

**EMPLOYEES' 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, 2017**

# Employees' Retirement System of the City of Milwaukee

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INDEPENDENT AUDITORS' REPORT

To the Annuity and Pension Board of the Employees'  
Retirement System of the City of Milwaukee  
Milwaukee, Wisconsin

**Report on Employer Schedules**

We have audited the accompanying schedule of employer allocations of the Employees' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2017, 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 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 Employees' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2017, 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 pension expense excluding that attributable to employer-paid member contributions for the total of all participating entities for the Employees' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2017, 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 United States, the financial statements of the Employees' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2017, and our report thereon, dated July 12, 2018, expressed an unmodified opinion on those financial statements.

***Restriction on Use***

Our report is intended solely for the information and use of the Employees' Retirement System of the City of Milwaukee management, the Annuity and Pension Board, the Employees' 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 12, 2018 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 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 internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering Employees' Retirement System of the City of Milwaukee's internal control over financial reporting and compliance.

*Baker Tilly Virchow Krause, LLP*

Milwaukee, Wisconsin  
September 26, 2018

**Employees' Retirement System of the City of Milwaukee**  
**Schedule of Employer Allocations**  
**As of and for the year ended December 31, 2017**

<b>Employer</b>	<b>Current Year Actuarial Employer Contributions</b>	<b>Employer Allocation Percentage</b>	<b>Prior Year Actuarial Employer Contributions</b>	<b>Employer Allocation Percentage</b>
City of Milwaukee - General City	\$ 16,908,937	18.9077865%	\$ 16,243,778	20.2683831%
City of Milwaukee - Water Department	1,620,272	1.8118086%	1,497,335	1.8683190%
Milwaukee Public Schools	11,310,385	12.6474151%	10,538,564	13.1496289%
Milwaukee Metropolitan Sewerage district	1,587,306	1.7749456%	1,546,382	1.9295180%
Veolia Water Milwaukee LLC	269,974	0.3018883%	314,774	0.3927633%
Wisconsin Center District	396,188	0.4430224%	367,387	0.4584119%
Housing Authority of the City of Milwaukee	980,258	1.0961369%	900,100	1.1231114%
Redevelopment Authority of the City of Milwaukee	72,895	0.0815121%	74,809	0.0933439%
City of Milwaukee - Policeman	39,457,424	44.1217889%	33,410,152	41.6879472%
City of Milwaukee - Fireman	16,824,793	18.8136956%	15,250,152	19.0285734%
<b>Total</b>	<b>\$ 89,428,432</b>	<b>100.0000000%</b>	<b>\$ 80,143,433</b>	<b>100.0000000%</b>

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

# Employees' Retirement System of the City of Milwaukee

## Schedule of Pension Amounts by Employer As of and for the year ended December 31, 2017 (Dollar Amounts in Thousands)

Employer	Deferred Outflows of Resources -							Deferred Inflows of Resources					Pension Expense		
	Beginning Net pension liability (asset)	Ending Net Pension Liability (asset)	Difference Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Difference Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Pension Expense	Net Amortization Deferred Amount from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Pension Expense
City of Milwaukee - General City	\$ 86,362	\$ 68,549	\$ 9,466	\$ -	\$ 34,536	\$ 66	\$ 44,068	\$ 2,596	\$ 26,579	\$ 281	\$ 1,775	\$ 31,231	\$ 37,383	\$ (531)	\$ 36,852
City of Milwaukee - Water Department	7,961	6,569	907	-	3,309	18	4,234	249	2,547	27	74	2,897	3,582	(14)	3,568
Milwaukee Public Schools	56,030	45,852	6,332	-	23,101	118	29,551	1,737	17,778	188	670	20,373	25,005	(168)	24,837
Milwaukee Metropolitan Sewerage district	8,222	6,435	889	-	3,242	3	4,134	244	2,495	26	201	2,966	3,509	(62)	3,447
Veolia Water Milwaukee LLC	1,674	1,094	151	-	551	4	706	41	424	4	145	614	597	(46)	551
Wisconsin Center District	1,953	1,606	222	-	809	5	1,036	61	623	7	20	711	876	(4)	872
Housing Authority of the City of Milwaukee	4,786	3,974	549	-	2,002	4	2,555	151	1,541	16	49	1,757	2,167	(13)	2,154
Redevelopment Authority of the City of Milwaukee	398	296	41	-	149	1	191	11	115	1	25	152	161	(8)	153
City of Milwaukee - Policeman	177,629	159,961	22,090	-	80,590	3,170	105,850	6,058	62,022	656	137	68,873	87,233	925	88,158
City of Milwaukee - Fireman	81,079	68,208	9,419	-	34,364	34	43,817	2,583	26,446	280	327	29,636	37,196	(79)	37,117
<b>Total for all Entities</b>	<b>\$ 426,094</b>	<b>\$ 362,544</b>	<b>\$ 50,066</b>	<b>\$ -</b>	<b>\$ 182,653</b>	<b>\$ 3,423</b>	<b>\$ 236,142</b>	<b>\$ 13,731</b>	<b>\$ 140,570</b>	<b>\$ 1,486</b>	<b>\$ 3,423</b>	<b>\$ 159,210</b>	<b>\$ 197,709</b>	<b>\$ -</b>	<b>\$ 197,709</b>

