

City of Kalamazoo

Employees Retirement System

GASB Statement Nos. 67 and 68 Accounting and
Financial Reporting for Pensions

December 31, 2018



April 15, 2019

Mr. Steve Vicenzi
Director of Management Services/CFO
City of Kalamazoo Employees Retirement System
241 West South Street
Kalamazoo, Michigan 49007

Dear Mr. Vicenzi:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the City of Kalamazoo Employees Retirement System. These calculations have been made on a basis that is consistent with our understanding of these Statements and the classification of the Plan as a single employer with component units. These results are subject to review by the System's auditor and may be revised.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of Plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the City of Kalamazoo Employees Retirement System only in its entirety and only with the permission of the System. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by the City, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited. GRS is not responsible for the accuracy and completeness of the information provided by the City.

Mr. Steve Vicenzi
City of Kalamazoo
Employees Retirement System
April 15, 2019
Page 2

This report complements the actuarial valuation report provided to the City of Kalamazoo Employees Retirement System for funding purposes and should be considered in conjunction with that report. Please see the actuarial valuation report as of December 31, 2017 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the City of Kalamazoo Employees Retirement System. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

James D. Anderson and Michael D. Kosciuk are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



James D. Anderson, FSA, EA, FCA, MAAA



Michael D. Kosciuk, ASA, EA, ACA, MAAA

JDA/MDK:dj

172



Table of Contents

Page

Section A	Executive Summary	
	Executive Summary.....	1
	Discussion.....	2
Section B	Financial Statements	
	Pension Expense under GASB Statement No. 68.....	5
	Statement of Outflows and Inflows Arising from Current Reporting Period	6
	Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods.....	7
	Statement of Fiduciary Net Position.....	9
	Statement of Changes in Fiduciary Net Position	10
Section C	Required Supplementary Information	
	Schedule of Changes in Net Pension Liability and Related Ratios Current Period	11
	Schedule of Changes in Net Pension Liability and Related Ratios Current	12
	Schedule of Net Pension Liability.....	13
	Schedule of Contributions	14
	Notes to Schedule of Contributions.....	15
	Schedule of Investment Returns.....	16
Section D	Schedules by Employer	
	Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis).....	17
	Schedule of Pension Amounts by Employer	18
	Schedule of Deferred Resources by Employer.....	19
Section E	Notes to Financial Statements	
	Asset Allocation.....	20
	Sensitivity of Net Pension Liability to the Single Discount Rate Assumption.....	21
	Reconciliation of DROP Accounts as Provided by the System.....	21
	Summary of Population Statistics	21
Section F	Summary of Benefits	22
Section G	Actuarial Cost Method and Actuarial Assumptions	
	Valuation Methods	25
	Actuarial Assumptions Used for Valuation	26
	Miscellaneous and Technical Assumptions	31
Section H	Discussion of the Single Discount Rate	32
Section I	Glossary of Terms	33

SECTION A

EXECUTIVE SUMMARY

Executive Summary as of December 31, 2018

	2018
Actuarial Valuation Date	December 31, 2017
Measurement Date of the Net Pension Liability	December 31, 2018
Employer's Fiscal Year Ending Date (Reporting Date)	December 31, 2018

Membership

Number of^	
- Retirees and Beneficiaries	911
- Inactive, Nonretired Members	54
- Active Members	572
- Total	1,537
Covered-employee Payroll #	\$ 34,999,543

Net Pension Liability

Total Pension Liability	\$ 471,236,087
Plan Fiduciary Net Position	594,371,413
Net Pension Liability	\$ (123,135,326)
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	126.13%
Net Pension Liability as a Percentage of Covered-employee Payroll #	(351.82)%

Development of the Single Discount Rate

Single Discount Rate	7.50%
Long-Term Expected Rate of Investment Return	7.50%
Long-Term Municipal Bond Rate*	3.71%
Last year ending December 31 in the 2019 to 2118 projection period for which projected benefit payments are fully funded	2118

Total Pension Expense \$ 6,739,346

Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ 1,591,297	\$ 558,055
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	87,942,331	41,231,580
Total	\$ 89,533,628	\$ 41,789,635

^ As of the actuarial valuation date.

Reflects payroll as of the actuarial valuation date that is one year prior to the measurement date. This payroll may differ from the GASB Statement No. 68 definition of covered-employee payroll.

* Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of December 31, 2018. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.

Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to the Plan subsequent to the measurement date of December 31, 2018.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans, to include certain additional information. The list of disclosure items should include:

- a description of benefits provided by the plan;
- the type of employees and number of members covered by the pension plan;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- the pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- the net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates; and
- certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- a description of how fair value is determined;
- information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets;
- annual money-weighted rate of return; and
- a description of the terms of the plan's deferred retirement option program (DROP) and the total DROP balance for those members currently participating in the DROP.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- sources of changes in the net pension liability;
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and a
- comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

These tables may be built prospectively as the information becomes available.

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.50% on the actuarial value of assets), then the following outcomes are expected:

1. The employer normal cost as a percentage of pay is expected to remain level as a percentage of payroll.
2. The overfunding credit will be used up over a period of years.
3. The funded status of the plan is expected to decrease gradually towards a 100% funded ratio.

This funding policy results in an expected crossover date in 2118 and a GASB single discount rate of 7.50%. The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled-forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of December 31, 2017 and a measurement date of December 31, 2018.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 3.71% (based on the weekly rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 7.50%.

