MERS®
Municipal Employees' Retirement System

COMPREHENSIVE ANNUAL FINANCIAL REPORT

for the fiscal year ending
12.31.2017

1134 Municipal Way
Lansing, Michigan 48917

800.767.MERS (6377)
www.mersofmich.com

MERS
Municipal Employees' Retirement System

COMPREHENSIVE ANNUAL FINANCIAL REPORT

FOR THE YEAR ENDED DECEMBER 31, 2017

PREPARED BY
The Finance Department of the
Municipal Employees' Retirement System of Michigan
1134 Municipal Way
Lansing, MI 48917

Contact MERS of Michigan
800.767.MERS (6377)
www.mersofmich.com

Chris Derose
Chief Executive Officer

Leon Hank, CPA
Chief Financial Officer

INTRODUCTORY SECTION

FINANCIAL SECTION

***The Notes are part of the basic Financial Statements.*

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INVESTMENTS SECTION

ACTUARIAL SECTION

STATISTICAL SECTION

INTRODUCTION

2017 ACHIEVEMENTS

Certificate of Achievement for Excellence in Financial Reporting

The Municipal Employees' Retirement System of Michigan (MERS) received the Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association for the December 31, 2016, Comprehensive Annual Financial Report. This marks the 29th consecutive year MERS has received this honor.

Public Pension Standards Award

MERS also received the Public Pension Coordinating Council (PPCC), Public Pension Standards Award for 2017, in recognition of meeting the professional standards for plan design and administration as set forth in the Public Pension Standards. This award is presented by the PPCC, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS), and the National Council on Teacher Retirement (NCTR).

Municipal Employees' Retirement System MERS

Letter of Transmittal, May 16, 2018

Dear Board Members:

We are pleased to submit the Comprehensive Annual Financial Report (CAFR) for the Municipal Employees' Retirement System (MERS) of Michigan for the fiscal year ending December 31, 2017.

This year, MERS completed the first year of our four-year strategic plan driven by our vision to deliver superior value to our customers by:

1) Achieving a deeper understanding of customer needs and connection with them.
2) Proactively partnering with employers by providing options that help meet their unique needs.
3) Consistently delivering services through intuitive processes and systems.
4) Significantly increasing resources and awareness that help participants improve financial wellness to be ready for retirement.

Supported by strategic business plan projects and measured by meaningful data on an ongoing basis, MERS aims to build on past successes, respond to customer feedback, and establish direction for continual improvement. More specifically, performance outcomes included an increase in satisfaction of employers and participants from 85% to 92%, and 85% to 93% respectively. There was a dedicated focus on building awareness of MERS resources and actions participants can take to improve their financial wellness. In addition, we established performance standards and promoted user-centric processes to consistently deliver service through intuitive, streamlined processes to customers.

MERS continues to work to manage costs, maximize benefit options, and develop responsible, alternative funding approaches for employers. One key initiative was to continue to assist our municipalities in managing their unfunded liabilities, recognizing there is no one-size-fits-all approach. MERS has expanded its toolbox of options for municipalities to proactively address their plans, and we're proud of the fact that over the last six years, 75% of MERS members have taken voluntary steps to reduce unfunded liabilities. This approach aligns the unique nature of each municipality with the appropriate strategies to address their specific needs.

MERS Profile

MERS is a statutory public corporation that serves members across the state of Michigan. We are one of the largest, most established, and successful shared services stories in Michigan, providing administration, investment expertise, fiduciary responsibility, and oversight for benefit plans. Our approach to efficiently managing retirement and other post-employment plans allows local governments to focus on their core services, leaving day-to-day plan administration and long range management to us. Services we provide include: plan governance, on-staff auditor, legal counsel, actuarial services, financial management, fiduciary responsibility, information technology support, legislative advocacy, administration of benefits, and investments. The MERS Retirement Board (Board) serves as the fiduciary of the funds and has oversight responsibilities.

Report Structure and Contents
Section 38.1536 of the Michigan Compiled Laws requires the Board to prepare this annual report in accordance with U.S. Generally Accepted Accounting Principles (GAAP). The financial information shown throughout this report meets that requirement. The MERS management team, under the oversight of the Board, is responsible for the preparation, integrity, and fairness of the financial statements and other information presented in this report.

Section 38.1536 also requires the Board to arrange for an annual audit of the MERS financial statements. Plante Moran, PLLC, MERS external auditor, conducted an independent audit of the financial statements in accordance with Generally Accepted Auditing Standards. This audit is described in the Independent Auditor's Report in the Financial Section following this letter. MERS management provides the external auditors with unrestricted access to records and staff. This external audit is conducted annually to ensure the sufficiency of the internal controls and that our financial statements are fairly stated.

As a part of our financial statement process, we have identified necessary internal controls and have them in place to ensure that transactions are authorized, assets are safeguarded, and all supporting records are properly retained and managed. The cost of a control should not exceed the benefits to be derived. The internal control objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. We have an internal auditor on staff to help ensure we meet high standards for internal control. As a part of continually strengthening internal controls, MERS conducted an Internal Control Evaluation (ICE) in 2017 for the entire organization. As part of the ICE process, management evaluated its controls designed to protect assets, facilitate accurate financial reporting, and ultimately assist in achieving the MERS vision. Going forward, this evaluation is scheduled to be completed on a biennial basis. In 2017, MERS also completed a Service Organization Control Audit (SOC 1, Type II audit) that disclosed no deficiencies in MERS internal control.

This CAFR is divided into five sections: Introduction, Financial, Investment, Actuarial, and Statistical. The Introductory Section outlines the achievements and structure of MERS; the Financial Section contains the Financial Statements, Notes, Required Supplementary Information, Management's Discussion and Analysis (MD&A), which is the MERS management team's narrative and overview of the financial statements. This Transmittal Letter is designed to supplement and complement the MD&A. The two documents should be read together to get a thorough overview of MERS' financial condition. The Investment Section reports investment activities and performance information; the Actuarial Section contains the actuarial assumptions and methods as well as the actuary's certification letter. The Statistical Section provides various schedules on member data and ten-year trends.

Financial Summary
In 2017, MERS enhanced our oversight practices and continued to enhance the efficiency of MERS investments along with returns to mitigate the low return environment. For the second year in a row, MERS had robust investment returns for the MERS Defined Benefit (DB) Portfolio. This year, the portfolio gained 13.4% (gross of fees). More information regarding our investment management performance, policies and processes are found in the Investments Section. Investment returns above the 7.75% actuarial assumption helps strengthen DB plans and reduces retirement costs paid by employers and employees.

MERS also grew its net position held for members to a new record level of $11.3 billion, the first time exceeding that plateau. The most significant factor in that growth was net revenue of $2.2 billion ($1.4 billion from investment returns). Strong cost control measures helped MERS hold its administrative costs to $19.2 million, consistent with last year, and within comparable costs all the way back to its 2009 spending level. Lower administrative costs also have a positive impact on DB plans.

As an indicator of how municipalities are more aggressively addressing their other post-employment benefit (OPEB) obligations, MERS experienced its most significant growth in the Health Care Savings Program and Retiree Health Funding Vehicle, where net plan assets grew by 25% and 20% respectively. The total asset increase for these two programs for 2017 is over $187 million.

One other measure of a defined benefit retirement system's financial health is the percentage of its actuarial liabilities owed that is covered by its available actuarial assets. Using this ratio, 56% of MERS' municipalities were funded at 70% or higher (401 municipalities), which is up from the previous year.

We continue to partner with all municipalities in helping them set fiscal goals and discussing options to find the programs and provisions that best fit each municipality's unique needs. There are 730 municipalities within MERS Defined Benefit and Hybrid Plans, which encompasses 2,723 divisions with unique benefit designs. Overall, 29% of municipalities have one or more divisions where new hires have either a hybrid plan or a lower tier defined benefit. About 24% of municipalities have one or more divisions where new hires have a defined contribution plan. There were also 176 divisions that increased cost sharing to their employees. In 2017, almost half of our employers made voluntary contributions to their plan, contributing an additional $149 million to help increase funding levels. These efforts helped strengthen the financial condition of all these plans. In addition, new municipalities joining the MERS system brought in an extra $48 million.

More detail on these financial metrics is included in the Management Discussion & Analysis document. A complete copy of the CAFR is provided to the Governor, the members of both the State House and Senate, and the Office of the State Treasurer, as required by law. The CAFR and Summary Report are available on our website, www.mersofmich.com.

Acknowledgements
We are honored that for the 29th consecutive year, the Government Finance Officers Association (GFOA) awarded MERS its Certificate of Achievement for Excellence in Financial Reporting award for our 2016 CAFR.

We are very grateful to our Board members for their time and dedication which makes it possible for MERS to be successful for our members and participants. Their conscientious oversight and diligence of our well-run system is greatly appreciated. On behalf of all MERS members and participants, we thank them for their dedication to public service.

We also express our deep gratitude to the entire staff for their hard work and dedication to ensure the successful operation of MERS. Our staff uses innovation, skill, and a commitment to service excellence every day to ensure the security of a retirement plan for all of our participants. Staff has built stronger relationships with each other and with customers through celebration, understanding and connection.

Respectfully submitted,

Chris DeRose
Chief Executive Officer

Leon E. Hank, CPA
Chief Financial Officer

Letter from the Chairperson, May 16, 2018

Dear MERS Members:

On behalf of the MERS Retirement Board, it is my pleasure to present the Comprehensive Annual Financial Report (CAFR) of the Municipal Employees' Retirement System of Michigan. This is the 71st year MERS has provided professional retirement services to municipal members across the state of Michigan. Included in this year's report is all of the required financial information for the fiscal year ending December 31, 2017.

MERS is governed by an elected board that operates without compensation. This governance approach ensures MERS continues to grow in financial strength as well as provides superior value to members. We just completed the first year of our four-year Strategic Plan and are working toward that shared vision and aggressive service goals under the leadership of Chris DeRose, our Chief Executive Officer.

Our Board remains committed to fairness, transparency, and accountability for our members, holding the line on administrative costs and watching out for the best interests of our members. Our Board adheres to strong conflict of interest provisions and best fiscal practices, all of which have made MERS the go-to expert for retirement security in Michigan.

We continue to grow in the number of members and participants we serve. MERS manages retirement and employee benefit plans for more than 850 municipal members across the state, from the western Upper Peninsula to the southeastern Lower Peninsula with a combined net position value of more than $11.3 billion. MERS proudly serves over 136,000 accounts, including police officers and firefighters, road crews, medical staff, librarians, clerks, and countless other roles that protect and serve the many communities across Michigan that we call home.

We are actively partnering with our membership to listen to their unique needs. As a result of those discussions, we have planned and prioritized our actions and our work projects based on feedback received. We continue to focus on providing more information and resources to assist our members with managing their unfunded liabilities, enhancing online account access, as well as providing educational resources to assist participants in overall financial wellness and preparing for retirement.

Readying Michigan for retirement is no small feat. However, I know our staff will continue to work diligently with our members to find the appropriate solutions. All of this speaks to the dedication of our leadership, the competency of our staff, and our passion for excellence in all we do for you, our members.

In closing, I would like to take this opportunity to thank the Board members and staff for their expertise and professionalism. It is my pleasure to serve as your MERS Chairperson and, like all of you, I am proud to have played a role in serving all MERS members and participants in our mission to provide a secure retirement.

Sincerely,

Michael Brown, Chairperson
MERS Retirement Board

MERS RETIREMENT BOARD

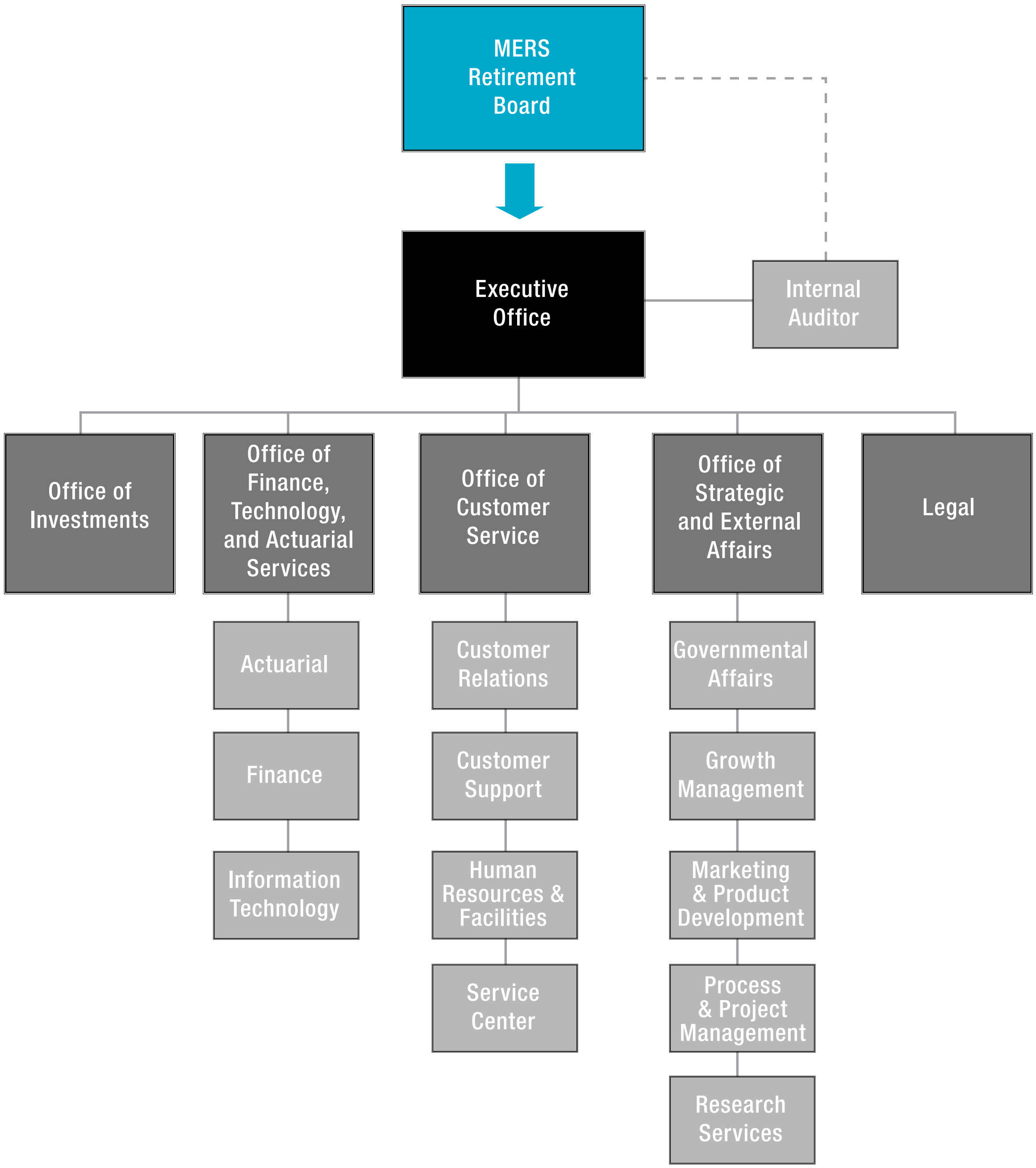
Back row (standing left to right): Dale Feldpausch, James Wiersma, Jason Sarata, Michael Brown, Tina Butler
Front row (sitting): Amy Deford, John Ogden, Michael Gilmore, Randy Girard

Officer Members:	**Michael Brown** (Chairperson), Barry County; **Randy Girard**, Charter Township of Marquette; **Dale Feldpausch**, Capital Region Airport Authority
Employee Members:	**Tina Butler**, Cass County; **Jason Sarata**, Delta Township; **Amy Deford**, Saginaw County
Public Members:	**Michael Gilmore**, Delta Dental, Okemos; **James R. Wiersma**, Haworth, Holland
Retiree Member:	**John Ogden**, City of Port Huron

MERS OFFICERS

From left to right:
Carrie Lombardo, Chief Strategic and External Affairs Officer
Denise Boucke, Chief Customer Service Officer
Chris DeRose, Chief Executive Officer
Jeb Burns, Chief Investment Officer
Leon Hank, Chief Financial Officer

MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN ORGANIZATIONAL STRUCTURE – 2017



OUTSIDE PROFESSIONAL SERVICES

Actuaries
CBIZ, Inc.
Gabriel, Roeder, Smith & Company
PricewaterhouseCoopers LLP

Auditors
Plante & Moran, PLLC

Banking
Commerce
JP Morgan Chase
Northern Trust

Business Consulting
Byrum & Fisk Advocacy Communications
Red Cedar Solutions Group
The Cadence Group, Inc.

Human Resource Advisor
Gallagher Benefit Services, Inc.
HR Management Group, Inc.

Custodial Bank and Securities Lending Agent
State Street Bank & Trust Company

Investment Consulting and Research Firms
BCA Research
Bloomberg Finance L.P.
Gavekal Capital
Informa Investment Solutions
Ned Davis Research
Stephen Morrow

Legal Counsel
Bernstien, Litowitz, Berger and Grossmann, LLP
Dickinson Wright PLLC
Ice Miller, LLP
Miller, Canfield, Paddock and Stone, P.L.C.

Legislative Consultants
Karoub Associates
Michigan Legislative Consultants

Medical Advisor
Managed Medical Review Organization

Systems Implementation and Maintenance
Atrio Systems
Dewpoint, Inc.
Maner Costerisan
Optima Consulting LLC
Rapid7 LLC
Tegrit Software Ventures, Inc.
Total Solutions, Inc.
Viawest, Inc.
Winklevoss Technologies LLC

Third-Party Administrator
Alerus Retirement Solutions

ACKNOWLEDGEMENTS

The MERS Comprehensive Annual Financial Report (CAFR) for the year ended December 31, 2017, was prepared by the Office of Finance and Technology Services. Special thanks to the individuals who contributed significant amounts of time and energy to help complete this report.

Office of Finance and Technology Services

Betsy Waldofsky, Finance Director
Luke Huelskamp, Senior Finance Manager
Danielle Williams, Accountant
Courtney Allen, Accountant

Office of Investments

Claudia Konieczny, Investment Compliance and Operations Analyst
Julian Ramirez, Investment Analyst
Mike Schrauben, Investment Officer and Portfolio Manager
Paul VanGilder, Investment Analyst

Office of Strategic and External Affairs

Betsy Schaeffer, Digital Print and Mail Services Supervisor
James Scofield, Design Coordinator
Janie Olivarez, Office Administrator
Jennifer Mausolf, Marketing Director
Richard Taylor, Print Production Specialist

Executive Office

Brian LaVictoire, Deputy General Counsel for Investments and Compliance
Carri Simon, Internal Auditor
Kristin Bellar, Senior Deputy General Counsel
Patricia Tarini, General Counsel

Special thanks are also extended to Plante & Moran PLLC, Alerus Retirement Solutions, CBIZ, State Street Bank & Trust Company, and Tegrit Software Ventures, Inc.

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FINANCIAL

INDEPENDENT AUDITOR'S REPORT

plante moran

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P.O. Box 307
Southfield, MI 48037-0307
Tel: 248.352.2500
Fax: 248.352.0018
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Independent Auditor's Report

To the Retirement Board
Municipal Employees' Retirement System of Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of Municipal Employees' Retirement System of Michigan (MERS) as of and for the year ended December 31, 2017 and the related notes to the financial statements, which collectively comprise MERS' 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.

Auditor's 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 auditor's 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 relevant to the entity'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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the 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 basic financial statements referred to above present fairly, in all material respects, the plan net position of Municipal Employees' Retirement System of Michigan as of December 31, 2017 and the changes in plan net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As explained in Note 4, the financial statements include investments valued at approximately $3.8 billion (33 percent of net position) at December 31, 2017, whose fair values have been estimated by management in the absence of readily determinable market values. Management's estimates are based on information provided by fund managers, general partners, etc. Our opinion is not modified with respect to this matter.

To the Retirement Board
Municipal Employees' Retirement System of Michigan

Required Supplemental Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the other 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, which 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 supplemental 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.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise Municipal Employees' Retirement System of Michigan's basic financial statements. The schedule of administrative expenses, schedule of investment expenses, and schedule of payments to consultants and introductory, investments, actuarial, and statistical sections are presented for the purpose of additional analysis and are not a required part of the basic financial statements.

The schedule of administrative expenses, schedule of investment expenses, and schedule of payments to consultants are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such 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 schedule of administrative expenses, schedule of investment expenses, and schedule of payments to consultants are fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory, investments, actuarial, and statistical sections have 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 them.

Report on Summarized Comparative Information

We have previously audited Municipal Employees' Retirement System of Michigan's December 31, 2016 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated May 9, 2017. In our opinion, the summarized comparative information presented herein as of and for the year ended December 31, 2016 is consistent, in all material respects, with the audited financial statements from which it has been derived.

To the Retirement Board
Municipal Employees' Retirement System of Michigan

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated May 15, 2018 on our consideration of Municipal Employees' Retirement System of Michigan's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the 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 Municipal Employees' Retirement System of Michigan's internal control over financial reporting and compliance.

Plante & Moran, PLLC

May 15, 2018

MANAGEMENT'S DISCUSSION AND ANALYSIS

This narrative overview and analysis of Municipal Employees' Retirement System of Michigan's (MERS or System) financial condition for the year ended December 31, 2017 is presented in conjunction with the Chief Executive Officer and Chief Financial Officer's Letter of Transmittal. The Financial Section is comprised of the Independent Auditor's Report, Management's Discussion and Analysis, two basic financial statements with explanatory notes, three required supplementary schedules with explanatory notes, and three supplementary expense schedules.

FINANCIAL HIGHLIGHTS

The following financial highlights occurred during the year ended December 31, 2017:

- Total fiduciary net position for the Defined Benefit Plan, Defined Contribution Plan, Health Care Savings Program, Retiree Health Funding Vehicle, 457 Program, and Investment Services Program increased by 13%, primarily due to investment gains for the year. MERS finished the year with $11.3 billion in net fiduciary position, the highest level in our history.
- Defined Benefit investment returns saw a gain of 13.2% net of investment expenses for the year. The 30-year return was 8.51%, which is above the long-term target of MERS expected investment rate of return of 7.75%.
- Contribution revenue increased by 1% from $851 million in 2016 to $858 million in 2017. This increase was largely due to an increase in employer contributions compared to the previous year.
- Total annual benefits, transfers, and withdrawals decreased by $104 million for a total of $909 million. This decrease was due to a withdrawal in 2016 of $108 million for a Defined Benefit employer who privatized and terminated its plan with MERS.
- Administrative expenses remained level at $19 million while MERS grew significantly and brought in 202 new municipal programs. MERS has continued to keep costs down through the growth of our pool and strong ongoing budgeting and cost-control measures.
- Investment expenses totaled $14 million, a decrease from the previous year. Most of these expenses are related to investment manager fees. The decrease in investment manager expense was partly due to bringing in additional assets to be managed in-house by MERS Office of Investments at a lower cost.
- MERS' most recent actuarial valuation, dated December 31, 2016, showed 401 of MERS' 720 Defined Benefit municipalities are funded 70% or better, with 66 municipalities over 100% funded.
- The difference between MERS' actuarial and fair value assets declined from last year, as the actuarial calculation for 2017 is 101% of the fair value of assets as calculated by the actuaries (the ratio was 108% as of December 31, 2016). Total Defined Benefit Plan actuarial assets and fair value of assets were valued at $9,545,649,179 billion and $9,438,790,673 billion respectively at December 31, 2017.

Basic Financial Statements

This Management's Discussion and Analysis is an introduction to the MERS basic financial reporting statements:

1. Statement of Fiduciary Net Position
2. Statement of Changes in Fiduciary Net Position
3. Notes to Basic Financial Statements

The "Statement of Fiduciary Net Position" and "Statement of Changes in Fiduciary Net Position" provide the current financial condition of each MERS product.

The "Comparison Statement of Fiduciary Net Position" and "Comparison Statement of Changes in Fiduciary Net Position" provide a comparative summary of the financial condition of the plan as a whole with the prior year results.

Required Supplemental Information

1. Schedule of Investment Returns
2. Schedule of Employer Contributions
3. Schedule of Changes in Employer Net Pension Liability and Related Ratios

Supplementary Expense Schedules

1. Schedule of Administrative Expenses
2. Schedule of Investment Expenses
3. Schedule of Payments to Consultants

The expense schedules summarize all expenses associated with administering all MERS' programs.

Comparison Statement of Fiduciary Net Position (Dollars in Thousands)

	December 31, 2017	December 31, 2016	Increase (Decrease) Amount	Increase (Decrease) Percent
Assets				
Cash and Short-Term Investments	$12,766	$131,920	$(119,154)	-90%
Receivables	367,227	214,316	152,911	71%
Interfund Receivables	136	81	55	68%
Loans	5,774	5,063	711	14%
Investments, at fair value	11,315,059	9,863,926	1,451,133	15%
Invested Securities Lending Collateral	528,514	750,384	(221,870)	-30%
Other Assets/Prepaids	695	651	44	7%
Net Capital Assets	15,913	15,126	787	5%
Total Assets	**12,246,084**	**10,981,467**	**1,264,617**	**12%**
Deferred Outflow of Resources				
Outflows Related to Pension	4,288	5,130	(842)	100%
Liabilities				
Purchase of Investments	324,919	171,383	153,536	90%
Securities Lending Collateral	528,610	750,429	(221,819)	-30%
Administrative/Investment Costs/Reserves	**8,633**	**10,762**	**(2,129)**	**-20%**
Interfund Payables	136	81	55	68%
Total Liabilities	**862,298**	**932,655**	**(70,357)**	**-8%**
Net Position Restricted for Pension and Health Benefits and Investment Accounts Held for Others	**$11,388,074**	**$10,053,942**	**$1,334,132**	**13%**

Comparison Statement of Changes in Fiduciary Net Position (Dollars in Thousands)

	December 31, 2017	December 31, 2016	Increase (Decrease) Amount	Increase (Decrease) Percent
Additions				
Contributions	$858,228	$851,270	$6,958	1%
Investment Net Income (Loss) Investing Activities	1,404,789	1,000,473	404,316	40%
Investment Net Income-Securities Lending	3,663	5,073	(1,410)	-28%
Miscellaneous Income	55	101	(46)	-46%
Total Additions	**2,266,735**	**1,856,917**	**409,818**	**22%**
Deductions				
Benefits/Transfers and Withdrawals	909,116	1,013,016	(103,900)	-10%
Forfeitures, Miscellaneous	15		15	100%
Special Litigation Expense	4,250		4,250	100%
Administrative Expense	19,222	19,143	79	0%
Total Distributions	**932,603**	**1,032,159**	**(99,556)**	**-10%**
Net Increase/Decrease	**1,334,132**	**824,758**	**509,374**	**62%**
Net Position-Restricted for Pension and Health Benefits and Investment Accounts Held for Others				
Balance Beginning of Year	10,053,942	9,229,184	824,758	9%
Balance End of Year	**$11,388,074**	**$10,053,942**	**$1,334,132**	**13%**

Analysis of Fiduciary Net Position

The fiduciary net position increased by nearly $1.3 billion over the previous fiscal year primarily due to investment gains of over $1 billion.

MERS' receivables consist chiefly of investment and employer contribution billings that settled in early 2018. Investment receivables are the bulk of the receivables for securities that were purchased in late 2017 and then cleared in the new year.

Combined employer and employee contributions increased slightly in 2017 due to an increase in the actuarial required employer contributions.

MERS had capital assets, net of accumulated depreciation, of $15.9 million. Of the total, $8 million is software needed to run the pension administration and financial programs; $870,000 is office furniture and equipment; and $7 million is buildings and land.

