MICHIGAN
STATE POLICE
RETIREMENT SYSTEM

Annual Comprehensive Financial Report
for the Fiscal Year Ended September 30, 2023

MSPRS

A Fiduciary Component Unit 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

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Certificate of Achievement for Excellence in Financial Reporting

Presented to

Michigan State

Police Retirement System

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

September 30, 2022

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council

Public Pension Standards Award

For Funding and Administration

2023

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 State Police
Retirement System
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

February 7, 2024

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 annual comprehensive financial report of the Michigan State Police Retirement System (System) for fiscal year 2023.

INTRODUCTION TO REPORT

The System was established by legislation under Public Act 251 of 1935. It now operates under the provisions of Public Act 182 of 1986, as amended, and is administered by the Office of Retirement Services (ORS). The number of active and retired members and beneficiaries of the System is presented in Note 1 of the financial statements in the Financial Section in this report. The purpose of the System is to provide retirement, disability, death, and healthcare benefits for all State Police officers. 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 System. 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 System.

Internal Control Structure

The leadership team of the System 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 System. The independent auditor's report on the System's 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 System and to recommend employer contribution rates. The annual actuarial valuation was completed by Gabriel, Roeder, Smith & Company for the fiscal year ended September 30, 2022 and recommends employer contribution rates for the fiscal year ended September 30, 2025. 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 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 State Police Retirement System was created by Public Act 251 of 1935 and later superseded by Public Act 182 of 1986. A 9-member board, under the direction of a chairperson elected from the membership, and the director of the Department of Technology, Management, and Budget (DTMB), govern the System. All individuals hired before June 10, 2012, are members of the legacy defined benefit pension plan, and those hired on or after June 10, 2012 are members of the Pension Plus Plan. The System serves over 5,300 members and is funded by employer contributions, member contributions, and investment earnings. A detailed plan description is included in Note 1 of the Financial Section in this report.

ECONOMIC CONDITIONS AND OUTLOOK

Despite a long term mix of both challenging and robust economic times, the System continues to show steady performance.

Investments

The State of Michigan Investment Board is the investment fiduciary and custodian of all investments of the System 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 8.3 percent for the Pension Plan and 8.2 percent for the Other Postemployment Benefits (OPEB) Plan. For the last five years, the System has experienced an annualized rate of return of 7.6 percent for the Pension Plan and 7.6 percent for the OPEB Plan. A summary of asset allocation and rates of return can be found in the Investment Section of this report.

Accounting System

Transactions of the System 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 System provide reasonable assurance the System is 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 System 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 System and generally, the greater this percentage, the stronger the System.

Pension – The actuarial value of the assets and actuarial accrued liability of the System were $1.8 billion and $2.7 billion, respectively, resulting in a funded ratio of 66.5 percent on September 30, 2022. A historical perspective of funding levels for the Pension Plan is presented on the Schedule of Funding Progress in the Actuarial Section of this report.

OPEB – Prefunding for OPEB began in fiscal year 2013. The actuarial value of the assets and actuarial accrued liability for OPEB were $405.6 million and $727.5 million respectively resulting in a funded ratio of 55.7 percent at September 30, 2022. A historical perspective of funding levels is presented on the Schedule of Funding Progress in the Actuarial Section of this report.

MAJOR GOALS ACCOMPLISHED

HIPAA training module - The main goal of the federal Health Insurance Portability and Accountability Act (HIPAA) is to strike a balance between making the flow of healthcare information easier and protecting patients’ privacy.

As technology advances, it transforms healthcare delivery and the interactions with customers and vendors. While advancements bring benefits, they also present challenges protecting customers’ privacy and security.

ORS redesigned its internal HIPAA training module. The goal was to help staff retain knowledge better, foster a culture of compliance, and enable proficient customer privacy and security.

The training incorporates content clarity, custom examples that relate directly to ORS work, interactive activities designed to mimic real-world scenarios, and additional resources. Any ORS staff assigned HIPAA training on or after May 18, 2023, are using the new module.

IRS Form W-4P and Form W-R updates - The IRS updated Form W-4P (Withholding Certificate for Periodic Pension or Annuity Payments) for 2022, delaying required use until Jan. 1, 2023.

For retirees receiving pensions, annuities (including commercial annuities), and certain other deferred compensation, Form W-4P tells payers the amount of federal income tax to withhold from payment(s).

In addition, IRS moved withholding elections for nonperiodic payments and eligible rollover distributions to its new Form W-4R (Withholding Certificate for Nonperiodic Payments and Eligible Rollover Distributions).

The ORS made numerous updates, including on federal tax withholding screens for the Clarety account database for retirees in its five retirement systems; two screens in the miAccount application -- apply for retirement (federal tax) and retiree federal tax withholding; and ORS paper forms and letters providing federal tax entries.

ORS communicated the changes on ORS websites, via emails and letters sent to retirees, through Customer Service representatives, and Facebook and Twitter social media.

For retirees who didn’t update federal withholdings by Dec. 9, 2022, ORS made those IRS default withholdings of single or married filing separately. Changes made after that overrode the default.

Modernization - ORS has begun a modernization project to replace legacy applications.

The project aims to deliver a new technology platform that is wholly integrated and enables agility in our tools to deliver better customer experiences and outcomes.

The efforts are focused on creating a technology ecosystem that enables us to deliver retirement services to customers, employers, and ORS staff.

Among the components being modernized are the customer relationship management platform, our line of business application, self-service platforms for employers and customers, and communication tools.

NICE CXone call center solution - ORS upgraded its Customer Service and Employer Reporting call center operations from the Genesys-Cisco phone platform to the NICE CXone cloud-based solution.

The replacement includes interactive voice response (IVR), callback requests, workforce management (WFM), call recording, and quality management.

The upgrade to NICE CXone was effective Oct. 26, 2022. Testing for NICE started in August 2022, with more than 160 defects identified, remediated, and re-tested.

More flexible than the former platform, CXone provides a one-platform solution instead of multiple applications with the previous Genesys-Cisco on-premises platform. In addition, CXone allows for improved security with implementation of the single sign-on process.

ORS continues to learn and grow with the technology enhancement for its call center interactions.

Public Act 4 of 2023/Michigan retirement tax repeal - On March 7, 2023, Michigan Gov. Gretchen Whitmer signed into law a phase-out of the state pension tax previously implemented in 2012.

Under Public Act (PA) 4 of 2023, retirees may choose between current deductible limits on pensions or retirement income or new limits being put in place starting with 2023 state income taxes filed in 2024.

ORS and Michigan Department of Treasury continue working to provide further details to impacted retirees. The law takes effect 90 days after the Michigan Legislature's current 2023 session ends.

To help inform, ORS provided charts and FAQs outlining changes on website landing pages for the Michigan Public School Employees' Retirement System (MPSERS), State Employees' Retirement System (SERS), Judges' Retirement System (JRS), and Michigan State Police Retirement System (SPRS).

To communicate impacts, ORS sent emails and letters to affected retirees; published information in the Connections newsletter for defined benefits recipients; and shared updated rules with ORS partners. In addition, ORS updated its employer-information website and internal-use common responses and solution finder content for call center representatives. ORS also posted information on social media.

SECURE 2.0 Act - The Setting Every Community Up for Retirement Enhancement (SECURE) 2.0 Act of 2022 makes changes to qualified retirement plans and Individual Retirement Accounts (IRAs) to expand coverage, increase retirement savings, and simplify retirement plan rules.

The federal law, effective Dec. 29, 2022, enhances the SECURE Act of 2019. Some initial provisions, including increases in age for required minimum distributions for participants and spousal beneficiaries, are already in effect; others go into effect in 2024, 2025, and 2026.

ORS works with Voya Financial, the State of Michigan 401(k) and 457 Plans recordkeeper; the state's Human Resource Management Network; and the Office of Financial Management on changes to information technology systems, policies, websites, communications, and forms affecting SERS, MPSERS, SPRS, and JRS.

