



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2021 - Battle Creek, City of (1302)



Spring, 2022

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 for Battle Creek, City of (1302) as of December 31, 2021. The report includes the determination of liabilities and contribution rates resulting from the participation in the Municipal Employees' Retirement System of Michigan ("MERS"). This report contains the minimum actuarially determined contribution requirement, in alignment with the MERS Plan Document, Actuarial Policy, the Michigan Constitution, and governing statutes. Battle Creek, City of is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees.

The purposes of this valuation are to:

- Measure funding progress as of December 31, 2021,
- Establish contribution requirements for the fiscal year beginning July 1, 2023,
- Provide information regarding the identification and assessment of risk,
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements, and
- Provide information to assist the local unit of government with state reporting requirements.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through December 31, 2021. The valuation was based upon information furnished by MERS concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by MERS.

The Municipal Employees' Retirement Act, PA 427 of 1984 and the MERS' Plan Document Article VI Sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. As the fiduciary of the plan, the MERS Retirement Board sets certain assumptions for funding and GASB purposes. These assumptions are reviewed regularly through a comprehensive study, most recently in the Fall of 2021. The MERS Retirement Board adopted a Dedicated Gains Policy at the February 17, 2022 Board meeting. The Dedicated Gains Policy will automatically reduce the assumed rate of investment return in conjunction with recognizing excess investment gains to mitigate the impact on employer contributions the first year. The new policy is effective with this December 31, 2021 annual actuarial valuation, and is reflected in the funded status and fiscal year 2023 contributions as shown in the Executive Summary.

The Michigan Department of Treasury provides required assumptions to be used for purposes of Public Act 202 reporting. These assumptions are for reporting purposes only and do not impact required contributions. Please refer to the State Reporting page found at the end of this report for information for this filing.

For a full list of all the assumptions used, please refer to the division-specific assumptions described in table(s) in this report, and to the Appendix on the MERS website at:

<https://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2021AnnualActuarialValuation-Appendix.pdf>

The actuarial assumptions used for this valuation, including the assumed rate of investment return, are reasonable for purposes of the measurement.

This report reflects the impact of COVID-19 experience through December 31, 2021. It does not reflect the ongoing impact of COVID-19, which is likely to influence demographic and economic experience, at least in the short term. We will continue to monitor these developments and their impact on the MERS Defined Benefit and Hybrid plans. Actual future experience will be reflected in each subsequent annual valuation, as experience emerges.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of Battle Creek, City of as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with applicable statutes.

David T. Kausch, Rebecca L. Stouffer, and Mark Buis are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor. GRS maintains independent consulting agreements with certain local units of government for services unrelated to the actuarial consulting services provided in this report.

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.

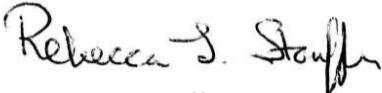
This report was prepared at the request of the MERS Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). GRS is not responsible for the consequences of any unauthorized use. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

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,
Gabriel, Roeder, Smith & Company



David T. Kausch, FSA, FCA, EA, MAAA



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA

Table of Contents

Executive Summary.....	6
Table 1: Employer Contribution Details for the Fiscal Year Beginning July 1, 2023	13
Table 2: Benefit Provisions.....	15
Table 3: Participant Summary	19
Table 4: Reported Assets (Market Value)	21
Table 5: Flow of Valuation Assets	22
Table 6: Actuarial Accrued Liabilities and Valuation Assets as of December 31, 2021	23
Table 7: Actuarial Accrued Liabilities - Comparative Schedule	25
Tables 8 and 9: Division-Based Comparative Schedules.....	26
Table 10: Division-Based Layered Amortization Schedule.....	44
GASB Statement No. 68 Information	57
Benefit Provision History.....	58
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	66
Risk Commentary	67
State Reporting	69

Executive Summary

Funded Ratio

The funded ratio of a plan is the percentage of the dollar value of the actuarial accrued liability that is covered by the actuarial value of assets. While the funded ratio may be a useful plan measurement, understanding a plan's funding trend may be more important than a particular point in time. Refer to Table 7 to find a history of this information.

	12/31/2021	12/31/2020
Funded Ratio*	58%	54%

* Reflects assets from Surplus divisions, if any.

Throughout this report are references to valuation results generated prior to the 2018 valuation date. Results prior to 2018 were received directly from the prior actuary or extracted from the previous valuation system by MERS's technology service provider.

Required Employer Contributions

Your required employer contributions are shown in the following table. Employee contributions, if any, are in addition to the employer contributions.

Effective for the December 31, 2021 valuation, the MERS Retirement Board has adopted a Dedicated Gains Policy which allows for recognition of asset gains in excess of a set threshold in combination with lowering the assumed rate of investment return (discussed below). Changes to these assumptions and methods are effective for contributions beginning in 2023. Effective with the 2020 and 2019 valuations respectively, the MERS Retirement Board adopted updated demographic and economic assumptions. The combined impact of the prior demographic and economic assumption changes may be phased in. The remaining combined phase-in period is three years for all assumption changes.

By default, MERS will invoice you based on the amount in the “No Phase-in” columns. This amount will be considered the minimum required contribution unless you request to be billed the “Phase-in” rates. If you wish to be billed using the phased-in rates, please contact MERS, at which point the alternate minimum required contribution will be the amount in the “Phase-in” columns.

	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:	12/31/2021	12/31/2021	12/31/2020	12/31/2020	12/31/2021	12/31/2021	12/31/2020	12/31/2020
Fiscal Year Beginning:	July 1, 2023	July 1, 2023	July 1, 2022	July 1, 2022	July 1, 2023	July 1, 2023	July 1, 2022	July 1, 2022
Division								
01 - Gnrl NonUn.	39.91%	41.87%	37.65%	40.52%	\$ 170,128	\$ 178,466	\$ 167,482	\$ 180,247
10 - General AFSCME	-	-	-	-	81,256	86,632	89,725	97,891
11 - Gnl Transit	-	-	-	-	22,247	24,033	25,231	27,922
12 - Gnrl BCSA	-	-	-	-	120,040	124,856	118,417	125,668
13 - Gnl Housing	-	-	-	-	11,751	13,159	15,430	17,542
14 - SEIU Local	-	-	-	-	78,250	85,430	79,650	90,504
15 - City Mngr.	136.42%	139.79%	132.19%	137.31%	36,852	37,762	35,474	36,848
16 - Cntrl Disp.	-	-	-	-	4,996	5,664	5,303	6,305
17 - Corr.Offrcs	0.00%	0.00%	0.00%	0.00%	0	0	0	0
18 - General AFSCME after 12/1/10	3.88%	3.88%	4.33%	4.33%	15,428	15,428	16,224	16,224
19 - Gen. SEIU hired after 7/1/201	3.38%	3.38%	3.24%	3.24%	9,628	9,628	8,163	8,163
20 - Gen. BCSA hired after 1/1/201	6.34%	6.42%	6.36%	6.53%	4,794	4,854	3,600	3,696
HA - GNL Trans hired after 3/1/10	6.77%	6.77%	6.24%	6.24%	8,788	8,788	8,732	8,732
Total Municipality - Estimated Monthly Contribution					\$ 564,158	\$ 594,700	\$ 573,431	\$ 619,742
Total Municipality - Estimated Annual Contribution					\$ 6,769,896	\$ 7,136,400	\$ 6,881,172	\$ 7,436,904

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2021	12/31/2020
Division		
01 - Gnrl NonUn.	8.00%	7.00%
10 - General AFSCME	5.00%	4.00%
11 - Gnl Transit	5.00%	4.50%
12 - Gnrl BCSA	6.66%	6.16%
13 - Gnl Housing	1.50%	1.50%
14 - SEIU Local	6.00%	5.00%
15 - City Mngr.	3.00%	2.00%
16 - Cntrl Disp.	7.20%	7.20%
17 - Corr.Offrcs	4.62%	4.12%
18 - General AFSCME after 12/1/10	4.00%	3.00%
19 - Gen. SEIU hired after 7/1/201	5.00%	4.50%
20 - Gen. BCSA hired after 1/1/201	4.00%	3.50%
HA - GNL Trans hired after 3/1/10	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 division 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. With the implemented Dedicated Gains policy, market gains and losses will continue to be smoothed over five years; however, since excess return are being used to lower the investment assumption, there will be less gains to smooth in down markets. Having additional funds in Surplus divisions will assist plans with navigating any market volatility.