MERS has no long-term liabilities. The bulk of MERS' liabilities at year-end are related to investment purchases that did not settle until early 2018, accrued administrative and investment expenses, and securities' lending collateral.

Investment Activities

The performance of the Defined Benefit Portfolio was favorable when compared to the investment benchmark over the past 30 years. The return (net of investment expenses) of 13.2% was above the 7.75% actuarial return assumption target for the year. By comparison for three, five, ten, and thirty-year periods, the net returns were 7.45%, 8.67%, 5.56%, and 8.51%, respectively. Net investment income (net appreciation in fair value less investment expenses plus securities lending income) increased $403 million for the year. A further detailed analysis of investment returns is in the Investments Section.

MERS' investments are managed to control downside risk while maximizing long-term gain potential. This strategy positions MERS to limit the impact of adverse market conditions. Portfolio diversification by asset class and style is an important element of investment risk control.

MERS is an investment fiduciary under the Public Employee Retirement System Investment Act, PA 314 of 1965, MCL 38.1132 et seq., as amended, and, as such, is subject to the "prudent person" standard of care with respect to the management and investment of the System's assets. This standard requires that MERS discharge its duties solely in the interest of the System's participants and beneficiaries with the diligence, care, and skill that a prudent person would ordinarily exercise under similar circumstances.

In accordance with its fiduciary duties, the Board has adopted an investment policy that outlines the investment goals, objectives, and policies of the System's pension fund. The purpose of the policy is to ensure that the investment activities are carried out within the framework established by MERS' policy and administrative documents. The investment policy assists the Board, Investment Committee, and Office of Investments in effectively and prudently monitoring and administering MERS' investments. A summary of MERS' total assets are on page 70.

Funding Status

A pension plan is well funded when it has sufficient assets invested to meet all expected future obligations to participants. The greater the level of funding — the larger the ratio of assets to actuarial accrued liability. While some municipalities are not fully funded, annual contributions are made at an actuarially determined rate to reach full funding over a period of years (currently 22 years as of January 1, 2018). There is no single, all-encompassing test for measuring a retirement system's funding progress and current funded status. However, some common indicators that a retirement system has achieved progress in funding its obligations include: observing the changes over time of the ratio of valuation assets to actuarial accrued liabilities and the pattern of the unfunded actuarial accrued liability as a percentage of active payroll.

The Board has adopted a funding policy for MERS to achieve the following major objectives:

- Adequacy;
- Inter-Period Equity (in particular intergenerational equity) and Transparency; and
- Contribution Stability and Governance.

The actuarial method for calculating the accrued liability for all plans is entry age normal with the objective of maintaining employer contributions approximately level as a percentage of member payroll. A detailed discussion of the funding method is in the Actuarial Section.

MERS is an agent multiple-employer retirement system that pools assets of the participating employers for investment purposes, but maintains separate trusts for each individual employer. For this reason, MERS does not have a "funded status;" rather, each municipality has its own funded level. Each municipality is responsible for its own plan liabilities; a municipality cannot borrow from another municipality's account to pay for pension expenses. A measure of a municipality's funding progress is the ratio of its actuarial assets to actuarial accrued liabilities.

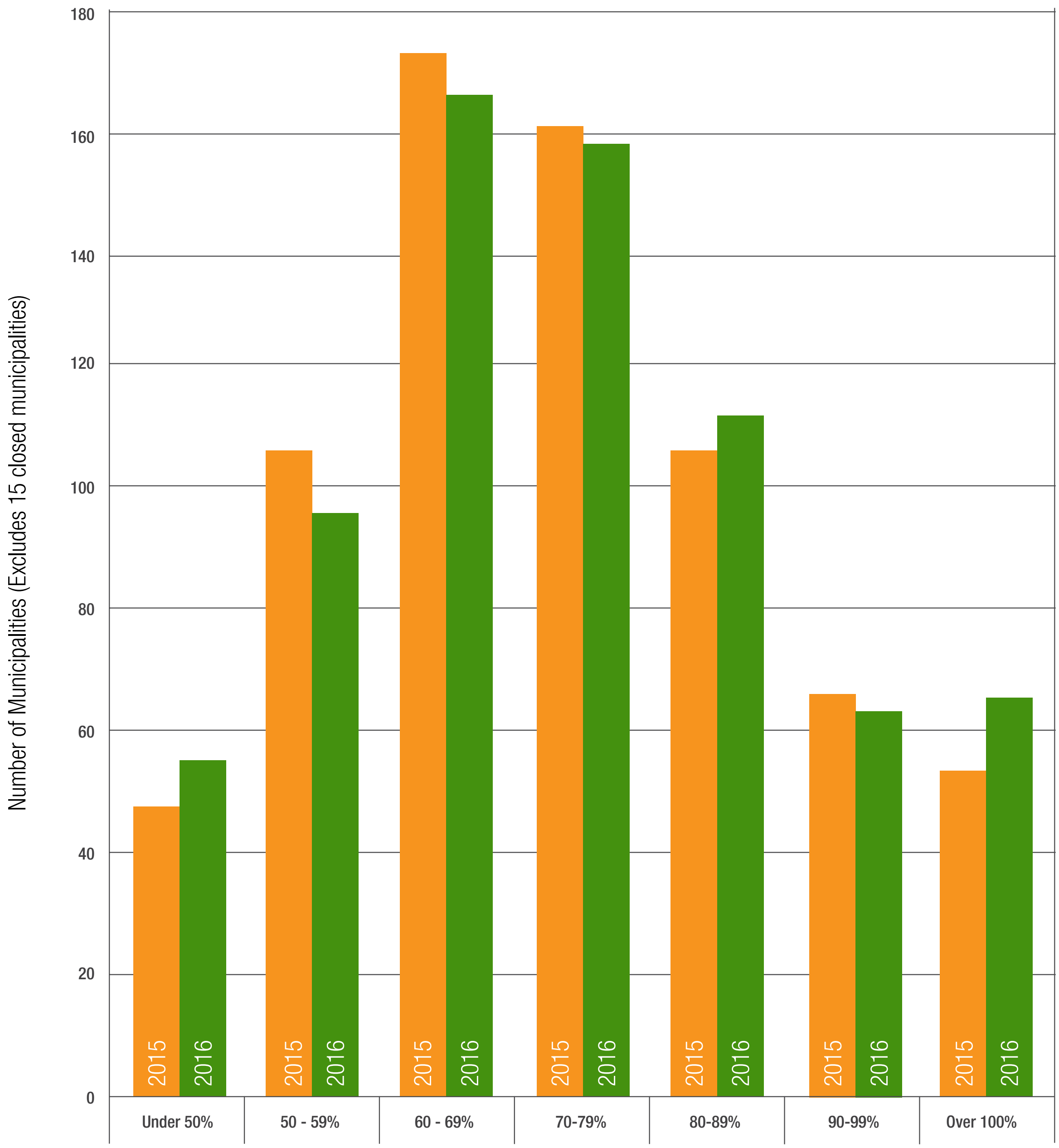
The most recent MERS actuarial valuation is as of December 31, 2016. On that date, of all 720 municipalities, 401 municipalities in MERS are funded at 70% or higher (56% of all municipalities) and 66 municipalities (9.2% of all Defined Benefit and Hybrid municipalities) are funded at 100% or more. The average funded percentage was 74% in 2016.

MERS partners with our local governments to

- determine the best retirement fit for each municipality,
- offer cost-reducing strategies, and
- provide fiscal best practices.

The difference between MERS' actuarial and fair value of assets narrowed in 2017. The 2017 end of the year actuarial calculation of assets is 1.01% of the fair value of assets compared to 1.08% as of December 31, 2016. Ideally, the differences between actuarial value and fair value of assets should be small. The higher actuarial value of assets reflects smoothing losses of the 2008 downturn, and lower investment returns than the MERS expected rate of return of 7.75%. If investment returns are higher in the next few years than the MERS expected rate of return, the difference will continue to narrow between the actuarial and fair values.

Distribution of Funded Percentage of Actuarial Accrued Liability among the 720 participating municipalities as of December 31, 2016, and the 717 participating municipalities as of December 31, 2015



Statement of Fiduciary Net Position as of December 31, 2017 (Dollars in Thousands)

	Defined Benefit	Defined Contribution	Health Care Savings Plan
Assets			
Cash and Short-Term Investments[1]	$12,825	$(10)	$(2)
Receivables			
Employer and Member Contributions	42,225	175	89
Sale of Investments	270,507	6,340	4,961
Investment Income	11,571	271	212
Loans		5,505	
Interfund Receivables	136		
Other	710		
Total Receivables	**325,149**	**12,291**	**5,262**
Investments, at fair value	9,406,317	661,247	182,562
Invested Securities Lending Collateral	460,291	10,787	8,442
Prepaid Expenses	695		
Capital Assets, at cost, net of accumulated depreciation	15,913		
Total Assets	**10,221,190**	**684,315**	**196,264**
Deferred Outflow of Resources			
Outflows related to pension	4,288		
Liabilities			
Purchase of Investments	282,976	6,632	5,190
Securities Lending Collateral	460,375	10,789	8,443
Reserves and Forfeitures			
Administrative and Investment Costs	6,004		
Interfund Payables		54	42
Total Liabilities	**749,355**	**17,475**	**13,675**
Deferred Inflow of Resources			
Net Position-Restricted for Pension and Health Benefits and Investment Accounts Held for Others	**$9,476,123**	**$666,840**	**$182,589**

The accompanying notes are an integral part of these Financial Statements.

[1] Cash can be temporarily negative due to investments being traded and settled.

Retiree Health Funding Vehicle	Investment Services Program	457 Program	Year Ended December 31, 2017	Year Ended December 31, 2016
$(43)	$(3)	$(1)	$12,766	$131,920
100		42	42,631	43,682
$26,072	$2,094	627	310,601	158,090
1,115	90	26	13,285	12,200
		269	5,774	5,063
			136	81
			710	344
27,287	**2,184**	**964**	**373,137**	**219,460**
906,589	72,833	85,511	11,315,059	9,863,926
44,363	3,564	1,067	528,514	750,384
			695	651
			15,913	15,126
978,196	**78,578**	**87,541**	**12,246,084**	**10,981,467**
			4,288	5,130
27,274	2,191	656	324,919	171,383
44,371	3,565	1,067	528,610	750,429
		2,629	2,629	3,208
			6,004	7,554
32	3	5	136	81
71,677	**5,759**	**4,357**	**862,298**	**932,655**
$906,519	**$72,819**	**$83,184**	**$11,388,074**	**$10,053,942**

Statement of Changes in Fiduciary Net Position for the Year Ended December 31, 2017 (Dollars in Thousands)

	Defined Benefit	Defined Contribution	Health Care Savings Plan
Additions			
Contributions and Transfers In			
Employer Contributions and Other	$609,707	$32,666	$23,477
Plan Member Contributions	88,192	22,259	
Total Contributions and Transfers In	697,899	54,925	23,477
Net Appreciation/Depreciation in Fair Value	1,079,662	83,641	18,093
Interest and Dividend Income	105,894	2,482	1,942
Subtotal of Investment Income	1,185,556	86,123	20,035
Less Investment Expense	12,702	215	168
Net Investment Income Before Securities Lending Activities	1,172,854	85,908	19,867
Security Lending Activities			
Security Lending Income	9,361	220	172
Security Lending Expenses			
Borrower Rebates	5,373	126	98
Management Fees	798	18	15
Total Securities Lending Expenses	6,171	144	113
Net Income from Security Lending Activities	3,190	76	59
Total Net Investment Income	1,176,044	85,984	19,926
Miscellaneous Income	55		
Total Additions	**1,873,998**	**140,909**	**43,403**
Deductions			
Benefits/Transfers and Withdrawals	849,719	34,722	5,645
Forfeitures, and Other Miscellaneous	15		
Special Litigation Expense	4,250		
Administrative Expenses	17,389	648	187
Total Deductions	**871,373**	**35,370**	**5,832**
Net Increase/Decrease	1,002,625	105,539	37,571
Net Position-Restricted for Pension and Health Benefits and Investment Accounts Held for Others			
Balance Beginning of Fiscal Period	8,473,498	561,301	145,018
Balance End of Fiscal Period	**$9,476,123**	**$666,840**	**$182,589**

The accompanying notes are an integral part of these Financial Statements.

Retiree Health Funding Vehicle	Investment Services Program	457 Program	Year Ended December 31, 2017	Year Ended December 31, 2016
$59,219	$142		$725,211	$722,699
		$22,566	133,017	128,571
59,219	142	22,566	858,228	851,270
97,784	6,612	11,467	1,297,259	910,402
10,206	820	245	121,589	106,926
107,990	7,432	11,712	1,418,848	1,017,328
882	71	21	14,059	16,855
107,108	7,361	11,691	1,404,789	1,000,473
902	72	22	10,749	8,738
518	42	13	6,170	2,397
77	6	2	916	1,268
595	48	15	7,086	3,665
307	24	7	3,663	5,073
107,415	7,385	11,698	1,408,452	1,005,546
			55	101
166,634	**7,527**	**34,264**	**2,266,735**	**1,856,917**
12,286	3,355	3,389	909,116	1,013,016
			15	
			4,250	
841	71	86	19,222	19,143
13,127	**3,426**	**3,475**	**932,603**	**1,032,159**
153,507	4,101	30,789	1,334,132	824,758
753,012	68,718	52,395	10,053,942	9,229,184
$906,519	**$72,819**	**$83,184**	**$11,388,074**	**$10,053,942**

NOTES TO BASIC FINANCIAL STATEMENTS

Year ended December 31, 2017

1. REPORTING ENTITY AND PLAN DESCRIPTION

MERS is a statutory public corporation and governmental pension plan qualified under Section 401(a) of the Internal Revenue Code, independent from the State of Michigan, which was established to provide a pooled program for retirement, survivor and disability benefits on a voluntary basis to the State of Michigan's municipal employees. MERS has helped provide retirement plans for municipal employees for over 70 years.

MERS was established by the Michigan Legislature under Public Act 135 of 1945 to provide pooled retirement plans specifically for Michigan municipalities on a voluntary basis. This act was repealed and replaced by the successor Municipal Employees' Retirement Act of 1984 (PA 427), as last amended by 2004 PA 490 (MERS Act). On August 15, 1996, pursuant to 1996 PA 220, MERS became independent from the State of Michigan.

Since 1996, MERS is solely administered by a nine-member retirement board (Board). The Board consists of the following members, each of whom, except for the retiree member and the Board appointees, shall be from a different county at the time of election:

- Two members, appointed by the Board, who have knowledge or experience in retirement systems, administration of retirement systems, investment management, or advisory services;
- One member, a retiree of the System, is appointed by the Board;
- Three members of the System, officers of a participating municipality or of a participating court, who are elected as Officer Board members by the delegates at the MERS Annual Meeting; and
- Three employee members of the System, who are not officers of a participating municipality or of a participating court, who are elected as Employee Board members by the delegates at the MERS Annual Meeting.

The regular term of office for members of the Board is three years. Members of the Board serve without compensation with respect to their duties, but are reimbursed by the System for their actual and necessary expenses incurred in the performance of their duties.

The Board establishes in its Plan Document the benefit plans and provisions that are available for adoption. The local municipality's governing body adopts all benefits of the plan. The various plans are discussed in the Actuarial Section. Pursuant to Article 9, Section 24 of the Constitution of the State of Michigan: "The accrued financial benefits of each pension plan and retirement system of the state and its political subdivisions shall be a contractual obligation thereof which shall not be diminished or impaired thereby. Financial benefits arising on account of service rendered in each fiscal year shall be funded during that year and such funding shall not be used for financing unfunded accrued liabilities."

MERS is an agent multiple-employer retirement system that pools assets of the participating employers for investment purposes, but maintains separate accounts for each individual employer.

Employee contribution rates vary depending on the benefit plan adopted by the local government. If an employee leaves employment or dies before becoming eligible for retirement benefits, accumulated employee contributions (plus interest) are refunded to the employee or designated beneficiary upon application.

The Internal Revenue Service (IRS) has determined that MERS Defined Benefit, Defined Contribution and Hybrid Plans are governmental plans that are tax-qualified trusts under Internal Revenue Code (the Code or IRC) Section 401(a) and tax exempt under Section 501(a). The IRS issued the most recent Letter of Favorable Determination for MERS on October 18, 2016. The benefits of tax-qualified status include the preferential deferred taxability of contributions, accumulated earnings, pensions, rollovers, annual compensation limits, and benefit limitations.

Under the Code, the retiree's pension becomes subject to taxation upon periodic distribution unless the distribution is "rolled over" if permitted by law. Pursuant to IRC Section 72(d), any "after tax contributions" are recovered tax-free over the life expectancy of the retiree (or beneficiary, if applicable).

IRC Section 401(a)(17) limits the amount of compensation can be taken into account for benefit calculation purposes and, correspondingly, limits the amount of employer and employee contributions. Compensation in excess of the limit ($270,000 and $275,000 for 2017 and 2018 respectively) will not be included by MERS in any benefit determination. Employee contributions in excess of the limit will not be collected or accepted, nor included in final average compensation for benefit purposes.

In addition, IRC Section 415(b)(1)(A) imposes certain limitations on pension benefit payments from the MERS qualified trust. Any amounts that exceed the limitations shall be paid from a Qualified Excess Benefit Arrangement (QEBA), as authorized by IRC Section 415(m) and the Michigan Public Employee Benefit Protection Act, MCL 38.1686 (2002 PA 100). The QEBA is a separate plan, and is annually cash funded by the affected participating municipality or court. The Board established the MERS QEBA in 2003 solely for the purpose of providing retirees and beneficiaries that portion of the retirement allowance exceeding the Section 415 limits, which is otherwise not payable by the trust under the terms of the MERS qualified plan. The IRS approval of the QEBA was pursuant to Private Letter Ruling issued December 15, 2003. Retirees and beneficiaries do not have an election, directly or indirectly, to defer compensation to the QEBA.

The MERS Defined Contribution Plan became operative July 8, 1997, under Section 401(a) of the IRC. On this date, the MERS Plan Document of 1996 was first determined by the IRS Letter of Favorable Determination to meet qualifications as a "governmental plan" trust under Code Section 401(a), and tax exempt under Section 501(a). MERS has contracted with a third party administrator for recordkeeping and administrative functions. The plan is available to all MERS participating municipalities and may be adopted on a division-by-division basis. Plan provisions and requirements are specified in the MERS Plan Document. MERS Defined Contribution Plan provides participants with an account they manage. At retirement, benefits are based solely on the amount contributed by the participant and employer and the performance of investments. IRC Section 415(c) imposes certain limitations on the annual additions that can be accepted by the MERS qualified trust (for 2017, the limit is the lesser of $54,000 or 100% of compensation). The plan has several strategic investment categories designed to help participants meet their retirement goals. All participants have access to the MERS streamlined investment menu that allows for simple and strategic investing.

The MERS Hybrid Plan is an option for municipalities that includes both a defined benefit and a defined contribution component. The defined benefit component (Part I) is employer funded, with benefit multipliers of 1.0, 1.25, and 1.5%. The defined contribution component (Part II) is a combination of employer and participant contributions that are invested in mutual funds selected by the individual participant. On the financial statements, the Hybrid Plan is reflected in both Defined Benefit and Defined Contribution columns on page 22.

MERS received a Private Letter Ruling dated January 13, 2004, allowing the establishment of an IRC Section 115 Integral Governmental Trust, giving MERS the ability to create two programs – the Health Care Savings Program and the Retiree Health Funding Vehicle.

The MERS Health Care Savings Program became operational in June 2004 and was made available to all municipalities in Michigan. The employer-sponsored program provides medical reimbursement accounts to participants. Medical expenses are reimbursed, as defined in Code Section 213, once participants terminate employment, are on medical leave for six months or longer, or are on disability from any public pension plan.

There are four types of contributions that may be used in the program: 1) Basic Employer (tax-favored); 2) Mandatory Salary Reductions (tax-favored); 3) Mandatory Leave Conversions (tax-favored); and 4) Voluntary Employee Contributions (post-tax).

As a result of the Private Letter Ruling and Code Sections 106 and 213, reimbursements for medical expenses are tax-exempt for the participant, their spouse, and/or Code Section 152 dependent(s). The Health Care Savings Program accounts are invested in the MERS Investment Menu, and earnings are tax exempt as a result of the MERS Private Letter Ruling. Plan provisions and requirements are specified in the MERS Health Care Savings Program and Retiree Health Funding Vehicle Plan Document and Trust.

The MERS Retiree Health Funding Vehicle became operational in the fall of 2004, and was made available to all municipalities in Michigan. Participating municipalities can contribute monies to the Trust as desired and no contribution method is imposed. These funds constitute a health care fund, which enable municipalities to accumulate monies to provide or subsidize health benefits for retirees and beneficiaries. MERS does not provide benefits, only the funding vehicle for local governments. The Retiree Health Funding Vehicle accounts are invested in the MERS portfolio choices and earnings are tax exempt as a result of the MERS Private Letter Ruling. Plan provisions and requirements are specified in the MERS Health Care Savings Program and Retiree Health Funding Vehicle Plan Document and Trust.

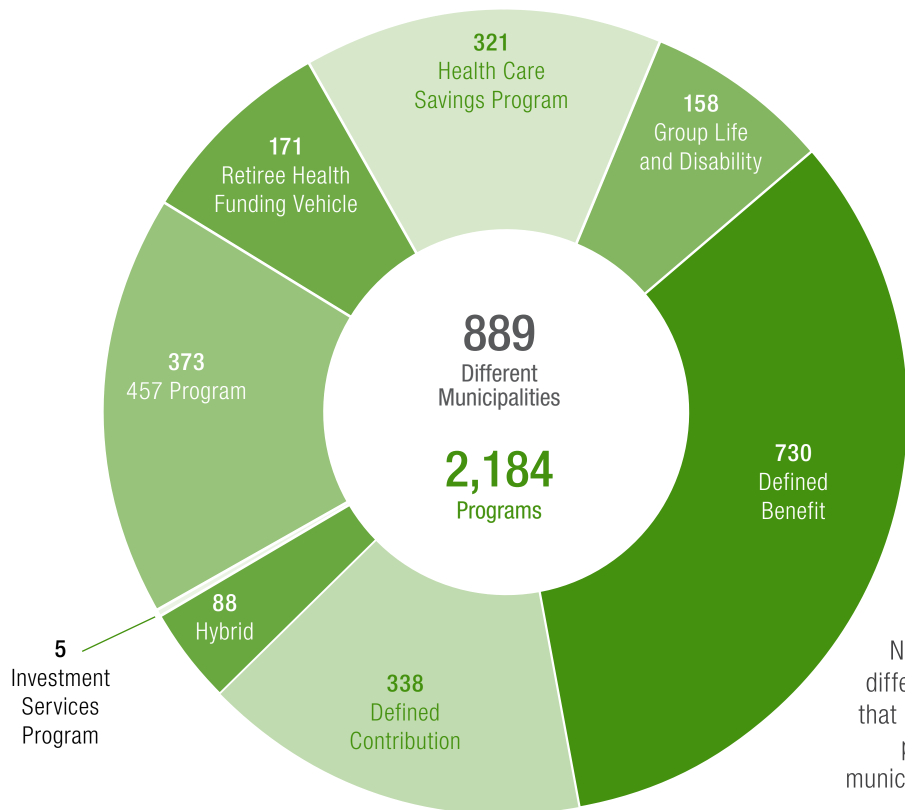
The MERS 457(b) Deferred Compensation Program was established as a deferred compensation plan and trust and became operational November 8, 2011. Its purpose is to provide benefits under the Program to participants and beneficiaries upon retirement, termination, disability, or death, upon the terms and conditions, and subject to the limitations contained in the Program. The Program was created for the exclusive benefit of eligible participants and their beneficiaries of any employer electing to participate in the Program. The Program is intended to comply with Code Section 457(b). All assets held in connection with the Program, including all contributions and amounts of compensation deferred pursuant to the Program, all property and rights acquired or purchased with such amounts, and all income attributable to such amounts, property, or rights shall be held in trust for the exclusive benefit of participants and their beneficiaries under the Program. No part of the assets and income shall be used for, or diverted to, purposes other than for the exclusive benefit of participants and their beneficiaries and for defraying reasonable expenses of the Program.

The Investment Services Program is an investment trust fund that is available to all municipalities in Michigan to invest funds through the MERS portfolio while maintaining administrative functions at the municipal level. The program was established by the Board in March 2006 and began operations in June 2006. The Investment Services Program trust fund complies with all the requirements imposed by the Public Employee Retirement System Investment Act, 1965 PA 314. Like the other non-retirement plans, participation in the Investment Services Program alone does not qualify as membership in MERS, and the participating employer that does not otherwise participate in MERS' 401(a) plan does not have a vote at the MERS Annual Conference.

Through The Standard Insurance Company, MERS offers quality group life and disability insurance to Michigan municipalities. This group buying program offers comprehensive benefit features, a variety of plan designs, and family-friendly provisions at an affordable cost.

Any "municipality" (a term defined by Section 2b (2) of the MERS Act, MCL 38.1502b(2)) within the state may elect to become a participating member of MERS by a majority vote of the municipality's governing body or by an affirmative vote of the qualified electors. Changes in retirement plan coverage are subject to approval by a majority vote of the municipality's governing body.

MERS Participating Municipalities as of December 31, 2017



Note: There are 889 different municipalities that make up the 2,184 programs, as many municipalities have more than one product.

MERS Participants as of December 31, 2017

	Defined Benefit	Defined Contribution	Hybrid	Health Care Savings Program	457
Active	31,987	12,093	2,784	14,924	3,302
Deferred	9,056	NA	194	NA	NA
Retired	39,782	NA	70	NA	NA
Contributions not Vested	11,965	NA	7	NA	NA
Terminated	NA	4,726	NA	5,226	438
Product Totals	92,790	16,819	3,055	20,150	3,740
Total MERS Accounts*					136,554
Total MERS Participants**					113,401

** Total MERS Accounts represents the total number of accounts within MERS; individuals may be represented multiple times across categories.*

*** Total MERS Participants represents the number of unique individuals that have a liability in a program. At least one of the individual's employments fell into the following categories: Active Status, Retired Status, Terminated Status Defined Benefit vested, Terminated Status Defined Benefit not vested but has a contribution balance, Terminated Status Hybrid vested, Terminated Status Hybrid not vested but has a contribution balance, Terminated Status Defined Contribution with a contribution balance, or Terminated Status Health Care Savings Program with a contribution balance.*

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

The Board is responsible for the administration of the System, has fiduciary responsibility for the investment of assets, and oversees all funds included in these financial statements. The Board appoints the Chief Executive Officer who manages and administers the System under the supervision and direction of the Board.

MERS is a statutory public corporation. MERS financial statements are not included in the financial statements of any other organization; it is the only entity included in this financial report.

Cost Allocation

The costs of administering the MERS Defined Benefit Plan are allocated proportionally based on the average daily balance asset size to the municipalities along with investment gains/losses on a quarterly basis.

The costs of administering the MERS Defined Contribution Plan, Health Care Savings Program, Retiree Health Funding Vehicle, and Investment Services Program are allocated out to the employers and participants based on an administrative expense percentage for each employer and participant.

Basis of Accounting

The financial statements for MERS are prepared on an accrual basis in accordance with Generally Accepted Accounting Principles (GAAP) as applicable to government organizations in the U.S. The preparation of financial statements, in conformity with GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure 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 could differ from these estimates.