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

**Employees' Retirement System of the City of Milwaukee**  
**Notes to the Schedules of Employer Allocations and Pension Amounts by Employer**  
**As of and for the year ended December 31, 2017**  
**(Dollar Amounts in Thousands)**

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**Plan Description** — The following brief description of the more common provisions of the Employees' 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 54.0% 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.

**Employees' Retirement System of the City of Milwaukee**  
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**Long-term Expected Rate of Return —**

The long-term expected rate of return on the pension plan investments was determined based on the results of an experience review performed by Conduent HR Consulting, LLC. The results of the experience review were presented to the Board by Conduent at the Board's October 23, 2017 meeting and adopted at the same meeting. The rate of return assumption was based on the Retirement System's target asset allocation. In the experience review, Conduent developed best estimate ranges of expected future real rates of return (net of inflation) for the portfolio, based on the expected returns of each major asset class and their weights in the portfolio. Conduent used an econometric model that forecasts a variety of economic environments and then calculates asset class returns based on functional relationships between the economic variables and the asset classes. Expected investment expenses were subtracted and expected inflation was added to arrive at the long term expected nominal return. A value for the expected long term expected return was selected for the portfolio such that there was a better than 50% likelihood of the emerging returns exceeding the expected return.

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, 2017, are listed in the table below:

<u>Asset Class</u>	<u>Asset Allocation</u>	<u>Long-term Expected Real Rate of Return*</u>
Public Equity	49.00%	8.25%
Fixed Income	13.00%	1.83%
Cash	1.00%	0.94%
Real Estate	7.70%	6.91%
Real Assets	3.30%	5.38%
Private Equity	8.00%	12.54%
Absolute Return	18.00%	4.66%
	<u>100.00%</u>	

\* Rates provided by Conduent HR Consulting, LLC.

**Rate of Return —** For the year ended December 31, 2017, 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.

	<u>2017</u>
Annual money-weighted rate of return, net of investment expense	16.41%



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**Actuarial Assumptions** — The last actuarial valuation was performed as of January 1, 2017, and the amounts were used to roll-forward the total pension liability to the plan's year-end, December 31, 2017, and was determined using the following actuarial assumptions, applied to all prior periods included in the measurement:

Valuation Date	January 1, 2017
Measurement Date	December 31, 2017
Actuarial Cost Method	Entry Age Normal – Level Percentage of Pay
Amortization Method	For pension expense; the difference between expected and actual liability experience and changes of assumptions are amortized over the average of the expected remaining service lives of all members. The differences between projected and actual earnings are amortized over a closed period of five years.
Asset Valuation Method	Market Value
Actuarial Assumptions:	
Investment Rate of Return	8.00% for calendar years through 2022, and 8.25% beginning with calendar year 2023
Projected Salary Increases	General City 2.5% - 5.5% Police & Fire 4.0% - 13.4%
Inflation Assumption	2.50%
Cost of Living Adjustments	Vary by Employee Group as explained in summary of plan provisions
Mortality Table	For regular retirees and for survivors, 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. For duty and ordinary disability retirees, the RP-2014 Disability Mortality Table (using 102% of rates for males and 98% of rates for females) projected generationally with Scale MP-2016 was used. For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016.
Experience Study	The actuarial assumptions used in December 31, 2017 valuation were based on the results of an actuarial experience study for the period January 1, 2012-December 31, 2016.

