

**EMPLOYEES' RETIREMENT SYSTEM
OF THE CITY OF MILWAUKEE**

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Year Ended December 31, 2019

Employees' Retirement System of the City of Milwaukee
789 North Water Street, Suite 300
Milwaukee, WI 53202

COMPREHENSIVE ANNUAL FINANCIAL REPORT

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

For the year ended December 31, 2019

Prepared by:

*Bernard J. Allen, Executive Director,
David Silber, CFA, CAIA, Chief Investment Officer, &
Daniel Gopalan, CPA, Chief Financial Officer*

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INTRODUCTORY SECTION



City of Milwaukee
Employees' Retirement System

Bernard J. Allen
Executive Director

David M. Silber, CFA, CAIA
Chief Investment Officer

Melody Johnson
Deputy Director

Executive Director's Letter of Transmittal

July 15, 2020

On behalf of the Annuity and Pension Board (the Board) of the Employees' Retirement System of the City of Milwaukee (ERS, the System, or the Plan), we are pleased to present this Comprehensive Annual Financial Report (CAFR) of the Employees' Retirement System of the City of Milwaukee as of and for the year ended December 31, 2019.

ERS is a defined benefit plan created under Chapter 396 of the Laws of Wisconsin of 1937 and the City of Milwaukee Charter, Chapter 36. ERS is a qualified retirement plan under the Internal Revenue Code. The ERS Pension and Annuity Board (the Board) serves as trustee of the Plan.

ERS was created to provide retirement, survivor, and disability benefits to eligible employees. Currently, this includes eligible employees of the City of Milwaukee and some of its agencies, such as Milwaukee Metropolitan Sewerage District, Wisconsin Center District, Veolia Water Milwaukee LLC, Milwaukee Housing and Redevelopment Authorities, and non-certified staff of Milwaukee Public Schools (Agencies).

Financial Information

The System's administration is responsible for the accuracy of the data, completeness, and fairness of the presentation of the CAFR, including all disclosures. The Plan's record-keeping, financial statement, and investment controls are also performed by the System's administration. To the best of our knowledge and belief, this report is accurate in all material respects and is reported in a manner designed to present fairly the fiduciary net position and the change in fiduciary net position. All disclosures necessary to enable the reader to gain an understanding of the Plan's financial activities have been included. Users of this report are strongly encouraged to review the Management's Discussion and Analysis portion of the financial section in order to obtain a more complete understanding of ERS' financial condition and activity.

Major Initiatives

There were four major undertakings during 2019: Fill all of ERS' open positions, RFP for investment consultant, review of asset allocation, and IT security updates.

Fill ERS' critical open positions: In 2019, ERS had a number of open positions that were critical to our operations. We were able to recruit and fill the following positions: Chief Technology Officer, Deputy Chief Investment Officer, Disability Deputy Director, Pension Investment Analyst – Sr., Accounting Assistant II, and Records Technician II. We would like to thank the City of Milwaukee Department of

Employee Relations (DER) for their expertise and assistance with recruiting excellent candidates for the open positions.

Review of Asset Allocation: In 2019, Callan, ERS' investment consultant, reviewed the Fund's Private Equity allocation. The review included analysis of the Fund's liquidity position and how the Fund's projected risk and return characteristics change with a higher Private Equity allocation. With the support of Callan, ERS approved a long-term asset allocation with the following targets: Public Equity 43%, Fixed Income 26%, Real Assets 11%, Private Equity 10%, and Absolute Return 10%. The effective date of the new asset allocation is January 1, 2020.

Investment Consultant Request for Proposals (RFP): In November 2019, we initiated a RFP for our system's outside investment consultant. ERS utilizes an outside investment consultant to assist with the development of ERS' investment policy and asset/liability studies, investment manager oversight, search and selection, investment performance evaluation and reporting, educating ERS staff and trustees, and also assist with the review and selection of other investment-related vendors.

Information Technology Infrastructure and Security Upgrades: In 2019, ERS completed major security enhancements and upgrades to its IT infrastructure. The ERS upgraded its vulnerability and penetration test management systems and tools in order to increase vulnerability and penetration test frequencies, mitigate discovered vulnerabilities more quickly, and decrease risk exposure for its networks and systems. The new software and tools will aid the ERS to meet its operational standards and provide continuity of operations as well as greater security, integrity, and availability of data. These upgrades will allow the ERS to manage and adjust for its technical risk profile through 2024.

Actuarial and Funding Results

ERS' actuaries prepared three actuarial reports. The three reports are as follows:

- The actuarial valuation is prepared for funding purposes and produced annually. Cavanaugh Macdonald prepared the most recent actuarial valuation as of January 1, 2019 and this report determines the contributions due to ERS from employers on January 31, 2020.
- The GASB Statement No. 67 report is prepared annually, with the most recent report completed as of December 31, 2019 by Cavanaugh Macdonald. The GASB 67 report focuses on the reporting aspects of ERS' assets and liabilities.
- The experience study is completed every five years and the study sets the actuarial assumptions used to calculate the pension liabilities for ERS. Buck Consultants completed the most recent experience study based on a measurement date of December 31, 2016.

For funding purposes, the valuation showed the actuarial value of assets, which is a smoothed asset value used for funding purposes was \$5.22 billion as of January 1, 2019. When compared to the actuarial liability of \$7.16 billion, there was an unfunded actuarial liability of \$1.18 billion and the present value of future normal costs was \$761 million. The System's funded ratio, which is the ratio of actuarial assets to actuarial liability, decreased from 89.9% in 2018 to 81.5% in 2019. The decrease in ERS' funded ratio is primarily attributable to the reduction to the investment return assumption. The required employer contribution is determined actuarially, based on the annual cost of accrual of benefits and amortization of the unfunded

actuarial liability offset by employee contributions. The recommended employer contribution for 2019 was \$90.5 million for all ERS employers and is due to ERS by January 31, 2020. This contribution represents 15.6% of employees' pensionable compensation.

The following table presents the annual employer contributions for the Global Combined Fund as of January 1, 2020 using the discount rate of 7.50 percent, a discount rate that is 1-percentage-point lower (6.50 percent) and a discount rate that is 1-percentage-point higher (8.50 percent) (in thousands):

	1% Decrease	Current Discount	1% Increase
	(6.50%)	(7.50%)	(8.50%)
Annual employer contributions	\$ 234,013	\$ 167,489	\$ 107,828

Additional information regarding the actuarial valuation can be found in the Actuarial section of this report.

For reporting purposes, the System's Fiduciary Net Position (FNP) increased from \$4.95 billion as of December 31, 2018 to \$5.56 billion as of December 31, 2019. This was a 12.2% increase compared to the 2018 results. The FNP was insufficient to offset the Total Pension Liability (TPL) of \$6.55 billion as of December 31, 2019 resulting in a Net Pension Liability (NPL) of \$993.57 million as provided on page 35. The NPL is the difference between the TPL less the FNP. This represents a decrease of \$345 million in NPL from 2018. The decrease in NPL is mainly attributed to the investment return in 2019. All data related to GASB 67 is provided in the Notes to Basic Financial Statements and the Required Supplementary Information sections.

Investments

The Board is responsible for the investment of the System's assets. The responsibilities of the Board relating to the investment management of the System's assets include: establishing reasonable investment objectives and policy guidelines; using reasonable care, skill and caution in selecting investment professionals; and evaluating performance results of investment managers and other investment professionals on a systematic and regularly scheduled basis. The Board has a fiduciary duty to exercise its investment authority prudently and solely in the interest of the System's participants and beneficiaries.

The System's investment goal is to obtain the highest return possible on its investments within corresponding acceptable levels of minimum investment risk and liquidity requirements in recognition of prudent person standards and applicable local, state, and federal laws.

The System's investment objective is to earn or exceed the actuarial assumption rate or to outperform its policy benchmark over the long term. The System's 18.4% net of fee return outperformed its policy benchmark for the year. The investment consultant provides the Board with quarterly and annual evaluation reports. A summary of their annual analysis and the target asset allocation is found in the Investment Section of this report. Please refer to the MD&A for more investment and financial analysis.

Professional Services

The Board retains professional consultants to prudently discharge its fiduciary responsibility for the proper administration of the Plan. Cavanaugh Macdonald provides actuarial services and the corresponding certification. Northern Trust serves as the master custodian. Callan Associates provides investment consulting and other investment-related services. Baker Tilly Virchow Krause, LLP audits ERS' financial statements and Experis performs reviews of operations. The City Attorney's Office provides legal representation.

Acknowledgements

The guidance provided by the Board is greatly appreciated. The preparation of this report is a collaborative effort of many individuals and I would like to acknowledge the hard work of the ERS staff, especially Robin Earleywine. The intention of this report is to provide complete and reliable information to the members of ERS, employers of the members, the City of Milwaukee, and other important users of ERS' financial and demographic information.

Respectfully submitted,

A handwritten signature in cursive script that reads "Bernard J. Allen".

Bernard J. Allen
Executive Director



Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Milwaukee Employees' Retirement
System, Wisconsin**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2018

Christopher P. Morill

Executive Director/CEO

List of Principal Officials

Annuity & Pension Board Members as of December 31, 2019

Elected Representative - Active:

Matthew Bell	Milwaukee Police Department
James Campbell	Milwaukee Police Department
Carmelo Patti	Milwaukee Police Department

Elected Representative - Retirees:

Thomas Klusman	Retired
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Appointed by the President of the Common Council:

Nik Kovac	Alderman for 3rd District
Deborah Ford	Retired
Rudolph Konrad	Retired

Ex-Officio Member:

Martin Matson - Board Chairman	City of Milwaukee Comptroller
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List of Professional Relationships

Investment Managers:

Abbott Capital Management, LLC
Allianz Global Investors
Almanac Realty Investors, LLC
Apollo Global Real Estate Management, LP
AQR Capital Management, LLC
BlackRock, Inc.
Brandes Investment Partners, LP
Bryanston Realty Partners
CastleArk Management, LLC
Colony Capital, LLC
Cypress Acquisition Partners
Deutsche Asset Management
Dimensional Fund Advisors
Drawbridge Realty Partners Holdings, LP
Earnest Partners
Fortress Investment Group
GE Polish
Greenfield Partners
H/2 Capital Partners
JP Morgan Asset Management
LaSalle Investment Management, Inc.
Loomis-Sayles & Company, LP
Lubert-Adler Partners
M&G Real Estate
Mesirow Financial
MFS Institutional Advisors
Morgan Stanley Real Estate Advisor, Inc.
Neuberger Berman
Newton Investment Management
Northern Trust Asset Management
Polen Capital Management
Principal Global Investors, LLC
Private Advisors, LLC
Prologis, Inc.
Reams Asset Management
Standard Life
Stockbridge Capital Partners, LLC
UBS Hedge Fund Solutions, LLC
Walton Street Capital
William Blair Investment Management, LLC

Investment Trading Analytics:

Global Trading Analytics, LLC

Legal Counsel:

Foley & Lardner LLP
Ice Miller LLP
Reinhart Boerner Van Deuren
Grant F. Langley, Milwaukee City Attorney

Bank:

Wells Fargo Bank Wisconsin, NA

Investment Consultants:

Callan Associates

Custodian:

The Northern Trust Company
G. Spencer Coggs, City of Milwaukee Treasurer

Auditors:

Baker Tilly Virchow Krause, LLP
Experis

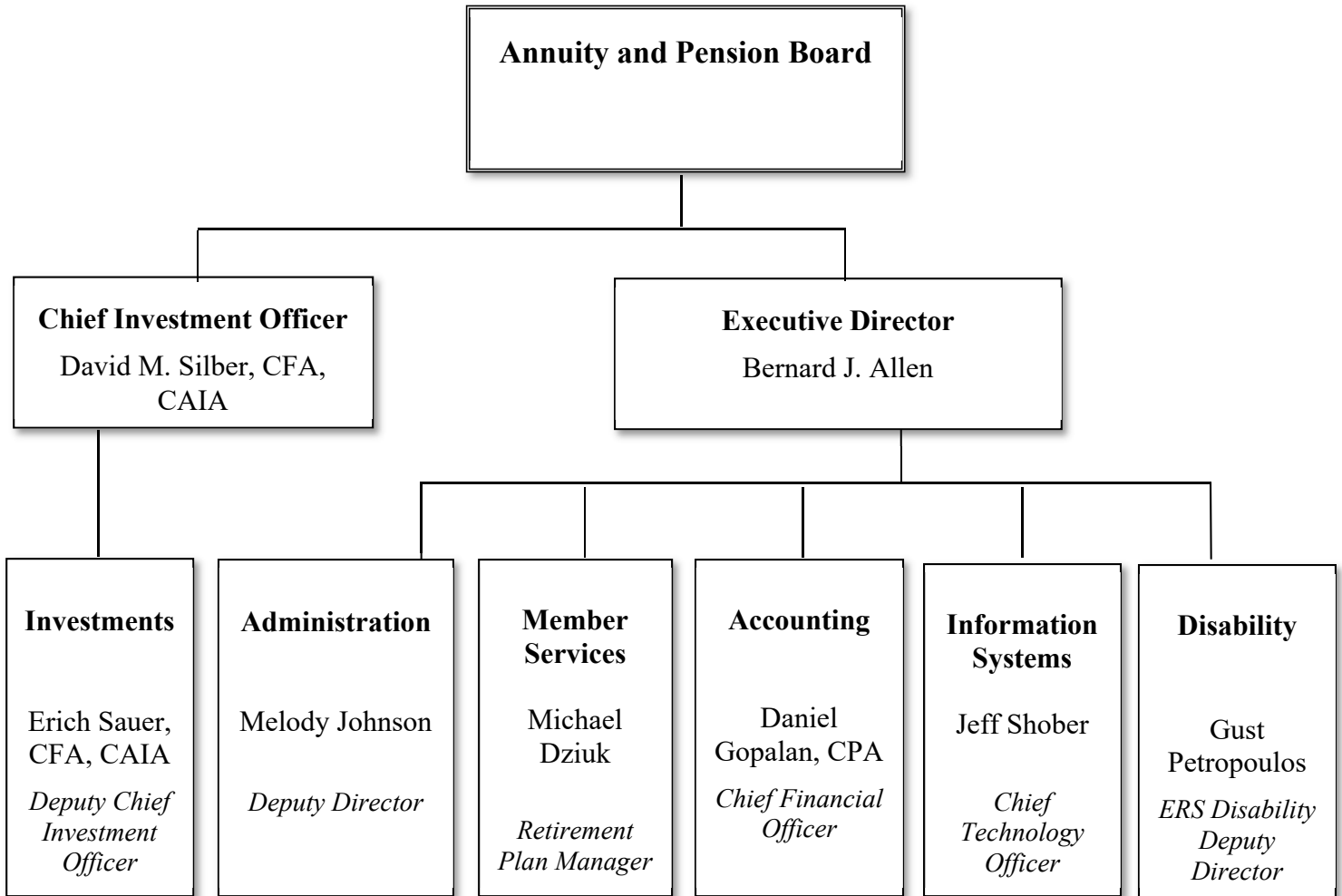
Actuaries:

Cavanaugh Macdonald Consulting, LLC

Medical Advisors:

Gregory Brotzman, M.D.
David L. Drury, M.D.
William Greaves, M.D.

Employees' Retirement System Organization Chart



Investments are managed externally through investment managers. Please refer to the Summary of Management Fees on page 67 in the Investment Section and the Schedule of Brokerage Commissions on page 68 in the Investment Section.

FINANCIAL SECTION

INDEPENDENT AUDITORS' REPORT

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

Report on the Financial Statements

We have audited the accompanying statement of fiduciary net position of the Employees' Retirement System of the City of Milwaukee (the "Retirement System"), as of December 31, 2019, the statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the Retirement System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements 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 financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements 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*, 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 financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control over financial reporting relevant to the Retirement System's preparation and fair presentation of the financial statements 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 Retirement System'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 financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Retirement System as of December 31, 2019, and the changes in fiduciary net position of the Retirement System for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, the Schedules of Changes in Net Pension Liability, Net Pension Liability and Investment Returns, Employers' Contributions, and the notes to the required supplementary information as listed in the table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Retirement System's basic financial statements. The Schedules of Administrative Expenses, Investment Expenses, and Payments to Consultants, Non-Consenter Combining Statement of Fiduciary Net Position and the Non-Consenter Combining Statement of Changes in Fiduciary Net Position are presented for purposes of additional analysis and are not a required part of the basic financial statements. The information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedules of Administrative Expenses, Investment Expenses, and Payments to Consultants, Non-Consenter Combining Statement of Fiduciary Net Position and the Non-Consenter Combining Statement of Changes in Fiduciary Net Position are fairly stated in all material respects, in relation to the basic financial statements as a whole.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Retirement System's basic financial statements. The Introductory, Investment, Actuarial and Statistical sections as listed in the table of contents are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

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 grant agreements 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 reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Retirement System's internal control over financial reporting and compliance.

Baker Tilly Virchow Krause, LLP

Milwaukee, Wisconsin
July 15, 2020

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

We are pleased to provide this analytical overview of the financial activities of the Employees' Retirement System of the City of Milwaukee ("ERS", "the System", or "the Plan") for the year ended December 31, 2019. The information provided is intended to be considered in conjunction with the Plan's financial statements.

Financial Highlights

- The System's Fiduciary Net Position increased by \$606,196,000 and 12.2% during 2019. The increase in Net Position is mainly attributed to the positive investment return.
- As members consent to the Global Pension Settlement, their member balances are transferred from the Non-Consenter fund to the Global Combined Fund. Balances transferred for 2019 totaled \$1,241,000.
- The ERS's funding objective is to meet long-term benefit obligations through contributions and investment income. As of December 31, 2019, pursuant to GASB Statement No. 67, ERS's funded ratio is 84.8%. In general, this means the Plan has 84.8 cents of assets to cover every dollar of benefits due.
- For 2019, Northern Trust, the ERS custodian, reported an 18.4% annual net of fees total fund return, while in 2018 the return was negative 2.9%. Returns are calculated using geometrically-linked, time and asset-weighted returns, net of investment manager fees. As of December 31, 2019, the fund's five-year performance ranked in the top quintile of the Callan Associates database, performing better than 88% of the funds in Callan's database. This database consists of public employee pension funds, including both Callan client funds and surveyed non-client funds.

(See Independent Auditors' Report)

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

Overview of the Financial Statements

The following discussion and analysis are intended to serve as an introduction to the Plan's financial statements and the Financial Section of this report.

The **Statement of Fiduciary Net Position** presents ERS' assets and liabilities, as well as the net position restricted for pensions at December 31, 2019. The assets comprise receivables, mainly from investment activity, investments at fair market value, and securities lending collateral.

The **Statement of Changes in Fiduciary Net Position** presents information showing how the Plan's net position changed during the year. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when a formal commitment has been made by the City or Agencies to provide the contributions. All investment gains and losses are shown at trade date. Both realized and unrealized gains and losses are shown on investments. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

The **Notes to Basic Financial Statements** provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes are an integral part of the financial statements and included detailed information not readily evident in the basic financial statements.

The statements and notes are presented in conformity with U.S. generally accepted accounting principles. These principles require certain financial statement presentations and disclosures, including the use of accrual basis of accounting to record assets and liabilities, and revenues and expenses.

The Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position can be found on pages 23 and 24 of this report.

The **Required Supplementary Information** that follows immediately after the notes to the basic financial statements include the Schedules of Changes in Net Pension Liability, Net Pension Liability, Investment Returns, Contributions, and the Notes to Required Supplementary Information. See the Required Supplementary Information beginning on page 50 of this report.

The remaining supplemental schedules provide additional detailed information concerning administrative expenses, investment expenses, and payments to consultants. All of this information is considered useful in understanding and evaluation the financial activities of the Plan.

(See Independent Auditors' Report)

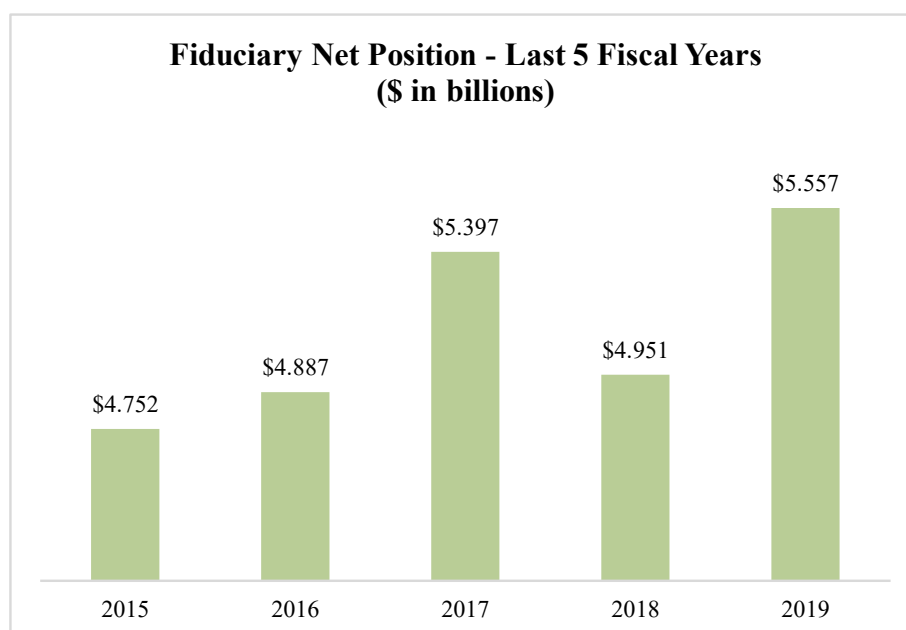
**EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**

Financial Analysis

Net Position

Net position may serve over time as a useful indicator of the ERS's financial position. At December 31, 2019, assets exceeded liabilities by \$5.56 billion. The net position is available to meet ERS' ongoing obligation to participants and their beneficiaries. As of December 31, 2019, total net position increased by 12.2% over the prior year. The increase is attributable to the improvement in investment market value in 2019. Management believes that ERS is in a strong financial position to meet its obligations to the members, retirees, and their beneficiaries.

Fiduciary Net Position (\$ in thousands)	For the year ended December 31,		
	2019	2018	Increase / (Decrease)
Investments	\$ 5,511,387	\$ 4,904,551	\$ 606,836
Other assets	229,590	328,384	(98,794)
Total assets	5,740,977	5,232,935	508,042
Total liabilities	(183,900)	(282,054)	98,154
Total net position	\$ 5,557,077	\$ 4,950,881	\$ 606,196



(See Independent Auditors' Report)

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

Investments

ERS is a long-term investor and manages its assets with long-term objectives in mind. A primary element of this investment philosophy is to employ a diversification of assets as the best possible way to achieve its goals. After conducting an asset-liability study with investment staff and ERS' consultant, the Board established an asset allocation plan taking into account the risk associated with each asset class as well as the financial objectives of the plan. Investments are stated at fair value and include the recognition of unrealized gains and losses in the current period.

The rate of return on investments (net of investment fees) for the year ended December 31, 2019 was 18.4%, a 21.3% increase compared to the fiscal year 2018 rate of return of negative 2.9%. Returns are calculated using geometrically-linked, time and asset-weighted returns, net of investment manager fees. The Fund's performance improved along with the majority of the stock and bond markets. The Fund exceeded the benchmark performance by 2.0%. The annualized rate of return (net of fees) for the last three and five periods ended December 31, 2019 were 10.2% and 7.9%, respectively. The positive rate of return is attributable to positive returns across all of the major asset classes the Fund was invested in.

The Investment Section beginning on page 59 gives detailed information on the ERS's investment policies. See page 69 of this report for a table showing the asset allocation targets established by the Board and actual asset allocation of the System's assets at December 31, 2019.

Liabilities

The liabilities are payables incurred by the transaction activity of the investment assets, securities lending, retirement benefit expenses, and administrative expenses of the Fund.

Changes in Fiduciary Net Position

(\$ in thousands)

	2019	2018	Increase / (Decrease)
Additions			
Employer contributions	\$ 96,389	\$ 83,166	\$ 13,223
Member contributions	32,633	32,085	548
Net appreciation (depreciation) in fair value of investments	833,313	(214,697)	1,048,010
Interest, dividends and other investment income	112,073	103,963	8,110
Less: investment expense	(52,108)	(49,456)	(2,652)
Total Additions:	<u>\$ 1,022,300</u>	<u>\$ (44,939)</u>	<u>\$ 1,067,239</u>
Deductions			
Administrative expenses	\$ (7,018)	\$ (7,181)	\$ 163
Benefits paid	(405,216)	(388,889)	(16,327)
Refund of contributions	(3,870)	(4,637)	767
Total Deductions	<u>\$ (416,104)</u>	<u>\$ (400,707)</u>	<u>\$ (15,397)</u>
Net Increase (Decrease)	<u>\$ 606,196</u>	<u>\$ (445,646)</u>	<u>\$ 1,051,842</u>

(See Independent Auditors' Report)

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

Contributions and Investment Income

Employer contributions increased by 15.9% over last year's contributions. The employers' contributions are actuarially determined in the prior year and due by January 31st of the following year. The increase in employer contributions is attributable to contributions to the employers' reserve fund. Plan members' contributions increased by 1.7%. Plan member contributions are determined by the City Charter and by contracts signed with bargaining units. In 2019, the Fund generated positive returns (net of fees) as the Fund's performance improved along with the majority of the stock and bond markets. Net investment income includes securities lending income and investment expenses.