ORS is publicizing the changes in newsletters to active employees in the four retirement systems and to MPSERS employers, on websites, and through ORS social media channels.

Self Leadership - ORS is using Blanchard Exchange's Self Leadership program to empower staff and make a difference in the quality of engagements and work.

Kicked off in late January 2023, the program is running through December 2023. The focus is for all ORS staff to become more proactive asking for direction and support, challenge assumed constraints, and take action in areas they are empowered to do so.

The goals are to foster shared terms for development and performance, improve workplace conversations, build trust, boost self-reliance, and raise productivity. The program augments the Situational Leadership II program ORS has embraced since 2018.

The self-directed coursework takes about 2½ hours to complete, with assignments, videos, stories, and games. Staff use the principles in one-on-one meetings and progress reports.

To bolster matters, the ORS intranet offers a self-leadership awareness series and informational posters are up at ORS offices.

Video initiative - ORS invested in video for fiscal year 2023, hiring a new video lead and upgrading equipment.

The results include a 5½ -minute video for new members of the MPSERS titled "Choosing Your Retirement Plan"; four minute-or-so-long Ask the Expert videos for the Proactive and Connections newsletters and social media; and an internal technical assessment presentation for ORS modernization efforts.

All are new benchmarks for ORS, which is using more video because of increased interest and industry trends.

The MPSERS video was shot July 2023 in an Okemos, Michigan, elementary school, with the topic chosen from surveying new hires in 2021. The project involved 80 minutes of footage; three days editing; and follow-up for the finished product.

The lead for the ORS Customer Education video line-of-business team has a degree in video and was a broadcast journalist.

Women & Retirement - ORS and Voya Financial created a multi-platform campaign titled Women & Retirement that ran from November 2021 to October 2022. Showing how women can better prepare to achieve their retirement goals, the campaign was recognized with the National Association of Government Defined Contribution Administrators 2023 Leadership Award for Participant Education & Communication. Content was organized around several foundational facts: women enter the workforce later, are more likely to take time off as a caregiver, tend to live longer, and, on average, spend more years in retirement than men. A November 2022 survey and review showed the campaign's impact. Voya had 4,499 webinar attendees and 1,156 one-on-one appointments during the campaign period, increases of 48% and 31%, respectively. The Women & Retirement landing page was the ORS website's second longest-viewed in 2022 and was among the top 20 most-visited ORS webpages in fiscal year 2023.

HONORS

Public Pension Standards Award – ORS was awarded the 2023 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 System with the Certificate of Achievement for Excellence in Financial Reporting for our fiscal year 2022 Annual Comprehensive Financial Report (ACFR). This marks the 32nd 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 System.

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 Michigan State Police Retirement System. Their cooperation contributes significantly to the success of the System.

Sincerely,

Michelle Lange
Michelle Lange, Director
Department of Technology, Management & Budget

Anthony J. Estell, Director
Office of Retirement Services

RETIREMENT BOARD MEMBERS*

As of February 7, 2024

Major Chris Hawkins
for Colonel Joseph Gasper
Representing Director,
Dept. of State Police
Statutory Member

Lisa Geminick
Representing Attorney General
Statutory Member

Detective Sergeant Mitchell Stevens
Chair
Representing Sergeants and Below
Term Expires December 31, 2024

Julian Darden
Representing General Public
Term Expires December 31, 2024

Cheryl Schmittdiel
Representing Director,
Office of State Employer
Statutory Member

Craig Murray
Representing Deputy Auditor General
Statutory Member

Ann Marie Storberg
Representing State Treasurer
Statutory Member

Vacant
Representing Lieutenants and Above
Term Expires December 31, 2022*

Retired Inspector Diane Bockhausen
Vice Chair
Representing Retirees
Term Expires December 31, 2023

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

ADVISORS AND CONSULTANTS

As of February 7, 2024

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

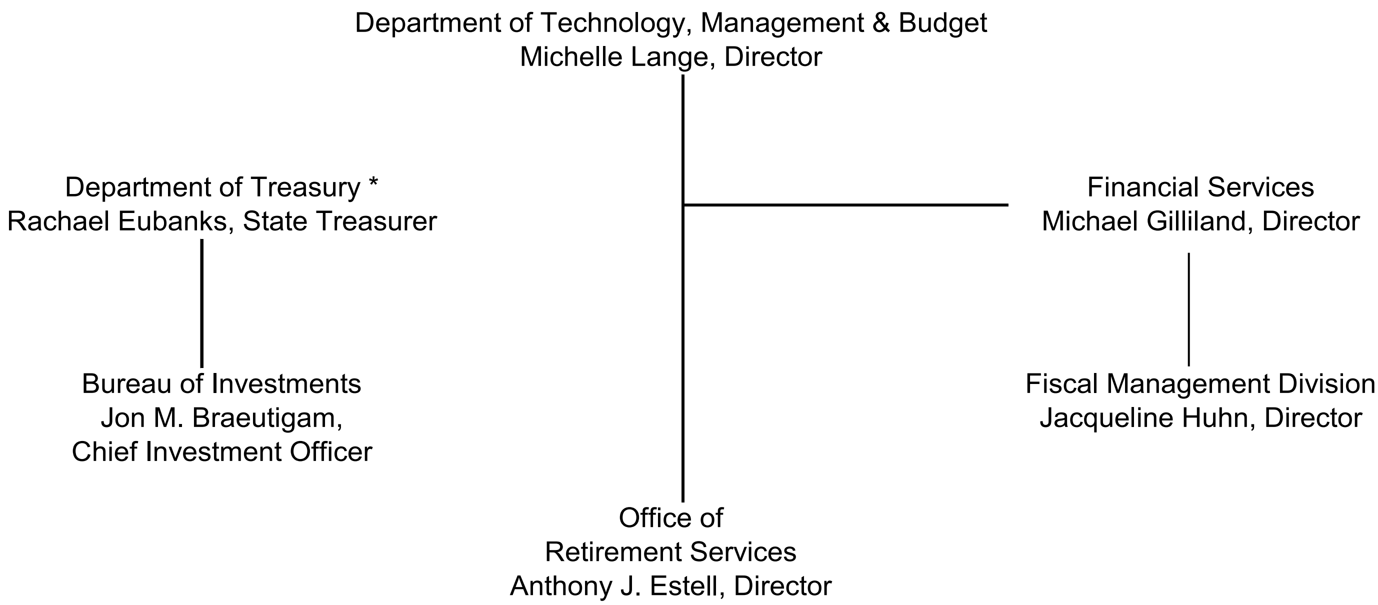
Investment Manager and Custodian
Rachael Eubanks
State Treasurer
State of Michigan

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 February 7, 2024



* The investments of the System 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 72) and Schedule of Investment Commissions (page 73), for information regarding the investment fees and commissions paid as well as investment professionals utilized by the System.

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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

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*

Detective Sergeant Mitchell Stevens, Chair
Michigan State Police Retirement System Board
Stevens T. Mason Building
and
Michelle Lange, Director
Department of Technology, Management, and Budget
Elliott-Larsen Building
and
Anthony J. Estell, Director
Office of Retirement Services
Stevens T. Mason Building
Lansing, Michigan

Report on the Audit of the Financial Statements

Opinion
We have audited the financial statements of the Michigan State Police Retirement System (System), a fiduciary component unit of the State of Michigan, as of and for the fiscal year ended September 30, 2023 and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Michigan State Police Retirement System as of September 30, 2023 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.

Basis for Opinion
We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements
Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America and for 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.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for the twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and, therefore, is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit 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 System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

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 changes in net OPEB liability, schedules of contributions, schedules of investment returns, and related note, as listed in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other

knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information
Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The supporting schedules, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supporting schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information
Management is responsible for the other information included in the annual report. The other information comprises the introductory, investment, actuarial, and statistical sections and acknowledgments, as listed in the table of contents, but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*
In accordance with *Government Auditing Standards*, we will also issue a report dated February 7, 2024 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Doug Ringler

Doug Ringler
Auditor General
February 7, 2024

Our discussion and analysis of the Michigan State Police Retirement System's (System) financial performance provides an overview of the System's financial activities for the fiscal year ended September 30, 2023. Please read it in conjunction with the transmittal letter in the Introductory Section on page 4 and the basic financial statements, which follow this discussion.

