MICHIGAN MILITARY RETIREMENT PROVISIONS

Comprehensive Annual Financial Report for the Fiscal Year Ended September 30, 2019

MMRP

A Pension Trust Fund of the State of Michigan

Prepared by:
Financial Services
For
Office of Retirement Services
P.O. Box 30171
Lansing, Michigan 48909-7671
517-284-4400
1-800-381-5111

TABLE OF CONTENTS

INTRODUCTORY SECTION

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Michigan Military Retirement Provision

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

September 30, 2018

Christopher P. Morrill

Executive Director/CEO

PPCC

Public Pension Coordinating Council

Public Pension Standards Award
For Funding and Administration
2019

Presented to

Michigan Office of Retirement Services

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

Michigan Military
Retirement Provisions
P.O. Box 30171
Lansing, Michigan 48909-7671
Telephone 517- 284-4400
Outside Lansing 1-800-381-5111

STATE OF MICHIGAN

GRETCHEN WHITMER, Governor

DEPARTMENT OF TECHNOLOGY, MANAGEMENT & BUDGET

December 27, 2019

The Honorable Gretchen Whitmer
Governor, State of Michigan,

Members of the Legislature
State of Michigan,

Retirement Board Members
and
Members, Retirees and Beneficiaries

Ladies and Gentlemen:

We are pleased to present the comprehensive annual financial report of Michigan Military Retirement Provisions (Provisions) for fiscal year 2019.

INTRODUCTION TO REPORT

The Provisions were established by legislation under Public Act 150 of 1967 (the Michigan Military Act) and are administered by the Office of Retirement Services (ORS). The number of active and retired members and beneficiaries of the Provisions is presented in Note 1 of the financial statements in the Financial Section in this report. The purpose of the Provisions is to provide benefits for all Michigan National Guard members and their beneficiaries. The services performed by ORS staff provide benefits to members, retirees, and beneficiaries.

Responsibility

Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with the leadership team of the Provisions. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the Provisions.

Internal Control Structure

The leadership team of the Provisions is responsible for maintaining adequate internal accounting controls designed to provide reasonable assurance that transactions are executed in accordance with management's general or specific authorization and are recorded as necessary to maintain accountability for assets and to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America. The internal control structure is designed to provide reasonable assurance regarding the safekeeping of assets and reliability of all financial records.

The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgments by management. This internal control structure includes maintaining written policies and procedures. Discussion and analysis of fiduciary net position and related additions and deductions are presented in the Management Discussion and Analysis which can be found immediately following the Independent Auditor's Report.

Independent Auditors and Actuary

The Office of the Auditor General (OAG), independent auditors, conducted an annual audit of the Provisions. The independent auditor's report on the Provisions' financial statements is included in the Financial Section of this report.

An actuarial valuation is conducted annually. The purpose of the valuation is to evaluate the mortality, service, compensation and other financial experience of the Provisions and to recommend employer contributions. The annual actuarial valuation was completed by Gabriel Roeder Smith & Company for the fiscal year ended September 30, 2018 and recommends the employer contribution for the fiscal year ended September 30, 2021. Actuarial certification and supporting statistics are included in the Actuarial section in this report.

Management's Discussion and Analysis (MD&A)

Generally Accepted Accounting Principles (GAAP) require that management provide a narrative introduction, overview, and analysis to accompany the Basic Financial Statements in the form of an MD&A. This letter of transmittal is intended to complement MD&A and should be read in conjunction with it. The MD&A can be found immediately following the Independent Auditor's Report.

PROFILE OF THE GOVERNMENT

The Provisions were established by Public Act 150 of 1967. A 9-member board and the director of the Department of Technology, Management, and Budget (DTMB) govern the Provisions. Executive order 2015-13 created a State of Michigan Retirement Board responsible for the functions, duties and responsibilities of the State Employees' Retirement System, the Judges' Retirement System and the Military Retirement Provisions. Executive Order 2015-13 further established the Provisions as a qualified pension plan under section 401 of the Internal Revenue Code. The Provisions are administered in accordance with the State Employees' Retirement Act and other applicable state and federal laws governing the investment and administration of such retirement trusts. The Provisions serves over 15,000 members. Financing comes from investment earnings and legislative appropriation. A detailed plan description is included in Note 1 of the Financial Section in this report.

ECONOMIC CONDITIONS AND OUTLOOK

Since oversight of the Provisions was transferred to ORS in 2015, best practices for contributions and investments have been applied. The Provisions began prefunding in 2016 and due to several large supplemental contributions made in 2018 and 2019, are expected to be close to 100% funded by September 30, 2019.

Investments

The State of Michigan Investment Board is the investment fiduciary and custodian of all investments of the Provisions pursuant to State law. The primary investment objective is to maximize the rate of return on the total investment portfolio, consistent with a high degree of prudence and sufficient diversity to eliminate inordinate risks and to meet the actuarial assumption for the investment rate of return. The investment activity for the year produced a total rate of return on the portfolio of 5.0 percent for the Provisions. A summary of asset allocation and rates of return is presented in the Investment Section in this report.

Accounting System

Transactions of the Provisions are reported on the accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded when incurred. Participants' benefits are recorded when payable by law. We believe that the accounting and administrative internal controls established by the Provisions provide reasonable assurance the Provisions are carrying out its responsibilities in safeguarding its assets, in maintaining the reliability of the financial records for preparing financial statements, and in maintaining accountability for its assets.

Funding

Funds are derived from the excess of additions to plan fiduciary net position over deductions from plan fiduciary net position. Funds are accumulated by the Provisions to meet future benefit obligations to retirees and beneficiaries. The percentage computed by dividing the actuarial value of assets by the actuarial accrued liability is referred to as the “funded ratio.” This ratio provides an indication of the funding status of the Provisions and generally, the greater this percentage, the stronger the Provisions.

Pension – Prefunding for pension benefits began in fiscal year 2016. The actuarial value of the assets and actuarial accrued liability for pension benefits of the Provisions were $17.2 million and $56.8 million, respectively, resulting in a funded ratio of 30.3 percent on September 30, 2018. A historical perspective of funding levels for the Pension Plan is presented on the Schedule of Funding Progress in the Statistical section in this report.

MAJOR GOALS ACCOMPLISHED

Telephone System Upgrade – In December 2018, ORS migrated to a new Voice over Internet Protocol (VoIP) phone system that is fully encrypted. VoIP transmits sound over the internet rather than traditional phone lines. This system implementation was the first of its kind for the State of Michigan. A new interactive voice response system (IVR) was introduced that improves the customer experience by reducing time spent navigating the menu and preserves security by automatically authenticating the call against the member’s phone number on record. In many cases, a routine call that would have taken over two minutes to navigate the menu and get in queue now takes less than one minute.

Paperless Options – A new feature was implemented in miAccount that lets customers opt out of receiving paper direct deposit statements as well as paper *1099-R* annual statements. Both direct deposit and *1099-R* statements are available electronically to view and print in miAccount for current and past years. If customers choose the paperless option, their *1099-R* statements are available online a week or two before the printed one is mailed. They can also view their pension payment history on a monthly basis versus receiving a paper statement four to five times a year. In addition to providing the member with more personalized information faster, going paperless helps the environment and reduces print and mailing costs.

New E-Learning Modules – Customer Service now has online modules available to help train staff members. The training modules use realistic scenarios in simulated environments so staff members can practice completing various transactions and processes. The training helps ensure Customer Service staff members are completing tasks accurately and efficiently, improving customer experiences through consistent account handling. Upon completion of each module, staff members take a quiz to evaluate their learning.

Mailing Security Process Improvement – An information security improvement was implemented in fiscal year 2019 that will improve end-to-end processing of the daily mailings and ensure that ORS customers are getting their mail and only their mail. The solution utilizes 2-D bar coding which are tracked by the automated print and mail equipment to ensure that each printed page is accounted for as it passes through various machines, reducing the risk of mail going to the wrong customer.

Mobile App Launch – ORS released a mobile app, MiORS, for members and retirees of the defined benefit plans. The new app provides account access in a simple, modern format, compatible with all popular mobile devices. One key feature allows users the ability to upload documents directly to ORS by taking a picture of a form, birth certificate, or other insurance proof and sending the document(s) securely to ORS. This eliminates the need to fax or mail them to ORS. In the first year, the app has been downloaded by over 15,500 users who have uploaded more than 700 documents. The app also allows ORS to send custom–crafted alerts and targeted announcements, based on a member’s retirement system and account status. Retirees are now able to manage their direct deposit, update tax withholdings, and view their payment history on the app.

Supplemental Appropriation Boosts Pension Funded Ratio – In the 2018 fiscal year, the Military Retirement Provisions pension plan was only 30% funded and was not expected to be fully funded until 2038. A proposal was made to boost the funding of the MRP pension plan through a supplemental appropriation in 2019. On December 28, 2018, Public Act 618 was signed into law which appropriated $35.8 million to the MRP. The additional funding will be reflected in the Sept. 30, 2019, actuarial valuation and is expected to result in a funded ratio very close to 100%, 19 years ahead of schedule. This additional funding will result in greater benefit security to the membership and lower employer contributions in the future.

HONORS

Public Pension Standards Award – ORS was awarded the 2019 Standards Award from the Public Pension Coordinating Councils Standards Program (PPCC) for both funding and administration. ORS has received these awards every year since 2004.The PPCC Standards reflect expectations for public retirement system management and administration and serve as a benchmark for all DB public plans to be measured.

Government Finance Officers Association Award – The Government Finance Officers Association (GFOA) of the United States and Canada awarded the retirement system with the Certificate of Achievement for Excellence in Financial Reporting for our fiscal year 2018 Comprehensive Annual Financial Report (CAFR). This marks the 28th consecutive year ORS has received this prestigious award.

ACKNOWLEDGEMENTS

The preparation of this report was accomplished with the dedication and cooperation of many people. It is intended to provide complete and reliable information as a basis for making management decisions, as a means of determining compliance with legal provisions, and as a means for determining responsible stewardship of the funds of the Provisions.

We would, therefore, like to express our appreciation for the assistance given by staff, the advisors and the many people who contributed to its preparation. We believe their combined efforts have produced a report that will enable employers and plan members to better evaluate and understand the Provisions. Their cooperation contributes significantly to the success of the Provisions.

Sincerely,

Tricia L. Foster, Director
Department of Technology, Management & Budget

Kerri VandenBosch

Kerri Vanden Bosch, Director
Office of Retirement Services

RETIREMENT BOARD MEMBERS*

As of December 27, 2019

Judge Mark T. Boonstra
General Public
Term Expires Dec. 31, 2019

Ann Marie Storberg
Ex-officio Member Representing
State Treasurer

Matthew Fedorchuk
Active State Employee
Term Expires Dec. 31, 2020

John Gnodtke
Ex-officio Member Representing
State Personnel Director

Laurie Hill
Retired State Employee
Term Expires Dec. 31, 2019

Eric Jamison
Ex-officio Member Representing
Attorney General

Craig Murray
Ex-officio Member Representing
Auditor General

Judge David H. Sawyer
Active Judge
Term Expires Dec. 31, 2021

Col. John Wojcik, Chair
Michigan National Guard
Term Expires Dec. 31, 2022

* Statute provides that board members may continue to serve after their term expires until they are replaced or reappointed.

ADVISORS AND CONSULTANTS

As of December 27, 2019

Actuaries
Gabriel Roeder Smith & Co.
Mita D. Drazilov
Southfield, Michigan

Independent Auditors
Doug A. Ringler, C.P.A., C.I.A.
Auditor General
State of Michigan

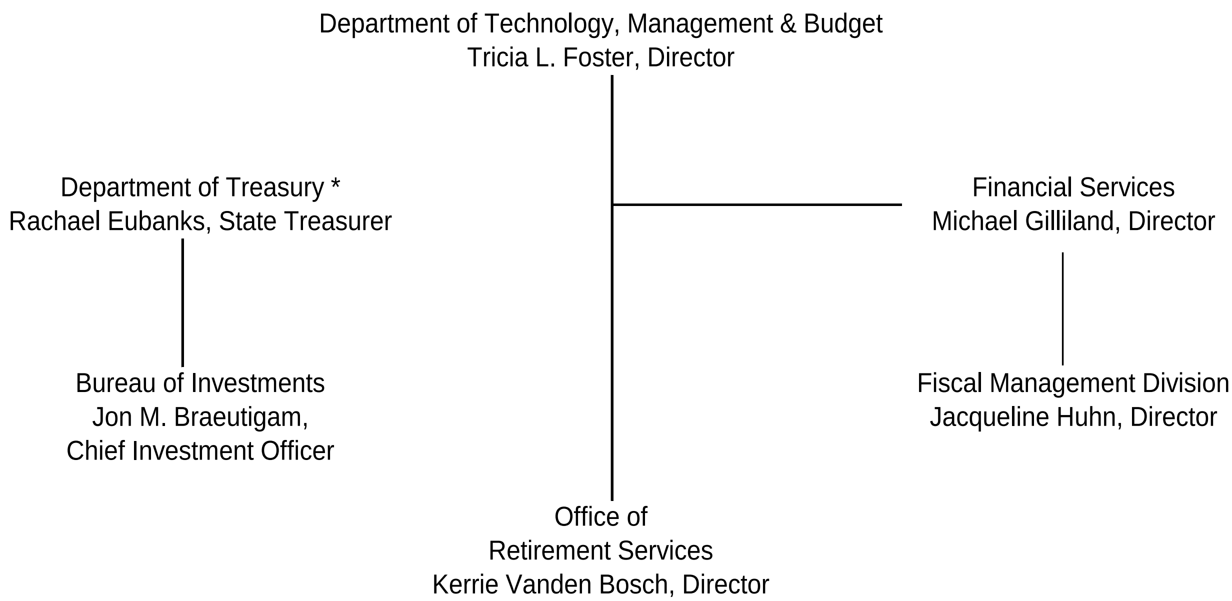
Investment Manager and Custodian
Rachael Eubanks
State Treasurer
State of Michigan

Legal Advisor
Dana Nessel
Attorney General
State of Michigan

Investment Performance Measurement
State Street Corporation
State Street Investment Analytics
Boston, MA

ORGANIZATION CHART

As of December 27, 2019



* The investments of MMRP are managed by the Michigan Department of Treasury. Information on the investments and the fiduciary, Michigan Department of Treasury, can be found in the Investment Section, Introduction. In addition, see the Investment Section, Schedule of Investment Fees (page 56) and Schedule of Investment Commissions (page 57) for information regarding the investment fees and commissions paid as well as investment professionals utilized by MMRP.

This page was intentionally left blank.