Retirement Benefits and Administrative Expenses

The Plan was created to provide lifetime service retirement benefits, survivor benefits, and disability benefits to eligible members and their beneficiaries. The cost of such programs includes recurring benefit payments, death benefits, payments to terminated members, and the administrative expenses of the ERS. The primary source of expense during 2019 was for the payment of continuing retirement benefits totaling \$405 million, compared to \$389 million in 2018. The increase was attributable to new retirees and cost of living increases to retirees.

Requests for Information

Members of the Annuity and Pension Board and ERS senior management are fiduciaries of the pension fund and are responsible for ensuring that ERS assets are used exclusively for the benefit of plan participants and their beneficiaries. This financial report is designed to provide an overview of the financial condition of ERS, and to account for the resources entrusted to ERS for the benefit its stakeholders. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to:

Bernard J. Allen
Executive Director and Secretary
Employees' Retirement System – City of Milwaukee
789 North Water Street, Suite 300
Milwaukee, WI 53202

(See Independent Auditors' Report)

BASIC FINANCIAL STATEMENTS

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Statement of Fiduciary Net Position
As of December 31, 2019
(in thousands)

	Global Combined Fund	Non-consenter Retirement Funds	Employers' Reserve Fund	Securities Lending Fund	Total
ASSETS					
CASH AND CASH EQUIVALENTS	\$ 67,575	\$ 1,238	\$ 1,303	\$ 815	\$ 70,931
INVESTMENTS (Notes 1 and 8)					
Fixed income	1,285,046	3,646	29,689	-	1,318,381
Public equity	2,612,909	7,418	-	-	2,620,327
Absolute return	536,436	1,523	-	-	537,959
Real assets	595,387	1,690	-	-	597,077
Private equity	436,405	1,238	-	-	437,643
Total Investments	5,466,183	15,515	29,689	-	5,511,387
RECEIVABLES AND OTHER ASSETS					
Employer (Note 1)	93	-	-	-	93
Member (Note 1)	849	-	-	-	849
Interest, dividends and foreign tax recoverable (Note 1)	7,599	21	51	-	7,671
Investments sold	11,790	33	-	45	11,868
Software development and equipment, net of depreciation (Note 1)	350	-	-	-	350
Securities lending collateral (Note 8)	-	-	-	137,828	137,828
Total Receivables and Other Assets	20,681	54	51	137,873	158,659
Total Assets	5,554,439	16,807	31,043	138,688	5,740,977
LIABILITIES					
Benefits payable	476	-	-	-	476
Unearned contributions	2,646	-	-	-	2,646
City of Milwaukee (Notes 4 and 6)	737	-	-	-	737
Securities lending obligation (Note 8)	-	-	-	137,804	137,804
Investments purchased	41,410	118	709	-	42,237
Total Liabilities	45,269	118	709	137,804	183,900
NET POSITION RESTRICTED FOR PENSIONS	\$ 5,509,170	\$ 16,689	\$ 30,334	\$ 884	\$ 5,557,077

See Independent Auditors' Report.

The accompanying notes to financial statements are an integral part of these financial statements.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Statement of Changes in Fiduciary Net Position
For the Fiscal Year Ended December 31, 2019
(in thousands)

	Global Combined Fund	Non-consenter Retirement Funds	Employers' Reserve Fund	Securities Lending Fund	Total
ADDITIONS					
Contributions					
Employer (Note 5)	\$ 82,759	\$ 266	\$ 13,364	\$ -	\$ 96,389
Member	32,625	8	-	-	32,633
Total Contributions	115,384	274	13,364	-	129,022
Investment Income					
Net appreciation in fair value of investments	830,463	2,358	459	33	833,313
Interest, dividends and other investment income	105,153	299	617	6,004	112,073
Total Investment Income	935,616	2,657	1,076	6,037	945,386
Investment Expense (Note 6)	(46,919)	-	-	(5,189)	(52,108)
Net Investment Income	888,697	2,657	1,076	848	893,278
Total Additions	1,004,081	2,931	14,440	848	1,022,300
DEDUCTIONS					
Administrative expenses (Note 6)	(5,877)	-	-	(1,141)	(7,018)
Benefits paid	(405,089)	(127)	-	-	(405,216)
Refunds of contributions	(3,790)	(80)	-	-	(3,870)
Interfund transfers	1,241	(1,241)	-	-	-
Total Deductions	(413,515)	(1,448)	-	(1,141)	(416,104)
NET INCREASE (DECREASE) IN NET POSITION	590,566	1,483	14,440	(293)	606,196
NET POSITION RESTRICTED FOR PENSIONS					
Beginning of Year	4,918,604	15,206	15,894	1,177	4,950,881
End of Year	\$ 5,509,170	\$ 16,689	\$ 30,334	\$ 884	\$ 5,557,077

See Independent Auditors' Report.

The accompanying notes to financial statements are an integral part of these financial statements.

NOTES TO BASIC FINANCIAL STATEMENTS

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

For accounting and financial reporting purposes, the Employees' Retirement System of the City of Milwaukee ("ERS", "the Retirement System", "the System", or "the Plan") conforms with accounting principles generally accepted in the United States and reporting standards as promulgated by the Governmental Accounting Standards Board (GASB), which designates accounting principles and financial reporting standards applicable to the Plan. This report includes solely the accounts of the Plan.

Reporting Entity

The reporting entity for the ERS consists of the primary government and its component units. Component units are legally separate organizations for which the elected officials of the primary government are financially accountable or other organizations for which the nature and significance of their relationship with the primary government are such that their exclusion would cause the reporting entity's financial statements to be misleading. The primary government is financially accountable if:

- 1) It appoints a voting majority of the organization's governing body and it is able to impose its will on that organization;
- 2) It appoints a voting majority of the organization's governing body and there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the primary government; or
- 3) The organization is fiscally dependent on and there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the primary government.

Certain legally separate, tax exempt organizations should also be reported as a component unit entity if all of the following criteria are met:

- 1) The economic resources received or held by the separate organization are entirely or almost entirely for the direct benefit of the primary government, its component units, or its constituents;
- 2) The primary government is entitled to, or has the ability to otherwise access, a majority of the economic resources received or held by the separate organization;
- 3) The economic resources received or held by an individual organization that the specific primary government, or its component units, is entitled to, or has the ability to otherwise access, are significant to that primary government.

Component units are reported using one of two methods, discrete presentation or blending. Generally, component units should be discretely presented in a separate column in the financial statements.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

A component unit should be reported as part of the primary government using the blending method if it meets any one of the following criteria:

- 1) The primary government and the component unit have substantively the same governing body and a financial benefit or burden relationship exists,
- 2) The primary government and the component unit have substantively the same governing body and management of the primary government has operational responsibility for the component unit,
- 3) The component unit serves or benefits, exclusively or almost exclusively, the primary government rather than its citizens, or
- 4) The total debt of the component unit will be paid entirely or almost entirely from resources of the primary government.

Blended Component Units

CMERS Low Beta, LLC

CMERS Low Beta, LLC was created by the ERS to serve as a hedge fund of funds investment vehicle for the Retirement System. The LLC is a legally separate entity governed by a board of directors appointed by the Annuity and Pension Board of the ERS. UBS Hedge Fund Solutions serves as investment manager for the hedge fund of funds portfolio. Although it is a legally separate entity, the LLC is reported and included as part of the ERS because its sole purpose is for the benefit of the Retirement System. MUFG Alternative Fund Services (Cayman) Limited is the administrator and Ernst and Young is the external auditor for the LLC. Separate financial statements are issued annually for CMERS Low Beta, LLC.

Basis of Accounting

The financial statements have been prepared on the accrual basis of accounting. Investment income is recorded when earned and expenses are recorded when they are incurred. Plan member and employer contributions are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

Contributions

The Retirement System records employee contributions as they are earned. Contributions earned but not yet received from the City of Milwaukee, participating city agencies and members are reported as contributions receivable. Overpayments and prepayments of contributions are reported as liabilities.

Cash and Cash Equivalents

Cash and cash equivalents are composed of cash in local banks, cash held by the custodian, and cash equivalents. Cash equivalents are defined as short-term, highly liquid investments that are both (a) readily convertible to known amounts of cash and (b) so near maturity they present insignificant risk of changes

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

in value due to changes in interest rates. Investments with an original maturity of three months or less are considered cash equivalents. Restricted securities held as collateral for Securities Lending are not included as cash equivalents.

Methods Used to Value Investments

Investments of the Retirement System are reported at fair value in accordance with applicable GASB statements. Fair value is defined as the amount that a plan can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller. The fair value of investments is based on published market prices and quotations from major investment brokers at current exchange rates, as available. Many factors are considered in arriving at that value. In general, however, bonds and mortgage obligations are valued based on yields currently available on comparable securities of issuers with similar credit ratings.

Receivables and payables relating to investment transactions that were initiated but not settled at year-end, are recorded as assets or liabilities.

Real estate consists of equity and debt participation in diversified real estate investments. The majority of properties in the portfolio are offices, industrial warehouses, multi-family and retail. Real estate investments are carried at market value, which approximates fair value, as of December 31, 2019. Annual assessments performed by independent professional appraisers are used for market values.

Private equity consists of equity and debt participation in diversified private equity investments. The majority of investments in the portfolio consist of buyouts and venture capital. Private equity investments are carried at market value, which approximates fair value, as of December 31, 2019.

The Retirement System may have investments in certain derivative vehicles, including interest rate, credit, index volatility, and currency futures; bond futures; deliverable and non-deliverable forward contracts; bond forwards; currency forwards; currency options; options on bond futures, U.S. equity indices, U.S. equity index futures, volatility indices, volatility futures, and ETF's; total return swaps; and to-be-announced (TBA) securities. The ERS allows UBS Hedge Fund Solutions to allocate funds within CMERS Low Beta, LLC to hedge fund managers who may invest in derivatives including, but not limited to, the derivatives listed earlier. Derivative investments comply with the Annuity and Pension Board Investment Policy and Guidelines. Additional information on derivatives for ERS, including the notional and contractual amounts, market values and unrealized gains and losses of holdings, are contained in Note 8.

All investments are made in accordance with the provisions of Section 36-09 of Chapter 36 of the Milwaukee City Charter. The provisions require several funds of the Retirement System to be invested within the requirements of ss. 40.03(1) (n) and 62.63 (3) Wisconsin Statutes. During 2019, investments were in compliance with the Annuity and Pension Board Investment Policy and Guidelines.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

Investments in stocks of corporations in 2019, as measured quarterly by their cost, did not exceed 48.7% of the total assets.

The Retirement System invests in financial instruments such as U.S. Treasury Strips, collateralized mortgage obligations and asset backed securities. Investment managers may temporarily invest small amounts of available cash in short-term investments prior to purchasing securities.

The Retirement System's international equity managers may invest in warrants and foreign exchange forward contracts as a hedge for foreign currency fluctuations. The unrealized gains and losses on these positions as of December 31, 2019, are detailed in Note 8.

Investment securities, in general, are exposed to various risks, such as, but not limited to, interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term. These value changes could materially affect the amounts reported in the Statement of Fiduciary Net Position.

Investment Income

Dividends, interest and realized gains and losses are recorded as earned. Investment income is allocated to each individual fund based on fund balances at the beginning of the year.

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.

Capitalization

The Retirement System capitalizes hardware and software development costs. Amounts incurred for hardware (including printers, monitors, disk drives, network infrastructure, switches) are capitalized in a yearly hardware pool and depreciated over three years. Capitalized costs are depreciated over their useful lives, with a half of a year's depreciation expensed in the year of acquisition.

Costs related to the development of the Pension Management Information System were capitalized as Software Development costs. The system went live in 2006 and as of December 31, 2014, the development costs were fully depreciated. As of December 31, 2019, the cost of the Retirement System's hardware and software development totaled \$18,534,525 and accumulated depreciation totaled \$18,184,482. During 2019, depreciation of \$376,177 was recognized and included in Administrative Expenses in the accompanying Statement of Changes in Fiduciary Net Position.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (cont.)

Contingencies

Claims and judgments are recorded if all the conditions of GASB pronouncements are met. Claims and judgments are recorded as expenses when the related liabilities are probable and management can reasonably estimate the amounts.

Tax Status

The Plan is a tax-exempt governmental plan qualified under Section 401 and exempt under Section 501(a) of the Internal Revenue Code.

New Pronouncements

In January 2017, the GASB issued Statement No. 84, Fiduciary Activities (an amendment of GASB Statements No. 67, No. 68, and No.73). The objective of this Statement is to enhance the consistency and comparability of fiduciary activity reporting by state and local governments. This Statement establishes criteria for identifying fiduciary activities of all state and local governments.

In June 2017, the GASB issued Statement No. 87. The objective of this Statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. This Statement improves the usefulness of governments' financial statements by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases.

In May 2020, the GASB issued Statement No. 95. The objective of this Statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic. This Statement has postponed the effective date of the provisions of Statements No. 84 and No. 87. Statement No. 84 will now be effective in the 2020 fiscal year and Statement No. 87 will now be effective in the 2021 fiscal year. When Statements No. 84 and No. 87 become effective, the application of these standards may result in restatement of a portion of these financial statements.

2. DESCRIPTION OF RETIREMENT SYSTEM

The following description of the more common provisions of the Employees' Retirement System of the City of Milwaukee is provided for financial statement purposes only. The provisions reflect changes to the Retirement System enacted in 2000, known as the Global Pension Settlement (GPS). GPS increased benefits to current and future retirees and also allowed changes to the ERS administration, including permitting the use of ERS funds to pay costs related to plan administration. The 99.0% of existing members who have consented to GPS are accounted for in the Global Combined Fund. Members who have not consented are accounted for in one or more of the non-consenter funds. Refer to Chapter 36 of the City of Milwaukee Charter for more complete information.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

2. DESCRIPTION OF RETIREMENT SYSTEM (cont.)

GPS requires that members enrolled through June 28, 2000 provide written consent to ERS in order to be eligible for the benefit enhancements of GPS. Members enrolled after June 28, 2000, are automatically eligible and are included in the Combined Fund.

Subsequent to completion of the January 1, 2019 actuarial valuation, 8 members who were enrolled as of June 28, 2000 and had not consented to GPS, elected to consent. The January 1, 2020 actuarial valuation reflects the impact of this change.

Plan Administration

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

Membership

Full-time employees, part-time employees who are eligible under adopted rules and regulations, and elected officials who have evidenced their intent to join are members of the Retirement System.

At January 1, 2019, the measurement date, the membership of the plan was as follows:

Plan members currently receiving benefits	13,370
Inactive plan members entitled to, but not yet receiving benefits	4,360
Current employees:	
Vested	7,397
Non-vested	<u>3,454</u>
Total	<u>28,581</u>

This membership data is as of January 1, 2019, and reasonably approximates membership data through December 31, 2019.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

2. DESCRIPTION OF RETIREMENT SYSTEM (cont.)

Contributions

Member contributions to the ERS are required under Chapter 36-08-7. The City of Milwaukee, in its legislative capacity, has sole authority to make changes to Chapter 36, and to set contribution requirements and benefit terms. It is a section 401(a), Internal Revenue Code, qualified cost-sharing, multiple-employer defined benefit plan for participating public employees.

Contribution rates, as a percentage of earnable compensation, are as follows:

- a) General Employees
 - i. Tier 1 (enrolled prior to January 1, 2014) – 5.5%
 - ii. Tier 2 (enrolled on or after January 1, 2014) – 4.0%
- b) Firemen and Policemen – 7.0%
- c) Elected Officials
 - i. Tier 1
 - i. Enrolled prior to January 1, 2014 and elected to an office prior to January 1, 2014 – 7.0%
 - ii. Enrolled prior to January 1, 2014, and elected for the first time to an office on or after January 1, 2014, and employee was paying contributions prior to being elected – employee pays contributions at the rate they were paying prior to becoming an elected official
 - iii. Enrolled prior to January 1, 2014, and elected for the first time to an office on or after January 1, 2014, and employer was paying contributions on behalf of the employee prior to being elected – employer pays 7.0%
 - ii. Tier 2 (enrolled on or after January 1, 2014) – 4.0%

Commencing in 1999, contributions of one dollar of each police officer's longevity pay per year are made by police officers on their own behalf. This excludes sergeant of police, detective lieutenant and any ranks above same.

In addition to the above percentage contributions, additional contributions were required of general city employees who were enrolled as active members after January 1, 2000. To participate in the Global Combined Fund, each new member was required to contribute 1.6% of his or her pensionable earnings for a period of eight years. However, the 1.6% required contributions did not apply to members required to make member contributions under 36-08-7-a or c.

The Retirement System requires regular payroll contributions from its agencies and members for all active employees covered by the plan on a biweekly basis. To provide for disciplined, predictable and stable funding of pension obligations as a percentage of covered compensation, the City amended its charter to revise the method used to determine employer contributions to the ERS Combined Fund (referred to as the Stable Employer Contribution Policy). This amendment repealed the full-funding limit. The amendment achieves stable and predictable contribution levels.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

2. DESCRIPTION OF RETIREMENT SYSTEM (cont.)

The 2011 Wisconsin Act 10, known as the governor's Budget Repair Bill, created Wis. Stat. 62.623 addresses payment of contributions in an employee retirement system of a first class city. The Act requires certain members to pay employee required contributions, and prohibits their employer from making contributions on their behalf.

Benefits Provided

The normal retirement benefit is a monthly pension for the life of the member. A service retirement allowance is payable to any member who meets one of the following eligibility criteria:

<u>Class</u>	<u>Enrollment Date</u>	<u>Eligibility for Service Retirement*</u>
General City	Prior to January 1, 2014	Age 60, or age 55 with 30 years of creditable service
General City	On/after January 1, 2014	Age 65, or age 60 with 30 years of creditable service
Fire	Prior to July 30, 2016	Age 57, or age 49 with 22 years of creditable fire or police service
Fire	On/after July 30, 2016	Age 57, or age 52 with 25 years of creditable fire service
Police	Prior to December 20, 2015	Age 57, or any age with 25 years of creditable fire or police service
Police	On/after December 20, 2015	Age 57, or age 50 with 25 years of creditable police service

**These eligibility criteria assume consent to the provisions of the Global Pension Settlement (GPS); most members have consented to GPS.*

For General City employees, the service retirement allowance is 2%, or 1.6% for members enrolled on or after January 1, 2014, of the member's final average salary (the highest average of earnable compensation during any 3 years preceding retirement, death or termination) for each year of creditable service. The service retirement allowance for General City employees who retire after January 1, 1989, cannot exceed 70% of their final average salary.

For police officers and firefighters, the retirement allowance is 2.5% of their final average salary (computed on the year of creditable service during which earnable compensation was highest) for each year of creditable service. The retirement allowance for firefighters hired after March 1, 1989, and police officers hired after July 1, 1989, is limited to 90% of their final average salary (excluding any imputed service credit provided under the GPS).

For elected officials enrolled prior to January 1, 2014, the retirement allowance is 2.6% of their final average salary for each year of creditable service as an elected official for years before 1996 and is limited to 70% of the final average salary. For the years 1996 and forward, the accrual rate is 2.5% (For the Mayor, the accrual rate is 2.0%) for creditable service, imputed military service, or seasonal service and is limited to 70% of their final average salary. However, elected officials who were enrolled

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

2. DESCRIPTION OF RETIREMENT SYSTEM (cont.)

prior to 2014 and are first elected to office on or after January 1, 2014, have an accrual rate of 2% for each year if they contribute 5.5% of their earnable compensation, or 2.5% for each year if they contribute 7% of their earnable compensation. For elected officials enrolled on or after January 1, 2014, the accrual rate is 1.6% of their final average salary for each year of creditable service as an elected official, and is limited to 70% of their final average salary.

Chapter 36 of the Milwaukee City Charter addresses pension escalators. General City employees participating in the Global Combined Fund and enrolled prior to January 1, 2014 and retiring on a service retirement allowance on or after January 1, 2000, are eligible for a pension escalator of 1.5% on the second, third and fourth anniversaries of their retirement, and 2% on each anniversary thereafter. Police officers and firefighters participating in the Global Combined Fund retiring on a service retirement allowance on or after January 1, 2000, are eligible for a pension escalator based upon the percentage increase in the prior year's Consumer Price Index-All Urban Consumers (CPI-U), effective on their first anniversary and each anniversary thereafter. The percentage increase is determined annually by measuring the change in the Index from November to November of each year. The pension escalator is guaranteed to be at least two percent, but is capped at three percent.

General City employees enrolled on or after January 1, 2014, retiring on a service retirement allowance are eligible for a pension escalator of 2% on their fifth anniversary of retirement and each anniversary thereafter.

Rules governing pension escalators provided to retirees retiring prior to January 1, 2000, before the Global Pension Settlement, differ from those described herein. In addition, a one-time "catch up" adjustment was provided in January of 1996 to employees who retired on a service retirement allowance on or before September 30, 1987, to partially offset the increase in inflation. For a complete description of the escalator rules, see Chapter 36 of the Milwaukee City Charter.

3. CONSENT STATUS CHANGES

Members who have not consented to the GPS have either objected to the settlement or never responded. The deadline to consent of April 24, 2004, has been extended indefinitely for those who never responded. Often, non-responders consent to GPS at the time they apply for benefits. As of the January 1, 2019 actuarial valuation, 298 members were non-consenting, including 62 active members, 221 inactive members, and 15 benefit recipients. During 2019, eight members elected to consent to the GPS, resulting in a transfer of \$1,241,000 to the Global Combined Fund from the non-consenter funds.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

4. EMPLOYERS' RESERVE FUND

The City of Milwaukee and other Agencies participating in the Retirement System may voluntarily contribute to the Employers' Reserve Fund, which was established per Section 36-08-8 of Chapter 36. Deposits to the Employers' Reserve Fund may be used to fund contribution requirements, but this requires a formal resolution directing a fund transfer. Employers' Reserve Fund resources are invested according to City of Milwaukee investment policies.

In 2019, the City of Milwaukee contributed \$13,364,000 to the Employers' Reserve Fund. There were no transfers from the Employers' Reserve Fund. As of December 31, 2019, the City of Milwaukee is the only employer participating in the fund. Investment expenses in 2019 were \$67,000.

5. NET PENSION LIABILITY

The components of the pension liability at December 31, 2019, were as follows (in thousands):

Total pension liability	\$ 6,550,651
Plan fiduciary net position	<u>(5,557,077)</u>
Net pension liability	<u>\$ 993,574</u>
 Plan fiduciary net position as a percentage of the total pension liability	 84.83%

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

5. NET PENSION LIABILITY (cont.)

Actuarial Assumptions: The last actuarial valuation was performed as of January 1, 2019, and these amounts were used to roll-forward the total pension liability for the year ended December 31, 2019. The valuation was determined using the following actuarial assumptions, which were 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.

The total pension liability as of December 31, 2019 was determined by rolling forward the total pension liability as of January 1, 2019 to December 31, 2019.

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 review performed by the consultants, Conduent HR Consulting, LLC. The results of the experience review were adopted by the Board at the October 23, 2017 meeting. The long-term rate of return is based on analysis performed by Cavanaugh Macdonald Consulting, LLC and adopted by the Board at the April 29, 2019 meeting.

The rate of return assumption was based on the Retirement System's target asset allocation. In the experience review, the consultants 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 within the portfolio.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

5. NET PENSION LIABILITY (cont.)

The consultants 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. The rate for the 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, 2019 are listed in the table below:

<u>Asset Class</u>	<u>Target Asset Allocation</u>	<u>Long-term Expected Real Rate of Return*</u>
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*

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 the City and Agencies will be made at contractually required rates, as determined by the actuary. Based on those assumptions, the ERS' fiduciary net position was projected to be available to make projected future benefit payments for current members. The crossover analysis produced a single rate of 7.50 percent, which reflects the long-term expected rate of return on ERS investments. Based on the analysis, 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 calculated using the discount rate of 7.50 percent, a discount rate that is 1-percentage-point lower (6.50 percent) and a discount rate that is 1-percentage-point higher (8.50 percent) (in thousands):

	<u>1% Decrease (6.50%)</u>	<u>Current Discount (7.50%)</u>	<u>1% Increase (8.50%)</u>
Net pension liability	\$ 1,773,015	\$ 993,574	\$ 344,873

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

6. EXPENSES

Under the Milwaukee City Charter, as provided in the GPS, administrative and investment expenses of the Retirement System are the direct obligation of the Global Combined Fund. Expenses are normally paid by the City of Milwaukee and then reimbursed to the City by ERS.