MERS Defined Benefit Plan employer and employee contributions are recognized when due pursuant to legal, statutory, and contractual requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan. Expenses and the associated liabilities for those expenses are also recorded using the accrual method when the liability is incurred.

The Defined Contribution Plan, 457 Program, Health Care Savings Program, Retiree Health Funding Vehicle and Investment Services Program financial statements are prepared using the accrual accounting method for revenues which are recorded when either payroll reports and/or funds are received. Expenses and the associated liabilities for those expenses are also recorded using the accrual method when the liability is incurred.

Plan investments are presented at fair value using the accrual method for those investments which are invested in the MERS portfolio. Investment purchases, sales, and associated payables and receivables are recorded on their trade date. Investments invested outside of the MERS portfolio (primarily mutual funds) are recorded at fair value.

Post-Employment Benefits

MERS does not provide other post-employment benefits to its employees and accordingly does not have any expense or liabilities for these benefits.

Fair Value of Investments

In accordance with GASB Statement No. 67, plan investments are presented at fair value. Short-term investments are valued at cost plus accrued interest, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Corporate bonds not traded on a national or international exchange are based upon equivalent values of comparable securities with similar yield and risk. Independent appraisals are the basis for valuing the fair value of real estate. Other investments that do not have established markets are recorded at an estimated fair value. Real estate and private equity investments typically have a quarter lag in reporting, but the values as of December 31 are estimated based on the third quarter capital statements plus fourth quarter cash flows, adjusted for any other known events.

Investment Act Disclosures

The Public Employee Retirement System Investment Act, MCL 38.1132, et seq., 1965 PA 314 requires MERS to follow certain financial management practices and provide related disclosures, and to provide a summary annual report, as defined by Act 314. Compliance with these requirements is achieved in this CAFR, in our Summary Report, and Consolidated Annual Actuarial Valuation found at www.mersofmich.com. MCL 38.1133(6) limits board member professional training, education, and travel expenses. MERS' compliance with the statute is shown in the Schedule of Administrative Expenses.

Capital Assets

Capital assets represent land, buildings, office furniture, equipment, and software with a value of $5,000 or more. Assets are carried at cost, less accumulated depreciation. Depreciation expense is calculated by allocating the net cost of assets over their estimated useful lives using the straight-line method. Useful lives of the related assets vary from 3 to 30 years.

Capital Assets

Capital Assets	Buildings	Land	Leasehold Improvements	Office Furniture and Equipment	Software	Total Capital Assets
Balances Dec 31, 2016	$6,266,635	$1,266,516	$155,811	$3,402,505	$26,061,969	$37,153,437
Additions	244,426			394,510	3,446,403	4,085,338
Deletions and Transfers	(6,361)			(525,307)	(12,770,660)	(13,302,328)
Balances Dec 31, 2017	**6,504,700**	**1,266,516**	**155,811**	**3,271,708**	**16,737,712**	**27,936,447**
Accumulated Depreciation						
Balances Dec 31, 2016	563,062		56,792	2,386,560	19,021,176	22,027,590
Depreciation Expense	247,441		31,162	396,195	2,393,418	3,068,215
Deletions and Transfers				(316,602)	(12,755,811)	(13,072,413)
Balances Dec 31, 2017	**810,503**		**87,954**	**2,466,153**	**8,658,783**	**12,023,393**
Net Capital Assets Dec 31, 2017	**$5,694,197**	**$1,266,516**	**$67,857**	**$805,556**	**$8,078,929**	**$15,913,054**

During 2017, MERS performed a fixed asset inventory and determined it necessary to remove several office furniture and software assets. As a result, a $543,000 increase in depreciation occurred in order to fully depreciate any items that had a remaining value.

Total Columns on Statements

The “Total” columns on the “Statement of Plan Net Position” and “Statement of Changes in Plan Net Position” are presented to facilitate financial analysis. Amounts in these columns do not present the plan net position and changes in plan net position in conformity with GAAP, nor is such data comparable to a consolidation. Transactions between the Defined Benefit Plan, Defined Contribution Plan, Health Care Savings Program, 457 Program, Retiree Health Funding Vehicle, and Investment Services Program have not been eliminated from the “Total” columns.

The basic financial statements include certain prior-year summarized comparative information in total but not at the level of detail required for a presentation in conformity with generally accepted accounting principles. Accordingly, such information should be read in conjunction with the government’s financial statements for the year ended December 31, 2016, from which the summarized information was derived.

Certain prior year amounts have been reclassified to conform to the current year presentation.

New Accounting Pronouncements

In June 2015, GASB issued *Statement No. 75 – Accounting and Financial Reporting for Post-employment Benefits Other Than Pensions*. The Statement will apply to local governments and how they record and measure their net OPEB liability in a manner also similar to GASB Statement No. 68. MERS supplies statements of the fair market values for those municipalities who are enrolled in the Retiree Health Funding Vehicle. MERS also supplies information for employers in regard to the Health Care Savings Program, which is similar to a defined contribution-type program for post-employment health care costs. The effective date of the Statement No. 75 on financial statements was for periods beginning after June 15, 2017.

In June 2017, the Governmental Accounting Standards Board issued GASB Statement No. 87, Leases, which improves accounting and financial reporting for leases by governments. This statement requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. MERS is currently evaluating the impact this standard will have on the financial statements when adopted. The provisions of this statement are effective for MERS’ financial statements for the year ending December 31, 2020.

3. CONTRIBUTIONS AND RESERVES

Contributions

The Defined Benefit Plan contribution funding requirements are actuarially determined using the entry age normal actuarial cost method and are based upon the benefit plan adopted by the municipality. Some municipalities fund their entire pension obligations solely from employer contributions. Most municipalities jointly fund pension obligations from employee and employer contributions. Monthly employee contributions are based upon a percentage of actual compensation as determined by the employer. Employer contributions are based upon projected or accrued compensation as determined by an annual actuarial valuation. For details about normal cost and total employer contributions by employer, please see the MERS Summary Actuarial Report found on our website at www.mersofmich.com. Employee contributions are held in individual member accounts that are credited with interest annually. Pursuant to Board resolution adopted November 9, 2005, the interest rate for each year beginning in 2005 is the one-year T-bill rate as of December 31 each year for the ensuing December 31 employee interest calculation. It is also used for interest calculations the subsequent year for those employees requesting a refund of their contributions.

Contributions to the Defined Contribution Plan are reported directly to the MERS third-party administrator by the participating municipalities and are separate from contributions made to the MERS Defined Benefit Plan. Both employer contributions and employee voluntary and mandatory contributions are governed by the contribution limits under the IRC. Municipalities may elect to have mandatory employee contributions where the participant pays a fixed dollar or percentage. If the municipality has a match contribution type, the participant will elect the amount of contribution at the time of enrollment and will not be allowed to make any changes to that contribution amount. Municipalities may also choose to allow additional voluntary after-tax contributions through payroll deduction. Municipalities may also choose to offer matching contributions into the Defined Contribution Plan based on elective deferrals made by participants to the MERS 457(b) Program.

Participating municipalities may, upon adoption of a Defined Contribution Plan resolution for new hires, offer current Defined Benefit employees an opportunity to opt into the Defined Contribution Plan. MERS transfers the actuarial present value of the employee’s accrued benefit in the Defined Benefit Plan into the employee’s Defined Contribution Plan account (at a stipulated funded ratio between 80%-100%). Employees direct their contributions to various investment options offered by the MERS Office of Investments, and may transfer their account balances between investment categories or make changes to the percentage allocation on a daily basis.

Contributions to the 457(b) Program are made pre-tax and can be either a flat dollar amount or a percentage of payroll. An employer may also adopt a Roth provision allowing for after-tax contributions. Participation in the program is voluntary, so contributions can start and stop at any time, as well as increase or decrease.

Contributions to the Health Care Savings Program can come in many different forms based on the election of the employer. Mandatory pre-tax salary reductions can be elected based on a fixed dollar or required percentage that is mandatory for the entire group of participant or through a leave conversion election where vacation, personal time, sick time, or severance can be deposited into a Health Care Savings Program upon termination. In addition, post-tax voluntary employee contributions can be elected and can start or stop at any time.

Contributions to the Retiree Health Funding Vehicle and Investment Services Program can be made at any frequency for any amounts the employer wishes.

Defined Benefit Plan Reserves

Three reserves have been established pursuant to the MERS Plan Document. See “Schedule of Changes in Reserves” in the Statistical Section.

- **Reserve for Employee Contributions**

  All additions to and deductions from this reserve are for the Defined Benefit Plan. Employee contributions and interest are credited to this reserve. Also credited are monies received from the purchase of service credit and monies received in repayment of previously refunded contributions. The reserve is reduced by amounts paid to employees who terminate employment and request refunds, and by amounts transferred into the “Reserve for Employer Contributions and Benefit Payments” upon an employee’s retirement. Interest is credited to each employee’s account, as provided in the Board’s November 9, 2005, resolution. The December 31, 2017 balance was $849 million.

- **Reserve for Employer Contributions and Benefit Payments**

  All additions to and deductions from this reserve are for the Defined Benefit Plan. All employer contributions are credited to this reserve. Net income is allocated to this reserve from the “Reserve for Expenses and Undistributed Investment Income”. At retirement, the employee’s accumulated contributions, if any, and including interest are transferred into this reserve from the “Reserve for Employee Contributions.” Monthly benefits paid to retirees reduce this reserve. The December 31, 2017, balance was $8.6 billion.

- **Reserve for Expenses and Undistributed Investment Income**

  All additions to and deductions from this reserve are for the Defined Benefit Plan and Defined Benefit portion of the Hybrid Plan. All investment earnings and other monies received that are not dedicated to other areas are credited to this reserve. All administrative and investment expenses are paid from this reserve. Transfers from this reserve to the “Reserve for Employer Contributions and Benefit Payments” are at allocation rates determined by the Board. The unallocated reserve at the end of December 31, 2017, was $36 million.

Other Reserves

Each of the products outside of the Defined Benefit Plan has its own reserve for additions and deductions to be recorded. MERS maintains separate employer account records for each municipality within the products. The December 31, 2017 reserve balances were as follows: Defined Contribution Plan $667 million, Health Care Savings Program $183 million, Retiree Health Funding Vehicle $907 million, Investment Services Program $73 million, and 457(b) Program $83 million.

A more detailed analysis of the reserves can be found in the Statistical Section.

4. INVESTMENTS AND DEPOSITS

The Board has the fiduciary responsibility and authority to oversee the investment portfolio. Various professional investment managers are contracted to manage the System's assets. All investment decisions are subject to the Michigan Public Employee Retirement System Investment Act, 1965 PA 314, MCL 38.1132, et seq. (PERSIA), and the investment policy established by the Board. Michigan law allows diverse investment in stocks, corporate and government bonds, mortgages, real estate, and other investments. PERSIA requires that the System invest its assets prudently and solely in the interest of the participants and beneficiaries. Under Plan Document Section 87(6), PERSIA, and Internal Revenue Code Section 401(a)(2), the investments shall be made for the exclusive purpose of providing benefits to the participants and their beneficiaries, and defraying reasonable expenses to the System.

The Board's investment policy requires independent performance measurement of investment managers and establishes total return objectives for the total portfolio and major categories of investments. As of December 31, 2017, all securities held met the required statutory provisions and Board policy. As of the same dates, no investments were in default or subject to bankruptcy proceedings that had not been previously recorded.

MERS asset allocation policy is an important determinant of achieving the investment goals of the Plan. An asset allocation study is conducted every three years to assess portfolio construction and design. The study is presented to the Board for adoption. Factors influencing the allocation policy include projecting actuarial liabilities, historical and expected long-term market returns and risk, future economic conditions, inflation and interest rate risks, and liquidity requirements.

The investment policy provides for periodic rebalancing of the portfolio to reflect asset reallocation and ensuring investments remain within the Board approved parameters.

Investment manager selection is an important decision involving complex due diligence. Managers are selected after a lengthy and time consuming process involving a review of quantitative and qualitative components. Policy objectives include focusing on stable, long-term, financially secure, experienced, and disciplined investment managers in the selection decision. Once selected, managers are monitored and reviewed for investment returns, asset allocation compliance, and market related factors.

Other investment processes and procedures include capital calls, cash flow reconciliations, trade settlements, weekly portfolio review, monthly account reconciliation, performance reporting and review, bi-annual conference calls, and asset reallocation and reviews.

The annual money weighted rate of return on pension plan investments is calculated as the internal rate of return on pension plan investments, net of investment expenses. This expresses investment performance adjusted for the changing amounts actually invested throughout the year, measured on monthly inputs with expenses measured on an accrual basis. For the year 2017, the annual money weighted rate of return net of investment expenses measured on monthly inputs was 13.38 %. (See Required Supplemental Information)

MERS' Investment Policy is adopted by the Board with the Chief Executive Officer (CEO) being responsible for all activities and duties of the System. The CEO has delegated to the Office of Investments authority to manage MERS pension funds, other trust funds, and direct all investment management activities. The Board appoints public members with investment expertise to serve on the Investment Committee (IC), which then reports directly to the Board concerning investment guidelines, principles, and procedures. The Board is the System's sole fiduciary and sets general investment policy, including the Plan's asset allocation, Investment Guidelines, and Investment Policy Statements. The Board's investment authority and fiduciary responsibility is found in 1945 PA 135 and 1965 PA 314.

The IC serves as the Board's investment decision-making and policy development arm, and monitors investment management activity and policy recommendations developed by MERS' Office of Investments. The IC is composed of three voting Board members, including two public members with investment experience. The CEO and Chief Investment Officer (CIO) also serve on the committee as non-voting members. The IC approves recommendations to hire and terminate managers. The IC also appoints one additional non-voting Board member to observe meetings.

The Office of Investments carries out all investment activity for the System, providing a monthly report on investment activities and performance, monitoring external investment managers, and reporting any material changes to the IC and the Board.

During the year 2017, the IC approved new investment managers to be added to the portfolio. The Board also approved the implementation of the 2016 Asset Allocation Study. The allocation is as follows:

Global Equity	55.5%
Global Fixed Income	18.5
Real Assets	13.5
Diversifying Strategies	12.5

There is one investment manager who exceeds 5% of the pension plan's net position: Janus Henderson Investors. This firm however, has many individual diversified investments under the firm's control, so that no one specific position exceeds the investment guideline or PERSIA limits.

MERS offers a variety of investment choices to participants and municipalities:

- The Defined Benefit plan invests in the whole portfolio of MERS including global equities, global bonds, diversified strategies, and real assets.
- The Defined Contribution Plan, Health Care Savings Program, and 457 Program have several investment options. One is a Retirement Strategies option whereby a participant can choose a target date fund that adjusts their investment allocation automatically over time as they approach retirement. Another choice is the Premium Select Option whereby a participant can select from various pre-built select funds. A third option for only the Defined Contribution and 457 participants is the Self Directed Brokerage account for those investors who understand the risks of selecting their own investment choices.
- The Retirement Health Funding Vehicle and Investment Services Program have several investment options available under the Premium Select Options of various pre-built select funds of which employers may choose.

Cash Deposits

Custodial credit risk for cash deposits is the risk that, in the event of a failure of a depository financial institution, the system may not be able to recover its deposits. Balances on deposits are insured by the Federal Deposit Insurance Corporation (FDIC) up to specified limits. Balances in excess of FDIC limits are uninsured. MERS has not experienced any losses in its accounts and believes it is not exposed to a significant credit risk on its cash.

Credit Risk

Credit risk is the financial risk that an issuer, or other counterparty, will not fulfill its obligations to MERS. Credit risk exposure is dictated by each investment manager's agreement. Other criteria based on the Board's investment policy, includes that if a security is downgraded below investment grade after purchase, a review with a written explanation shall be forwarded to the Investments staff. Board policy also allows that when calculating the average rating of the portfolio, the manager may use the highest rating of the major rating agencies to calculate the average. Board policy, with regard to global fixed income securities, is that no more than 10% of the portfolio may be invested in corporate bonds or sovereign bonds rated below investment grade, as defined by Moody's and Standard & Poor's rating agencies. Board policy for global fixed income securities is that the average weighted credit of the portfolio will be a minimum of A-. When calculating the average rating of the global portfolio, the manager may use the highest rating of the major agencies to calculate the average. Board policy with regard to global, non-investment grade fixed income securities includes criteria that credit quality must maintain a minimum of 10% of the portfolio in investment grade fixed income with at least two ratings of BBB-/Baa3 or higher at the time of purchase (as assigned by Standard & Poor's or Moody's). Each portfolio is managed in accordance with investment guidelines that are specific as to permissible credit quality ranges, exposure levels within individual security quality rating tiers, and/or the average credit quality of the overall portfolio.

As of December 31, 2017, the domestic fixed income portfolio consisted of fixed income investments with respective quality ratings, excluding those obligations of the U.S. government. Investments issued by or explicitly guaranteed by the U.S. government are not considered to have credit risk. The Plan's exposure to credit risk as of December 31, 2017, is presented on the following pages by investment category as rated by Standard & Poor's, Moody's, and Fitch credit ratings.

Credit Ratings Summary – December 31, 2017

Quality Rating	Agencies	Asset Backed	Corporate Bonds	Foreign Currency	LMTD Part Units
AAA/Aaa		$22,819,287	$36,465,133		
AA+/Aa1	$37,140,817	1,200,119	4,257,962		
AA/Aa2			15,152,662		
AA-/Aa3			20,402,430		
A+/A1	1,940,049	873,966	36,591,184		
A/A2		587,034	58,536,725		
A-/A3			52,578,410		
BBB+/Baa1		2,929,968	85,086,737		
BBB/Baa2		7,604,722	61,758,874		
BBB-/Baa3		1,555,982	71,702,270		
BB+/Ba1			10,535,415		
BB/Ba2			14,987,451		
BB-/Ba3			6,303,435		
B+/B1					
B/B2			2,270,049		
B-/B3					
CCC+/Caa1					
CCC/Caa2					
CCC-/Caa3					
CC/Ca					
C					
D/C					
NA					
Cash with no ratings				$667	
NR*	2,156,158	11,018,685	3,369,205	(52,836)	$308,791,739
Totals	**$41,237,024**	**$48,589,762**	**$479,997,944**	**$(52,169)**	**$308,791,739**

**The Not Rated classification includes $208 million in commingled funds and limited partnerships without credit ratings. There is also $185 million in mortgage backed securities most of which are believed to be AAA or AA+. Removing those classifications leaves the overall portfolio at 1.6% Not Rated.*

Reconciliation of Investments

Fixed income from page 70	$2,560,727,120
Difference from Investments	13,815,158
Payables settling in 2018	(111,502,924)
Margin Variation settling in 2018	(2,587,741)
Receivables settling in 2018	100,251,196
Small difference	60
Equities Holdings Difference	24,252
Total	**$(13,815,158)**

Mortgage Backed Securities	Municipals	Short-Term Cash	U.S. Treasuries	Total	% of Portfolio
$11,782,991				$71,067,412	2.76%
17,475			$843,383,094	885,999,468	34.41%
	$2,762,060			22,830,018	0.89%
589,971				20,992,401	0.82%
662,781				40,067,980	1.56%
				59,123,760	2.30%
1,266,650				53,845,060	2.09%
449,006				88,465,711	3.44%
				69,363,596	2.69%
1,628,552				74,886,804	2.91%
394,936				10,930,351	0.42%
546				14,987,997	0.58%
2,907,440				9,210,875	0.36%
1,369,259				1,369,259	0.05%
				2,270,049	0.09%
459,057				459,057	0.02%
				-	0.00%
306,818				306,818	0.01%
				-	0.00%
				-	0.00%
				-	0.00%
				-	0.00%
				-	0.00%
		$615,303,780		615,304,447	23.90%
207,778,265				533,061,216	20.71%
$229,613,748	**$2,762,060**	**$615,303,780**	**$843,383,094**	**$2,574,542,278**	**100.00%**

Concentration of Credit Risk Debt Securities

Concentration of credit risk is the risk of loss attributed to the magnitude of an entity's exposure in a single issuer. The MERS investment policy states securities representing debt and equity of any one company shall not exceed 5% of the fair value of the portfolio. MERS did not hold any organization's securities that exceeded 5% of the investment portfolio other than those issued or explicitly guaranteed by the U.S. government as of December 31, 2017.

Interest Rate Risk

Interest rate risk is the risk that an investment's value will change due to a change in the absolute level of interest rates. Interest rate risk is controlled through diversification of portfolio management styles. Duration is a measure of interest rate risk. The greater the duration of a bond or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates and vice-versa. Sensitivity to changing interest rates may derive from prepayment options embedded in an investment. The Board policy, in regard to interest rate risk, is that the effective duration of the domestic portfolio shall be (+/-) 20% of the Bloomberg Barclays Capital Aggregate Index or the Bloomberg Barclays Universal Bond Index. Board policy in regard to global non-investment grade fixed income securities is that the portfolio's duration is (+/-) 2 years of the benchmark duration. The benchmark for global non-investment grade fixed income securities is 1/3 Bloomberg Barclays Capital U.S. Treasury Inflation Protected Securities Index, 1/3 Citigroup High Yield Market Index, and 1/3 JP Morgan Emerging Markets Global Bond Index. As of December 31, 2017, the System's exposure to interest rate risk (as measured by the effective duration method summary) is listed below by investment type.

The term duration has a special meaning in the context of bonds. It is a measurement of how long, in years, it takes for the price of a bond to be repaid by its internal cash flows. It is an important measure for investors to consider, as bonds with higher durations carry more risk and have higher price volatility than bonds with lower durations.

Effective Duration – December 31, 2017

Investment Type	Fair Value	Weighted Effective Duration
Agency	$39,614,696	1.96
Asset Backed	48,381,729	1.75
CMBS	6,135,797	2.22
CMO	29,525,872	4.06
Corporate	458,599,684	5.41
Mortgage Pass-Through	191,686,234	3.42
Commingled Fund	206,765,923	7.00
US Treasury	843,383,095	2.83
Yankee (Intl bonds in U.S. dollars)	33,171,822	5.50
Total Fair Value of Effective Duration	**$1,857,264,852**	

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. MERS currency risk exposure, or exchange rate risk, is primarily derived from its holdings in foreign currency denominated equities and fixed income investments. The Board investment policy for the global non-investment grade fixed income portfolio, allows currency hedging to mitigate currency exposure.

Hedging the non-U.S. dollar currency exposure of the portfolio is permitted. The portfolio will be limited to the maximum net currency exposure of 25% at any given time.

MERS' exposure to foreign currency risk in U.S. dollars as of December 31, 2017, is summarized below.

Foreign Currency Risk in U.S. Dollar Denominations – December 31, 2017

Currency	Equities	Currency	Private Equity	Real Estate	Total
Australian dollar	$10,333,668	$1,432	$44,853,376	$198,018	$55,386,494
Brazilian real	528,005	15,162			543,167
British pound sterling	47,632,293	60,414		336,532	48,029,238
Canadian dollar	22,398,190	(223,048)	2,890,198	(7,996,263)	17,069,078
Danish krone	4,159,972				4,159,972
Euro	96,361,995	6,854	95,753,612	3,010,652	195,133,113
Hong Kong dollar	10,879,994	95,632			10,975,627
Indonesian rupiah	71,885	3,930			75,815
Japanese yen	124,262,591	30,362			124,292,953
Malaysian ringgit	676,182	4,261			680,443
Mexican peso	79,315	29,051		756,588	864,955
New Israeli shekel	5,770,656	623			5,771,279
New Taiwan dollar	9,397,512	43,398			9,440,910
New Zealand dollar	858,169	170,046			1,028,215
Norwegian krone	7,384,447	158,885			7,543,331
Philippine peso		17,832			17,832
Polish zloty	366,720	19,331			386,051
Singapore dollar	6,431,432	15,671			6,447,104
South African rand	1,871,259	175,801			2,047,061
South Korean won	2,983,184	62,023			3,045,207
Swedish krona	8,406,574				8,406,574
Swiss franc	18,504,593	3,529			18,508,123
Thailand baht	5,350,467	(10,471)			5,339,996
Turkish lira	350,927				350,927
Total Investment Securities	**$385,060,033**	**$680,717**	**$143,497,187**	**$(3,694,473)**	**$525,543,464**

Custodial Credit Risk

Custodial credit risk is the risk that deposits may not be recovered in the event of failure of a depository financial institution. As of December 31, 2017, the $12.8 million carrying amount of the System's cash and short term investments was comprised of $12.8 million in deposits, which was subject to custodial credit risk because it was uninsured and uncollateralized.

Securities Lending

MERS' policy and statute authorizes participation in a securities lending program administered by its global custodian, State Street Bank and Trust Company. MERS receives income as the owner of securities and income from the lending of those securities. There are no dividends or coupon payments owing on the securities on loan. Securities lending earnings are credited to MERS and other participating clients on approximately the 15th day of the following month. The securities are open contracts and, therefore, could be terminated at any time by either party.

The borrower collateralizes the loan with cash at 102% of fair value plus accrued interest on domestic securities, and 105% of fair value plus accrued interest on international securities loaned. Due to the nature of the program's collateralization of U.S. fixed income securities on loans at 102% plus accrued interest, MERS' management believes that there is no credit risk per GASB 40 because the lender owes the borrower more than the borrower owes the lender. Cash collateral is invested for MERS in a dedicated short-term investment fund consisting of investment grade fixed income securities. The custodian provides for full indemnification to MERS for any losses that might occur in the event of borrower default resulting from negligence or intentional misconduct. Securities on loan are marked to fair value daily to ensure the adequacy of the collateral. There are no restrictions on the amount of securities that can be loaned at one time.

MERS has never experienced a loss on securities lending transactions resulting from the default of a borrower or lending agent since it commenced lending securities in March 1995. As of December 31, 2017, the fair value of fixed income securities invested in the cash collateral pool was below the original cost, resulting in a cumulative unrealized loss of $97,000 that is reflected in the financial statements. Securities lending produced a net income of $3.7 million excluding unrealized gains and losses.

Collateral Held and Fair Value of Securities on Loan

Fair Value of Securities on Loan	Nature of Collateral	Collateral Held
$515,096,911	Cash	$528,611,051
	Calculated Mark	(1,233,406)
$515,096,911		**$527,377,645**

Securities Lending Collateral

	S & P Rating	Percentage	Amount
Short-Term Credit Ratings	A-1+/P-1 *	3.84%	$20,299,764
	A-1/P-1 *	41.20%	217,765,847
	A-2	0.95%	5,009,710
Long-Term Credit Ratings	AAA	0.00%	
	AA	14.00%	73,991,761
	A	39.86%	210,691,425
	BBB+	0.00%	
	BBB	0.00%	
	BBB-	0.00%	
	BB+	0.00%	
	BB	0.00%	
	BB-	0.00%	
	Other	0.16%	852,544
		100.00%	528,611,051
Net accumulated depreciation in fair value			(96,744)
Invested Securities Lending Collateral			$528,514,307

** A short term obligation rated A-1/P-1 is rated in the highest category by both Standard & Poor's (S&P) and Moody's Investor Services. These Issuer's have a superior ability to repay short-term obligations. S&P will designate certain issues with a plus sign (+) to indicate that the obligor's capacity to meet its financial committtment is extremely strong.*

Derivatives

Derivative instruments are financial contracts whose value depends on the values of underlying assets, reference rates, or financial indices. They include futures contracts, swap contracts, credit-linked notes (CLN), and forward foreign currency exchange. While the Board has no formal policy specific to derivatives, MERS holds investments in futures contracts, swap contracts, credit linked notes, and forward foreign currency exchange. MERS enters into these derivative contracts primarily to obtain exposure to different markets to enhance the performance and reduce the volatility of the portfolio. It enters swaps and futures contracts to gain or hedge exposure to certain markets. They also manage interest rate risk and forward foreign exchange contracts primarily to hedge foreign currency exposure.