FINANCIAL SECTION

Independent Auditor’s Report
Management’s Discussion and Analysis
Basic Financial Statements
Notes to Basic Financial Statements
Required Supplementary Information
Note to Required Supplementary Information
Supporting Schedules

OAG
Office of the Auditor General
Doug A. Ringler, CPA, CIA
Auditor General
201 N. Washington Square, Sixth Floor • Lansing, Michigan 48913 • Phone: (517) 334-8050 • audgen.michigan.gov

Independent Auditor's Report on the Financial Statements
and Other Reporting Required by *Government Auditing Standards*

Colonel John J. Wojcik, Chair
State of Michigan Retirement Board
and
Ms. Tricia L. Foster, Director
Department of Technology, Management, and Budget
and
Ms. Kerrie L. Vanden Bosch, Director
Office of Retirement Services

Dear Colonel Wojcik, Ms. Foster, and Ms. Vanden Bosch:

Report on the Financial Statements
We have audited the accompanying financial statements of the Michigan Military Retirement Provisions (MMRP) as of and for the fiscal year ended September 30, 2019 and the related notes to the financial statements, which collectively comprise MMRP’s basic financial statements as listed in the table of contents.

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

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 financial statements referred to in the first paragraph present fairly, in all material respects, the fiduciary net position of the MMRP as of September 30, 2019 and the changes in fiduciary net position for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America.

Colonel John J. Wojcik, Chair
Ms. Tricia L. Foster, Director
Ms. Kerrie L. Vanden Bosch, Director
Page 2

Other Matters

Required Supplementary Information
Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, schedule of changes in net pension liability, schedule of contributions, schedule of pension investment returns, and related note, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information
Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise MMRP's basic financial statements. The supporting schedules and the introductory, investment, actuarial, and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The supporting schedules 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 supporting schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory, investment, 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.

Other Reporting Required by *Government Auditing Standards*
In accordance with *Government Auditing Standards*, we will also issue a report on our consideration of MMRP's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of MMRP's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering MMRP's internal control over financial reporting and compliance.

Sincerely,

Doug Ringler

Doug Ringler
Auditor General
December 27, 2019

Effective January 1, 2016, in accordance with Executive Order 2015-13, the Michigan Military Retirement Provisions (MMRP) became a qualified pension plan created in trust under Section 401 of the Internal Revenue Code. MMRP will be administered in accordance with the State Employees' Retirement Act and all plan documents relating the governance of the same. Our discussion and analysis of MMRP financial performance provides an overview of MMRP's financial activities for the fiscal year ended September 30, 2019. Please read it in conjunction with the basic financial statements, which follow this discussion.

FINANCIAL HIGHLIGHTS

- MMRP assets exceeded liabilities at the close of fiscal year 2019 by $56.6 million (reported as *net position restricted for Pension Benefits*). Fiduciary net position is restricted for pension benefits to meet future benefit payments.
- Additions for the year were $43.8 million, which are comprised primarily of employer contributions.
- Deductions decreased over the prior year from $4.3 million to $4.1 million or 5.0%.

THE STATEMENT OF PLAN FIDUCIARY NET POSITION AND THE STATEMENT OF CHANGES IN PLAN FIDUCIARY NET POSITION

This Comprehensive Annual Financial Report (CAFR) consists of two financial statements; *The Statement of Pension Plan Fiduciary Net Position* (page 18) and *The Statement of Changes in Pension Plan Fiduciary Net Position* (page 19). These financial statements report information about MMRP, as a whole, and about its financial condition that should help answer the question: Is MMRP, as a whole, better off or worse off as a result of this year's activities? These statements include all assets and liabilities using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, all revenues and expenses are taken into account regardless of when cash is received or paid.

The Statement of Pension Plan Fiduciary Net Position presents all of MMRP's assets and liabilities, with the difference between the two reported as fiduciary net position. Over time, increases and decreases in fiduciary net position measure whether the MMRP's financial position is improving or deteriorating. *The Statement of Changes in Pension Plan Fiduciary Net Position* presents how MMRP's fiduciary net position changed during the most recent fiscal year. These two financial statements should be reviewed along with the Schedule of Changes in Net Pension Liability (page 37) and Schedule of Contributions (page 38) to determine whether MMRP is becoming financially stronger or weaker.

FINANCIAL ANALYSIS

MMRP total assets as of September 30, 2019, were $58.7 million and were mostly comprised of investments. Total assets increased $41.0 million or 231.9% between fiscal years 2018 and 2019 primarily due to an increase in investments.

Total liabilities as of September 30, 2019, were $2.1 million and were comprised of accounts payable and obligations under securities lending. Total liabilities increased $1.4 million or 188.4% between fiscal years 2018 and 2019 due primarily to increased obligations under securities lending.

MMRP assets exceeded its liabilities at the close of fiscal year 2019 by $56.6 million. Total net position restricted for pension increased $39.6 million or 233.8% between fiscal years 2018 and 2019 due primarily to contributions exceeding benefit payments.

PLAN FIDUCIARY NET POSITION

(in thousands)

	2019	2018	Increase (Decrease)
Assets			
Equity in common cash	$ 597	$ 559	6.8 %
Receivables	1	1	6.1
Investments	55,993	16,400	241.4
Securities lending collateral	2,131	730	192.0
Total assets	58,722	17,690	231.9
Liabilities			
Accounts payable and other accrued liabilities	4	10	(63.2)
Obligations under securities lending	2,131	730	191.9
Total liabilities	2,134	740	188.4
Net Position Restricted for Pension Benefits	$ 56,588	$ 16,950	233.8 %

ADDITIONS TO PLAN FIDUCIARY NET POSITION

The reserves needed to finance pension are accumulated through the employer contributions from the State of Michigan General Fund. Contributions and net investment income for fiscal year ending September 30, 2019 totaled $43.8 million. Total additions for fiscal year 2019 increased $26.8 million or 158.4% from those of fiscal year 2018 due primarily to MMRP receiving supplemental appropriation funding under Public Act 618 of 2018.

DEDUCTIONS FROM PLAN FIDUCIARY NET POSITION

The primary deductions of MMRP include the payment of pension benefits to members and beneficiaries and the cost of administering MMRP. Total deductions for fiscal year ending September 30, 2019 were $4.1 million, a decrease of 5.0% from fiscal year 2018 deductions.

The payment of pension benefits decreased by $44 thousand or 1.1% between fiscal years 2018 and 2019. Administrative and other expenses decreased by $173 thousand or 43.6% from $396 thousand to $223 thousand between fiscal years 2018 and 2019. Administrative expenses decreased due to a decrease of professional services.

CHANGES IN PLAN FIDUCIARY NET POSITION

(in thousands)

	2019	2018	Increase (Decrease)
Additions			
Employer contributions	$ 41,045	$ 16,245	152.7 %
Net investment income (loss)	2,711	569	376.6
Miscellaneous income	1	123	(99.5)
Total additions	43,756	16,936	158.4
Deductions			
Pension benefits	3,895	3,939	(1.1)
Administrative and other expenses	223	396	(43.6)
Total deductions	4,119	4,335	(5.0)
Net Increase (Decrease) in Net Position	39,638	12,601	214.6
Net Position Restricted for Pension Benefits:			
Beginning of Year	16,950	4,349	289.7
End of Year	$ 56,588	$ 16,950	233.8 %

MMRP AS A WHOLE

MMRP's overall Fiduciary Net Position experienced an increase in 2019. MMRP's rate of return for the Pension Plan's investments in fiscal year 2019 was 5.0%. Management believes that MMRP is financially sound and positioned to meet its ongoing benefit obligations due, in part, to prudent cost controls, and strategic planning.

CONTACTING MMRP FINANCIAL MANAGEMENT

This financial report is designed to provide the Retirement Board, our membership, taxpayers, investors, and creditors with a general overview of MMRP's finances and to demonstrate MMRP's accountability for the money it receives. If you have any questions about this report or need additional financial information, contact the Office of Retirement Services, P.O. Box 30171, Lansing, MI 48909-7671.

This page was intentionally left blank.

STATEMENT OF PENSION PLAN FIDUCIARY NET POSITION

As of September 30, 2019
(in thousands)

	Pension Plan
Assets:	
Equity in common cash	$ 597
Receivables:	
Amounts due from members	1
Interest and dividends	1
Total receivables	1
Investments:	
Short term investment pools	1,218
Fixed income pools	7,727
Domestic equity pools	12,760
Real estate and infrastructure pools	5,403
Private equity pools	10,564
International equity pools	9,067
Absolute return pools	9,255
Total investments	55,993
Securities lending collateral	2,131
Total assets	58,722
Liabilities:	
Accounts payable and other accrued liabilities	4
Obligations under securities lending	2,131
Total liabilities	2,134
Net Position Restricted for Pension Benefits:	$ 56,588

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

STATEMENT OF CHANGES IN PENSION PLAN FIDUCIARY NET POSITION

For Fiscal Year Ended September 30, 2019
(in thousands)

	Pension Plan
Additions:	
Contributions:	
Employer contributions	$ 41,045
Investment income (loss):	
Net increase (decrease) in fair value of investments	2,375
Interest, dividends, and other	507
Investment expenses:	
Real estate operating expenses	(1)
Other investment expenses	(176)
Securities lending activities:	
Securities lending income	62
Securities lending expenses	(55)
Net investment income (loss)	2,711
Miscellaneous income	1
Total additions	43,756
Deductions:	
Benefits paid to plan members and beneficiaries:	
Retirement benefits	3,895
Administrative and other expenses	223
Total deductions	4,119
Net Increase (Decrease) in Net Position	39,638
Net Position Restricted for Pension Benefits:	
Beginning of Year	16,950
End of Year	$ 56,588

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

NOTE 1 – PLAN DESCRIPTION

ORGANIZATION

The Michigan Military Retirement Provisions (MMRP) is a single employer, state-wide, defined benefit public employee retirement plan governed by the State of Michigan (State), under Public Act 150 of 1967, as amended. Effective January 1, 2016, Executive Order 2015-13 signed by the Governor on October 27, 2015 established the State of Michigan Retirement Board. The executive order establishes the board's authority to promulgate or amend the provision of MMRP. The board shall administer MMRP in accordance with the State Employees' Retirement Act and all plan documents relating to the governance of the same. The board consists of nine members:

- The Attorney General
- The State Treasurer
- The Legislative Auditor General
- The State Personnel Director
- One member or retirant of the State Employees' Retirement System appointed by the Governor
- One member of the Judges' Retirement System appointed by the Governor
- One current or former officer or enlisted person in the Michigan military establishment who is a member or retirant under the Military Retirement Provisions appointed by the Governor
- One retirant member of the State Employees' Retirement System appointed by the Governor
- One member of the general public appointed by the Governor

MMRP's pension plan was established by the State to provide retirement, and survivor benefits to the State's National Guard members. MMRP is contained in a qualified pension trust fund under section 401(a) of the Internal Revenue Code.

MMRP is administered by the Office of Retirement Services within the Michigan Department of Technology, Management & Budget. The Department Director appoints the Office Director, with whom the general oversight of MMRP resides. The State of Michigan Investment Board serves as the investment fiduciary and custodian for MMRP.

MEMBERSHIP

At September 30, 2019, MMRP's pension plan membership consisted of the following:

Inactive plan members or their beneficiaries currently receiving benefits:	4,524
Inactive plan members entitled to but not yet receiving benefits:	1,039
Active plan members:	10,717
Total plan members	16,280

BENEFIT PROVISIONS

Introduction

Benefit provisions of the defined benefit pension plan are established by State statue, which may be amended. The Michigan Military Act, Public Act 150 of 1967, establishes eligibility and benefit provisions for the defined benefit pension plan.

Members are eligible to receive a monthly benefit when they meet certain age and service requirements. MMRP also provides survivor benefits.

There are two kinds of benefits paid to MMRP's membership depending on classification:

1) Special duty officers: This group includes the adjutant general, and two assistant adjutants general who are employees of the State of Michigan.

2) Former members of the Michigan National Guard (Army or Air Force) who have served in the State Defense Force and Michigan National Guard who are not special duty officers.

Pension Reform 2018

On December 18, 2018 the Governor signed Public Act 378 into law. The new law updated the pension benefit calculation for special duty officers which is described in the benefit calculations section of this note.

Eligibility

Special duty officers can retire at age 55 with at least 20 years of service. The adjutant general and the assistant adjutant(s) general must serve four consecutive years of service as an adjutant general or assistant adjutant general. This requirement is waived if the service member is relieved due to a new governor assuming office. State of Michigan Military Officers may qualify for health benefits that are paid out of the Michigan State Employees Retirement System (MSERS). Only one adjutant general and two assistant adjutants general are eligible for retirement in any 4-year period. If an adjutant general or assistant adjutant general is mobilized pursuant to federal mobilization, and the governor appoints a replacement adjutant general or assistant adjutant general, the replacement general is eligible for retirement upon satisfying eligibility criteria.

Members of the Michigan National Guard who are not special duty officers can retire at age 60 with at least 20 years of service for members who began active service before June 30, 1967. Members who began active service after June 30, 1967, can retire at age 62 with at least 20 years of service.

Members who are age 55 and who have completed not less than 20 years of active service with the National Guard or State Defense Force, or both, may retire and receive retirement benefits under one or more of the following circumstances:

- Ineligibility, because of federal law or regulation, for further federal recognition in the person's current grade because of age or length of service, and termination of the person's commission or enlistment in the national guard of the United States
- Withdrawal of the person's federal recognition and termination of the person's commission or enlistment in the National Guard of the United States because of physical disqualification from further service
- Separation from the National Guard or State Defense Force under an honorable circumstance

Benefit Calculations

Special duty officers receive an annual benefit of 45% of final compensation. Final compensation is equal to the pay that an officer of like grade and total years of service would receive as indicated in appropriate federal regulations when they are retired or honorably relieved. Retirement benefits will start on the date of retirement or honorable relief from duty. The surviving spouse of a special duty officer who dies after retirement shall receive a lifetime survivor benefit equal to 50% of the retirement pay of the officer. The surviving spouse of a special duty officer who dies prior to retirement but after earning 15 years of special duty shall be paid a lifetime monthly benefit equal to 67% of the retired pay to which the member would have been authorized had the member retired on the day before death. Special duty officers who retired before December 18, 2018, and their survivors receive annual benefit adjustments equal to the percentage by which federal military service benefits are increased.

Members of the Michigan National Guard who are not special duty officers receive $600 per year. The benefit is payable for life. The surviving spouse of a member who dies after retiring or before becoming age eligible for retirement shall receive a lifetime benefit of $500 per year.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

BASIS OF ACCOUNTING AND PRESENTATION

MMRP's financial statements are prepared using the accrual basis of accounting. Contributions from the State are recognized as revenue when due and payable. Benefits and refunds are recognized when due and payable in accordance with the terms of MMRP. The reserves are described below, and details are provided in the supporting schedules.