FINANCIAL HIGHLIGHTS

- System assets exceeded liabilities at the close of fiscal year 2023 by $2.3 billion (reported as *Net Position Restricted for Pension Benefits and OPEB*). Fiduciary net position is restricted to meet future benefit payments.
- Additions for the year were $418.8 million, which are comprised primarily of contributions of $249.2 million and investment increases of $168.9 million.
- Deductions increased over the prior year from $195.2 million to $203.5 million or 4.3%. This is the result of increased pension and health care benefit payments.

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

This Annual Comprehensive Financial Report (ACFR) consists of two financial statements; *The Statement of Pension Plan and Other Postemployment Benefit Plan Fiduciary Net Position* (page 20) and *The Statement of Changes in Pension Plan and Other Postemployment Benefit Plan Fiduciary Net Position* (page 21). These financial statements report information about the System, as a whole, and about its financial condition that should help answer the question: Is the System, 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 and Other Postemployment Benefit Plan Fiduciary Net Position presents all of the System'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 System's financial position is improving or deteriorating. *The Statement of Changes in Pension Plan and Other Postemployment Benefit Plan Fiduciary Net Position* presents how the System'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 47), the Schedule of Changes in Net OPEB Liability (page 48), and Schedules of Contributions (page 49) to determine whether the System is becoming financially stronger or weaker.

FINANCIAL ANALYSIS

System total assets as of September 30, 2023, were $2.4 billion and were mostly comprised of accounts receivables, investments, and securities lending collateral. Total assets increased $0.2 billion or 10.2% between fiscal years 2022 and 2023, due primarily to increase in investments.

Total liabilities as of September 30, 2023, were $79.2 million and were comprised of accounts payable, other accrued liabilities, and obligations under securities lending. Total liabilities increased $2.6 million or 3.4% between fiscal years 2022 and 2023, primarily due to increased obligations under securities lending.

System assets exceeded its liabilities at the close of fiscal year 2023 by $2.3 billion. Total fiduciary net position restricted for pension and OPEB increased $0.2 billion or 10.4% between fiscal years 2022 and 2023, due to an increase in investments.

PLAN FIDUCIARY NET POSITION
(in thousands)

	2023	2022	Increase (Decrease)
Assets			
Equity in common cash	$ 25,318	$ 22,646	11.8 %
Receivables	29,495	27,522	7.2
Investments	2,233,540	2,023,689	10.4
Securities lending collateral	75,785	72,366	4.7
Total assets	2,364,139	2,146,224	10.2
Liabilities			
Accounts payable and other accrued liabilities	3,336	4,122	(19.1)
Obligations under securities lending	75,785	72,366	4.7
Other accrued liabilites long term	29	35	(16.5)
Total liabilities	79,151	76,522	3.4
Net Position Restricted for Pension Benefits and OPEB	$ 2,284,988	$ 2,069,701	10.4 %

ADDITIONS TO PLAN FIDUCIARY NET POSITION

The reserves needed to finance pension and other postemployment benefits are accumulated through the collection of employer and employee contributions and through earnings on investments. Contributions and net investment income for fiscal year 2023 totaled approximately $418.1 million.

Total additions for fiscal year 2023 increased approximately $369.4 million or 746.5% from those of fiscal year 2022 due primarily to an increase in employer contributions and investment income. Total contributions increased between fiscal years 2022 and 2023 by $98.9 million or 65.8%, while net investment income increased $269.9 million or 267.4%. The Investment Section of this report reviews the results of investment activity for fiscal year 2023.

DEDUCTIONS FROM PLAN FIDUCIARY NET POSITION

The expenses of the System include the payment of pension benefits to members and beneficiaries; payment for health, dental and vision benefits, refunds of contributions; and the cost of administering the System. Total deductions for fiscal year 2023 were $203.5 million, an increase of 4.3% over fiscal year 2022 deductions.

The health, dental and vision care expenses during the year increased by $3.0 million or 8.0%, from $37.6 million to $40.6 million. The payment of pension benefits increased by $5.8 million or 3.7% between fiscal years 2022 and 2023. In fiscal year 2023, the increase in pension benefit expenses resulted from an increase of 37 retirees and an increase in benefit payments to retirees. Administrative and other expenses decreased by $86.8 thousand or 5.1% between fiscal years 2022 and 2023, primarily due to a decrease in health administrative fees. Refunds of contributions decreased by $243.4 thousand or 58.0% between fiscal years 2022 and 2023.

CHANGES IN PLAN FIDUCIARY NET POSITION
(in thousands)

	2023	2022	Increase (Decrease)
Additions			
Member contributions	$ 4,637	$ 4,383	5.8 %
Employer contributions	238,623	140,129	70.3
Other governmental contributions	5,898	5,733	2.9
Net investment income (loss)	168,944	(100,947)	267.4
Other non-operating revenue	675	-	N/A
Miscellaneous income	57	178	(67.8)
Total additions	418,834	49,476	746.5
Deductions			
Pension benefits	161,157	155,375	3.7
Health care benefits	40,603	37,603	8.0
Refunds of contributions	176	419	(58.0)
Uncollectible accounts	-	96	(100.0)
Administrative and other expenses	1,611	1,698	(5.1)
Total deductions	203,548	195,192	4.3
Net Increase (Decrease) in Net Position	215,286	(145,716)	247.7
Net Position Restricted for Pension Benefits and OPEB:			
Beginning of Year	2,069,701	2,215,417	(6.6)
End of Year	$ 2,284,988	$ 2,069,701	10.4 %

RETIREMENT SYSTEM AS A WHOLE

The System's overall Fiduciary Net Position experienced an increase in fiscal year 2023. The System's rate of return for the Pension Plan's investments increased an overall 13.1% from a (4.8)% return in fiscal year 2022 to a 8.3% return during fiscal year 2023. The System's rate of return for the OPEB Plan's investments increased an overall 13.0% from a (4.8)% return in fiscal year 2022 to a 8.2% return during fiscal year 2023. Management believes that the System remains financially sound and positioned to meet its ongoing benefit obligations due, in part, to a prudent investment program, cost controls, and strategic planning.

CONTACTING SYSTEM FINANCIAL MANAGEMENT

This financial report is designed to provide the Retirement Board, our membership, taxpayers, investors, and creditors with a general overview of the System's finances and to demonstrate the System'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 by phone at 1-800-381-5111, or visit the website at https://www.michigan.gov/ors/contact-ors.