The following tables summarize the various contracts in the portfolio as of December 31, 2017. The notional value associated with these derivative instruments are generally not recorded on the financial statements; however, the amounts for the exposure (unrealized gains/losses) on these instruments are recorded. Interest rate risks associated with these investments are included in the table. MERS does not anticipate additional significant market risk from the swap arrangements.

Swap Contracts

Name	Maturity Date	Position	Cost	Market Value	Unrealized Gain
None					

Foreign Currency Forward Contracts

Pending Payable	$(6,443,021)
Foreign Currency Forward Contract Asset/(Liability)	**$(6,443,021)**

Futures and Options Contracts

Futures Contract	Expiration Date	Long/Short	Cost	Market Value	Unrealized Gain/(Loss)
None					

MERS could be exposed to risk if the counterparties to the contracts are unable to meet the terms of the contracts. MERS and its investment managers seek to control this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures. MERS anticipates that counterparties will be able to satisfy their obligations under the contracts. Investments in limited partnerships and combined funds may include derivatives that are not shown in the derivative totals.

Private Equity and Capital Calls

The Board has approved $3.0 billion for allocation to private investments. As of December 31, 2017, $2.2 billion was invested in private investments leaving $846 million available for future investments. Investments in private market values reflect capital returns, income, and gains or losses.

MERS has various investments that can be difficult to value in that there are not readily accessible comparable market values. MERS has level 2 investment values of approximately $3 billion, (chiefly in global fixed income). Level 2 investments typically have quoted prices for similar type assets and have pricing models that can be derived principally from observable market data. MERS also has level 3 investments of approximately $4 billion (chiefly in real estate, private equity, timber, commingled funds, and limited partnerships). These investments tend to be illiquid and do not trade frequently. As a result, there may not be readily marketable prices for them.

Management's estimates of these values are based on information provided by investment managers, general partners, real estate advisors, and other means. Because alternative investments are not readily marketable, their estimated value is subject to uncertainty and therefore may differ from the values that would have been used had a ready market for these securities existed. The differences could be material.

Fair Value Measurements

Investments are presented at fair value. The System categorizes their fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

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.

Investments that are measured at fair value using the net asset value (or NAV) (or its equivalent) as a practical expedient are not classified in the fair value hierarchy. The tables on page 46 shows the fair value leveling on the investments for MERS.

In instances where inputs used to measure fair value fall into different levels in the fair value higher hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. (An investment having both level 2 and level 3 inputs would be categorized as level 3.) The system's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset. The tables on page 46 show the fair value leveling of the investments for MERS.

Global equities classified in Level 1 are valued using prices quoted in active markets for those securities. Global equities classified in level 3 are values with last trade data having limited trading volume.

Global fixed income classified in Level 2 and Level 3 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. Level 2 fixed income securities have non-proprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market. Level 3 fixed income securities use proprietary information or single source pricing. Global fixed income classified in level 3 are investments with values in leases, real estate and credit limited partnerships that are not readily traded and are valued using a pricing model.

Real assets and Diversifying Strategies in Level 1 are valued using prices quoted in active markets. Real assets classified in Level 3 are primarily investments in real estate, infrastructure and timber generally valued using the income approach by internal manager reviews or independent external appraisers. Level 2 securities for real assets and Diversifying Strategies have non-proprietary information that was readily available to market participants, from multiple independent sources, which are actively involved in the market. Level 3 Diversifying Strategies are valued using appraisals, cash-flow analysis, and sales of similar investments. MERS policy is to obtain an external appraisal a minimum of every three years for properties that MERS has some degree of control or discretion. In practice, some investments are appraised annually. Appraisals are performed by an independent appraiser with preference for Member Appraisal Institute designated appraisers. The appraisals are performed using generally accepted valuation approaches applicable to the investment type.

Mutual funds and self-directed accounts are valued at quoted prices for those securities in active markets. Mutual funds that are not publicly traded are recorded as Level 3 investments.

Certain alternative investments such as private equity, real assets, and diversifying strategies do not have readily ascertainable market values. Management, in consultation with their investment managers, value these investments in good faith based upon audited financials, cash-flow analysis, purchase and sales of comparable investments, other practices used within the industry, or other information provided by the underlying investment managers. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed.

The valuation method for investments measured at the net asset value (NAV) per share is presented in the table on page 46. The System holds shares or interests in investment companies where the fair value of the investments are measured on a recurring basis using net asset value per share (or its equivalent) of the investment companies as a practical expedient. Global equity, real assets and diversifying strategy investments at NAV are generally long term private market investments that are illiquid with redemptions restricted over the life of the partnership. During the life of the partnerships, distributions are received as underlying partnership investments are realized. As of December 31, 2017, it is probable that all of the investments in this type will be sold at an amount different from the NAV per share of MERS ownership interest in partners' capital.

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Fair Value Investments	December 31, 2017	Quoted Prices in Active Markets Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Totals
Global Equities		$2,604,215,903		$2,331,799,556	$4,936,015,459
Global Fixed Income			$2,724,268,574	103,779,772	2,828,048,347
Real Assets		70,595,855	1,288,443	796,035,551	867,919,850
Diversifying Strategies		81,761,058	110,062,663	542,568,648	734,392,369
Mutual Funds (DC, 457, HCSP)		21,200,689			21,200,689
Self Directed accounts (DC and 457)		3,651,967			3,651,967
Total investments by fair value		**2,781,425,473**	**2,835,619,680**	**3,774,183,528**	**9,391,228,681**
Investments at net asset value (NAV)	NAV				Totals
Global Equities	$794,396,649				794,396,649
Fixed Income	206,755,923				206,755,923
Real Assets	186,726,047				186,726,047
Diversifying Strategies	252,221,284				252,221,284
Mutual Funds (DC, 457, HCSP)	489,703,919				489,703,919
Total investments at NAV	**1,929,803,822**				**1,929,803,822**
Total fair value and NAV investments	**1,929,803,822**	**2,781,425,473**	**2,835,619,680**	**3,774,183,528**	**11,321,032,502**
Securities Lending Collateral			**528,514,307**		**528,514,307**
Total fair value and NAV investments with Securities Lending	**$1,929,803,822**	**$2,781,425,473**	**$3,364,133,987**	**$3,774,183,528**	**$11,849,546,809**

Reconciliation to Investments on Financial Statements	
Investments at fair value and NAV	$11,321,032,502
Alternatives not adjusted on GASB 72 report yet	
Bonds in default	(102,886)
Rounding	(9)
Foreign Exchange Receivables/Payables-net	(5,876,791)
Cash in financial statements/GASB 72 reports	4,821
Adjusted investments	11,315,057,638
Investments from page 70	$11,315,057,638

MERS holds shares or interests in investment companies where the fair value of the investments are measured on a recurring basis, using net asset value (NAV) per share (or its equivalent) of the investment companies as a practical expedient.

As of December 31, 2017, the fair value, unfunded commitments, redemption frequency, and redemption notice periods of those investments are as follows:

Investment Type	Fair Value	Unfunded Commitments	Redemption Frequency (if Eligible)	Redemption Notice Period
Global Equities	$794,396,649		Monthly, quarterly, semi-annually, annually	30 days
Real Assets	186,726,047		Monthly, quarterly, semi-annually, annually	N/A
Diversifying Strategies	489,703,919	$40,010,424	Monthly, quarterly, semi-annually, annually	N/A
Total investments at NAV	**$1,470,826,615**	**$40,010,424**		

Investments at NAV

The Global Equities' portfolios are diversified by geographic region, styles, sectors, and market capitalizations. Active management is used to take advantage of less efficient areas of the market. This strategy is expected to perform well in periods of low to falling inflation and rising economic growth. It is also projected to provide ongoing income as well as downside protection in volatile markets. The fair value of the investments have been estimated using the net asset value of the investments.

The Real Assets portfolio includes investments in real estate, timber, infrastructure, commodities, and agriculture and farmland strategies. The real assets strategy is designed to provide a hedge against unexpected spikes in inflation as well as capitalize on long-term themes such as an emerging middle class in developing markets and global population growth. The majority of the investments within this portfolio will be private investments making the portfolio relatively illiquid and longer duration. The fair value of the investments have been estimated using the net asset value of the investments.

Diversifying strategies in middle market direct lending, litigation finance, healthcare royalties, bank regulatory capital, and opportunistic credit, among others. The strategy is designed to provide downside protection and uncorrelated returns with traditional asset classes – specifically equities. Core fixed income has traditionally been one of the most diversifying asset classes, but the low return expectations for the asset class make it less attractive on a risk-adjusted basis. Consequently, non-traditional asset classes must be considered as an alternative. The fair value of the investments have been estimated using the net asset value of the investments.

Mutual fund strategies are designed to provide participants access to target date funds based on their expected retirement date. The funds automatically adjust based on the participant's age with investments in global equities, fixed income, and other diversified investments with an appropriate level of risk that is consistent with its asset mix. The fair value of the investments have been estimated using the net asset value of the investments.

5. RISK MANAGEMENT AND INSURANCE

MERS maintains fiduciary liability insurance, insurance for workers' compensation, its two buildings, and owned and leased vehicles, and carries general liability insurance to cover risks of loss arising from personal injury to employees or others, property damage, and other causes.

6. SELF INSURANCE

MERS self-insured for its dental insurance in 2017 with a third party administrator to assist with coverage.

7. COMMITMENTS AND CONTINGENCIES

In the normal course of business, MERS is involved in a number of disputes over benefits or other claims. MERS does not anticipate any material loss as a result of these claims. Furthermore, the cost of a successful benefit claim is ultimately the responsibility of the affected municipality, in most cases, as it becomes a funding obligation of that municipality.

In 1998, MERS entered into a contractual agreement with a municipality and its bargaining units to pay for a certain portion of the municipality's and employees' benefit costs to settle a legal dispute over an alleged actuarial error. MERS took the position that its legal obligations under this agreement ended on December 31, 2015. The municipality and its bargaining units disagreed with MERS, resulting in litigation. The parties settled the matter in 2017. The settlement amount is reported as a special, one-time payment item in the Statement of Changes in Fiduciary Net Position for the year ended December 31, 2017.

8. RELATED PARTIES

Cobalt Community Research is a 501(c)(3) nonprofit, non-partisan coalition that helps local governments, schools and membership organizations measure, benchmark, and manage their efforts through shared data, high-quality affordable surveys, focus groups and meetings that use instant audience feedback technology. MERS facilitated the creation of Cobalt and MERS employees performed the regular work required to run Cobalt through August 31, 2017, after which time Cobalt Community Research took over all operations and MERS employees no longer performed these duties. Cobalt maintained separate financial reporting and was responsible for repaying MERS for all administrative costs including staff time. In 2017, Cobalt paid MERS $76,807.35 to cover the year's pro-rated expenses.

9. FUNDED STATUS AND FUNDING PROGRESS

MERS' funded status is summarized in the Management's Discussion and Analysis.

Actuarial valuations are prepared annually as of December 31 for each participating municipality. To facilitate budgetary planning needs, employer contribution requirements are provided for each municipality's unique fiscal year that commences after the following calendar year end. For example, the contribution requirements for fiscal years that began in 2017 were determined by actuarial valuations as of December 31, 2015. Approximately 78% of the participating municipalities have fiscal years that begin January 1 or July 1.

10. INTERFUND BALANCES

The general purpose of the interfund receivables and payables in the financial statements relates to transactions that occurred between the various product positions within MERS that did not settle until 2017.

11. GASB 68

The Governmental Accounting Standards Board (GASB) Statement No. 68, "Accounting and Financial Reporting for Pensions", requires certain disclosures for employers who provide pensions. MERS employees participate in the MERS Defined Benefit Plan. The sections below are required and pertain to MERS staff only.

Pensions

For purposes of measuring the Net Pension Liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description

The employer's defined benefit pension plan provides certain retirement, disability, and death benefits to plan members and beneficiaries. MERS is an agent multiple employer, statewide public employee pension plan established by the Michigan Legislature under Public Act 135 of 1945 and administered by a nine member Board. MERS issues a publicly available financial report that includes financial statements and required supplementary information. This report is available on the MERS website at www.mersofmich.com.

Benefits Provided

Benefit Multiplier: 2.25% Multiplier (80% max)
Normal Retirement Age: 60
Vesting: 6 years
Early Retirement (Unreduced): 55/30
Early Retirement (Reduced): 50/25, 55/15
Final Average Compensation: 3 years
COLA for Future Retirees: 2.50% (Non-Compounded)
Employee Contributions: 4%
Act 88: Yes (Adopted 9/24/1996)

At the December 31, 2016, valuation date, the following employees were covered by the benefit terms:

Inactive Employees or Beneficiaries Currently Receiving Benefits: 34
Inactive Employees Entitled to but Not Yet Receiving Benefits: 37
Active Employees: 126
Total Employees: 197

Contributions

The employer is required to contribute amounts at least equal to the actuarially determined rate, as established by the Board. The actuarially determined rate is the estimated amount necessary to finance the cost of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. The actuarial determined contribution rate for 2017 was 7.59% of payroll. MERS total employer contributions totaled $2,367,084. MERS employees are required to contribute 4% of their salaries to help fund the pension.

Article 9, Section 24 of the State of Michigan constitution requires that financial benefits arising on account of employee service rendered in each year be funded during that year.

Net Pension Liability/Asset

MERS Net Pension Asset, measured as of December 31, 2016, was $343,343 and the total pension liability used to calculate the Net Pension liability was determined by an annual valuation for that date.

Actuarial Assumptions

The total pension liability in the December 31, 2016, annual actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation: 2.5%
Salary Increases: 3.75% in the long term
Investment Rate of Return: 8.00% net of investment expenses, including inflation

The mortality table used to project the mortality experience of non-disabled plan members is a 50% male/50% female blend of the following tables:

1. The RP-2014 Healthy Annuitant Mortality Tables, with rates multiplied by 105%
2. The RP-2014 Employee Mortality Tables
3. The RP-2014 Juvenile Mortality Tables

The mortality table used to project the mortality experience of disabled plan members is 50% Male/50% Female blend of RP-2014 Disabled Retiree Mortality Tables.

The actuarial assumptions used in the valuation were based on the results of the most recent actuarial experience study of 2009-2013.

The long-term expected rate of return on pension plan investments was determined using a model method in which the best-estimate ranges of expected future real rates of return (expected returns net of investment and administrative expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	55.50%	8.65%
Global Fixed Income	18.50%	3.76%
Real Assets	13.50%	9.72%
Diversifying Strategies	12.50%	7.50%

Discount Rate

The discount rate used to measure the total pension liability was 8.00% for 2016. The projection of cash flows used to determine the discount rate assumes that employer and employee contributions will be made at the rates agreed upon for employees and the actuarially determined rates for employers. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to pay all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Changes in Net Pension Liability/(Asset)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability/(Asset) (a) - (b)
Balances at December 31, 2015	$24,441,582	$23,146,516	$1,295,066
Changes for the Year			
Service Cost	1,379,059		1,379,059
Interest on Total Pension Liability	1,985,384		1,985,384
Changes in benefits			-
Difference Between Expected and Actual Experience	(134,179)		(134,179)
Changes in Assumptions			-
Employer Contributions		1,672,934	(1,672,934)
Employee Contributions		514,304	(514,304)
Net Investment Income		2,735,307	(2,735,307)
Benefit Payments, Including Employee Refunds	(627,619)	(627,619)	-
Administrative Expenses		(53,870)	53,870
Other Changes	(1)		(1)
Net changes	2,602,645	4,241,055	(1,638,410)
Balances as of December 31, 2016	**$27,044,227**	**$27,387,571**	**$(343,344)**

Sensitivity of the Net Pension Liability/(Asset) to Changes in the Discount Rate

The following presents the Net Pension Liability of MERS, calculated using the discount rate of 8.00%, as well as what the employer's Net Pension Asset would be using a discount rate that is 1% lower (7.00%) or 1% higher (9.00%) than the current rate.

Sensitivity of Net Pension Liability/(Asset)

	1% Decrease (7%)	Current Discount Rate (8%)	1% Increase (9%)
Net Pension Liability/(Asset)		$(343,344)	
Change in Net Pension Liability/(Asset)	$4,292,029		$(3,513,113)
Adjusted Net Pension Liability/(Asset)	$3,948,685	$(343,344)	$(3,856,457)

Note: the current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because GASB 68 requires that the discount rate must be gross of administrative expenses, whereas for funding purposes, it is net of administrative expenses. MERS has a net position asset due to the Plan Fiduciary Net Position exceeding the total Pension Liability.

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the year ended December 31, 2017, MERS recognized pension expenses of $1,641,604. MERS also reported deferred outflows and inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences in Experience	$109,232	$-
Differences in Assumptions	990,494	
Excess (Deficit) Investment Returns	821,104	
Contributions Subsequent to the Measurement Date*	2,367,084	
Total	**$4,287,914**	**$-**

**The amount reported as deferred outflows of resources resulting from contributions subsequent to the measurement date will be recognized as a reduction in the Net Pension Liability for the measurement date of December 31, 2017, which is recorded in 2018.*

Amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended	Deferred Outflow
2018	$579,123
2019	579,123
2020	498,866
2021	59,108
2022	223,779
2023	(19,168)

There were changes in the actuarial assumptions or methods affecting the 2015 valuation for smoothing, price and wage inflation, discount rate, and mortality tables based on the most recent experience study.
This calculation was done with an effective date of December 31, 2015.

12. SUMMARY INFORMATION – ACTUARIAL FUNDING METHODS AND ASSUMPTIONS

Valuation Date	December 31, 2016
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percent of Payroll, Closed
Remaining Amortization Period	For open divisions (new hires are included in the division) the amortization period is 22 years. The 22 year period will decline by one each year until the initial unfunded accrued liability is paid off. For divisions that closed to new hires prior to 2016 (new hires are not covered by the MERS Defined Benefit Plan or Hybrid Plan (Part I) provisions in a linked division) of active municipalities, the employer had two amortization options. Under Accelerated to 5 Year Option, the amortization period is decreased annually by two years until the period reaches six or five years. Each year thereafter, It decreases by one each year until the unfunded liability is paid off. Under the Accelerated to 15 year Option, the amortization period is decreased annually by two years until the period reaches 16 or 15 years. Each year thereafter, the amortization period is decreased annually by one year until the unfunded accrued liability is paid off. Negative unfunded accrued liabilities are amortized over 10 years, with the 10 year period reestablished with each annual actuarial valuation.
Asset Valuation Method	A 5-year smoothed fair value asset valuation method was adopted December 31, 2015.
Actuarial Assumptions	Investment Rate of Return – 8.00% net of investment expenses
Projected Salary Increases	A 3.75% for base inflation, plus a percentage based on an age-related scale to reflect merit, longevity and promotional pay increases.
Post-Retirement Benefit	A 2.5% annual post-retirement benefit adjustment – if adopted by individual municipalities.

Deferred Retirement Option Program (DROP+) Partial Lump Sum

If participants are covered by the Benefit Program DROP+, and retires at least 12 months after first becoming eligible for unreduced benefits, they have the option to receive a partial lump sum and a reduced monthly benefit:

- The participant can elect a lump sum equal to 12, 24, 36, 48, or 60 times their monthly straight life accrued benefit.
- For each 12 months included in the lump sum, the participant's lifetime benefit is reduced by the DROP+ percentage adopted by the employer. The employer can adopt any of the following DROP+ reduction percentages: 4, 5, 6, 7, or 8%.

Benefit Program DROP+ may not be adopted after June 30, 2013. Two employers adopted this benefit prior to it ending.

Deferred Retirement Option Program (DROP): Traditional

If a member is covered by the Benefit Program DROP and is eligible for retirement, they have the option to elect a specified DROP period in which they will cease to accrue any additional retirement benefits, but remain employed by the participating municipality or court. The member must elect a DROP end date at least six months after the beginning date, but no more than sixty months after the beginning date, in one-month increments.

Upon the member's election of DROP and the receipt of an application to enroll in DROP, MERS will calculate the member's service retirement and benefit payment as of the beginning date. The System also shall calculate any age differential between the member and the member's beneficiary as of the calendar year of the DROP exit date in accordance with Treasury Regulation § 1.401(a)(9)-6. Upon the beginning date of the DROP period, the member shall be responsible to continue employee contributions, if any.

On the next available benefit payment date after processing is complete, and monthly thereafter, an amount equal to 100% of the monthly service retirement benefit payment the member would have received if he or she had retired as of the DROP beginning date will be credited to a notional account for the benefit of the member. Funds in the DROP account are credited with interest in the amount of 3% annually, or prorated in the event of a DROP period that is less than twelve months.

Upon the end date, the member shall receive a lump-sum distribution of the member's DROP account and on the first day of the calendar month following end date, the member will begin receiving monthly service retirement benefit payments.

REQUIRED SUPPLEMENTARY INFORMATION

The following schedules are presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years where information is available.

Annual Money Weighted Return

The annual money weighted rate of return on pension plan investments is calculated as the internal rate of return on pension plan investments, net of investment expenses. This expresses investment performance adjusted for the changing amounts actually invested throughout the year, measured on monthly inputs with expenses measured on an accrual basis.

Schedule of Investment Returns

	2013	2014	2015	2016	2017
Annual money-weighted rate of return, net of investment expenses	14.97%	7.32%	-0.99%	10.78%	13.38%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, information is presented for those years where information is available.

The following schedules refer to MERS' staff only. A measurement date of December 31, 2016, was used. Note that while the measurement date for calculation of the net pension liability and pension expense is December 31, 2016, the schedule of employer contributions show the actuarial contributions that have been remitted through December 31, 2017, and the preceding nine years.

Schedule of Employer Contributions

The Schedule of Employer Contributions shows the employer's required annual contributions from the annual actuarial valuation, compared with the actual contributions remitted over the past ten years.

Schedule of Employer Contributions

	2017	2016	2015	2014	2013
Actuarial Determined Contributions	$1,367,084	$1,172,934	$1,088,267	$1,089,079	$1,006,942
Contributions in Relation to the Actuarially Determined Contribution	2,367,084	1,672,934	2,099,146	2,089,079	2,506,942
Contribution Deficiency (Excess)	$(1,000,000)	$(500,000)	$(1,010,879)	$(1,000,000)	$(1,500,000)
Covered Employee Payroll	$10,080,837	$9,694,637	$9,184,670	$9,184,670	$9,741,710
Contributions as a Percentage of Covered Employee Payroll	14%	12%	12%	12%	10%

	2012	2011	2010	2009	2008
Actuarial Determined Contributions	$1,276,266	$1,194,741	$1,136,057	$1,070,451	$935,463
Contributions in Relation to the Actuarially Determined Contribution	1,276,266	1,194,741	1,136,057	1,070,451	935,463
Contribution Deficiency (Excess)	$-	$-	$-	$-	$-
Covered Employee Payroll	$9,400,436	$10,195,504	$9,113,922	$8,198,952	$7,802,747
Contributions as a Percentage of Covered Employee Payroll	14%	12%	12%	13%	12%

Notes to Schedule of Employer Contributions:

Actuarial Cost Method: Entry Age Normal
Amortization Method: Level percentage of payroll, open
Remaining Amortization Period: 22 years
Asset Valuation Method: 5 year smoothed
Inflation: 2.50% long-term wage inflation
Salary Increases: 3.75%

Investment Rate of Return: 7.75% net of investment and administrative expenses
Normal Retirement Age: 60
Mortality: 50% Female/50% Male blend of the RP-2014 Healthy Annuitant Mortality Tables with rates multiplied by 105%, the RP-2014 Employee Mortality Tables, and the RP-2014 Juvenile Mortality Tables

Schedule of Changes in Employer's Net Pension Liability/(Asset) and Related Ratios

The Schedule of Changes in Employer's Net Pension Liability and Related Ratios shows the changes in the total pension liability less the statement of changes in fiduciary net position resulting in the net Pension Liability calculation for the employer.

Schedule of Changes in the Net Pension Liability/(Asset)

Total Pension Liability	2014	2015	2016
Service Cost	$1,203,192	$1,269,997	$1,379,059
Interest	1,523,654	1,706,312	1,985,384
Changes of Benefit Terms			
Difference Between Expected and Actual Experience		313,939	(134,179)
Changes of Assumptions		1,386,692	
Benefit Payments Including Employee Refunds	(526,561)	(565,862)	(627,619)
Other		1	(1)
Net Change in Total Pension Liability	2,200,285	4,111,079	2,602,645
Total Pension Liability Beginning Balance	18,130,219	20,330,504	24,441,583
Total Pension Liability Ending Balance	**$20,330,504**	**$24,441,583**	**$27,044,228**
Plan Fiduciary Net Position			
Contributions-Employer	$2,089,079	$2,099,146	$1,672,934
Contributions-Employee	398,940	520,710	514,304
Net Investment Income	1,193,652	(343,573)	2,735,307
Benefit Payments Including Employee Refunds	(526,561)	(565,862)	(627,619)
Administrative Expense	(44,244)	(48,754)	(53,870)
Net Change in Plan Fiduciary Net Position	3,110,866	1,661,667	4,241,055
Plan Fiduciary Net Position Beginning Balance	18,373,983	21,484,849	23,146,516
Plan Fiduciary Net Position Ending Balance	**$21,484,849**	**$23,146,516**	**$27,387,571**
Employer Net Pension Liability/(Asset)	**$(1,154,345)**	**$1,295,067**	**$(343,343)**
Plan Fiduciary Net Position as a percentage of the Total Pension Liability/(Asset)	106%	95%	101%
Covered Employee Payroll (from GASB 68 actuarial page)	$9,184,670	$9,694,637	$10,080,837
Employer's Net Pension Liability/(Asset) as a percentage of covered employee payroll	-13%	13%	-3%

There were changes in the actuarial assumptions or methods affecting the 2015 valuation for smoothing, price and wage inflation, discount rate, and mortality tables based on the most recent experience study.
This calculation was done with an effective date of December 31, 2015.

OTHER SUPPLEMENTARY INFORMATION

Schedule of Administrative Expenses for the Year Ended December 31, 2017

	Budget	Actual	Balance	Percentage of Budget
Personnel Services				
Salaries	$10,765,175	$10,177,085	$588,090	95%
Social Security	795,700	728,355	67,345	92%
Retirement	1,562,900	1,467,818	95,082	94%
Insurance	2,120,600	1,991,386	129,214	94%
Total Personnel Services	**15,244,375**	**14,364,644**	**879,731**	**94%**
Professional Services				
Third Party Administrator	1,767,277	1,832,936	(65,659)	104%
Actuarial Services	1,235,000	1,347,662	(112,662)	109%
Audit Services	200,000	180,100	19,900	90%
Commercial Banking	85,000	85,170	(170)	100%
Temporary Personnel	30,000	4,481	25,519	15%
IT Services/Continuity/Records	146,500	151,849	(5,349)	104%
Business Consultants	687,060	580,181	106,879	84%
Legal Services	60,000	37,483	22,517	62%
Medical Services	145,000	123,435	21,565	85%
Total Professional Services	**4,355,837**	**4,343,297**	**12,540**	**100%**
Communication				
Annual Conference	191,000	191,481	(481)	100%
Board Travel, Education and Meetings[1]	53,000	23,422	29,578	44%
Outreach	190,000	183,668	6,332	97%
Postage / Shipping	200,000	176,321	23,679	88%
Printing and Copying Services	102,500	80,048	22,452	78%
Telephone / Communications	217,000	201,985	15,015	93%
Travel and Meetings	186,000	175,598	10,402	94%
Total Communication	**1,139,500**	**1,032,523**	**106,977**	**91%**
Miscellaneous				
Depreciation	2,929,400	3,068,215	(138,815)	105%
Equipment Purchases & Rental	44,000	62,637	(18,637)	142%
Insurance	280,000	351,124	(71,124)	125%
Building / Maintenance / Utilities	300,435	222,758	77,677	74%
Office Supplies/Subscriptions	109,810	74,530	35,280	68%
Operating Expenses	567,650	60,305	507,345	11%
Personnel Support	138,300	83,069	55,231	60%
Professional Development	245,100	191,124	53,976	78%
Software Support	1,585,800	1,375,695	210,105	87%
Service Fees[2]	(5,700,881)	(6,007,772)	306,891	105%
Total Miscellaneous	**499,614**	**(518,315)**	**1,017,929**	**-104%**
Total Administrative Expenses	**$21,239,326**	**$19,222,149[3]**	**$2,017,177**	**91%**

[1] Board Travel, Education, and Meetings includes $1,593 for board members training and educations, including related travel expenditures. These expenditures comply with the requirements of Section 38.1133 of the Michigan Compiled Laws.

