EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

Schedules of Employer Allocations and Pension Amounts by Employer As of and for the year ended December 31, 2019

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Independent Auditors' Report

To the Annuity and Pension Board of Employes' Retirement System of the City of Milwaukee

Report on Employer Schedules

We have audited the accompanying schedule of employer allocations of the Employes' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2019, and the related notes. We have also audited the total for all entities of the columns titled beginning net pension liability, ending net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension expense excluding that attributable to employer-paid member contributions (specified column totals) included in the accompanying schedule of pension amounts by employer of the Employes' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2019, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing* Standards, which is issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and beginning net pension liability, ending net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension expense excluding that attributable to employer-paid member contributions for the total of all participating entities for the Employes' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, and the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States, the financial statements of the Employes' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2019, and our report thereon, dated July 15, 2020, expressed an unmodified opinion on those financial statements.

Restriction on Use

Our report is intended solely for the information and use of the Employes' Retirement System of the City of Milwaukee management, the Annuity and Pension Board, the Employes' Retirement System of the City of Milwaukee employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated July 15, 2020 on our consideration of the Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Retirement System's internal control over financial report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Employes' Retirement System of the City of Milwaukee's internal control over financial reporting and compliance.

Baker Tilly US, LLP

Baker Tilly US, LLP (formerly known as Baker Tilly Virchow Krause, LLP) Milwaukee, Wisconsin September 3, 2020

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE Schedule of Employer Allocations As of and for the year ended December 31, 2019

Employer	Current Year Actuarial Employer Contributions		Employer Allocation Percentage	Prior Year Actuarial Employer Contributions	Employer Allocation Percentage
City of Milwaukee - General City	\$	14,522,022	16.0870789%	\$ 14,682,553	16.3865965%
City of Milwaukee - Water Department		1,486,852	1.6470919%	1,432,313	1.5985459%
Milwaukee Public Schools		10,141,565	11.2345344%	10,088,662	11.2595428%
Milwaukee Metropolitian Sewerage District		1,564,774	1.7334117%	1,516,283	1.6922614%
Veolia Water Milwakee LLC		155,786	0.1725753%	213,488	0.2382652%
Wisconsin Center District		386,306	0.4279387%	344,024	0.3839511%
Housing Authority of the City of Milwaukee		727,746	0.8061761%	772,027	0.8616277%
City of Milwaukee - Policemen		43,603,007	48.3021588%	43,246,399	48.2655359%
City of Milwaukee - Firemen		17,683,284	19.5890341%	17,305,243	19.3136734%
Total	\$	90,271,342	100.000000%	\$ 89,600,992	100.000000%

The accompanying notes are an integral part of the Schedules of Employer Allocations and Pension Amounts by Employer.

EMPLOYES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE Schedule of Pension Amounts by Employer As of and for the year ended December 31, 2019 (in thousands)