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 2023 for the entire employer would be \$835,189, instead of \$594,700.

How and Why Do These Numbers Change?

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

- Changes in benefit provisions (see Table 2),
- Changes in actuarial assumptions and methods (see the Appendix), and
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions.

These impacts are reflected in various tables in the report. For more information, please contact your Regional Manager.

Comments on Investment Rate of Return Assumption

A defined benefit plan is funded by employer contributions, participant contributions, and investment earnings. Investment earnings have historically provided a significant portion 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 **7.00%** per year. This, along with all of our other actuarial assumptions, is reviewed at least 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 assumed investment return assumptions, please review the “What If” projection scenarios later in this report.

Assumption and Method Change in 2021

Effective February 17, 2022, the MERS Retirement Board adopted a dedicated gains policy that automatically adjusts the assumed rate of investment return by using excess asset gains to mitigate large increases in required contributions to the Plan. Full details of this dedicated gains policy are available in the Actuarial Policy found on the MERS [website](#). Some goals of the dedicated gains policy are to:

- Provide a systematic approach to lower the assumed rate of investment return between experience studies, and
- Use excess gains to cover both the increase in normal cost and any increase in UAL payment the first year after implementation (i.e., minimize the first-year impact (i.e., increase) in employer contributions).

The dedicated gains policy has been implemented with the December 31, 2021 annual actuarial valuation. After initial application of the smoothing method, remaining market gains were used to lower the assumed rate of investment return from 7.35% to 7.00%. The December 31, 2021 valuation liabilities were developed using this new, lower assumption. Additionally, as a result of recognizing excess market gains, the valuation assets used to fund these liabilities are 7.2% higher than if there were no dedicated gain policy. The combined impact of these changes will minimize the first-year impact on employer contributions and may result in an increase or a decrease in employer contributions.

Comments on Asset Smoothing

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. After initial application of asset smoothing, remaining excess market gains are used to buy down the assumed rate of investment return and increase the level of valuation assets, to the extent allowed by the dedicated gains policy. 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 2021 was 17.04%, while the actual market rate of return was 13.97%**. 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 view the "[How Smoothing Works](#)" video on the [Defined Benefit resource page](#) of the MERS website.

As of December 31, 2021, the actuarial value of assets is just below 100% of market value due to asset smoothing and dedicated gains. This means that rate of return on the actuarial value of assets should exceed the actuarial assumption in the next few years provided that the annual market returns meet or exceed the 7.00% investment return assumption. When all assumptions are met, contribution rates are expected to stay approximately level as a percent of payroll (dollar amounts are expected to increase with wage inflation of 3.0% each year).

As of December 31, 2021, the market value of assets and actuarial value of assets are very similar, resulting in a funded percentage that is not materially different.

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.

Many assumptions are important in determining the required employer contributions. In the following table, we show the impact of varying the Investment Return assumption. Lower investment returns would generally result in higher required employer contributions, and vice versa. The three economic scenarios below provide a quantitative risk assessment for the impact of investment returns on the plan's future financial condition for funding purposes.

The relative impact of the economic scenarios 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, 2021 valuation and are for the municipality in total, not by division. These results do not reflect a phase-in of the impact of the actuarial assumptions updated in the 2020 and 2019 valuations. There is no phase-in with dedicated gains.

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. Projections are not predictions. Future valuations will be based on actual future experience.

12/31/2021 Valuation Results	Lower Future Annual Returns	Lower Future Annual Returns	Valuation Assumptions
Investment Return Assumption	5.00%	6.00%	7.00%
Accrued Liability	\$ 214,104,585	\$ 191,501,321	\$ 172,588,041
Valuation Assets ¹	\$ 100,280,858	\$ 100,280,858	\$ 100,280,858
Unfunded Accrued Liability	\$ 113,823,727	\$ 91,220,463	\$ 72,307,183
Funded Ratio	47%	52%	58%
Monthly Normal Cost	\$ 205,681	\$ 145,977	\$ 101,088
Monthly Amortization Payment	\$ 679,621	\$ 583,004	\$ 491,962
Total Employer Contribution²	\$ 885,302	\$ 729,068	\$ 594,700

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

² If assets exceed accrued liabilities for a division, the division may have an overfunding credit 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 economic assumption scenarios. All three projections take into account the past investment experience that will continue to affect the actuarial rate of

return in the short term.

The 7.00% scenario provides an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.00% 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 6.00% and 5.00% projection scenarios provide an indication of the potential required employer contribution if these assumptions were met over the long term.

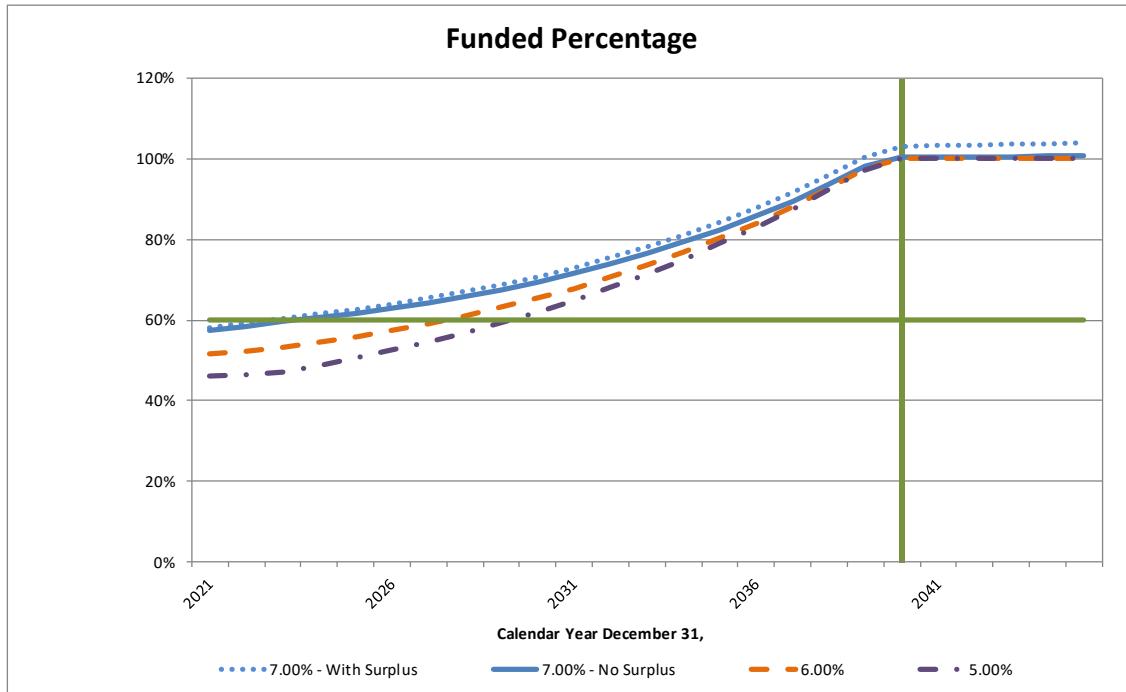
Your municipality includes one or more Surplus divisions. Extra contributions in a Surplus division may be used to reduce future employer contributions or to accelerate the date by which the municipality becomes 100% funded. The timing and use of these Surplus assets is discretionary. Certain employers have special funding arrangements that may differ from the Actuarial Policy.