SECTION B

FINANCIAL STATEMENTS

Pension Expense under GASB Statement No. 68

Fiscal Year Ended December 31, 2018

A. Expense

1. Service Cost	\$ 5,894,750
2. Interest on the Total Pension Liability	33,674,058
3. Current-Period Benefit Changes	279,702
4. Employee Contributions (made negative for addition here)	(1,209,623)
5. Projected Earnings on Plan Investments (made negative for addition here)	(49,227,754)
6. Pension Plan Administrative Expense	147,100
7. Other Changes in Plan Fiduciary Net Position	246,932
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	2,721,174
9. Recognition of Outflow (Inflow) of Resources due to Assets	14,213,007
10. Total Pension Expense	\$ 6,739,346

Statement of Outflows and Inflows Arising from the Current Reporting Period Fiscal Year Ended December 31, 2018

A. Outflows (Inflows) of Resources Due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$	313,218
2. Assumption Changes (gains) or losses	\$	-
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.8995
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$	80,323
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$	-
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$	80,323
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$	232,895
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$	-
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$	232,895

B. Outflows (Inflows) of Resources Due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	96,668,475
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$	19,333,695
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	77,334,780

Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods Fiscal Year Ended December 31, 2018

A. Outflows and Inflows of Resources Due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to Liabilities	\$ 3,723,086	\$ 1,001,912	\$ 2,721,174
2. Due to Assets	29,941,247	15,728,240	14,213,007
3. Total	\$ 33,664,333	\$ 16,730,152	\$ 16,934,181

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 941,107	\$ 1,001,912	\$ (60,805)
2. Assumption Changes	2,781,979	-	2,781,979
3. Net Difference between projected and actual earnings on pension plan investments	29,941,247	15,728,240	14,213,007
4. Total	\$ 33,664,333	\$ 16,730,152	\$ 16,934,181

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 1,591,297	\$ 558,055	\$ 1,033,242
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	87,942,331	41,231,580	46,710,751
4. Total	\$ 89,533,628	\$ 41,789,635	\$ 47,743,993

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending December 31	Net Deferred Outflows of Resources
2019	\$ 14,596,058
2020	4,183,398
2021	9,630,842
2022	19,333,695
2023	-
Thereafter	-
Total	\$ 47,743,993

Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods (Concluded) Fiscal Year Ended December 31, 2018

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
Deferred Outflow (Inflow) Due to Differences Between Expected and Actual Experience on Liabilities					
2015	\$ (1,493,811)	3.9187	\$ (350,208)	\$ 0	0.0000
2016	(2,513,167)	3.8563	(651,704)	(558,055)	0.8563
2017	3,079,970	3.5781	860,784	1,358,402	1.5781
2018	313,218	3.8995	80,323	232,895	2.8995
Total	(613,790)		(60,805)	1,033,242	
Deferred Outflow (Inflow) Due to Assumption Changes					
2015	\$ 11,866,489	3.9187	\$ 2,781,979	\$ 0	0.0000
2016	0	3.8563	0	0	0.8563
2017	0	3.5781	0	0	1.5781
2018	0	3.8995	0	0	2.8995
Total	11,866,489		2,781,979	0	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2015	\$ 53,037,759	5.0000	\$10,607,552	\$ 10,607,551	1.0000
2016	(29,765,698)	5.0000	(5,953,140)	(11,906,278)	2.0000
2017	(48,875,502)	5.0000	(9,775,100)	(29,325,302)	3.0000
2018	96,668,475	5.0000	19,333,695	77,334,780	4.0000
Total	71,065,034		14,213,007	46,710,751	

Statement of Fiduciary Net Position as of December 31, 2018

	2018
Assets	
Cash and Deposits	\$ 239,863
Receivables	
Accounts Receivable - Sale of Investments	\$ 1,406,152
Accrued Interest and Other Dividends	994,701
Contributions	-
Accounts Receivable - Other	6,150
Total Receivables	\$ 2,407,003
Investments	
Fixed Income	\$ 160,122,418
Domestic Equities	290,577,187
International Equities	120,270,397
Real Estate	31,510,568
Other	-
Total Investments	\$ 602,480,570
Total Assets	\$ 605,127,436
Liabilities	
Payables	
Accounts Payable - Purchase of Investments	\$ 9,998,424
Accrued Expenses	36,462
Accounts Payable - Other	721,137
Total Liabilities	\$ 10,756,023
Net Position Restricted for Pensions	\$ 594,371,413

Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2018

	2018
Additions	
Contributions	
Employer	\$ -
Employee	1,209,623
Other	-
Total Contributions	\$ 1,209,623
Investment Income	
Net Appreciation in Fair Value of Investments	\$ (64,225,595)
Interest and Dividends	18,988,211
Less Investment Expense	(2,203,337)
Net Investment Income	\$ (47,440,721)
Other	\$ -
Total Additions	\$ (46,231,098)
 Deductions	
Benefit payments, including refunds of employee contributions	\$ 29,931,417
Pension Plan Administrative Expense	147,100
Other	246,932
Total Deductions	\$ 30,325,449
Net Increase in Net Position	\$ (76,556,547)
 Net Position Restricted for Pensions	
Beginning of Year	\$ 670,927,960
End of Year	\$ 594,371,413

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability and Related Ratios Current Period Fiscal Year Ended December 31, 2018