Governmental Accounting Standards Board (GASB) Statement No. 67, which was adopted during the year ended September 30, 2014, addresses accounting and financial reporting requirements for pension plans. The requirements for GASB Statement No. 67 require changes in presentation of the financial statements, notes to the financial statements, and required supplementary information. Significant changes include an actuarial calculation of total and net pension liability. It also includes comprehensive footnote disclosure regarding the pension liability, the sensitivity of the net pension liability to the discount rate, and increased investment activity disclosures. The implementation of GASB Statement No. 67 did not significantly impact the accounting for accounts receivable and investment balances. The total pension liability, determined in accordance with GASB Statement No. 67, is presented in Note 4 on page 24 and in the Required Supplementary Information beginning on page 37.

As of September 30, 2017, MMRP applies GASB Statement No. 72, *Fair Value Measurement and Application*. GASB Statement No. 72 provides guidance for determining a fair value measurement for reporting purposes and applying fair value to certain investments and disclosures related to all fair value measurements.

RESERVES

Reserve for Employee Contributions

All employer contributions are credited to this reserve. At September 30, 2019, the balance in this reserve was $71.6 million.

Reserve for Retired Benefit Payments

This represents the reserves for payment of future retirement benefits to current retirees. Monthly benefits, which are paid to the retiree, reduce the reserve. At the end of each fiscal year, an amount determined by an annual actuarial valuation is transferred from the Reserve for Employer Contributions to this reserve to bring the reserve into balance with the actuarial present value of retirement allowances. At September 30, 2019, the balance in this reserve was $(14.9) million.

Reserve for Undistributed Investment Income

The net investment earnings (losses) are recorded in this reserve. Interest as authorized by the board is transferred annually to the other reserves. Administrative expenses are paid from this reserve. At September 30, 2019, the balance in this reserve was $(123.2) thousand.

REPORTING ENTITY

MMRP is a pension trust fund of the State. As such, MMRP is considered part of the State and is included in the State's Comprehensive Annual Financial Report as a pension trust fund. MMRP and its Board are not financially accountable for any other entities or other organizations. Accordingly, MMRP is the only entity included in this financial report.

BENEFIT PROTECTION

Public Act 100 of 2002 was passed by the Michigan Legislature to protect pension benefits of public employees from alienation (being transferred). Alienation is attachment, garnishment, levy, execution, bankruptcy or other legal process except for divorce orders or eligible domestic relation orders. The statutes governing MMRP contained an "anti-alienation" clause to provide for this protection; however, many smaller public pension systems did not have the benefit of this protection. Therefore, Public Act 100 of 2002 was passed to establish legal protection of pension assets that encompasses all public employees.

INVESTMENTS

Generally, investments are reported at fair value, consistent with the provisions of GASB Statement No. 72, *Fair Value Measurement and Application*. Short-term, highly liquid debt instruments including commercial paper are reported at amortized cost. Additional disclosures describing investments are provided in Note 5.

INVESTMENT INCOME

Dividend and interest income are recognized on the accrual basis. Fair value changes are recorded as investment income or loss. Purchases and sales of investments are recorded as of the trade date (the date upon which the transaction is initiated), except for purchase and sale of mortgages, real estate, and private equity investments which are recorded as of the settlement date (the date upon which the transaction is ultimately completed). The effect of recording such transactions as of the settlement date does not materially affect the financial statements.

COSTS OF ADMINISTERING MMRP

Each year a restricted general fund appropriation is requested to fund the ongoing business operations of MMRP. These administrative costs are ultimately funded by MMRP through the regular transfer of funds from MMRP to the State's general fund based on either a direct cost or allocation basis depending on the nature of the expense. Costs of administering MMRP are financed by undistributed investment income of MMRP.

PROPERTY AND EQUIPMENT

Office space is leased from the State on a year-to-year basis. Office equipment is capitalized if the value exceeds $5,000. These assets are recorded at cost and are reported net of depreciation in the *Statement of Pension Plan Fiduciary Net Position*. Such assets are depreciated on a straight-line basis over 10 years. MMRP does not have equipment that falls within these parameters.

RELATED PARTY TRANSACTIONS

Leases and Services

MMRP leases operating space and purchases certain administrative, data processing, and legal services from the State. The space and services are not otherwise available by competitive bid. The schedule below summarizes costs incurred by MMRP for such services.

		2019
Building Rentals	$	1,288
Technological Support		18,626
Attorney General		11,353
Personnel Services		75,251

Cash

At September 30, 2019, MMRP had $597 thousand in a common cash investment pool maintained for various State operating funds. The participating funds in the common cash pool earn interest at various rates depending upon prevailing short-term interest rates. Earnings (Losses) from these activities amounted to $6,791 for the year ended September 30, 2019.

NOTE 3 – CONTRIBUTIONS

The State contributes annually to MMRP, based on the actuarial required contributions to support retirement benefits, through appropriation from the state's general fund. Members do not pay contributions.

Employer contributions to MMRP are determined on an actuarial basis using the entry age normal actuarial cost method. Under this method, the actuarial present value of the projected benefits of each individual included in the actuarial valuation is allocated on a level basis over the service of the individual between entry age and assumed exit age. The normal cost is the annual cost assigned, under the actuarial funding method, to the current and subsequent plan years. The remainder is called the actuarial accrued liability. Normal cost is funded on a current basis.

Pension contributions made in the fiscal year ending September 30, 2019, were determined as of the September 30, 2016 actuarial valuation. The pension unfunded (overfunded) actuarial accrued liability as of September 30, 2016, is amortized over a 20-year period beginning October 1, 2018 and ending September 30, 2038.

NOTE 4 – NET PENSION LIABILITY

MEASUREMENT OF THE NET PENSION LIABILITY

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the fair value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Net Pension Liability

Total Pension Liability	$	56,844,125	
Plan Fiduciary Net Position		56,587,694	
Net Pension Liability	$	256,431	
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		99.55%	
Net Pension Liability as a Percentage of Covered Payroll		52%	
Total Covered Payroll	$	493,005	*

* Special duty officers only, as of 9/30/19

LONG-TERM EXPECTED RETURN ON PLAN ASSETS

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

Best estimates of arithmetic real rates of return were provided by the Bureau of Investments (BOI) for each major asset class included in the pension plan's portfolio as of September 30, 2019. These best estimates and the plan's target asset allocation are summarized in the following table:

Asset Allocation

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Domestic Equity Pools	28.0%	5.5%
Private Equity Pools	18.0	8.6
International Equity Pools	16.0	7.3
Fixed Income Pools	10.5	1.2
Real Estate and Infrastructure Pools	10.0	4.2
Absolute Return Pools	15.5	5.4
Short-Term Investment Pools	2.0	0.8
TOTAL	**100.0 %**	

* Long-term rates of return are net of administrative expenses and 2.3% inflation.

RATE OF RETURN

For the fiscal year ended September 30, 2019, the annual money-weighted rate of return on pension plan investment, net of pension plan investment expense, was 6.64%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

DISCOUNT RATE

A single discount rate of 6.75% was used to measure the total pension liability for fiscal year 2019. In fiscal year 2018, the single discount rate was used to measure the total pension liability 6.75%. This single discount rate was based on the expected rate of return on pension plan investments of 6.75%. The projection of cash flows used to determine this single discount rate was based on the assumption that in the future, plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. 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.

SENSITIVITY OF THE NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

As required by GASB Statement No. 67, we determined the sensitivity of the net pension liability to changes in the single discount rate. The following table presents the plan's net pension liability, calculated using a single discount rate of 6.75%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

1% Decrease	Current Discount Rate Assumption	1% Increase
5.75%	6.75%	7.75%
$6,857,894	$256,431	($5,189,760)

TIMING OF THE VALUATION

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. If the actuarial valuation is not calculated as of the plan's fiscal year end, the total pension liability is required to be rolled forward from the actuarial valuation date to the pension plan's fiscal year end.

The total pension liability as of September 30, 2019, is based on the results of an actuarial valuation date of September 30, 2018, and rolled-forward using generally accepted actuarial procedures.

ACTUARIAL VALUATIONS AND ASSUMPTIONS

Actuarial valuations for the pension plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment and mortality trends. Amounts determined regarding the funded status of the plan and the actuarially determined contributions (ADC) are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

The Schedule of Contributions in Required Supplementary Information presents trend information about the amounts contributed to the plan by employers in comparison to the ADC, an amount that is actuarially determined in accordance with the parameters of GASB Statement No. 67 for pension contributions.

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

The information presented in the net pension liability schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Summary of Actuarial Assumptions

Valuation Date	September 30, 2018
Actuarial Cost Method	Entry Age, Normal
Asset Valuation Method	Fair Value
Actuarial Assumptions:	
Wage Inflation Rate	2.75%
Investment Rate of Return	6.75%, net of investment expenses
Projected Salary Increases[1]	2.75%, including wage inflation at 2.75%
Cost-of-Living Pension Adjustments[1]	Assumed 2.75% compounded for those eligible
Mortality	
Retirees	RP-2014 Male and Female Healthy Annuitant Mortality Table scaled by 93% for males and 99% for females and adjusted for mortality improvements using projection scale MP-2017 from 2006.
Active	RP-2014 Male and Female Employee Mortality Table scaled by 100% for both males and females and adjusted for mortality improvements using projection scale MP-2017 from 2006.
Disabled Retirees	RP-2014 Male and Female Disabled Annuitant Mortality Table scaled by 100% for both males and females and adjusted for mortality improvements using projection scale MP-2017 from 2006.
Notes	Assumption changes as a result of an experience study for the periods 2015 through 2017 have been adopted by MMRP for use in the determination of the total pension liability beginning with the September 30, 2017 valuation.

[1] Post-retirement cost of living adjustments and pay increase assumptions apply to Special Duty Officers only.

NOTE 5 – INVESTMENTS

INVESTMENT AUTHORITY

The State of Michigan Investment Board (Board) was created by Executive Order 2018-10 (Order) and serves as the investment fiduciary over the assets of the State sponsored defined benefit retirement systems. The Board is responsible for investing the System's assets in accordance with the duties and powers enumerated in the Order and with Public Act 380 of 1965, as amended. Investments are made subject to the Public Employee Retirement System Investment Act, Public Act 314 of 1965, as amended. The Public Employee Retirement System Investment Act authorizes, with certain restrictions, the investment of pension fund assets in stocks, corporate and government bonds and notes, mortgages, real estate, and certain short-term and private equity investments. Investments must be made for the exclusive purposes of providing benefits to active members, retired members and beneficiaries, and for defraying the expenses of investing the assets.

DERIVATIVES

The Board employs the use of derivatives in the investment of the pension and other employee benefit trust funds (the trust funds).

Derivatives are used in managing the trust fund portfolios, but uses do not include speculation or leverage of investments. State investment statutes limit total derivative exposure to 15% of a fund's total asset value, and restrict uses to replication of returns and hedging of assets. Swap agreements represent the largest category of derivative investments subject to this limitation. Option and Future contracts traded daily on an exchange and settling in cash daily or having a limited and fully defined risk profile at an identified, fixed cost are not subject to the derivative exposure limitation. Less than 15% of the total trust funds' portfolio has been invested from time to time in future contracts, swap agreements, structured notes, option and forward contracts.

The derivative fair values are reported on the Statement of Pension Plan Fiduciary Net Position as of September 30, 2019, in their respective investment pool's fair value. Derivative net increase and decrease are reported on the Statement of Changes in Pension Plan Fiduciary Net Position for fiscal year ended September 30, 2019, under "Investment income (loss)", in "Net increase (decrease) in fair value of investments". Bond interest, swap payments, and dividends are reported under "Investment income (loss)", in "Interest, dividends, and other".

Derivative Investment Table as of September 30, 2019 (In Thousands):

Investment and Investment Type	Percentage of Fair Value	Notional Value	Investments at Fair Value	Net Increase (Decrease) in Fair Value	Investment Income	Fair Value Subject to Credit Risk
Future Contracts	0.0%	$ 232.0	$ 1.4	$ (5.7)	$ -	$ -
Fixed Income and International Equity Investments						
Option Contracts	0.6	22,831.6	312.3	(58.0)	-	-
Equity, Fixed Income, and International Equity Investments						
Swap Agreements	2.5	3,210.4	1,398.2	43.9	(14.5)	129.5
Fixed Income and International Equity Investments						
Total		$ 26,274.0	$ 1,711.9	$ (19.8)	$ (14.5)	$ 129.5

To diversify the trust funds' portfolio, the Board has entered into international swap agreements with investment grade counterparties, which are tied to foreign stock market indices in approximately forty-eight foreign countries. Generally, the notional amount of equity swap tied to foreign stock market indices is executed via a net total return USD index. The swap agreements provide that MMRP will pay quarterly over the term of the swap agreements, interest indexed to the three-month London Inter-Bank Offer Rate (LIBOR), adjusted for an interest rate spread, on the notional amount stated in the agreements. International equity swap agreement maturity dates range from

October 2019 to June 2020. U.S. Treasury Bonds, U.S. Corporate Bonds and other public market fixed income securities, as well as, other investments are held to correspond with the notional amount of the international swap agreements.

The value of the international synthetic equity structures is a combination of the value of the swap agreements and the value of the notes and other investments. The book value represents the cost of the bonds, notes and other investments. The current value represents the current value of the bonds, notes and other investments and the change in the value of the underlying indices from the inception of the swap agreements. The current value is used as a representation of the fair value based on the intention to hold all swap agreements until maturity. At the maturity of the swap agreements, the trust funds will either receive the increase in the value of the equity indices from the level at the inception of the agreements or pay the decrease in the value of the indices. The combined swap structure generally realizes gains and losses on a rolling basis.

To reduce the risk in the Fixed Income and International Equity portfolios, the Board has entered into FX swap agreements, interest rate swap agreements and credit default swap agreements with investment grade counterparties. The FX swap agreements are tied to foreign currency forward exchange rates and are used to reduce the currency risk within the Fixed Income portfolio. The swap agreements are entered into on an as-needed basis and are generally tied to the maturity of a foreign government bond indenture denominated in a foreign currency. The purpose of the FX swap agreement that has a final maturity date of less than three months, is to reduce or eliminate the currency risk on foreign bond transactions. US. Domestic LIBOR-based floating rate notes, U.S. Treasury securities, and portfolio cash are held to correspond with the notional amount of FX swap agreements within the Fixed Income and International Equity portfolios. Interest rate swaps are used to adjust interest rate and yield curve exposures and substitute for physical securities. Long swap positions that receive fixed rate, increase exposure to long-term interest rates; short swap positions that pay fixed rate, decrease exposure. Credit default swaps (CDS) are used to manage credit exposure without buying or selling securities outright. Written CDS increase credit exposure, selling protection, obligating the portfolio to buy bonds from counterparties in the event of a default. Purchased CDS decrease exposure, buying protection, providing the right to “Put” bonds to the counterparty in the event of a default.