Investment-related fees of approximately \$52,108,000 and administrative expenses of approximately \$7,018,000 were charged to the Retirement System in 2019. In addition, the Annuity and Pension Board authorized the payment of \$1,141,000 of administrative costs from the Securities Lending Fund during 2019. This reduced the amount needed from the Global Combined Fund for costs to administer the Retirement System (see Note 8).

7. INCOME TAX STATUS

The most recent determination letter is dated February 7, 2017, with the Internal Revenue Service (IRS) stating that the Retirement System, as then designed and in conjunction with the proposed amendments required by the IRS, was in compliance with the applicable requirements of the Internal Revenue Code. The Retirement System's management believes that the plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code. Therefore, the accompanying basic financial statements reflect no provision for income taxes.

8. INVESTMENTS

Investment Policies

The Retirement System's policy for the allocation of invested assets is established, and amended, as needed, by the ERS Board. The ERS Board's adopted asset allocation policy as of December 31, 2019 is provided on page 37. ERS publishes its latest Investment Policy on its website. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the Retirement System.

Rate of Return

For the year ended December 31, 2019, the annual money-weighted rate of return on ERS investments, net of pension plan investment expense, was 18.51 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Fair Value Measurement

The Retirement System categorizes their fair value measurements within the fair value hierarchy established by generally accepted accounting principles. ERS had the following recurring fair value measurements as of December 31, 2019 (in thousands):

Investment Type	Fair Market Value	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Public Equity	\$ 2,620,327	\$ 1,327,560	\$ 1,187,574	\$ 105,193
Fixed Income	1,318,381	-	805,664	512,717
Absolute Return	537,959	-	135,709	402,250
Public Diversified Real Assets	185,728	-	185,728	-
Total assets in the Fair Value Hierarchy	\$ 4,662,395	\$ 1,327,560	\$ 2,314,675	\$ 1,020,160
Investments measured at Net Asset Value *	848,992			
Investments at Fair Value	<u>\$ 5,511,387</u>			

** Per GASB 72, investments that are measured using the net asset value per share (or its equivalent) are not classified in the fair value hierarchy. The fair value presented in this table are intended to permit reconciliation of the fair value hierarchy to the line items presented in the Statement of Fiduciary Net Position.*

The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority (Level 1) to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority (Level 3) to unobservable inputs.

Level 1: Unadjusted quoted prices for identical instruments in active markets.

Level 2: Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3: Valuations derived from valuation techniques in which significant inputs are unobservable.

The following is a description of the valuation methodologies used for assets measured at fair value. There were no changes to the methodologies during the year ended December 31, 2019.

U.S. treasury securities, equity securities, Real Estate Investment Trusts, and Exchange Traded Funds classified in Level 1 are valued using prices quoted in active markets for those securities.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Debt and debt derivative securities classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices.

Index linked debt securities are valued by multiplying the external market price feed by the applicable day's Index Ratio. Level 2 debt securities also have nonproprietary information from multiple independent sources that were readily available to market participants who are known to be actively involved in the market. Equity and equity derivative securities classified in Level 2 are securities whose values are derived daily from associated traded securities.

The System's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. When inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation.

Real estate and private equity are valued using the net asset value (NAV) per share (or its equivalent). These investments are considered "alternative investments" and, unlike more traditional investments, generally do not have readily obtainable market values and take the form of limited partnerships. These investments are valued based on the partnerships' audited financial statements. If December 31 statements are available, those values are used. If December 31 values are not available, the valuation is adjusted from the most recently available valuation taking into account subsequent calls and distributions, adjusted for unrealized appreciation/depreciation, other income, and fees.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

The summary of unfunded commitments for these types of alternative investments is reported below (in thousands).

Investment Type	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Private Equities	\$ 437,643	\$ 242,682	N/A	N/A
Real Assets - Non-Core	50,848	13,987	N/A	N/A
Real Assets - Core	360,501	-	Quarterly	90 Days
Totals	<u>\$ 848,992</u>	<u>\$ 256,669</u>		

Private Equities

This consists of four “fund of funds” managers that invest in a multitude of underlying private equity funds. The primary investment type of the underlying funds is buyout and growth equity. Investments can never be redeemed from the funds. Instead, distributions are received through the liquidation of the underlying assets of the funds. It is expected that the funds will be liquidated over the next 15-20 years. The funds are valued on a quarterly basis using appraisals based on the best estimate of market value.

Real Estate Investments – Non-Core

This consists of 16 closed-end funds that invest primarily in U.S. commercial real estate. Investments can never be redeemed from the funds. Instead, distributions are received through the liquidation of the underlying assets of the funds. It is expected that the funds will be liquidated over the next 7 to 10 years. The funds are valued on a quarterly basis using appraisals based on the best estimate of market value.

Real Estate Investments – Core

This consists of four open-end funds that invest primarily in U.S. commercial real estate. Investments can be redeemed from the funds on a quarterly basis with 90 days’ notice, subject to availability of sufficient capital to cover the redemption. The funds are valued on a quarterly basis using appraisals based on the best estimate of market value.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Deposits and Custodial Credit Risk

Custodial credit risk is the risk that, in the event a financial institution or counterparty fails, the Retirement System will not be able to recover the value of its deposits, investments, or securities. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the Retirement System's name, and held by the counterparty. As of December 31, 2019, no investments or securities were exposed to custodial credit risk.

The Retirement System is also exposed to custodial credit risk for uncollateralized cash and cash equivalents that are not covered by federal depository insurance. As of December 31, 2019, approximately \$141,000 of cash and cash equivalents was exposed to custodial credit risk.

The Retirement System was established to provide for the present and future retirement, disability, and death and survivor benefit payments for all city and city agency employees. All of the funds of the Retirement System taken in the aggregate constitute a special trust subject to applicable local, state, and federal laws, including but not limited to sections 36-15, 36-09-1, and 36-09-6 of the Milwaukee City Charter.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of an entity's investment in a single issuer. As of December 31, 2019, the Retirement System has no single issuer that exceeds 5% of total investments. Investments issued or explicitly guaranteed by the U.S. Government and investments in mutual funds, external investment pools, and other pooled investments are excluded.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Retirement System's investment guidelines limit how much each fixed income manager may deviate duration from their respective benchmarks. Duration is the approximate percentage change in price for a 100-basis-point change in yield. Depending on the investment manager, the duration of the Retirement Systems active fixed income managers must either be between 50% and 250% of the duration of the Bloomberg Barclays U.S. Aggregate Index or +/- 2 years of the Bloomberg Barclays U.S. Aggregate Index. As of December 31, 2019, the segmented time distribution of the various investment types of debt securities for the Retirement System is as follows (in thousands):

Investment Type	Fair Market Value	1 Year or Less	1 to 5 Years	6 to 10 Years	More than 10 Years
Asset Backed Securities	\$ 9,562	\$ 85	\$ 9,477	\$ -	\$ -
Commercial Mortgage-Backed	7,225	-	-	-	7,225
Corporate Bonds	327,709	23,890	146,693	90,769	66,357
Corporate Convertible Bonds	11,079	-	5,838	1,452	3,789
Government Bonds	264,051	27,857	124,787	62,122	49,285
Government Mortgage Backed Securities	132,425	1,584	44,219	18,257	68,365
Gov't-issued Commercial Mortgage-Backed	6,028	-	4,621	1,407	-
Municipal/Provincial Bonds	6,168	-	-	-	6,168
Short Term Bills and Notes	52,496	52,496	-	-	-
Totals	\$ 816,743	\$ 105,912	\$ 335,635	\$ 174,007	\$ 201,189

The risk above is disclosed only for investments evidenced by securities in separate accounts and commingled funds. Assets held in commingled funds are classified based on the individual fund's characteristics as of December 31, 2019. This schedule will not tie to the Basic Financial Statements provided on page 23 and the Summary of Investment Holdings provided on page 69 as ERS classifies a limited partnership investment within its Fixed Income asset class.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Foreign Currency Risk

Foreign currency risk is the risk that changes in currency exchange rates will adversely affect the fair value of an investment or deposit. ERS investment guidelines allow foreign currency contracts for defensive hedging purposes. In addition, the guidelines recommend adequate diversification by country and currency. As of December 31, 2019, the Retirement System's exposure to foreign currency risk, expressed in U.S. Dollars, is as follows (in thousands):

Foreign Currency	Equities	Fixed Income	Real Estate and Private Equity	Total Fair Market Value
Australian dollar	\$ 7,777	\$ -	\$ -	\$ 7,777
Brazilian real	6,623	1,792	-	8,415
British pound sterling	141,999	899	2,475	145,373
Canadian dollar	10,909	1,080	-	11,989
Chinese Yuan Renminbi	1,843	-	-	1,843
Danish krone	13,915	-	-	13,915
Euro	202,778	-	547	203,325
Hong Kong dollar	15,182	-	-	15,182
Indian rupee	955	-	-	955
Japanese yen	102,148	-	573	102,721
Mexican peso	14,438	8,300	-	22,738
New Taiwan dollar	5,128	-	-	5,128
New Zealand dollar	367	3,169	-	3,536
Norwegian krone	471	178	-	649
South Korean won	24,447	-	-	24,447
Swedish krona	11,774	-	-	11,774
Swiss franc	54,551	-	-	54,551
Totals	\$ 615,305	\$ 15,418	\$ 3,595	\$ 634,318

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Credit Risk of Debt Securities

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Retirement System's investment guidelines require its fixed income managers to have an Investment Grade average portfolio. The Retirement System's active fixed income managers are allowed to hold a maximum of 20% of their respective portfolio's market value in issues rated B- or B3, and an additional 5% may be invested in non-rated issues. The quality ratings of investments in fixed income securities of the Retirement System as described by Standard & Poor's as of December 31, 2019, are as follows (in thousands):

Investment Type	Fair Market Value	AAA	AA	A	BBB	BB	B	CCC	D	Not Rated	
										US Government Guaranteed	Quality Rating Not Available
Asset Backed Securities	\$ 9,562	\$ 4,048	\$ 339	\$ 768	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,407 **
Commercial Mortgage-Backed	7,225	1,257	-	-	-	-	-	-	-	-	5,968 **
Corporate Bonds	327,709	12,954	15,658	75,751	124,310	66,148	25,965	1,640	4,216	-	1,067 **
Corporate Convertible Bonds	11,079	-	-	1,101	-	5,137	-	2,698	1,453	-	690 **
Government Bonds	264,051	178	3,169	7,879	-	1,792	-	-	-	251,033	-
Government Mortgage Backed Securities	132,425	-	-	-	-	-	-	-	-	132,425	-
Gov't-issued Commercial Mortgage-Backed	6,028	-	-	-	-	-	-	-	-	6,028	-
Municipal/Provincial Bonds	6,168	-	-	-	-	-	6,168	-	-	-	-
Short Term Bills and Notes	52,496	-	-	-	-	-	-	-	-	52,496	-
Totals	\$ 816,743	\$ 18,437	\$ 19,166	\$ 85,499	\$ 124,310	\$ 73,077	\$ 32,133	\$ 4,338	\$ 5,669	\$ 441,982	\$ 12,132

** Bonds listed as Not Rated by S&P are rated Investment Grade by Moody's.

The risk above is disclosed only for investments evidenced by securities. Assets held in commingled funds are classified based on the individual fund's characteristics as of December 31, 2019. As a result, Fair Market Values for individual Investment Types within this table may differ from the Basic Financial Statements provided on page 23 and the Summary of Investment Holdings provided on page 69.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Derivatives

The ERS' Statement of Investment Policy written objectives and guidelines governing the investment of Fund assets allows separate account investment managers to use forward contracts and derivatives traded on a recognized derivatives exchange for hedging and efficient portfolio management purposes if the Board approves their use within the individual manager's written guidelines. No assets shall be committed to futures, options, options on futures, forwards and other derivatives unless approved by the Board.

Prohibited investments in separate accounts include mortgage interest only, principal only, inverse floaters or other CMO derivatives that have uncertain or volatile duration or price movement.

In 2019, the Retirement System's separate account investment managers utilized currency forwards, bond futures, and credit default swaps. Currency forwards are necessary to purchase or sell non-U.S. securities. Bond forwards and futures are sometimes more liquid and easier to trade than the respective underlying security and can allow an investment manager to reduce the costs of constructing an efficient portfolio.

Currency Forwards

A foreign currency forward is a contractual agreement between two parties to pay or receive amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. The Retirement System's International Equity and Global Equity managers entered into foreign exchange positions, such as forward and spot contracts, to hedge foreign currency exposure or obtain a currency for a pending cash transaction. The ERS has two Fixed Income managers who are allowed to invest globally, and they enter into spot contracts to obtain a currency for a pending cash transaction. The majority of the contracts are short-term in duration and mature within 90 days.

Bond Futures

A futures contract is a standardized contractual agreement between two parties, made through an organized exchange, to buy or sell a pre-determined amount of a bond at a future date in exchange for a price agreed upon today. The counterparty credit risk for a futures contract is generally less than privately negotiated forward contracts because the organized exchange acts as a clearinghouse that typically settles net changes to futures contract values daily. ERS had no futures contracts as of December 31, 2019.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

The following table summarizes the aggregate notional or contractual amounts for the ERS' separate account managers as of December 31, 2019 (in thousands):

	Notational/ Contractual Amounts	Fair Market Value	Gain/(Loss)
Foreign exchange forward spot contracts receivable	\$ 212	\$ 212	\$ -
Foreign exchange forward spot contracts payable	(212)	(213)	(1)

These instruments are recorded in cash and cash equivalents, investment receivables, and investments in the Statements of Fiduciary Net Position. The changes in fair value are included in investment income in the Statement of Changes in Fiduciary Net Position.

Fixed Income Index Credit Default Swaps

A credit default swap is a type of swap designed to transfer the credit exposure of a fixed income product from one party to another. ERS grants one of its managers the ability to sell protection on the CDS index. This position is equivalent to the credit risk of holding the underlying bonds, but carries significantly lower trading costs. The CDSs may not be used to create leverage, and must be fully collateralized by cash or US Treasury securities.

Derivative Risk

The total exposure of all hedges is limited to 100% of the total portfolio value, at market. Shorting currency exposure in countries without any underlying security exposure is prohibited.

The ERS is also exposed to market risk, the risk that future changes in market conditions may make an instrument less valuable. Exposure to market risk is managed through the limits placed on an investment manager within the Statement of Investment Policy.

The ERS is exposed to credit risk in the event of non-performance by counterparties to financial instruments. Typical counterparties for ERS are major financial institutions and broker-dealers. A counterparty's financial condition, cash on hand, and general credit worthiness is evaluated prior to entering into a transaction. In addition, ratings agencies' evaluations are reviewed.

The ERS was not exposed to counterparty credit risk as of December 31, 2019.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

8. INVESTMENTS (cont.)

Securities Lending

ERS started the securities lending program in 1993. Eligible securities are loaned out through the ERS custodian, Northern Trust. ERS earns a daily fee for securities loaned and incurs a reduction in earnings per the indemnification agreement with the custodian. Each security loan is initially collateralized by securities or cash for at least 102% of its market value (105% for international securities). Collateral is held by the custodian. Cash collateral received from borrowers is invested in a short-term investment pool, which is managed by Northern Trust. The custodian's lending program does not operate the collateral investments as a "matched program" where the length of the loaned assets is specifically matched to the length of the portfolio investments. Loans are open and renewed each day until they are no longer needed. The loans can be terminated at any time by either the agent or the borrower.

Revenue earned from securities lending is used to offset expenses of the Retirement System. If revenues are not expended within one calendar year following receipt, the remaining amount is distributed to the Non-Consenter Retirement Fund. For the year ended December 31, 2019, the Retirement System earned revenue from securities lending of approximately \$6,037,000, and paid custodian fees and rebates of approximately \$5,189,000. The ERS also disbursed \$1,141,000 to offset some of the Retirement System's administrative costs.

As of December 31, 2019, ERS has securities on loan with a fair value of approximately \$134,643,000 and the short-term collateral investment pool has a fair value of approximately \$137,828,000.

<u>Investment Type</u>	<u>Securities on Loan</u>
	<u>Fair Value</u>
Global Equities	\$ 5,725,987
US Corporate Fixed	23,447,990
US Equities	66,172,962
US Government Fixed	39,296,224
Totals	<u>\$ 134,643,163</u>

The two main risks in securities lending are counterparty risk and collateral investment risk. Counterparty risk is the risk that the borrower defaults on a loan and is unable to return the security. The ERS' contract with Northern Trust indemnifies ERS of any losses suffered as a result of the securities lending program due to counterparty default. Collateral investment risk is the risk that an investment in a collateral option becomes impaired or decreases in value. ERS is responsible to refund any losses to the borrower as a result of losses in the collateral pool. As of December 31, 2019, the ERS' collateral pool was trading at or near fair market value with no impairments.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
NOTES TO BASIC FINANCIAL STATEMENTS
AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2019

9. COMMITMENTS & CONTINGENCIES

The Retirement System is involved in litigation and disputes arising during the normal course of operations. Management does not believe the settlement of such matters will have a material impact on the Retirement System's basic financial statements.

10. SUBSEQUENT EVENT

The Retirement System evaluated events occurring through July 15, 2020, the date the financial statements were available to be issued, for subsequent events requiring recording or disclosure in the Plan's financial statements.

On March 25, 2020, Allianz Global Investors ("AllianzGI") announced the formal liquidation of its Structured Alpha 1000 strategy. At the time of the announcement, AllianzGI did not provide details as to how long liquidation would take or estimated expenses to carry out the liquidation. According to AllianzGI, the decision to liquidate the portfolio was made by the firm.

The System redeemed its investment on April 27, 2020 and received \$12,969,106. The realized loss on this investment was \$76,530,893.

REQUIRED SUPPLEMENTARY INFORMATION

(See Independent Auditors' Report)

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Required Supplementary Information
Schedule of Changes in the Net Pension Liability
Last 6 Fiscal Years
(in thousands)

	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	\$ 87,285	\$ 75,119	\$ 77,681	\$ 70,377	\$ 70,500	\$ 69,693
Interest	463,215	464,845	441,811	430,745	418,874	409,899
Changes in benefit items	-	-	-	-	-	-
Differences between expected and actual experience	119,477	(91,515)	67,154	(9,921)	(30,035)	-
Changes of assumptions	-	475,766	244,993	-	(5,206)	-
Benefit payments including refunds of member contributions	(409,086)	(393,526)	(385,331)	(351,303)	(347,889)	(342,569)
Net change in total pension liability	260,891	530,689	446,308	139,898	106,244	137,023
Total pension liability - beginning	6,289,760	5,759,071	5,312,763	5,172,865	5,066,621	4,929,598
Total pension liability - ending	\$6,550,651	\$6,289,760	\$5,759,071	\$5,312,763	\$5,172,865	\$5,066,621
Plan fiduciary net position						
Contributions - employer	\$ 96,389	\$ 83,166	\$ 83,524	\$ 74,095	\$ 72,198	\$ 72,844
Contributions - member	32,633	32,085	32,494	35,918	49,553	43,663
Net investment income	893,278	(160,190)	787,809	383,747	34,982	238,985
Benefit payments, including refunds of member contributions	(409,086)	(393,526)	(385,332)	(351,303)	(347,889)	(342,569)
Administrative expense	(7,018)	(7,181)	(8,637)	(8,096)	(9,686)	(10,831)
Net change in plan fiduciary net pension	606,196	(445,646)	509,858	134,361	(200,842)	2,092
Plan fiduciary net position - beginning	4,950,881	5,396,527	4,886,669	4,752,308	4,953,150	4,951,058
Plan fiduciary net position - ending	\$5,557,077	\$4,950,881	\$5,396,527	\$4,886,669	\$4,752,308	\$4,953,150
Net pension liability - ending	\$ 993,574	\$1,338,879	\$ 362,544	\$ 426,094	\$ 420,557	\$ 113,471

The plan implemented GASB Statement No. 67 in the fiscal year 2014. Information calculated utilizing GASB 67 prior to fiscal year 2014 is not available.

See independent auditors' report and notes to required supplementary information.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Required Supplementary Information
Schedules of Net Pension Liability and Investment Returns
Last 6 Fiscal Years
(in thousands)

Schedule of Net Pension Liability

	2019	2018	2017	2016	2015	2014
Total pension liability	\$ 6,550,651	\$ 6,289,760	\$ 5,759,071	\$ 5,312,763	\$ 5,172,865	\$ 5,066,621
Plan fiduciary net position	(5,557,077)	(4,950,881)	(5,396,527)	(4,886,669)	(4,752,308)	(4,953,150)
Net pension liability	\$ 993,574	\$ 1,338,879	\$ 362,544	\$ 426,094	\$ 420,557	\$ 113,471
Plan fiduciary net position as a percentage of total pension liability	84.83%	78.71%	93.70%	91.98%	91.87%	97.76%
Covered payroll	\$ 581,663	\$ 574,394	\$ 577,119	\$ 583,950	\$ 535,802	\$ 529,939
Net pension liability as a percentage of covered payroll	170.82%	233.09%	62.82%	72.97%	78.49%	21.41%

Schedule of Investment Returns

	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	18.51%	-2.75%	16.41%	8.77%	0.55%	5.17%

The plan implemented GASB Statement No. 67 in the fiscal year 2014. Information for calculating the effects of GASB 67 prior to fiscal year 2014 is not available.

See independent auditors' report and notes to required supplementary information.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Required Supplementary Information
Schedule of Employers' Contributions
For Last Ten Fiscal Years
(in thousands)

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>
Actuarially Determined Contributions	\$ 83,025	\$ 83,166	\$ 83,524	\$ 74,095	\$ 72,198	\$ 72,844	\$ 79,533	\$ 73,159	\$ -	\$ -
Contributions in relation to the actuarially determined contribution	83,025	83,166	83,524	74,095	72,198	72,844	79,533	73,159	-	-
Contributions in relation to the Employers' Reserve Fund	13,364	-	-	-	-	-	-	27,000	17,350	-
Contribution deficiency (excess)	<u>\$ (13,364)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (27,000)</u>	<u>\$ (17,350)</u>	<u>\$ -</u>
Covered payroll	\$ 581,663	\$ 574,394	\$ 577,119	\$ 583,950	\$ 535,802	\$ 529,939	\$ 521,651	\$ 523,738	\$ 525,181	\$ 538,218

See independent auditors' report and notes to required supplementary information.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Notes to Required Supplementary Information
As of and for the year ended December 31, 2019

1. This information presented in the required supplementary schedules, for pension funding purposes, was based on the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation is as follows:

Valuation Date	January 1, 2019
Actuarial Cost Method	Individual Entry Age Normal Cost
Amortization Method	Closed layered Payments for each base increasing by 2% per year
Remaining Amortization Period	25 years as of January 1, 2019
Asset Valuation Method	5-year smoothed market
Actuarial Assumptions:	
Investment Rate of Return	7.50% per annum, compounded annually
Projected Salary Increases	General City 2.5% - 4.93% Police & Fire 4.0% - 9.47%
Inflation Assumption	2.50%
Cost of Living Adjustments	For retirees whose COLA is defined as the lesser of 3.00% and CPI-U, the assumed COLA is 2.50% per annum
Mortality Table	For regular retirees and survivors, the RP-2014 Healthy Annuitant Mortality Table, using 111% of rates for males and 110% of rates for females, projected generationally using Scale MP-2016, was used. 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 using Scale MP-2016, was used. For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016 was used. All mortality rates are projected using generational improvement with Scale MP-2016.
Experience Study	The actuarial assumptions used in the January 1, 2019 valuation were based on the results of an actuarial experience study for the period January 1, 2012-December 31, 2016.

2. The total pension liability contained in the Schedule of Net Pension Liability was provided by the Retirement System's actuaries, Cavanaugh Macdonald Consulting, LLC for 2018 and subsequent years and Conduent HR Consulting, LLC for years prior to 2018. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the Retirement System.
3. The required employer contributions and percent of contributions made are presented in the Schedule of Contributions.

See independent auditors' report and notes to required supplementary information.