**Employees' Retirement System of the City of Milwaukee**  
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**Net Pension Liability** — The components of the pension liability of the ERS as of December 31, 2017, were as follows:

Total pension liability	\$ 5,759,071
Plan fiduciary net position	<u>(5,396,527)</u>
Net pension liability	<u><u>362,544</u></u>
Plan fiduciary net position as a percentage of total pension liability	93.70%
Covered employee payroll	\$577,119
Net pension liability as a percentage of covered employee payroll	62.82%

**Discount Rate** — The discount rate used to measure the total pension liability was 8.24 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 8.24 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 (asset) to changes in the discount rate** — The following presents the net pension liability (asset) of the ERS calculated using the discount rate of 8.24 percent, as well as what the ERS' net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower (7.24 percent) or 1-percentage-point higher (9.24 percent) than the current rate:

	1% Decrease (7.24%)	Current Discount (8.24%)	1% increase (9.24%)
ERS' net pension liability (asset)	<u>\$1,018,101</u>	<u>\$362,544</u>	<u>(\$186,511)</u>

**Sensitivity of the ERS employer contributions to changes in the discount rate:** The following presents the annual employer contributions as of January 1, 2018 using the discount rate of 8.24 percent, a discount rate that is 1-percentage-point lower (7.24 percent), and a discount rate that is 1-percentage-point higher (9.24 percent):

	1% Decrease (7.24%)	Current Discount (8.24%)	1% Increase (9.24%)
Annual employer contributions	\$ 142,403	\$ 82,144	\$ 27,069

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**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, 2017 based on a January 1, 2017, actuarial valuation rolled forward to December 31, 2017 using standard roll-forward techniques as shown below:

	<b>2017</b>
Total pension liability	
Service cost	\$ 77,681
Interest	441,811
Differences between expected and actual experience	67,154
Changes of assumptions	244,993
Benefit payments including refunds of member contributions	(385,331)
Net change in total pension liability	446,308
Total pension liability - beginning	5,312,763
Total pension liability - ending	\$ 5,759,071
Plan fiduciary net position	
Contributions - employer	\$ 83,524
Contributions - member	32,494
Net investment income	787,809
Benefit payments, including refunds of member contributions	(385,332)
Administrative expense	(8,637)
Net change in plan fiduciary net pension	509,858
Plan fiduciary net position - beginning	4,886,669
Plan fiduciary net position - ending	\$ 5,396,527
Net pension liability - ending	\$ 362,544

The Fiduciary Net Position is 93.70% of the Total Pension Liability, so the ERS has a Net Pension Liability.

**Employees' Retirement System of the City of Milwaukee**  
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The Collective Deferred Inflows and Outflows of Resources due to liabilities are amortized over the Average Expected Service Lives of all Employees of 3.93 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:

	<b>Outflows of Resources</b>	<b>Inflows of Resources</b>	<b>Net Outflows (Inflows) of Resources</b>
Differences between expected and actual experience	\$ 17,088	\$ (9,537)	\$ 7,551
Net difference between projected and actual earnings on pension plan investments	104,727	(79,619)	25,108
Changes of Assumptions	62,340	(1,240)	61,100
Total	<u>\$ 184,155</u>	<u>\$ (90,396)</u>	<u>\$ 93,759</u>

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

	<b>Outflows of Resources</b>	<b>Inflows of Resources</b>	<b>Net Outflows (Inflows) of Resources</b>
Differences between expected and actual experience	\$ 50,066	\$ (13,731)	\$ 36,335
Net difference between projected and actual earnings on pension plan investments	177,509	(318,079)	(140,570)
Changes of Assumptions	182,653	(1,486)	181,167
Total	<u>\$ 410,228</u>	<u>\$ (333,296)</u>	<u>\$ 76,932</u>

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

<b>Year Ending December 31,</b>	<b>Net Deferred Outflows (Inflows) of Resources</b>
2018	\$ 93,759
2019	68,532
2020	(6,136)
2021	(79,223)
Total	<u>\$ 76,932</u>

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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	\$ 77,681
Interest cost on total pension liability	441,811
Projected earnings on plan investments	(391,685)
Contributions - Member	(32,494)
Administrative expense	8,637
<u>Recognition of net deferred outflows (inflows)</u>	
Changes in assumptions	62,340
Differences between expected and actual liability experience	17,088
Difference between projected and actual earnings	(79,225)
Recognition of prior years'	
Deferred outflows	104,727
Deferred inflows	(11,171)
Total Pension Expense	<u>\$ 197,709</u>

**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>