A. Total Pension Liability	
1. Service Cost	\$ 5,894,750
2. Interest on the Total Pension Liability	33,674,058
3. Changes of benefit terms	279,702
4. Difference between expected and actual experience of the Total Pension Liability	313,218
5. Changes of assumptions	-
6. Benefit payments, including refunds of employee contributions	(29,931,417)
7. Net change in Total Pension Liability	\$ 10,230,310
8. Total Pension Liability – Beginning	461,005,777
9. Total Pension Liability – Ending	<u><u>\$ 471,236,087</u></u>
B. Plan Fiduciary Net Position	
1. Contributions – Employer	\$ -
2. Contributions – Employee	1,209,623
3. Net investment income	(47,440,721)
4. Benefit payments, including refunds of employee contributions	(29,931,417)
5. Pension Plan Administrative Expense	(147,100)
6. Other	(246,932)
7. Net change in Plan Fiduciary Net Position	\$ (76,556,547)
8. Plan Fiduciary Net Position – Beginning	670,927,960
9. Plan Fiduciary Net Position – Ending	<u><u>\$ 594,371,413</u></u>
C. Net Pension Liability	<u><u>\$ (123,135,326)</u></u>
D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	126.13%
E. Covered-Employee Payroll #	\$ 34,999,543
F. Net Pension Liability as a Percentage of Covered-Employee Payroll #	(351.82)%

Reflects payroll as of the actuarial valuation date that is one year prior to the measurement date. This payroll may differ from the GASB Statement No. 68 definition of covered-employee payroll.

Schedules of Required Supplementary Information

Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Ultimately 10 Fiscal Years Will Be Displayed
(which may be built prospectively starting from 2014)

Fiscal year ending December 31,	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total Pension Liability										
Service Cost	\$ 5,894,750	\$ 5,604,960	\$ 5,683,351	\$ 6,187,334	\$ 6,259,728					
Interest on the Total Pension Liability	33,674,058	32,746,676	33,892,669	32,334,356	31,603,299					
Benefit Changes	279,702	-	(23,809,450)	-	-					
Difference between expected and actual experience of the Total Pension Liability	313,218	3,079,970	(2,513,167)	(1,574,739)	-					
Assumption Changes	-	-	-	12,509,343	-					
Benefit Payments and Refunds	(29,931,417)	(28,491,380)	(28,496,870)	(28,356,700)	(27,802,129)					
Net Change in Total Pension Liability	10,230,310	12,940,226	(15,243,467)	21,099,594	10,060,898					
Total Pension Liability - Beginning	461,005,777	448,065,551	463,309,018	442,209,424	432,148,526					
Total Pension Liability - Ending (a)	\$ 471,236,087	\$ 461,005,777	\$ 448,065,551	\$ 463,309,018	\$ 442,209,424					
Plan Fiduciary Net Position										
Employer Contributions	\$ -	\$ -	\$ -	\$ 1,602,053	\$ 760,912					
Employee Contributions	1,209,623	1,086,257	1,085,940	1,084,798	1,067,029					
Pension Plan Net Investment Income	(47,440,721)	94,301,279	72,939,990	(9,974,517)	41,065,446					
Benefit Payments and Refunds	(29,931,417)	(28,491,380)	(28,496,870)	(28,356,700)	(27,802,129)					
Pension Plan Administrative Expense	(147,100)	(147,099)	(153,024)	(125,770)	(122,107)					
Other	(246,932)	(8,848,472)	(21,875,722)	(174,885)	(110,326)					
Net Change in Plan Fiduciary Net Position	(76,556,547)	57,900,585	23,500,314	(35,945,021)	14,858,825					
Plan Fiduciary Net Position - Beginning	670,927,960	613,027,375	589,527,061	625,472,082	610,613,257					
Plan Fiduciary Net Position - Ending (b)	\$ 594,371,413	\$ 670,927,960	\$ 613,027,375	\$ 589,527,061	\$ 625,472,082					
Net Pension Liability - Ending (a) - (b)	(123,135,326)	(209,922,183)	(164,961,824)	(126,218,043)	(183,262,658)					
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	126.13 %	145.54 %	136.82 %	127.24 %	141.44 %					
Covered-employee Payroll #	\$ 34,999,543	\$ 32,780,965	\$ 37,291,474	\$ 37,198,788	\$ 36,331,892					
Net Pension Liability as a Percentage of Covered-employee Payroll #	(351.82)%	(640.38)%	(442.36)%	(339.31)%	(504.41)%					

Notes to Schedule:

Effective October 1, 2016, the City's existing transit operations spun off to become part of the Central County Transportation Authority (CCTA). The CCTA is a separate single-employer retirement system. Asset transfers were reflected in 2016 and 2017.

Reflects payroll as of the actuarial valuation date that is one year prior to the measurement date. This payroll may differ from the GASB Statement No. 68 definition of covered-employee payroll.

Schedules of Required Supplementary Information

Schedule of the Employers' Net Pension Liability

Ultimately 10 Fiscal Years Will Be Displayed
(which may be built prospectively starting from 2014)

FY Ending December 31,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered- Employee Payroll #	Net Pension Liability as a % of Covered Payroll
2009						
2010						
2011						
2012						
2013						
2014	\$442,209,424	\$625,472,082	\$ (183,262,658)	141.44%	\$36,331,892	(504.41)%
2015	463,309,018	589,527,061	(126,218,043)	127.24%	37,198,788	(339.31)%
2016	448,065,551	613,027,375	(164,961,824)	136.82%	37,291,474	(442.36)%
2017	461,005,777	670,927,960	(209,922,183)	145.54%	32,780,965	(640.38)%
2018	471,236,087	594,371,413	(123,135,326)	126.13%	34,999,543	(351.82)%

Reflects payroll as of the actuarial valuation date that is one year prior to the measurement date. This payroll may differ from the GASB Statement No. 68 definition of covered-employee payroll.