				Deferre	d Outflows of Re	sources			Deferred Inflows	s of Resources			Pension Expense	
				Net					Net					
				Difference					Difference				Net	
				Between					Between				Recognition of	
			Differences	Projected and				Differences	Projected and				Deferred	
			Between	Actual			Total	Between	Actual		Total	Proportionate	Amounts from	Total
	Beginning	Ending Net	Expected and	Earnings on			Deferred	Expected and	Earnings on		Deferred	Share of Plan	Changes in	Employer
	Net Pension	Pension	Actual	Pension Plan	Changes of	Changes in	Outflows of	Actual	Pension Plan	Changes in	Inflows of	Pension	Proportionate	Pension
Employer	Liability	Liability	Experience	Investments	Assumptions	Proportion	Resources	Experience	Investments	Proportion	Resources	Expense	Share	Expense
City of Milwaukee - General City	\$ 219,396	\$ 159,837	\$ 16,848	\$ 57,270	\$ 47,690	\$ 5	\$ 121,813	\$ 7,441	\$ 94,088	\$ 5,701	\$ 107,230	\$ 59,730	\$ (2,850)	\$ 56,880
City of Milwaukee - Water Department	21,403	16,365	1,725	5,864	4,883	215	12,687	762	9,633	334	10,729	6,116	(94)	6,022
Milwaukee Public Schools	150,751	111,623	11,766	39,995	33,305	7	85,073	5,196	65,707	2,336	73,239	41,713	(1,181)	40,532
Milwaukee Metropolitan Sewerage District	22,657	17,223	1,815	6,171	5,139	183	13,308	802	10,138	191	11,131	6,436	(58)	6,378
Veolia Water Milwaukee LLC	3,190	1,715	181	614	512	-	1,307	80	1,009	427	1,516	641	(192)	449
Wisconsin Center District	5,141	4,252	448	1,523	1,269	194	3,434	198	2,503	93	2,794	1,589	21	1,610
Housing Authority of the City of Milwaukee	11,536	8,010	844	2,870	2,390	-	6,104	373	4,715	595	5,683	2,993	(268)	2,725
City of Milwaukee - Policemen	646,217	479,917	50,589	171,956	143,190	7,253	372,988	22,340	282,503	4	304,847	179,341	3,952	183,293
City of Milwaukee - Firemen	258,586	194,632	20,516	69,737	58,071	1,930	150,254	9,060	114,570	106	123,736	72,732	670	73,402
Total for All Entities	\$ 1,338,877	\$ 993,574	\$ 104,732	\$ 356,000	\$ 296,449	\$ 9,787	\$ 766,968	\$ 46,252	\$ 584,866	\$ 9,787	\$ 640,905	\$ 371,291	\$ -	\$ 371,291

The accompanying notes are an integral part of the Schedules of Employer Allocations and Pension Amounts by Employer.

Plan Description

The following brief description of the more common provisions of the Employes' Retirement System of the City of Milwaukee (the "Retirement System" or "ERS") is provided for financial statement purposes only. The provisions described reflect changes to the Retirement System enacted in 2000 as part of what is known as the Global Pension Settlement ("GPS"). GPS increased benefits to all members who consented to the settlement in exchange for allowing the City to make certain changes in plan administration, including allowing the use of Retirement System assets to pay for all costs to administer the Retirement System.

Plan Administration

The Retirement System was established pursuant to the Retirement Act (Chapter 396 of the Laws of Wisconsin of 1937) to provide the payment of retirement and other benefits to employees of the City of Milwaukee (the "City"). Chapter 441 of the Laws of Wisconsin of 1947 made the benefits contractual and vested. The Retirement System is a cost-sharing, multi-employer plan, which also provides benefits to employees of the Milwaukee Metropolitan Sewerage District, Wisconsin Center District, Veolia Water Milwaukee LLC, Milwaukee Housing and Redevelopment Authorities, non-certified staff of Milwaukee Public Schools and some employees of the Milwaukee Area Technical College (the "Agencies"). City employees comprise approximately 53.5% of the active participants in the Retirement System.

Measurement Focus and Basis of Accounting

The ERS is accounted for using the flow of economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, contributions are recognized in the accounting period in which the underlying earnings on which the contributions are based are paid and the employer has made a formal commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the ERS. Investment transactions and the related gains and losses are recorded on a trade date basis. Dividend and interest income are accrued as earned. Investments are reported at fair value.

Estimates

The financial statements are presented in conformity with generally accepted accounting principles. These principles require management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results may differ from those estimates.

Long-term Expected Rate of Return

The long-term expected rate of return on pension plan investments was reviewed as part of the regular experience study, prepared for the Retirement System in October 2017. Additional analysis was performed in early 2019 which resulted in a decrease in the long-term rate of return to 7.50%. Several factors are considered in evaluating the long-term rate of return assumption, including long-term historical data, estimates inherent in current market data, and an analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation), along with estimates of variability and correlations, as developed by the Retirement System's investment consultant, for each major asset class. These ranges were 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 then adding expected inflation. This assumption is intended to be a long-term assumption (30 to 50 years) and is not generally expected to change absent a significant change in the asset allocation, a change in the inflation assumption, or a fundamental change in the market that alters expected returns in future years.