Counterparty credit risk is the maximum loss amount that would be incurred if the counterparties to the derivative instrument failed to perform according to the terms of the contract, without respect to any collateral or other security, or netting arrangement. For the Over-The-Counter (OTC) derivative investments, the system held collateral of $36.4 thousand in cash deposits and $58.3 thousand in securities on behalf of counterparties. Collateral securities in the amount of $0.3 thousand were held on our behalf by counterparties.

The Board traded U. S. Treasury bond future contracts to manage duration and yield curve exposure, adjust interest rate exposures and replicate bond positions.

To enhance returns while limiting downside risk, the Board traded equity options in single securities and on indices in the Large Cap Core and All Cap GARP funds. Domestic equity options were used for the purpose of stock replacement, in conjunction with dividend stocks to drive excess returns over the S&P 500, and to provide added exposure to strong equity markets while limiting principal at risk. Put options are used to protect against large negative moves in market indices. Options traded by the Board in the Fixed Income and International Equity pools are used to manage interest rate and volatility exposures. Written options generate income in expected interest rate scenarios and may generate capital losses, if unexpected interest rate environments are realized. Both written and purchased options will become worthless at expiration if the underlying instrument does not reach the strike price of the option.

SECURITIES LENDING

MMRP, pursuant to a Securities Lending Authorization Agreement, has authorized State Street Bank and Trust Company ("State Street") to act as MMRP's agent in lending MMRP's securities to approved borrowers. State Street, as agent, enters into Securities Loan Agreements with borrowers.

During the fiscal year, State Street lent, on behalf of the Board, certain securities of MMRP held by State Street as custodian and received cash or other collateral including securities issued or guaranteed by the United States government. The types of securities lent were equity, and fixed income, which includes government and corporate bonds and notes. State Street does not have the ability to pledge or sell collateral securities delivered absent a borrower default. Borrowers were required to deliver collateral for each loan equal to at least 100% of the fair value of the loaned securities.

Pursuant to the Securities Lending Authorization Agreement, State Street had an obligation to indemnify MMRP in the event of default by a borrower. There were no failures by any borrowers to return loaned securities or pay distributions thereon during the fiscal year that resulted in a declaration or notice of default of the Borrower.

During the fiscal year, MMRP and the borrowers maintained the right to terminate securities lending transactions upon notice. The cash collateral received on each loan was invested, together with the cash collateral of other qualified tax-exempt plan lenders, in a collective investment pool. As of September 30, 2019, such investment pool had an average duration of 6 days and an average weighted final maturity of 124 days for USD. Because the loans were terminable at will their duration did not generally match the duration of the investments made with cash collateral. On September 30, 2019, MMRP had no credit risk exposure to borrowers. The fair value of collateral held and the fair value (USD) of securities on loan for the client as of September 30, 2019, was $2,131 thousand and $2,088 thousand respectively.

RISK

In accordance with GASB Statement No. 40, investments require certain disclosures regarding policies and practices and the risks associated with them. The credit risk, (including custodial credit risk and concentration of credit risk), the interest rate risk, and the foreign currency risk are discussed in the following paragraphs. Amounts represent the pro rata share of the underlying investments as required by GASB Statement No. 40. These investments are held in internal investment pools and reported as such in the financial statements.

Credit Risk

Credit risk is the risk that an issuer will not fulfill its obligations.

- Short-Term Fixed Income Investments – Eligible commercial paper investments must be rated within one of the two highest ratings classifications (“1” or “2”) at the time of purchase from one of the nationally recognized ratings organizations (NRSROs) specified in Public Act 314 of 1965, as amended. Borrowers must have at least $400.0 million in commercial paper outstanding, and the Board may not invest in more than 10% of the borrower’s outstanding debt.
- Long-Term Fixed Income Investments – Investment grade and noninvestment grade securities may be acquired in compliance with the parameters set forth in Public Act 314 of 1965, as amended, and the Board’s Investment Policy Statement for System. Public Act 314 defines investment grade as investments in the top four major grades, rated by two national rating services. At September 30, 2019, MMRP was in compliance with Public Act 314 and the Investment Policy Statement in all material aspects.

Rated Debt Investments

(in thousands)
As of September 30, 2019

Investment Type	Fair Value	S&P	Fair Value	Moody's
Short Term	$ 1,440	A-1	$ 1,440	P-1
	91	A-2	91	P-2
	10	NR	10	NR
Government Securities				
U.S. Agencies - Sponsored	2	AAA	1,095	Aaa
	1,093	AA	-	Aa
Fixed Income				
	399	AAA	613	Aaa
	207	AA	297	Aa
	555	A	854	A
	1,566	BBB	1,062	Baa
	269	BB	430	Ba
	208	B	247	B
	131	CCC	128	Caa
	63	CC	90	Ca
	31	D	-	D
	1,555	NR	1,265	NR
Securities Lending Collateral				
Short Term	329	A-1	365	P-1
	426	NR	714	NR
Corporate	150	AA	473	Aa
	1,212	A	580	A
	14	BBB	-	Baa
Mutual Funds				
	-	AAA	35	Aaa
	26	BBB	26	Baa
	7	BB	7	Ba
	75	B	75	B
	35	NR	-	NR
Total	$ 9,894		$ 9,894	

NR – Not Rated

Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of a failure of the counterparty, the State will not be able to recover the value of the investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the government and are held by either the counterparty or the counterparty's trust department or agent, but not in the government name.

The Board does not have a policy for custodial credit risk. However, the State's custodial bank had a credit rating of A at September 30, 2019. As of September 30, 2019, no securities were exposed to custodial credit risk.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer.

Other than obligations issued, assumed or guaranteed by the United States, its agencies or United States government sponsored enterprises, MMRP is prohibited by Public Act 314 of 1965, as amended, from investing more than 5% of the outstanding obligations of any one issuer or investing more than 5% of MMRP's assets in the obligations of any one issuer. When calculating the amount of outstanding obligations, MMRP includes publicly issued and privately held debt.

At September 30, 2019, there were no investments in any single issuer that accounted for more than 5% of MMRP's assets. MMRP held one investment that exceeded the 5% cap in obligations of any one issuer. MMRP is aware of the breach and in accordance with MCL 38.1133(3)(g), is developing a prudent plan for reallocating assets to comply with the prescribed limitations.

Interest Rate Risk – Fixed Income Investments

Interest rate risk is the risk that changes in interest rates of debt investments will adversely affect the fair value of an investment.

The Board's policy states that cash equivalents are invested in short-term fixed income securities with an average weighted maturity of less than one year to provide liquidity and safety of principal from capital market and default risk. At September 30, 2019, the fair value of MMRP's prime commercial paper was $1.5 million with the weighted average maturity of 44 days.

The Board does not have a policy regarding interest rate risk for long-term debt investments. However, the trust funds are invested with a long-term strategy. The goal is to balance higher returns while accepting minimum risk for the return. Analyzing the yield curve on individual securities as compared to U.S. Treasuries determines, in part, what is an acceptable risk for the return. Therefore, market conditions such as lower interest rates result in shorter duration and higher interest rates result in longer duration.

Debt Securities

(in thousands)
As of September 30, 2019

	Fair Value	Effective Duration in Years
Government		
U. S. Treasury	$ 2,663	7.0
U. S. Agencies - Backed	452	2.3
U. S. Agencies - Sponsored	1,095	2.3
Corporate	4,461	2.9
International*		
U. S. Treasury	576	1.1
Corporate	708	0.4
Total	$ 9,955	

Debt securities are exclusive of securities lending collateral.

* International contains Domestic Government and Corporate Debt Securities as a part of their derivative strategies. The interest rates reset on a quarterly basis for these securities.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit.

MMRP invests in various securities denominated in foreign currencies. Authorized global securities include equities, fixed income, mutual funds, real estate, and limited partnerships. These investments are limited to 30% of the total assets of MMRP with additional limits of not more than 5% of the outstanding global securities of any one issuer and no more than 5% of MMRP's assets in the global securities of any one issuer. In addition to these limits, the Board cannot acquire securities with companies that have active business operations in the state sponsors of terror as identified by the United States Secretary of State. At September 30, 2019, the total amount of foreign investment subject to foreign currency risk was $9.0 million, which amounted to 15.9% of total investments (exclusive of securities lending collateral) of MMRP.

Foreign Currency Risk (in thousands)
As of September 30, 2019

Region	Country	Currency	Equity Fair Value in U.S. $	Fixed Income Fair Value in U.S. $	International* & Absolute Return Fair Value in U.S. $	Private Equity, Real Estate, & Infrastructure Fair Value in U.S. $
AMERICA						
	Argentina	Peso	$ -	$ -	$ 1	$ -
	Brazil	Real	-	8	6	22
	Canada	Dollar	-	6	31	27
	Chile	Peso	-	2	-	-
	Mexico	Peso	-	14	-	92
	Peru	Sol	-	1	-	-
PACIFIC						
	Australia	Dollar	1	2	26	-
	Hong Kong	Dollar	-	-	26	-
	India	Rupee	-	1	-	100
	Indonesia	Rupiah	-	1	-	-
	Japan	Yen	-	6	88	-
	Malaysia	Ringgit	-	3	-	-
	Taiwan	New Dollar	-	-	9	-
	China	Renminbi	15	-	5	5
	Singapore	Dollar	-	-	1	-
	South Korea	Won	-	13	-	-
	Thailand	Baht	-	4	-	-
	Sri Lanka	Rupee	-	1	-	-
EUROPE						
	Denmark	Krone	-	-	10	-
	European Union	Euro	108	114	97	429
	U.K.	Sterling	65	7	48	51
	Romania	Leu	-	3	-	-
	Sweden	Krona	-	2	35	-
	Switzerland	Franc	17	-	17	-
AFRICA						
	South Africa	Rand	1	5	-	-
	Egypt	Pound	-	2	-	-
	Libia	Dollar	4	-	-	-
MIDDLE EAST						
	Israel	New Shekel	-	6	-	-
OTHER						
	Various		-	48	5,729	1,662
	Total		$ 213	$ 251	$ 6,130	$ 2,388

* International includes derivatives whose market value exposure to foreign currency risk is the net amount of unrealized gains and unrealized losses. Maturity dates on these investments range from October 2019 through June 2020, with an average maturity of 0.5 years.

FAIR VALUE MEASUREMENTS

MMRP categorizes its 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. Not all investments held by MMRP are recorded at fair value. GASB 72 allows for certain investments to be recorded at cost (or amortized cost or any other valuation method), and therefore, they are not presented in the fair value hierarchy table. Equity and Fixed Income Securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Equity Swaps and Fixed Income Securities classified in

Level 2 of the fair value hierarchy are valued using a matrix pricing technique and other significant observable inputs. Equity and Fixed Income Securities classified as Level 3 of the fair value hierarchy are valued using a third-party data and reports that are unobservable. Securities reported at Net Asset Value (NAV) are valued using the most recent third-party statement adjusted for cash flows as of September 30, 2019. Investments that are measured at fair value using the Net Asset Value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

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

		Fair Value Measurement Using (in thousands)		
Investments by fair value level:	Balance at September 30, 2019	Quoted Prices In Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Total cash and cash equivalents	$ 73	$ 6	$ 67	$ -
Equity				
Depository Receipts	75	75	-	-
Common Stocks	9,924	9,923	-	1
Real Estate Investment Trusts	1,089	1,089	-	-
Swaps	49	-	51	(2)
Commingled Funds, ETF's, and PTP's	6,844	6,844	-	-
Options	312	316	(4)	-
Total Equity	18,292	18,246	47	-
Fixed Income				
Asset Backed	1,580	-	1,566	15
Corporate Bonds	2,432	-	2,414	18
Commercial Mortgage-backed	1,436	-	1,436	-
Government Issues	3,445	3,239	203	2
Swap	(2)	-	(2)	-
US Agency Issues	912	-	912	-
Commingled Funds, ETF's, and PTP's	107	107	-	-
Total Fixed Income	9,911	3,346	6,529	35
Total investments by fair value level	**$ 28,276**	**$ 21,597**	**$ 6,643**	**$ 35**
Investments measured at the net asset value (NAV)				
Private Equity	$ 10,280			
Real Estate & Infrastructure	5,259			
Absolute Return	3,105			
Real Return & Opportunistic	6,033			
Other Limited Partnerships	1,466			
Total investments measured at the NAV	**26,144**			
Total investments measured at fair value	**$ 54,420**			

Additional disclosures for fair value measurements of investments in certain entities that calculate the Net Asset Value per Share (or its equivalent):

Private Equity Funds (in thousands)

Total investments measured at the NAV	$ 10,280
Unfunded commitments	6,081

Private Equity funds. This type of investment includes investments in approximately 271 partnerships that invest in leveraged buyouts, venture capital, mezzanine debt, distressed debt, secondary funds and other investments. This type of investments can never be redeemed with the funds, but distributions are received through the liquidation of the underlying assets of the fund. It's expected that the underlying assets of the fund are liquidated over a period of five to eight years. However, as of September 30, 2019, it is probable that all of the investments in this group will be sold at an amount different from the NAV per share (or its equivalent). Therefore, the fair values of the investments in this type have been determined using recent observable transaction information for similar investments and nonbinding bids received from potential buyers of the investments. As of September 30, 2019, a buyer for these investments has not been identified.

Real Estate and Infrastructure (in thousands)

Total investments measured at the NAV	$ 5,259
Unfunded commitments	1,137

Real Estate and Infrastructure funds include approximately 111 accounts (limited partnerships, limited liability companies, etc.) that invest in real estate or infrastructure related assets. The fair value of the Real Estate and Infrastructure funds have been determined in accordance with generally accepted accounting principles using the NAV per share (or its equivalent) of the Plan's ownership interest in partners' capital. These types of investments cannot be redeemed with the funds. Distributions from these funds will be received as the underlying investments are sold and liquidated over time. It is expected that the underlying assets will be sold over the next 5 – 15 years. However, buyers have not been determined so the fair value has been determined using the NAV per share (or its equivalent) of the Plan's ownership interest in partners' capital.

Absolute Return Portfolio (in thousands)

Total investments measured at the NAV	$ 3,105
Unfunded commitments	46

This type includes approximately 7 investments in hedge funds and hedge fund of funds that pursue multiple strategies to diversify risks and reduce volatility. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. For 74.3% of the investments, investors may redeem at various dates between October 1, 2019 and January 1, 2021; 13.9% of the investments are redeemable between January 1, 2021 through April 1, 2025; and the remaining 11.8% is not redeemable on demand.

Real Return and Opportunistic Portfolio (in thousands)

Total investments measured at the NAV	$ 6,033
Unfunded commitments	2,988

This type includes 90 funds that invest in private credit, tangible and intangible real assets, or other real return and opportunistic strategies. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the Plan's ownership interest in partners' capital. These investments can never be redeemed with the funds. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 5 to 10 years.

All Other Investments (in thousands)

Total investments measured at the NAV	$ 1,466
Unfunded commitments	29

The balance of plan assets reported at fair value include 9 investments:

- A limited partnership (LP) that invests in the equity of Japanese companies. This LP permits partners to withdraw funds quarterly with 180 days of advance notice.