Schedule of Contributions

Ultimately 10 Fiscal Years Will Be Displayed
(which may be built prospectively starting from 2014)

<u>FY Ending December 31,</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered- Employee Payroll #</u>	<u>Actual Contribution as a % of Covered Payroll</u>
2009					
2010					
2011					
2012					
2013					
2014	\$ -	\$ 760,912	\$ (760,912)	\$ 36,331,892	2.09%
2015	-	1,602,053	(1,602,053)	37,198,788	4.31%
2016	-	-	-	37,291,474	0.00%
2017	-	-	-	32,780,965	0.00%
2018	-	-	-	34,999,543	0.00%

Reflects payroll as of the actuarial valuation date that is one year prior to the measurement date. This payroll may differ from the GASB Statement No. 68 definition of covered-employee payroll.

Notes to Schedule of Contributions

Valuation Date: December 31, 2017
Notes Actuarially determined contribution amounts are calculated as of December 31 each year, which is immediately prior to the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates for the Fiscal Year Ending December 31, 2018:

Actuarial Cost Method	Entry-Age Normal
Amortization Method	Level Percent-of-Payroll, Open Period
Remaining Amortization Period	10 years
Asset Valuation Method	5-Year smoothed market
Inflation	3.5% (which includes price inflation of 2.75%)
Salary Increases	3.5% to 15.5% including inflation
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2014 valuation pursuant to an experience study of the period 2009 - 2013.
Mortality	RP-2000 Mortality Combined Healthy Tables, projected 20 years with U.S. Projection Scale BB. This assumption will be updated in the forthcoming experience study of the period from 2014 - 2018.

Other Information:

Notes The December 31, 2018 Total Pension Liability includes benefit changes. These include the implementation of a DROP program for select members, 5-year vesting for all Exempt members, and a change in benefits for the City Manager. Additional details can be found in Section F.

Schedule of Investment Returns

Ultimately 10 Fiscal Years Will Be Displayed

<u>FY Ending December 31,</u>	<u>Annual Return^{1,2}</u>
2009	
2010	
2011	
2012	
2013	
2014	6.82 %
2015	(1.62)%
2016	12.64 %
2017	15.72 %
2018	(7.22)%

¹ Annual money-weighted rate of return, net of investment expenses.

² Based upon cash flows and beginning and ending balance of Pension Plan Investment as provided by the City.

SECTION D

SCHEDULES BY EMPLOYER

Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis)

Employer	FY 2018 Employer Contributions ⁽¹⁾	PVFB ⁽²⁾	Proportionate Share ⁽³⁾	Net Pension Liability		
				1% Decrease 6.50%	Current Single Discount Rate 7.50%	1% Increase 8.50%
Wastewater	\$ -	\$ 50,255,310	9.689%	\$ (6,625,711)	\$ (11,930,582)	\$ (16,361,749)
Water	\$ -	\$ 41,038,360	7.912%	\$ (5,410,530)	\$ (9,742,467)	\$ (13,360,941)
All Other Groups	\$ -	\$ 427,395,925	82.399%	\$ (56,347,603)	\$ (101,462,277)	\$ (139,146,635)
Total ⁽⁴⁾	\$ -	\$ 518,689,595	100.000%	\$ (68,383,844)	\$ (123,135,326)	\$ (168,869,325)

⁽¹⁾ Provided for use in preparing disclosures under GASB Statement No. 68 paragraph 81.

⁽²⁾ As discussed with the City and the auditor, proportionate shares have been developed on the basis of Present Value Future Benefits (PVFB) for each employer. This basis reflects the long-term obligation of each employer to the Plan. The PVFB was adjusted from the actuarial valuation date to the measurement date using standard actuarial roll-forward techniques.

⁽³⁾ The Plan has been identified as a single employer Plan. Given that the Plan has component units, GASB Statement 68 paragraph 18 requires that stand-alone financial statements for each government "...account for and report its participation in the single-employer or agent pension plan as if it was a cost-sharing employer and should apply the requirements of paragraphs 48-82."

⁽⁴⁾ Employer level numbers may not add to collective-development numbers due to rounding.

Schedule of Pension Amounts by Employer

	Wastewater	Water	All Other Groups	Total ⁽¹⁾
Proportionate Share	9.689%	7.912%	82.399%	100.000%
Net Pension Liability	\$ (11,930,582)	\$ (9,742,467)	\$ (101,462,277)	\$ (123,135,326)
Deferred Outflows of Resources				
1. Differences Between Expected and Actual Experience	\$ 154,181	\$ 125,903	\$ 1,311,213	\$ 1,591,297
2. Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	4,525,805	3,695,755	38,489,193	46,710,753
3. Changes of Assumptions	-	-	-	-
4. Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	356,631	244,485	-	601,116
5. Total Deferred Outflows of Resources	5,036,617	4,066,143	39,800,406	48,903,166
Deferred Inflows of Resources				
1. Differences Between Expected and Actual Experience	\$ (54,070)	\$ (44,153)	\$ (459,832)	\$ (558,055)
2. Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	-	-	-	-
3. Changes of Assumptions	-	-	-	-
4. Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	(13,207)	(92,471)	(495,438)	(601,116)
5. Total Deferred Inflows of Resources	(67,277)	(136,624)	(955,270)	(1,159,171)
Pension Expense				
1. Proportionate Share of Plan Pension Expense	\$ 652,975	\$ 533,217	\$ 5,553,151	\$ 6,739,343
2. Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	229,296	88,885	(318,181)	-
3. Total Employer Pension Expense	882,271	622,102	5,234,970	6,739,343

⁽¹⁾ Employer-level numbers may not add to collective-development numbers due to rounding.