Best estimates of arithmetic real rates of return (net of inflation) for each major asset class included in the Retirement System's target asset allocation as of December 31, 2019, are listed in the table below:

		Long-term Expected Real
Asset Class	Asset Allocation	Rate of Return*
Public Equity	47.0%	7.3%
Fixed Income & Cash	25.0%	3.1%
Real Estate	7.7%	5.6%
Real Assets	3.3%	4.5%
Private Equity	8.0%	10.6%
Absolute Return	9.0%	2.9%
	100.0%	

' Rates provided by Cavanaugh Macdonald, arithmetic mean, net of expenses

Rate of Return

For the year ended December 31, 2019, the annual money-weighted rate of return, net of investment expense is shown below. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

	2019
Annual money-weighted rate of return,	
net of investment expense	18.51%

Actuarial Assumptions

The last actuarial valuation was performed as of January 1, 2019, and the amounts were used to rollforward the total pension liability to the plan's year-end, December 31, 2019, and was determined using the following actuarial assumptions, applied to all prior periods included in the measurement:

Valuation Date	January 1, 2019
Actuarial Cost Method	Entry Age Normal - Level Percentage of Pay
Amortization Method	Level percent of payroll, closed
Asset Valuation Method	5-year smoothing of difference between expected return on actuarial value and actual return on market value
Actuarial Assumptions:	
Long-term Rate of Return, net of investment expense, including price inflation	7.50%
Projected Salary Increases	General City: 2.5% - 5.5%
	Police & Fire: 4.0% - 13.4%
Inflation Assumption	2.50%
Cost of Living Adjustments	Varies by employee group and decrement type (see plan provisions)
Mortality Table	Pre-retirement mortality rates were based on the RP-2014 Healthy Non- Annuitant Mortality Table, projected generationally with Scale MP- 2016. Post-retirement mortality rates are based on the RP-2014 Healthy Annuitant Mortality Table, using 111% of rates for males and 110% of rates for females, projected generationally with Scale MP-2016. Disabled mortality rates are based on RP-2014 Disabled Mortality Table, using 102% of rates for males and 98% of rates for females, projected generationally using Scale MP-2016.
Experience Study	The actuarial assumptions used in this valuation, other than the long- term rate of return, are based on the results of the most recent experience study covering the five-year period ending December 31, 2016. The long-term rate of return is based on analysis performed by Cavanaugh Macdonald and presented to the Board in March 2019.

Net Pension Liability

The components of the pension liability of the ERS as of December 31, 2019, were as follows:

Total pension liability Plan fiduciary net position	6,550,651 5,557,077)
Net pension liability	\$ 993,574
Plan fiduciary net position as a percentage of the total pension liability Covered payroll	\$ 84.83% 581,663
Net pension liability as a percentage of covered payroll	170.82%

Discount Rate

The discount rate used to measure the total pension liability was 7.50 percent. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from ERS agencies will be made at contractually required rates, actuarially determined. Based on those assumptions, the ERS' fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. The cross over analysis produces a single rate of 7.50 percent, which reflects the long-term expected rate of return on ERS investments. Therefore, the discount rate was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability (asset) of the ERS calculated using the discount rate of 7.50 percent, as well as what the ERS' net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50 percent) or 1-percentage-point higher (8.50 percent) than the current rate:

		0	Current		
	Decrease (6.50%)		iscount 7.50%)	1% Increase (8.50%)	
Net pension liability	\$ 1,773,015	\$	993,574	\$	344,873

Schedule of Employer Allocations

The Employer Allocation Percentage is based on the employers' required contribution compared to the required contribution for all employers. The Employer Allocation Percentage is rounded to seven decimal places.