- LPs that invest in fixed income type investment; residential rehabilitation, middle market business loans and senior secured debt financing. These investments cannot be redeemed by limited partners. Distributions are received through the liquidation of the underlying assets of fraud.
- LPs that invest in fixed income type investments permitting partners to request redemption monthly or quarterly, after initial lock up period of 1 year or less, requiring 45 to 65 days' advance notice.
- LPs investing in global investments permitting partners to request partial redemptions quarterly or monthly, with advance notice, subject to the sole discretion of the general partner.

NOTE 6 – COMMITMENTS AND CONTINGENCIES

Under the Administrative Procedures Act, members may appeal a decision made by the Retirement Board. Once the administrative procedure has been exhausted, the decision may be appealed in Michigan's court system. Various cases that have exhausted the administrative procedures have been appealed in the court system. These cases are in the normal course of business and MMRP does not anticipate any material loss as a result of the contingent liabilities.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

(in thousands)

	Fiscal Year				
	2019	2018	2017	2016	2015
Total Pension Liability					
Service Cost	$ 206	$ 140	$ 110	$ 403	$ 357
Interest	3,417	3,555	3,609	2,829	3,564
Changes of benefit terms	5,252	-	-	-	-
Differences between expected and actual experience	(610)	700	58	-	(17,548)
Changes of assumptions	-	2,719	2,505	(30,216)	7,086
Benefit payments, including refunds of member contributions	(3,895)	(3,939)	(4,090)	(3,950)	(3,923)
Net Change in Total Pension Liability	4,370	3,175	2,192	(30,933)	(10,463)
Total Pension Liability - Beginning	52,474	49,299	47,107	78,040	88,503
Total Pension Liability - Ending (a)	$ 56,844	$ 52,474	$ 49,299	$ 47,107	$ 78,040
Plan Fiduciary Net Position					
Contributions - Employer	$ 41,045	$ 16,245	$ 5,245	$ 7,780	$ 4,267
Contributions - Member	-	-	-	-	-
Net Investment Income	2,711	569	78	12	-
Benefit payments, including refunds of member contributions	(3,895)	(3,939)	(4,090)	(3,950)	(3,923)
Administrative and Other Expenses	(223)	(273)	(475)	(251)	(344)
Net Change in Plan Fiduciary Net Position	39,638	12,601	758	3,591	-
Plan Fiduciary Net Position - Beginning	16,950	4,349	3,591	-	-
Plan Fiduciary Net Position - Ending (b)	$ 56,588	$ 16,950	$ 4,349	$ 3,591	$ -
Net Pension Liability - Ending (a) - (b)	$ 256	$ 35,524	$ 44,950	$ 43,515	$ 78,040
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	99.55 %	32.3 %	8.82 %	7.62 %	-
Covered Payroll[1]	$ 493	$ 527	$ 466	$ 469	$ 484
Net Pension Liability as a Percentage of Covered Payroll	52 %	6,740 %	9,653 %	9,269 %	16,110 %

[1] The payroll shown applies only to special duty officers and is the payroll used in the corresponding actuarial valuation.

SCHEDULE OF CONTRIBUTIONS

PENSION BENEFITS

(in thousands)

Fiscal Year Ended Sept. 30	Actuarially Determined Contribution (ADC)	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll [1]	Actual Contribution as a % of Covered Payroll
2015	$ 6,293	$ 4,267	$ 2,026	$ 484	881 %
2016	5,200	7,780	(2,580)	469	1,657
2017	5,200	5,245	(45)	466	1,126
2018	6,849	16,245	(9,396)	527	3,082
2019	4,422	41,045	(36,623)	493	8,325

[1] The payroll shown applies only to special duty officers and is the payroll used in the corresponding actuarial valuation.

SCHEDULE OF PENSION INVESTMENT RETURNS

Fiscal Year	Annual Return[1]
2017	1.36 %
2018	9.52
2019	6.64

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

NOTE A – DESCRIPTION

Historical trend information designed to provide information about MMRP's progress made in accumulating sufficient assets to pay benefits when due is presented in the preceding schedules. This information is presented to enable the reader to assess the progress made by MMRP in accumulating sufficient assets to pay pension benefits as they become due.

The comparability of trend information is affected by changes in actuarial assumptions, benefit provisions, actuarial funding methods, accounting policies, and other changes. Those changes usually affect trends in contribution requirements and in ratios that use the pension benefit obligations as a factor.

The Schedule of Contributions is reported as historical trend information. The Schedule of Contributions is presented to show the responsibility of the Employer in meeting the actuarial requirements to maintain MMRP on a sound financial basis.

The Schedule of Changes in the Net Pension Liability, Schedule of Contributions, and Schedule of Pension Investment Returns are schedules that are required in implementing GASB Statement No. 67. These schedules are required to show information for ten years; additional years will be displayed as they become available. The Schedule of Changes in Net Pension Liability represents in actuarial terms, the accrued liability less the fair value of assets. The Schedule of Contributions is a comparison of the employer's contributions to the actuarially determined contributions. The Schedule of Pension Investment Returns represents the annual money-weighted rate of return, net of investment expenses.

The actuarially determined contributions presented in the Schedule of Contributions for pension are calculated as of September 30, three years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine the fiscal year 2019 contributions reported in that schedule.

Methods and Assumptions Used to Determine Contributions for Fiscal Year 2019:

Valuation Date	September 30, 2016
Actuarial Cost Method	Entry Age, Normal
Amortization Method	Level Dollar, Closed Period
Remaining Amortization Period	20 Years as of October 1, 2018, ending September 30, 2038
Asset Valuation Method	5 year smoothed fair value
Price Inflation	2.50%
Salary Increases	3.50%, for Special duty officers
Investment Rate of Return	7.50%, net of investment expenses
Retirement Age	Experience-based table of rates that are specific to the type of eligibility conditions.
Mortality	RP-2000 Combined Healthy Life Mortality Table, adjusted for mortality improvements to 2030 for males and to 2015 for females, using projection scale BB. For active members, the probabilities of dying before retirement were based upon the same mortality, but multiplied by 50%.
Notes	Some of the assumptions used to develop the 2018 Total Pension Liability are different than the assumptions shown above. The assumptions used to develop the TPL are described in Note 4 (page 24) of this report.

SUMMARY SCHEDULE OF PENSION PLAN ADMINISTRATIVE AND OTHER EXPENSES

For Fiscal Year Ended September 30, 2019

Personnel Services:	
Staff Salaries	$ 42,904
Staff Retirement and Social Security	23,918
Staff Other Fringe Benefits	8,429
Total	75,251
Professional Services:	
Actuarial	70,061
Attorney General	11,353
Audit	40,500
Consulting	1,072
Total	122,986
Building and Equipment:	
Building Rentals	1,288
Equipment Purchase, Maintenance, and Rentals	37
Total	1,325
Miscellaneous:	
Travel and Board Meetings	41
Office Supplies	40
Postage, Telephone, and Other	3,847
Printing	1,248
Technological Support	18,626
Total	23,801
Total Administrative and Other Expenses	$ 223,363

SCHEDULE OF INVESTMENT EXPENSES

For Fiscal Year Ended September 30, 2019
(in thousands)

Real Estate Operating Expenses	$	1,460
Securities Lending Expenses		55,352
Other Investment Expenses[1]		
Custody Fees		1,421
Management Fees		171,002
Research Fees		3,266
Total Investment Expenses	$	232,501

[1] Refer to the Investment Section for fees paid to investment professionals.

SCHEDULE OF PAYMENTS FOR PROFESSIONAL SERVICES

For Fiscal Year Ended September 30, 2019

Actuary	$	70,061
Attorney General		11,353
Independent Auditors		40,500
Consulting		1,072
Total Payments	$	122,986

DETAIL OF CHANGES IN PLAN FIDUCIARY NET POSITION

For Fiscal Year Ended September 30, 2019
(in thousands)

	Employer Contributions	Retired Benefit Payments	Undistributed Investment Income	Total
Additions:				
Contributions:				
Employer contributions:	$ 41,045	$ -	$ -	$ 41,045
Investment income (loss):				
Net increase (decrease) in fair value of investments	-	-	2,375	2,375
Interest, dividends, and other	-	-	507	507
Investment expenses:				
Real estate operating expenses	-	-	(1)	(1)
Other investment expenses	-	-	(176)	(176)
Securities lending activities:				
Securities lending income	-	-	62	62
Securities lending expenses	-	-	(55)	(55)
Net investment income (loss)	-	-	2,711	2,711
Miscellaneous income	-	1	-	1
Total additions	41,045	1	2,711	43,756
Deductions:				
Benefits paid to plan members and beneficiaries:				
Retirement benefits	-	3,895	-	3,895
Administrative and other expenses	-	-	223	223
Total deductions		3,895	223	4,119
Net Increase (Decrease) before other changes	41,045	(3,895)	2,487	39,638
Other Changes in Net Postion:				
Interest Allocation	2,262	-	(2,262)	-
Total other changes in net position	2,262	-	(2,262)	-
Net Increase (Decrease) in Net Position	43,307	(3,895)	225	39,638
Net Position Restricted for Pension Benefits:				
Beginning of Year	28,280	(10,982)	(348)	16,950
End of Year	$ 71,587	$ (14,876)	$ (123)	$ 56,588

This page was intentionally left blank.

INVESTMENT SECTION

Prepared by Michigan Department of Treasury, Bureau of Investments
Jon M. Braeutigam, Chief Investment Officer

REPORT ON INVESTMENT ACTIVITY

INTRODUCTION

The State of Michigan Investment Board (Board) was created by Executive Order 2018-10 (Order) and serves as the investment fiduciary over the assets of the State sponsored defined benefit retirement systems (Systems). The Board is responsible for investing the Systems' assets in accordance with the duties and powers enumerated in the Order and State law. Pursuant to powers provided in the Order, the Board duly authorized and delegated duties to the Department of Treasury's Bureau of Investments (BOI) to invest, prudently manage, and oversee the assets of the Systems and to take certain other actions that support the BOI's mandate in this regard. In furtherance of these duties, the BOI delivers quarterly investment activity reports to the Board that detail the investments, goals, and objectives of the Systems.

The Board is comprised of five members: three (3) public members appointed by the Governor with the advice and consent of the Senate and two (2) ex-officio members. The public members serve four (4) year terms and are limited to two (2) such terms. The State Treasurer, as the chair of the Board, and the State Budget Director are the ex-officio members. As of September 30, 2019, members of the Board were as follows: Rachael Eubanks (chair, ex-officio member), Chris Kolb (ex-officio member), James B. Nicholson (public member), Reginald G. Sanders, CFA, CAIA (public member), and Dina L. Richard, CPA (public member). The public members serve without pay but may receive reasonable reimbursement for actual and necessary travel and other expenses to attend official Board meetings.

INVESTMENT POLICY & GOALS

The Board's Investment Policy Statement states that it and the BOI will operate in accordance with Public Employee Retirement System Investment Act (Act No. 314 of 1965) and within standard investment practices of the prudent person. This includes being authorized to invest in government obligations, corporate obligations, various short-term obligations, corporate (domestic and international) stocks, private equity interests, mutual funds, real estate interests, and other investments subject to specific parameters. Above all, Systems' assets are to be invested in a fiduciary capacity for the sole and exclusive benefit of the members of the Systems.

The Systems' Proxy Voting Policy sets forth directives on various issues as holders of publicly traded securities, including but not limited to: Boards of Directors, corporate governance, social issues, and various corporate actions. All proxies are reviewed and voted in accordance with the Systems' policy.

The primary function of the Systems is to provide retirement, survivor and disability benefits along with health and other postemployment benefits to its members. The Board is investment fiduciary and custodian of the Systems' investments pursuant to the Order and other State law. The goals of the Systems are:

- Maintain sufficient liquidity to pay benefits
- Meet or exceed the actuarial assumption over the long term
- Perform in the top half of the public plan universe over the long term
- Diversify assets to preserve capital and avoid large losses
- Exceed individual asset class benchmarks over the long term

The strategy for achieving these goals is supported by investing the assets of the Systems according to a five year asset allocation model. The Systems currently invest in seven different asset classes, which provides for a well-diversified portfolio.

ASSET ALLOCATION

(Excludes Collateral on Loaned Securities)

Investment Category	As of 9/30/19 Actual %	Five-Year Target %
Domestic Equity Pools	22.5%	28.0%
International Equity Pools	16.0	16.0
Private Equity Pools	18.7	18.0
Real Estate and Infrastructure Pools	9.5	10.0
Fixed Income Pools	13.7	10.5
Absolute Return Pools	16.4	15.5
Short-Term Investment Pools	3.2	2.0
TOTAL	**100.0%**	**100.0%**

INVESTMENT AUTHORITY

Pursuant to State law (Executive Order 2018-10, which in part transferred to the Board the powers enumerated in (i) Section 91 of Act No. 380 of the Public Acts of 1965, as amended, and (ii) Section 12c of Act No. 314 of 1965), the Board is the investment fiduciary for the Systems, which is comprised of the State sponsored defined benefit retirement systems: Michigan Public School Employees' Retirement System, State Employees' Retirement System, Michigan State Police Retirement System, Michigan Judges' Retirement System, and the Michigan Military Retirement Provisions. The State Treasurer, State of Michigan, is custodian and ex officio treasurer of the retirement systems for the Legislators, State of Michigan (Section 47 of Act no. 261 of the Public Acts of 1957, as amended).

Act No. 314 of the Public Acts of 1965, as amended, authorizes the investment of assets of public employee retirement systems or plans created and established by the State or any political subdivision.

The administrative statutory powers, duties, functions, and responsibilities concerning retirement allowances, pensions, and other retirement benefits under the Military Retirement act, were transferred to the State of Michigan Retirement Board by Executive order 2015-13. This included conferring the investment duties over the Military Retirement Provisions to the State Treasurer; the investment duties were subsequently transferred to the Board pursuant to the Order. The Military Pension Fund is pooled and invested alongside the Michigan State Employees' pension fund.

INVESTMENT RESULTS

TOTAL PORTFOLIO RESULTS

For the fiscal year ended September 30, 2019, Michigan Military Retirement Provisions' (MMRP) total rate of return was 5.0% as compiled by State Street Investment Analytics.

Investment return calculations are prepared using a Time-Weighted rate of return.

DOMESTIC EQUITY POOLS

The objective for investments made in domestic equities is to meet or exceed the total return of the S&P 1500 Super Composite for one, three, and five-year periods and a market cycle.

For active management strategies, the objective is to earn returns that exceed the most relevant S&P Index (or the most relevant Russell Index), adjusting for market capitalization and style, for one, three, and five-year periods and a market cycle. Another objective is to rank above median in a universe of managers possessing a similar market cap and style characteristics.