[2] Service fees come primarily from fees paid on participant directed accounts to cover administrative expenses. They are treated as expenditure credit, not revenue.

[3] MERS paid a legal settlement in 2017 (see note 7) reported as a one-time item in the Changes in Fiduciary Net Position, not included in administrative expenses.

Schedule of Investment Expenses for the Year Ended December 31, 2017

	Budget	Actual	Balance	Percentage of Budget
Personnel Services				
Salaries	$1,724,800	$1,682,898	$41,902	98%
Social Security	109,800	87,429	22,371	80%
Retirement	251,300	173,786	77,514	69%
Insurance	171,200	170,633	567	100%
Total Personnel Services	**2,257,100**	**2,114,746**	**142,354**	**94%**
Professional Services				
Commercial Banking	1,250,000	878,902	371,098	70%
Investment Managers	15,000,000	10,514,154	4,485,846	70%
Business Consultants	155,000	146,156	8,844	94%
Total Professional Services	**16,405,000**	**11,539,212**	**4,865,788**	**70%**
Miscellaneous				
Travel	143,000	151,504	(8,504)	106%
Office Supplies	3,000	329	2,671	11%
Professional Development	11,000	8,526	2,474	78%
Operating Expenses	10,000	7,029	2,971	70%
Research and Portfolio Management	275,000	238,003	36,997	87%
Total Miscellaneous	**442,000**	**405,391**	**36,609**	**92%**
Total Investment Expenses	**$19,104,100**	**$14,059,349**	**$5,044,751**	**74%**

Note: See accompanying Independent Auditor's Report

Schedule of Payments to Consultants – December 31, 2017

Firm	Nature of Services	Amount
Tegrit Software Ventures, Inc.	Software Consulting and Configuration Services	$3,523,700
Alerus Retirement Solutions	Third Party Administration	1,844,939
CBIZ, Inc.	Actuarial Consultants	1,337,411
State Street Bank & Trust	Depository Trust Banking Services	452,549
Moore Trosper	Construction and Building Modification	414,015
Gabriel, Roeder, Smith & Company	Actuarial Consultants	277,796
Miller, Canfield, Paddock, and Stone, P.L.C.	Legal Services	235,871
Plante & Moran, PLLC	Auditing Services	174,769
PricewaterhouseCoopers LLP	Actuarial Consultants	149,175
Managed Medical Review Organization	Medical Advisors	148,370
Bloomberg Finance L.P.	Investment Data Services	132,876
Optima Consulting LLC	Software Consulting and Configuration Services	90,156
Rapid7 LLC	Software Consulting and Configuration Services	73,253
Ice Miller, LLP	Legal Services	57,037
Stephen Morrow	Investment Consultants	51,405
Red Cedar Solutions Group	Website Consulting Services	48,917
Byrum & Fisk Advocacy Communications	Marketing and Public Relations Services	48,250
Winklevoss Technologies LLC	Software Consulting and Configuration Services	43,333
BCA Research	Investment Consultants	43,169
Michigan Legislative Consultants	Legislative Consultants	42,840
The Cadence Group Inc	Records Management Consultants	40,270
Gavekal Capital	Investment Consultants	40,000
Viawest, Inc	Business Continuity Services	39,246
Ned Davis Research	Investment Consultants	37,500
Total Solutions, Inc.	Software Consulting and Configuration Services	37,353
Atrio Systems	Software Consulting and Configuration Services	27,926
Karoub Associates	Legislative Consultants	24,720
Informa Investment Solutions	Investment Consultants	21,877

This schedule only includes firms whose annual payment amount was $20,000 or above.

Fees paid to investment managers are included in the Investment Section.

Payments to consultants are already included in the Administrative and Investments Expenses reported in the Statement of Changes in Fiduciary Net Position.

See accompanying Independent Auditor's Report.

INVESTMENTS

CHIEF INVESTMENT OFFICER REPORT

Dear Members and MERS Retirement Board:

I respectfully submit the investment activity for the Municipal Employees' Retirement System (MERS) of Michigan's Comprehensive Annual Financial Report for the year ending December 31, 2017.

As always, our goal is to invest fund assets to achieve the long-term objectives of our member municipalities established by the Board, within prudent risk parameters. Our investment returns consistently outperform various benchmarks and market averages, through a long-term approach designed to provide downside protection and upside market participation.

Economic Overview

Global markets continued their relentless move higher in 2017; for the first time in history, the S&P 500 delivered a positive return in all twelve months in the calendar year. Broad market volatility also experienced historic and persistent lows with the VIX hovering around 9, well below its historic trend line. International equities outperformed domestic equities for the year, although both sectors posted strong returns with the MSCI EAFE returning 25.03% and S&P 500 21.83%. Emerging market equities outperformed developed markets for the second consecutive year, returning 37.28%. Global risk assets rose throughout 2017 virtually without interruption on the back of a broad-based global economic expansion. U.S. GDP grew at 2.6% in 2017 up from 1.8% in 2016. Job growth was strong throughout the year, but is expected to slow with the unemployment rate holding steady at 4.1%. The economy remains near full employment and wage pressure trended upward as the higher job numbers are likely a result of positive changes in labor utilization.

While interest rates remain at historic lows, the U.S. has entered into a new interest rate regime. Over the course of the next year, up to three Fed rate hikes are expected as Janet Yellen has been replaced as Fed Chair by Jerome Powell. Despite economic strength, the U.S. Treasury yield curve collapsed throughout 2017 to its lowest levels since 2007, just prior to the last recession. One of the reasons for the subdued volatility in bond yields was the falling inflation throughout 2017. However, entering 2018, many of the factors that have been holding back inflation appear to have reached a turning point and may contribute to higher inflation in the coming year. In fact, the New York Federal Reserve's Underlying Inflation Gauge (UIG) accelerated in the second half of 2017, pointing to a meaningful likelihood of higher inflation in 2018. The Eurozone's cyclical recovery continued with a YOY growth rate of 2.7%, a rate higher than the U.S. However, the banking sector remains a concern in southern Europe, although populist sentiment appears to be declining across the continent. Broad based economic acceleration is beginning to occur in the emerging markets which is reflected in expectations for 2018 global GDP growth to finish at 3.7%.

While global markets moved decidedly higher in 2017, the backdrop of increasing market volatility and a shift toward increased nationalistic economic policy are likely to increase global volatility going forward. Geopolitical instability in Asia and the Middle East may catalyze volatility spikes in 2018 in an otherwise benign environment. In addition, U.S. economic and foreign policy shifts are expected to potentially contribute to elevated levels of geopolitical instability. Developed markets will continue to grapple with aging populations and high legacy costs. Low interest rates may compress returns across all asset classes. However, the U.S. has started to tighten monetary policy and expand fiscal policy through tax cuts. This will begin to put upward pressure on both interest rates and inflation. However, interest rate levels remain artificially depressed from a historic perspective. This coupled with the increasing likelihood that we are nearing the top of the business cycle will make it difficult to meet return objectives in the near term, placing additional stress on financial systems.

MERS Total Market Fund

The MERS Total Market Fund performed well returning 13.40% gross of fees for the year, underperforming its policy benchmark which returned 16.72%. The fund continued to outperform consistently for longer time periods through ten years. Global equities drove the Total Market Fund's performance for the year with international and emerging market equities providing the strongest returns followed closely by U.S. large cap. MERS' decision to seek opportunities to combat lower interest rates was rewarded with strong returns from the diversifying strategies allocation. The global fixed income market remained a challenging area due to persistently low interest rates. The fixed income portfolio continued to exhibit a strategically lower duration. Core fixed income returns were muted, but were given support from emerging market and high yield positions. Real assets rebounded in the final quarter on strong real estate valuations. The downside protection and risk characteristics that have been carefully designed and approved by the Board continued to be exhibited.

MERS 2017 highlights:

- MERS Total Market Fund returned 13.40% gross of fees for the year, underperforming its policy benchmark by 3.33%. The five year return of 8.91% outperformed the policy benchmark by 1.59% on an annualized basis.
- The Office of Investments completed the implementation of the asset allocation changes set forth in the 2016 Asset Allocation Study. The Board approved the recommended changes that the Office of Investments presented at the September 2016 MERS Board Meeting.
- The target asset allocation breakdown is shown below:

Global Equity	55.5%
Global Fixed Income	18.5%
Real Assets	13.5%
Diversifying Strategies	12.5%

- At the broad asset class level, absolute returns gross of investment fees for the year were as follows:

Global Equity	20.39%
Global Fixed Income	4.73%
Real Assets	1.74%
Diversifying Strategies	9.10%

In conclusion, I would like to thank the MERS Retirement Board for their continued support of the Office of Investments in their roles as the fiduciaries of the MERS Plan. The clarity of MERS' governance structure and the functional checks and balances has allowed the investment program to be successful for our members. This relationship makes for a more efficient decision-making process, benefiting our membership through stronger risk-adjusted returns.

Respectfully,

Jeb Burns
Chief Investment Officer

REPORT ON INVESTMENT ACTIVITY

The Board, as "investment fiduciary" under the Public Employee Retirement System Investment Act (PERSIA), MCL 38.1132 et seq., has the fiduciary responsibility and authority to direct the investments of MERS' trust assets. Board Members must discharge their duties for the exclusive benefit of plan participants and beneficiaries. PERSIA requires that the Board "act with the same care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a similar capacity and familiar with those matters would use in the conduct of a similar enterprise with similar aims." MCL 38.1133(3). MERS offers a Defined Benefit Plan (DB), Defined Contribution Plan (DC), Hybrid Plan, Health Care Savings Program (HCSP), 457 Program (457), Retiree Health Funding Vehicle (RHFV), and Investment Services Program (ISP) (the "Plans"). The Board has delegated all investment management operations and activities to the Chief Executive Officer and the Board's Investment Committee, except those specifically reserved for the Board. The CEO is directly responsible for all day-to-day activities of MERS. The CEO has delegated management of MERS' trust assets to the Office of Investments, including all investment management activities. All transactions undertaken on behalf of the Plans shall be for the sole interest of the Plans' participants and beneficiaries.

The MERS Investment Policy Statement (IPS) outlines the investment goals, objectives, and policies of the MERS Total Market Fund (the Fund). The purpose of the IPS is to ensure that the investment activities are carried out within the framework established by MERS' policy and administrative documents. The IPS assists the Board, Investment Committee, and the Office of Investments in effectively and prudently monitoring and administering the MERS' investment. The IPS addresses the following:

- The goals of MERS' investment program;
- Investment policies;
- Performance objectives and evaluation;
- Major investment programs; and
- Investment processes and procedures.

The IPS is designed to provide sufficient flexibility in the management and oversight process to reflect the dynamic nature of the capital markets. It is a working document and may be modified as needed or as market conditions change. At a minimum, the IPS will be reviewed and approved annually by the Board.

In accordance with GASB Statement No. 67, plan investments are presented at fair value. Short-term investments are valued at cost plus accrued interest, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Corporate bonds not traded on a national or international exchange are based upon equivalent values of comparable securities with similar yield and risk. Independent appraisals are the basis for valuing the fair value of real estate. Other investments that do not have established markets are recorded at an estimated fair value. Real estate, private equity, and certain alternative investments typically have a quarter lag in reporting, which is the industry standard. Periodic and independent appraisals of these assets are carried out to ensure an accurate valuation to assist in properly assessing the value of the Fund.

MERS uses a time-weighted rate of return calculation methodology based on the market rate of return for the schedule of investment results in this report.

The annual money weighted rate of return on pension plan investments is calculated as the internal rate of return on pension plan investments, net of investment expenses. This expresses investment performance adjusted for the changing amounts actually invested throughout the year, measured on monthly inputs with expenses measured on an accrual basis. The annual money weighted rate of return net of investment expenses measured on monthly inputs was 13.38%.

DEFINED BENEFIT PLAN

INVESTMENT OBJECTIVES AND ACTIVITY

In conformity with PERSIA, the primary goal of MERS' investment program is to grow assets at a rate which, when coupled with employer and employee contributions, satisfies promised benefits to MERS members. To achieve this objective, the Investment Committee allocates MERS' assets with a strategic, long-term perspective and a high degree of prudence to reduce risk by:

- Exceeding the actuarial investment assumption on a long-term basis, which is currently 7.75% annually;
- Maintaining adequate liquidity to pay promised benefits;
- Adopting a strategic asset allocation plan that reflects current and future liabilities, minimizes volatility, and maximizes the long-term total rate of return;
- Minimizing the costs associated with the implementation of the asset allocation through the efficient use of internal and external resources;
- Maintaining above median peer rankings for the 10-year time period; and
- Exceeding the return of the Fund's Policy Benchmark. The Policy Benchmark currently consists of 45% Russell 3000, 25% Bloomberg Barclays Global Aggregate Bond Index, 20% MSCI ACWI IMIex-US, and 10% Bloomberg Barclays Global Aggregate ex US.

FUND HIGHLIGHTS

Asset Allocation

The Fund's asset allocation is the single most important determinant of achieving the stated investment goals. The Office of Investments conducts an asset allocation study every three years to assess portfolio construction and strategy. The MERS Board adopts and implements an asset allocation policy that is predicated on a number of factors, including:

- A projection of actuarial assets, liabilities, and benefit payments;
- Historical and expected long-term capital market risks and returns for each asset class;
- Expected correlations of returns among various asset classes;
- An assessment of future economic conditions, including inflation and interest rate levels;
- Various risk/return scenarios; and
- Liquidity requirements.

Criteria for Inclusion of Asset Classes

The following criteria will be used in assessing an asset class for inclusion in the Fund:

- Sufficient size and liquidity to permit an investment by the Fund;
- Staff, external managers, or consultant expertise to ensure proper due diligence and cost-effective implementation;
- The incorporation of the asset class contributes to the return enhancement and/or further diversification of the Fund's assets; and
- Ability to readily measure performance and risk against appropriate benchmarks.

Below is the asset allocation that the MERS Board adopted in September 2016. In January 2017, the MERS Office of Investments began implementing the new allocation in stages as investing permitted.

The Board sets target allocations to various asset classes that are designed to meet MERS' long-term objectives and establishes minimum and maximum allowable allocations for each asset class. The bands allow flexibility to pursue tactical shifts or investment strategies over shorter time periods.

Current Targeted Allocations and Allocation Bands

Asset Class	Target Weight	Min/ Max Bands	Minimum Allocation	Maximim Allocation
Global Equity	55.5%	+/- 10.0%	45.5%	65.5%
Global Fixed Income	18.5%	+/- 7.5%	11.0%	26.0%
Real Assets	13.5%	+/- 5.0%	8.5%	18.5%
Diversifying Strategies	12.5%	+/- 5.0%	7.5%	17.5%

Portfolio Rebalance Policy

In conducting rebalancing activities, the Office of Investments operates in accordance with the following:

- Reviews the asset allocation at least monthly to ensure conformance with the asset allocation set by the Board;
- Initiates rebalancing transactions to bring all percentages to values inside the bands or promptly seek Board approval to remain outside the bands in the event that an asset class falls out of the said bands;
- Deviates from an asset class' target allocation, but stay within the allowable bands when implementing a tactical shift or investment strategy;
- Implements rebalancing activities at a reasonable cost using either index futures via an external derivatives manager or using hard dollars; and
- Approves all rebalancing transactions.

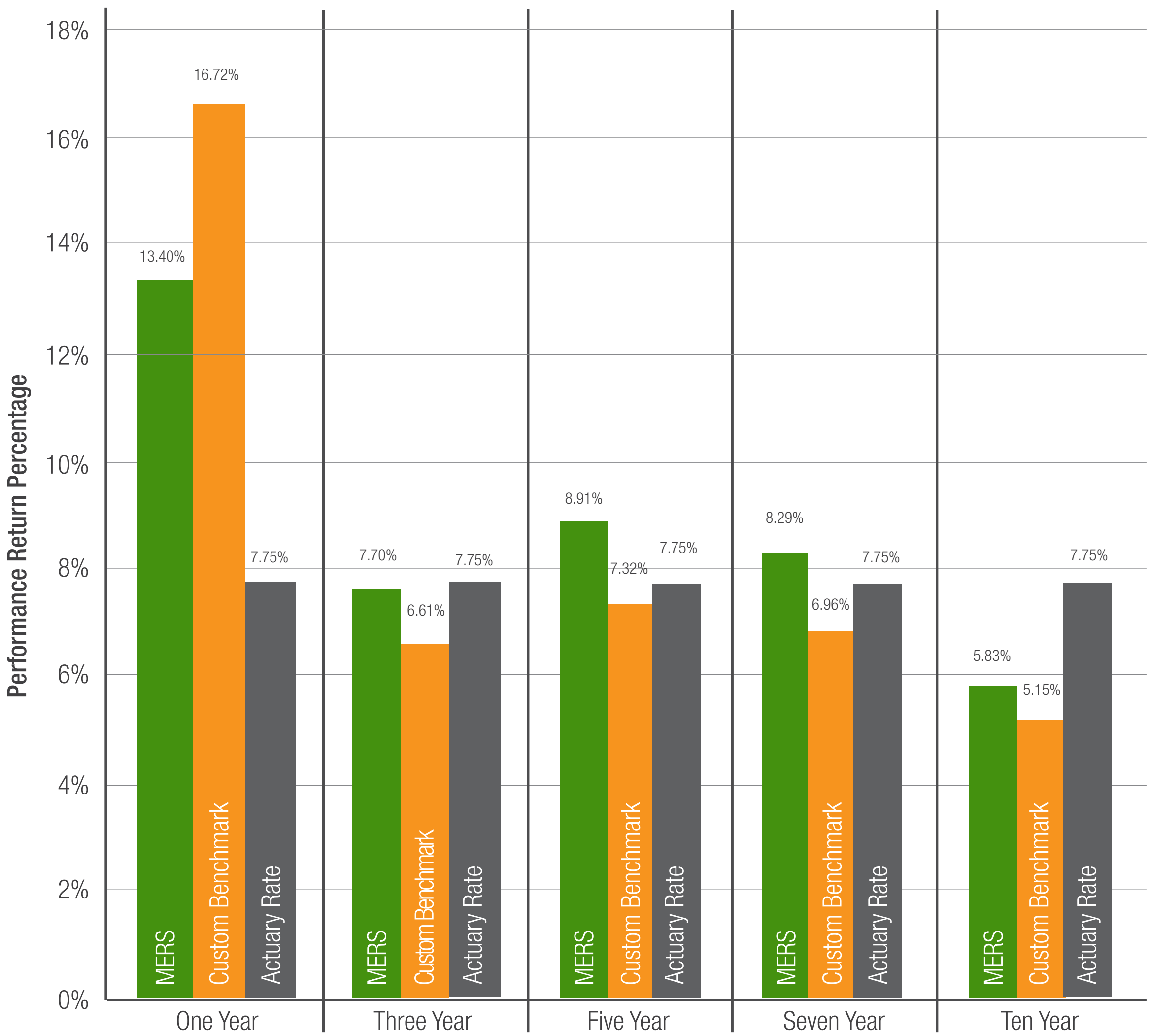
Sub-Asset Class/ Manager Rebalancing

The use of sub-asset class/manager level rebalancing is meant to exploit mean reversion at a more granular level. It is recognized that sub-asset classes/managers are poised to perform well at different times and in different market environments. Thus, by incorporating market information, rebalance rules or triggers can be established to guide the desired asset allocation tilts within the portfolio. A variety of factors will be included in the decision making process such as:

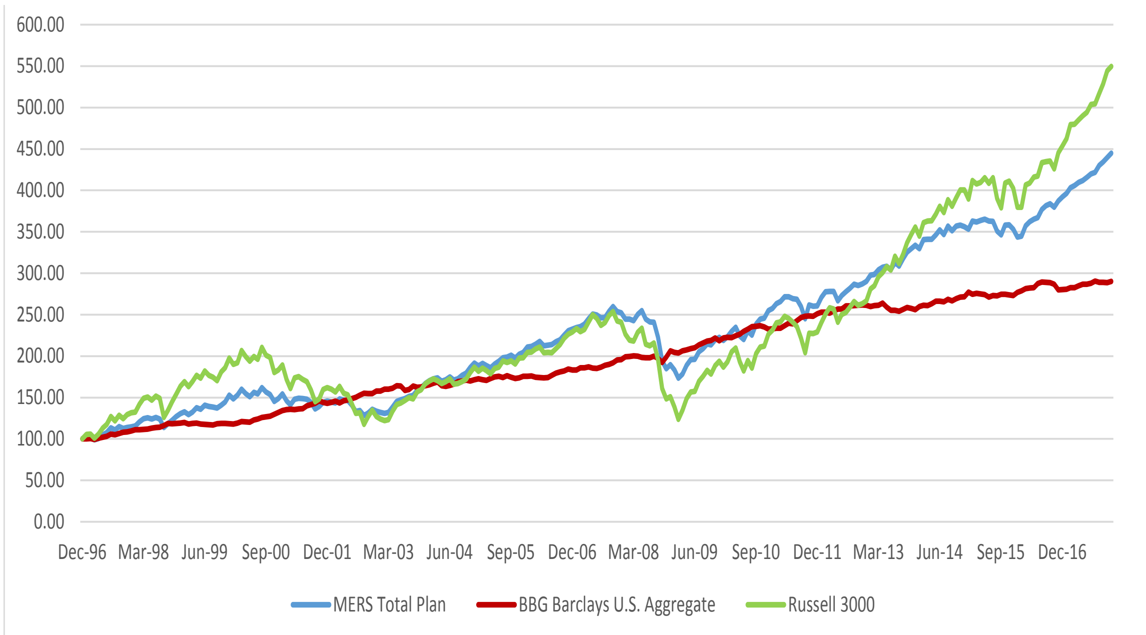
- Allocation level relative to target;
- Recent relative performance;
- Market correlation;
- Valuation — whether an asset class is overvalued or undervalued;
- Economic activity — different economic conditions favor different asset classes; and
- Market sentiment — volume, volatility, risk aversion, fund flows, etc.

The ultimate goal is overweighting a sub-asset class/manager when outperformance is likely and underweighting a sub-asset class/manager when it is likely to underperform. Doing so, systematically helps eliminate emotional decision making which leads to a better risk/return profile for the Fund. Allocations to external investment managers are limited to 15% of the total fund each; however, this excludes passive index strategies.

Performance Versus Custom Benchmarks as of December 31, 2017 (gross of fees)

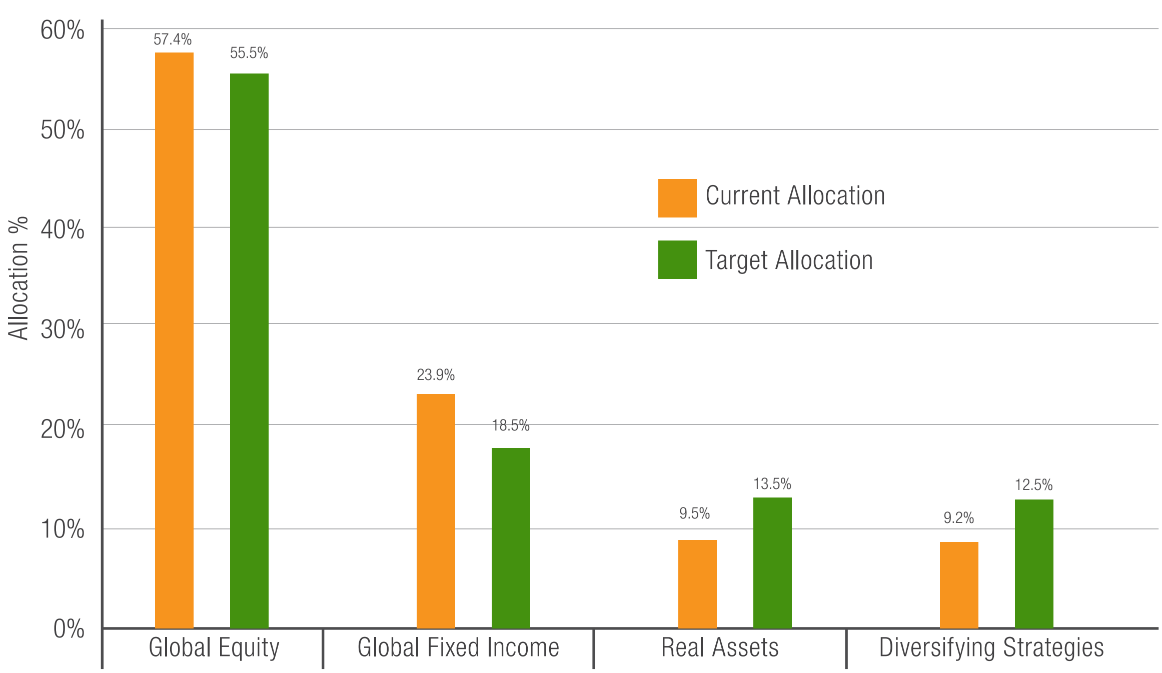


Downside Protection, Upside Participation as of December 31, 2017



Diversification is a portfolio strategy designed to reduce exposure to the volatility of returns by combining a variety of investments (such as stocks, bonds, real estate, and commodities) which are unlikely to all move in the same direction. The goal of diversification is to reduce the risk in a portfolio. While it is impossible to foresee all market risks, the strategic goal of the MERS asset allocation policy and the portfolio is to create a well-diversified portfolio that provides downside market protection with upside market participation.

Current Asset Allocation versus Target Allocation as of December 31, 2017



Statistical Performance

Portfolio Characteristics	1 Year	3 Year	5 Year	7 Year	10 Year
Annualized Return (gross of fees)	13.40%	7.70%	8.91%	8.29%	5.83%
Annualized Standard Deviation	1.54%	5.08%	5.20%	6.40%	9.24%
Sharpe Ratio	8.19	1.45	1.67	1.26	0.58
Excess Return	-3.32%	1.09%	1.59%	1.33%	0.68%
Correlation to Policy Benchmark	0.47	0.91	0.92	0.95	0.97

Portfolio Characteristics	1 Year	3 Year	5 Year	7 Year	10 Year
Total Market Fund (Gross of Fees)	13.40%	7.70%	8.91%	8.29%	5.83%
Total Market Fund (Net of Fees)	13.20%	7.45%	8.67%	8.03%	5.56%
TMF Custom Benchmark*	16.72%	6.61%	7.32%	6.96%	5.15%
Excess (Gross)	-3.32%	1.09%	1.59%	1.33%	0.68%

**45% Russell 3000, 20% MSCI ACWI ex USA IMI (Net), 25% Bloomberg Barclays Aggregate, 10% BBG BARC Global Aggregate ex US*

Securities Lending

The System participates in the securities lending program at the custodian as permitted under Section 20e of PERSIA. MCL 38.1140e. The securities lending program is managed in a prudent manner for the sole benefit of its participants and beneficiaries in accordance with PERSIA. MERS uses existing assets to generate an additional and steady source of income through conservative securities lending practices.