The Funded Percentage graph shows projections of funded status under the 7.00% 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.

Valuation Year Ending 12/31	Fiscal Year Beginning 7/1	Actuarial Accrued Liability	Valuation Assets ²	Funded Percentage	Estimated Annual Employer Contribution
7.00%¹ - NO PHASE-IN					
2021	2023	\$ 172,588,041	\$ 98,944,947	57%	\$ 7,136,400
2022	2024	\$ 174,300,000	\$ 101,800,000	58%	\$ 7,300,000
2023	2025	\$ 176,000,000	\$ 104,800,000	60%	\$ 7,490,000
2024	2026	\$ 177,500,000	\$ 107,600,000	61%	\$ 7,690,000
2025	2027	\$ 178,900,000	\$ 110,400,000	62%	\$ 7,900,000
2026	2028	\$ 180,100,000	\$ 113,400,000	63%	\$ 8,120,000
6.00%¹ - NO PHASE-IN					
2021	2023	\$ 191,501,321	\$ 98,944,947	52%	\$ 8,748,816
2022	2024	\$ 193,200,000	\$ 100,900,000	52%	\$ 9,000,000
2023	2025	\$ 194,900,000	\$ 103,600,000	53%	\$ 9,260,000
2024	2026	\$ 196,400,000	\$ 107,000,000	54%	\$ 9,500,000
2025	2027	\$ 197,700,000	\$ 110,500,000	56%	\$ 9,760,000
2026	2028	\$ 198,900,000	\$ 114,300,000	57%	\$ 10,000,000
5.00%¹ - NO PHASE-IN					
2021	2023	\$ 214,104,585	\$ 98,944,947	46%	\$ 10,623,624
2022	2024	\$ 215,800,000	\$ 99,900,000	46%	\$ 11,000,000
2023	2025	\$ 217,500,000	\$ 102,500,000	47%	\$ 11,300,000
2024	2026	\$ 218,900,000	\$ 106,800,000	49%	\$ 11,600,000
2025	2027	\$ 220,300,000	\$ 111,400,000	51%	\$ 11,900,000
2026	2028	\$ 221,400,000	\$ 116,200,000	52%	\$ 12,200,000

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.

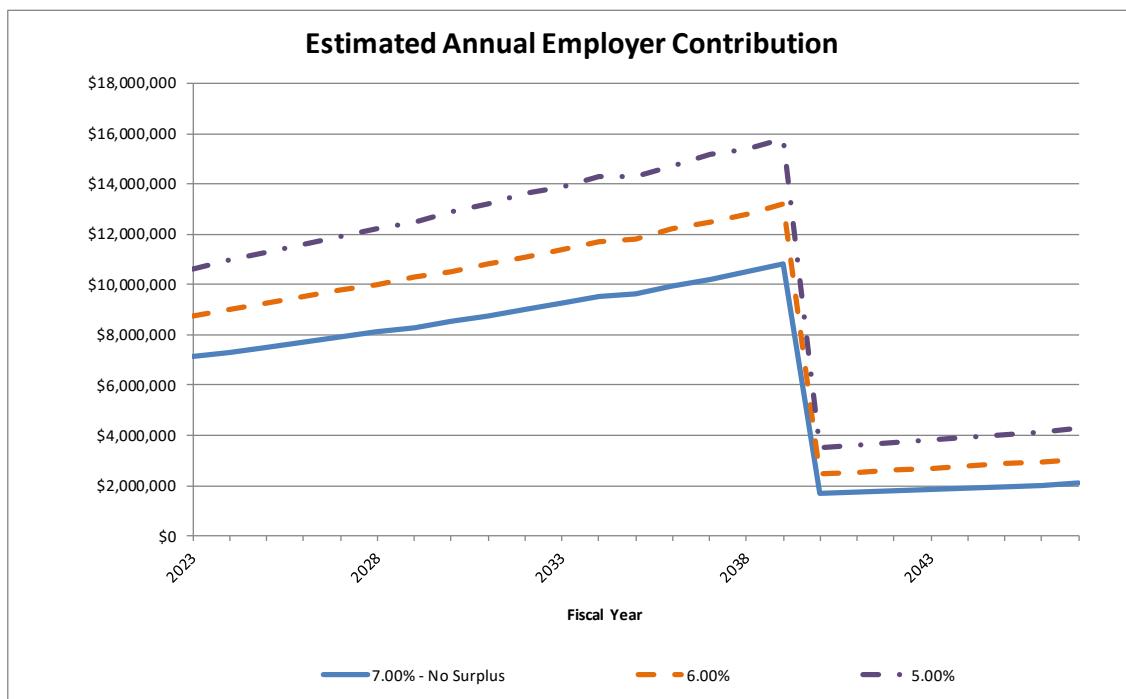


Notes:

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.

The green indicator lines have been added at 60% funded and 19 years following the valuation date for PA 202 purposes.



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.

Table 1: Employer Contribution Details for the Fiscal Year Beginning July 1, 2023

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions ¹			Computed Employer Contribut. With Phase-In	Computed Employer Contribut. Rate No Phase-In ⁵	Blended ER Rate No Phase-In ⁵	Blended ER Rate With Phase-In ⁵	Employee Contribut. Conversion Factor ²
			Employer Normal Cost ⁶	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In					
Percentage of Payroll										
01 - Gnrl NonUn.	14.61%	8.00%	6.61%	35.26%	41.87%	39.91%				0.81%
10 - General AFSCME	12.79%	5.00%	-	-	-	-	19.47%	18.44%		
11 - Gnl Transit	13.53%	5.00%	-	-	-	-	21.16%	20.01%		
12 - Gnrl BCSA	13.38%	6.66%	-	-	-	-	70.93%	68.26%		
13 - Gnl Housing	15.41%	1.50%	-	-	-	-				
14 - SEIU Local	13.06%	6.00%	-	-	-	-	25.92%	23.96%		
15 - City Mngr.	18.79%	3.00%	15.79%	124.00%	139.79%	136.42%				0.85%
16 - Cntrl Disp.	0.00%	7.20%	-	-	-	-				
17 - Corr.Offrcs	10.24%	4.62%	5.62%	-18.78%	0.00%	0.00%				0.95%
18 - General AFSCME after 12/1/10	7.88%	4.00%	3.88%	0.00%	3.88%	3.88%	19.47%	18.44%	0.85%	
19 - Gen. SEIU hired after 7/1/201	8.23%	5.00%	3.23%	0.15%	3.38%	3.38%	25.92%	23.96%	0.86%	
20 - Gen. BCSA hired after 1/1/201	10.42%	4.00%	6.42%	0.00%	6.42%	6.34%	70.93%	68.26%	0.94%	
HA - GNL Trans hired after 3/1/10	6.77%	0.00%	6.77%	0.00%	6.77%	6.77%	21.16%	20.01%		
Estimated Monthly Contribution³										
01 - Gnrl NonUn.			\$ 28,177	\$ 150,289	\$ 178,466	\$ 170,128				
10 - General AFSCME			9,863	76,769	86,632	81,256				
11 - Gnl Transit			2,156	21,877	24,033	22,247				
12 - Gnrl BCSA			7,208	117,648	124,856	120,040				
13 - Gnl Housing			4,659	8,500	13,159	11,751				
14 - SEIU Local			5,788	79,642	85,430	78,250				
15 - City Mngr.			4,265	33,497	37,762	36,852				
16 - Cntrl Disp.			0	5,664	5,664	4,996				
17 - Corr.Offrcs			705	(2,355)	0	0				
18 - General AFSCME after 12/1/10			15,428	0	15,428	15,428				
19 - Gen. SEIU hired after 7/1/201			9,197	431	9,628	9,628				
20 - Gen. BCSA hired after 1/1/201			4,854	0	4,854	4,794				
HA - GNL Trans hired after 3/1/10			8,788	0	8,788	8,788				
Total Municipality			\$ 101,088	\$ 491,962	\$ 594,700	\$ 564,158				
Estimated Annual Contribution³			\$ 1,213,056	\$ 5,903,544	\$ 7,136,400	\$ 6,769,896				