For index, or passive return strategies, the objective is to return within 20 basis points of the S&P 500 Index, 50 basis points for the S&P 400 mid-cap, and 60 basis points for the S&P 600 small-cap over one, three, and five-year periods and a market cycle.

The pools are invested primarily in equities or equity-related securities of U.S. companies through internal and externally managed strategies. The goal is to build a portfolio of strategies that will provide excess returns relative to the S&P 1500 while providing minimal tracking error to the index. At times a portion of these pools may be invested in exchange traded funds (ETFs) and fixed-income short-term securities with maturities of less than one year.

The pools invest in equities and equity related securities that are listed on U.S. national securities exchanges, including American Depository Receipts (ADRs). They may also invest in stocks that are traded over-the-counter. The pools diversify their investments by allocating their equity strategies with consideration of the capitalization weightings of the S&P 1500 Index.

The following summarizes the weightings of the pools as of September 30, 2019:

Active	59.4 %
Passive	40.6
Total	**100.0 %**

Large-Cap	58.4 %
Multi-Cap	33.3
Mid-Cap	6.9
Small-Cap	1.4
Total	**100.0 %**

MMRP’s Domestic Equity pools total rate of return was 2.5% for fiscal year 2019. This compared with 3.4% for the S&P 1500 index.

At the close of fiscal year 2019, the Domestic Equity pools represented 22.5% of total investments. The following summarizes MMRP's 0.1% ownership share of the Domestic Equity pools at September 30, 2019:

Domestic Equity Pools

(in thousands)

Short-Term Pooled Investments	$ 478
Equities	12,255
Settlement Proceeds Receivable	7
Accrued Dividends	20
Total	**$ 12,760**

INTERNATIONAL EQUITY POOLS

The objective for investments made in International Equity pools is to meet or exceed the total return of the MSCI ACWI Ex-US Net for one, three, and five-year periods and a market cycle.

For active management strategies, the objective is to earn returns that exceed the most relevant S&P Index (or the most relevant Russell Index), adjusting for market capitalization, style and geography for one, three, and five-year periods and a market cycle. Another objective is to rank above median in a universe of managers possessing a similar market capitalization, style and geography characteristics.

For index, or passive return strategies, the objective is to return within 250 basis points of the S&P/Citigroup BMI-EPAC Index with 25% of the currency hedged for one, three, and five-year periods and a market cycle. Another objective is to return within 400 basis points of the MSCI Emerging Markets Index, for one, three, and five-year periods and a market cycle.

Active exposure is invested primarily in equities or equity-related securities of non-U.S. companies through externally managed strategies.

Passive exposure to International Equity returns is achieved primarily by investing in a combination of fixed income LIBOR notes, short-term fixed income investments, and equity swap agreements on foreign stock indices in developed markets. Interest on the dedicated notes and short-term fixed income investments is exchanged for international stock returns, and the total notional amount of the swap agreements is invested in the approximate proportions of the S&P Broad Market Index (BMI) Europe and Pacific Composite (EPAC) country weightings in related indices. Use of swap agreements for a core position began in 1993, an American Depository Receipts (ADR) and index-related security portfolio was added in June of 1999 to increase portfolio management flexibility, and a multiple country fund portfolio with smaller capitalization stocks was added in September of 2002 to improve exposure to the smallest companies in the BMI index. Use of futures as an investment to hedge cash flows and balances began in December of 2008, and this use is expected to continue in the future. The combined Swap agreements, notes and short-term investments together continue to perform like a stock index fund that realizes all gains and losses on a rolling three year basis.

The pools diversify their investments by allocating their equity strategies with consideration of the economic development status weightings of the S&P/Citigroup BMI -World ex-US Index.

The following summarizes the weightings of the pool as of September 30, 2019:

Active	77.8 %
Passive	22.2
Total	**100.0 %**

Developed	92.6 %
Emerging	7.4
Total	**100.0 %**

MMRP's International Equity pools total rate of return was (1.4)% for fiscal year 2019. This compared with (1.2)% for the MSCI ACWI Ex US Net.

At the close of fiscal year 2019, the International Equity pools represented 16.0% of total investments. The following summarizes MMRP's 0.1% ownership share of the International Equity Pools at September 30, 2019:

International Equity Pools

(in thousands)

Short-Term Pooled Investments	$ 74
Equities	7,611
Fixed Income Securities	1,284
Market Value of Equity Contracts	91
Accrued Dividends and Interest	7
Total	**$ 9,067**

PRIVATE EQUITY POOLS

The Private Equity pools objective is to meet or exceed the benchmark for all private equity investments over long time periods. The benchmark is a blend of the S&P 500 Index plus 300 basis points and the 10 Year Yield plus 300 basis points using ending weights of equity and fixed income holdings within the portfolio.

Private Equity Investments are investments in the private equity market, primarily through limited partnerships. The following summarizes the weightings of the pools as of September 30, 2019:

Buyout Funds	45.7	%
Special Situation Funds	13.8	
Fund of Funds	19.2	
Venture Capital Funds	11.9	
Liquidation Portfolio	7.2	
Mezzanine Funds	2.2	
Total	**100.0**	**%**

The Private Equity pools had a return of 10.1% for the fiscal year ended September 30, 2019, versus the benchmark of 13.7%.

At the close of fiscal year 2019, the Private Equity pools represented 18.7% of total investments. The following summarizes MMRP's 0.1% ownership share of the Private Equity pools at September 30, 2019:

Private Equity Pools

(in thousands)

Short-Term Pooled Investments	$	274
Equities		10,281
Long Term Obligations		7
Settlement Proceeds Receivable		1
Accrued Interest		1
Total	**$**	**10,564**

REAL ESTATE AND INFRASTRUCTURE POOLS

The objective of the Real Estate and Infrastructure pools is to provide diversification and favorable risk adjusted returns primarily through income and appreciation of investments. Investments are typically held through investment entities, such as limited partnerships or limited liability companies, established for the specific purpose of owning, leasing, managing, financing, or developing real estate and infrastructure related investments.

The Real Estate and Infrastructure pools diversify its holdings by:

- **Geography** – The pools are invested globally and are diversified geographically so that it is not concentrated in a limited number of markets or geographic areas.
- **Size and Value** – The pools diversify its holdings by size so that it is not concentrated in a limited number of large investments.

- **Investment Type** – The pools are diversified by investment type as summarized below.

Multi-family apartments	39.7 %
Commercial office buildings	13.1
Hotel	13.1
Infrastructure	12.1
Industrial warehouse buildings	10.5
For Sale Homes	3.1
For Rent Homes	1.0
Retail shopping centers	5.0
Land	1.2
Short Term Investments	1.2
Total	**100.0 %**

The Real Estate and Infrastructure pools generated a return of 6.9% for fiscal year 2019. The two benchmark returns from the National Council of Real Estate Investment Fiduciaries: the National Property Blended Index (less 130 basis points) was 4.9% and the Open-End Diversified Core Equity Index was 4.6%.

At the close of fiscal year 2019, the Real Estate and Infrastructure pools represented 9.5% of total investments. The following summarizes the MMRP's 0.1% ownership share of the Real Estate and Infrastructure pools at September 30, 2019:

Real Estate and Infrastructure Pools

(in thousands)

Short-Term Pooled Investments	$	62
Real Estate Equities		4,683
Infrastructure Equities		656
Accrued Dividends		2
Total	**$**	**5,403**

FIXED INCOME POOLS

The objective for investments made in the Fixed Income pools is to meet or exceed the Barclays Aggregate Bond Index over one, three, and five-year periods and market cycles. Another objective is to rank above median in a nationally recognized universe of managers possessing a similar style.

For Fixed Income sub-strategies, the objective return is to meet or exceed the most relevant Barclays benchmark index.

The pools are invested primarily in fixed income securities of U.S. companies through internal and externally managed strategies. The goal is to build a portfolio of strategies that will provide excess returns relative to the blended benchmark while providing minimal tracking error to the index. At times a portion of the pools may be invested in exchange traded funds (ETFs) and fixed-income short-term securities with maturities of less than one year.

The pools invest in fixed income and related securities in a diversified portfolio of investment grade corporate issues, treasuries, agencies, government sponsored enterprises and government guaranteed mortgages. The pools diversify its investments by allocating its strategies with consideration of credit risk.

MMRP's Fixed Income pools total rate of return was 9.5% for fiscal year 2019. This compares to 10.3% for the Barclays Aggregate Bond benchmark.

At the close of fiscal year 2019, the Fixed Income pools represented 13.7% of total investments. The following summarizes MMRP's 0.1% ownership share of the Fixed Income pools at September 30, 2019:

Fixed Income Pools

(In thousands)

Short-Term Pooled Investments	$	28
Fixed Income Securities		7,691
Settlement Principal Payable		(10)
Accrued interest		18
Total	**$**	**7,727**

ABSOLUTE RETURN POOLS

The Absolute Return Pools consist of the Absolute Return Strategies Pool and the Real Return and Opportunistic Investment Pool.

The primary investment objective of the Absolute Return Strategies Pool is to generate a rate of return that meets or exceeds T-bills by 400 basis points net of fees over the one, three, and five-year periods and a market cycle. Another objective is to exceed the appropriate HFN Fund of Funds median net of fees over one, three, and five-year periods and a market cycle.

The Absolute Return Strategies pool rate for the fiscal year was 3.9% versus the benchmark's 1.6%.

The primary investment objective of the Real Return and Opportunistic Pool is to generate a rate of return that meets or exceeds the increase in the CPI by at least 4.0% annually net of fees over one, three, and five-year periods and a market cycle. If a peer universe is available, another objective is to rank above median in a nationally recognized universe of managers possessing a similar style.

For sub-strategies targeting a commodities index, the objective is to generate a rate of return that meets or exceeds the Dow Jones-AIG Total Return Commodities Index over one, three, and five year periods and a market cycle. Rank above median in a nationally recognized universe of managers possessing a similar style.

The Real Return and Opportunistic Investments pool rate of return for the fiscal year was 9.7% versus the benchmark's 6.5%.

At the close of fiscal year 2019, the Absolute Return Pools represented 16.4% of total investments. The following summarizes MMRP's 0.1% ownership share of the Absolute Return Pools at September 30, 2019:

Absolute Return Pools

(in thousands)

Short-Term Pooled Investments	$	103
Equities		9,152
Total	**$**	**9,255**

SHORT-TERM INVESTMENT POOLS

The objective of the Short-Term Investment pools is to closely match the return performance of its benchmark, the 30-day Treasury bill. The Short-Term Investment pools return for the fiscal year was 2.6% versus the benchmark's 2.3%.

Potential areas of investment are:

- Obligations of the United States or its agencies.
- Banker's acceptances, commercial accounts, certificates of deposit or depository receipts.

- Repurchase agreements for the purchase of securities issued by the US government or its agencies.
- Commercial paper rated at the time of purchase within the two highest classifications established by not less than two national rating services as determined by the State Treasurer.
- Short duration investment grade corporate issues.

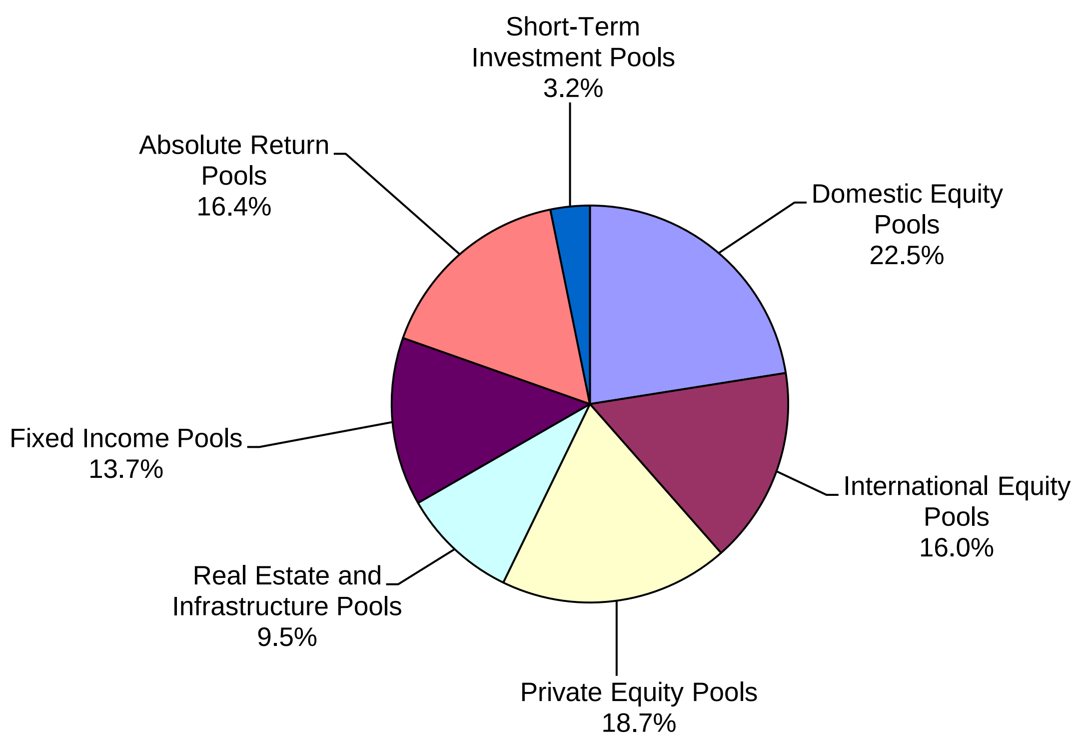
At the close of fiscal year 2019, the Short-Term Investment pools represented 3.2% of total investments. The following summarizes MMRP's 0.3% ownership share of the Short-Term Investment pools at September 30, 2019:

Short-Term Investment Pools

(in thousands)

Short-Term Pooled Investments	$	480
Fixed Income Securities		1,333
Accrued Interest		1
Total	**$**	**1,814**

ASSET ALLOCATION – SECURITY TYPE ONLY



PENSION PLAN INVESTMENT RESULTS

For the Period Ending September 30, 2019

Investment Category	Annualized Rate of Return[1] Current Year
Total Portfolio	5.0%
Domestic Equity Pools	2.5
S&P 1500 Index	3.4
International Equity Pools	(1.4)
International Blended Benchmark[2]	(1.2)
Private Equity Pools	10.1
Private Equity Blended Benchmark[3]	13.7
Real Estate and Infrastructure Pools	6.9
NCREIF Property Blended Index[4]	4.9
Fixed Income Pools	9.5
Barclays Aggregate Bond	10.3
Absolute Return Pools	
Total Absolute Return	3.9
HFRI Fund of Fund Cons 1 month lag	1.6
Total Real Return and Opportunistic	9.7
Real Return and Opportunistic Benchmark[5]	6.5
Short Term Investment Pods	2.6
30 Day Treasury Bill	2.3

[1] Calculations used a time-weighted rate of return based on the market rate of return in accordance with industry standards. Excludes income and investment gains and losses from securities lending.