Schedule of Deferred Resources by Employer by Year

Schedule of Deferred (Inflows) and Outflows

Employer	2019	2020	2021	2022	2023
Wastewater	\$ 1,641,036	\$ 526,026	\$ 929,035	\$ 1,873,243	\$ -
Water	\$ 1,230,846	\$ 354,963	\$ 814,027	\$ 1,529,683	\$ -
All Other Groups	\$ 11,724,177	\$ 3,302,408	\$ 7,887,779	\$ 15,930,772	\$ -
Total ⁽¹⁾	\$ 14,596,059	\$ 4,183,397	\$ 9,630,841	\$ 19,333,698	\$ -

⁽¹⁾ Employer-level numbers may not add to collective-development numbers due to rounding.

SECTION E

NOTES TO FINANCIAL STATEMENTS

Long-Term Expected Return on Plan Assets

The assumed rate of investment return was adopted by the plan's trustees after considering input from the plan's investment consultant and Actuary. Additional information about the assumed rate of investment return is included in our actuarial valuation report as of December 31, 2017. The assumed rate of investment return falls within a reasonable range of the long-term expected rate of return.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These real rates of return are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each major asset class that is included in the pension plan's target asset allocation as of December 31, 2018, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return *
U.S. Small Cap (Manager 1)	5.00%	4.60%
U.S. Small Cap (Manager 2)	10.00%	4.60%
International Developed Equity	10.00%	4.10%
U.S. Large Cap (Manager 1)	30.00%	4.10%
U.S. Large Cap (Manager 2)	5.00%	4.20%
Emerging Markets	10.00%	6.60%
Domestic Fixed Income	25.00%	1.00%
Real Estate (Manager 1)	2.50%	2.90%
Real Estate (Manager 2)	2.50%	2.90%
Total	100.00%	

** Real rate of return is based on investment manager inflation assumption of 2.00%.*

The figures in the above table were supplied by the City of Kalamazoo. Gabriel, Roeder, Smith & Company does not provide investment advice.

Single Discount Rate

A Single Discount Rate of 7.50% was used to measure the total pension liability. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.50%. Based on the System's current funding policy and the City's practice of contributing 100% of the recommended contribution, it is the opinion of the actuaries that the Plan Fiduciary Net Position is sufficient to make all future projected benefit payments, assuming all other assumptions are realized. Therefore, the Single Discount Rate would equal the long-term expected rate of return of 7.50%.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.50%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

	Current Single Discount		
	1% Decrease 6.50%	Rate Assumption 7.50%	1% Increase 8.50%
Total Pension Liability	\$ 525,987,570	\$ 471,236,087	\$ 425,502,088
Plan Fiduciary Net Position	594,371,413	594,371,413	594,371,413
Net Pension Liability/(Asset)	\$ (68,383,843)	\$ (123,135,326)	\$ (168,869,325)

Reconciliation of DROP Accounts as Provided by the System

Year Ended December 31	Balance at Beginning of Year	Credits	Interest	Distributions	Adjustments	Balance at End of Year
2018	\$ -	\$ 55,575.91	\$ 1,111.52	\$ -	\$ -	\$ 56,687.43

Summary of Population Statistics[^]

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	911
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	54
Active Plan Members	572
Total Plan Members	1,537

[^] As of the actuarial valuation date.

SECTION F

SUMMARY OF BENEFITS

Brief Summary of Benefit Provisions*

December 31, 2018

Eligibility	Amount
Regular Retirement (no reduction factor for age)	
General: Age 57 with 25 years of service, or age 62 with 10 years of service. AFSCME members only may also retire at age 60 with 20 years of service. Exempt members only may also retire at age 62 with 5 years of service.	<p>Total service multiplied by:</p> <ul style="list-style-type: none"> 2.1% of FAC – KMEA – effective 1/1/08 2.1% of FAC – AFSCME – effective 10/2/07 2.3% of FAC – Exempt members 2.7% of FAC – City Manager 2.1% of FAC – Other General members–CSO – effective 1/1/08 2.7% of FAC – Public Safety members <p>FAC (final average compensation) – Highest 3 consecutive years out of the last 10.</p>
Public Safety: 25 years of service or age 50 with 10 years of service.	Maximum benefit for Public Safety members is equal to 70.2% of FAC.
Early Retirement (age reduction factor used)	
General: Age 55 with 15 years of service.	Computed as a regular retirement but reduced by 4/10 of 1% for each month and fraction of a month by which retirement precedes age 62 if less than 25 years of service or age 57 if 25 or more years of service.
Public Safety: 20 years of service.	2% of final average compensation multiplied by years of credited service.
Deferred Retirement	
10 years of service for most members, 5 years for Exempt, 9 years for AFSCME hired before 10/2/2016 and 8 years for KMEA hired before 1/1/2009. Benefit begins at age 62 for General employees, and at age 50 for Public Safety employees.	<p>General: Computed as a regular or early retirement but based upon service and final average compensation at termination date.</p> <p>Public Safety: Computed as early retirement.</p>
Non-Duty Death-in-Service	
10 years of service for most members, 5 years for Exempt, 9 years for AFSCME hired before 10/2/2016, and 8 years for KMEA hired before 1/1/2009.	<p>General: Computed as a regular retirement but actuarially reduced in accordance with a 100% joint and survivor election.</p> <p>Public Safety: A benefit of 33-1/3% of final compensation is paid to the surviving spouse. Unmarried children under 18 years of age receive equal shares of 25% of final compensation.</p>
Duty Death-in-Service	
Payable to the survivors of a member who died in the line of duty.	A benefit of 33-1/3% of final compensation is paid to the surviving spouse. Unmarried children under 18 years of age receive equal shares of 25% of final compensation. Worker's compensation payments are offset.