STATEMENT OF PENSION PLAN AND OTHER POSTEMPLOYMENT BENEFIT PLAN FIDUCIARY NET POSITION

As of September 30, 2023
(in thousands)

	Pension Plan	OPEB Plan	Total
Assets:			
Equity in common cash	$ 9,126	$ 16,192	$ 25,318
Receivables:			
Amounts due from members	335	-	335
Amounts due from employers	10,493	5,361	15,854
Amounts due from federal agencies	-	1,280	1,280
Amounts due from other	-	1,764	1,764
Amounts due from employer - long term	6,600	3,452	10,052
Amounts due from federal agencies - long term	-	192	192
Interest and dividends	15	3	19
Total receivables	17,443	12,052	29,495
Investments:			
Short term investment pools	72,712	4,132	76,844
Fixed income pools	164,495	35,744	200,239
Domestic equity pools	355,764	77,283	433,047
Real estate and infrastructure pools	187,513	40,730	228,243
Private equity pools	434,369	94,479	528,848
International equity pools	239,494	52,000	291,494
Absolute return pools	192,121	41,750	233,872
Real return and opportunistic pools	197,966	42,986	240,952
Total investments	1,844,435	389,106	2,233,540
Securities lending collateral	62,301	13,485	75,786
Total assets	1,933,305	430,834	2,364,139
Liabilities:			
Accounts payable and other accrued liabilities	113	3,224	3,337
Obligations under securities lending	62,301	13,485	75,786
Other accrued liabilites long term	-	29	29
Total liabilities	62,413	16,737	79,151
Net Position Restricted for Pension Benefits and OPEB:	$ 1,870,891	$ 414,097	$ 2,284,988

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

STATEMENT OF CHANGES IN PENSION PLAN AND OTHER POSTEMPLOYMENT BENEFIT PLAN FIDUCIARY NET POSITION

For Fiscal Year Ended September 30, 2023
(in thousands)

	Pension Plan	OPEB Plan	Total
Additions:			
Contributions:			
Member contributions	$ 4,637	$ -	$ 4,637
Employer contributions	192,645	45,978	238,623
Other governmental contributions	-	5,898	5,898
Total contributions	197,282	51,876	249,158
Investment income (loss):			
Net increase (decrease) in fair value of investments	109,377	23,516	132,893
Interest, dividends, and other	37,411	8,340	45,751
Investment expenses:			
Other investment expenses	(8,198)	(1,771)	(9,969)
Securities lending activities:			
Securities lending income	3,148	666	3,814
Securities lending expenses	(2,927)	(618)	(3,544)
Net investment income (loss)	138,811	30,133	168,945
Non-operating revenue	-	675	675
Miscellaneous income	-	57	57
Total additions	336,094	82,741	418,835
Deductions:			
Benefits paid to plan members and beneficiaries:			
Retirement benefits	161,157	-	161,157
Health benefits	-	37,642	37,642
Dental/vision benefits	-	2,961	2,961
Refunds of contributions	176	-	176
Administrative and other expenses	756	855	1,611
Total deductions	162,090	41,458	203,548
Net Increase (Decrease) in Net Position	174,004	41,283	215,287
Net Position Restricted for Pension Benefits and OPEB:			
Beginning of Year	1,696,887	372,814	2,069,701
End of Year	$ 1,870,891	$ 414,097	$ 2,284,988

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

NOTE 1 – PLAN DESCRIPTION

ORGANIZATION

The Michigan State Police Retirement System (System) is a single employer, state-wide, defined benefit public employee retirement plan and a fiduciary component unit of the State of Michigan (State), created under Public Act 251 of 1935, recodified and currently operating under Public Act 182 of 1986. Section 7 of this act establishes the board's authority to promulgate or amend the provisions of the System. The board consists of nine members. Four members are appointed by the governor and consist of one officer having rank of sergeant or below, one officer having rank of lieutenant or above, one retirant, and one member of the general public to meet requirements within the act. The System's pension plan was established by the State to provide retirement, survivor, and disability benefits to Michigan State Police. In addition, the System's OPEB plan provides retirees hired prior to June 10, 2012 with the option of receiving health, dental, and vision coverage under the State Police Retirement Act. The System is a qualified pension trust fund under section 401(a) of the Internal Revenue Code.

A hybrid defined benefit and defined contribution plan was introduced for troopers and sergeants who became a member of the System on or after June 10, 2012. This plan is called the Pension Plus plan for Michigan State Police.

The System is a fiduciary component unit of the State of Michigan and its financial statements are included as a pension and other employee benefit trust fund in the State of Michigan Annual Comprehensive Financial Report.

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

MEMBERSHIP

At September 30, 2023, the System's pension plan membership consisted of the following:

Inactive plan members or their beneficiaries currently receiving benefits:	
Regular benefits	2,643
Survivor benefits	559
Disability benefits	204
Total	3,406
Inactive plan members entitled to but not yet receiving benefits:	17
Active plan members:	
Vested	569
Non-vested	1,084
Total	1,653
DROP program participants	304
Total plan members	5,380

Enrollment in the OPEB plan is voluntary. The number of participants is as follows:

Health, Dental and Vision Plan		
Eligible participants:		
Retirees and survivors		3,147
Inactive vested and DROP members		321
Active members[1]		1,653
Participants receiving benefits:		
Health		2,997
Dental		3,011
Vision		3,009
Expenses for the year (in thousands)	$	41,458
Employer payroll contribution rates	31.76 % - 31.77%	

[1] Active member count includes Personal Healthcare Fund members eligible for the $2,000 lump sum at termination benefit.

BENEFIT PROVISIONS - PENSION

Introduction

Benefit provisions of the defined benefit plan are established by State statute, which may be amended. Public Act 182 of 1986, Michigan State Police Retirement Act, as amended, establishes eligibility and benefit provisions for the defined benefit pension plan and the Pension Plus plan. Retirement benefits for defined benefit plan members are determined by final average compensation and members are eligible to receive a monthly benefit when they meet certain age and service requirements. The pension benefit for Pension Plus plan members is determined by final average compensation and years of service and members are eligible to receive a monthly benefit when they meet certain age and service requirements. In addition, the Pension Plus members' savings component includes the employee contributions into any combination of a member's 401(k), 457, or Roth 401(k) accounts, and an employer match into their 401(k) account. The System also provides duty disability, nonduty disability, and survivor benefits.

A member who leaves Michigan State Police employment may request a refund of his or her member pension contribution account. Effective in 2012, the System is contributory except for command officers. A refund cancels a former member's rights to a future pension and there is no provision for repaying the refund of contributions to restore the service represented by the refund.

Pension Reform 2012

The State Troopers' union and the State of Michigan negotiated a new retirement plan for new State Troopers and Sergeants. As a result, a State Trooper who became a member of the System on or after June 10, 2012, is a Pension Plus member. The Pension Plus plan pairs a guaranteed retirement income (Defined Benefit pension) with a flexible and transferable retirement investment (Defined Contribution) account. The Pension Plus plan was codified in the State Police Retirement act with the passage of Public Act 674 of 2018.

Regular Retirement

A pension is available to a defined benefit plan member after 25 years of credited service (employment). The pension equals 60% of a member's final average compensation and is payable monthly over the lifetime of a member. Final average compensation is the average annual salary for a member's last two years of service with the Department of State Police.

For a Pension Plus member, who became a member of the System on or after June 10, 2012, a pension is available at age 55 with 25 years of service or age 60 with 10 or more years of service. The pension equals 2% of a five-year final average compensation (excluding overtime) multiplied by the total number of years of credited service, not to exceed 25 years. After 25 years of credited service, the pension multiplier declines by 0.4% each year until reaching 0% at 30 years of service. The reduced pension multiplier applies only to years 26 through 30, not the first 25 years. Pension benefits are paid over the lifetime of a member.

Deferred Retirement

A defined benefit plan member with 10 or more years of credited service who terminates employment but has not reached the age of 50 is a deferred member and is entitled to receive a monthly allowance upon reaching age 50, provided the member's accumulated contributions have not been refunded. The deferred pension is equal to 2% of the final average compensation times the years and partial years of service credit.

A Pension Plus plan member who became a member of the System on or after June 10, 2012, with 10 or more years of credited service who terminates employment but has not reached the age of 60 is a deferred member and is entitled to receive a monthly allowance upon reaching age 60, provided the member's accumulated contributions have not been refunded.

Nonduty Disability Benefit

A member with 10 or more years of credited service who becomes totally and permanently disabled not due to performing duties as an employee of the Michigan State Police may be eligible for a nonduty disability pension. The nonduty disability pension for a defined benefit plan member is 2.4% of the final average compensation times years and partial years of credited service (but not more than 25 years).

Duty Disability Benefit

A member who becomes totally and permanently disabled from performing duties as a Michigan State Police Officer is eligible for a duty disability pension. The amount, for a defined benefit plan member is equal to 60% of the final average compensation.