[2] As of 7/1/14, index is MSCI ACWI Ex-US Net. History 10/1/10 to 6/30/14 is MSCI ACWI Ex-US Gross. History 1/1/10 to 9/30/10 is S&P Developed BMI-EPAC Net 75/25. History prior to 1/1/10 is S&P Developed BMI-EPAC Net 50/50.

[3] Index is blend of S&P 500 plus 300 bps with a 3 month lag.

[4] As of 10/1/05, index is NCREIF less 130 bp. History prior to 10/1/05 reflects NCREIF less 75 bp.

[5] As of 12/1/18 Benchmark is 50% (CPI+4%) and 50% (actuarial rate 7.05%). History prior to 12/1/18 reflects 50% (CPI+5%) and 50% (actuarial rate 8%).

LARGEST ASSETS HELD

LARGEST STOCK HOLDINGS

(By Fair Value)
September 30, 2019

Rank	Shares	Stocks	Fair Value
1	2,515	Microsoft Corp	$ 349,606
2	17,416	AGNC Investment Corp.	280,230
3	1,231	Apple Inc.	275,636
4	123	Amazon.com Inc.	213,753
5	1,398	JP Morgan Chase & Co.	164,536
6	604	Home Depot Inc.	140,054
7	810	Visa Inc. CL A	139,337
8	112	Alphabet Inc. CL A	136,476
9	656	Berkshire Hathaway Inc. CL B	136,430
10	14,406	Annaly Capital Management Inc.	126,769

A complete list of holdings is available from the Michigan Department of Treasury.

MMRP's assets are commingled in various pooled accounts. Amounts, par value and number of shares represent MMRP's pro-rata share based on its ownership of the investment pools.

LARGEST BOND HOLDINGS

(By Fair Value)
September 30, 2019

Rank	Par Amount	Bonds & Notes	Fair Value
1	161,005	US Treasury N/B 2.75% Due 02/15/2028	$ 174,803
2	120,817	US Treasury N/B 3% Due 02/15/2048	143,446
3	138,103	FNMA TBA 30 YR 4 Single Family Mortgage	143,368
4	129,271	TSY INFL IX N/B .750% 07/15/2028	135,625
5	131,851	US Treasury N/B 1.500% Due 05/15/2020	131,552
6	96,332	US Treasury N/B 3.375% Due 11/15/2048	122,745
7	115,372	US Treasury N/B 2.375% Due 05/15/2029	122,520
8	109,803	US Treasury N/B 1.875% Due 08/31/2022	110,725
9	102,678	US Treasury N/B 1.625% Due 02/15/2026	102,718
10	94,388	US Treasury N/B 1.750% Due 06/30/2024	95,188

A complete list of holdings is available from the Michigan Department of Treasury.

Largest Bond Holdings are exclusive of securities lending collateral.

MMRP's assets are commingled in various pooled accounts. Amounts, par value and number of shares represent MMRP's pro-rata share based on its ownership of the investment pools.

SCHEDULE OF INVESTMENT FEES

The State of Michigan Investment Board (Board) is the investment fiduciary and custodian of MMRP's funds pursuant to State law. Outside advisors are utilized to augment the State of Michigan's internal staff. 71.4% of the total investment portfolio is managed by fully discretionary outside advisors. The Michigan Department of Treasury's cost of operations applicable to MMRP for the fiscal year end amounted to $0 basis points (0.0%) of the fair value of the Assets under Management of the Board.

SCHEDULE OF INVESTMENT FEES

Investment Managers' Fees:

	Assets under Management (in thousands)	Fees (in thousands)	Basis Points*
State Treasurer	$ 16,203		0.0
Outside Advisors for			
Fixed Income	4,140	$ 11	26.6
Absolute Return	9,198	32	34.8
International Equity	7,507	11	14.7
Domestic Equity	3,655	7	19.2
Private Equity	10,564	79	74.8
Real Estate and Infrastructure	5,323	31	58.2
Total	**$ 56,590**	**$ 171**	

Other Investment Services Fees:

Assets in Custody	$ 55,993	$ 5
Securities on Loan	2,088	2

* Private Equity partnership agreements that define the management fees, the asset management fees range from 0 to 250 basis points of the committed capital. For Real Estate/Infrastructure, the asset management fees range from 40 to 200 basis points. For Absolute Return, the asset management fees range from 0 to 200 basis points. These fees, in most cases, are netted against income.

SCHEDULE OF INVESTMENT COMMISSIONS

Fiscal Year Ended September 30, 2019

	Actual Commissions Paid [1]	Actual Number of Shares Traded [1]	Average Commission Per Share	Estimated Trade Costs Per Share	Estimated Research Costs Per Share	Estimated Trade Costs	Estimated Research Costs
Investment Brokerage Firms:							
Banc of America Securities LLC	$ 18	720	$ 0.03	$ 0.01	$ 0.02	$ 7	$ 14
BTIG LLC	273	31,235	0.01	0.01	-	312	-
Capital Institutional Services Inc.	266	50,412	0.01	0.01	-	504	-
Citigroup Global Markets, Inc.	141	6,801	0.02	0.01	0.01	68	68
Cow en & Company LLC	56	2,805	0.02	0.01	0.01	28	28
Drexel Hamilton LLC	9	1,834	-	0.01	-	18	-
Goldman, Sachs & Co.	-	38	-	0.01	-	-	-
J. P. Morgan Securities Inc.	205	12,155	0.02	0.01	0.01	122	123
Merrill Lynch,Pierce,Fenner & Smith Inc.	10	311	0.03	0.01	0.02	3	6
MKM Partners LLC	74	3,689	0.02	0.01	0.01	37	37
Mischler Financial Group Inc.	10	761	0.01	0.01	-	8	-
Morgan Stanley & Co. Inc.	59	2,932	0.02	0.01	0.01	29	29
National Financial	-	7	-	0.01	-	-	-
Pershing LLC	-	13	-	0.01	-	-	-
Raymond James and Associates Inc.	3	93	0.03	0.01	0.02	1	2
RBC Capital Markets	-	7	-	0.01	-	-	-
Stifel, Nicolaus & Co. Inc.	2	63	0.03	0.01	0.02	1	1
USB Securities LLC	1	30	0.03	0.01	0.03	-	1
Wayne & Company	670	194,783	-	0.01	-	1,948	-
Roberts & Ryan Inv.	26	2,054	0.01	0.01	-	21	-
Total	**$ 1,823**	**310,743**	**$ 0.02** [2]	**$ 0.01**	**$ 0.01**	**$ 3,107**	**$ 309**

[1] Commissions are included in purchase and sale prices of investments. The commissions and shares represent MMRP's pro-rata share based on ownership of commission and share transactions in the investment pools.

[2] The average commission per share for all brokerage firms.

INVESTMENT SUMMARY

Fiscal Year Ended September 30, 2019

	Fair Value [1]	Percent of Value	Investment & Interest Income[2]	Percent of Total Investment & Interest Income
Fixed Income Pools	$ 7,727,449	13.7 %	$ 530,636	18.4 %
Domestic Equity Pools	12,759,545	22.5	672,496	23.3
Real Estate and Infrastructure Pools	5,402,892	9.5	306,618	10.6
Private Equity Pools	10,563,578	18.7	804,710	27.9
International Equity Pools	9,067,069	16.0	85,339	3.1
Absolute Return Pools	9,254,768	16.4	455,245	15.8
Short Term Investment Pools [3]	1,814,305	3.2	26,248	0.9
Total	$ 56,589,606	100.0 %	$ 2,881,292	100.0 %

[1] Fair value excludes $2,130,965 in securities lending collateral for fiscal year 2019.

[2] Total Investment & Interest Income excludes net security lending income of $6,196 and unrealized loss of $430 for securities lending collateral.

[3] Short term investment pools fair value includes $596,597 of equity in common cash.

ACTUARIAL SECTION

ACTUARY'S CERTIFICATION

GRS Retirement Consulting
800.521.0498 | P: 248.799.9000 | F: 248.799.9020 | www.grsconsulting.com

October 23, 2019

Ms. Tricia Foster, Director
Department of Technology, Management and Budget
and
The State of Michigan Retirement Board
P.O. Box 30171
Lansing, Michigan 48909

Ladies and Gentlemen:

The basic financial objective of the Military Retirement Provisions (MRP) is to establish and receive contributions which when combined with present assets and future investment return will be sufficient to meet the financial obligations of the plan to present and future benefit recipients. The progress towards meeting these financial objectives is illustrated in the Schedule of Funding Progress and the Schedule of Employer Contributions.

We performed an actuarial funding valuation and issued an actuarial funding report for the MRP as of September 30, 2018. The purpose of the September 30, 2018 annual actuarial valuation was to determine the contribution requirements for the fiscal year ending September 30, 2021, to measure the plan's funding progress, and to provide actuarial information in connection with applicable Governmental Accounting Standards Board statements. The valuation should not be relied upon for any other purpose. The valuation process develops employer contributions that are sufficient to fund the plan's normal cost (i.e., the costs assigned by the valuation method to the year of service about to be rendered), as well as to fund any unfunded accrued liabilities over a reasonable period. The valuation was completed based upon population data, asset data and plan provisions in effect on September 30, 2018.

In addition to the funding valuation report, a separate reports are issued to provide financial reporting information for the MRP in accordance with Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68. Reports containing the actuarial results of the financial reporting valuation are produced annually after the publication of this letter. The GASB Statement Nos. 67 and 68 financial reporting valuations are based upon a measurement date of September 30, 2019.

The valuations were based upon information provided by the plan's administrative staff concerning benefit provisions, financial transactions, and individual members, terminated members, retirees and beneficiaries. We checked the data for internal and year to year consistency but did not audit the data. As a result, we do not assume responsibility for the accuracy or completeness of the data provided by the plan's administrative staff. The actuary summarizes and tabulates population data in order to analyze long term trends. The plan's external auditor audits the actuarial data annually.

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723

Ms. Tricia Foster
October 23, 2019
Page 2

Annual actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rate of investment return and payroll growth, eligibility for the various classes of benefits and longevity among retired lives. These assumptions are adopted by the Board and the Department after considering the advice of the actuary and other professionals. The assumptions and the methods comply with the disclosure requirements of the applicable GASB Statements. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution requirements as needed.

The following schedules in the Financial Section, the Actuarial Section, and the Statistical Section of the CAFR were prepared by the Department of Financial Services based upon certain information presented in the previously mentioned funding and financial reporting valuation reports:

Financial Section

- Note 1 - Table of Plan's Membership
- Note 4 – Net Pension Liability; Summary of Actuarial Assumptions and Methods
- Schedules of Changes in the Net Pension Liability (NPL) and Related Ratios
- Schedules of Contributions Multiyear
- Sensitivity of the NPL to Changes in the Discount Rate

Actuarial Section

- Summary of Actuarial Assumptions and Methods used in the September 30,2018 Pension Funding Valuation
- Percent of Eligible Active Members Retiring Within Next Year
- Separation from Active Employment Before Age and Service Retirement and Individual Pay Increase Assumptions
- Schedule of Active Member Pension Valuation Data
- Schedule of Changes in the Retirement Rolls
- Prioritized Solvency Test
- Analyses of Plan Experience

Statistical Section

- Schedules of Average Benefit Payments – Pension
- Schedule of Funding Progress

The September 30, 2018 funding valuation and the September 30,2019 financial reporting valuations were based upon assumptions that were recommended in connection with a study of plan's experience covering the period from October 1, 2015 through September 30, 2017. Future actuarial measurements may differ significantly from those presented in the annual valuations due to such factors as experience differing from that anticipated by actuarial assumptions, or changes in plan provisions, actuarial assumption/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.

Ms. Tricia Foster
October 23, 2019
Page 3

The signing actuaries are independent of the plan sponsor.

The actuarial valuations of the MRP were performed by qualified actuaries in accordance with standards of practice prescribed by the Actuarial Standards Board and in compliance with applicable State statutes. The assumptions and methods used for funding and financial reporting purposes are in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Louise Gates and Mita Drazilov are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. It is our opinion that the calculated employer contribution meets the financial objective of the pension plan.

Respectfully submitted,

Louise Gates

Louise M. Gates, ASA, FCA, MAAA

Mita Drazilov

Mita D. Drazilov, ASA, FCA, MAAA

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

1. The investment return rate used in the valuations was 6.75% per year net of investment expenses, compounded annually. This rate of return is not the assumed real rate of return. Considering a wage inflation assumption of 2.75%, this 6.75% investment return rate translates to an assumed long-term real rate of return 4.0%. Adopted beginning with the 2018.
2. The healthy life mortality table used in evaluating allowances to be paid was the RP-2014 Male and Female Healthy Mortality Tables scaled by 93% for males and 99% for females and adjusted for mortality improvements using projection scale MP-2017 from 2006. Adopted 2018.
3. Sample probabilities of retirement with an age and service allowance are shown in Schedule 1 on the next page.
4. Sample probabilities of withdrawal from service assumptions, are shown in Schedule 2 on the next page.
5. Total active (Special Duty Officer) member payroll is assumed is to increase 2.75% per year. This represents the portion of the individual pay increase assumptions. In effect, this assumes no change in the number of active Special Duty Officer members.
6. An individual entry age actuarial cost method of valuation was used in determining actuarial liabilities and normal cost. Unfunded actuarial accrued liabilities, including actuarial gains and losses, were financed over a declining 18-year period ending September 30, 2038.
7. For investment gains and losses that occur, a 5-year smoothing technique was used. Specifically, the excess (shortfall) of actual investment income (including interest, dividends, realized and unrealized gains or losses) over the imputed income at the valuation interest rate is considered the gain (loss), which is spread over five years. Adopted beginning with the 2016 valuation.
8. The data about persons now covered and about present assets was furnished by the plan's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary.
9. The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA). The assumptions used in the actuarial valuations were adopted by the plan's Board and the Department of Technology, Management & Budget after consulting with the actuary.
10. An experience investigation covering the period from October 1, 2015 through September 30, 2017 was completed in 2018. The purpose of the study was to analyze the actual experience of the Provisions versus that anticipated by actuarial assumptions then in use.
11. Gabriel Roeder Smith and Co. was awarded the actuarial and consulting services contract beginning October 4, 2006.