SUPPLEMENTARY INFORMATION

(See Independent Auditors' Report)

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedules of Administrative Expenses, Investment Expenses, and Payments to Consultants
For the Year Ended December 31, 2019

Schedule of Administrative Expenses

Salaries	\$ 2,406,701
Fringe benefits	911,903
Professional services	796,547
Information technology services	1,141,405
Equipment rental	23,883
Facility rent & property services	560,964
General office expense	148,379
Other operating services & supplies	652,422
Depreciation	376,177
	<u>\$ 7,018,381</u>

Schedule of Investment Expenses

Investment manager expense	\$ 45,388,335
Security lending rebates	4,988,046
Security lending fees	200,471
Investment consulting fees	510,877
Investment custodian fees	300,000
Other investment related expenses	720,717
	<u>\$ 52,108,446</u>

Schedule of Payments to Consultants

Actuary services	\$ 74,765
Audit	155,848
Legal services	208,029
Medical advisors	313,261
Memberships	11,599
Other professional services	33,045
	<u>\$ 796,547</u>

(See Independent Auditors' Report)

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Combining Statement of Fiduciary Net Position
Non-Consenter Funds
As of December 31, 2019
(in thousands)

	Retirement Fund	Combined Retirement Fund	General Employees' Duty Disability Fund	Firemen's and Policemen's Duty Disability Fund	Firemen's Heart and Lung Fund	Firemen's and Policemen's Survivorship Fund	Total
ASSETS							
CASH AND CASH EQUIVALENTS	\$ 601	\$ 629	\$ 8	\$ -	\$ -	\$ -	\$ 1,238
INVESTMENTS (Notes 1 and 8):							
Fixed income	2,394	1,232	20	-	-	-	3,646
Public equity	4,869	2,507	42	-	-	-	7,418
Absolute return	1,000	514	9	-	-	-	1,523
Real assets	1,109	571	10	-	-	-	1,690
Private equity	813	418	7	-	-	-	1,238
Total Investments	10,185	5,242	88	-	-	-	15,515
RECEIVABLES AND OTHER ASSETS							
Interest, dividends and foreign tax recoverable (Note 1)	14	7	-	-	-	-	21
Investments sold	22	11	-	-	-	-	33
Total Receivables and Other Assets	36	18	-	-	-	-	54
Total Assets	10,822	5,889	96	-	-	-	16,807
LIABILITIES							
Investments purchased	77	40	1	-	-	-	118
Total Liabilities	77	40	1	-	-	-	118
NET POSITION RESTRICTED FOR PENSIONS	\$ 10,745	\$ 5,849	\$ 95	\$ -	\$ -	\$ -	\$ 16,689

See Independent Auditors' Report.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Combining Statement of Changes in Fiduciary Net Position
Non-Consenter Funds
For the Fiscal Year Ended December 31, 2019
(in thousands)

	Retirement Fund	Combined Retirement Fund	General Employees' Duty Disability Fund	Firemen's and Policemen's Duty Disability Fund	Firemen's Heart and Lung Fund	Firemen's and Policemen's Survivorship Fund	Total
ADDITIONS							
Contributions							
Employer (Note 5)	\$ -	\$ 266	\$ -	\$ -	\$ -	\$ -	\$ 266
Member	8	-	-	-	-	-	8
Total Contributions	8	266	-	-	-	-	274
Investment Income							
Net appreciation in fair value of investments	1,549	796	13	-	-	-	2,358
Interest, dividends and other investment income	196	101	2	-	-	-	299
Total Investment Income	1,745	897	15	-	-	-	2,657
Investment Expense (Note 6)	-	-	-	-	-	-	-
Net Investment Income	1,745	897	15	-	-	-	2,657
Total Additions	1,753	1,163	15	-	-	-	2,931
DEDUCTIONS							
Benefits paid	(95)	(32)	-	-	-	-	(127)
Refunds of contributions	(80)	-	-	-	-	-	(80)
Interfund transfers	(1,234)	-	(7)	-	-	-	(1,241)
Total Deductions	(1,409)	(32)	(7)	-	-	-	(1,448)
NET INCREASE IN NET POSITION	344	1,131	8	-	-	-	1,483
NET POSITION RESTRICTED FOR PENSIONS							
Beginning of Year	10,401	4,718	87	-	-	-	15,206
End of Year	\$ 10,745	\$ 5,849	\$ 95	\$ -	\$ -	\$ -	\$ 16,689

See Independent Auditors' Report.

INVESTMENT SECTION



City of Milwaukee
Employees' Retirement System

Bernard J. Allen
Executive Director

David M. Silber, CFA, CAIA
Chief Investment Officer

Melody Johnson
Deputy Director

July 15, 2020

To the Annuity and Pension Board and Our Members:

The Annuity and Pension Board (Board), as trustee of the funds in the Employees' Retirement System of the City of Milwaukee ("the Fund"), employs a prudent investment process. Together with the Fund's staff and the Fund's investment consultant, Callan Associates, the Board oversees the investment strategy through periodic reviews of return and volatility assumptions, asset class structures, and investment manager implementation.

Major stock markets around the world have exhibited volatile calendar year returns in recent years, and 2019 was no exception. While stock market volatility had a negative impact on the Fund's returns in 2018, stock market volatility had a positive impact on the Fund's returns in 2019. In 2019, the Fund, and all of the asset classes that the Fund invests in, had positive returns and added value compared to their respective benchmarks, net of fees.

- The Fund had a return of 18.4% in 2019, net of investment management fees, which exceeded its benchmark by 206 basis points.
- As a result of the 18.4% investment return, the System's Fiduciary Net Position increased from \$4.95 billion in 2018 to \$5.56 billion in 2019, even after accounting for benefit payments that exceeded contributions.
- Over the past 10 years, the Fund generated annualized returns of 8.9%, net of investment management fees, which exceeded its benchmark by an annualized 47 basis points.
- The Fund's Public Equity and Private Equity allocations generated the highest returns for the Fund in 2019, at 26.5% and 16.6%, respectively, net of fees. The Fund's Real Assets allocation generated the lowest return for the Fund in 2019, at 8.5%, net of fees.

The Consultant's Commentary; a summary of the Fund's goals, objectives, and guidelines; and selected investment schedules follow for your review.¹

A handwritten signature in black ink that reads "David Silber".

David M. Silber, CFA, CAIA
CMERS Chief Investment Officer

¹ Data provided to the Fund by its custodian and its investment consultant form the basis of the information that is presented throughout the Investment Section. All portfolio rates of return are presented using time and asset-weighted returns. Returns are calculated net of investment manager fees.

June 1, 2020

Annuity and Pension Board
Employees' Retirement System of the City of Milwaukee
789 N. Water Street, Suite 300
Milwaukee, WI 53202

Dear Annuity and Pension Board,

Callan LLC is pleased to present the Employees' Retirement System of the City of Milwaukee ("Fund") results for fiscal year ended December 31, 2019. As of year-end, the Fund reported a fair value of \$5.53 billion.

While 2018 was an unusual year where virtually all asset classes posted negative returns, 2019 was equally rare with all major asset classes delivering above-average returns. U.S. equity markets rebounded tremendously in 2019; investors were emboldened when the U.S. and China made progress towards a phase one trade deal, which was ultimately signed in December. The U.S. economy closed the year with the unemployment rate at a 50-year low of 3.5%. GDP was steady at 2.1%. Inflation remained at a very low level as the Fed's preferred inflation gauge, the Core PCE Deflator, rose only 1.4% in the fourth quarter.

Equity markets reached record highs and even fixed income investors were rewarded with nearly double-digit returns, an amazing feat given the sector's paltry yields. December capped a 129-month bull market for the S&P 500 Index, the longest ever, and a cumulative return of nearly 500% since the low point of the Great Financial Crisis on March 9, 2009. Going into year-end, perceived progress in U.S./China trade negotiations, some degree of closure around Brexit, and expectations for the Fed to remain on hold for the foreseeable future overshadowed various areas of concern. The S&P 500 Index brought home a banner year for 2019 with a whopping 31.5% return, the best calendar year return since 2013 and capping a decade of strong performance. Smaller capitalization securities also performed strongly, but trailed larger capitalization securities as the Russell 2000 Index was up 25.5% for the year.

Non-U.S. developed markets trailed the U.S. markets, but were still up sharply in 2019 (MSCI ACWI ex-USA IMI +21.6%). Virtually all countries posted positive returns, though results were varied. Emerging markets outperformed developed markets in the fourth quarter but trailed for the full year.

Fixed income markets posted strong returns in 2019 fueled both by falling interest rates and strong investor demand, especially for higher-yielding sectors. The Bloomberg Barclays US Aggregate Bond Index rose 8.7%, the best calendar year return since 2002, with the lowest-quality credit tier of the Index up 16.4%.

Real estate investments in 2019 had a stable, though not a stellar year. Transaction volumes for the four major property types were only modestly up from 2018. Although volumes did not quite reach levels some had hoped for, there was still plenty of liquidity. A standard real estate fund index (NCREIF ODCE) return for 2019 was 4.4%, which was down approximately 3.0% from 2018.

As noted in the Schedule of Investment Results, the Fund generated a total return of 18.4% net-of-fees for the year ended December 31, 2019, which exceeded the 16.4% return of the Fund's target benchmark (the Policy

Benchmark). In aggregate, the Fund's allocations to public equity, fixed income, real estate, absolute return and private equity strategies exceeded their benchmarks. For the last three- and five-year periods, the Fund returns have exceeded that of the target benchmark.

Sincerely,

A handwritten signature in blue ink, reading "John P. Jackson". The signature is fluid and cursive, with the first name "John" and last name "Jackson" clearly legible.

John P. Jackson, CFA
Senior Vice President, Callan LLC

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE

Summary of Investment Policies

INVESTMENT GOALS AND OBJECTIVES

The overall investment goal is to provide participants with retirement, disability and death and survivor benefits. The purpose of the Fund establishing an investment policy is to obtain the highest return possible on Fund investments within corresponding acceptable levels of minimum investment risk and liquidity requirements in recognition of prudent person standards and compliance with applicable local, state, and federal laws governing the operation and activities of the Fund. In particular, the Fund is bound by the City of Milwaukee Charter Chapter 36.

FUNDING LEVELS AND LIQUIDITY REQUIREMENTS

The Board seeks to keep Plan benefits as well funded as possible at all times. Additionally, the Board wishes to remain as fully invested as possible at all times, while maintaining appropriate liquidity. Generally, the Fund will maintain enough liquidity to meet one month of payments and expenses.

ASSET ALLOCATION CONSIDERATIONS

The Board implements an asset allocation policy that is predicated on a number of factors, including:

1. A projection of actuarial assets, liabilities, and benefit payments and the cost of contributions;
2. Historical and expected long-term capital market risk and return behavior;
3. An assessment of future economic conditions, including inflation and interest rate levels; and
4. The current and projected funding status

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Summary of Investment Policies

TARGET ALLOCATIONS

The Board has determined that the following asset allocation policy is appropriate for the Fund. This allocation policy will be reviewed periodically and may be modified, if appropriate, in light of changes in the structure or goals of the Fund.

<u>Public Equity</u>	<u>Target</u>	<u>Minimum</u>	<u>Maximum</u>
Domestic Equity			
Passive Large Cap	8.6%		
Active Large Cap	5.5%		
Active Mid/Small Cap	7.3%		
Total Domestic Equity	21.4%	17.4%	25.4%
Total International Equity	17.1%	14.1%	20.1%
Total Global Equity	8.5%	4.5%	12.5%
Total Public Equity	47%	42%	52%
<u>Fixed Income</u>			
Cash	1%	0%	1.5%
Passive Fixed Income	4%		
Portable Alpha Fixed Income	9%		
Core Opportunistic Fixed Income	11%		
Total Fixed Income	25%	22%	28%
<u>Real Assets</u>			
Private Real Estate	7.7%	5.7%	9.7%
Public Diversified Real Assets	3.3%	1.3%	5.3%
Total Real Assets	11%	8%	14%
<u>Private Equity</u>	8%	5%	13%
<u>Absolute Return</u>	9%	6%	14%
<u>Total</u>	<u>100%</u>		

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Investment Results
For the Year Ended December 31, 2019

	<u>2019</u>	<u>3 Years</u>	<u>5 Years</u>
Total Fund	18.4%	10.2%	7.9%
Policy Benchmark ¹	16.4%	9.2%	7.2%
Fixed income	11.7%	5.4%	4.1%
Bloomberg Barclays U.S. Aggregate Index	8.7%	4.0%	3.1%
Public equity	26.5%	12.2%	8.9%
ACWI IMI ²	26.4%	12.1%	8.3%
Absolute return	12.5%	6.5%	5.8%
90 Day Treasury Bill + 3%	5.1%	4.7%	4.1%
Public Diversified Real Assets	14.8%	5.4%	N/A
Blended Benchmark ³	14.9%	5.5%	N/A
Private Real Estate	6.7%	7.8%	9.3%
NCREIF Fund Index ODCE	4.6%	6.3%	8.4%
Private equity ⁴	16.6%	18.4%	15.3%
Cambridge Private Equity Index	13.0%	13.6%	11.8%

¹ The policy benchmark is a composite index designed to track the target asset allocation. Historical data on the Total Fund benchmark allocations can be found in the Fund's Statement of Investment Policy.

² ACWI IMI was adopted as the Public Equity benchmark on January 1, 2016. Data on earlier time periods is presented for illustrative purposes only.

³ The blended benchmark is as follows: 35% Barclays TIPS, 20% S&P Global Infrastructure, 20% Global Natural Resources, 10% FTSE EPRA/NAREIT Developed, 15% Bloomberg Commodity Total Return

⁴ Private Equity returns shown above are calculated by the Fund's custodian at a 1-quarter lag.

N/A - Not Applicable. Asset class not held during the stated time period.

Note: With the exception of Real Estate, returns are calculated by the Fund's custodian using geometrically-linked, time and asset-weighted returns. Returns are calculated net of investment manager fees.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedules of Top Ten Largest Holdings
For the Year Ended December 31, 2019

<u>Top 10 Equity Holdings</u>	<u>Fair Value</u>
Alphabet Inc.	\$ 20,998,760
Microsoft Corp.	20,873,803
AT&T Inc.	19,451,249
GlaxoSmithKline PLC	15,286,742
Sanofi EUR2	14,601,967
Visa Inc.	14,509,638
Accenture PLC	11,762,651
Facebook Inc.	10,754,484
Mitsubishi Tanabe Pharma Corp	10,720,420
Banco Actinver SA CBFI	10,616,339

<u>Top 10 Fixed Income Holdings</u>	<u>Fair Value</u>
WI U.S. Treasury Note 1.75% Due 7/31/2024	\$ 48,740,624
U.S. Treasury N/B 2.375% Due 5/15/2029	31,182,713
U.S. Treasury Note 2.375% Due 4/30/2020	16,038,750
FNMA Single Family Mortgage 0% 30 Years	15,375,556
FNMA Pool 3.5% Due 6/1/2049	13,586,799
U.S. Treasury Note 2.25% Due 11/15/2027	10,803,736
U.S. Treasury Bond 2.25% Due 8/15/2049	10,496,647
FNMA Single Family Mortgage 4.5% 30 Years	10,296,888
U.S. Treasury Bond 2.375% Due 11/15/2049	9,555,145
Ford Motor Credit Co LLC 4.389% Due 1/8/2026	9,442,235

The schedules above exclude commingled funds.

A complete list of the portfolio holdings is available for review upon request.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Summary of Management Fees
For the Year Ended December 31, 2019

	Assets Under Management	Management Fee	Performance Fee	Fund of Fund Fee	Total Fees
Public Equity					
Domestic					
<i>Passive Large Cap Equity</i>	\$ 474,095,490	\$ 55,123	\$ -	\$ -	\$ 55,123
<i>Active Large Cap Equity</i>	307,043,684	938,779	-	-	938,779
<i>Active Mid/Small Cap Equity</i>	400,478,533	1,434,195	-	-	1,434,195
International					
<i>Active International Equity</i>	962,733,948	4,436,936	-	-	4,436,936
Global					
<i>Active Global Equity</i>	478,593,709	986,367	934,223	-	1,920,590
Total Public Equity	<u>\$2,622,945,364</u>	<u>\$ 7,851,400</u>	<u>\$ 934,223</u>	<u>\$ -</u>	<u>\$ 8,785,623</u>
Private Equity Fund of Funds¹	<u>\$ 437,643,714</u>	<u>\$ 5,528,583</u>	<u>\$ 2,372,551</u>	<u>\$ 4,425,588</u>	<u>\$ 12,326,722</u>
Fixed Income					
Cash	\$ 33,764,812	\$ -	\$ -	\$ -	\$ -
Passive Fixed Income	206,322,297	41,350	-	-	41,350
Portable Alpha Fixed Income	512,719,486	-	2,774,027	-	2,774,027
Active Fixed Income	581,225,943	846,160	-	-	846,160
Total Fixed Income	<u>\$1,334,032,538</u>	<u>\$ 887,510</u>	<u>\$ 2,774,027</u>	<u>\$ -</u>	<u>\$ 3,661,537</u>
Absolute Return¹	<u>\$ 537,531,704</u>	<u>\$ 4,359,929</u>	<u>\$ 8,455,584</u>	<u>\$ 1,928,000</u>	<u>\$ 14,743,513</u>
Real Estate					
Private Real Estate - Core	\$ 360,500,916	\$ 3,168,068	\$ 332,420	\$ -	\$ 3,500,488
Private Real Estate - Non-Core	50,848,578	572,564	650,207	-	1,222,771
Total Real Estate	<u>\$ 411,349,494</u>	<u>\$ 3,740,632</u>	<u>\$ 982,627</u>	<u>\$ -</u>	<u>\$ 4,723,259</u>
Real Assets					
Public Real Assets	<u>\$ 185,728,193</u>	<u>\$ 1,147,681</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 1,147,681</u>
Total External Management Fees		<u>\$23,515,735</u>	<u>\$15,519,012</u>	<u>\$ 6,353,588</u>	<u>\$ 45,388,335</u>

Fees are paid quarterly on quarter-end asset values for the majority of investment managers. Basis point calculations made from the data presented here would not be reflective of the fund's true fee rates.

¹ Management Fee and Performance Fee for Private Equity Fund of Funds and Hedge Fund of Funds (included in Absolute Return) includes, but may not be limited to, management fees and performance/carry at the underlying fund level, respectively.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Brokerage Commissions
For the Year Ended December 31, 2019

Broker Name	Number of Shares	Commissions	Cost Per Share
Goldman Sachs	689,770,376	\$ 39,919	\$ 0.00006
J.P. Morgan Securities	188,829,995	30,665	0.00016
Credit Suisse	9,319,152	24,386	0.00262
William Blair & Co.	785,952	23,686	0.03014
Craig-Hallum Capital Group	734,113	21,918	0.02986
Sanford C. Bernstein & Co.	901,296	20,828	0.02311
Investment Technology Group	734,562	18,171	0.02474
Barclays Capital	149,926,591	17,676	0.00012
UBS Securities	55,100,193	17,413	0.00032
Merrill Lynch	496,694,183	15,970	0.00003
Total - Top Ten Brokers	1,592,796,413	230,632	0.00014
Total - Other Brokers	1,712,776,440	258,611	0.00015
Grand Total	3,305,572,853	\$ 489,243	\$ 0.00015

The schedule above excludes commingled funds.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Summary of Investment Holdings
For the Year Ended December 31, 2019
(in thousands)

<u>Asset Class</u>	<u>Fair Value</u>	<u>Percent of Total</u>	<u>Target Allocation</u>
Cash and cash equivalents	69,628	1%	1%
Fixed income	1,288,692	23%	24%
Public equity	2,620,327	47%	47%
Absolute return	537,959	10%	9%
Real assets	597,077	11%	11%
Private equity	437,643	8%	8%
	<u>5,551,326</u>	<u>100%</u>	<u>100%</u>

This chart excludes pending investment sales and purchases for the asset class totals.

The latest general investment policy was approved by the board in December 2019, any changes to the target asset allocations will be effective in January 2020. The major changes will reflect a decrease of the allocation to Public Equities, and an increase of the allocations to Private Equity, Fixed Income, and Absolute Return.

The summary above excludes investments held as part of the Employers' Reserve Fund.

ACTUARIAL SECTION



Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

January 9, 2020

Annuity and Pension Board

Employees' Retirement System of the City of Milwaukee

789 North Water Street, Suite 300

Milwaukee, WI 53202

Members of the Board:

At your request, we performed an actuarial valuation of the Employees' Retirement System of the City of Milwaukee (System) as of January 1, 2019. The report has been prepared in accordance with Section 3615-15 of the Milwaukee City Charter. The major findings of the valuation, which are summarized in this report, reflect the benefit and funding provisions in place on January 1, 2019.

This is the first actuarial valuation report prepared by Cavanaugh Macdonald Consulting, LLC. As part of our transition work, we replicated the January 1, 2018 actuarial valuation. Results were within acceptable limits, but as is typical in a takeover situation, there were some differences in the key valuation metrics. Based on our experience, these differences are neither unusual nor significant. Our replication results were within 2% of the actuarial liability.

The valuation was based on the actuarial assumptions and methods adopted by the Annuity and Pension Board, as specified by the Charter. An amendment to the Milwaukee City Charter was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Fireman, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. These rates are established every five years following the Experience Study, performed by the actuary. The actuarial determined employer contribution rates under the Stable Contribution Policy for Policemen, Firemen, and General Employees are 25.22%, 26.83% and 7.48% of covered payroll, respectively, through December 31, 2022.

The primary purpose of the valuation report is to determine the actuarial contribution rate, to describe the current financial condition of the System, and to analyze changes in such condition. Use of the valuation results for any other purposes or by anyone other than the System and its auditors, may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose.



In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data and financial information. Although reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by Cavanaugh Macdonald Consulting, LLC and we cannot certify as to the accuracy and completeness of the data supplied. The valuation results depend on the integrity of this information. If any of the information is inaccurate or incomplete, our results may be different and our calculations may need to be revised. Sometimes assumptions are made to interpret membership data that is imperfect. The valuation is also based on benefit and contribution provisions as disclosed herein.

There was a change in the actuarial assumptions from the prior valuation. The investment return assumption was lowered from 8.00% for calendar years through 2022 and 8.25% beginning in 2023 to 7.5% for all years. This change increased the liabilities and costs of the System. The actuarial assumptions, other than the investment return assumption, were developed by the prior actuary. The analysis and recommendation regarding the investment return assumption was prepared by Cavanaugh Macdonald. The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. We believe that these assumptions are appropriate and reasonable and also comply with all applicable Actuarial Standards of Practice. We certify that all costs and liabilities have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the plan and reasonable expectations) and which, in combination, offer the best estimate of anticipated experience affecting the plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions.

Future actuarial results may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period) and changes in plan provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of such future measurements.

Actuarial computations presented in this report are for purposes of evaluating the funding of the Plan and determining an actuarial contribution rate. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. For example, actuarial computations for purposes of fulfilling financial accounting requirements under Governmental Accounting Standard Number 67 and 68 are provided in separate reports.



This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries and have experience in performing valuations for public retirement plans, that the valuation was prepared in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated later in this section.

Respectfully submitted,

A handwritten signature in blue ink, consisting of stylized, overlapping loops and lines.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, written in a cursive style that reads "Patrice Beckham".