Survivor Benefit

Upon the nonduty death of a defined benefit plan member who completed at least 10 years of service, the surviving spouse receives a benefit based on 2.4% of the final average compensation for each year and partial year of credited service. If there is no spouse, surviving children are entitled to equally share the benefit until age 18. If death occurs in the line of duty (a duty death), the surviving spouse receives a benefit of 60% of the final average compensation. Children receive $100 each month until age 18. A $1,500 funeral expense is also authorized by State statute payable by the System.

Postretirement Adjustments

Effective October 1, 1996, the monthly pension was increased 10% if certain requirements were met. This was a one-time increase.

Each October 1, the benefits of all pension recipients increase 2% (not to exceed $500). This non-compounding increase is paid to persons who have been retired 12 months.

A Pension Plus member who became a member of the System on or after June 10, 2012, does not receive an annual post-retirement increase.

Effective fiscal year 2016, ORS issued a supplemental payment to eligible recipients. This supplemental payment continues to be issued to eligible recipients each fiscal year, subject to an annual budget appropriation.

Member Contributions

Command Officers currently participate on a noncontributory basis. Effective October 1, 2012, troopers and sergeants hired before June 10, 2012 began contributing 1% of their compensation. Effective October 1, 2013 troopers and sergeants hired before June 10, 2012 began contributing 2% of their compensation. Troopers hired on or after June 10, 2012 contribute 4% of their compensation as described below. Under certain circumstances, defined benefit plan members may contribute to the System for the purchase of creditable service, such as military, maternity or paternity leave, Peace Corps or VISTA service. Pension Plus plan members are only eligible to receive active duty military service. If a member terminates employment before a retirement benefit is payable, the member's contribution and interest on deposit are available to be refunded. If the member dies before being vested, the member's contribution and interest are refunded to the designated beneficiaries.

Pension Plus members who became members of the System on or after June 10, 2012, contribute 4% of their gross wages for the pension component of their plan. An additional, optional, 4% contribution of their gross wages is withheld for the savings component of their plan. The first 2% of employee contributions are directed to the member's Personal Healthcare Fund and receive an employer match of 100% up to a maximum of 2%. The next 2% employee contributions are identified as retirement savings and receive an employer match of 50% up to a maximum of 1%. These members will also receive a credit into a health reimbursement account (HRA) at termination if they have at least 10 years of service at termination. The credit will be up to $2,000 for participants.

Employer Contributions

The statute requires that the employer contribute to finance the benefits of plan members. These employer contributions are determined annually by the System's actuary and are based upon level-percent-of-payroll funding principles so that the contribution rates do not have to increase over time.

For a Pension Plus member who became a member of the System on or after June 10, 2012, there is an employer match for retirement of 100% of the first 2% of employee deferrals for retiree healthcare up to a maximum employer contribution of 2%. In addition, employers match 50% of the next 2% of employee deferrals, up to a maximum employer contribution of 1%.

Deferred Retirement Option Plan

Public Act 83 of 2004 amended the State Police Retirement Act to create a Deferred Retirement Option Plan (DROP) for members with 25 years of service. This benefit program allows state police who are eligible to retire to defer their retirement and keep working for up to six years. The participant's pension amount is calculated on the day before the DROP period starts, and a percentage of the equivalent monthly pension is credited to an interest-bearing account in the participant's name. The DROP balance will be available at the time their DROP participation ends. At this time, only Defined Benefit members are eligible for DROP. The balance at the end of the fiscal year 2023 for the DROP accounts was $75.8 million.

Banked Leave Time

Public Act 50 of 2004 amended the State Police Retirement Act to include Banked Leave Time (BLT) for members. BLT is an extension of the State's current annual leave program, which banks a predetermined number of hours per pay period. However, the BLT program will not have an effect on a member's Final Average Compensation calculation.

BENEFIT PROVISIONS – OTHER POSTEMPLOYMENT

Introduction

Benefit provisions of the postemployment benefit plan are established by State statute, which may be amended. Public Act 182 of 1986, as amended, establishes eligibility and benefit provisions for the OPEB plan. Defined benefit plan members are eligible to receive health, prescription drug, dental, and vision coverage on the first day they start receiving pension benefits (this benefit does not apply to Pension Plus members). There are no ad hoc or automatic increases. The State Police Retirement Act requires joint authorization by DTMB and the Civil Service Commission to make changes to retiree medical benefit plans.

Under the Michigan State Police Retirement Act, all defined benefit retirees have the option of continuing health, dental, and vision coverage. Retirees with this coverage contribute 5%, 10%, and 10% of the monthly premium amount for the health, dental, and vision coverage, respectively. The State funds 95% of the health and 90% of the dental and vision insurance. The employer payroll contribution rate to provide these benefits was 31.77% for non-Pension Plus members and 31.76% for Pension Plus members for fiscal year 2023.

The State Health Plan PPO is by far the most often selected health care option. This plan includes comprehensive coverage traditionally referred to as basic and major medical, with full coverage for most services received in-network after an annual deductible is met. Preventive services are not subject to a deductible and are fully covered if received in-network subject to an annual maximum. Both retail and mail order prescription drug coverage are included. Retiree health, dental, and vision plan benefits have generally matched those in place for active employees.

Personal Healthcare Fund

A Pension Plus member who became a member of the System on or after June 10, 2012 will be enrolled into a Personal Healthcare Fund (PHF), which is a separate account within the State of Michigan 401(k) and 457 Plans. The first optional 2% of their contributions plus their employer match are directed into the PHF. These members will also receive a credit into a health reimbursement account (HRA) at termination if they have at least 10 years of service at termination. The credit will be up to $2,000 for participants.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

BASIS OF ACCOUNTING AND PRESENTATION

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

Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans,* as amended, and Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans,* as amended, which were adopted during the year ended September 30, 2014 and 2017, addresses accounting and financial reporting requirements for pension and other postemployment benefit plans, respectively. The requirements for both GASB Statement No. 67 and 74 require changes in presentation of the financial statements, notes to the financial statements, and required supplementary information. Significant changes include an actuarial calculation of the total and net, pension and other postemployment benefit liabilities. It also includes comprehensive note disclosures regarding the pension and other postemployment benefit liability, the sensitivity of the net pension and other postemployment benefit liability to the discount rate, and increased investment activity disclosures. The implementation of GASB Statement No. 67 and 74 did not significantly impact the accounting for accounts receivable and investment balances. The total pension and other postemployment benefit liability, determined in accordance with GASB Statement No. 67 and 74, is presented in Note 4 on page 30, Note 5 on page 32, and in the Required Supplementary Information beginning on page 47.

As of September 30, 2016, the System applied GASB Statement No. 72, *Fair Value Measurement and Application,* as amended. 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

Public Act 182 of 1986, as amended, created the Reserve for Employee Contributions, Reserve for Employer Contributions, Reserve for Retired Benefit Payments, Reserve for Undistributed Investment Income, and Reserve for Health (OPEB) Related Benefits. The financial transactions of the System are recorded in these reserves as required by Public Act 182 of 1986, as amended. The reserves are described below, and details are provided in the supporting schedules.

Reserve for Employee Contributions

Command Officers currently participate on a noncontributory basis. Effective October 1, 2012, troopers and sergeants hired before June 10, 2012 began contributing 1% of their compensation, and the contribution increased to 2%, effective October 1, 2013. This reserve represents active member contributions and interest less amounts transferred to the Reserve for Retired Benefit Payments for regular and disability retirement, amounts refunded to terminated members, and unclaimed amounts transferred to the income reserve. At September 30, 2023, the balance in this reserve was $12.3 million.

Reserve for Pension Plus Employee Contributions

Troopers hired on or after June 10, 2012 contribute 4.0% of their compensation. This reserve represents active member contributions and interest less amounts transferred to the Pension Plus Reserve for Retired Benefit Payments for regular and disability retirement, amounts refunded to terminated members. At September 30, 2023, the balance in this reserve was $22.5 million.