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 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 not to add across.
- ⁵ For linked divisions, the employer will be invoiced the Computed Employer Contribution No 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).
- ⁶ For divisions with a negative employer normal cost, employee contributions cover the normal cost and a portion of the payment of any unfunded accrued liability.

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

Table 2: Benefit Provisions

01 - Gnr1 NonUn.: Open Division

	2021 Valuation	2020 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:	8.00%	7.00%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

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

	2021 Valuation	2020 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:	5.00%	4.00%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

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

	2021 Valuation	2020 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:	5.00%	4.50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

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

	2021 Valuation	2020 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:	6.66%	6.16%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

13 - Gnl Housing: Closed to new hires

	2021 Valuation	2020 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

	2021 Valuation	2020 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:	6.00%	5.00%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

15 - City Mngr.: Open Division

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
	55/15	55/15
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	3.00%	2.00%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

16 - Cntrl Disp.: Closed to new hires

	2021 Valuation	2020 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:	7.20%	7.20%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

17 - Corr.Offrcs: Open Division

	2021 Valuation	2020 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	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	4.62%	4.12%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

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

	2021 Valuation	2020 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:	4.00%	3.00%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

19 - Gen. SEIU hired after 7/1/201: Open Division, linked to Division 14

	2021 Valuation	2020 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:	5.00%	4.50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

20 - Gen. BCSA hired after 1/1/201: Open Division, linked to Division 12

	2021 Valuation	2020 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:	4.00%	3.50%
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

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.25% Multiplier (no max)	1.25% Multiplier (no max)
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:	0.00%	0.00%
Act 88:	Yes (Adopted 7/10/1983)	Yes (Adopted 7/10/1983)

Table 3: Participant Summary

Division	2021 Valuation		2020 Valuation		2021 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - Gnrl NonUn.							
Active Employees	60	\$ 4,750,444	62	\$ 4,956,886	47.2	10.5	11.6
Vested Former Employees	14	317,974	14	283,404	52.2	11.5	15.0
Retirees and Beneficiaries	95	2,992,563	88	2,676,598	73.2		
Pending Refunds	11		12				
10 - General AFSCME							
Active Employees	31	\$ 1,738,811	36	\$ 1,966,400	52.4	19.5	20.0
Vested Former Employees	7	153,071	7	127,230	51.0	17.0	17.4
Retirees and Beneficiaries	131	2,716,325	131	2,678,036	70.9		
Pending Refunds	12		13				
11 - Gnl Transit							
Active Employees	5	\$ 380,053	7	\$ 507,353	57.4	19.5	19.5
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	32	643,468	33	613,955	67.3		
Pending Refunds	5		8				
12 - Gnrl BCSA							
Active Employees	19	\$ 1,519,835	19	\$ 1,591,095	52.8	20.9	20.9
Vested Former Employees	2	22,919	4	66,404	59.2	11.9	12.8
Retirees and Beneficiaries	50	1,929,937	48	1,869,415	67.5		
Pending Refunds	0		0				
13 - Gnl Housing							
Active Employees	8	\$ 540,560	8	\$ 556,800	57.2	21.1	21.1
Vested Former Employees	1	23,380	1	23,380	58.8	18.6	18.6
Retirees and Beneficiaries	7	283,261	7	278,069	73.5		
Pending Refunds	2		3				
14 - SEIU Local							
Active Employees	20	\$ 1,102,139	24	\$ 1,146,545	52.6	19.1	19.1
Vested Former Employees	7	109,375	7	88,972	49.4	13.0	14.2
Retirees and Beneficiaries	103	2,425,010	102	2,406,110	69.8		
Pending Refunds	12		16				
15 - City Mngr.							
Active Employees	2	\$ 301,029	2	\$ 299,063	56.7	10.0	11.9
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	9	522,213	9	522,213	69.6		
Pending Refunds	0		0				

Table 3 (continued)

Division	2021 Valuation		2020 Valuation		2021 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
16 - Cntrl Disp.							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	3	29,230	3	29,230	56.4	8.6	14.4
Retirees and Beneficiaries	7	136,336	7	133,634	64.0		
Pending Refunds	6		6				
17 - Corr.Offrcs							
Active Employees	2	\$ 139,744	2	\$ 136,552	34.7	8.4	8.4
Vested Former Employees	3	26,176	3	26,176	48.0	6.1	20.3
Retirees and Beneficiaries	2	36,309	2	36,309	64.8		
Pending Refunds	1		1				
18 - General AFSCME after 12/1/10							
Active Employees	83	\$ 4,103,282	79	\$ 3,828,506	41.3	4.8	5.8
Vested Former Employees	1	2,977	1	2,977	47.9	4.1	23.2
Retirees and Beneficiaries	1	2,649	1	2,649	66.6		
Pending Refunds	35		31				
19 - Gen. SEIU hired after 7/1/201							
Active Employees	63	\$ 2,984,469	60	\$ 2,594,579	42.4	5.1	5.5
Vested Former Employees	3	7,154	1	2,266	46.4	3.4	7.5
Retirees and Beneficiaries	1	2,736	0	0	69.9		
Pending Refunds	19		15				
20 - Gen. BCSA hired after 1/1/201							
Active Employees	7	\$ 518,173	4	\$ 317,233	50.2	5.0	13.4
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	1		1				
HA - GNL Trans hired after 3/1/10							
Active Employees	23	\$ 1,348,227	28	\$ 1,413,668	42.2	3.9	3.9
Vested Former Employees	6	10,649	5	6,529	38.3	3.1	5.5
Retirees and Beneficiaries	2	8,970	1	5,071	64.7		
Pending Refunds	0		0				
Total Municipality							
Active Employees	323	\$ 19,426,766	331	\$ 19,314,680	46.0	9.8	10.6
Vested Former Employees	47	702,905	46	656,568	49.8	10.4	14.0
Retirees and Beneficiaries	440	11,699,777	429	11,222,059	70.3		
Pending Refunds	104		106				
Total Participants	914		912				

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

² Descriptions can be found under Miscellaneous and Technical Assumptions in the Appendix.