* This represents a brief summary of Plan provisions. As always official Plan documents, including the Ordinance and any applicable Collective Bargaining Agreements, will ultimately govern the benefits payable from the Plan.

Brief Summary of Benefit Provisions*

December 31, 2018 (Continued)

Eligibility	Amount
Non-Duty Disability	
10 years of service for most members, 5 years for General Exempt, 9 years for AFSCME hired before 10/2/2016 and 8 years for KMEA hired before 1/1/2009.	Computed as regular retirement. Reduced on a dollar-for-dollar basis by amount of worker's compensation, if any.
Duty Disability	
No age or service requirements.	<p>General: Computed as regular retirement with additional service credit granted from day of actual retirement to date of voluntary retirement eligibility.</p> <p>Public Safety: Computed as regular retirement. During worker's compensation period benefit cannot exceed the difference between final compensation and worker's compensation.</p>
Death After Retirement	
Spouse of Public Safety member retired on or after July 1, 1972.	50% of the regular retirement benefit the deceased retiree was receiving.
Post-Retirement Benefit Increases (Eligibility for PRAs vary by retirement type)	
AFSCME members who retire on and after 10/25/1999.	1% increases compounded annually, beginning 1 year after retirement; 2% compounded annually beginning at age 75.
KMEA members.	1.5% increases compounded annually, beginning the latter of the Retirees 64 th birthday and 1 year after retirement; 2% compounded annually beginning at age 75 (effective in 2002).
Public Safety members who retired on and after 1/1/95 with 25 or more years of service.	2% increases compounded annually.
Exempt members.	1.5% increases compounded annually one year after retirement for members who elected to contribute by May 2006.
City Manager.	2% increases compounded annually.
13th Checks	
Retired by 12/31/1999; retired at least 5 years; have attained age 70 prior to June 1 of the year preceding the periodic payment to be made; had at least 25 years of service with the City; ineligible for post-retirement benefit increases; pension less than \$20,000. Continuation of this program is conditional as described in the ordinance.	The periodic payment described herein shall be made in June every third year, commencing 2001; however, no payment shall be made in any year in which the fund's actuary projects (based upon a valuation of the fund as of December 31 of the prior year) the need for City contributions to the fund (for one or more actuarial grouping) within 10 years of the projection nor if the actuary recommends a contribution by the City (for one or more actuarial grouping) for that year. In the event a periodic payment is not made in a year in which it would otherwise occur (because of the actuary's projection or recommendation), then the payment shall be made in the next year in which no such actuarial projection or recommendation is made. In the event that a periodic payment is so delayed, future periodic payments shall be made every third year thereafter (so long as not prohibited by an actuarial projection or recommendation).

* This represents a brief summary of Plan provisions. As always official Plan documents, including the Ordinance and any applicable Collective Bargaining Agreements, will ultimately govern the benefits payable from the Plan.

Brief Summary of Benefit Provisions*

December 31, 2018 (Concluded)

Eligibility	Amount
Member Contributions	
AFSCME members:	1% - effective 10/2/06. If funding % goes below 120% contribution rate reverts to 2%.
KMEA members:	1% of AC. If City contributions become necessary, contribution rate will increase up to a maximum of 2%.
Exempt members:	1.5% of AC, 3% of AC for Exempt Members hired after 6/1/2006, 3.5% for Exempt Members who signed up for the PRA by May of 2006.
Non-Sworn Public Safety members:	1% of AC.
Sworn Public Safety members:	4.5% of AC. If funding % goes below 120% contribution rate reverts to 6.5%.
City Contributions	
Actuarially determined amounts, which, together with member contributions, are sufficient to cover both (i) normal costs of the plan, and (ii) financing of unfunded accrued benefit values over a selected period of future years.	

DROP PROGRAM

Effective Date: April 12, 2018

Eligibility: Public safety administrators meeting relevant provisions for an unreduced retirement allowance, authorization by the City Manager, and approval of the City Commission.

Maximum DROP Participation Period: 8 years.

DROP Benefit: Regular monthly benefit frozen at date of DROP election.

DROP Account:

- **Amount credited:** 100% of the DROP Benefit.
- **Interest credit rate:** 2% per annum.

PRA: Election of DROP is the trigger for purposes of determining the date of the first post-retirement increase.

Member Contributions: Cease upon DROP date.

Payout of Vacation/Sick Leave Balance: Not included in the DROP program.