Securities Lending 2017 Rebates and Fees

	Gross Earnings	Rebates	Agent/Mgr fees	Net earnings
First Quarter	$2,424,337	$908,761	$303,107	$1,212,469
Second Quarter	2,316,682	1,369,381	189,448	757,853
Third Quarter	2,940,904	1,868,056	214,558	858,290
Fourth Quarter	3,065,895	2,023,139	208,539	834,217
Totals	**$10,747,818**	**$6,169,337**	**$915,652**	**$3,662,829**

Investment Summary for Defined Benefit Plan, Defined Contribution Plan, Hybrid Plan, Health Care Savings Program, Retiree Health Funding Vehicle, 457 Program, and Investment Services Program as of December 31, 2017

Type of Investment	Market Value	
Global Fixed Income	$2,560,727,120	23.9%
Global Equities	6,149,519,886	57.4%
Diversifying Strategies	984,773,869	9.2%
Real Assets	1,012,838,251	9.5%
Sub Total Investments	**10,707,859,126**	

Reconciliation of Investments to Financial Statements	
Total Investments from above	**10,707,859,126**
Receivables - Sale of Investments, Interest & Dividends	(323,887,563)
Alternative asset adjustment not on State Street portfolio	91,506,035
Bonds in default	(102,886)
Investments not on State Street Performance report	(299,221)
Closed Investments not on SS Performance report	(3,799)
Investments not in MERS State Street' portfolio	514,556,575
Investments in cash	511,301
Payables - Purchases of Investments	324,918,070
Investments on Financial Statements	**$11,315,057,638**

Note: Includes receivables and payables for sales and purchases of securities with settlement dates after December 31, 2017.

GLOBAL EQUITY ASSET CLASS SUMMARY

As of December 31, 2017, the Global Equity portfolio had a fair value of $6.1 billion, representing 57.4% of the Fund. Performance for this portfolio was 20.39% gross of fees for the year.

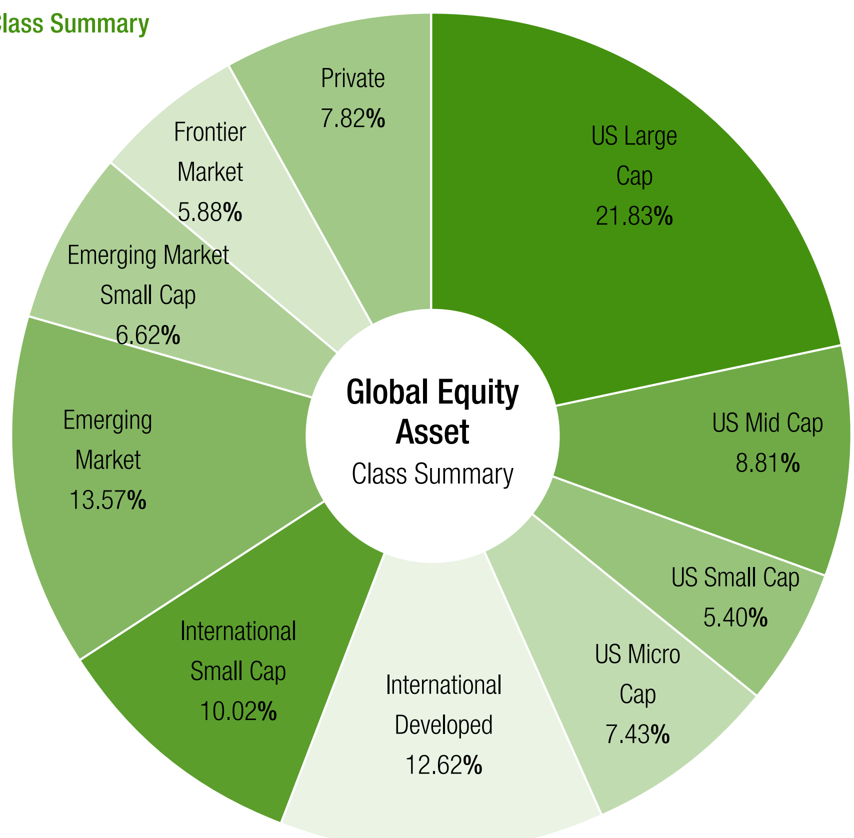
The Global Equity portfolio as of December 31, 2017, had a target allocation of 55.5% of the Fund, representing the largest portion of MERS' Defined Benefit Portfolio. The portfolio is designed to provide long-term capital appreciation, generate current income, and provide a hedge against inflation. To manage risk the global equity assets are diversified across geographic regions, styles, and the market capitalization spectrum.

A core portion of the global equity portfolio is invested in highly liquid equity securities including, but not limited to, U.S. large cap equities, U.S. mid cap equities, and developed ex U.S. large and mid cap equities. The portfolio may also include higher risk investments such as small cap equities, micro cap equities, private equity, emerging market equities, and frontier market equities.

Both internal and external managers are used within the Global Equity portfolio. The use of a passive investment approach versus active management will vary based on the composition of the asset class. In efficient markets, such as U.S. large cap equities, passive exposure will be favored in order to reduce of management fees. In inefficient markets, such as emerging markets, active management will be favored in order to reduce risk and add value over a passive approach.

MERS uses a time-weighted rate of return calculation methodology based on the market rate of return for the schedule of investment results in this report.

Equity Asset Class Summary



Global Equity Performance as of December 31, 2017

	1 Year	3 Years	5 Years	10 Years
Global Equity	20.39%	9.55%	12.77%	6.88%
Global Equity Blend[1]	25.58%	11.48%	14.56%	7.97%
Excess	-5.19%	-1.93%	-1.79%	-1.09%
U.S. Large Cap Equity	23.38%	12.07%	17.31%	9.47%
S&P 500 Index	21.83%	11.41%	15.79%	8.50%
Excess	1.55%	0.66%	1.52%	0.97%
U.S. Mid Cap Equity	16.17%	9.42%	14.19%	8.77%
S&P 400 Index	16.24%	11.14%	15.01%	9.97%
Excess	-0.07%	-1.72%	-0.82%	-1.20%
U.S. Small Cap Equity	11.70%	9.74%	13.31%	8.26%
S&P 600 Index	13.23%	12.00%	15.99%	10.43%
Excess	-1.53%	-2.26%	-2.68%	-2.17%
U.S. Micro Cap Index	11.40%	9.32%	14.57%	
Russell Micro Cap Index	13.17%	8.91%	14.29%	
Excess	-1.77%	0.41%	0.28%	
International Developed Equity	16.27%			
MSCI EAFE	25.03%			
Excess	-8.76%			
International Small Cap Equity	37.94%	17.43%	15.72%	7.15%
MSCI EAFE Small Cap (Net)	33.01%	14.20%	12.85%	5.77%
Excess	4.93%	3.23%	2.87%	1.38%
Emerging Market Equity	34.38%	8.19%	3.40%	
MSCI Emerging Markets	37.28%	9.10%	4.35%	
Excess	-2.90%	-0.91%	-0.95%	
Emerging Market Small Cap Equity	32.77%	13.80%		
MSCI EM Small Cap Equity	33.84%	8.44%		
Excess	-1.07%	5.36%		
Frontier Market Equity	22.89%	5.09%	8.53%	
MSCI Frontier Market Index	31.86%	5.01%	9.27%	
Excess	-8.97%	0.08%	-0.74%	
Private Equity	13.27%	8.16%	11.70%	8.00%
Private Equity Blend[2]	23.64%	12.27%	13.69%	7.47%
Excess	-10.37%	-4.11%	-1.99%	0.53%

[1] 19.82% S&P 500 Index, 4.5% S&P 400 Index, 4.5% S&P 600 Index, 11.71% Russell Microcap Index, 11.71% MSCI EAFE Index (Net), 10.81% MSCI EAFE Small Cap Index (Net), 13.51% MSCI Emerging Markets Index (Net), 9.01% MSCI Emerging Markets Small Cap Index (Net), 5.41% MSCI Frontier Markets Index (Net), 9.01% Private Equity Blend

[2] 50% Russell 2000, 50% MSCI EAFE Small Cap Net

Top 10 Public Equity Holdings as of December 31, 2017

Asset Description	Fair Value	Percentage of Total Fair Value
Apple Inc.	$25,751,052	0.24%
Microsoft Corportation	20,342,610	0.19%
Exxon Mobile Corporation	20,329,371	0.19%
Amazon.com, Inc.	15,585,527	0.15%
AbbVie Inc.	14,776,901	0.14%
Facebook, Inc.	13,895,872	0.13%
JPMorgan Chase & Co.	12,998,557	0.12%
Johnson & Johnson	12,701,945	0.12%
Altria Group, Inc.	12,618,433	0.12%
Berkshire Hathaway Inc. Class B	12,286,865	0.11%

A complete list of portfolio holdings is available upon request.

External Management	Portfolio Fair Value
U.S. Large Cap	$432,160,428
U.S. Mid Cap	1,037,697
U.S. Small Cap	765,764
U.S. Micro Cap	308,284,667
International Developed	776,243,176
International Small Cap	616,245,674
Emerging Markets	834,549,395
Emerging Markets Small Cap	407,408,553
Frontier Markets	361,571,135
Global Private Equity	375,299,041
Total	**4,113,565,530**
Internal Management	**Portfolio Fair Value**
U.S. Large Cap	910,121,781
U.S. Mid Cap	540,873,759
U.S. Small Cap	331,132,849
U.S. Micro Cap	148,475,604
Private Equity Funds and Direct Deals	105,350,361
Total	**2,035,954,354**
Grand Total	**$6,149,519,884**

GLOBAL FIXED INCOME ASSET CLASS SUMMARY

As of December 31, 2017, the Global Fixed Income portfolio had a fair value of $2.6 billion, representing 23.9% of the Fund. Performance for fixed income was 4.73% gross of fees for the year.

The Global Fixed Income allocation (18.5% targeted) plays a vital role in the MERS Defined Benefit Portfolio. The core of the portfolio includes investment grade securities such as U.S. Treasuries bonds, corporate bonds, and global investment grade debt. This portfolio is designed to provide downside protection, diversification, stable income, and liquidity. The core fixed income portfolio is expected to preserve capital and provide liquidity that may be used for portfolio rebalancing in stressed market environments.

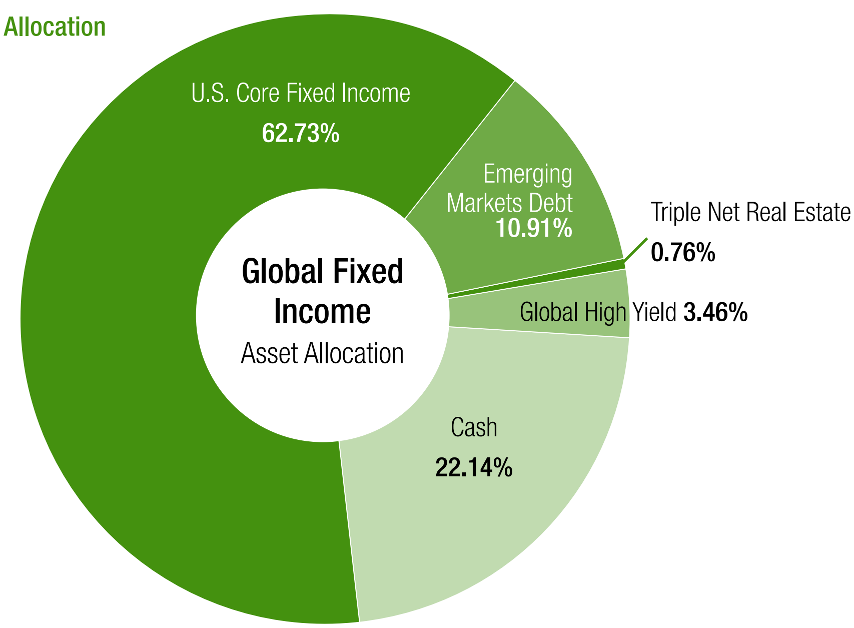
The Global Fixed Income portfolio may also include higher risk investments such as high yield bonds, emerging market debt, structured credit investments, and other below investment grade securities. These below investment grade securities entail higher risk, including the potential impairment of capital and low liquidity. However, these securities tend to exhibit equity-like risk/return profiles combined with higher cash yields and will only be purchased when risk premiums are high.

Both internal and external management will be utilized within the Global Fixed Income portfolio.

Internal management will be focused on investment grade core fixed income and will entail active decisions regarding duration, sector allocation, and security selection within U.S. Treasuries, corporate bonds, and other sectors. External managers may also be used within Core Fixed Income. Risk characteristics (such as duration) will be monitored on an aggregate basis including both internal and external portfolios. External managers will be used in the management of sub-investment grade securities. The Office of Investments will utilize specialized managers to opportunistically invest in certain portions of the sub-investment grade fixed income market. Exchange Traded Funds (ETFs) and other index-linked products may also be used to cost-effectively implement bond strategies in lieu of using active managers.

MERS uses a time-weighted rate of return calculation methodology based on the market rate of return for the schedule of investment results in this report.

Global Fixed Income Asset Allocation



Global Fixed Income Performance as of December 31, 2017 (gross of fees)

	1 Year	3 Years	5 Years	10 Years
Global Fixed Income	4.73%	4.31%	3.38%	4.18%
Global Fixed Income Blend*	5.82%	3.41%	2.40%	4.66%
Excess	**-1.09%**	**0.90%**	**0.98%**	**-0.48%**
U.S. Core Fixed Income	2.59%	2.19%	2.31%	4.41%
Bloomberg Barclays Aggragate Bond Index	3.54%	2.24%	2.10%	4.01%
Excess	**-0.95%**	**-0.05%**	**0.21%**	**0.40%**
Emerging Markets Debt	8.42%	7.12%	3.25%	
JPMorgan EMBI Global Diversified Index	10.26%	7.11%	4.58%	
Excess	**-1.84%**	**0.01%**	**-1.33%**	
Global High Yield	29.63%			
Bank of America Merrill Lynch Global High Yield Index	10.20%			
Excess	**19.43%**			
Cash	1.54%	1.03%	0.95%	-1.01%
91 Day Treasury Bill	0.86%	0.41%	0.27%	0.39%
Excess	**0.68%**	**0.62%**	**0.68%**	**-1.40%**

**54.05% BBG Barclays US Agg, 27.03% JP Morgan EMBI Global Diversified, 10.81% BofA Merrill Lynch Global High Yield Index, 8.11% US 91-Day Treasury Bills*

Top 10 Global Fixed Income Holdings as of December 31, 2017

Asset Description	Fair Value	Percentage of Total Fair Value
United States Treasury 3.125% 5/15/2019	$61,026,563	0.57%
United States Treasury 1.25% 12/15/2018	59,685,937	0.56%
United States Treasury 1.625% 4/30/2019	53,952,989	0.50%
United States Treasury 1.375% 2/29/2020	49,435,547	0.46%
United States Treasury 2.00% 10/31/2021	48,789,453	0.46%
United States Treasury 0.75% 7/31/2018	44,778,515	0.42%
United States Treasury 1.375% 12/31/18	39,823,438	0.37%
United States Treasury 0.75% 9/30/2018	39,715,625	0.37%
United States Treasury 1.00% 11/15/2019	39,356,250	0.37%
United States Treasury 1.50% 2/28/2019	34,860,547	0.33%

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

Global Fixed Income – Investment Strategies

External Management	Portfolio Fair Value
U.S. Core Fixed Income	$948,724,251
Emerging Markets Debt	207,227,668
Triple Net Lease Real Estate	19,459,920
Global High Yield	88,477,470
Total	**1,263,889,309**
Internal Management	**Portfolio Fair Value**
U.S. Core Fixed Income	657,691,795
Emerging Markets Debt	72,178,863
Cash Account	566,967,153
Total	**1,296,837,811**
Grand Total	**$2,560,727,120**

REAL ASSETS CLASS SUMMARY

As of December 31, 2017, the Real Assets portfolio had a fair value of $1.0 billion, representing 9.5% of the Fund's portfolio. The target allocation is 13.5% of the total portfolio. Performance for Real Assets was 1.74% gross of fees for the year, following an annual return of 19.67% produced in 2016.

The primary objective of the Real Assets allocation is to provide some degree of protection for the Fund against inflation. Secondary objectives are capital growth and if possible, current yield through cash dividends. Examples of potential real asset categories include:

- Real Estate;
- Commodities;
- Infrastructure; and
- Agriculture/Farmland.

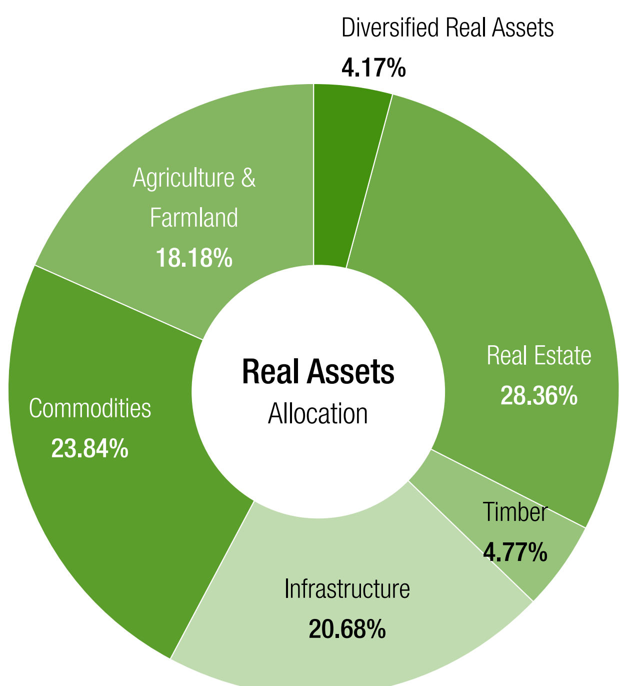
The Real Assets portfolio is constructed in a diversified manner, with no single investment comprising more than 20% of the total allocation to Real Assets. Investments in real assets may be either liquid (those that could be liquidated within 30 days) or illiquid (investments where capital is committed for multi-year periods of time). Illiquid strategies are defined as strategies with contractual lockups that would take greater than one year to liquidate. Examples of liquid real assets investments include commodities futures, sector specific equities, or sector specific publicly traded debt. Examples of illiquid investments include commingled funds, limited partnerships, co-investments, or private placements.

MERS uses a time-weighted rate of return calculation methodology based on the market rate of return for the schedule of investment results in this report.

Real Assets Performance as of December 31, 2017 (gross of fees)

Strategy	Portfolio Fair Value
Diversified Real Assets	$42,257,414
Real Estate	287,192,798
Timber	48,290,298
Infrastructure	209,408,768
Commodities	241,519,026
Agriculture & Farmland	184,169,947
Grand Total	**$1,012,838,251**

Real Assets Allocation



	1 Year	3 Years	5 Years	10 Years
Real Assets	1.74%	6.40%	5.62%	2.61%
Real Assets Blend1	7.40%	4.90%	3.90%	2.85%
Excess	**-5.66%**	**1.50%**	**1.72%**	**-0.24%**
Real Estate	15.08%	13.05%	14.42%	4.88%
Real Estate Blend2	8.94%	6.36%	8.84%	6.80%
Excess	**6.14%**	**6.69%**	**5.58%**	**-1.92%**
Timber	13.68%	7.35%	7.38%	3.97%
S&P Global Timber & Forestry Index Net	34.38%	12.02%	11.45%	3.57%
Excess	**-20.70%**	**-4.67%**	**-4.07%**	**0.40%**
Infrastructure	-0.24%	3.09%	5.52%	3.49%
Private Infrastructure Blend3	5.11%	5.00%	4.87%	5.11%
Excess	**-5.35%**	**-1.91%**	**0.65%**	**-1.62%**
Commodities	-10.27%	11.59%	1.00%	-1.13%
Bloomberg Commodity Index Total Return	1.70%	-5.03%	-8.45%	-6.83%
Excess	**-11.97%**	**16.62%**	**9.45%**	**5.70%**
Agriculture & Farmland	-7.90%	-1.56%	3.80%	
S&P Global Agribusiness Equity Index	18.38%	5.79%	7.67%	
Excess	**-26.28%**	**-7.35%**	**-3.87%**	

[1] 18.52% Real Estate Blend, 7.41% BBG Barclays Inv Grade CMBS BBB Index, 22.22% Private Infrastructure Blend, 33.33% Bloomberg Commodities Index, 18.52% S&P Global Agribusiness Equity Index
[2] 80% FTSE NAREIT All Equity REITS, 20% Barclays Investment Grade CMBS BBB Index
[3] 50% DJ Brookfield Global Infrastructure Index, 50% BBG Barclays Global Inflation-Linked

DIVERSIFYING STRATEGIES CLASS SUMMARY

As of December 31, 2017, the Diversifying Strategies portfolio had a fair value of $984.8 million, representing 9.2% of the total portfolio. Performance for the strategy was 9.10% gross of fees for the year, making it the second highest asset class return for MERS.

The Diversifying Strategies allocation (12.5% targeted) is expected to provide the Fund with downside protection and uncorrelated returns with traditional asset classes, specifically equities.

The following criteria are used to classify a diversifying strategy:

- Correlation or Beta of 0.40 or less with equity markets;
- Superior risk-adjusted returns (as measured by Sharpe ratio and other appropriate statistical measures); and
- Returns resulting from idiosyncratic (non-market) risks.

Illiquid and liquid strategies are both considered when funding the Diversifying Strategies portfolio. As a result illiquid Diversifying Strategies are expected to deliver higher returns with higher levels of risk. Liquid strategies are defined as strategies that can be liquidated within thirty days. These strategies will have lower expected returns and lower levels of risk.

The MERS Office of Investments adheres to the following portfolio construction guidelines for the Diversifying Strategies portfolio:

- The portfolio is diversified across a minimum of four different strategies at any one time;
- Each strategy targets a minimum of $100M and positions will be initiated at a minimum size of $50M when possible; and
- The Asset Allocation Study determines the target allocation between illiquid strategies and liquid strategies.

MERS uses a time-weighted rate of return calculation methodology based on the market rate of return for the schedule of investment results in this report.

Diversifying Strategies Performance as of December 31, 2017 (gross of fees)

	1 Year	3 Years	5 Years	10 Years[2]
Diversifying Strategies	9.10%	6.12%	8.11%	
Diversifying Strategies Blend[1]	9.40%	3.81%	5.14%	
Excess	**-0.30%**	**2.31%**	**2.97%**	
Liquid Diversifying Strategies	7.04%	4.58%		
Diversifying Strategies Blend[1]	9.40%	3.81%		
Excess	**-2.36%**	**0.77%**		
Private Diversifying Strategies	9.84%	6.86%	8.60%	
Diversifying Strategies Blend[1]	9.40%	3.81%	5.14%	
Excess	**0.44%**	**3.05%**	**3.46%**	

[1] 25% Russell 3000, 10% MSCI ACWI ex US IMI Net, 45% BBG Barclays US Agg, 20% BBG Barclays Global Agg ex US
[2] The Diversifying Strategies Allocation started in June 2012 and therefore does not possess 10 year returns.

Diversifying Strategies – Investment Strategies

Liquid Diversifying Strategies	Portfolio Fair Value
Canadian Small/Mid Cap Market Neutral Equity	$87,390,229
Long/Short Equity	215,966,091
Total	**303,356,320**
Private Diversifying Strategies	**Portfolio Fair Value**
Bank Regulatory Capital	48,210,002
Litigation Financing	16,217,784
Middle Market Direct Lending	43,655,821
Global Opportunistic Credit	272,752,083
Intangible/Tangible Assets	66,661,611
Global Structured Lending	101,678,072
Lower Middle Market Direct Lending	34,985,447
Healthcare Royalties	18,862,079
Insurance Linked Securities	63,451,438
Life Settlements	14,943,212
Total	**681,417,549**
Grand Total	**$984,773,869**

Investment Management Fees

Since management fees directly affect the returns of a manager, a best effort is made to achieve the best fee agreement possible. MERS leverages the scale of investments to negotiate deals that are at the lower end of industry standards and more than competitive with peers. While it is understood that superior managers often have higher fee structures, performance expectations and costs are carefully balanced. Fees are the only factor that one can be certain of ex-ante; thus it is critical to minimize them to the extent possible. All else being equal, managers with lower fees will be favored.

Schedule of Investment Fees as of December 31, 2017

Investment Managers	Average Assets Under Management	Annual Fee	Average Basis Points
Global Equity	$6,149,519,886	$7,473,890	12.15
Global Fixed Income	2,560,727,120	1,816,130	7.09
Diversifying Strategies	984,773,869	1,103,472	11.21
Real Assets	1,012,838,251	120,661	1.19
Total	**$10,707,859,126**	**$10,514,153**	**9.82**

Investment Custodian	
State Street Bank and Trust	878,902
Securities Lending Agent	
State Street Bank and Trust	915,652
Total Investment Fees	**$12,308,707**

The above table presents the 2017 investment manager fees MERS incurred, excluding alternative investments and comingled funds. The alternative investments and comingled fund portfolios results are reported to MERS net of fees, therefore the management fees paid for these investments are not reported in the above table.

Schedule of Investment Commissions as of December 31, 2017

Brokerage Firm	Shares Traded	Total Dollars	Commission/ Share
Instinet, LLC	70,610,480	$859,597	0.01
State Street Bank and Trust Company	15,694,020	109,624	0.01
Instinet	4,001,616	100,226	0.03
State Street Global Markets, LLC	8,780,364	87,804	0.01
BTIG, LLC	2,682,298	76,554	0.03
CIBC World Markets, Inc.	12,830,775	76,299	0.01
Bloomberg Tradebook, LLC	3,743,140	64,034	0.02
RBC Capital Markets	4,291,661	61,019	0.01
Virtu Americas LLC	3,028,021	60,477	0.02
KCG Americas LLC	12,059,480	60,303	0.01
Toronto Dominion Securities, Inc.	3,686,408	60,069	0.02
Scotia McLeod, Inc.	3,442,807	52,806	0.02
Raymond James, Ltd.	3,387,582	51,077	0.02
Canaccord Genuity Corporation	3,854,636	49,370	0.01
Nesbitt Burns	3,969,704	48,282	0.01
Weeden & Company	4,899,122	47,848	0.01
Goldman Sachs & Company	14,190,363	46,659	0.00
GMP Securities LTD.	3,172,223	40,028	0.01
Pershing LLC	2,124,565	39,987	0.02
NBC Clearing Services Incorporated	1,564,437	29,876	0.02
JonesTrading Institutional Services, LLC	1,321,514	28,653	0.02
Cormark Securities, Inc.	2,548,049	28,425	0.01
Peters and Company Limited	2,908,782	28,023	0.01
Fidelity Clearing Canada	2,175,319	24,088	0.01
Instinet U.K. Limited	9,810,300	21,639	0.00
Subtotal (25 Largest)	200,777,666	2,152,766	0.01
Remaining Total	103,176,380	472,367	0.01
Total Commissions	303,954,046	$2,625,133	0.01

MERS INVESTMENT MENU SUMMARY *(PARTICIPANT DIRECTED ACCOUNTS AND INSTITUTIONAL FUNDS)*

The Board is the sole fiduciary for MERS' institutional funds and participant directed retirement accounts with respect to establishing, monitoring, and amending the various Plans investment lineup and will execute its duties solely in the interest of the Plans and their participants and beneficiaries. The Board has delegated day-to-day administration of the System to the CEO, including vendor hiring and termination.