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

MEMBER DATA

Active Member Data by Group as of January 1, 2019

General Employees

<u>Valuation January 1</u>	<u>Active Members</u>	<u>Annual Payroll</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay</u>
2010	8,772	\$362,283,000	\$41,300	
2011	8,379	346,086,000	41,304	0.01%
2012	7,972	335,459,000	42,080	1.88%
2013	7,950	329,368,000	41,430	(1.54%)
2014	7,993	331,738,000	41,504	0.18%
2015	8,240	337,248,000	40,928	(1.39%)
2016	8,276	343,867,000	41,550	1.52%
2017	8,417	361,660,000	42,968	3.41%
2018	8,289	359,914,000	43,421	1.05%
2019	8,228	360,750,000	43,844	0.97%

Policemen

<u>Valuation January 1</u>	<u>Active Members</u>	<u>Annual Payroll</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay</u>
2010	1,997	\$131,102,000	\$65,649	
2011	1,986	132,590,000	66,762	1.70%
2012	1,922	130,716,000	68,010	1.87%
2013	1,907	134,151,000	70,347	3.44%
2014	1,847	131,568,000	71,233	1.26%
2015	1,920	136,104,000	70,888	(0.48%)
2016	1,912	135,571,000	70,906	0.03%
2017	1,922	160,106,000	83,302	17.48%
2018	1,855	157,864,000	85,102	2.16%
2019	1,916	159,971,000	83,492	(1.89%)

Firemen

<u>Valuation January 1</u>	<u>Active Members</u>	<u>Annual Payroll</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay</u>
2010	895	\$60,461,000	\$67,554	
2011	882	59,542,000	67,508	(0.07%)
2012	873	59,006,000	67,590	0.12%
2013	857	60,219,000	70,267	3.96%
2014	835	58,345,000	69,874	(0.56%)
2015	804	56,587,000	70,382	0.73%
2016	794	56,364,000	70,987	0.86%
2017	744	62,184,000	83,581	17.74%
2018	701	59,340,000	84,651	1.28%
2019	707	60,942,000	86,198	1.83%

Total

<u>Valuation January 1</u>	<u>Active Members</u>	<u>Annual Payroll</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay</u>
2010	11,664	\$553,846,000	\$47,483	
2011	11,247	538,218,000	47,854	0.78%
2012	10,767	525,181,000	48,777	1.93%
2013	10,714	523,738,000	48,884	0.22%
2014	10,675	521,651,000	48,867	(0.03%)
2015	10,964	529,939,000	48,334	(1.09%)
2016	10,982	535,802,000	48,789	0.94%
2017	11,083	583,950,000	52,689	7.99%
2018	10,845	577,118,000	53,215	1.00%
2019	10,851	581,663,000	53,605	0.73%

Benefit Recipients by Group as of January 1, 2019

General Employees

Amount of Monthly Benefits	Total Monthly Benefits	Total Number of Recipients	Type of Benefit		
			Retired	Beneficiary	Disability
1 to 500	643,263	2,359	1,961	355	43
501 to 1,000	1,391,187	1,890	1,326	414	150
1,001 to 1,500	1,674,388	1,349	852	407	90
1,501 to 2,000	1,929,282	1,104	758	285	61
2,001 to 2,500	2,573,484	1,142	923	174	45
2,501 to 3,000	2,810,627	1,024	871	119	34
3,001 to 3,500	2,557,511	790	660	107	23
3,501 to 4,000	2,397,096	639	571	64	4
4,001 to 4,500	3,088,259	726	665	57	4
4,501 to 5,000	4,199,106	886	750	31	105
Over 5,000	8,661,391	1,461	1,378	43	40

Policemen

Amount of Monthly Benefits	Total Monthly Benefits	Total Number of Recipients	Type of Benefit		
			Retired	Beneficiary	Disability
1 to 500	643,263	2,359	1,961	355	43
501 to 1,000	1,391,187	1,890	1,326	414	150
1,001 to 1,500	1,674,388	1,349	852	407	90
1,501 to 2,000	1,929,282	1,104	758	285	61
2,001 to 2,500	2,573,484	1,142	923	174	45
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4,001 to 4,500	3,088,259	726	665	57	4
4,501 to 5,000	4,199,106	886	750	31	105
Over 5,000	8,661,391	1,461	1,378	43	40

Firemen

Amount of Monthly Benefits	Total Monthly Benefits	Total Number of Recipients	Type of Benefit		
			Retired	Beneficiary	Disability
1 to 500	643,263	2,359	1,961	355	43
501 to 1,000	1,391,187	1,890	1,326	414	150
1,001 to 1,500	1,674,388	1,349	852	407	90
1,501 to 2,000	1,929,282	1,104	758	285	61
2,001 to 2,500	2,573,484	1,142	923	174	45
2,501 to 3,000	2,810,627	1,024	871	119	34
3,001 to 3,500	2,557,511	790	660	107	23
3,501 to 4,000	2,397,096	639	571	64	4
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1,501 to 2,000	1,929,282	1,104	758	285	61
2,001 to 2,500	2,573,484	1,142	923	174	45
2,501 to 3,000	2,810,627	1,024	871	119	34
3,001 to 3,500	2,557,511	790	660	107	23
3,501 to 4,000	2,397,096	639	571	64	4
4,001 to 4,500	3,088,259	726	665	57	4
4,501 to 5,000	4,199,106	886	750	31	105
Over 5,000	8,661,391	1,461	1,378	43	40

Reconciliation of Membership Data From January 1, 2018 to January 1, 2019

	Active Members	Inactive Members	Benefit Recipients			Total
			Disabled Members	Retirees	Beneficiaries	
Participants as of January 1, 2018	10,845	3,135	903	10,191	2,102	27,176
New Participants	1,274	926	0	0	156	2,343
Terminations						
- Refunded	(219)	(95)	0	0	0	(314)
- Refund Payable	(376)	376	0	0	0	0
- Deferred Vested	(262)	262	0	0	0	0
Service Retirements	(413)	(186)	0	593	0	0
Disabilities						
- Duty-Related	(4)	0	4	0	0	0
- Non Duty-Related	(8)	(6)	14	0	0	0
Return to Work	33	(33)	0	0	0	0
Deaths	(19)	(19)	(39)	(357)	(146)	(919)
Benefit Payments Stopped Reached Service Retirement Conversion Age*	0	0	(1)	0	(56)	(57)
	0	0	(282)	282	0	0
Participants as of January 1, 2019	10,851	4,360	599	10,715	2,056	28,581

ACTUARIAL EXHIBITS

Short-Term Solvency Test

In a system that has been following the discipline of level percent of payroll financing, the liabilities for active participant accumulated contributions (liability 1) and the liabilities for future benefits to retirees, beneficiaries, and inactive participants (liability 2) will be fully covered by assets if all assumptions are met. In addition, the liabilities for service already rendered by active participants (liability 3) are normally partially covered by the remainder of the present assets. Generally, if the system has been using level percent of payroll financing, the funded portion of liability 3 will increase over time. The schedule below illustrates the history of the liabilities of the system and is indicative of the system following the discipline of level percent of compensation funding (dollar amounts in thousands).

Valuation January 1	Active Participants' Accumulated Contributions	Retirees, Beneficiaries and Inactive Participants	Active Participants (Employer Financed)	Valuation Assets	Percent Covered By Valuation Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
2010	483,627	2,730,144	1,055,553	4,814,402	100%	100%	152%
2011	483,331	2,936,289	1,027,928	4,641,425	100%	100%	119%
2012	482,924	3,097,577	1,007,414	4,404,635	100%	100%	82%
2013	493,263	3,210,639	985,912	4,259,889	100%	100%	56%
2014	501,712	3,347,689	982,288	4,580,729	100%	100%	74%
2015	510,917	3,434,355	990,210	4,797,437	100%	100%	86%
2016	512,752	3,552,301	1,000,088	4,899,155	100%	100%	83%
2017	508,005	3,625,511	1,125,784	5,055,700	100%	100%	82%
2018	482,151	4,140,458	1,197,153	5,233,486	100%	100%	51%
2019	468,584	4,642,839	1,289,478	5,218,294	100%	100%	8%

Analysis of Financial Experience

	(Millions)
Unfunded Actuarial Accrued Liability, January 1, 2018	\$ 607.4
- Expected change in UAAL	46.8
- Contribution above actuarial rate	(0.3)
- Investment experience	137.1
- Demographic experience	111.0
- Assumption changes	448.6
- Transition process	(103.0)
- Other experience	(42.9)
Unfunded Actuarial Accrued Liability, January 1, 2019	\$ 1,204.7

Note: This table shows the reconciliation of the unfunded actuarial accrued liability for the Combined Fund only.

Funded Ratio

	Actuarial Value of Assets	Market Value of Assets
January 1, 2018 Funded Ratio	89.9%	92.7%
- Expected change	0.1%	0.2%
- Change due to actuary	1.7%	1.8%
- Change due to assumptions	(6.6%)	(6.8%)
- Change due to asset return	(2.1%)	(9.1%)
- Change due to liabilities	<u>(1.5%)</u>	<u>(1.4%)</u>
- Total change	(8.4%)	(15.3%)
January 1, 2019 Funded Ratio	81.5%	77.4%

Funding Progress

Analysis of the dollar amounts of actuarial value of assets, actuarial accrued liability, or unfunded actuarial accrued liability in isolation can be misleading. Expressing the actuarial value of assets as a percentage of the actuarial accrued liability provides one indication of the System's funded status on an on-going concern basis. Analysis of this percentage over time indicates whether the System is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the System's funding. The unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Expressing the unfunded actuarial accrued liability as a percentage of covered payroll approximately adjusts for the effects of inflation and aids analysis of the progress being made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the System's funding.

Actuarial Valuation Date	Actuarial Value of Assets (AVA)* (a)	Actuarial Accrued Liabilities (AAL)* (b)	Unfunded AAL (UAAL)* (b - a)	Funded Ratio (a / b)	Covered Payroll* (c)	UAAL as Percent of Covered Payroll [(b - a) / c]
1/1/2010	4,814,402	4,269,324	0	112.8%	553,846	0.0%
1/1/2011	4,641,425	4,447,548	0	104.4%	538,218	0.0%
1/1/2012	4,404,635	4,587,915	183,280	96.0%	525,181	34.9%
1/1/2013	4,259,889	4,689,814	429,925	90.8%	523,738	82.1%
1/1/2014	4,580,729	4,831,689	250,960	94.8%	521,651	48.1%
1/1/2015	4,797,437	4,935,482	138,045	97.2%	529,939	26.0%
1/1/2016	4,899,155	5,065,141	165,986	96.7%	535,802	31.0%
1/1/2017	5,055,700	5,259,300	203,600	96.1%	583,950	34.9%
1/1/2018	5,233,486	5,819,762	586,276	89.9%	577,118	101.6%
1/1/2019	5,219,184	6,400,901	1,181,717	81.5%	581,663	203.3%

* Dollar amounts are in thousands.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Methods

The method of financing the ERS is prescribed in Section 36.08 of the MCC.

Actuarial Cost Method

The method used to determine Normal Cost and Accrued Actuarial Liability (AAL) is the Individual Entry Age Normal Cost Method. The UAAL, under this method, is the AAL over the Actuarial Value of Assets. The total Employer contribution is the sum of the Employer portion of the Normal Cost (Total Normal Cost less expected member contributions) plus an amount to amortize the UAAL according to the Amortization Method.

If the Actuarial Value of Assets exceeds the sum of the AAL and the Employer portion of the Normal Cost, there is no Employer contribution required for that year.

Asset Values

Two asset values are used in various exhibits. A description of each and a brief explanation of where they are used follows:

- **Market Value**

The market value of assets is the value of investments if they were to be sold on the date valued. The market value of assets is used to develop the actuarial value of assets.

- **Actuarial Value**

The actuarial value of the assets in the Employers' Reserve Fund and the Securities Lending Fund is equal to the market value of assets. These Funds are not available to pay the benefits for ERS members so they are excluded from the allocation of the actuarial value of assets to the various funds and groups and the resulting calculations of employer contributions. The actuarial value of assets for the remaining funds is a smoothed value of assets. The difference between (1) the expected return on the actuarial value of assets at the beginning of the year, based on the investment return assumption and the net non-investment cash flows, and (2) the actual return on the market value of assets is smoothed equally over five years. As a result, there are five components of excess/shortfall returns to be smoothed each year.

The preliminary actuarial value for the current valuation is the preliminary actuarial value from the prior year plus non-investment cash flows (contributions less benefits and refunds) plus the expected return on the market value of assets at the applicable assumed investment return and the current year's recognition of each of the prior five year's excess/shortfall returns.

Amortization Method

Closed layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2019 is amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25-year period.

Actuarial Assumptions

Assumptions are based on the experience investigation prepared as of December 31, 2016 and adopted by the Board of Trustees on October 23, 2017 for use beginning with the January 1, 2018 actuarial valuation. The investment return assumption of 7.50% was adopted by the Board of Trustees on April 29, 2019, for use in the January 1, 2019 actuarial valuation.

Investment Return Assumption: 7.50% per annum, compounded annually.

Inflation: 2.50% per annum.

Cost of Living Adjustments (COLA): For retirees whose COLA is defined as the lesser of 3.00% and CPI-U, the assumed COLA is 2.50% per annum.

Payroll Growth for UAAL amortization: UAAL amortization payments increase at 2.00% per annum.

Illustrative Rates of Salary Increase:

Age	Salary Increases	
	General Employees	Firemen and Policemen
25	4.93%	9.47%
30	3.79	7.72
35	3.78	5.78
40	2.89	4.68
45	2.50	4.28
50	2.50	4.08
55	2.50	4.00
60	2.50	4.00
65	2.50	4.00

Annual increases of 2.50% per annum is assumed for Policemen, Firemen and General Employees on duty disability. The increases for duty disabled Firemen and Policemen affect both current duty disability benefits and future service retirement or extended life conversion benefits. The increases for General Employees affect only service retirement conversion benefits.

Deaths After Retirement: For regular retirees and survivors, the RP-2014 Healthy Annuitant Mortality Table, using 111% of rates for males and 110% of rates for females, projected generationally using Scale MP-2016, was used. 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 using Scale MP-2016, was used.

Deaths Prior to Retirement: For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016 was used.

Mortality Projection: All mortality rates are projected using generational improvement with Scale MP2016.

Illustrative Rates of Termination:

Age	<u>Less than 5 Years of Service</u>		<u>At least 5 Years of Service</u>	
	Males	Females	Males	Females
<u>General Employees</u>				
20	17.62%	24.05%	13.00%	14.30%
25	15.93	24.12	12.68	14.30
30	11.31	16.77	6.92	8.45
35	10.66	15.60	7.19	7.27
40	8.78	10.40	4.51	8.45
45	9.10	9.23	2.99	4.67
50	8.32	8.58	2.38	3.38
55	6.83	7.80	1.99	3.64
60	-	-	-	-
<u>Firemen and Policemen</u>				
20	6.15%	5.55%	-	-
25	2.33	4.65	1.34%	2.33%
30	2.75	7.38	1.13	3.34
35	3.38	6.63	1.10	1.88
40	4.40	4.40	0.90	0.97
45	5.40	4.40	1.08	1.53
50	8.80	4.40	4.05	6.70
55	10.00	4.40	-	-
60	-	-	-	-

All terminations are assumed to be involuntary.

Members who terminate vested are assumed to take a refund if it is more valuable than their deferred benefit.
Regular interest credited on contribution account balances is assumed to be 4.0%.

Illustrative Rates of Early and Normal Retirement:

Age	Early Retirement		Normal Retirement			
	General Employees	General Employees		Firemen	Policemen	
		Males	Females		Not in Combined Fund	In Combined Fund
42						10%
43						25
44						25
45						25
46						32
47						32
48				10%		32
49				13		25
50				13		25
51				13	44%	25
52				18	44	25
53				18	24	25
54		35%	26%	20	24	25
55	4%	45	26	25	24	25
56	4	30	17	25	40	25
57	4	27	15	30	35	25
58	4	27	20	35	35	25
59	4	22	20	35	35	25
60	4	19	19	35	35	25
61	4	19	20	50	35	25
62	4	28	25	50	50	50
63	4	20	18	100	100	100
64	4	20	18	100	100	100
65		30	25	100	100	100
66		30	30	100	100	100
67		18	20	100	100	100
68		18	20	100	100	100
69		18	20	100	100	100
70		100	100	100	100	100

Illustrative Rates of Disability:

Age	Disability Rates		
	General Employees	Firemen	Policemen
20	0.050%	0.064%	0.030%
25	0.050	0.136	0.030
30	0.060	0.280	0.100
35	0.077	0.760	0.187
40	0.131	0.960	0.231
45	0.162	0.960	0.231
50	0.256	1.080	0.210
55	0.527	1.080	0.210
60	0.077	1.080	0.210
65	0.200	1.080	0.210

Elected officials are assumed to become disabled at the same rate as General Employees.

Duty Disabilities:

Employee Group	Percentage of Disabilities Incurred in the Performance of Duty	Percentage of Duty Disabilities Assumed Eligible For The 90% Benefit	Under The Heart & Lung Law	Assumption Adopted January 1
General Employees	10.0%	N/A	N/A	2018
Police other than MPA	70.0%	5.0%	N/A	2018
MPA enrolled on or before 4/18/2005	70.0%	5.0%	N/A	2018
MPA enrolled after 4/18/2005	62.5%	7.5%	N/A	2008
Fire other than MPFFA	90.0%	5.0%	15.0%	2008
MPFFA enrolled on or before 10/3/2005	90.0%	5.0%	15.0%	2008
MPFFA enrolled after 10/3/2005	81.2%	6.9%	20.8%	2008

Upon reaching their service conversion date, 100% of Policemen and Firemen who become duty disabled are assumed to convert to a service retirement benefit.

Marriage Assumption and Duty Disability Child Allotments:

It is assumed that female spouses are three years younger than males. In absence of evidence to the contrary, it is assumed that 85% of General Employees and 95% of Policemen and Firemen are married, with dependent children, described by the following table:

Member's Age at Death or Disability	Number of Dependent Children	Age of Youngest Child
20	0.0	-
25	1.5	1
30	2.5	2
35	2.5	5
40	2.5	8
45	2.0	11
50	1.5	14
55	1.0	15
60 and Over	0.0	-

The percentage of retiring employees assumed to elect option 3, the subsidized 50% option, is 25% for males and 15% for females. The percentage of General Employees assumed electing the 100% PSO option before retirement is 40% for males and 15% for females. For Firemen and Policemen, 95% are assumed to elect the 100% PSO option before retirement.

Duty Deaths:

The following percentages of deaths in active service are assumed to incur in the performance of duty:

General Employees: 5%
Police & Fire: 10%. In addition, amongst firemen, 25% of duty deaths are assumed to occur under the Heart and Lung Law.

Imputed Military Service:

The following percentages of eligible members are assumed to earn 1 year of imputed military service credit:

General Employees: 10%
Police: 13%
Fire: 13%

These percentages are based on troop strength statistics from the Department of Defense website. (Adopted 1/1/2003)

Seasonal Service Credit: The following percentages of eligible members are assumed to receive one year of reasonable service credit:

Member's Union or Bargaining Group	Percentage with Seasonal Service	Assumption Adopted January 1
District Council 48, AFSCME	27.09%	2005
Fire Equipment Dispatchers Local 494, IBEW	0.00%	2006
Electrical Group Local 494, IBEW	31.00%	2006
Machine Shop Local 494, IBEW	12.00%	2005
Bridge Operators Local 195, IBEW	28.57%	2005
Joint 129/48 Local 139, IOUE & DC48	100.00%	2005
Machinists Local 510, IAM	5.00%	2005
Sanitation Local 61, LIUNA	98.06%	2005
TEAM (Techs, Eng, Archs of Milw)	5.00%	2005
MBCTC (Bricklayers, Carpenters, Cement Masons, Painters, Iron Workers)	10.00%	2005
Police Sworn Management, Police Civilian Management, Managers, Elected Officials (except mayor)	3.13%	2005
Non-represented in the Police Department and General City non-represented	5.00%	2005

Miscellaneous

Future Service Accrual: For members active on the valuation date, credited service in each future year is assumed to be the greater of credited service earned in the year prior to the valuation, or the average of the three highest years of service credit out of the five years that preceded the valuation date. New hires are assumed to accrue a full year of service in each future year (adopted 1/1/2007).

Annualized Compensation: For active members, their prior year reported compensation amount is annualized based on their Future Service Accrual and further increased by a leap year adjustment factor of 1.0034 ($26.089285 \div 26$).

Deemed Inactives: Active members who worked less than 100 hours in the prior year, but who have not officially terminated employment are treated as Inactives. These members are not assumed to earn additional service credit in future years.

Decrement Timing: All withdrawals, deaths, disabilities, and retirements are assumed to occur mid-year.

Liability for Inactive Members: The data provided for inactive members does not contain all the elements to calculate the member's deferred benefit. The deferred benefit amounts for these members are estimated using the member's life-to-date earnings and assumed salary increases. For terminated members who are missing a termination date on their record, it is assumed that they terminated at age 35. The actuary is collecting data so that future members' deferred benefits can be estimated.

Administrative Expenses: Based on the most recent fiscal year end.

SUMMARY OF BENEFIT PROVISIONS

A summary of the main benefit provisions of the Retirement System and of the sources of revenue from which benefits are paid is presented in the following digest. Items in parentheses in the text are the provisions applicable to law enforcement officers.

Eligibility for Membership

Membership is optional for all Employees that were in service as of January 1, 1938. New Employees are automatically members as a condition of employment. Membership is optional for elected officials. Note that unless specifically stated, elected officials follow the same rules as General Employees.

Additionally, effective January 1, 2014, there are two tiers of benefits. Tier 1 is for General Employees enrolled prior to January 1, 2014, and all Fire and Police Employees. Tier 2 is for General Employees enrolled on or after January 1, 2014.

Participation in the Combined Fund

On January 19, 2001 the Combined Fund was created and was retroactive to January 1, 2000. Individuals who participate in the Combined Fund may be eligible for certain benefit enhancements which are described in this Summary of Plan Provisions. Members who enroll in the ERS after June 28, 2000, and their eligible survivors, are automatically participants in the Combined Fund. Members enrolled in the ERS on or before June 28, 2000, and their eligible survivors, participate in the Combined Fund provided that the members consented in writing to the Global Pension Settlement. Eligible survivors of members or retirees who died on or before June 28, 2000 participate in the Combined Fund provided that the eligible survivors consented in writing to the Global Pension Settlement. Members or survivors whose benefit payments ceased prior to January 1, 2000, are not eligible for benefits from the Combined Fund.

Creditable Service

Creditable service equals prior service plus membership service. Prior service includes service as an employee prior to January 1, 1938, or prior to an amendment which made the employee eligible for membership in the ERS. Membership service means service as an employee since last becoming a member, on account of which contributions are made.

- For most Employees, 2080 hours of service constitute one year of creditable service. For prevailing wage Employees (carpenters and other tradespeople) 2000 hours constitute one year. For members employed by the school board for a 10-month school year, 1600 hours of service constitute a year of creditable service. After July 2006, for members serving as firefighters, 2590 hours of service constitutes one year of creditable service. After September 2016, for members serving as firefighters, 2756 hours of service constitutes one year of creditable service.
- Under certain conditions creditable service may be granted for periods of absence due to military service.
- For purposes of computing the service retirement allowance only, creditable service is granted for periods of eligibility for a duty disability retirement allowance.
- No more than one year of creditable service is granted for service in a single calendar year.

Imputed Service

Imputed service credit may be granted, under specified conditions, to members who consented to the Global Pension Settlement. Imputed service credit is used to calculate the amount of certain benefits, but is not used to determine eligibility for any kind of benefit. An individual may be eligible for one or more types of imputed service credit.

Eligibility for Imputed Service Credit

Only individuals participating in the Combined Fund can become eligible for the following types of imputed service credit.

- a) Imputed military service credit: The member must have been active in the armed forces of the United States of America prior to his or her enrollment in the ERS, and must have been honorably discharged. A member must be described as in 36-04-1-c. An individual eligible for imputed military service credit must apply for the credit.
- b) Imputed fire and police service credit: The member must be described as in 36-04-4-a. The member must have been in active ERS service as a fireman or policeman as of January 1, 2000, and must also retire from ERS service as a fireman or policeman, or die while a fireman or policeman eligible for protective survivorship option benefits. To be eligible, the member must retire or die as a policeman or fireman and must have attained the minimum service retirement requirements as outlined in 36-05-1.
- c) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund, (the "Fund"): The member must be described as in 36-04-4-b. The member must have been a policeman who was an active member of the "Fund" as of January 1, 2000. If the policeman was in active ERS service as of January 1, 2000, he must either retire as a policeman on a service retirement allowance at the minimum service retirement age of 57 or after completing 25 years of creditable service as a fireman or policeman; or he must retire on a policeman's duty disability retirement allowance and subsequently convert to a service retirement allowance. If the policeman was retired on a duty disability retirement allowance as of January 1, 2000, then he must subsequently convert to a service retirement allowance.

Benefits Affected by Imputed Service Credit

- a) Imputed military service credit and/or imputed fire and police service credit: The amount of the service retirement allowance, the conversion service retirement allowance, protective survivorship option benefits, and the extended life duty disability retirement allowance are affected. If the eligible individual is also entitled to a 5% Lump Sum Bonus, and/or an 8.6% Dissolution Bonus that is based on the affected benefit, then the imputed service credit is included in calculating the base for the bonus payment(s).
- b) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund: The amount of the service retirement allowance and the conversion service retirement allowance are affected. If the service retirement allowance is affected, then the imputed service credit is included in calculating the base for the 5% Lump Sum Bonus.

See the benefit descriptions later in this summary for further details on how imputed service credit is used.

Amount of Imputed Service Credit

- a) Imputed military service credit: A period of eligible military service consists of a period of at least 90 consecutive days of active service in the armed forces of the United States prior to enrollment in the ERS. Total eligible military service equals the sum of all periods of eligible military service. Imputed military service credit equals one-third of the member's total eligible military service, to a maximum of three years of imputed military service credit.
- b) Imputed fire and police service credit: For policemen and firemen with 20 years of creditable service as a fireman or policeman - 1.5 years. For firemen with less than 20 years of creditable service as a fireman or policeman: 1.5 years times the full years of creditable fire and police service, divided by 20.
- c) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund: 2 years.

Seasonal Service

Seasonal service credit may be granted under specified conditions to certain General City Employees. Seasonal service credit is used to calculate the amount of certain benefits but is not used to determine eligibility for any kind of benefit.