Table 4: Reported Assets (Market Value)

Division	2021 Valuation		2020 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - Gnrl NonUn.	\$ 20,045,022	\$ 2,191,485	\$ 17,904,937	\$ 2,362,410
10 - General AFSCME	23,924,264	986,734	22,402,989	1,044,910
11 - Gnl Transit	5,375,616	138,285	5,005,900	175,491
12 - Gnrl BCSA	11,259,625	886,581	10,187,430	842,932
13 - Gnl Housing	5,776,740	155,582	5,156,034	146,936
14 - SEIU Local	18,479,726	653,038	17,484,169	671,574
15 - City Mngr.	1,227,301	21,466	1,113,016	13,727
16 - Cntrl Disp.	1,489,514	3,801	1,387,648	3,786
17 - Corr.Offrcs	912,331	65,411	826,509	59,042
18 - General AFSCME after 12/1/10	1,923,831	650,339	1,482,309	522,616
19 - Gen. SEIU hired after 7/1/201	1,258,276	580,499	963,138	461,759
20 - Gen. BCSA hired after 1/1/201	257,502	77,653	165,068	46,057
HA - GNL Trans hired after 3/1/10	750,684	0	580,693	0
S1 - Surplus Unassociated	1,045,001	0	609,967	0
S2 - Surplus AFSCME	90,664	0	9,426	0
S3 - Surplus Transit	12,484	0	698	0
S4 - Surplus BCSA	55,486	0	4,215	0
S5 - Surplus SEIU	134,253	0	65,552	0
Municipality Total³	\$ 94,018,320	\$ 6,410,874	\$ 85,349,699	\$ 6,351,239
Combined Assets³	\$100,429,194		\$91,700,938	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

The December 31, 2021 valuation assets (actuarial value of assets) are equal to 0.998523 times the reported market value of assets (compared to 0.972357 as of December 31, 2020). Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

Assets in the Surplus division(s) are employer assets that have been reserved separately and may be used within the plan at the employer's discretion at some point in the future. These assets are not used in calculating the employer contribution for the fiscal year beginning July 1, 2023.

Table 5: Flow of Valuation Assets

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
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
2018	5,404,480	194,470	635,312	3,151,829	(10,495,785)	(16,549)	66,168	87,380,611
2019	5,367,992	162,593	717,521	3,940,352	(10,819,917)	(20,289)	281,556	87,010,419
2020	5,772,166	109,124	828,776	6,615,138	(11,101,024)	(68,551)	0	89,166,048
2021	6,058,748	573,900	953,917	14,897,718	(11,425,573)	(43,741)	99,841	100,280,858

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.

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 Asset balance includes assets from Surplus divisions, if any.

Years where historical information is not available will be displayed with zero values.

**Table 6: Actuarial Accrued Liabilities and Valuation Assets
as of December 31, 2021**

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
01 - Gnrl NonUn.	\$ 12,330,532	\$ 2,379,349	\$ 30,018,707	\$ 65,307	\$ 44,793,895	\$ 22,203,664	49.6%	\$ 22,590,231
10 - General AFSCME	8,255,019	1,177,050	27,144,832	27,526	36,604,427	24,874,205	68.0%	11,730,222
11 - Gnl Transit	1,861,409	0	6,971,674	710	8,833,793	5,505,757	62.3%	3,328,036
12 - Gnrl BCSA	8,499,399	259,209	21,052,555	0	29,811,163	12,128,266	40.7%	17,682,897
13 - Gnl Housing	3,878,483	329,257	2,790,337	879	6,998,956	5,923,560	84.6%	1,075,396
14 - SEIU Local	5,186,595	802,856	25,117,669	30,224	31,137,344	19,104,504	61.4%	12,032,840
15 - City Mngr.	800,218	0	5,469,591	0	6,269,809	1,246,922	19.9%	5,022,887
16 - Cntrl Disp.	0	343,508	1,600,500	3,801	1,947,809	1,491,110	76.6%	456,699
17 - Corr.Offrcs	186,605	118,479	458,368	3,535	766,987	976,297	127.3%	(209,310)
18 - General AFSCME after 12/1/10	2,376,880	14,973	28,323	101,794	2,521,970	2,570,368	101.9%	(48,398)
19 - Gen. SEIU hired after 7/1/201	1,753,477	40,952	39,244	67,166	1,900,839	1,836,059	96.6%	64,780
20 - Gen. BCSA hired after 1/1/201	306,717	0	0	12,793	319,510	334,660	104.7%	(15,150)
HA - GNL Trans hired after 3/1/10	538,172	43,325	100,042	0	681,539	749,575	110.0%	(68,036)
S1 - Surplus Unassociated	0	0	0	0	0	1,043,457		(1,043,457)
S2 - Surplus AFSCME	0	0	0	0	0	90,530		(90,530)
S3 - Surplus Transit	0	0	0	0	0	12,466		(12,466)
S4 - Surplus BCSA	0	0	0	0	0	55,404		(55,404)
S5 - Surplus SEIU	0	0	0	0	0	134,054		(134,054)
Total	\$ 45,973,506	\$ 5,508,958	\$ 120,791,842	\$ 313,735	\$ 172,588,041	\$ 100,280,858	58.1%	\$ 72,307,183

The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already shown in the table on the prior page(s).

Table 6 (continued)

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
Linked Divisions 18, 10	\$ 10,631,899	\$ 1,192,023	\$ 27,173,155	\$ 129,320	\$ 39,126,397	\$ 27,444,573	70.1%	\$ 11,681,824
Linked Divisions 19, 14	6,940,072	843,808	25,156,913	97,390	33,038,183	20,940,563	63.4%	12,097,620
Linked Divisions 20, 12	8,806,116	259,209	21,052,555	12,793	30,130,673	12,462,926	41.4%	17,667,747
Linked Divisions HA, 11	2,399,581	43,325	7,071,716	710	9,515,332	6,255,332	65.7%	3,260,000

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

The December 31, 2021 valuation assets (actuarial value of assets) are equal to 0.998523 times the reported market value of assets. Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

Table 7: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2018	151,060,394	87,380,611	58%	63,679,783
2019	157,393,873	87,010,419	55%	70,383,454
2020	165,362,658	89,166,048	54%	76,196,610
2021	172,588,041	100,280,858	58%	72,307,183

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

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

Years where historical information is not available will be displayed with zero values.

Throughout this report are references to valuation results generated prior to the 2018 valuation date. Results prior to 2018 were received directly from the prior actuary or extracted from the previous valuation system by MERS's technology service provider.

Tables 8 and 9: Division-Based Comparative Schedules

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
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
2018	36,981,207	18,370,270	50%	18,610,937
2019	39,518,912	18,833,776	48%	20,685,136
2020	42,400,742	19,707,097	46%	22,693,645
2021	44,793,895	22,203,664	50%	22,590,231

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	63	4,857,655	34.32%	5.00%
2019	63	5,015,439	37.55%	6.00%
2020	62	4,956,886	40.52%	7.00%
2021	60	4,750,444	41.87%	8.00%

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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	35,723,096	23,785,991	67%	11,937,105
2019	35,785,702	22,935,247	64%	12,850,455
2020	35,902,227	22,799,729	64%	13,102,498
2021	36,604,427	24,874,205	68%	11,730,222

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	43	2,310,685	\$ 91,171	2.75%
2019	39	2,083,790	\$ 98,418	3.00%
2020	36	1,966,400	\$ 97,891	4.00%
2021	31	1,738,811	\$ 86,632	5.00%

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

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

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	7,901,136	5,136,832	65%	2,764,304
2019	8,160,092	5,018,372	61%	3,141,720
2020	8,766,937	5,038,162	57%	3,728,775
2021	8,833,793	5,505,757	62%	3,328,036

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	8	388,202	\$ 19,739	2.50%
2019	8	453,462	\$ 23,264	4.00%
2020	7	507,353	\$ 27,922	4.50%
2021	5	380,053	\$ 24,033	5.00%

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

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

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	25,217,053	10,570,414	42%	14,646,639
2019	26,727,967	10,525,502	39%	16,202,465
2020	28,472,906	10,725,450	38%	17,747,456
2021	29,811,163	12,128,266	41%	17,682,897