The Office of Investments, under the supervision of the CEO, has been authorized by the Board to oversee the investment of MERS' assets and direct all investment management activities.

The MERS Investment Menu is divided into three categories that PDA participants can use to address his/her investment needs: Retirement Strategies, Premium Select Options, and a Self-Directed Brokerage Account. The availability of the investment options in these categories is dependent on the plan of which a participant or municipality partakes.

Retirement Strategies

The Retirement Strategies offer participants a simple way to invest. Each fund is named for a "target date"—the approximate year in which the participant is expected to retire and start withdrawing from their account. Funds farthest from the target dates emphasize growth potential by allocating a higher percentage of the portfolio to equities. As investors move closer to—and into—retirement, the funds automatically adjust to a more conservative asset mix. The Retirement Strategies are expected to meet the general needs of the average participant in different age groups by utilizing a glide path. A glide path represents the changes made to the asset allocation over time as the target date approaches.

The Retirement Strategies glide path shall be based on industry accepted investment theory and investment methodology as well as reasonable capital market assumptions. Plan demographics shall be taken into consideration when developing the glide path. The glide path will be monitored by the MERS Office of Investment and Investment Committee.

Premium Select Options

1. Premium Select - Asset Allocation Portfolios

The Premium Select Asset Allocation Portfolios are multi-manager investment options built to offer participants the ability to benefit from economies of scale, by utilizing investments MERS' Defined Benefit portfolio. The options are designed so a participant can select the option that best matches his/her risk tolerance and offer attractive risk-adjusted returns at a below-market fee.

2. Premium Select - Asset Specific Funds

The Premium Select Asset Specific Funds provide a participant the ability to structure his/her own unique portfolio by allocating his/her investments to a single asset class. These options give a participant the ability to build his/her own portfolio. The funds can either be components of the MERS Defined Benefit portfolio or outside investment fund options with a preference for index based investments. Whenever an outside investment is offered, the lowest share class available to MERS will be utilized.

Self-Directed Brokerage Account

Participants who desire additional investment options and are willing to accept all risks and costs related to such alternatives can make his/her own investment decisions through the Self-Directed Brokerage Account (SDBA). The SDBA is available to participants through MERS DC or 457 programs as long as they maintain a pre-determined account balance.

Participant Directed Accounts

1 Retirement Strategies[1]

2005 Retirement Strategy
2010 Retirement Strategy
2015 Retirement Strategy
2020 Retirement Strategy
2025 Retirement Strategy
2030 Retirement Strategy
2035 Retirement Strategy
2040 Retirement Strategy
2045 Retirement Strategy
2050 Retirement Strategy
2055 Retirement Strategy
2060 Retirement Strategy

2 Premium Select Options

Portfolios Built for You
MERS Total Market Portfolio
MERS Global Stock Portfolio (100/0)
MERS Capital Appreciation Portfolio (80/20)
MERS Established Market Portfolio (60/40)[2]
MERS Balanced Income Portfolio (40/60)
MERS Capital Preservation Portfolio (20/80)
MERS Diversified Bond Portfolio (0/100)

Funds to Build Your Own Portfolio
Large Cap Stock Index
Mid Cap Stock Index
Small Cap Stock Index
Emerging Market Stock
International Stock Index
Real Estate Stock
Bond Index
High-Yield Bond
Short-Term Income
Stable Value (DC &457 Only)

3 Self-Directed Brokerage Account

TD Ameritrade (DC & 457 Only)

Institutional Funds

Portfolios Built for You
MERS Total Market Portfolio[3]
MERS Global Stock Portfolio (100/0)
MERS Capital Appreciation Portfolio (80/20)
MERS Established Market Portfolio (60/40)
MERS Balanced Income Portfolio (40/60)
MERS Capital Preservation Portfolio (20/80)
MERS Diversified Bond Portfolio (0/100)

Funds to Build Your Own Portfolio
Large Cap Stock Index
Mid Cap Stock Index
Small Cap Stock Index
Emerging Market Stock
International Stock Index
Short-Term Income

Note: *1 Default investment option for DC and 457*
2 Default investment option for HCSP
3 Default investment option for RHFV and ISP

ACTUARIAL

CBIZ Retirement Plan Services
CBIZ Benefits & Insurance Services, Inc.
17199 Laurel Park North, Ste. 405
Livonia, MI 48152
http://retirement.cbiz.com

September 14, 2017

The Retirement Board
Municipal Employees' Retirement System of Michigan
1134 Municipal Way
Lansing, Michigan 48917

Dear Board Members:

The basic financial objective of the Municipal Employees' Retirement System of Michigan (MERS) is to establish and receive contributions for each municipality and court which:

(1) fully cover the cost of benefits that members earn during the coming fiscal year, and

(2) amortize the unfunded costs of benefits earned based on past service, and which

(3) when combined with present assets and future investment return will be sufficient to meet the financial obligations, of each municipality and court under MERS, to present and future retirees and beneficiaries.

In order to measure progress toward this fundamental objective, MERS has annual actuarial valuations completed. Separate actuarial valuations are prepared for each participating municipality and court. The purpose of the December 31, 2016 annual actuarial valuations was to (i) measure MERS' funding progress, (ii) establish contribution requirements for fiscal years beginning in 2018 that provide for the normal cost (i.e. the costs assigned by the valuation method to the year of service about to be rendered) and amortization of unfunded actuarial accrued liabilities over a reasonable period (see the Appendix on the MERS website for a description of the amortization policy), and (iii) provide actuarial information in connection with applicable Governmental Accounting Standards Board statements. The valuations should not be relied upon for any other purpose. The valuations were completed based upon population data, asset data, and plan provision data as of December 31, 2016.

The actuarial valuations are based upon financial data, plan provision data, and participant data which are prepared by MERS' administrative staff. We checked the data for internal and year-to-year consistency as well as general reasonableness, but did not otherwise audit the data. As a result, we do not assume responsibility for the accuracy or completeness of the data provided by MERS' administrative staff. The actuary summarizes and tabulates population data in order to analyze long term trends. MERS' external auditor audits the actuarial data annually.

This letter was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This letter may be provided to parties other than the System only in its entirety and only with the permission of the System.

Retirement Board
September 14, 2017
Page 2 of 2

Actuarial valuations are based on assumptions regarding future rates of investment return and inflation, rates of retirement, withdrawal, death, disability, and pay increase among MERS members and their beneficiaries. These assumptions are adopted by the Board after considering the advice of the actuary and other professionals. The assumptions and methods used for funding purposes were developed based on the parameters set by the Actuarial Standards of Practice. The assumptions and methods comply with the requirements of Governmental Accounting Standards Board Statement No. 68. The demographic assumptions adopted by the Retirement Board were based upon the actual experience of MERS during the years 2009 to 2013 and were first reflected in the December 31, 2015 annual valuations.

The economic assumptions were last revised by the Board for the December 31, 2015 annual valuations. Future actuarial valuation results may differ significantly from those presented in the annual valuations due to such factors as experience differing from that anticipated by the actuarial assumptions, or changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of the assignment, we did not perform an analysis of the potential range of future measurements.

Assets are valued on a market related basis that fully recognizes expected investment return and averages unanticipated market return over a 5 year period. Prior to 2016, future unanticipated market returns were reflected in the valuation assets over a 10 year period.

Based on the actuarial valuations, MERS' staff prepared various supporting schedules in the Comprehensive Annual Financial Report.

To the best of our knowledge, the actuarial valuations are complete and accurate and are made in accordance with generally recognized actuarial methods, in compliance with Act No. 220 of the Public Acts of 1996, as amended, and the MERS plan document, as revised. All of the undersigned are members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The actuarial assumptions used in the December 31, 2016 annual actuarial valuation reports produce results that we believe are reasonable.

Respectfully submitted,

W. James Koss, MAAA, ASA

Cathy Nagy

Cathy Nagy, MAAA, FSA

Curtis Powell, MAAA, EA

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

An actuarial valuation is the mathematical process that estimates plan liabilities and employer contribution requirements for the purpose of financing the Retirement System (System). This process is repeated annually to update the liabilities and contribution requirements for changes in participant census and plan features, and to reflect actual plan experience in the process. The valuation complies with the Municipal Employees' Retirement Act, MCL 38.1501, et seq., as amended (MERS Act) and as embodied in the MERS Plan Document (as revised), the MERS Actuarial Policy, and other applicable laws.

In addition to using current membership and financial data, an actuarial valuation requires the use of a series of assumptions regarding uncertain future events. The assumptions and methods used in the December 31, 2016, actuarial valuations are those adopted by the MERS Retirement Board (Board). The actuarial assumptions are unchanged from those used in the December 31, 2015, valuations. The most recent experience study for the System was completed in 2015, and covered the period from January 1, 2009, through December 31, 2013.

There have been no changes in the funding method that was adopted by the Board commencing with the December 31, 1993, valuations. The basic funding method is entry age normal and employer contribution amounts are developed as a level percentage of payroll.

Valuation assets were valued for each municipality by taking the difference in investment income between expected return and market return and recognizing it over a 5-year period. This asset valuation method was first adopted for the December 31, 2016, valuation. For purposes of transition from the 10 year to the 5 year smoothing method, the entirety of prior unrecognized gains and losses at December 31, 2016, was combined into a single item and will be recognized over the next four years.

The employer contribution rate has been determined for each municipality based on the entry age normal funding method (adopted 1994). Under the entry age normal cost funding method, the total employer contribution is comprised of the normal cost plus the amortization payment required to fund the unfunded actuarial accrued liability over a period of years. For open divisions (new hires are included in the division) the amortization period is 22 years. The 22 year period will decline by one each year until the initial unfunded accrued liability is paid off. For divisions that closed to new hires prior to 2016 (new hires are not covered by the MERS Defined Benefit Plan or Hybrid Plan (Part I) provisions in a linked division) of active municipalities, the employer had two amortization options. Under the Accelerated to 5 Year Option, the amortization period is decreased annually by two years until the period reaches six or five years. Each year thereafter it decreases by one each year until the unfunded liability is paid off. Under the Accelerated to 15 Year Option, the amortization period is decreased annually by two years until the period reaches 16 or 15 years. Each year thereafter the amortization period is decreased annually by one year until the unfunded accrued liability is paid off. Negative unfunded accrued liabilities are amortized over 10 years, with the 10 year period reestablished with each annual actuarial valuation. As of December 31, 2016, there were 1,389 closed divisions.

The total normal cost is, for each active participant, the level percentage of payroll contribution (from entry age to retirement) required to accumulate sufficient assets at the participant's retirement to pay for his or her projected benefit. The employer normal cost is the total normal cost reduced by the participant contribution rate. Closed municipalities (no longer actively participating in MERS) are covered by special funding. Employer's computed normal cost of benefits expressed as a percentage of valuation payroll is 6.98% and the total required contribution rate expressed as a percentage of valuation payroll is 24.61%.

For employers that adopt E-1 or E-2 post-retirement benefit increases, retirement benefits are assumed to increase by an annual, non-compounded rate of 2.5%. (Board adopted in 1981.)

There have been no recent changes that have had an impact on the System. Municipalities have the ability to modify provisions that apply to their individual plan. The individual municipality contribution rates are modified to account for changes in provisions of the plan selected by the municipality.

MERS' staff has provided the data about participants and present assets. Although examined for general reasonableness, the actuary has not audited the data. The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA). The Board adopted the assumptions used in the actuarial valuations after consulting with the actuary. Details on MERS' provisions, actuarial assumptions, and actuarial methodology follow this section.

Note: the Annual Actuarial Valuation addresses assets and liabilities for participation under the MERS Defined Benefit Plan, including the defined benefit portion (Part I) of the Hybrid Plan. The defined contribution portion of the Hybrid Plan (Part II) is not addressed in the valuation results as it is not a defined benefit plan.

ASSUMPTIONS AND METHOD CHANGES

Actuarial Assumptions

To calculate MERS' contribution requirements, assumptions are made about future events that could affect the amount and timing of benefits to be paid, and the assets to be accumulated. The economic and demographic assumptions include:

- An assumed rate of investment return used to discount liabilities and project what plan assets will earn;
- A mortality table projecting the number of participants who will die before retirement and the duration of benefit payments after retirement;
- Assumed retirement rates projecting when participants will retire and commence receiving retirement benefits;
- A set of withdrawal and disability rates to estimate the number of participants who will leave the workforce before retirement; and
- Assumed rate of pay increases to project participant compensation in future years.

Interest Rate

Funding plan benefits involves the accumulation of assets to pay benefits in the future. These assets are invested, and the net rate of investment earnings is a significant factor when determining the contributions required to support the ultimate cost of benefits. For the 2016 actuarial valuation, the long-term investment yield, net of administrative and investment expenses, is assumed to be 7.75%. This assumption was first used for the December 31, 2015, actuarial valuations.

The reader should note that, given that the actuarial value of assets for 2016 was 8% higher than the fair value, meeting the actuarial assumption in the next few years will require average annual market returns that exceed the 7.75% investment return assumption.

Pay Increases

Because benefits are based on a participant's final average compensation (FAC), it is necessary to make an assumption with respect to each participant's estimated pay progression. The pay increase assumption used in the actuarial valuation projects annual pay increases of 3.75% in the long term plus a percentage based on an age-related scale to reflect merit, longevity and promotional pay increases.

The pay increase assumption for sample ages is shown on the following page. The 3.75% long-term wage inflation assumption was first used for the December 31, 2015, actuarial valuation. The merit and longevity pay increase assumption was first used for the December 31, 2015, actuarial valuation.

Annual Percentage Increase in Salary

Sample Ages	Base Inflation	Merit and Longevity	Total Percentage Increase in Salary
20	3.75%	11.00%	14.75%
25	3.75%	7.20%	10.95%
30	3.75%	3.10%	6.85%
35	3.75%	1.90%	5.65%
40	3.75%	1.20%	4.95%
45	3.75%	0.81%	4.56%
50	3.75%	0.52%	4.27%
55	3.75%	0.30%	4.05%
60	3.75%	0.00%	3.75%

Inflation

Although no specific price inflation assumption is needed for this valuation, the assumed long-term annual rate of price inflation is 2.5%.

Payroll Growth

For divisions that are open to new hires, the number of active participants is projected to remain constant, and the total payroll is projected to increase 3.75% annually. This assumption was first used for the December 31, 2015, actuarial valuations.

Increase in Final Average Compensation

The last three experience studies determined that for some retirees of some municipalities, the actual final average compensation (FAC) at retirement was larger than would be expected based on reported annual pays and FACs for the years just before retirement. Some possible sources for the differences are:

- Lump sum payments for unused paid time off. Unused sick leave payouts have been excluded from FAC since the mid-1970s. However, since that time it has become popular to combine sick and vacation time into paid time off, which is included in the FAC. Consequently, the lump sums that are includible in FAC have grown over the years.
- Extra overtime pay during the final year of employment. Our studies only reflect any increase in overtime during the final year, not any increase that occurs during the full three or more year averaging period.

The amount of unexpected FAC increase varies quite a bit between municipalities. Some municipalities show no sign of FAC loading, while other municipalities show increases above the average increase. This is presumably the result of different personnel policies and collective bargaining agreements among municipalities.

The Board adopted new FAC assumptions to be first used for the December 31, 2015, annual actuarial valuations. These assumptions reflect an FAC load of 0% to 12% for each municipality, based on the municipality's experience in the 2009-2013 and earlier experience studies (it is anticipated that these assumptions will be updated after every 5 year experience study). The FAC increase assumption(s) for each municipality are shown in individual annual actuarial valuation reports. Note that for divisions that adopted Sick Leave in FAC (SLIF), the assumption is developed individually for each division based on the specific SLIF provision and/or past experience.

Retirement Rates

A schedule of retirement rates is used to measure the probability of eligible members retiring during the next year. The retirement rates for Normal Retirement are determined by each member's replacement index at the time of retirement. The replacement index is defined as the approximate percentage of the member's pay (after reducing member contributions) that will be replaced by the member's benefit at retirement. The index is calculated as:

Replacement Index = 100 multiplied by Accrued Benefit ÷ by [Pay - Member Contributions].

Retirement rates for early reduced retirement are determined by the member's age at early retirement.

The revised normal retirement rates below were first used for the December 31, 2015, actuarial valuations. The early retirement rates were first used for the December 31, 2015, actuarial valuations.

Normal Retirement – Service Based Benefit F(N) Adopted

Sample Replacement Index	Percent of Eligible Active Members Retiring Within the Next Year
5	8.0%
10	12.0%
15	16.0%
20	19.0%
25	19.5%
30	19.5%
35	19.5%
40	20.0%
45	21.0%
50	21.0%
55	21.0%
60	24.0%
65	24.0%
70	25.0%
75	28.0%
80	33.0%
85	36.0%
90	41.0%
95	46.0%
100+	50.0%

Early Retirement – Reduced Benefit

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year
50	2.00%
51	2.00%
52	3.30%
53	3.80%
54	5.60%
55	4.30%
56	4.20%
57	4.10%
58	5.00%
59	6.20%

Withdrawal Rates

The withdrawal rates are used to estimate the number of employees at each age that are expected to terminate employment before qualifying for retirement benefits. The withdrawal rates do not apply to participants eligible to retire, and do not include separation on account of death or disability. The assumed rates of withdrawal applied in the current valuation are based on years of service and scaled up or down according to each division's experience.

Sample rates of withdrawal from active employment, prior to the scaling factor, are shown. These rates were first used for the December 31, 2015 actuarial valuations.

The base withdrawal rates are multiplied by a scaling factor to obtain the assumed withdrawal rates. The scaling factor for each division is shown in each municipality's annual actuarial report.

Rates of Withdrawal (Excluding Death or Disability) from Active Employment Before Retirement

Sample Years of Service	% of Active Members Withdrawing Within the Next Year
0	19.6%
1	16.3%
2	13.3%
3	10.5%
4	8.6%
5	6.9%
10	4.6%
15	3.4%
20	2.6%
25	2.2%
30 and over	2.2%

Disability Rates

Disability rates are used in the valuation to estimate the incidence of participant disability in future years. The assumed rates of disablement at various ages are shown. These rates were first used for the December 31, 2015 actuarial valuations.

** 80% of the disabilities are assumed to be non-duty, and 20% of the disabilities are assumed to be duty related. For those plans that have adopted disability provision D-2, 40% of the disabilities are assumed to be non-duty, and 60% are assumed to be duty related*

Rates of Withdrawal Due To Disability*

Sample Ages	Percent of Active Members Becoming Disabled Within Next Year
20	0.02%
25	0.02%
30	0.02%
35	0.05%
40	0.08%
45	0.20%
50	0.29%
55	0.38%
60	0.39%
65	0.39%

Mortality Tables

In estimating the amount of reserves required at retirement to pay a participant's benefit for the remainder of their lifetime, it is necessary to make an assumption with respect to the probability of surviving to retirement, and the life expectancy after retirement.

The mortality table used to project the mortality experience of non-disabled plan participants is a 50% male/50% female blend of the following tables:

The RP-2014 Healthy Annuitant Mortality Tables, with rates multiplied by 105%
The RP-2014 Employee Mortality Tables
The RP-2014 Juvenile Mortality Tables

For ages 0-17 we use the rates in Table 3; for ages 18-49 we use the rates in Table 2; for ages 70 and older we use the rates in Table 1; and for ages 50-69 we blend Table 1 and Table 2.

The mortality table used to project the mortality experience of disabled plan participants is 50% Male, 50% Female blend of RP-2014 Disabled Retiree Mortality Tables.

These mortality tables were first used for the December 31, 2015, actuarial valuations.

It is assumed that 90% of active participants' deaths are non-duty and 10% of deaths are assumed to be duty-related.

Possible future mortality improvements are reflected in the mortality assumption. The mortality assumptions include a 10% margin for future mortality improvements, relative to the actual mortality experience seen in the 2009-2013 Experience Study.

Mortality Tables (Non – Disabled)

Age	Expected Years of Life Remaining	Mortality Rates
20	63.06	0.03%
25	58.15	0.03%
30	53.24	0.03%
35	48.33	0.04%
40	43.43	0.05%
45	38.56	0.08%
50	33.74	0.23%
55	29.18	0.37%
60	24.79	0.58%
65	20.59	0.94%
70	16.66	1.56%
75	13.07	2.51%
80	9.85	4.18%

Mortality Tables (Disabled)

Age	Expected Years of Life Remaining	Mortality Rates
20	46.95	0.47%
25	43.14	0.54%
30	39.24	0.55%
35	35.33	0.65%
40	31.52	0.82%
45	27.98	1.30%
50	24.87	1.62%
55	21.91	1.89%
60	18.97	2.18%
65	16.04	2.63%
70	13.19	3.43%
75	10.54	4.77%
80	8.18	6.88%

Schedule of Active Member Valuation Data

Valuation Dec 31	Participating Municipalities	Active Members	Active Members Annual Payroll	Annual Average Pay	Percent Increase in Average Pay	Persons on Deferred Status
2007	683	36,518	$1,581,597,937	$43,310	3.2%	6,438
2008	692	36,092	1,624,855,145	45,020	3.9%	6,662
2009	699	35,598	1,636,501,282	45,972	2.1%	6,726
2010	715	35,816	1,683,983,258	47,018	2.3%	6,961
2011	721	35,111	1,669,676,476	47,554	1.1%	7,160
2012	726	34,187	1,640,390,877	47,983	0.9%	7,262
2013	728	34,809	1,687,391,045	48,476	1.0%	7,620
2014	728	35,302	1,743,799,124	49,397	1.9%	7,690
2015	732	35,274	1,786,825,334	50,656	2.5%	8,340
2016	735	34,843	1,779,919,980	51,084	0.8%	8,252

Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls	
Valuation Dec 31	Retirees/ Beneficiaries Number	Annual Allowance	Retirees/ Beneficiaries Number	Annual Allowance
2007	2,030	$36,947,384	894	$5,928,199
2008	2,015	43,573,642	783	5,156,426
2009	1,871	36,164,024	773	4,545,379
2010	2,809	67,149,443	809	9,250,641
2011	2,212	50,594,419	940	11,072,125
2012	2,348	53,957,105	811	9,477,177
2013	3,578	73,762,997	857	11,138,379
2014	4,242	107,064,445	948	12,090,122
2015	2,714	68,984,180	1001	13,947,540
2016	2,847	70,269,768	1540	25,743,252

	End-of-Year Rolls			
Valuation Dec 31	Retirees/ Beneficiaries Number	Annual Allowance	% Increase in Annual Allowance	Average Annual Allowance
2007	22,600	$353,541,830	9.6%	$15,643
2008	23,832	391,959,046	10.9%	16,447
2009	24,930	423,577,691	8.1%	16,991
2010	26,930	481,476,493	13.7%	17,879
2011	28,202	520,998,787	8.2%	18,474
2012	29,739	565,478,715	8.5%	19,015
2013	32,460	628,103,333	11.1%	19,350
2014	35,754	723,077,656	15.1%	20,224
2015	37,467	778,114,296	7.6%	20,768
2016	38,774	822,640,812	5.7%	21,216

SUMMARY OF PLAN DOCUMENT PROVISIONS

There were no recent changes in the nature of the Defined Benefit Plan that would have a material impact on the actuarial valuations for December 31, 2016. Pursuant to a collective bargaining agreement, a participating municipality may provide for retirement benefits that are modifications of some of the MERS standard retirement benefits otherwise included, although the Hybrid Plan is not modifiable. The actuary took the known modifications into consideration when determining the municipality contribution rates in the December 31, 2016 actuarial valuation.

The benefits summarized in this section are intended only as general information regarding MERS. The CAFR and valuation are not a substitute for the language of the MERS Act and the MERS Plan Document, as revised. If any conflict occurs between the information in this summary and the MERS Act or the MERS Plan Document, as revised, the provision of the Act and the MERS Plan Document govern.

The December 31, 2016 actuarial valuation was based on the provisions of the MERS Plan Document as of that date.

Defined Benefit Plan

Eligibility for Retirement

Monthly retirement payments are made over the lifetime of the retiree and/or over the lifetime of the beneficiary. Payments are based on the choice of benefits adopted by each municipality and the final payment option elected by the retiring member.

Vesting occurs after 10 years of credited service unless the municipality selects a lesser number of years.

Members are eligible to retire after vesting and between the ages of 60 and 70. The municipality may choose other combinations of age and service such as age 55 and 15 years of service, age 50 and 25 years of service, etc.

Early retirement benefits are available if the vested member meets either the age 55 with 15 years of service or age 50 with 25 years of service eligibility requirements. The monthly payment is reduced (unless waived by the municipality) for each month the participant is younger than the age the unreduced retirement benefits are available.

Benefit Formula

The annual benefit equals a specified percentage of the participant's final average compensation, multiplied by the number of years and months of credited service. The plan has several benefit multipliers available. The benefit multipliers vary and are adopted by a participating municipality.

Mandatory Retirement

There is no mandatory retirement age; however, participants must take a required minimum distribution as required by law.

Deferred Retirement (Vesting)

Deferred retirement occurs when an participant leaves MERS covered employment after vesting, but before reaching the minimum retirement age. The participant or beneficiary will become eligible for the deferred allowance once eligibility requirements for retirement are met. However, the participant's contributions must remain on deposit with MERS.

Maximum Benefit Payable by MERS

The maximum benefit that may be paid by MERS is governed by Section 415 of the Internal Revenue Code (IRC). Benefits in excess of the maximum benefit will be paid by the MERS Excess Benefit Plan under Plan Section 88.

Act 88 (Reciprocal Retirement Act)

If a municipality elects to come under the provision of Act 88, service with former and future public employers in Michigan may be used to satisfy the eligibility requirements for that municipality.

Final Average Compensation

Final average compensation (FAC) is the highest monthly average of a participant's compensation over a consecutive period of months of credited service. The municipality selects the number of months. A FAC-3 is over a 36-month period, and a FAC-5 is over a 60-month period. The compensation used in calculating the final average compensation cannot exceed the limit set by IRC Section 401(a)(17).

Disability Retirement Allowance – Duty or Non-Duty

Duty disability retirement is available to a participant who becomes totally and permanently disabled while employed by a participating municipality after meeting the vesting requirement of the benefit program. The service requirement is waived if the disability is the natural and proximate result of a personal injury or disease arising out of and in the course of the participant's actual performance of duty with a municipality.

The allowance is computed in the same manner as a service retirement allowance, except that the reduction for retirement before age 60 is not applied.

If disability is duty-related, the amount of the retirement allowance shall not be less than 25% of the member's final average compensation.

Death Allowance – Duty or Non-Duty

If a participant or vested former participant with the minimum years of service required to be vested dies before retirement, a monthly survivor allowance may be made payable. If the participant is married, the spouse is the automatic beneficiary unless the spouse, in writing, declines a benefit in favor of another named beneficiary.

A survivor beneficiary will receive a retirement allowance computed in the same manner as a service retirement allowance, based on service and final average compensation at death, but reduced to reflect an Option II election. The reduction for retirement before age 60 is not applied. Payment to the survivor beneficiary of a deceased member commences immediately. Payment to the survivor beneficiary of a deceased vested former member commences on the date the member would have first satisfied eligibility for retirement with an unreduced service retirement allowance.