SCHEDULE 1

PERCENT OF ELIGIBLE ACTIVE MEMBERS RETIRING WITHIN NEXT YEAR

Age	% Retiring M Day	% Retiring Special Duty
55	33%	10%
56	33	10
57	33	10
58	33	10
59	33	10
60 and over	100	100

SCHEDULE 2

SEPARATION FROM ACTIVE EMPLOYMENT BEFORE AGE & SERVICE RETIREMENT & INDIVIDUAL PAY INCREASE ASSUMPTIONS

Sample Ages	Completed Years of Service	Percent Separating within Next Year	
		M Day	Special Duty
All	0	25.0%	N/A
	1	20.0	N/A
	2	18.0	N/A
	3	16.0	N/A
	4	15.5	N/A
25	5 & Over	15.4	7.0%
30		14.4	7.0
35		13.4	7.0
40		10.6	7.0
45		8.4	4.5
50		7.4	2.0
55		6.4	2.0

SCHEDULE OF ACTIVE MEMBER PENSION VALUATION DATA

Valuation Date Sept. 30	Number[1]	Reported Annual Payroll	Average Annual Pay	Increase (Decrease)	Average Age	Average Service
2016	10,144	$ 465,680	$ 155,227	3.9%	31.5	7.1
2017	10,394	493,395	164,465	6.0	31.4	7.1
2018	10,554	348,259	174,130	5.9	31.4	7.3

[1] Includes all plan members with only 2 special duty officers who receive annual pay as reported above.

SCHEDULE OF CHANGES IN RETIREMENT ROLLS

Year Ended Sept. 30	Added to Rolls		Removed from Rolls		Rolls – End of Year		Increase in Annual Allowances	Average Annual Allowances
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances		
2016	177	$ 118,680	100	$ 93,168	4,325	$ 3,912,600	0.7%	$ 905
2017	183	161,481	146	141,031	4,362	3,933,051	0.5	902
2018	187	126,130	94	273,043	4,455	3,786,139	(3.7)	850

MMRP funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to MMRP are level in concept and soundly executed, MMRP will pay all promised benefits when due, the ultimate test of financial soundness. Testing for level contribution rates is the long-term solvency test.

A prioritized solvency test is another means of checking MMRP progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with: (1) active member contributions on deposit; (2) the liabilities for future benefits to present retired lives; and (3) the liabilities for service already rendered by active and inactive members. In a system that has been following the discipline of level percent of payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) are normally partially covered by the remainder of present assets. Generally, if MMRP has been using level-cost financing, the funded portion of liability 3 will increase over time. Liability 3 being fully funded is not necessarily a by-product of level percent of payroll funding methods.

The schedules that follow illustrate the history of the liabilities of MMRP and are indicative of MMRP policy of following the discipline of level percent of payroll financing.

PENSION BENEFITS

($ in thousands)

	Actuarial Accrued Liability (AAL)							
	(1)	(2)	(3)					
Valuation Date Sept. 30	Active Member Contributions	Retirants and Beneficiaries	Active and Inactive Members (Employer Financed Portion)	Valuation Assets	Portion of AAL Covered by Assets (1)	(2)	(3)	(4)[2]
2016	$ -	$ 38,889,306	$ 8,270,646	$ 3,696,232	0.0%	9.5%	0.0%	7.8%
2016[1]	-	40,483,759	9,191,169	3,696,232	0.0	9.0	0.0	7.4
2017	-	40,022,670	9,927,450	4,602,232	0.0	11.5	0.0	9.2
2018	-	37,585,252	11,294,179	17,213,520	0.0	45.8	0.0	35.2
2018[1]	-	39,697,297	17,104,389	17,213,520	0.0	43.4	0.0	30.3

[1] Revised actuarial assumption and/or methods.

[2] Percent funded on a total valuation asset and total actuarial accrued liability basis.

GAINS/(LOSSES) IN ACCRUED LIABILITIES

During Year Ended September 30, 2018
Resulting from Differences Between Assumed Experience & Actual Experience

	Type of Activity	Gain/(Loss)
1	**Demographic.** Includes retirement, withdrawal and death.	$ 963,916
2	**Investment Income.** If there is greater investment income than assumed, there is a gain. If less income, a loss.	(89,890)
3	**Composite Gain (or Loss) During Year.**	$ 874,026

Our actuarial valuation of the Military Retirement Provisions is based on our understanding of the present provisions of Public Act 150 of 1967.

RETIREMENT BENEFITS

Eligibility

- Age 60 with at least 20 years of service for members who began active service before June 30, 1967.
- Age 62 with at least 20 years of active service.
- Age 55 with at least 20 years of service and one or more of the following:
    a. Ineligibility and termination of the person's commission or enlistment.
    b. Physical disqualification from service.
    c. Separation from the National Guard under an honorable circumstance.
- Age 55 with at least 20 years of service for Special Duty officers (the Adjutant General and any assistant Adjutant General). To be eligible, the Adjutant General or Assistant Adjutant General must serve at least four consecutive years of special duty as the Adjutant General or Assistant Adjutant General. This requirement is waived if the service member is relieved due to a new governor assuming office.
- Officers, Warrant Officers, and Enlisted personnel **must** retire upon reaching the age of 62 (assuming they have at least 20 years of service).

Annual Amount

Members on special duty receive an annual benefit of 45% of final compensation. Non-special duty members received $600 per annum. The benefit is payable for life.

VESTING

Inactive members with 20 or more years of service are entitled to a benefit upon reaching age 55.

SURVIVOR BENEFITS

The surviving spouse of a deceased National Guard member receives $500 per annum if the former member died while in active service, or had at least 20 years of active service and who, at the time of death, met one of the three additional requirements:

(1) Honorable discharge,
(2) Termination due to disability, or
(3) Reaching the Federal limit for age or length of service

The spouse of the Adjutant General or Assistant Adjutant General who dies prior to retirement but after earning 15 years of active service shall be paid a lifetime monthly benefit equal to 67% of the retired pay to which the member would have been authorized had the member retired on the day before death. The spouse of the Adjutant General or Assistant Adjutant General who dies after retirement shall be paid a lifetime monthly benefit equal to 50% of the retired pay.

POST-RETIREMENT COST-OF-LIVING ADJUSTMENTS

Retired special duty members who retired before December 18, 2018, and their survivors, receive annual benefit adjustments equal to the percentage by which federal military service benefits are increased.

STATISTICAL SECTION

Contents

STATISTICAL SECTION

CONTENTS

This part of MMRP comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about MMRP overall financial health.

FINANCIAL TRENDS

These schedules contain trend information to help the reader understand how MMRP's financial performance and fiscal health has changed over time. Schedules included are:

- Schedule of Pension Plan Additions by Source
- Schedule of Pension Plan Deductions by Type

OPERATING INFORMATION

These schedules contain contextual information to assist the reader's understanding of how MMRP's financial information relates to the combination of participating members and the benefits it provides. Schedules included are:

- Schedule of Average Benefit Payments
- Schedule of Funding Progress
- History of Membership

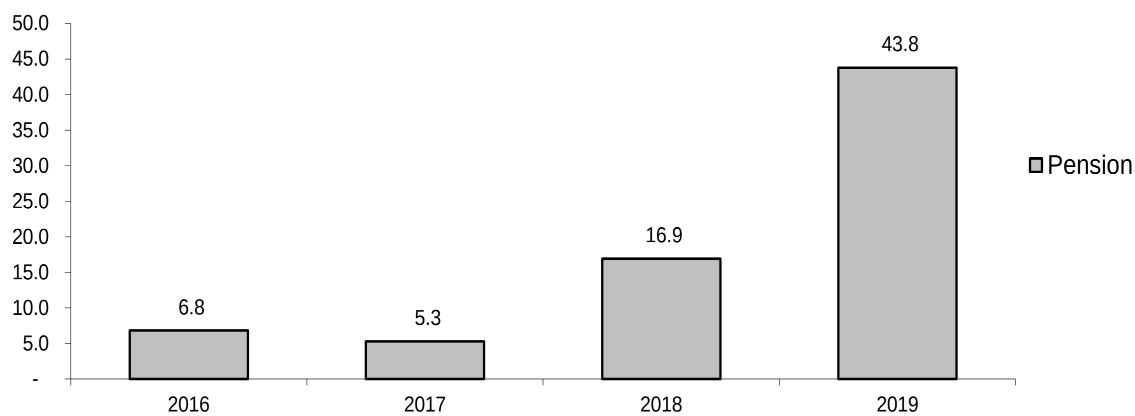
SCHEDULES OF ADDITIONS BY SOURCE

Fiscal Year Ended Sept. 30	Employer Contributions	Net Investment & Other Income	Total
2016	$ 6,790,331	$ 11,770	$ 6,802,100
2017	5,244,800	84,556	5,329,356
2018	16,244,800	691,640	16,936,440
2019	41,044,800	2,711,414	43,756,214

TOTAL ADDITIONS

Year Ended September 30

(in millions)



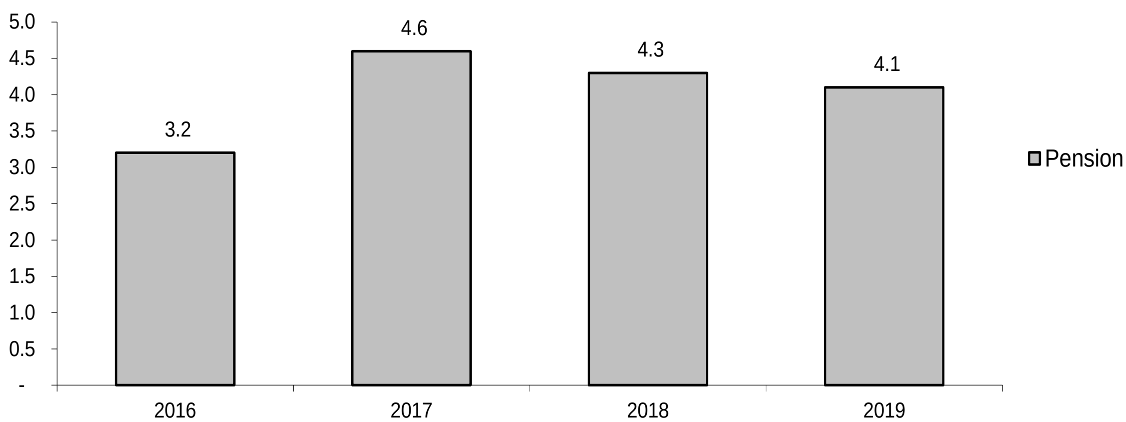
SCHEDULES OF DEDUCTIONS BY TYPE

Fiscal Year Ended Sept. 30	Benefit Payments	Administrative and Other Expenses	Total
2016	$ 2,960,944	$ 250,047	$ 3,210,991
2017	4,089,801	481,605	4,571,406
2018	3,939,098	396,294	4,335,392
2019	3,895,264	223,363	4,118,627

TOTAL DEDUCTIONS

Year Ended September 30

(in millions)



SCHEDULE OF AVERAGE BENEFIT PAYMENTS - PENSION

Payment Periods	Credited Service (Years) as of September 30					
	less than 15	15-20	20-25	25-30	30+	Total
Period 10/1/15 to 9/30/16:						
Average Monthly Benefit	$ 49	$ 49	$ 53	$ 68	$ 146	$ 76
Number of Retirants	16	30	2,487	882	910	4,325
Period 10/1/16 to 9/30/17:						
Average Monthly Benefit	$ 49	$ 49	$ 52	$ 71	$ 146	$ 75
Number of Retirants	18	36	2,529	887	892	4,362
Period 10/1/17 to 9/30/18:						
Average Monthly Benefit	$ -	$ 49	$ 52	$ 69	$ 127	$ 71
Number of Retirants	-	38	2,595	914	908	4,455

Source: Gabriel Roeder Smith & Co.

SCHEDULE OF FUNDING PROGRESS

PENSION BENEFITS

($ in thousands)

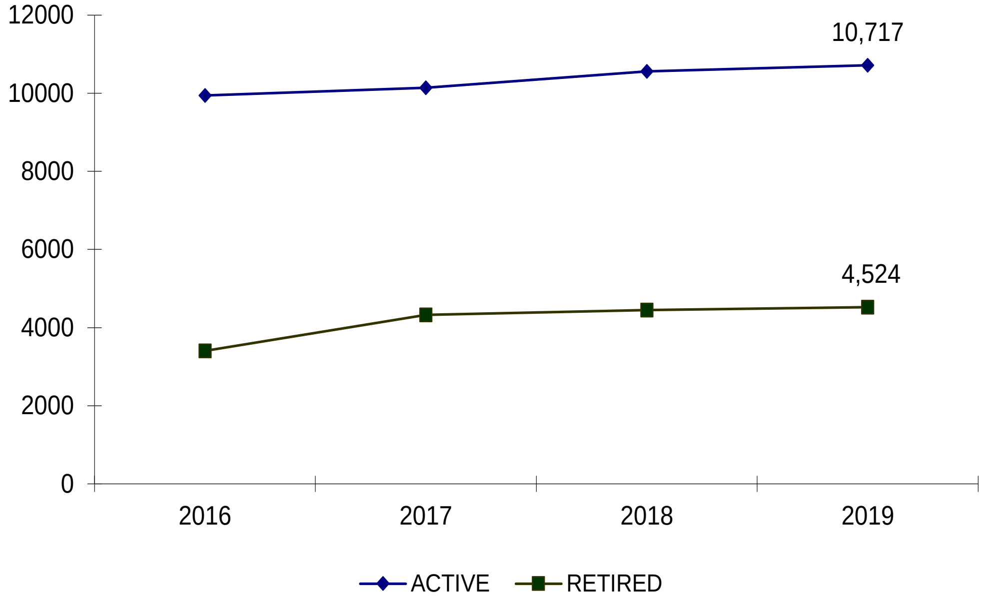
Valuation Date Sept 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded (Overfunded) Accrued Liability (UAAL) (b-a)	Funded Ratio (a/b)
2016	$ 3,696	$ 47,160	$ 43,464	7.8%
2016[1]	3,696	49,675	45,979	7.4
2017	4,602	49,950	45,348	9.2
2018	17,214	48,879	31,665	35.2
2018[1]	17,214	56,802	39,588	30.3

[1] Revised actuarial assumption

Source: Gabriel Roeder Smith & Co.

HISTORY OF MEMBERSHIP

Fiscal Year Ended September 30



Source: Gabriel Roeder Smith & Co.

This page was intentionally left blank.

ACKNOWLEDGMENTS

Acknowledgments

The *Michigan Military Retirement Provisions Comprehensive Annual Financial Report* is prepared by Financial Services, Fiscal Management Division. Staff of the division for the fiscal year 2019 report included:

Management:

Jacqueline Huhn, Director
Aver Hamilton, Accounting Manager

Accountants:

Dan Harry
Rick Legal
Cindy Molzan
Hope Richardson
Paula Webb
Carol Wheaton

Technical and Support Staff:

Jamin Schroeder

Special thanks are also extended to the Office of Retirement Services personnel, accounting and support personnel throughout Financial Services, Investments Division of Treasury, Department of Health and Human Services cashiering personnel, Office of the Auditor General, Gabriel Roeder Smith & Co., and the staff at the Office of Financial Management. Preparation of this report would not have been possible without the efforts of these individuals.

This report may be viewed online at: www.michigan.gov/ors