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	22	1,739,995	\$ 101,346	5.16%
2019	20	1,532,858	\$ 114,566	5.16%
2020	19	1,591,095	\$ 125,668	6.16%
2021	19	1,519,835	\$ 124,856	6.66%

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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	5,738,201	4,768,193	83%	970,008
2019	6,107,591	4,875,762	80%	1,231,829
2020	6,668,767	5,156,379	77%	1,512,388
2021	6,998,956	5,923,560	85%	1,075,396

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	9	570,602	\$ 13,308	1.50%
2019	9	576,289	\$ 15,683	1.50%
2020	8	556,800	\$ 17,542	1.50%
2021	8	540,560	\$ 13,159	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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	28,801,347	18,563,790	64%	10,237,557
2019	29,291,747	17,863,318	61%	11,428,429
2020	30,252,511	17,653,864	58%	12,598,647
2021	31,137,344	19,104,504	61%	12,032,840

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	34	1,735,412	\$ 75,459	3.50%
2019	29	1,502,243	\$ 83,578	4.50%
2020	24	1,146,545	\$ 90,504	5.00%
2021	20	1,102,139	\$ 85,430	6.00%

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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	5,765,992	1,076,925	19%	4,689,067
2019	5,947,910	1,024,720	17%	4,923,190
2020	6,116,523	1,095,597	18%	5,020,926
2021	6,269,809	1,246,922	20%	5,022,887

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	2	273,550	201.41%	0.00%
2019	2	289,000	132.48%	1.00%
2020	2	299,063	137.31%	2.00%
2021	2	301,029	139.79%	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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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
2018	1,716,553	1,396,324	81%	320,229
2019	1,806,249	1,350,985	75%	455,264
2020	1,888,286	1,352,971	72%	535,315
2021	1,947,809	1,491,110	77%	456,699

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	0	0	\$ 3,327	7.20%
2019	0	0	\$ 5,213	7.20%
2020	0	0	\$ 6,305	7.20%
2021	0	0	\$ 5,664	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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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)
2018	605,858	820,853	135%	(214,995)
2019	647,412	826,937	128%	(179,525)
2020	698,195	861,071	123%	(162,876)
2021	766,987	976,297	127%	(209,310)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	2	132,460	0.00%	3.12%
2019	2	125,445	0.00%	3.62%
2020	2	136,552	0.00%	4.12%
2021	2	139,744	0.00%	4.62%

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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
2018	1,334,569	1,233,806	92%	100,763
2019	1,598,956	1,569,133	98%	29,823
2020	2,013,916	1,949,503	97%	64,413
2021	2,521,970	2,570,368	102%	(48,398)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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%
2018	74	3,452,289	5.29%	2.50%
2019	75	3,542,516	4.64%	3.00%
2020	79	3,828,506	4.33%	3.00%
2021	83	4,103,282	3.88%	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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division 19 - Gen. SEIU hired after 7/1/201

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
2018	849,830	766,136	90%	83,694
2019	1,206,115	1,079,501	90%	126,614
2020	1,424,649	1,385,508	97%	39,141
2021	1,900,839	1,836,059	97%	64,780

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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%
2018	57	2,415,318	4.30%	3.50%
2019	62	2,808,111	3.99%	4.00%
2020	60	2,594,579	3.24%	4.50%
2021	63	2,984,469	3.38%	5.00%

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

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

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division 20 - Gen. BCSA hired after 1/1/201

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	0%	\$ 0
2012	0	0	0%	0
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
2018	126,497	133,592	106%	(7,095)
2019	170,186	168,873	99%	1,313
2020	183,454	205,289	112%	(21,835)
2021	319,510	334,660	105%	(15,150)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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	0.00%
2012	0	0	\$ 0	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%
2018	5	321,977	6.51%	2.50%
2019	5	342,622	6.78%	2.50%
2020	4	317,233	6.53%	3.50%
2021	7	518,173	6.42%	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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

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
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)
2018	299,055	341,397	114%	(42,342)
2019	425,034	433,040	102%	(8,006)
2020	573,545	564,640	98%	8,905
2021	681,539	749,575	110%	(68,036)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

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		
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%
2018	26	1,077,600	6.29%	0.00%
2019	28	1,243,368	6.39%	0.00%
2020	28	1,413,668	6.24%	0.00%
2021	23	1,348,227	6.77%	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 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division S1 - Surplus Unassociated

Table 8-S1: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0		\$ 0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	294,437		(294,437)
2018	0	416,088		(416,088)
2019	0	481,122		(481,122)
2020	0	593,106		(593,106)
2021	0	1,043,457		(1,043,457)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

Years where historical information is not available will be displayed with zero values.

Division S2 - Surplus AFSCME

Table 8-S2: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0		\$ 0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	0		0
2018	0	0		0
2019	0	0		0
2020	0	9,166		(9,166)
2021	0	90,530		(90,530)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

Years where historical information is not available will be displayed with zero values.

Division S3 - Surplus Transit

Table 8-S3: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0		\$ 0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	0		0
2018	0	0		0
2019	0	0		0
2020	0	678		(678)
2021	0	12,466		(12,466)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

Years where historical information is not available will be displayed with zero values.

Division S4 - Surplus BCSA

Table 8-S4: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0		\$ 0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	0		0
2018	0	0		0
2019	0	0		0
2020	0	4,098		(4,098)
2021	0	55,404		(55,404)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

Years where historical information is not available will be displayed with zero values.

Division S5 - Surplus SEIU

Table 8-S5: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0		\$ 0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	0		0
2018	0	0		0
2019	0	24,131		(24,131)
2020	0	63,740		(63,740)
2021	0	134,054		(134,054)

Notes: Actuarial assumptions were revised for the 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

Years where historical information is not available will be displayed with zero values.

Table 10: Division-Based Layered Amortization Schedule

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 7/1/2023			
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment	
Initial	12/31/2015	\$ 15,969,581	23	\$ 16,643,853	17	\$ 1,349,736	
(Gain)/Loss	12/31/2016	375,584	22	419,024	17	33,984	
(Gain)/Loss	12/31/2017	639,742	21	708,990	17	57,492	
Amendment	12/31/2017	(16,827)	21	(18,660)	17	(1,512)	
(Gain)/Loss	12/31/2018	789,675	20	871,210	17	70,656	
Amendment	12/31/2018	(11,551)	20	(12,744)	17	(1,032)	
(Gain)/Loss	12/31/2019	827,263	19	905,670	17	73,440	
Assumption	12/31/2019	1,084,340	19	1,072,719	17	86,988	
Amendment	12/31/2019	(16,736)	19	(18,320)	17	(1,488)	
Experience	12/31/2020	1,849,357	18	2,037,728	17	165,252	
Experience	12/31/2021	(334,789)	17	(370,550)	17	(30,048)	
Total				\$ 22,238,920		\$ 1,803,468	

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 9,987,316	23	\$ 10,528,664	17	\$ 853,824
(Gain)/Loss	12/31/2016	653,157	22	728,708	17	59,100
Amendment	12/31/2016	(3,650)	22	(4,076)	17	(336)
(Gain)/Loss	12/31/2017	(42,807)	21	(47,443)	17	(3,852)
(Gain)/Loss	12/31/2018	664,814	20	733,461	17	59,484
(Gain)/Loss	12/31/2019	(237,954)	19	(260,505)	17	(21,132)
Assumption	12/31/2019	1,039,343	19	1,069,152	17	86,700
Amendment	12/31/2019	(2,702)	19	(2,961)	17	(240)
Experience	12/31/2020	173,894	18	191,600	17	15,540
Experience	12/31/2021	(1,424,447)	17	(1,576,602)	17	(127,860)
Total				\$ 11,359,998		\$ 921,228