** This represents a brief summary of Plan provisions. As always official Plan documents, including the Ordinance and any applicable Collective Bargaining Agreements, will ultimately govern the benefits payable from the Plan.*

SECTION G

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods

The normal cost was computed as follows:

The series of contributions necessary to accumulate the present value at time of retirement of the portion of a member's pension attributable to service likely to be rendered after the valuation date was computed so that each contribution in the series was a constant percentage of the member's year-by-year projected covered compensation. This is the individual entry age normal actuarial cost method. Under GASB Statement Nos. 67 and 68 reporting, date of retirement is defined as date of DROP entry for those members covered by DROP.

The accrued liability was computed and financed as follows:

Retirees and Beneficiaries: The discounted value of pensions likely to be paid retirees and beneficiaries was computed using the investment return and mortality assumptions. This amount was financed by applicable accrued assets.

Active and Inactive members: The discounted value of benefits likely to be paid active and inactive members on account of service rendered prior to the valuation date was computed using the assumptions outlined on the following pages. The computed amount was reduced by applicable valuation assets and the remainder (or overfunding) was financed as a level percent-of-payroll over a rolling period of 10 years.

Asset valuation method: The market value of assets was used for GASB Statements No. 67 and No. 68 reporting purposes.

Actuarial Assumptions Used for the Valuation

In accordance with Subsection 2-252.2c (10) of the Retirement System Ordinance, the actuarial assumptions are recommended to the City Commission by the Retirement Investment Committee (RIC). The actuarial assumptions used for this report were based upon the results of an Experience Study for the City of Kalamazoo Employees Retirement System covering the period January 1, 2009 through December 31, 2013. A report dated February 19, 2015 presented the results of this experience study. The actuarial assumptions represent estimates of future experience. Unless otherwise noted, the assumptions were first used with the actuarial valuation date of December 31, 2014.

Investment Return. The rate of investment return is compounded annually net of investment expenses.

Investment Return	7.50%
Wage Inflation	3.50%
Price Inflation	2.75%
Spread Between Investment Return and Wage Inflation	4.00%
Spread Between Investment Return and Price Inflation	4.75%

These assumptions are used to equate the value of payments due at different points in time.

Investment Expenses. 0.50% of average valuation assets.

Administrative Expenses. 0.65% of covered member payroll was added to the Normal Cost in anticipation of administrative expenses expected to be paid during the fiscal year.

Actuarial Assumptions Used for the Valuation (Continued)

Pay Projections. These assumptions are used to project current pays to those upon which benefits will be based.

The annual rate of pay increases consists of two parts:

- (i) a long-term rate of pay inflation equal to 3.5%.
- (ii) merit and longevity increases which vary according to age or length of service. These rates are illustrated below.

Years of Service	KMEA	AFSCME	Exempt	Non-Sworn Public Safety	Public Safety
1	6.0%	8.0%	6.0%	8.0%	12.0%
2	5.0	3.0	6.0	7.0	12.0
3	4.0	3.0	0.5	6.0	5.5
4	2.0	2.0	0.5	4.0	4.5
5	1.0	2.0	0.5	3.0	4.5
6	1.0	1.0	0.3	1.5	4.0
7	1.0	0.0	0.3	1.5	4.0
8	1.0	0.0	0.3	1.5	4.0
9	0.0	0.0	0.3	1.5	1.5
10	0.0	0.0	0.3	1.5	1.3
11	0.0	0.0	0.3	0.5	1.0
12	0.0	0.0	0.3	0.3	1.0
13	0.0	0.0	0.3	0.3	0.5
14	0.0	0.0	0.3	0.3	0.5
thereafter	0.0	0.0	0.3	0.3	0.5

If the number of active members remains constant and the group demographics do not change, the City payroll is expected to increase 3.50% annually, the base portion of the individual pay increase assumptions. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities.

Actuarial Assumptions Used for the Valuation (Continued)

The mortality table used was the RP-2000 Mortality Combined Healthy Tables, projected 20 years with U.S. Projection Scale BB.

Ages	Value at Retirement of \$1 Monthly for Life*		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$144.67	\$147.85	32.99	35.59
55	137.49	141.58	28.37	30.90
60	128.51	133.44	23.94	26.34
65	117.58	123.33	19.74	21.98
70	104.59	111.45	15.83	17.93
75	89.73	97.95	12.26	14.25
80	73.73	83.02	9.13	10.95

* Values are before post-retirement increases are reflected.

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. Rates for disabled members were set-forward 7 years.

Actuarial Assumptions Used for the Valuation (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Retirement Ages	KMEA	AFSCME	Exempt	Non-Sworn Public Safety
55	2%	6%	10%	10%
56	2	7	10	10
57	5	10	25	25
58	5	7	25	25
59	7	6	20	20
60	15	30	25	25
61	15	20	30	30
62	50	60	30	30
63	15	25	15	15
64	10	25	15	15
65	100	100	100	100

Years of Service	Public Safety
20	2%
21	4
22	4
23	2
24	2
25	70
26	30
27	45
28	25
29	25
30	100

Retirement probabilities were applied for General members after both attaining age 55 and completing 15 years of service, or age 62 with 10 years of service (5 years for Exempt, 9 years for AFSCME hired before 10/2/2016 and 8 years for KMEA hired before 1/1/2009). AFSCME members are also considered eligible for retirement at age 60 with 20 or more years of service. Retirement probabilities were applied for Public Safety members upon completion of 20 years of service with 100% retirement probability assumed at age 60 with 10 years of service. The assumptions above were first used for the December 31, 2009 valuation.