Eligibility for Seasonal Service Credit

In order to be eligible for seasonal service credit, a member must be a General City employee with five or more years of City service credit, and a member of one of the groups as outlined in 36-04-1-d.

Benefits Affected by Seasonal Service Credit

Seasonal service credit affects the amount of the service retirement allowance, the conversion service retirement allowance and protective survivorship option benefits. If the eligible individual is also entitled to a 5% Lump Sum Bonus that is based on the affected benefit, then the seasonal service credit is included in calculating the base for the bonus payment.

Amount of Seasonal Service Credit

Seasonal service is based on the hours worked as a City Labor-Seasonal employee and/or Playground Laborer-Seasonal employee (MPS), but limited to one year of additional service credit.

Qualifying for an ERS Benefit

Rules regarding qualifying time are encapsulated in the ERS Board Rules & Regulations, XV.G. The rules have been adopted and applied prospectively for enrollments prior to 1995, 1995 to 2001 and post 2001. All members are fully vested after attaining four years of qualifying time.

Earnable Compensation

The annual regular base salary that would be payable to a member if he or she worked the full normal working time for his or her position as described in 36-02-12. Earnable compensation for the calendar year preceding retirement may also include special pays as negotiated in labor agreements such as longevity in rank pay, (limited) variable shift assignment pay, police liaison officer pay, and/or certification pay for policemen; and emergency medical technician pay for firemen. Earnable compensation for school board Employees represented by Local 950, OEIU, also includes site differential pay.

Final Average Salary

- a) For General Employees, final average salary means the average annual earnable compensation computed on the 3 years of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
- b) For policemen and firemen, final average salary means the average annual earnable compensation computed on the year of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
- c) For members converting from a duty disability retirement allowance to a service retirement allowance, the service retirement allowance is computed on the basis of the current compensation of the member's position at the service retirement date.

Service Retirement

Eligibility for Service Retirement

For Tier 1 Benefits (applicable to General Employees enrolled prior to January 1, 2014 and all Fire and Police Employees), eligibility for service retirement is as defined under 36-05-01 as follows:

- a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 60 for General Employees and age 57 for policemen and firemen.
- b) General Employees that have attained age 55 and completed 30 years of qualifying time are eligible for service retirement.
- c) Policemen who participate in the Combined Fund are eligible for service retirement at any age after attaining 25 years of fire or police qualifying time, if they were hired prior to December 20, 2015.
- d) Policemen who participate in the Combined Fund, who have attained age 50 are eligible for service retirement after completing 25 years of police qualifying time, if they were hired on/after December 20, 2015.
- e) Firemen who participate in the Combined Fund, who have attained age 49 and completed 22 years of fire or police qualifying time, are eligible for service retirement, if they were hired prior to July 30, 2016.
- f) Firemen who participate in the Combined Fund, who have attained age 52 and completed 25 years of fire qualifying time, are eligible for service retirement, if they were hired on/after July 30, 2016.

- g) Policeman and firemen who are not participants in the Combined Fund are eligible for service retirement after attaining age 52 and completing 25 years of fire or police qualifying time.

For Tier 2 Benefits (applicable to General Employees enrolled on or after January 1, 2014), eligibility for service retirement is as defined under 36-05-01 as follows:

- a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 65 for General Employees.
- b) General Employees that have attained age 60 and completed 30 years of qualifying time are eligible for service retirement.

Amount of Service Retirement Allowance

The amount of a member's service retirement allowance under 36-05-01 is equal to the following:

- a) For General Employees, enrolled prior to January 1, 2014, 2% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary. For General Employees, enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary.
- b) For firemen enrolled prior to March 1, 1989, and policemen enrolled prior to July 1, 1989, and who were in active service on or after January 1, 1995, 2.5% of final average salary for each year of creditable service or imputed service (of any kind).
- c) For firemen enrolled after February 28, 1989, and policemen enrolled after June 30, 1989, 2.5% of final average salary for each year of creditable service or imputed military service, limited to 90% of final average salary, plus 2.5% of final average salary for each year of imputed fire and police service or imputed service under the dissolution of the Firemen and Policemen's Survivorship Fund.
- d) For elected officials enrolled prior to January 1, 2014, 2.6% of final average salary for each year of creditable service as an elected official for years before 1996, limited to 70% of the final average salary; from 1996 forward the rate of accrual for creditable service, imputed military service, or seasonal service is 2.5% except for the mayor, who will have an accrual rate of 2.0%, limited to 70% of the final average salary, except for elected officials who were enrolled prior to 2014 and are first elected to office on or after January 1, 2014, in which case their accrual rate is 2% for each year if they contribute 5.5% of their earnable compensation, or 2.5% for each year if they contribute 7% of their earnable compensation. For elected officials enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service as an elected official limited to 70% of the final average salary.

Funds Charged with Service Retirement Allowance

For individuals participating in the Combined Fund, service retirement allowance payments are charged to the Combined Fund. For all other individuals, the service retirement allowance is charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member enrolled on or after February 1, 1996.

Ordinary Disability Retirement Allowance

Eligibility for Ordinary Disability Retirement Allowance

A member who the medical council certifies is mentally or physically incapacitated for further performance of duty that such incapacity is likely to be permanent and that such member should be retired, is eligible for the ordinary disability retirement allowance. The ordinary disability allowance is not payable if the member qualifies for the duty disability allowance.

Amount of Ordinary Disability Retirement Allowance

Imputed service credit and seasonal service credit are not used in any part of the calculation of the Ordinary Disability Retirement Allowance. The “service retirement allowance” referred to below is calculated based on creditable service only.

- a) For General Employees, 90% of the service retirement allowance based on creditable service to date of disability retirement, but no less than 25% of final average salary, provided such amount does not exceed 90% of the retirement allowance payable had the member continued in service to the minimum service retirement age.
- b) For policemen and firemen hired after January 1, 1971, who have 5 years of service, 25% of final average salary plus 2% thereof for each year of creditable service in excess of 5 years up to a maximum of 50% of final average salary.
- c) For policemen and firemen hired before January 1, 1971, the greater of the benefit described in (a), or the benefit described in (b).
- d) The benefit is payable for life while the member remains disabled, except that for General Employees with less than 10 years of qualifying time, the duration is limited to one-fourth (1/4) of the period of the service accrued to the date of disability.
- e) Members receiving benefits for life may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.

Funds Charged with Ordinary Disability Retirement Allowance

Ordinary disability retirement allowance payments are charged to the Combined Fund if the eligible individual is a participant in the Combined Fund. Otherwise, the allowance is charged to (i) the Retirement Fund, if the member’s enrollment date is before February 1, 1996, and (ii) the Combined Retirement and Disability Fund, if the member’s enrollment date is on or after February 1, 1996.

Duty Disability Retirement Allowance

Eligibility for Duty Disability Retirement Allowance

If a member becomes permanently and totally incapacitated for duty as a result of the performance of his duty, and his mental or physical incapacitation is medically certified, such member is eligible for a duty disability retirement allowance. Unless the member is beyond his/her conversion age, in which case the member would be eligible for an extended lifetime Duty Disability benefit. The medical certification is made by the Medical Council for General Employees, for members of the MPA enrolled after June 28, 2005, and for members of the MPFFA enrolled after December 13, 2005 with disability based on a mental injury. For all other members, the medical certification is made by the Medical Panel, except as indicated below. There are certain diseases that are considered presumptive for purposes of duty disabilities.

All new duty disability applications are reviewed by the Medical Council effective June 19, 2016 for MPA members, effective January 1, 2016 for MPSO members, and effective July 29, 2016 for MPFFA members.

Effective July 14, 2015, a new state law was enacted related to duty disability benefits for mental injuries (section 62.624 Wis. Stat.). The ERS may only provide a duty disability benefit for a mental injury if the following criteria are met:

- a) The mental injury resulted from a situation of greater dimensions than the day-to-day mental stresses and tension and post-traumatic stress that all similarly situated Employees must experience as part of the employment, **and**
- b) The employer certifies that the mental injury is a duty-related injury.

Only if a duty-related mental injury has occurred, can the duty disability application be forwarded to the Medical Panel or Medical Council for the examination and requisite certification.

Amount of Duty Disability Related Benefits

Imputed service credit and seasonal service credit are not used when calculating a duty disability retirement allowance. Imputed service credit or seasonal service credit is used when calculating the conversion service retirement allowance referred to in paragraphs (a) - (c) below. Eligibility for imputed military service credit depends upon the date of the conversion, not upon the date of the duty disability retirement.

- a) For General Employees, the duty disability retirement allowance equals 75% of the member's final average salary. Members receive the allowance, while disability continues, until the later of age 65, or for a period of 5 years, at which time they convert to a service retirement allowance. General Employees receiving duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.
- b) For firemen and policemen, the duty disability retirement allowance is 75% of the current annual salary for the position held by the member at retirement, plus \$40 per month for each child younger than age 18 (up to a maximum of 20% of the member's salary). In certain cases of extreme disability, when approved by a panel of physicians, the disability allowance will be 90% of such salary. Duty disability benefits paid to firemen on account of heart and lung disease are at the 75% level. In the event of the death of a policeman or fireman receiving a 75% or 90% disability allowance, 70% or 75%, respectively, of the amount of the member's allowance shall be paid to the member's spouse during her lifetime.

The 90% duty disability allowances are payable for life. For policemen enrolled on or after January 1, 1990, and firemen enrolled on or after December 17, 1989, the 75% duty disability allowances are payable until the earlier of attainment of age 57, or completion of 25 years of service and attainment of age 52, at which time the member must either convert to a service retirement allowance or irrevocably elect to receive a recalculated duty disability allowance, referred to as an extended life duty disability allowance, as described in (c), below. Different conversion age requirements apply to policemen enrolled prior to January 1, 1990, and firemen enrolled prior to December 17, 1989, as discussed in (d), below. A fireman or policeman who becomes duty disabled on or after his conversion age may choose between a service retirement or extended life duty disability retirement.

- c) The extended life duty disability allowance referred to in (b), above, equals the lesser of the conversion service retirement allowance, or 75% of the current annual salary, provided further that the benefit will not be less than 57% of current annual salary for a fireman, or 60% of current annual salary for a policeman. "Current annual salary" here refers to the salary at the conversion age, for the position held by the member at the time of injury. The extended life duty disability allowance is payable for life and, unlike the duty disability allowance, is a fixed amount that does not change after the conversion age, notwithstanding any cost of living adjustments. Firemen or policemen receiving extended life duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary. Their spouses are not eligible to receive the 70% benefit payable to surviving spouses of firemen and policemen who die while in receipt of the 75% duty disability benefit.
- d) For policemen enrolled prior to January 1, 1990, and firemen enrolled prior to December 17, 1989, the conversion age determination depends upon the member's enrollment date and whether or not the member signed the DeBraska II release form.

Under Charter Ordinance 980130 Substitute 2 (DeBraska I), duty disabled firemen and policemen who retired on duty disability before October 17, 1992, have a conversion age equal to the greater of the conversion age in effect when they were enrolled, or the conversion age in effect at the time of their disability retirement.

Under Charter Ordinance 000789 (DeBraska II), duty disabled firemen and policemen who signed the DeBraska II release form are subject to the following conversion requirements: (i) members retired on duty disability prior to February 8, 1972, will receive duty disability benefits for life; (ii) members enrolled prior to February 8, 1972, who are either policemen who retired on duty disability on or after August 1, 1985, or firemen who retired on duty disability on or after March 1, 1984, will have a conversion age of 63; (iii) members enrolled on or after February 8, 1972, who retired on duty disability on or after October 17, 1992, will not be required to convert to service retirement prior to the conversion age requirements that were in effect when they enrolled; and (iv) for all other members who signed the DeBraska II release form, there is no difference between the conversion requirements of Charter Ordinance 980130 Substitute 2, and Charter Ordinance 000789. In general, only members who were duty disabled prior to January 1, 2001 were given the opportunity to sign the DeBraska II release form.

Under the Charter Ordinance (which reflects the Rehrauer decision) firemen and policemen who retire (or previously retired) on duty disability and who did not sign the DeBraska II release form will convert at the highest conversion age agreed upon during their

employment (Section 36-05-3). Members who enrolled prior to February 8, 1972, who are either policemen who retired on duty disability on or after November 1, 1976, or firemen who retired on duty disability on or after October 1, 1977, will receive duty disability for life if they did not sign the DeBraska II release form, and will have a conversion age of 63 if they did sign the DeBraska II release form.

Funds Charged with Duty Disability Related Benefits

- a) For participants in the Combined Fund, duty disability benefits paid to members, benefits paid to survivors of members who die while duty disabled, child allotment payments, conversion service retirement benefits, and extended life duty disability benefits are paid from the Combined Fund.
- b) For General Employees who do not participate in the Combined Fund, duty disability benefits, and survivor benefits paid to beneficiaries of General Employees who elect an optional form of payment and die while disabled, are paid from (i) the General Employees Duty Disability Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.
- c) For members who do not participate in the Combined Fund, benefits paid after conversion to either a service retirement allowance or an extended life disability benefit are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Ordinary Death Benefit

Eligibility and Amount of Ordinary Death Benefit

- a) In the event of death of a member while in service, a death benefit equal to the sum of the member's accumulated contributions, plus if the member has one or more years of active service, one-half his final average salary is payable to the designated beneficiary. Optional forms of payment of such benefit to the beneficiary are provided. If the member had elected a protective survivorship option – and duty death benefits are not payable – such option will become effective and the ordinary death benefit will not be payable. If a duty death benefit is payable the ordinary death benefit will not be paid.
- b) Unless the member elects an optional death benefit, the death benefit subsequent to retirement is the amount remaining, if any, of the member's contributions with interest to retirement less the sum of the allowance payments made prior to the member's death.

Funds Charged with Ordinary Death Benefits

Ordinary death benefits paid on behalf of a participant in the Combined Fund are charged to the Combined Fund. Otherwise, ordinary death benefits are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Protective Survivorship Option

Eligibility and Amount of Protective Survivorship Option

Firemen may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 49 and completion of 22 years of qualifying time as a fireman or policeman, or age 52 and 25 years of qualifying time as a fireman or policeman, or age 57. Policemen may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 57, or completion of 25 years of qualifying time as a policeman or fireman. Firemen and policemen who fail to elect a PSO during the eligible period are deemed to have elected an Option 2 PSO with the spouse as the named beneficiary.

General Employees who enrolled prior to January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 60 or completion of 30 years of qualifying time and attainment of age 55. General Employees who enrolled on or after January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 65, or completion of 30 years of qualifying time and attainment of age 60.

Firemen and policemen are allowed to reselect a PSO if they marry, or divorce, and to select a different option and/or beneficiary at retirement, if they wish. As of June 5, 2012, General Employees may also reselect a PSO if they marry, or divorce, or select a different option and/or beneficiary at retirement.

The PSO may be canceled if the joint annuitant predeceases the member before retirement; or if the member is divorced from the joint annuitant before retirement.

Under a PSO, if a member eligible to retire on a service retirement allowance dies prior to retirement, benefits begin to the named beneficiary just as if the member retired under such option immediately prior to his or her death, except that imputed service credit arising from the dissolution of the Firemen and Policemen's Survivorship Fund will not be used in the calculation of the PSO benefit. If a fireman eligible for PSO coverage dies prior to age 49, benefits for the named beneficiary will be deferred until the date the fireman would have attained age 49. Imputed military service, imputed fire and police service, and seasonal service credit may be used in the calculation of the deferred PSO benefit.

In all cases where the requirements are met for both a PSO benefit and a duty death benefit, the duty death benefit will be payable in lieu of the PSO.

Funds Charged with PSO Benefits

PSO benefits for participants in the Combined Fund are charged to the Combined Fund. Benefits for individuals who do not participate in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Duty Death Benefits

Eligibility and Amount of Duty Death Benefits

In the event the member's death occurs in the performance of his duty, a lump sum payment equal to the member's accumulated contributions, plus an annuity of 60% of such deceased member's final average salary will be paid to one of the following (payable in this order):

- The member's surviving spouse
- The member's children until their 21st birthday
- The member's dependent parents
- Death of a fireman that is due to heart or lung disease is considered a duty death.

Funds Charged with Duty Death Benefits

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. Heart & Lung duty death benefits payable to individuals who are not participants in the Combined Fund are charged to the Heart & Lung Fund. Duty death benefits (other than Heart & Lung) payable to individuals who are not participants in the Combined Fund are charged to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Member Contributions

Member contribution rates are the following percentages of annual salary:

General Employees	5.5% (tier 1 – enrolled prior to January 1, 2014) 4.0% (tier 2 – enrolled on or after January 1, 2014)
Firemen and Policemen	7.0%
Elected Officials	7.0% (tier 1 – enrolled prior to January 1, 2014 and elected to an office prior to January 1, 2014; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employee was paying contributions prior to being elected, employee pays contributions at the rate they were paying prior to becoming an elected official; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employer was picking up contributions on behalf of the employee prior to being elected, employer pays 7.0%) 4.0% (tier 2 – enrolled on or after January 1, 2014)

Under state law, per 2011 Wisconsin Act 10, participating employers are no longer permitted to make contributions on the member's behalf (with the exception of contractually agreed upon arrangements).

Member contributions made for or by participants in the Combined Fund are credited to the Combined Fund. Member contributions made for or by individuals who are not participants in the Combined Fund are credited to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Pension Escalators

Several different pension escalators are paid by the ERS as listed and described under section 36-05-1(h). They are as follows:

- Fire and Police \$50 Escalator

Eligible Groups and Amounts

- a) Firemen in Local 215 who retired under a service retirement allowance between March 1, 1990, and December 31, 1992; members of the Milwaukee Police Association (MPA) who retired under a service retirement allowance between January 1, 1990, and December 31, 1992; members of the Milwaukee Police Supervisors Organization who retired under a service retirement allowance between January 1, 1991, and December 31, 1992; and firemen in Local 215 or members of the MPA who elect a deferred retirement allowance after separating from service between January 1, 1993, and December 31, 1994, with 25 years of service; are eligible for a pension escalator which increases their allowance by \$50 per month on the 4th, 7th, and 10th anniversary of retirement.
- b) Members who both retired on duty disability and converted from duty disability to service retirement during the eligibility period are eligible for the escalators on the 4th, 7th, and 10th anniversaries of their conversion dates.
- c) The surviving spouses of eligible retirees, or of members who died during the eligibility period, are eligible provided that the member elected an optional benefit at retirement – or elected a protective survivorship option (PSO) prior to retirement – with the spouse as beneficiary. The member's surviving spouse receives increases on the member's 4th, 7th, and 10th anniversary of retirement (or spouse's retirement date in the case of a PSO) with the amount of the escalator adjusted to reflect the option elected by the member.

Funds Charged with Duty Death Benefits

Fire and Police \$50 escalators paid to participants in the Combined Fund are charged to the Combined Fund.

Fire and Police \$50 escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- January 1996 Catch-up COLA for pre-October, 1987 Retirees

Eligible Group

- a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to October 1, 1987, or who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.
- b) Firemen and policemen who retired prior to October 1, 1987, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, firemen and policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.

- c) Surviving spouses of eligible retirees, or of members who elected a PSO and died prior to October 1 1987, after naming their spouse as the designated beneficiary under Option 2, Option 3, or Option 4 with a percentage to the beneficiary.

Timing and Amount of Increase

The catch-up COLA was a permanent increase in the ERS monthly benefit which was granted effective January 1, 1996. The increase was an amount equal to (i) the total ERS benefit in payment, multiplied by the greater of (ii) the total percentage change in the cost of living for each full calendar month between the 8th anniversary of service retirement and October 1, 1995, and (iii) the total percentage change required to bring the member's allowance to 60% of its full inflation adjusted value considering inflation for the period from retirement to October 1, 1995. The percentage change in the cost of living was measured by the increase in the CPI-U, U.S. Cities, as reported by the U.S. Department of Labor, Bureau of Labor Statistics.

When the catch-up COLA was calculated, the factor was not applied to supplemental, pass through benefits, which are paid by the ERS but are not a liability of the ERS. These pass through benefits, which appear on the pension payroll data supplied to the actuary, are part of an old guaranteed minimum program. The ERS is a paying agent for these benefits, but is reimbursed by the City for all such payments.

Funds Charged

Catch-up COLA amounts paid to participants in the Combined Fund are charged to the Combined Fund. Catch-up COLA amounts paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- 2% Escalator for pre-1993 Retirees

Eligible Group

- a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to January 1, 1993, or who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.
- b) Firemen and policemen who retired prior to January 1, 1993, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, firemen and policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.
- c) Surviving spouses of eligible members who elected Option 3 with the spouse as the beneficiary, or of members who died prior to January 1, 1993 after electing an Option 3 PSO with the spouse as the beneficiary.

Timing and Amount of Increase

The first increase occurs with the later of the January 1996 installment or the installment next following the 8th anniversary of the member's service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

The first increase is 2% of the total ERS benefit in payment. That is, the monthly benefit to which the increase is applied includes \$50 fire and police escalators, and the January, 1996 catch-up COLA amount, if any, but it excludes supplemental pass through payments, if any. Increases after the first are also 2%, and are compounded -- that is, they are applied to the total ERS benefit in payment, including all prior increases, and again, excluding any supplemental pass through payments. (The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.)

Funds Charged

2% escalators paid to participants in the Combined Fund are charged to the Combined Fund. 2% escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- CPI Escalator for post-1992 Fire and Police Retirees who don't Participate in the Combined Fund and Pre-2000 CPI Escalator for post-1992 Fire and Police Retirees who do Participate in the Combined Fund

Eligible Group

- a) Firemen and policemen in active service on or after January 1, 1993, who become eligible to retire on service retirement at age 57 or after attaining age 52 and completing 25 years of service.
- b) Firemen and policemen who retire on either a 75% Fire & Police duty disability benefit or a Heart & Lung duty disability benefit (i) between January 1, 1993, and December 31, 1994, and thereafter convert to service retirement; or (ii) on or after January 1, 1995, and who are eligible to elect between service retirement and extended life duty disability benefits at their conversion age.
- c) Police in active service on or after January 1, 1995, who separate with 25 years of service and elect a deferred retirement allowance.
- d) Surviving spouses of eligible members who elect Option 2 or 3, or who elect Option 4 with a percentage to the spouse, or who elect a PSO with a percentage to the spouse.

Timing and Amount of Increase

For members who retired on service retirement between January 1, 1993, and December 31, 1994; or who retired on duty disability between January 1, 1993, and December 31, 1994, and later convert to service retirement; and for eligible surviving spouses of members who died prior to retirement between January 1, 1993, and December 31, 1994, with PSO coverage in effect; the first increase occurs for March of the year following the first full calendar year of service retirement. For all others, the first increase occurs one full year after the member's service retirement date. Thereafter, increases occur annually on the anniversary of the first increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. (The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.)

Funds Charged

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. For individuals who are not participants in the Combined Fund: (i) benefits are charged to the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) benefits are charged to the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

- Post-1999 CPI Escalator for post-1992 Fire and Police Retirees who Participate in the Combined Fund

Eligible Group

The eligible group is restricted to individuals who were firemen and policemen who retired on duty disability between October 17, 1992, and December 31, 1992; or who were in active service on or after January 1, 1993, who either retire as firemen or policemen, or who die in active service as firemen or policemen; and their eligible surviving spouses. The types of benefits that receive the CPI escalator include:

- a) The service retirement allowance and ordinary disability retirement allowance.
- b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance or the extended life duty disability retirement allowance.
- c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.
- d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
- e) The fire and police or heart & lung duty disability surviving spouse allowance.
- f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999

- a) The first post-1999 increase occurs the later of March 2000 and March of the year following the first full calendar year of retirement for: members who retired on service retirement or ordinary disability between January 1, 1993, and December 31, 1994; or who convert to service retirement after a period of duty disability which commenced between January 1, 1993, and December 31, 1994; or who separated from service between January 1, 1993, and December 31, 1994, and subsequently retire on a deferred, early, involuntary separation, or County transfer/ State reciprocity allowance; eligible spouse survivors of such members, including PSO spouse survivors when the member died between January 1, 1993, and December 31, 1994; duty death surviving spouses of members who died between January 1, 1993, and December 31, 1994; and duty disability surviving spouses where both the member's duty disability retirement date and duty disabled death date were between January 1, 1993, and December 31, 1994.
- b) The first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member's date of death for: duty disability surviving spouses where the member's duty disability death date is on or after January 1, 1995.
- c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member's retirement or pre-retirement death. (Note: this group includes members who retired on duty disability between October 17, 1992, and December 31, 1994, who subsequently elect an extended life duty disability retirement allowance, and members who retired on duty disability between October 17, 1992, and December 31, 1992, who subsequently convert to service retirement.)

Thereafter, increases occur annually on the anniversary of the first post-1999 increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. If the member retired on duty disability between October 17, 1992, and December 31, 1992, and subsequently converts to service retirement, then the 2nd, 3rd, and 4th increases will not be less than 1.5%, and the 5th and subsequent increases will not be less than 2%. (The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.)