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,409,244	23	\$ 2,515,942	17	\$ 204,036
(Gain)/Loss	12/31/2016	162,926	22	181,771	17	14,736
(Gain)/Loss	12/31/2017	10,426	21	11,547	17	936
(Gain)/Loss	12/31/2018	39,748	20	43,854	17	3,552
(Gain)/Loss	12/31/2019	117,082	19	128,178	17	10,392
Assumption	12/31/2019	242,978	19	249,111	17	20,208
Amendment	12/31/2019	(799)	19	(870)	17	(72)
Experience	12/31/2020	560,599	18	617,698	17	50,088
Experience	12/31/2021	(460,710)	17	(509,922)	17	(41,352)
Total				\$ 3,237,309		\$ 262,524

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 11,147,262	23	\$ 11,554,910	17	\$ 937,044
(Gain)/Loss	12/31/2016	695,820	22	776,296	17	62,952
Amendment	12/31/2016	1,542	22	1,711	17	144
(Gain)/Loss	12/31/2017	509,676	21	564,837	17	45,804
(Gain)/Loss	12/31/2018	1,693,160	20	1,867,984	17	151,488
(Gain)/Loss	12/31/2019	507,365	19	555,454	17	45,048
Assumption	12/31/2019	828,147	19	816,837	17	66,240
Experience	12/31/2020	1,389,641	18	1,531,184	17	124,176
Experience	12/31/2021	(235,283)	17	(260,415)	17	(21,120)
Total				\$ 17,408,798		\$ 1,411,776

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 675,535	20	\$ 708,729	12	\$ 74,676
(Gain)/Loss	12/31/2016	6,402	18	6,575	12	696
(Gain)/Loss	12/31/2017	17,679	16	18,201	12	1,920
(Gain)/Loss	12/31/2018	172,396	15	179,362	12	18,900
(Gain)/Loss	12/31/2019	57,519	14	60,414	12	6,360
Assumption	12/31/2019	196,079	14	200,168	12	21,096
Experience	12/31/2020	270,124	13	291,104	12	30,672
Experience	12/31/2021	(448,697)	12	(496,625)	12	(52,320)
Total				\$ 967,928		\$ 102,000

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023			
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization	Payment
Initial	12/31/2015	\$ 9,189,857	23	\$ 9,677,814	17	\$ 784,824	
(Gain)/Loss	12/31/2016	(537,210)	22	(599,342)	17		(48,600)
Amendment	12/31/2016	5,043	22	5,617	17		456
(Gain)/Loss	12/31/2017	508,934	21	564,016	17		45,744
(Gain)/Loss	12/31/2018	556,118	20	613,532	17		49,752
Amendment	12/31/2018	(3,597)	20	(3,968)	17		(324)
(Gain)/Loss	12/31/2019	227,812	19	249,412	17		20,232
Assumption	12/31/2019	844,849	19	863,283	17		70,008
Amendment	12/31/2019	3,128	19	3,429	17		276
Experience	12/31/2020	1,075,340	18	1,184,870	17		96,084
Experience	12/31/2021	(699,052)	17	(773,722)	17		(62,748)
Total				\$ 11,784,941		\$ 955,704	

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 4,977,487	23	\$ 4,085,710	17	\$ 331,332
(Gain)/Loss	12/31/2016	77,986	22	87,002	17	7,056
(Gain)/Loss	12/31/2017	63,871	21	70,795	17	5,736
(Gain)/Loss	12/31/2018	105,525	20	116,420	17	9,444
(Gain)/Loss	12/31/2019	90,091	19	98,633	17	8,004
Assumption	12/31/2019	177,565	19	167,313	17	13,572
Amendment	12/31/2019	(1,515)	19	(1,658)	17	(132)
Experience	12/31/2020	214,495	18	236,347	17	19,164
Experience	12/31/2021	86,734	17	95,999	17	7,788
Total				\$ 4,956,561		\$ 401,964

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023			
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment	
Initial	12/31/2015	\$ 125,763	16	\$ 103,938	6	\$ 19,668	
(Gain)/Loss	12/31/2016	(69,400)	14	(57,937)	6	(10,956)	
(Gain)/Loss	12/31/2017	178,820	12	152,286	6	28,812	
(Gain)/Loss	12/31/2018	66,509	10	60,662	7	10,020	
(Gain)/Loss	12/31/2019	64,145	10	62,941	8	9,264	
Assumption	12/31/2019	63,503	10	60,290	8	8,868	
Experience	12/31/2020	81,418	10	85,585	9	11,400	
Experience	12/31/2021	(67,386)	10	(74,584)	10	(9,108)	
Total				\$ 393,181		\$ 67,968	

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (276,951)	10	\$ (246,658)	9	\$ (32,856)
(Gain)/Loss	12/31/2016	23,820	15	23,014	10	2,808
(Gain)/Loss	12/31/2017	33,527	15	33,760	11	3,816
(Gain)/Loss	12/31/2018	36,193	15	37,660	12	3,972
(Gain)/Loss	12/31/2019	(31,422)	15	(33,369)	13	(3,300)
Assumption	12/31/2019	23,941	15	26,573	13	2,628
Amendment	12/31/2019	(755)	10	(736)	8	(108)
Experience	12/31/2020	4,851	15	5,283	14	492
Experience	12/31/2021	(58,102)	15	(64,308)	15	(5,712)
Total				\$ (218,781)		\$ (28,260)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (55,049)	15	\$ (60,929)	15	\$ (5,412)
Total				\$ (60,929)		\$ (5,412)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 19 - Gen. SEIU hired after 7/1/201

Table 10-19: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023			
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment	
Initial	12/31/2015	\$ 18,080	23	\$ 25,975	17	\$ 2,112	
(Gain)/Loss	12/31/2016	(875)	22	(965)	17	(84)	
Amendment	12/31/2016	(5,553)	22	(6,196)	17	(504)	
(Gain)/Loss	12/31/2017	28,079	21	31,121	17	2,520	
(Gain)/Loss	12/31/2018	44,223	20	48,787	17	3,960	
Amendment	12/31/2018	(9,705)	20	(10,702)	17	(864)	
(Gain)/Loss	12/31/2019	36,020	19	39,429	17	3,192	
Assumption	12/31/2019	15,752	19	16,507	17	1,344	
Amendment	12/31/2019	(12,655)	19	(13,863)	17	(1,128)	
Experience	12/31/2020	(91,619)	18	(100,949)	17	(8,184)	
Experience	12/31/2021	31,236	17	34,572	17	2,808	
Total				\$ 63,716		\$ 5,172	

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 20 - Gen. BCSA hired after 1/1/201

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2020	\$ (21,913)	15	\$ (23,876)	14	\$ (2,232)
Experience	12/31/2021	6,380	15	7,062	15	624
Total				\$ (16,814)		\$ (1,608)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

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 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (68,781)	15	\$ (76,128)	15	\$ (6,756)
Total				\$ (76,128)		\$ (6,756)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

GASB Statement No. 68 Information

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

Actuarial Valuation Date:	12/31/2021
Measurement Date of the Total Pension Liability (TPL):	12/31/2021
At 12/31/2021, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	440
Inactive employees entitled to but not yet receiving benefits (including refunds):	151
Active employees:	<u>323</u>
	914
Total Pension Liability as of 12/31/2020 measurement date:	\$ 161,362,030
Total Pension Liability as of 12/31/2021 measurement date:	\$ 168,344,519
Service Cost for the year ending on the 12/31/2021 measurement date:	\$ 1,902,272
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ (145,429)
- Differences between expected and actual experience ² :	\$ (852,912)
- Changes in assumptions ² :	\$ 5,647,905
Average expected remaining service lives of all employees (active and inactive):	3
Covered employee payroll (Needed for Required Supplementary Information):	
	\$ 19,426,766

Note: Covered employee payroll may differ from the GASB Statement No. 68 definition.