Actuarial Assumptions Used for the Valuation (Concluded)

Rates of disability were as follows:

Sample Ages	% of Active Members Becoming Disabled within Next Year	
	Public Safety AFSCME	KMEA Exempt CSO
20	0.23%	0.04%
25	0.27	0.04
30	0.32	0.04
35	0.40	0.04
40	0.55	0.10
45	0.76	0.13
50	1.45	0.25
55	2.84	0.45
60	0.00	0.71

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	% of Active Members Separating within Next Year				
		KMEA	AFSCME	All Exempt	Non-Sworn Public Safety	Public Safety
	0	15.0%	15.0%	15.0%	15.0%	6.0%
	1	14.0	14.0	14.0	14.0	4.0
	2	9.0	9.0	9.0	9.0	3.0
	3	8.0	8.0	8.0	8.0	2.5
	4	7.0	7.0	7.0	7.0	2.5
25	5 or Over	7.4	7.4	7.4	7.4	2.2
30		5.8	5.8	5.8	5.8	2.0
35		5.0	5.0	5.0	5.0	1.4
40		4.0	4.0	4.0	4.0	1.1
45		3.3	3.3	3.3	3.3	0.8
50		2.5	2.5	2.5	2.5	0.6
55		2.0	2.0	2.0	2.0	0.4
60		2.0	2.0	2.0	2.0	0.4

The assumptions above were first used for the December 31, 2009 valuation.

Miscellaneous and Technical Assumptions

Active Member Group Size	The number of active members was assumed to remain constant.
Marriage Assumption	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing	Was assumed to occur in the middle of the year. This means that the pays reported for the valuation are assumed to be rates of pay on the valuation date.
Decrement Timing	Decrements are assumed to occur at the middle of the fiscal year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service	Exact fractional service is used to determine the amount of benefit payable.
Decrement Relativity	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation	Death-in-service decrement does not operate until member becomes vested. Withdrawal does not operate during retirement eligibility.
Normal Form of Benefit	The assumed normal form of benefit is straight life form. For public safety members, the assumed normal form of benefit is an automatic 50% Joint and Survivor form. 90% of public safety members were assumed to be married for the purposes of this benefit.
Incidence of Contributions	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.
Post-Retirement Adjustment Timing	Post-Retirement Adjustments (PRAs) were assumed to be paid on January 1 of each year for Public Safety and Exempt retirees (beginning the year immediately following retirement for Public Safety retirees and the second year following retirement for Exempt retirees). PRAs were assumed to be paid on the first of the month immediately following the retiree's birthday for all other groups.
Active Member Pay Adjustments	New hire pays were annualized. Pays were adjusted for members on Worker's Compensation or Leave of Absence for part of the valuation year.

SECTION H

DISCUSSION OF THE SINGLE DISCOUNT RATE

Discussion of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

The City of Kalamazoo Employees Retirement System has a history of adhering to a funding policy with actuarially determined employer contributions. At the measurement date, the Plan has assets which exceed the value of all expected benefits to be paid from the Plan for the existing membership. Said differently, the Plan is overfunded on a present value of future benefits basis, and is expected to remain in this position if all future assumptions are realized. As a result, the SDR is the long-term expected rate of return on pension plan investments, 7.50%, and projections have been excluded from this report.

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 3.71%; and the resulting SDR is 7.50%.

SECTION I

GLOSSARY OF TERMS

Glossary of Terms

<i>Actuarial Accrued Liability (AAL)</i>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as “accrued liability” or “actuarial liability.”
<i>Actuarial Assumptions</i>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Equivalent</i>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<i>Actuarial Cost Method</i>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<i>Actuarial Gain (Loss)</i>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<i>Actuarial Present Value (APV)</i>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<i>Actuarial Valuation</i>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Amortization Method</i>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<i>Covered-Employee Payroll</i>	The payroll of employees that are provided with pensions through the pension plan.
<i>Deferred Retirement Option Program (DROP)</i>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
<i>Deferred Inflows and Outflows</i>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<i>Discount Rate</i>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none">1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)

The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

GASB

The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Fiduciary Net Position

The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.

Long-Term Expected Rate of Return

The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.

Money-Weighted Rate of Return

The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

Multiple-Employer Defined Benefit Pension Plan

A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.

Municipal Bond Rate

The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.

Net Pension Liability (NPL)

The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.

Non-Employer Contributing Entities

Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.

Normal Cost

The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.



April 15, 2019

Mr. Steve Vicenzi
Director of Management Services/CFO
City of Kalamazoo Employees Retirement System
241 West South Street
Kalamazoo, Michigan 49007

Dear Mr. Vicenzi:

Please find enclosed five copies of the GASB Statement Nos. 67 and 68 Accounting and Financing Reporting Schedules report of the City of Kalamazoo Employees Retirement System.

We will be happy to meet with the Board to discuss the results of this report.

Sincerely yours,

A handwritten signature in black ink that reads "James D. Anderson". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

James D. Anderson, FSA, EA, FCA, MAAA

JDA:dj
Enclosures

cc: Maner Costerisan (1 report copy)
Attn: Mr. Aaron Stevens

Electronic Copies:
Steve Vicenzi, City of Kalamazoo
Melissa Fuller, City of Kalamazoo
Lora Ross, City of Kalamazoo
Jennifer Clark, City of Kalamazoo
Aaron Stevens, Maner Costerisan