Reserve for Employer Contributions

Defined Benefit employer contributions are credited to this reserve. Interest from the Reserve for Undistributed Investment Income is credited annually. Amounts are transferred annually from this reserve to the Reserve for Retired Benefit Payments to fund that reserve. At September 30, 2023, the balance in this reserve was ($198.3) million.

Reserve for Pension Plus Employer Contributions

Pension Plus employer contributions are credited to this reserve. Interest from the Reserve for Undistributed Investment Income is credited annually. Amounts are transferred annually from this reserve to the Pension Plus Reserve for Retired Benefit Payments to fund that reserve. At September 30, 2023, the balance in this reserve was $55.2 million.

Reserve for Retired Benefit Payments

This represents the reserve for payment of future retirement benefits to current Defined Benefit retirees. At retirement, a member’s accumulated contributions plus interest are transferred into this reserve from the Reserve for Employee Contributions. Monthly benefits, which are paid to the retirees, reduce this reserve. At the end of each fiscal year, an amount is transferred from the Reserve for Employer Contributions to bring the reserve into balance with the actuarial present value of retirement allowances. Also included are reserves for casualty experience (injury or death of a member or vested former member). The initial actuarial casualty valuation determined the full funding reserve requirements to be allocated from assets of the reserve. All retiree casualty payments are made from this reserve. At September 30, 2023, the balance in this reserve was $1.8 billion.

Reserve for Pension Plus Retired Benefit Payments

This represents the reserve for payment of future retirement benefits to current Pension Plus retirees. At retirement, a member’s accumulated contributions plus interest are transferred into this reserve from the Reserve for Pension Plus Employee Contributions. Monthly benefits, which are paid to the retirees, reduce this reserve. At the end of each fiscal year, an amount is transferred from the Reserve for Pension Plus Employer Contributions to bring the reserve into balance with the actuarial present value of retirement allowances. Also included are reserves for casualty experience (injury or death of a member, or vested former member). All Pension Plus retiree casualty payments are made from this reserve. At September 30, 2023, the balance in this reserve was $615.0 thousand.

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, 2023, the balance of this reserve was $145.9 million.

Reserve for Health (OPEB) Related Benefits

This reserve is credited with member and employer contributions for retirees’ health (including prescription coverage), dental, and vision benefits. Starting in fiscal year 2012, the employer contribution is based on a prefunded basis and represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liability (or funding excess) over a period not to exceed thirty years. In addition, in fiscal year 2023, this reserve includes revenue from the federal government for the Employee Group Waiver Plan (EGWP). Premiums for health, dental and vision benefits are paid from this reserve. At September 30, 2023, the balance in this reserve was $414.1 million.

REPORTING ENTITY

The System is a fiduciary component unit of the State of Michigan. As such, the System's financial statements are included as a pension trust fund in the State of Michigan Annual Comprehensive Financial Report. The System and its Board are not financially accountable for any other entities or other organizations. Accordingly, the System 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 the System 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. Short-term, highly liquid debt instruments including commercial paper are reported at amortized cost. Additional disclosures describing investments are provided in Note 6.

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 alternative 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 THE SYSTEM

Each year a restricted general fund appropriation is requested to fund the on-going business operations of the System. These administrative costs are ultimately funded by the System through the regular transfer of funds from the System 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 the System are financed by undistributed investment income of the System.

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 and Other Postemployment Benefit Plan Fiduciary Net Position.* Such assets are depreciated on a straight-line basis over 10 years. The System does not have equipment that falls within these parameters.

RELATED PARTY TRANSACTIONS

Leases and Services

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

	2023 (in thousands)
Building Rentals	$ 13
Technological Support	194
Attorney General	36
Investment Services	400
Personnel Services	450

Cash

At September 30, 2023, the System had $25.3 million 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 from these activities amounted to $675.9 thousand for the year ended September 30, 2023.

NOTE 3 – CONTRIBUTIONS

The State is required by Public Act 182 of 1986, as amended to contribute amounts necessary to finance the coverage of member and retiree benefits. Command officers currently participate in the System on a noncontributory basis. Effective October 1, 2012, troopers and sergeants hired before June 10, 2012, began contributing 1% of their compensation, and the contribution increased to 2%, effective October 1, 2013. Troopers hired on or after June 10, 2012 contribute 4% of their compensation. Under certain circumstances, members may contribute to the System for the purchase of creditable service, such as military service or maternity leave. The State is required by Public Act 182 of 1986, as amended, to contribute amounts necessary to finance the benefits of its employee and retiree OPEB. Contribution provisions are specified by State statute and may be amended only by action of the State Legislature.

Employer contributions to the System 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 and OPEB contributions made in the fiscal year ending September 30, 2023, were determined as of the September 30, 2020 actuarial valuations. The pension and OPEB unfunded (overfunded) actuarial accrued liabilities (UAAL) as of September 30, 2020 are amortized over a 16 year period beginning October 1, 2022 and ending September 30, 2038. The schedules below summarize pension and OPEB contribution rates in effect for fiscal year 2023.

Pension Contribution Rates

Benefit Structure	Member	Employer
Non Command Officers	2.00 %	70.30 %
Command Officers	-	71.88
Pension Plus	4.00	57.96

OPEB Contribution Rates

Benefit Structure	Member	Employer
Premium Subsidy	- %	31.76 - 31.77 %
Personal Healthcare Fund	-	31.76 - 31.77

The System is required to reconcile with actuarial requirements annually. Any funding deficiency for pension and/or OPEB benefits is smoothed over five years. One fifth (20%) of the funding deficiency is included in each of the subsequent years' contribution, and is not recognized as a receivable in the accounting records.

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

(in thousands)

Total Pension Liability	$ 2,729,411
Plan Fiduciary Net Position	1,870,891
Net Pension Liability	$ 858,520
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	68.55%
Net Pension Liability as a Percentage of Covered Payroll	589.51%
Total Covered Payroll	$ 145,633

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 investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of September 30, 2023, are summarized in the following table:

Asset Allocation

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Domestic Equity Pools	25.0 %	5.8 %
Private Equity Pools	16.0	9.6
International Equity Pools	15.0	6.8
Fixed Income Pools	13.0	1.3
Real Estate and Infrastructure Pools	10.0	6.4
Absolute Return Pools	9.0	4.8
Real Rate and Opportunistic Pools	10.0	7.3
Short-Term Investment Pools	2.0	0.3
TOTAL	**100.0 %**	

* Long-term rates of return are net of administrative expenses and 2.7% inflation.

RATE OF RETURN

For the fiscal year ended September 30, 2023, the annual money-weighted rate of return on pension plan investment, net of pension plan investment expense, was 8.24%. 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 6.15% was used to measure the total pension liability. The DTMB Director and the Board modified the dedicated gains policy to limit the reduction in the discount rate to no lower than 6.00%. This single discount rate was based on the expected rate of return on pension plan investments of 6.15%. 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, in thousands, calculated using a single discount rate of 6.15% as well as what the plan's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher:

1% Decrease	Current Discount Rate Assumption	1% Increase
5.15%	6.15%	7.15%
$1,183,093	$858,520	$591,023

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, 2023, is based on the results of an actuarial valuation date of September 30, 2022, 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. 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 Schedules of Contributions in Required Supplementary Information present 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.

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 and notes 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, 2022
Actuarial Cost Method	Entry Age, Normal
Asset Valuation Method	Fair Value
Actuarial Assumptions:	
Wage Inflation Rate	2.75%
Investment Rate of Return	
- Non-Hybrid Plans	6.15%, net of investment expenses
- Hybrid Plan	6.15%, net of investment expenses
Projected Salary Increases	3.25% - 82.75%, including wage inflation at 2.75%
Cost-of-Living Pension Adjustments[1]	2% annual non-compounded with maximum annual increase of $500 for those eligible
Mortality	
Retirees	PubS-2010 Male and Female Retiree Mortality Tables scaled by 89% for males and 99% for females and adjusted for mortality improvements using projection scale MP-2021 from 2010.
Active	PubS-2010 Male and Female Employee Mortality Tables scaled by 100% and adjusted for mortality improvements using projection scale MP-2021 from 2010.
Disabled Retirees	PubNS-2010 Male and Female Disabled Retiree Mortality Tables scaled by 100% and adjusted for mortality improvements using projection scale MP-2010 from 2010.
Notes	Assumption changes as a result of an experience study for the period 2017 through 2022 have been adopted by the System for use in the determination of the Total Pension Liability beginning with the September 30, 2023 valuation.