Funds Charged

The CPI escalator is charged to the Combined Fund.

- 2% Guarantee for Fire and Police CPI Escalator for Participants in Combined Fund

The eligible group is restricted to firemen and policemen who retire on service retirement, their spouse survivors, and PSO spouse survivors. In addition, firemen members of Local 215 and policemen members of the MPA must have been in active service on or after January 1, 1998; policemen members of the MPSO must have been in active service on or after January 1, 1999; and non-represented firemen and policemen must have been in active service on or after January 1, 2000. The benefit is a guarantee that the CPI Escalator will not be less than 2% per annum.

- 2% Escalator for post-1992 General Employee Retirees who do Not Participate in Combined Fund

Eligible Group

- a) General Employees who retire on a service retirement allowance on or after January 1, 1993 who have either (i) attained age 60, or (ii) completed 30 years of service and attained age 55.
- b) General Employees receiving a duty disability retirement allowance who convert to service retirement on or after January 1, 1993.
- c) Spouses of eligible members who either elect Option 3 at retirement with the spouse as beneficiary, or who die after electing an Option 3 PSO with the spouse as beneficiary.

Timing and Amount of Increase

The first increase occurs with the installment next following the 8th anniversary of the member's service retirement or conversion to service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

Each increase is 2%, and increases after the first are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. (The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.)

Funds Charged

For members whose enrollment dates are prior to February 1, 1996, the 2% escalator for post-1992 general employee retirees is paid from the Retirement Fund. For members whose enrollment dates are on or after February 1, 1996, the 2% escalator for post-1992 general employee retirees is paid from the Combined Retirement and Disability Fund.

- Post-1999 1.5% / 2% Escalator for General Employee Retirees and for Pre-1993 Fire and Police Retirees who Participate in the Combined Fund

Eligible Group

The eligible group includes (i) pre-1993 retirees and surviving spouses who are not eligible for either the 2% Escalator for pre-1993 retirees, or the Post-1999 CPI Escalator for post-1992 fire and police retirees; and (ii) post-1992 general employee retirees and their surviving spouses. The types of benefits that receive the 1.5%/2% escalator include:

- a) The service retirement allowance and ordinary disability retirement allowance for all members, and the duty disability retirement allowance for General Employees.

- b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance for all members or the extended life duty disability retirement allowance for fire and police.
- c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.
- d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
- e) The fire and police or heart & lung duty disability surviving spouse allowance.
- f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999

- a) The first post-1999 increase occurs for January 2000 for eligible Option 2 and 4 spouse survivors of members retired on a service retirement allowance or a conversion service retirement allowance - and for eligible Option 2 and 4 PSO spouse survivors - when the member's date of retirement or pre-retirement death was prior to January 1988.
- b) The first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's date of death for: duty disability surviving spouses of firemen and policemen.
- c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's retirement or pre-retirement death.

Thereafter, increases occur annually on the anniversary of the first increase.

All increases for the group described in paragraph (a) are 2% increases. For paragraphs (b) and (c), an increase which takes effect on the 2nd, 3rd, or 4th anniversary is a 1.5% increase. An increase which takes effect on the 5th or subsequent anniversary is a 2% increase. Increases after the first one are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. (The benefit initially payable to an eligible spouse upon the member's death includes the spouse's proportionate share of any increases in payment at the member's death, based on the option elected.)

Tier 2 Employees receive an increase of 2% on the fifth anniversary of their retirement and on each anniversary that follows, but only for service retirement.

Fire and Police Survivorship Benefits Prior to the Global Pension Settlement

The survivors of firemen or policemen who die in active service or while in receipt of a disability allowance may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. Eligible children include unmarried children who are either under the age of 18, or are over age 18, but who suffer from a disability which commenced before the age of 18. The amount of the survivorship benefit for a death occurring in 2000 is \$600 monthly for the spouse and one child or for two or more eligible children. If there is no surviving widow and only one child, the benefit is \$300. Upon attainment of age 57, \$300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disabled prior to age 18) or marriage. For member deaths that occurred prior to 2000 the monthly amount payable depends upon the plan provisions in effect at the member's death.

Fire and Police Survivorship Benefits for Survivors Participating in the Combined Fund

Survivors of firemen or policemen who died prior to 2000 while in active service or while retired on disability (and contributing to the Fire and Police Survivorship Fund) may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. For participants in the Combined Fund, the amount of the survivorship benefit for a death occurring prior to 2000 is \$600 monthly for the spouse and one child under age 18, or for two or more children under age 18. If there is no surviving widow and only one child, the benefit is \$300. The monthly amount payable to a disabled child over the age of 18 depends upon the plan provisions in effect at the member's death. Upon attainment of age 57, \$300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disability commenced prior to age 18) or marriage.

Survivorship Benefits for Participants in the Combined Fund are charged to the Combined Fund.

Separation Benefits

Eligibility and Amounts

Should a member separate from service, and no other benefit is payable, such a member will possibly be entitled to one of the options outlined below. Additional eligibility information about Separation Benefits is provided under 36-05-6.

- a) If the member has less than four years of creditable service, a refund of member contributions (not paid by the member's employer). Interest at 4.0% per annum on the 4%, 5.5%, or 7% member paid contributions is also payable.
- b) If the member has four years of creditable service, a deferred allowance payable at the minimum service retirement age.
- c) A refund of the member contributions and interest, including contributions paid on the member's behalf, is payable to (i) General Employees after 4 years of creditable service, or (ii) firemen or policemen after 10 years of creditable service.
- d) If the member's service is involuntarily terminated, or the member terminates voluntarily after attaining age 55 and completing 15 years of creditable service, such member may elect to receive a deferred allowance at the minimum service retirement age, or an immediate allowance that is the actuarial equivalent of the deferred allowance.
- e) If the member has 25 years of qualifying time as a fireman or policeman, and is not participating in the Combined Fund, a deferred allowance payable at age 52.
- f) If the member is a fireman with 25 years of qualifying time as a fireman or policeman, had not attained age 49 at the date of separation from service, and is participating in the Combined Fund, a deferred allowance payable at age 52.

Imputed service credit and seasonal service credit are not used when calculating separation benefits.

Funds Charged with Separation Benefits

Benefits paid to participants in the Combined Fund are charged to the Combined Fund. Separation benefits paid to individuals not participating in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Fund if the member's enrollment date is on or after February 1, 1996.

Lump Sum Bonus Payments

Under the Global Pension Settlement, various lump sum bonus payments may be made to eligible individuals participating in the Combined Fund. An individual may be eligible for one or more types of lump sum bonus payments.

Eligibility for Lump Sum Bonus Payments

Only individuals participating in the Combined Fund can become eligible for the following types of lump sum bonus payments. In addition, the following conditions apply to the individual lump sum bonuses.

- a) 5% lump sum bonus: Members who are inactive as of January 1, 2000, will become eligible at the time that their deferred retirement allowance commences.

Members in active service as of January 1, 2000, will become eligible when they first retire.

If a member in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

Only one 5% lump sum bonus will be paid on account of an individual member. Thus, if a member receiving a duty disability retirement allowance receives a 5% lump sum bonus on account of the duty disability benefit, then the member will not be eligible for an additional 5% lump sum bonus at the time of conversion.

- b) 8.6% lump sum bonus: A fireman or policeman in active service as of January 1, 2000, who (i) retires as a fireman or policeman on a service retirement allowance; or (ii) converts to service retirement or elects an extended life duty disability retirement allowance after retiring as a fireman or policeman on duty disability; (iii) attains age 63 while in receipt of an ordinary disability retirement allowance or a lifetime Fire & Police or Heart & Lung duty disability retirement allowance, is eligible for this bonus so long as the member did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund; (iv) or retires as a fireman or policeman on an extended life duty disability.

If a fireman or policeman in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

A fireman or policeman retired on disability as of January 1, 2000, who is also an active member of the Firemen and Policemen's Survivorship Fund as of January 1, 2000 - under age 57 at 1/1/2000, and made all required contributions to the Survivorship Fund – is eligible for this bonus if he (i) converts to service retirement or elects an extended life duty disability retirement allowance; or (ii) is ineligible to convert to service retirement and attains age 63 while in receipt of the disability retirement allowance; provided that he (iii) did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund.

Amount of Lump Sum Bonus Payments

Age factors are used in the 5% lump sum bonus and the 8.6% lump sum bonus calculations. The age factors for these bonus payments are contained in s. 36-05-11-a.

- a) 5% lump sum bonus: For members who are either inactive or active as of January 1, 2000, who retire in the future, the bonus payment equals 5% times their initial annual retirement allowance times a factor based on attained age on the retirement date. The retirement allowance used in the bonus calculation is to be reduced for early retirement, if applicable, but is not to be reduced for any optional election the member might have made under s. 36-05-7.

If a member in active service as of January 1, 2000 dies prior to retirement and the member's surviving spouse is eligible for this bonus payment, then the bonus will equal 5% times the spouse's initial annual benefit times a factor based on the spouse's attained age when the benefit commences.

- b) 8.6% lump sum bonus: In the explanation that follows, whenever an annual allowance is used in calculating a bonus due to a member, the allowance used is the allowance that would be paid if the member did not elect an option under s. 36-05-7.

For members who retire on service retirement: 8.6% times the annual service retirement allowance times a factor based on attained age at retirement.

For surviving spouses who receive either a PSO benefit or a duty death benefit: 8.6% times the initial annual allowance payable to the spouse times a factor based on the spouse's attained age when the benefit commences.

For a member who is retired on duty disability as of January 1, 2000 - or who retires on duty disability thereafter - and who is eligible to convert to service retirement: 8.6% times the annual conversion service retirement allowance earned as of the conversion age times a factor based on attained age at conversion.

For a member who is retired on disability as of January 1, 2000 – or who retired on disability thereafter – who is ineligible to convert to service retirement, and who is age 63 or younger at the later of 1/1/2000 or the disability retirement date: 8.6% times the “hypothetical” annual conversion service retirement allowance earned at age 63 times the attained age factor for age 63. The “hypothetical” allowance is calculated as if the member were eligible to convert at age 63.

For a member who retires on disability after January 1, 2000, who is older than age 63 at the disability retirement date: 8.6% times the annual disability allowance payable when the allowance commences times a factor based on the member's attained age at retirement.

Funds Charged

The 5% lump sum bonus and the 8.6% lump sum bonus are paid from the Combined Fund.

Benefits Not Valued

Best practice supports use of a three to five-year amortization period for amortization of liabilities generated by early retirement incentives such as the Bonus Year. While it is not clear whether a member retired due to an incentive, best practice would indicate that the additional liabilities generated by the Bonus Year should be amortized over a shorter period more in line with the period of payroll saving anticipated to be generated by the window. We recommend that the Bonus Year liabilities be isolated and amortized over a period not to exceed five years.

STATISTICAL SECTION

Overview of Statistical Section

The Statistical Section presents detailed information that assists users in using the basic financial statements, notes to basic financial statements, and required supplementary information to assess the economic condition of ERS. The source of the information in this section is derived from ERS internal records.

Financial Trends

The following schedule shows trend information about the changes and growth in ERS's fiduciary net position over the past 10 years:

- Changes in Fiduciary Net Position

Demographic and Economic Information

These schedules offer demographic and economic indicators to help readers understand the environment within which the System's financial activities take place.

- Schedule of Retired Members by Type of Pension Benefit
- Schedule of Average Benefit Payment Amounts – Age/Service
- Schedule of Average Benefit Payment Amounts – Death
- Schedule of Average Benefit Payment Amounts – Disability
- Principal Participating Employers

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Changes in Fiduciary Net Position
For Last Ten Fiscal Years
(in thousands)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions										
Member contributions	\$ 32,633	\$ 32,085	\$ 32,494	\$ 35,918	\$ 49,553	\$ 43,663	\$ 42,624	\$ 38,809	\$ 35,325	\$ 35,699
Employer contributions	96,389	83,166	83,524	74,095	72,198	72,844	79,533	100,159	17,350	-
Investment earnings (net of expenses)	893,278	(160,190)	787,809	383,747	34,982	238,985	798,204	539,970	(67,932)	557,801
Total additions to fiduciary net position	1,022,300	(44,939)	903,827	493,760	156,733	355,492	920,361	678,938	(15,257)	593,500
Deductions										
Benefit payments										
Age/Service	371,719	354,553	343,430	313,927	301,667	289,877	280,110	269,885	254,487	241,569
Death	1,148	1,970	2,305	2,167	2,287	2,208	2,170	1,883	1,699	1,565
Disability	32,349	32,366	34,266	30,843	29,382	29,194	28,416	27,711	26,942	25,806
Total benefit payments	405,216	388,889	380,001	346,937	333,336	321,279	310,696	299,479	283,128	268,940
Refund of contributions										
Final death payout	1,150	1,647	1,688	971	949	1,486	1,624	1,223	1,272	1,263
Retirement lump sum equivalent	215	142	223	332	294	359	437	505	432	282
Withdrawal	2,505	2,848	3,420	3,063	2,910	6,045	3,702	1,232	733	1,224
Total refunds of contributions	3,870	4,637	5,331	4,366	4,153	7,890	5,763	2,960	2,437	2,769
Administrative expenses	7,018	7,181	8,637	8,096	9,686	10,831	11,745	9,739	12,134	13,275
Interfund Transfers	-	-	-	-	10,400	13,400	18,399	-	-	7,000
Total deductions from fiduciary net position	416,104	400,707	393,969	359,399	357,575	353,400	346,603	312,178	297,699	291,984
Change in fiduciary net position	\$ 606,196	\$ (445,646)	\$ 509,858	\$ 134,361	\$ (200,842)	\$ 2,092	\$ 573,758	\$ 366,760	\$ (312,956)	\$ 301,516

For the fiscal years ended 2013, 2014, and 2015, the presentation of interfund transfers has been reclassified from refunds of contributions to interfund transfers.

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Retired Members by Type of Pension Benefit
As of December 31, 2019

Amount of Annual Pension Benefit	Number of Recipients	Type of Pension Benefit		
		Age/Service	Death	Disability
General City				
\$0 - \$10,000	3,873	3,562	34	277
\$10,001 - \$20,000	2,177	1,944	9	224
\$20,001 - \$30,000	1,667	1,566	7	94
\$30,001 - \$40,000	1,204	1,162	1	41
\$40,001 - \$50,000	600	592	-	8
\$50,001 - \$60,000	291	286	-	5
\$60,001 - \$70,000	138	138	-	-
\$70,001 - \$80,000	75	75	-	-
\$80,001 - \$90,000	32	32	-	-
\$90,001 - \$100,000	15	15	-	-
\$100,001 - \$110,000	9	9	-	-
\$110,001 - \$120,000	2	2	-	-
Totals	10,083	9,383	51	649
Police				
\$0 - \$10,000	102	84	14	4
\$10,001 - \$20,000	185	169	5	11
\$20,001 - \$30,000	149	129	6	14
\$30,001 - \$40,000	206	184	2	20
\$40,001 - \$50,000	304	285	2	17
\$50,001 - \$60,000	630	607	-	23
\$60,001 - \$70,000	568	496	-	72
\$70,001 - \$80,000	200	193	-	7
\$80,001 - \$90,000	99	96	-	3
\$90,001 - \$100,000	43	42	-	1
\$100,001 - \$110,000	24	23	-	1
\$110,001 - \$120,000	16	14	-	2
\$120,001 - \$130,000	5	4	-	1
\$130,001 - \$140,000	8	6	-	2
\$140,001 - \$150,000	-	-	-	-
\$150,001 - \$160,000	-	-	-	-
\$160,001 - \$170,000	1	1	-	-
Totals	2,540	2,333	29	178
Fire				
\$0 - \$10,000	50	38	8	4
\$10,001 - \$20,000	75	65	2	8
\$20,001 - \$30,000	82	60	5	17
\$30,001 - \$40,000	133	100	-	33
\$40,001 - \$50,000	202	169	-	33
\$50,001 - \$60,000	368	278	-	90
\$60,001 - \$70,000	269	218	-	51
\$70,001 - \$80,000	98	86	-	12
\$80,001 - \$90,000	54	53	-	1
\$90,001 - \$100,000	21	19	-	2
\$100,001 - \$110,000	13	11	-	2
\$110,001 - \$120,000	11	10	-	1
\$120,001 - \$130,000	5	4	-	1
\$130,001 - \$140,000	12	10	-	2
\$140,001 - \$150,000	6	6	-	-
\$150,001 - \$160,000	2	2	-	-

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Average Benefit Payment Amounts – Age/Service
For Last Ten Fiscal Years

Retirement Year	Employment Class	Category	Age/Service						
			Service Credit						
			0-5	5-10	11-15	16-20	20-25	26-30	31+
2010	General City	Average Annual Benefits	\$ 1,623	\$ 3,466	\$ 7,129	\$10,251	\$14,063	\$20,210	\$26,536
		Average Final Average Salary	\$19,412	\$20,782	\$23,770	\$27,119	\$31,008	\$34,957	\$37,360
		Number of Retired Members	484	1,145	975	1,019	935	1,203	2,134
	Police	Average Annual Benefits	\$12,163	\$ 7,911	\$13,761	\$16,604	\$33,319	\$36,060	\$42,324
		Average Final Average Salary	\$63,574	\$35,781	\$35,705	\$37,796	\$43,100	\$42,954	\$43,118
		Number of Retired Members	11	15	7	13	227	898	844
	Fire	Average Annual Benefits	\$ 2,611	\$17,354	\$15,030	\$15,121	\$32,226	\$37,381	\$40,927
		Average Final Average Salary	\$17,505	\$21,683	\$39,014	\$29,446	\$47,149	\$45,245	\$43,715
		Number of Retired Members	4	3	2	5	73	307	552
2011	General City	Average Annual Benefits	\$ 1,681	\$ 3,558	\$ 7,201	\$10,732	\$15,271	\$21,538	\$27,433
		Average Final Average Salary	\$19,829	\$21,785	\$24,505	\$28,297	\$32,941	\$36,374	\$39,101
		Number of Retired Members	508	1,226	1,017	1,064	979	1,218	2,236
	Police	Average Annual Benefits	\$12,343	\$ 8,249	\$12,021	\$19,971	\$33,770	\$37,467	\$42,827
		Average Final Average Salary	\$62,188	\$36,345	\$36,906	\$39,599	\$43,400	\$44,493	\$44,188
		Number of Retired Members	10	15	9	15	226	904	863
	Fire	Average Annual Benefits	\$ 2,654	\$10,774	\$10,507	\$15,377	\$32,590	\$38,092	\$42,684
		Average Final Average Salary	\$17,505	\$23,134	\$43,226	\$29,446	\$49,529	\$46,011	\$44,930
		Number of Retired Members	4	5	3	5	79	313	552
2012	General City	Average Annual Benefits	\$ 1,752	\$ 3,757	\$ 7,395	\$11,231	\$16,116	\$22,446	\$29,186
		Average Final Average Salary	\$20,581	\$22,750	\$25,361	\$29,649	\$33,909	\$37,763	\$40,200
		Number of Retired Members	524	1,288	1,039	1,103	1,006	1,239	2,259
	Police	Average Annual Benefits	\$10,976	\$ 8,452	\$13,502	\$21,093	\$34,833	\$39,836	\$45,298
		Average Final Average Salary	\$53,178	\$36,345	\$37,337	\$40,257	\$44,020	\$45,456	\$45,213
		Number of Retired Members	12	15	10	18	227	905	869
	Fire	Average Annual Benefits	\$ 2,699	\$10,518	\$16,107	\$16,000	\$36,774	\$39,413	\$44,719
		Average Final Average Salary	\$17,505	\$24,102	\$43,226	\$35,371	\$52,276	\$48,444	\$45,710
		Number of Retired Members	4	6	3	6	80	326	556
2013	General City	Average Annual Benefits	\$ 1,837	\$ 3,870	\$ 7,633	\$11,726	\$16,806	\$23,178	\$30,200
		Average Final Average Salary	\$21,545	\$23,675	\$26,459	\$30,661	\$35,368	\$39,095	\$41,391
		Number of Retired Members	541	1,341	1,061	1,123	1,014	1,264	2,254
	Police	Average Annual Benefits	\$10,704	\$ 7,571	\$14,146	\$21,041	\$35,993	\$41,140	\$47,335
		Average Final Average Salary	\$51,974	\$37,145	\$40,425	\$42,244	\$46,552	\$46,433	\$46,235
		Number of Retired Members	13	17	11	19	226	914	868
	Fire	Average Annual Benefits	\$ 2,745	\$10,105	\$16,521	\$17,930	\$36,802	\$42,199	\$45,320
		Average Final Average Salary	\$17,505	\$25,052	\$43,226	\$40,650	\$53,476	\$50,684	\$46,605
		Number of Retired Members	4	7	3	7	86	331	565
2014	General City	Average Annual Benefits	\$ 1,932	\$ 4,083	\$ 7,888	\$12,092	\$17,610	\$23,781	\$30,727
		Average Final Average Salary	\$21,809	\$24,397	\$27,271	\$31,455	\$36,225	\$40,389	\$42,471
		Number of Retired Members	551	1,402	1,070	1,143	1,006	1,296	2,280
	Police	Average Annual Benefits	\$11,032	\$ 7,979	\$14,413	\$21,691	\$36,392	\$42,096	\$48,371
		Average Final Average Salary	\$51,974	\$35,813	\$43,783	\$45,067	\$46,953	\$47,130	\$47,082
		Number of Retired Members	13	17	13	20	228	924	872
	Fire	Average Annual Benefits	\$ 2,792	\$10,382	\$16,804	\$19,832	\$38,748	\$43,372	\$47,302
		Average Final Average Salary	\$17,505	\$25,052	\$43,226	\$43,025	\$55,286	\$51,958	\$48,195
		Number of Retired Members	4	7	3	8	90	341	562

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Average Benefit Payment Amounts – Age/Service
For Last Ten Fiscal Years

Age/Service - Continued									
Retirement Year	Employment Class	Category	Service Credit						
			0-5	5-10	11-15	16-20	20-25	26-30	31+
2015	General City	Average Annual Benefits	\$ 1,991	\$ 4,255	\$ 8,309	\$12,541	\$18,101	\$24,946	\$31,947
		Average Final Average Salary	\$22,370	\$25,181	\$28,282	\$32,174	\$37,678	\$42,241	\$43,590
		Number of Retired Members	572	1,441	1,068	1,148	1,008	1,323	2,286
	Police	Average Annual Benefits	\$11,241	\$ 6,993	\$15,952	\$24,070	\$39,029	\$42,750	\$49,811
		Average Final Average Salary	\$51,974	\$36,363	\$45,816	\$45,734	\$48,781	\$49,122	\$47,978
		Number of Retired Members	13	21	14	19	218	950	870
	Fire	Average Annual Benefits	\$ 2,841	\$ 9,707	\$13,086	\$22,290	\$39,423	\$44,635	\$48,604
		Average Final Average Salary	\$17,505	\$25,720	\$43,802	\$43,025	\$56,688	\$53,316	\$49,154
		Number of Retired Members	4	8	4	8	94	347	557
2016	General City	Average Annual Benefits	\$ 2,029	\$ 4,342	\$ 8,455	\$12,760	\$18,514	\$25,975	\$32,531
		Average Final Average Salary	\$22,634	\$25,694	\$29,210	\$33,330	\$38,696	\$43,430	\$44,644
		Number of Retired Members	591	1,493	1,094	1,176	1,018	1,337	2,313
	Police	Average Annual Benefits	\$10,689	\$ 7,428	\$16,958	\$24,777	\$38,908	\$43,989	\$51,088
		Average Final Average Salary	\$50,632	\$36,078	\$45,816	\$47,087	\$48,979	\$51,967	\$48,721
		Number of Retired Members	14	24	14	19	222	985	866
	Fire	Average Annual Benefits	\$ 2,890	\$ 9,782	\$16,452	\$22,595	\$38,227	\$45,319	\$48,852
		Average Final Average Salary	\$17,505	\$25,720	\$43,802	\$43,025	\$59,582	\$55,504	\$51,893
		Number of Retired Members	4	8	4	8	106	363	567
2017	General City	Average Annual Benefits	\$ 2,096	\$ 4,430	\$ 8,763	\$13,324	\$19,037	\$26,583	\$33,276
		Average Final Average Salary	\$23,289	\$26,128	\$29,934	\$34,209	\$39,784	\$44,761	\$46,059
		Number of Retired Members	602	1,522	1,104	1,185	1,031	1,357	2,363
	Police	Average Annual Benefits	\$11,044	\$ 8,016	\$15,306	\$26,203	\$41,359	\$45,231	\$52,108
		Average Final Average Salary	\$50,632	\$37,646	\$46,698	\$47,087	\$50,984	\$55,902	\$50,640
		Number of Retired Members	14	24	17	19	212	1,092	878
	Fire	Average Annual Benefits	\$ 2,829	\$11,696	\$15,561	\$21,233	\$40,455	\$47,937	\$52,389
		Average Final Average Salary	\$20,169	\$25,720	\$43,471	\$43,025	\$62,265	\$57,378	\$53,802
		Number of Retired Members	5	8	5	8	117	376	575
2018	General City	Average Annual Benefits	\$ 2,149	\$ 4,552	\$ 9,001	\$13,492	\$19,642	\$27,379	\$34,536
		Average Final Average Salary	\$23,695	\$26,975	\$30,734	\$34,961	\$40,767	\$46,009	\$47,329
		Number of Retired Members	617	1,560	1,118	1,202	1,054	1,377	2,373
	Police	Average Annual Benefits	\$ 8,578	\$ 8,543	\$16,217	\$24,061	\$42,583	\$48,585	\$54,637
		Average Final Average Salary	\$49,931	\$41,594	\$45,854	\$47,632	\$51,925	\$58,490	\$51,979
		Number of Retired Members	16	29	17	22	210	1,133	866
	Fire	Average Annual Benefits	\$ 3,064	\$11,342	\$16,304	\$24,575	\$43,416	\$49,715	\$54,200
		Average Final Average Salary	\$20,169	\$28,340	\$43,471	\$47,079	\$63,897	\$58,938	\$54,760
		Number of Retired Members	5	8	5	7	125	384	578
2019	General City	Average Annual Benefits	\$ 2,309	\$ 4,766	\$ 9,444	\$14,051	\$20,978	\$29,037	\$36,204
		Average Final Average Salary	\$26,240	\$27,951	\$32,337	\$37,201	\$43,600	\$49,907	\$52,564
		Number of Retired Members	631	1,569	1,131	1,207	1,064	1,392	2,389
	Police	Average Annual Benefits	\$ 8,073	\$ 9,459	\$17,060	\$28,387	\$45,532	\$53,442	\$57,435
		Average Final Average Salary	\$40,409	\$41,313	\$48,305	\$56,393	\$58,400	\$66,113	\$59,847
		Number of Retired Members	17	32	17	28	198	1,176	865
	Fire	Average Annual Benefits	\$ 3,113	\$ 4,594	\$16,662	\$25,403	\$50,046	\$55,691	\$58,175
		Average Final Average Salary	\$20,169	\$28,340	\$43,470	\$53,147	\$69,313	\$65,246	\$62,582
		Number of Retired Members	5	7	5	8	131	405	576