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

	1% Decrease <u>(6.25%)</u>	Current Discount <u>Rate (7.25%)</u>	1% Increase <u>(8.25%)</u>
Change in Net Pension Liability as of 12/31/2021:	\$ 18,115,040	\$ 0	\$ (15,323,271)

Note: The current discount rate shown for GASB Statement No. 68 purposes is higher than the MERS assumed rate of return. This is because for GASB Statement No. 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.

7/1/2021	Participant Contribution Rate 8%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 7%
7/1/2019	Participant Contribution Rate 6%
7/1/2018	Participant Contribution Rate 5%
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

7/1/2021	Participant Contribution Rate 5%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted

10 - General AFSCME

1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 4%
12/1/2019	Participant Contribution Rate 3%
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
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

7/1/2021	Participant Contribution Rate 5%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 4.5%
7/1/2019	Participant Contribution Rate 4%
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%

11 - Gnl Transit

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

7/1/2021	Participant Contribution Rate 6.66%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 6.16%
10/1/2019	Participant Contribution Rate 5.66%
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
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

1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2020	Non-Accelerated Amortization
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)

13 - Gnl Housing

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

7/1/2021	Participant Contribution Rate 6%
1/1/2021	Part Time Employees - Included
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 5%
7/1/2019	Participant Contribution Rate 4.5%
7/1/2018	Participant Contribution Rate 3.5%
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	Benefit B-4 (80% max)
1/1/1996	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%
1/1/1989	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%
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.

7/1/2021	Participant Contribution Rate 3%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 2%
7/1/2019	Participant Contribution Rate 1%
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

16 - Cntrl Disp.

12/1/2020	Non-Accelerated Amortization
12/31/2018	Accelerated to 5-year Amortization
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 (.%) at Age 50 with 25 Years or Age 55 with 15 Years

17 - Corr.Offrcs

7/1/2021	Participant Contribution Rate 4.62%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted

17 - Corr.Offrcs

1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 4.12%
10/1/2019	Participant Contribution Rate 3.62%
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
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

7/1/2021	Participant Contribution Rate 4%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2019	Participant Contribution Rate 3%
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2011	Non Standard Compensation Definition
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)
12/1/2010	10 Year Vesting
12/1/2010	Benefit C-1 (New)
12/1/2010	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

19 - Gen. SEIU hired after 7/1/201

7/1/2021	Participant Contribution Rate 5%
1/1/2021	Part Time Employees - Included
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 4.5%
7/1/2019	Participant Contribution Rate 4%

19 - Gen. SEIU hired after 7/1/201

7/1/2018	Participant Contribution Rate 3.5%
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 1/1/201

7/1/2021	Participant Contribution Rate 4%
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
7/1/2020	Participant Contribution Rate 3.5%
10/1/2019	Participant Contribution Rate 3%
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2012	Non Standard Compensation Definition
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

1/1/2021	Workers Compensation - Service Granted
1/1/2021	Custom Wages
1/1/2021	Other Leave - Service Granted
1/1/2021	Short Term Disability - Service Granted
1/1/2021	Long Term Disability - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2012	Non Standard Compensation Definition
3/1/2010	Benefit FAC-3 (3 Year Final Average Compensation)
3/1/2010	6 Year Vesting
3/1/2010	1.25% Multiplier
7/10/1983	Covered by ACT 88
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60

HA - GNL Trans hired after 3/1/10

No Early Reduced Conditions

S1 - Surplus Unassociated

7/1/1962 Fiscal Month - July

S2 - Surplus AFSCME

7/1/1962 Fiscal Month - July

S3 - Surplus Transit

7/1/1962 Fiscal Month - July

S4 - Surplus BCSA

7/1/1962 Fiscal Month - July

S5 - Surplus SEIU

7/1/1962 Fiscal Month - July

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	3.00%

Miscellaneous and Technical Assumptions

Loads – None.

Amortization Policy for Closed Not Linked Divisions: The default funding policy for closed not linked divisions, including open divisions with zero active members, is to follow a non-accelerated amortization, where each closed period decreases by one year each year until the period is exhausted. In select instances, closed not linked division(s) may follow an accelerated amortization policy.

Risk Commentary

Determination of the accrued liability, the employer contribution, and the funded ratio requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability, the actuarially determined contribution and the funded ratio that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

- **Investment Risk** – actual investment returns may differ from the expected returns;
- **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
- **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
- **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
- **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	<u>12/31/2021</u>	<u>12/31/2020</u>	<u>12/31/2019</u>	<u>12/31/2018</u>
1. Ratio of the market value of assets to total payroll	5.2	4.7	4.4	4.1
2. Ratio of actuarial accrued liability to payroll	8.9	8.6	8.1	7.8
3. Ratio of actives to retirees and beneficiaries	0.7	0.8	0.8	0.8
4. Ratio of market value of assets to benefit payments	8.8	8.2	7.9	7.6
5. Ratio of net cash flow to market value of assets (boy)	-4.1%	-5.2%	-5.4%	-4.8%

RATIO OF MARKET VALUE OF ASSETS TO TOTAL PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of actives to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF MARKET VALUE OF ASSETS TO BENEFIT PAYMENTS

The MERS' Actuarial Policy requires a total minimum contribution equal to the excess (if any) of three times the expected annual benefit payments over the projected market value of assets as of the participating municipality or court's Fiscal Year for which the contribution applies. The ratio of market value of assets to benefit payments as of the valuation date provides an indication of whether the division is at risk for triggering the minimum contribution rule in the near term. If the division triggers this minimum contribution rule, the required employer contributions could increase dramatically relative to previous valuations.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

State Reporting

The following information has been prepared to provide some of the information necessary to complete the Public Act 202 pension reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form No. 5572). Additional resources are available at www.mersofmich.com and on the State [website](#).

Form 5572 Line Reference	Description	Result
10	Membership as of December 31, 2021	
11	Indicate number of active members	323
12	Indicate number of inactive members (excluding pending refunds)	47
13	Indicate number of retirees and beneficiaries	440
14	Investment Performance for Calendar Year Ending December 31, 2021¹	
15	Enter actual rate of return - prior 1-year period	14.13%
16	Enter actual rate of return - prior 5-year period	9.96%
17	Enter actual rate of return - prior 10-year period	9.11%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return ²	7.00%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any ³	17
22	Is each division within the system closed to new employees? ⁴	No
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$92,832,429
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$175,221,442
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending June 30, 2022	\$7,755,900

1. The Municipal Employees' Retirement System's investment performance has been provided to GRS from MERS Investment Staff and is included here for reporting purposes. The investment performance figures reported are net of investment expenses on a rolling calendar year basis for the previous 1-, 5-, and 10-year periods as required under PA 530.
2. Net of administrative and investment expenses.
3. Populated with the longest amortization period remaining in the amortization schedule, across all divisions in the plan. This is when each division and the plan in total is expected to reach 100% funded if all assumptions are met.
4. If all divisions within the employer are closed, "yes." If at least one division is open (including shadow divisions), "no."
5. Line 25 actuarial accrued liability is determined under PA 202 uniform assumptions which differ from the valuation assumptions. In particular, the assumed rate of return for PA 202 purposes is 6.85%.