[1] Applies to individuals hired before June 10, 2012.

NOTE 5 – NET OPEB LIABILITY

MEASUREMENT OF THE NET OPEB LIABILITY

The net OPEB liability is to be measured as the total OPEB liability, less the amount of the OPEB 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 OPEB Liability

(in thousands)

Total OPEB Liability	$	748,340
Plan Fiduciary Net Position		414,097
Net OPEB Liability	$	334,243
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability		55.34%
Net OPEB Liability as a Percentage of Covered Payroll		229.51%
Total Covered Payroll	$	145,633

LONG-TERM EXPECTED RETURN ON PLAN ASSETS
The long-term expected rate of return on OPEB 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 OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the OPEB plan's target asset allocation as of September 30, 2023, are summarized in the following table:

Asset Allocation

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Domestic Equity Pools	25.0 %	5.8 %
Private Equity Pools	16.0	9.6
International Equity Pools	15.0	6.8
Fixed Income Pools	13.0	1.3
Real Estate and Infrastructure Pools	10.0	6.4
Absolute Return Pools	9.0	4.8
Real Rate and Opportunistic Pools	10.0	7.3
Short-Term Investment Pools	2.0	0.3
TOTAL	**100.0 %**	

* Long-term rates of return are net of administrative expenses and 2.7% inflation.

RATE OF RETURN
For the fiscal year ended September 30, 2023, the annual money-weighted rate of return on OPEB plan investment, net of OPEB plan investment expense, was 11.48%. 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 6.25% was used to measure the total OPEB liability. The DTMB Director and the Board modified the dedicated gains policy to limit the reduction in the discount rate to no lower than 6.00%. This single discount rate was based on the expected rate of return on OPEB plan investments of 6.25%. The projection of cash flows used to determine this single discount rate was based upon 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 OPEB plan's fiduciary net position was projected to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

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

As required by GASB Statement No. 74, we have determined the sensitivity of the net OPEB liability to changes in the single discount rate. The following table presents the plan's net OPEB liability, in thousands, calculated using a single discount rate of 6.25%, as well as what the plan's net OPEB 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 5.25%	Current Single Discount Rate Assumption 6.25%	1% Increase 7.25%
$415,436	$334,243	$265,957

SENSITIVITY OF THE NET OPEB LIABILITY TO HEALTHCARE COST TREND RATE

As required by GASB Statement No. 74, we have determined the sensitivity of the net OPEB liability to changes in the healthcare cost trend rates. The following table presents the plan's net OPEB liability, in thousands, calculated using assumed trend rates, as well as what the plan's net OPEB liability would be if it were calculated using a trend rate that is 1-percentage-point lower or 1-percentage-point higher:

1% Decrease	Current Healthcare Cost Trend Rate Assumption	1% Increase
$263,048	$334,243	$416,340

TIMING OF THE VALUATION

An actuarial valuation to determine the total OPEB 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 OPEB liability is required to be rolled forward from the actuarial valuation date to the OPEB plan's fiscal year end.

The total OPEB liability as of September 30, 2023, is based on the results of an actuarial valuation date of September 30, 2022, and rolled-forward using generally accepted actuarial procedures.

ACTUARIAL VALUATIONS AND ASSUMPTIONS

Actuarial valuations for the OPEB plans 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, mortality and the healthcare cost trend. 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 Schedules of Contributions in Required Supplementary Information present 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. 74 for OPEB.

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 OPEB Liability schedules and notes 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, 2022
Actuarial Cost Method	Entry Age, Normal
Asset Valuation Method	Fair Value
Actuarial Assumptions:	
Wage Inflation Rate	2.75%
Investment Rate of Return	6.25%, net of investment expenses
Projected Salary Increases	3.25% - 82.75%, including wage inflation at 2.75%
Healthcare Cost Trend Rate[1]	Pre-65: 7.50% Year 1 graded to 3.50% Year 15 Post-65: 6.25% Year 1 graded to 3.50% Year 15
Mortality	
Retirees	PubS-2010 Male and Female Retiree Mortality Tables scaled by 89% for males and 99% for females and adjusted for mortality improvements using projection scale MP-2021 from 2010.
Active	PubS-2010 Male and Female Employee Mortality Tables scaled by 100% and adjusted for mortality improvements using projection scale MP-2021 from 2010.
Disabled Retirees	PubNS-2010 Male and Female Disabled Retiree Mortality Tables scaled by 100% and adjusted for mortality improvements using projection scale MP-2010 from 2010.
Other Assumptions OPEB only:[2]	
Opt Out Assumption	6% of eligible participants are assumed to opt out of the retiree health plan.
Survivor Coverage	100% of male and female retirees are assumed to have coverage continuing after the retiree’s death when 2-person coverage was assumed to be elected.
Coverage Election at Retirement	85% of male and 60% of female future retirees who elect coverage are assumed to elect coverage for 1 or more dependents.
Notes:	Assumption changes as a result of an experience study for the period 2017 through 2022 have been adopted by the System for use in the determination of the Total Pension Liability beginning with the September 30, 2023 valuation.

[1] Applies to Medical and Rx payments.

[2] Applies to individuals hired before June 10, 2012.

NOTE 6 – 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 System 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 INSTRUMENTS

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

Derivative instruments are used in managing the trust fund portfolios but uses do not include speculation or leverage of investments. State investment statutes limit total derivative instrument 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 instrument 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 instrument 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, options and forward contracts.

The derivative instrument fair values are reported on the *Statement of Pension Plan and Other Postemployment Benefit Plan Fiduciary Net Position* as of September 30, 2023, in their respective investment pool's fair value. Derivative instrument net increase and decrease are reported on the *Statement of Changes in Pension Plan and Other Postemployment Benefit Plan Fiduciary Net Position* for fiscal year ended September 30, 2023, 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 Instrument Investment Table as of September 30, 2023 (in millions):

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 Fixed Income and International Equity Investments	- %	$ 1.1	$ -	$ 0.1	$ -	$ -
Option Contracts Equity, Fixed Income and International Equity Investments	0.5	1,767.1	11.9	11.3	-	-
Swap Agreements Fixed Income and International Equity Investments	1.8	75.3	40.2	16.1	(3.1)	0.6
Total		$ 1,843.4	$ 52.1	$ 27.4	$ (3.1)	$ 0.6

To diversify the trust funds' portfolio, the Board will enter into international swap agreements with investment grade counterparties, which are tied to stock market indices in approximately forty-six foreign countries. Generally, the notional amount of equity swaps tied to foreign stock market indices is executed via a net total return USD index. The swap agreements provide that the System will pay quarterly or at maturity over the term of the swap agreements, interest indexed to Secured Overnight Financing Rate (SOFR) or the U.S. Federal Funds Rate, adjusted for an interest rate spread, on the notional amount stated in the agreements. International equity swap agreement maturity dates range from October 2023 to June 2024. 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 in the collateral portfolio. 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. U.S. Treasuries, cash, publicly traded fixed income investments and private market investments are held in the collateral portfolio to correspond with the notional amount of the swap agreements. 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 foreign exchange (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. U.S. Domestic SOFR-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 received fixed rate increase exposure to long-term interest rates; short swap positions that pay fixed rated, 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 instrument investments, the System held collateral of $1.6 million in cash deposits and $50.0 thousand in securities on behalf of counterparties. Collateral securities in the amount of $334.0 thousand were held on our behalf by counterparties.