Schedule of Pension Amounts

The employer's proportionate share of the Collective Net Pension Liability, Deferred Outflows of Resources, Deferred Inflows of Resources, and Total Employer Pension Expense (Income) is based on the Employer Allocation Percentage.

The Total Pension Liability is measured as of December 31, 2019 based on a January 1, 2019 actuarial valuation rolled forward to December 31, 2019 using standard roll-forward techniques as shown below:

	2019
Total pension liability	
Service cost	\$ 87,285
Interest	463,215
Changes in benefit items	-
Differences between expected and actual experience	119,477
Changes of assumptions	-
Benefit payments including refunds of member contributions	(409,086)
Net change in total pension liability	260,891
Total pension liability - beginning	6,289,760
Total pension liability - ending	\$6,550,651
Plan fiduciary net position	
Contributions - employer	\$ 96,389
Contributions - member	32,633
Net investment income	893,278
Benefit payments, including refunds of member contributions	(409,086)
Administrative expense	(7,018)
Net change in plan fiduciary net pension	606,196
Plan fiduciary net position - beginning	4,950,881
Plan fiduciary net position - ending	\$ 5,557,077
Net pension liability - ending	\$ 993,574

The Fiduciary Net Position is 84.83% of the Total Pension Liability, so the ERS has a Net Pension Liability.

The Collective Deferred Inflows and Outflows of Resources due to liabilities are amortized over the Average Expected Service Lives of all Employees of 3.90 years. The Collective Deferred Inflows and Outflows of Resources due to the net difference between projected and actual earnings on pension plan investments is amortized over five years.

Collective Deferred Inflows and Outflows of Resources to be recognized in the Current Pension Expense are as follows:

	C)utflows of	Ir	nflows of	-	Net utflows flows) of	
	Re	esources	Re	sources	Resources		
Differences between expected and actual experience	\$	47,723	\$	(26,635)	\$	21,088	
Changes of assumptions		180,985		(246)		180,739	
Differences between projected and actual earnings		191,449		(186,125)		5,324	
Changes in proportion		5,090		(5,090)		-	
	\$	425,247	\$	(218,096)	\$	207,151	

Collective Deferred Inflows and Outflows of Resources to be recognized in the Future Pension Expense are as follows:

	Outflows of esources	nflows of sources	(In	Net Outflows flows) of esources
Differences between expected and actual experience	\$ 104,732	\$ (46,252)	\$	58,480
Changes of assumptions	296,449	-		296,449
Differences between projected and actual earnings	356,000	(584,866)		(228,866)
Changes in proportion	9,787	(9,787)		-
	\$ 766,968	\$ (640,905)	\$	126,063

Deferred Outflows and Inflows of Resources to be recognized in the Future Pension Expense are as follows:

Year Ending	Net Outflows				
December 31,	of Resource				
2020	\$	132,483			
2021		59,396			
2022		40,691			
2023		(106,507)			

Employers may also need to recognize a Deferred Outflow or Inflow of Resources related to a change in their proportionate share of the Net Pension Liability and for differences between employer contributions and proportionate share of contributions.

The Collective Pension Expense is determined as follows:

Service cost	\$ 87,285
Interest cost on total pension liability	463,215
Projected earnings on plan investments	(360,745)
Contributions - Member	(32,633)
Administrative expense	7,018
Recognition of net deferred outflows (inflows)	
Changes in assumptions	-
Differences between expected and actual liability experience	30,635
Difference between projected and actual earnings	(106,506)
Recognition of prior years':	
Deferred outflows	389,522
Deferred inflows	(106,500)
Total Pension Expense	\$371,291

Additional Financial Information for the ERS - For additional information regarding ERS's financial statements and audit report, please visit the ERS web site at: http://www.cmers.com/About-Us/Reports.htm