If there is no named beneficiary and the participant leaves a spouse, the spouse will receive an Option II survivor allowance. The amount shall be 85% of the deceased participant's or the deceased former vested participant's accrued retirement allowance computed in the same manner as a service retirement allowance, based on service and final average compensation at the time of death. Payment to the surviving spouse of a deceased participant commences immediately. Payment to the surviving spouse of a deceased former vested participant commences on the date the member would have first satisfied eligibility for retirement with an unreduced service retirement allowance. The amount of a surviving spouse's benefit is always the larger of (1) the benefit computed as a survivor beneficiary, and (2) the 85% of accrued retirement allowance benefit described above. If there is no named beneficiary and no retirement allowance being paid to a surviving spouse, unmarried children under 21 will be paid an equal share of 50% of the deceased participant's or the deceased former vested participant's accrued retirement allowance. The reduction for retirement before age 60 is not applied.

If no retirement benefits are payable on death, the beneficiary or, if none, the decedent's estate would receive a refund of any remaining employee's contributions.

A duty death allowance, computed in the same manner as a non-duty death allowance, may be payable to a spouse or child(ren) if death occurs as the natural and proximate result of a personal injury or disease arising out of and in the course of the member's actual performance of duty with a municipality. The vesting requirement is waived, and the minimum benefit is 25% of the deceased participant's final average compensation.

Participant Contributions

Each participant may contribute a percentage of their annual compensation, if selected by the municipality, up to the compensation limit under Section 401(a)(17) of the Internal Revenue Code. The weighted average of participant contributions in 2016 was 4.29%. Interest is credited to accumulated member contributions each December 31 at a rate determined by MERS. Currently MERS is using the one-year U.S. Treasury bill rate determined as of December 31.

If a participant dies without a retirement allowance or other benefit payable on their account, the member's accumulated contributions plus interest are refunded to the member, if living, or to the member's surviving spouse or a beneficiary named by the participant (with spousal consent). If a member terminates employment, the member may take a refund of member contributions, while waiving any attributable service credit.

Post-Retirement Adjustments
Each municipality may elect to provide post-retirement adjustments to retirees and their beneficiaries. The municipality can choose a one-time adjustment, an annual adjustment for all retirees, or an adjustment for future retirees only. This cost-of-living adjustment (COLA) increase is effective in January of each year.

Forms of Benefit Payment
The member elects a payment option as part of the retirement application process. Once the election is made, the selection is irrevocable after receipt of first payment. The payment options include:

- Straight Life paid over the retiree's life only.
- A reduced benefit paid over the joint lives of the retiree and beneficiary, and continuing to the beneficiary if s/he survives the retiree. If the retiree survives the beneficiary, the retiree's benefit is prospectively converted to a straight life benefit.
- A reduced benefit paid over the life of the retirement, continuing as 75% or 50% of the original reduced amount for the life of the beneficiary if s/he survives the retiree). If the retiree survives the beneficiary, the retiree's benefit is prospectively converted to a straight life benefit.
- A reduced benefit paid to the retiree for life, and if the retiree dies before the number of monthly benefits elected at retirement (60, 120, 180, or 240) is reached, the reduced benefit continues to the beneficiary until the sum of the number of the monthly benefits paid to the retiree and to the beneficiary reaches the number elected at retirement.

Deferred Retirement Option Program (DROP): Traditional
If a member is covered by the Benefit Program DROP and is eligible for retirement, they have the option to elect a specified DROP period in which they will cease to accrue any additional retirement benefits, but remain employed by the participating municipality or court. The member must elect a DROP end date at least six months after the beginning date, but no more than sixty months after the beginning date, in one-month increments.

Upon the member's election of DROP and the receipt of an application to enroll in DROP, MERS will calculate the member's service retirement and benefit payment as of the beginning date. The System shall also calculate any age differential between the member and the member's beneficiary as of the calendar year of the DROP exit date in accordance with Treasury Regulation § 1.401(a)(9)-6. Upon the beginning date of the DROP period, the member shall be responsible to continue employee contributions, if any.

On the next available benefit payment date after processing is complete, and monthly thereafter, an amount equal to 100% of the monthly service retirement benefit payment the member would have received if he or she had retired as of the DROP beginning date will be credited to a notional account for the benefit of the member. Funds in the DROP account are credited with interest in the amount of 3% annually, or prorated in the event of a DROP period that is less than twelve months.

Upon the end date, the member shall receive a lump-sum distribution of the member's DROP account and on the first day of the calendar month following end date, the member will begin receiving monthly service retirement benefit payments.

Deferred Retirement Option Program (DROP+) Partial Lump Sum
If a member is covered by the Benefit Program DROP+ and retires at least 12 months after first becoming eligible for unreduced benefits, they have the option to receive a partial lump sum and a reduced monthly benefit:

- The member can elect a lump sum equal to 12, 24, 36, 48, or 60 times their monthly accrued benefit.
- For each 12 months included in the lump sum, the member's lifetime benefit is reduced by the DROP+ percentage adopted by the employer. The employer can adopt any of the following DROP+ reduction percentages: 4, 5, 6, 7, or 8%.

As of June 30, 2013, Benefit Program DROP+ may no longer be adopted. Two employers adopted this prior to it ending.

Annuity Withdrawal
Under the Annuity Withdrawal Program, a retiring member may elect to receive a refund of their accumulated member contributions with interest in a lump sum at retirement. The member's monthly pension would then be reduced by the actuarial equivalent of the lump sum payment. The employer has two options for the interest discount rate used to compute the actuarial equivalent reduction: the current investment return assumption used in the annual actuarial valuations or the most recent December 31 interest rate used for crediting interest on member contributions.

HYBRID PLAN

Part I - Defined Benefit Portion of Hybrid Plan

Eligibility for Retirement

Monthly retirement payments are made over the lifetime of the retiree and/or over the lifetime of the beneficiary. Payments are based on the choice of benefits adopted by each municipality and the final payment option elected by the retiring participant.

Vesting occurs after six years of credited service.

Participants are eligible to retire at an age between 60 and 70, as selected by the participating municipality, or upon accruing 6 years of service, whichever is later.

Benefit Formula

The annual benefit equals a specified percentage of the participant's final average compensation multiplied by the number of years and months of credited service. Percentage options are 1.0, 1.25, and 1.5%, and may be selected by a participating municipality.

Mandatory Retirement

There is no mandatory retirement age; however, all benefits must commence by the required beginning dated determined under IRC Section 401(a)(9).

Deferred Retirement (Vesting)

Deferred retirement occurs when an employee leaves MERS covered employment after vesting, but before reaching the applicable retirement age. The participant or beneficiary will become eligible for the deferred allowance once eligibility requirements are met. However, the participant's contributions must remain on deposit with MERS.

Maximum Benefit Payable by MERS

The maximum benefit that may be paid by MERS is governed by Section 415 of the Internal Revenue Code (IRC). Benefits in excess of the maximum benefit will be paid by the MERS Excess Benefit Plan under Plan Section 88.

Act 88 (Reciprocal Retirement Act)

If the municipality has elected to come under the provision of Act 88, service with former and future public employers in Michigan may be used to satisfy the eligibility requirements for that municipality.

Final Average Compensation

Final average compensation (FAC) is computed using the FAC-3 under the Defined Benefit Plan. The compensation used in calculating final average compensation cannot exceed the limit set by IRC Section 401(a)(17).

Disability Benefit – Duty or Non-Duty

Benefits are the same as are provided in the Defined Benefit Plan, except that optional benefit program D-2 does not apply.

Death Allowance – Duty or Non-Duty

Benefits are the same as are provided in the Defined Benefit Plan, except that the optional benefit program D-2 does not apply.

Participant Contributions

In the event the municipality elects an employer cap under Plan Document section 66(3), each participant may contribute a percentage of their annual compensation, up to the compensation limit under IRC Section 401(a)(17). Interest is credited to accumulated participant contributions each December 31 at a rate determined by MERS.

Currently MERS is using the one-year U.S. Treasury bill rate determined as of December 31.

If a participant leaves the municipality, or dies without a retirement allowance or other benefit payable on their account, the participant's accumulated contributions plus interest are refunded with spousal consent to the participant, if living, or to the participant's surviving spouse or a named beneficiary.

Post-Retirement Adjustments

There are no post-retirement adjustments within the Hybrid Plan.

Forms of Benefit Payment

The member elects a payment option as part of the retirement application process. Once the election is made, the selection is irrevocable after receipt of first payment. The payment options include:

- Straight Life paid over the retiree's life only.
- A reduced benefit paid over the joint lives of the retiree and beneficiary, and continuing to the beneficiary if s/he survives the retiree. If the retiree survives the beneficiary, the retiree's benefit is prospectively converted to a straight life benefit.
- A reduced benefit paid over the life of the retirement, continuing as 75% or 50% of the original reduced amount for the life of the beneficiary if s/he survives the retiree). If the retiree survives the beneficiary, the retiree's benefit is prospectively converted to a straight life benefit.
- A reduced benefit paid to the retiree for life, and if the retiree dies before the number of monthly benefits elected at retirement (60, 120, 180, or 240) is reached, the reduced benefit continues to the beneficiary until the sum of the number of the monthly benefits paid to the retiree and to the beneficiary reaches the number elected at retirement.

Deferred Retirement Option Program (DROP): Traditional

There is no DROP option in the Hybrid Plan.

Deferred Retirement Option Program (DROP+) Partial Lump Sum

There is no DROP+ option in the Hybrid Plan.

Annuity Withdrawal

There is no Annuity Withdrawal option in the Hybrid Plan.

Part II - Defined Contribution Portion of Hybrid Plan

Contributions — Employer

Any percentage of compensation that is allowed by federal law.

There are three vesting schedules from which an employer may choose to adopt:

- Immediate vesting upon participation,
- 100% vesting after stated years (the maximum vesting period is five years), or
- Graded vesting percentages per year of service (must be 100% vested after six years).

Contributions — Participant

Any percentage of compensation that is allowed by federal law and subject to procedures established by the Retirement Board. Participant contributions are vested immediately.

Note: The Annual Actuarial Valuation addresses assets and liabilities for participation under the MERS Defined Benefit Plan and the Defined Benefit portion of the Hybrid Plan. The Defined Contribution portion of the Hybrid Plan is not addressed in the valuation results.

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STATISTICAL

STATISTICAL SUMMARY

The Statistical Section provides pertinent information to assist readers when viewing the Financial Statements, Notes to the Financial Statements, and Required Supplementary Information to help in understanding and assessing the System's overall financial condition. The information reported here is in compliance with GASB Statement No. 44, Economic Condition Reporting: The Statistical Section. This statement establishes standardized reporting requirements for the supplementary information provided in this section.

The schedules and graphs beginning on the next page show financial trend information about the growth of MERS assets for the past 10 years. These schedules provide detailed information about the trends of key sources of additions and deductions to the System's assets, and assist in providing a context framing of how MERS' financial position has changed over time. The financial trend schedules presented are:

- Changes in Fiduciary Net Position – Last 10 Years and
- Schedule of Changes in Reserves

The next schedules show demographic, economic, operating, and trend information about the MERS environment.

- Schedule of Average Benefit Payments
- Schedule of Benefit Payments by Type
- Schedule of Retired Members by Type of Benefit
- Schedule of Retired Members by Type of Option Selected
- Defined Contribution Plan Participants, Defined Benefit Participants and Total MERS Participants

Changes in Fiduciary Net Position – Last 10 Years Ended December 31, 2017 (Dollars in Thousands)

Year	2008	2009	2010	2011
Defined Benefit Plan				
Additions:				
Plan Member Contributions	$64,871	$62,677	$83,573	$64,790
Employer Contributions	310,717	350,737	341,354	298,328
Net Investment Gain (Loss)	(1,533,327)	789,800	754,011	130,115
Total Additions to Plan Net Assets	**(1,157,739)**	**1,203,214**	**1,178,938**	**493,233**
Deductions:				
Benefits and Employee Refunds	379,401	419,576	461,204	505,854
Special Litigation Expense				
Administrative Expenses	16,936	19,254	21,340	22,514
Total Deductions from Plan Net Assets	**396,337**	**438,830**	**482,544**	**528,368**
Net Increase (Decrease)	(1,554,076)	764,384	696,394	(35,135)
Net Assets Held in Trust				
Balance Beginning of Fiscal Period	6,066,863	4,512,787	5,277,171	5,973,565
Balance End of Fiscal Period	$4,512,787	$5,277,171	$5,973,565	$5,938,430
Defined Contributions				
Additions:				
Plan Member Contributions	$6,978	$8,086	$8,694	$10,376
Employer Contributions	20,147	21,994	26,374	22,079
Net Investment Gain (Loss)	(61,679)	39,951	28,971	1,862
Total Additions to Plan Net Assets	**(34,554)**	**70,031**	**64,039**	**34,317**
Deductions:				
Benefits and Withdrawals	12,406	8,868	10,902	19,901
Administrative Expenses				826
Total Deductions from Plan Net Assets	**12,406**	**8,868**	**10,902**	**20,727**
Net Increase (Decrease)	(46,960)	61,163	53,137	13,590
Net Assets Held in Trust				
Balance Beginning of Fiscal Period	230,573	183,613	244,776	297,913
Balance End of Fiscal Period	$183,613	$244,776	$297,913	$311,503
Health Care Savings Program				
Additions:				
Employer Contributions	$10,127	$16,964	$11,651	$7,307
Net Investment Gain (Loss)	(4,604)	2,978	4,055	918
Miscellaneous Income	162	263	377	
Total Additions to Plan Net Assets	**5,685**	**20,205**	**16,083**	**8,225**
Deductions:				
Medical Disbursements Paid	462	512	890	1,474
Forfeitures and transfers	212	322	458	16
Administrative Expenses	360	159	(439)	717
Total Deductions from Plan Net Assets	**1,034**	**993**	**909**	**2,207**
Net Increase (Decrease)	4,651	19,212	15,174	6,018
Net Assets Held in Trust				
Balance Beginning of Fiscal Period	9,818	14,469	33,681	48,855
Balance End of Fiscal Period	$14,469	$33,681	$48,855	$54,873

2012	2013	2014	2015	2016	2017
$73,133	$88,410	$102,446	$86,553	$87,043	$88,192
783,292	409,563	523,372	635,581	566,815	609,707
668,303	988,639	501,254	(140,903)	867,584	1,136,227
1,524,728	**1,486,612**	**1,127,072**	**581,231**	**1,521,442**	**1,834,126**
565,695	662,708	707,268	754,978	917,084	849,734
					4,250
24,483	20,342	17,822	17,665	17,446	17,389
590,178	**683,050**	**725,090**	**772,643**	**934,530**	**871,373**
934,550	803,562	401,982	(191,412)	586,912	962,753
5,938,430	6,872,980	7,676,016	8,077,998	7,886,586	8,473,498
$6,872,980	$7,676,542	$8,077,998	$7,886,586	$8,473,498	$9,436,251
$1,997	$20,370	$20,805	$23,496	$20,882	$22,259
40,103	42,706	26,112	38,151	56,696	32,666
38,552	63,614	25,208	(7,482)	45,744	85,049
80,652	**126,690**	**72,125**	**54,165**	**123,322**	**139,974**
18,532	26,021	63,304	34,797	61,088	34,722
759	812	623	601	619	648
19,291	**26,833**	**63,927**	**35,398**	**61,707**	**35,370**
61,361	99,857	8,198	18,767	61,615	104,604
311,503	372,864	472,721	480,919	499,686	561,301
$372,864	$472,721	$480,919	$499,686	$561,301	$665,905
$10,742	$12,164	$11,649	$20,275	$27,158	$23,477
5,406	7,979	3,480	(1,779)	11,393	19,195
16,148	**20,143**	**15,129**	**18,496**	**38,551**	**42,672**
1,787	2,316	3,011	3,694	4,925	5,645
300	723	469	355		
144	125	163	145	165	187
2,231	**3,164**	**3,643**	**4,194**	**5,090**	**5,832**
13,917	16,979	11,486	14,302	33,461	36,840
54,873	68,790	85,769	97,255	111,557	145,018
$68,790	$85,769	$97,255	$111,557	$145,018	$181,858

Changes in Fiduciary Net Position – Last 10 Years Ended December 31, 2017 (Dollars in Thousands)

Year	2008	2009	2010	2011
Retiree Health Funding Vehicle				
Additions:				
Employer Contributions	$42,377	$48,029	$52,613	$48,644
Net Investment Gain (Loss)	(32,642)	23,525	29,278	6,820
Total Additions to Plan Net Assets	**9,735**	**71,554**	**81,891**	**55,464**
Deductions:				
Disbursements Paid to Municipalities	3,857	6,088	5,564	9,074
Transfers and Special Expenses	487	623	859	
Administrative Expenses	319	54	1,039	1,647
Total Deductions from Plan Net Assets	**4,663**	**6,765**	**7,462**	**10,721**
Net Increase (Decrease)	5,072	64,789	74,429	44,743
Net Assets Held in Trust				
Balance Beginning of Fiscal Period	113,343	118,415	183,204	257,633
Balance End of Fiscal Period	$118,415	$183,204	$257,633	$302,376
Investment Services Program				
Additions:				
Employer Contributions	$2,969	$999		
Net Investment Gain (Loss)	(11,607)	3,376	$867	$162
Total Additions to Plan Net Assets	**(8,638)**	**4,375**	**867**	**162**
Deductions:				
Disbursements and Transfers	750	33,593		
Administrative Expenses	154	4	250	28
Total Deductions from Plan Net Assets	**904**	**33,597**	**250**	**28**
Net Increase (Decrease)	(9,542)	(29,222)	617	134
Net Assets Held in Trust				
Balance Beginning of Fiscal Period	44,855	35,313	6,091	6,708
Balance End of Fiscal Period	$35,313	$6,091	$6,708	$6,842
457 Program				
Additions:				
Employee Contributions				
Employer Contributions				
Net Investment Gain (Loss)				
Total Additions to Plan Net Assets				
Deductions:				
Benefits				
Administrative Expenses				
Total Deductions from Plan Net Assets				
Net Increase (Decrease)				
Net Assets Held in Trust				
Balance Beginning of Fiscal Period				
Balance End of Fiscal Period				

The Changes in Fiduciary Net Position over the last 10 years chart shows contributions being received from municipalities, investment gains/losses and disbursements to retirees/municipalities. The 457 Program been in existence for less than 10 years.

2012	2013	2014	2015	2016	2017
$78,809	$58,111	$64,161	$73,764	$71,741	$59,219
36,770	59,826	32,947	(8,833)	70,585	103,572
115,579	**117,937**	**97,108**	**64,931**	**142,326**	**162,791**
13,071	14,341	9,556	22,002	24,893	12,286
	4				
521	659	692	732	773	841
13,592	**15,004**	**10,248**	**22,734**	**25,666**	**13,127**
101,987	102,933	86,860	42,197	116,660	149,664
302,376	404,363	507,296	594,156	636,352	753,012
$404,363	$507,296	$594,156	$636,352	$753,012	$902,676
$700		$74,660	$19,721	$289	$142
791	$1,148	2,781	138	6,699	7,076
1,491	**1,148**	**77,441**	**19,859**	**6,988**	**7,218**
106	300	280	40,798	3,309	3,355
11	10	81	82	74	71
117	**310**	**361**	**40,880**	**3,383**	**3,426**
1,374	838	77,080	(21,021)	3,605	3,792
6,842	8,216	9,054	86,134	65,113	68,718
$8,216	$9,054	$86,134	$65,113	$68,718	$72,510
$8,170	$4,582	$5,788	$12,442	$20,646	$22,566
	77	132			
163	1,558	786	(747)	3,643	11,605
8,333	**6,217**	**6,706**	**11,695**	**24,289**	**34,171**
21	584	1,230	1,066	1,717	3,389
6	34	70	51	66	86
27	**618**	**1,300**	**1,117**	**1,783**	**3,475**
8,306	5,599	5,406	10,578	22,506	30,696
	8,306	13,905	19,311	29,889	52,395
$8,306	$13,905	$19,311	$29,889	$52,395	$83,091

Schedule of Changes in Reserves – Year Ended December 31, 2017 (Dollars in Thousands)

	Reserve for Employee Contributions	Reserve for Employer Contributions and Benefit Payments	Reserve for Expenses and Undistributed Investment Income	Total Reserve for Defined Benefit Plan
Additions				
Member Contributions	$88,192			$88,192
Employer Contributions		$609,707		609,707
Net Investment Income			$1,176,044	1,176,044
Miscellaneous Income			55	55
Total Additions	**88,192**	**609,707**	**1,176,099**	**1,873,998**
Deductions				
Benefits and Withdrawals	10,432	839,302		849,734
Special Litigation Expense			4,250	4,250
Administrative Expense			17,389	17,389
Total Deductions	**10,432**	**839,302**	**21,639**	**871,373**
Net Increase (Decrease)	77,760	(229,595)	1,154,460	1,002,625
Other Changes in Reserves				
Investment Income Allocations	13,289	1,086,239	(1,099,528)	-
Retirement and Division Transfers	(63,133)	63,133		-
Total Other Changes in Reserves	**(49,844)**	**1,149,372**	**(1,099,528)**	**-**
Net Increase in Reserves After Other Changes	27,916	919,777	54,932	1,002,625
Reserve Balance Beginning of Year	820,602	7,671,906	(19,010)	8,473,498
Reserve Balance End of Year	**$848,518**	**$8,591,683**	**$35,922**	**$9,476,123**

The Schedule of Changes in Reserves shows the balance in each of the reserves and changes to those reserves' balances over the year. The Employee Contributions, Employer Contributions and Reserve for Expenses and Undistributed Investment Income are components of the Defined Benefit Plan. A balance in the Reserve for Expenses and Undistributed Investment Income will be allocated at a future date.

Reserve for Defined Contribution	Reserve for Health Care Savings Program	Reserve for Retiree Health Funding Vehicle	Reserve for Investment Services Program	Reserve for 457 Program	Total Reserve for Pension Trust Funds
$22,259				$22,566	$133,017
32,666	$23,477	$59,219	$142		725,211
85,984	19,926	107,415	7,385	11,698	1,408,452
					55
140,909	**43,403**	**166,634**	**7,527**	**34,264**	**2,266,735**
34,722	5,645	12,286	3,355	3,389	909,131
648	187	841	71	86	19,222
35,370	**5,832**	**13,127**	**3,426**	**3,475**	**932,603**
105,539	37,571	153,507	4,101	30,789	1,334,132
					-
					-
-	**-**	**-**	**-**	**-**	**-**
105,539	37,571	153,507	4,101	30,789	1,334,132
561,301	145,018	753,012	68,718	52,395	10,053,942
$666,840	**$182,589**	**$906,519**	**$72,819**	**$83,184**	**$11,388,074**

Schedule of Average Benefit Payments – Defined Benefit Plan

Valuation Date December 31	Number of Retirees and Beneficiaries	Average Yearly Benefit
2007	22,600	$15,643
2008	23,832	16,447
2009	24,930	16,991
2010	26,930	17,879
2011	28,202	18,474
2012	29,739	19,015
2013	32,460	19,350
2014	35,754	20,224
2015	37,467	20,768
2016	38,774	21,216

The Schedule of Average Benefit Payments shows the historical record and trends of retirees and the benefits they are drawing.

Schedule of Benefit Payments by Type – Defined Benefit Plan (Dollars in Thousands)

Fiscal Year Ended	Pension Benefits and Employer Withdrawals	Disability Benefits	Employee Refunds and Withdrawals	Total
December 31, 2008	$355,626	$16,729	$5,580	$377,935
December 31, 2009	391,613	18,254	9,510	419,377
December 31, 2010	433,778	19,415	7,006	460,199
December 31, 2011	476,993	20,812	7,915	505,720
December 31, 2012	535,900	21,284	8,052	565,236
December 31, 2013	631,906	20,913	9,889	662,708
December 31, 2014	670,032	27,959	9,277	707,268
December 31, 2015	715,638	31,364	7,976	754,978
December 31, 2016	870,741	35,829	10,514	917,084
December 31, 2017	802,037	37,250	10,432	849,719

The Schedule of Benefit Expenses by Type shows the benefits paid as regular pension benefits, disability benefits and refunds for employees who have been terminated and requested refunds of their employee contributions.

Schedule of Retired Members by Type of Benefit – Defined Benefit Plan

December 31, 2016, Tabulated by Optional Form of Benefit Being Paid, Tabulated by Type of Benefit Being Paid

Type of Benefit	Number of Retirees	Total Monthly Benefits
Normal Retirement for age and service	31,593	$60,413,646
Non-Duty Disability[1]	1,183	1,568,663
Duty Disability[1]	583	1,005,659
Beneficiaries[2]	4,534	4,614,382
Non-Duty Death	824	891,893
Duty Death	57	59,157
Totals	**38,774**	**$68,553,400**

[1] At age 60, these benefit types are converted to normal retirement for age and service
[2] Includes EDRO alternate payees

Schedule of Retired Members by Type of Option Selected – Defined Benefit Plan

December 31, 2016, Tabulated by Optional Form of Benefit Being Paid

Type of Benefit	Number of Retirees	Total Monthly Benefits
Beneficiary draws 100% of retiree's benefit	11,886	$21,958,263
Beneficiary draws 67% of retiree's benefit	4	$13,968
Beneficiary draws 75% of retiree's benefit	2,480	6,024,859
Beneficiary draws 60% of retiree's benefit	414	1,482,241
Beneficiary draws 50% of retiree's benefit	5,636	11,664,382
Equated Option (changing at Social Security age)	422	401,652
5 year certain and life	306	478,773
10 year certain and life	803	1,525,936
15 year certain and life	227	340,609
20 year certain and life	476	697,693
Straight life allowance	16,120	23,965,024
Totals	**38,774**	**$68,553,400**

The Schedule of Retired Members by Type of Benefit and by Type of Option Selected present distributions of retirees and beneficiaries on the rolls by the types of benefit being paid and option selected.

Defined Contribution Plan Participants and Total MERS Participants

	Number of Participants Total	Defined Benefit	% of Total	Defined Contribution	% of Total	Hybrid	% of Total
December 31, 2008	74,400	66,586	89.5%	7,814	10.5%	N/A	0.0%
December 31, 2009	75,605	67,254	89.0%	8,351	11.0%	N/A	0.0%
December 31, 2010	78,343	69,707	89.0%	8,636	11.0%	N/A	0.0%
December 31, 2011	91,666	81,926	89.4%	9,193	10.0%	547	0.6%
December 31, 2012	93,462	82,331	88.1%	10,210	10.9%	921	1.0%
December 31, 2013	98,072	85,530	87.2%	11,340	11.6%	1,202	1.2%
December 31, 2014	101,589	87,661	86.3%	12,239	12.0%	1,689	1.7%
December 31, 2015	106,735	90,437	84.7%	13,912	13.0%	2,386	2.2%
December 31, 2016	108,412	91,125	84.1%	14,803	13.7%	2,484	2.3%
December 31, 2017	112,664	92,790	82.4%	16,819	14.9%	3,055	2.7%

Although MERS Defined Contribution Plan participants are not included in the annual actuarial valuation of the MERS Defined Benefit Plan, the trend in Defined Contribution participation is of interest. Numerous municipal divisions have established Defined Contribution Plan benefits for future new employees. Existing Defined Benefit Plan active members in those divisions were offered a choice of plans. The table above shows recent participation trends in Defined Contribution and Hybrid Plans, and overall MERS participants.

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