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Average Benefit Payment Amounts – Death
For Last Ten Fiscal Years

Retirement Year	Employment Class	Category	Death						
			Service Credit						
			0-5	5-10	11-15	16-20	20-25	26-30	31+
2010	General City	Average Annual Benefits	\$ 4,516	\$ 5,156	\$ 5,390	\$15,880	\$ 7,516	\$ 8,344	\$11,181
		Average Final Average Salary	\$28,107	\$35,896	\$26,548	\$62,669	\$41,197	\$36,818	\$34,054
		Number of Retired Members	8	13	16	9	22	9	20
	Police	Average Annual Benefits	\$ 8,578	\$ 9,749	\$ 6,379	\$11,961	\$ 4,775	\$ 8,869	\$ 3,600
		Average Final Average Salary	\$37,968	\$45,047	\$38,424	\$41,526	\$19,706	\$41,124	N/A
		Number of Retired Members	16	14	7	8	7	4	1
	Fire	Average Annual Benefits	\$ 7,798	\$16,554	\$15,735	\$ 5,654	\$14,463	\$10,130	\$20,141
		Average Final Average Salary	\$18,487	\$27,591	\$31,304	\$16,270	\$33,159	\$23,766	\$33,568
		Number of Retired Members	6	2	4	3	3	2	2
2011	General City	Average Annual Benefits	\$ 3,218	\$ 4,135	\$ 6,337	\$23,774	\$ 7,534	\$ 8,773	\$11,704
		Average Final Average Salary	\$28,788	\$37,916	\$30,832	\$62,669	\$41,232	\$42,778	\$34,887
		Number of Retired Members	12	21	20	9	22	13	19
	Police	Average Annual Benefits	\$ 7,862	\$ 9,857	\$ 6,435	\$13,573	\$ 3,667	\$ 8,974	\$ 3,600
		Average Final Average Salary	\$38,070	\$45,226	\$39,073	\$42,317	\$ 6,666	\$41,827	N/A
		Number of Retired Members	16	14	7	7	6	4	1
	Fire	Average Annual Benefits	\$ 7,868	\$16,879	\$11,856	\$ 5,684	\$14,675	\$ 8,915	\$20,464
		Average Final Average Salary	\$18,719	\$28,131	\$22,685	\$16,421	\$33,687	\$24,215	\$34,107
		Number of Retired Members	6	2	4	3	3	2	2
2012	General City	Average Annual Benefits	\$ 4,101	\$ 4,473	\$ 7,018	\$22,843	\$ 6,635	\$10,617	\$10,788
		Average Final Average Salary	\$28,853	\$37,953	\$32,645	\$61,443	\$47,838	\$52,597	\$38,765
		Number of Retired Members	12	21	19	13	26	21	23
	Police	Average Annual Benefits	\$11,476	\$ 9,966	\$ 6,406	\$13,780	\$ 3,600	\$ 8,782	\$ 3,600
		Average Final Average Salary	\$23,692	\$45,409	\$39,734	\$43,123	N/A	\$42,543	N/A
		Number of Retired Members	9	14	7	7	5	4	1
	Fire	Average Annual Benefits	\$ 7,987	\$17,209	\$12,162	\$ 5,715	\$13,990	\$ 9,202	\$13,121
		Average Final Average Salary	\$19,116	\$28,683	\$24,912	\$16,574	\$34,225	\$24,674	\$21,868
		Number of Retired Members	6	2	3	3	3	2	2
2013	General City	Average Annual Benefits	\$ 4,416	\$ 3,965	\$ 6,086	\$16,268	\$ 9,348	\$12,462	\$13,035
		Average Final Average Salary	\$30,623	\$39,497	\$30,286	\$61,443	\$47,868	\$52,597	\$47,181
		Number of Retired Members	11	28	23	13	26	21	38
	Police	Average Annual Benefits	\$12,653	\$10,165	\$ 7,041	\$13,992	\$ 3,120	\$11,055	\$ 3,600
		Average Final Average Salary	\$23,244	\$45,740	\$40,409	\$43,946	N/A	\$43,274	N/A
		Number of Retired Members	8	14	6	7	5	3	1
	Fire	Average Annual Benefits	\$ 8,084	\$17,547	\$12,323	\$ 5,746	\$20,864	\$ 9,342	\$23,581
		Average Final Average Salary	\$19,438	\$29,245	\$25,317	\$16,731	\$34,774	\$25,141	\$39,301
		Number of Retired Members	6	2	3	3	2	2	1
2014	General City	Average Annual Benefits	\$ 4,842	\$ 4,614	\$ 8,328	\$15,425	\$ 9,285	\$12,560	\$16,308
		Average Final Average Salary	\$30,966	\$42,453	\$37,102	\$48,370	\$47,899	\$52,597	\$47,181
		Number of Retired Members	10	28	14	13	26	20	38
	Police	Average Annual Benefits	\$12,326	\$ 7,946	\$ 7,110	\$15,975	\$ 3,150	\$11,204	\$ 3,600
		Average Final Average Salary	\$22,621	\$46,388	\$41,097	\$44,785	N/A	\$44,020	N/A
		Number of Retired Members	8	14	6	6	4	3	1
	Fire	Average Annual Benefits	\$ 7,546	\$17,891	\$12,488	\$ 5,778	\$21,200	\$ 3,076	\$23,980
		Average Final Average Salary	\$19,692	\$29,819	\$25,729	\$16,890	\$35,334	\$ 4,252	\$39,967
		Number of Retired Members	6	2	3	3	2	2	1

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Average Benefit Payment Amounts – Death
For Last Ten Fiscal Years

Death - Continued									
Retirement Year	Employment Class	Category	Service Credit						
			0-5	5-10	11-15	16-20	20-25	26-30	31+
2015	General City	Average Annual Benefits	\$ 4,891	\$ 4,931	\$ 7,908	\$12,165	\$ 9,508	\$12,560	\$15,342
		Average Final Average Salary	\$31,048	\$42,480	\$38,019	\$48,744	\$47,930	\$52,597	\$47,181
		Number of Retired Members	10	28	17	17	25	20	38
	Police	Average Annual Benefits	\$13,367	\$17,139	\$14,770	\$15,782	\$ 3,600	\$11,356	\$ 3,600
		Average Final Average Salary	\$24,992	\$28,565	\$62,160	\$45,640	N/A	\$44,780	N/A
		Number of Retired Members	7	6	10	6	3	3	1
	Fire	Average Annual Benefits	\$ 8,621	\$18,242	\$12,657	\$ 5,611	\$21,543	\$ 3,600	\$24,388
		Average Final Average Salary	\$19,948	\$30,403	\$26,150	\$17,053	\$35,905	N/A	\$40,647
		Number of Retired Members	5	2	3	3	2	1	1
2016	General City	Average Annual Benefits	\$ 4,941	\$ 4,947	\$ 5,086	\$10,037	\$ 8,530	\$ 9,749	\$16,988
		Average Final Average Salary	\$31,132	\$42,508	\$38,019	\$45,675	\$51,104	\$56,809	\$50,694
		Number of Retired Members	10	28	17	21	29	24	30
	Police	Average Annual Benefits	\$13,450	\$17,415	\$14,813	\$19,073	\$ 3,600	\$11,511	\$ 3,600
		Average Final Average Salary	\$25,153	\$29,026	\$62,303	\$46,513	N/A	\$45,556	N/A
		Number of Retired Members	7	6	10	5	3	3	1
	Fire	Average Annual Benefits	\$ 7,416	\$18,600	\$12,828	\$ 6,966	\$21,892	\$ 3,600	\$24,804
		Average Final Average Salary	\$20,127	\$31,000	\$26,579	\$17,219	\$36,488	N/A	\$41,339
		Number of Retired Members	6	2	3	2	2	1	1
2017	General City	Average Annual Benefits	\$ 3,881	\$ 4,963	\$ 5,857	\$ 7,816	\$ 7,885	\$10,255	\$17,341
		Average Final Average Salary	\$33,585	\$42,537	\$35,417	\$43,227	\$50,959	\$57,001	\$51,088
		Number of Retired Members	14	28	13	25	45	24	31
	Police	Average Annual Benefits	\$13,593	\$17,698	\$14,857	\$19,393	\$ 3,600	\$10,118	\$ 3,600
		Average Final Average Salary	\$25,431	\$29,496	\$62,449	\$47,403	N/A	\$38,592	N/A
		Number of Retired Members	7	6	10	5	3	3	1
	Fire	Average Annual Benefits	\$ 7,924	\$18,965	\$13,003	\$ 7,017	\$22,249	\$ 3,600	\$25,228
		Average Final Average Salary	\$20,413	\$31,609	\$27,017	\$17,388	\$37,082	N/A	\$42,046
		Number of Retired Members	6	2	3	2	2	1	1
2018	General City	Average Annual Benefits	\$ 5,360	\$ 4,015	\$ 3,240	\$ 8,988	\$ 8,875	\$11,469	\$ 9,726
		Average Final Average Salary	\$35,969	\$42,566	\$45,266	\$39,896	\$48,195	\$51,554	\$57,259
		Number of Retired Members	13	28	17	25	41	20	23
	Police	Average Annual Benefits	\$10,530	\$17,985	\$14,451	\$17,851	\$ 8,117	\$ 3,600	\$ 3,600
		Average Final Average Salary	\$19,474	\$29,976	\$62,598	\$59,005	\$79,173	N/A	N/A
		Number of Retired Members	7	6	10	5	7	2	1
	Fire	Average Annual Benefits	\$ 7,784	\$19,338	\$13,182	\$ 7,068	\$22,613	\$ 3,600	\$25,660
		Average Final Average Salary	\$20,780	\$32,230	\$27,463	\$17,561	\$37,688	N/A	\$42,767
		Number of Retired Members	6	2	3	2	2	1	1
2019	General City	Average Annual Benefits	\$11,427	\$ 7,943	\$ 4,924	\$ 9,618	\$12,830	\$ 9,992	\$17,703
		Average Final Average Salary	\$37,487	\$47,985	\$48,432	\$39,576	\$38,736	\$32,327	\$36,499
		Number of Retired Members	5	8	7	8	11	8	4
	Police	Average Annual Benefits	\$12,261	\$17,162	\$12,761	\$32,230	\$ 6,151	\$ 3,300	\$ 3,600
		Average Final Average Salary	\$19,435	\$28,604	\$28,926	\$55,925	\$24,483	N/A	N/A
		Number of Retired Members	6	6	5	5	4	2	1
	Fire	Average Annual Benefits	\$ 9,059	\$19,718	\$11,612	\$ 7,121	\$24,337	\$ 3,600	\$26,101
		Average Final Average Salary	\$12,698	\$32,863	\$22,080	\$13,212	\$40,562	\$ 5,026	\$43,502
		Number of Retired Members	5	2	3	2	1	1	1

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Average Benefit Payment Amounts – Disability
For Last Ten Fiscal Years

		Disability							
Retirement		Service Credit							
Year	Employment	Category	0-5	5-10	11-15	16-20	20-25	26-30	31+
2010	General City	Average Annual Benefits	\$20,834	\$ 8,399	\$ 9,234	\$11,354	\$12,924	\$15,893	\$17,393
		Average Final Average Salary	\$28,967	\$25,789	\$30,674	\$27,277	\$27,982	\$29,325	\$24,813
		Number of Retired Members	14	126	147	126	128	85	36
	Police	Average Annual Benefits	\$50,467	\$36,921	\$40,277	\$37,590	\$37,842	\$47,297	\$46,980
		Average Final Average Salary	\$63,359	\$64,595	\$59,329	\$58,740	\$54,357	\$66,467	\$67,088
		Number of Retired Members	15	27	28	34	28	13	20
	Fire	Average Annual Benefits	\$42,276	\$41,746	\$38,659	\$38,220	\$36,259	\$40,248	\$42,795
		Average Final Average Salary	\$60,500	\$59,976	\$62,921	\$60,673	\$54,129	\$62,713	\$74,440
		Number of Retired Members	20	32	26	44	42	49	28
2011	General City	Average Annual Benefits	\$17,881	\$ 8,467	\$ 8,995	\$11,294	\$13,053	\$16,090	\$18,187
		Average Final Average Salary	\$28,509	\$26,516	\$30,936	\$28,352	\$29,591	\$30,313	\$25,700
		Number of Retired Members	17	130	161	133	128	89	36
	Police	Average Annual Benefits	\$44,119	\$38,374	\$38,993	\$40,832	\$36,809	\$47,684	\$47,199
		Average Final Average Salary	\$55,844	\$64,018	\$59,208	\$60,139	\$53,699	\$68,483	\$67,088
		Number of Retired Members	17	28	30	33	29	14	20
	Fire	Average Annual Benefits	\$42,025	\$44,601	\$39,683	\$37,799	\$37,947	\$41,417	\$50,275
		Average Final Average Salary	\$60,245	\$61,846	\$63,139	\$62,914	\$56,472	\$64,088	\$76,566
		Number of Retired Members	20	31	28	49	41	50	27
2012	General City	Average Annual Benefits	\$14,894	\$ 9,325	\$ 9,480	\$11,248	\$13,687	\$17,014	\$19,268
		Average Final Average Salary	\$28,106	\$28,012	\$31,240	\$28,535	\$31,508	\$31,218	\$26,284
		Number of Retired Members	20	126	160	139	130	86	33
	Police	Average Annual Benefits	\$50,074	\$38,996	\$39,347	\$41,205	\$38,927	\$49,263	\$48,324
		Average Final Average Salary	\$65,276	\$66,229	\$60,353	\$62,198	\$55,809	\$69,579	\$67,088
		Number of Retired Members	15	30	31	35	28	14	20
	Fire	Average Annual Benefits	\$41,831	\$45,039	\$41,368	\$41,587	\$37,969	\$45,162	\$53,882
		Average Final Average Salary	\$61,065	\$64,243	\$65,431	\$63,677	\$57,428	\$66,849	\$77,336
		Number of Retired Members	20	32	30	50	42	50	28
2013	General City	Average Annual Benefits	\$19,451	\$ 9,389	\$ 9,211	\$10,314	\$14,517	\$17,107	\$18,194
		Average Final Average Salary	\$29,493	\$28,834	\$32,100	\$31,909	\$31,776	\$32,180	\$25,708
		Number of Retired Members	16	133	171	160	128	86	34
	Police	Average Annual Benefits	\$46,399	\$39,871	\$40,416	\$41,971	\$38,977	\$49,794	\$45,931
		Average Final Average Salary	\$61,480	\$64,090	\$62,804	\$61,593	\$59,361	\$69,842	\$67,886
		Number of Retired Members	16	32	33	36	28	14	21
	Fire	Average Annual Benefits	\$40,499	\$44,276	\$43,185	\$40,821	\$39,697	\$44,907	\$49,953
		Average Final Average Salary	\$59,775	\$61,483	\$66,071	\$63,440	\$59,370	\$66,115	\$75,187
		Number of Retired Members	20	34	32	52	42	50	30
2014	General City	Average Annual Benefits	\$18,708	\$ 9,611	\$ 9,403	\$11,043	\$13,646	\$18,109	\$18,019
		Average Final Average Salary	\$27,539	\$28,279	\$32,087	\$31,994	\$37,437	\$32,818	\$26,283
		Number of Retired Members	15	133	180	158	145	84	33
	Police	Average Annual Benefits	\$50,123	\$41,520	\$42,712	\$44,306	\$40,681	\$50,023	\$45,903
		Average Final Average Salary	\$66,647	\$66,192	\$62,040	\$64,594	\$58,626	\$69,890	\$65,227
		Number of Retired Members	15	33	34	36	28	14	21
	Fire	Average Annual Benefits	\$39,685	\$44,593	\$44,023	\$43,369	\$39,094	\$44,944	\$52,578
		Average Final Average Salary	\$59,781	\$62,726	\$65,435	\$64,797	\$58,235	\$68,050	\$77,203
		Number of Retired Members	20	33	33	50	41	54	30

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Schedule of Average Benefit Payment Amounts – Disability
For Last Ten Fiscal Years

Disability - Continued									
Retirement Year	Employment Class	Category	Service Credit						
			0-5	5-10	11-15	16-20	20-25	26-30	31+
2015	General City	Average Annual Benefits	\$19,075	\$ 9,537	\$ 9,559	\$11,193	\$14,170	\$19,033	\$19,735
		Average Final Average Salary	\$25,491	\$28,147	\$32,507	\$32,202	\$37,795	\$34,539	\$27,379
		Number of Retired Members	14	133	182	161	144	81	29
	Police	Average Annual Benefits	\$48,855	\$39,124	\$40,842	\$42,403	\$42,757	\$52,008	\$48,977
		Average Final Average Salary	\$64,689	\$62,994	\$59,312	\$61,801	\$62,513	\$71,666	\$66,246
		Number of Retired Members	15	33	36	36	28	14	20
	Fire	Average Annual Benefits	\$42,449	\$45,206	\$40,620	\$42,980	\$40,457	\$44,829	\$52,367
		Average Final Average Salary	\$65,481	\$64,009	\$64,085	\$63,882	\$61,057	\$68,086	\$76,838
		Number of Retired Members	18	32	36	50	39	58	32
2016	General City	Average Annual Benefits	\$22,435	\$ 9,875	\$ 9,937	\$11,213	\$14,344	\$19,527	\$19,635
		Average Final Average Salary	\$29,740	\$28,875	\$32,647	\$32,813	\$38,407	\$35,348	\$27,993
		Number of Retired Members	12	133	176	161	140	78	28
	Police	Average Annual Benefits	\$60,448	\$47,224	\$48,980	\$47,777	\$51,388	\$56,365	\$52,484
		Average Final Average Salary	\$79,452	\$74,098	\$71,998	\$69,675	\$71,002	\$75,847	\$66,246
		Number of Retired Members	14	33	38	37	28	14	20
	Fire	Average Annual Benefits	\$41,396	\$44,862	\$41,587	\$40,471	\$40,655	\$47,560	\$53,366
		Average Final Average Salary	\$63,475	\$63,765	\$64,241	\$61,942	\$61,880	\$70,091	\$77,702
		Number of Retired Members	18	32	37	52	41	58	31
2017	General City	Average Annual Benefits	\$22,882	\$ 9,417	\$ 9,600	\$11,875	\$13,920	\$20,423	\$20,586
		Average Final Average Salary	\$30,090	\$29,583	\$32,948	\$33,274	\$36,145	\$36,187	\$27,036
		Number of Retired Members	12	141	186	158	144	77	26
	Police	Average Annual Benefits	\$56,361	\$42,779	\$48,749	\$46,454	\$47,113	\$56,586	\$51,247
		Average Final Average Salary	\$74,193	\$67,398	\$71,253	\$72,135	\$67,831	\$78,723	\$66,246
		Number of Retired Members	13	34	36	35	29	14	20
	Fire	Average Annual Benefits	\$48,429	\$55,565	\$50,837	\$55,184	\$48,302	\$54,320	\$63,596
		Average Final Average Salary	\$71,007	\$78,164	\$76,053	\$81,113	\$71,530	\$76,761	\$82,874
		Number of Retired Members	17	33	38	52	43	58	31
2018	General City	Average Annual Benefits	\$23,339	\$ 9,790	\$ 9,501	\$11,967	\$14,533	\$18,635	\$21,735
		Average Final Average Salary	\$30,448	\$29,746	\$33,471	\$34,062	\$36,476	\$36,728	\$27,571
		Number of Retired Members	12	133	193	160	137	85	23
	Police	Average Annual Benefits	\$53,898	\$44,200	\$49,099	\$48,487	\$47,837	\$57,648	\$48,808
		Average Final Average Salary	\$71,524	\$69,497	\$71,315	\$71,307	\$70,565	\$78,998	\$65,601
		Number of Retired Members	13	33	37	34	28	14	21
	Fire	Average Annual Benefits	\$49,931	\$47,452	\$47,234	\$49,220	\$48,607	\$51,174	\$59,296
		Average Final Average Salary	\$72,619	\$68,957	\$72,578	\$71,919	\$69,912	\$72,998	\$81,132
		Number of Retired Members	13	34	37	52	44	59	31
2019	General City	Average Annual Benefits	\$23,804	\$10,056	\$10,441	\$13,968	\$17,351	\$21,468	\$22,182
		Average Final Average Salary	\$30,743	\$29,828	\$34,414	\$37,022	\$41,194	\$44,100	\$36,060
		Number of Retired Members	12	121	172	137	115	71	21
	Police	Average Annual Benefits	\$58,446	\$48,053	\$50,976	\$45,527	\$57,926	\$63,741	\$56,804
		Average Final Average Salary	\$77,626	\$77,381	\$75,704	\$79,160	\$79,635	\$81,557	\$71,296
		Number of Retired Members	12	29	37	34	30	15	21
	Fire	Average Annual Benefits	\$50,358	\$50,626	\$46,885	\$51,367	\$48,879	\$55,498	\$68,092
		Average Final Average Salary	\$73,019	\$79,171	\$78,986	\$81,735	\$71,652	\$78,708	\$82,455
		Number of Retired Members	13	28	38	46	42	58	33

EMPLOYEES' RETIREMENT SYSTEM OF THE CITY OF MILWAUKEE
Principal Participating Employers
Current Year and Nine Years Ago

	<u>As of December 31, 2019</u>			<u>As of December 31, 2010</u>		
	<u>Active</u>	<u>Percentage</u>	<u>Rank</u>	<u>Active</u>	<u>Percentage</u>	<u>Rank</u>
	<u>Members</u>	<u>of Total Plan</u>		<u>Members</u>	<u>of Total Plan</u>	
Participating Government						
City of Milwaukee	5,875	53.54%	1	6,237	56.13%	1
Milwaukee Public Schools	4,258	38.80%	2	3,919	35.27%	2
Milwaukee Water Works	340	3.10%	3	313	2.82%	3
Milwaukee Metropolitan Sewerage District	226	2.06%	4	232	2.09%	4
Housing Authority - City of Milwaukee	146	1.33%	5	210	1.89%	5
Wisconsin Center District	109	0.99%	6	90	0.81%	7
Veolia Water	20	0.18%	7	109	0.98%	6
Milwaukee Technical College	-	0.00%	N/A	2	0.02%	8
Total	<u>10,974</u>	<u>100%</u>		<u>11,112</u>	<u>100%</u>	