The Board traded bond future contracts to manage duration, 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. Attractively priced equity options were used for the purpose of stock replacement in order to drive excess returns over the S&P 500, as well as to provide added exposure to strong equity markets while limiting principal at risk. Put options are used to protect against large negative moves in the 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. However, purchased options are often sold well before expiration in order to lock in profits at prices well below listed strike prices, and thereby generate consistent returns.

SECURITIES LENDING

The System, pursuant to a Securities Lending Authorization Agreement, has authorized State Street Bank and Trust Company ("State Street") to act as System's agent in lending System'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 the System 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 the System 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, the System 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, 2023, such investment pool had an average duration of 7 days and an average weighted final maturity of 95 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, 2023, the System had no credit risk exposure to borrowers. The fair value of collateral held and the fair value (USD) of securities on loan for the System as of September 30, 2023, was $75.8 million and $74.1 million respectively.

RISK

In accordance with GASB Statement No. 40, *Deposit and Investment Risk Disclosures,* as amended, 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 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 statistical 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 the System. Public Act 314 defines investment grade as investments in the top four major grades, rated by one of the NRSROs. At September 30, 2023, the System 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, 2023

Investment Type	Fair Value	S&P	Fair Value	Moody's
Short Term	$ 91,236	A-1	$ 90,200	P-1
	2,025	A-2	1,507	P-2
	-	NR	1,555	NR
Money Market	2,651	AAA	2,651	Aaa
Government Securities				
U.S. Agencies - Sponsored	12	AAA	21,675	Aaa
	21,664	AA	-	Aa
Fixed Income	2,750	AAA	7,938	Aaa
	5,463	AA	4,455	Aa
	9,888	A	12,498	A
	23,432	BBB	18,595	Baa
	6,746	BB	6,155	Ba
	3,288	B	4,853	B
	1,422	CCC	2,004	Caa
	1,026	CC	1,435	Ca
	-	C	252	C
	341	D	-	
	45,709	NR	41,881	NR
Fixed Income ETF	9,777	NR	9,777	NR
Mutual Fund	314	BB	-	Ba
	3,644	NR	3,957	NR
Securities Lending Collateral				
Short Term	6,385	A-1	8,014	P-1
Fixed Income	3,818	AA	17,087	Aa
	63,720	A	25,590	A
	1,909	NR	25,140	NR
Total	$ 307,221		$ 307,221	

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, 2023. As of September 30, 2023, 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, the System 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 a System's assets in the obligations of any one issuer. When calculating the amount of outstanding obligations, the System includes publicly issued and privately held debt.

At September 30, 2023, there were no investment in any single issuer that accounted for more than 5% of the System's assets. The System held one investment that exceeded the 5% cap in obligations of any one issuer. The System 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, 2023, the fair value of the System's short term investments was $95.9 million with the weighted average maturity of 45 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, 2023

	Fair Value	Effective Duration in Years
Government		
U. S. Treasury	$ 50,297	11.1
U. S. Agencies - Backed	8,255	4.3
U. S. Agencies - Sponsored	21,675	5.0
Corporate	113,801	2.6
International*		
U. S. Treasury	33,809	0.9
Total	$ 227,837	

Debt securities are exclusive of securities lending collateral.

* International contains Domestic Government and Corporate Debt Securities as a part of their derivative instrument 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.

The System 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 the System with additional limits of not more than 5% of the outstanding global securities of any one issuer and no more than 5% of the System'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, 2023, the total amount of foreign investment subject to foreign currency risk was $209.9 million, which amounted to 9.3% of total investments (exclusive of securities lending collateral) of the System.

Foreign Currency Risk

(in thousands)
As of September 30, 2023

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						
	Brazil	Real	$ -	$ 277	$ 860	$ -
	Canada	Dollar	482	272	3,372	45
	Mexico	Peso	23	133	1,071	12
	Peru	Sol	-	22	-	-
	Chile	Peso	-	-	43	-
PACIFIC						
	Australia	Dollar	278	38	1,797	-
	Hong Kong	Dollar	197	-	3,173	-
	India	Rupee	-	3	332	-
	Indonesia	Rupiah	59	148	110	-
	Japan	Yen	68	334	5,395	-
	Malaysia	Ringgit	-	148	59	-
	Taiwan	New Dollar	-	-	516	-
	China	Renminbi	130	-	382	-
	Singapore	Dollar	61	151	12	-
	South Korea	New Dollar	-	221	1,177	-
	Thailand	Baht	-	99	740	-
	Sri Lanka	Rupee	-	59	-	-
	New Zealand	Dollar	-	74	246	-
	China	Yuan	5	47	106	-
	China	Yuan Offshore	-	235	64	-
	Philippines	Peso	-	-	9	-
	United Arab Emirates	Dirham	3	-	-	-
EUROPE						
	Denmark	Krone	3	-	1,811	-
	European Union	Euro	4,062	723	12,229	13,917
	Hungary	Forint	-	-	56	-
	Norway	Krone	-	-	57	-
	Poland	Zloty	-	11	148	-
	United Kingdom	Pound Sterling	539	423	4,848	1,324
	Romania	Leu	-	10		-
	Sweden	Krona	350	46	2,999	-
	Switzerland	Franc	492	-	1,223	-
	Türkiye	Lira	-	-	114	-
	Czech Republic	Koruna	-	29	-	-
AFRICA						
	South Africa	Rand	3	23	93	-
	Liberia	Dollar	139	-	-	-
MIDDLE EAST						
	Israel	New Shekel	-	71	38	-
WORLD-WIDE						
	Various	Various	-	-	141,011	-
Total			$6,894	$3,595	$184,090	$15,297

FAIR VALUE MEASUREMENTS

The System 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 the System are recorded at fair value. GASB Statement No. 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 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, 2023. 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 on the following page.

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. The System's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability.

Investments by fair value level:	Balance at September 30, 2023	Fair Value Measurement Using (in thousands) 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	$ 236	$ 236	$ -	$ -
Equity				
Depository Receipts	2,959	2,959	-	-
Common Stocks	395,603	395,598	-	5
Preferred Stocks	187	187	-	-
Real Estate Investment Trusts	15,668	15,668	-	-
Swaps	3,363	-	3,363	-
Commingled Funds, ETF's and PTP's	110,852	110,864	(12)	-
Options	11,588	11,588	-	-
Convertible Bonds	12	-	12	-
Total Equity	540,232	536,864	3,363	5
Fixed Income				
Asset Backed	32,193	-	32,193	450
Corporate Bonds	36,093	-	35,643	213
Commercial mortgage-backed	33,831	-	33,618	-
Government Issues	88,401	82,154	6,247	-
Swaps	391	-	391	-
US Agency Issues	23,572	-	23,572	-
Commingled Funds, ETF's and PTP's	13,876	13,876	-	-
Options	54	-	54	-
Total Fixed Income	228,412	96,030	131,720	663
Total investments by fair value	$ 768,881	$ 633,131	$ 135,082	$ 668
Investments measured at the net asset value (NAV)				
Private Equity	$ 526,253			
Real Estate & Infrastructure	217,699			
Absolute Return	233,311			
Real Return & Opportunistic	240,327			
Other Limited Partnerships	146,930			
Total investments measured at the NAV	1,364,520			
Total investments measured at fair value	**$ 2,133,401**			

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 millions)

Total investments measured at the NAV	$	526.3
Unfunded commitments		186.5

These types of investment include investments in approximately 288 partnerships that invest in leveraged buyouts, venture capital, mezzanine debt, distressed debt, secondary funds and other investments. These types 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, 2023, 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, 2023, a buyer for these investments has not been identified.

Real Estate and Infrastructure (in millions)

Total investments measured at the NAV	$	217.7
Unfunded commitments		70.1

Real Estate and Infrastructure funds include approximately 114 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 millions)

Total investments measured at the NAV	$	233.3
Unfunded commitments		77.2

This type includes approximately 5 investments in hedge funds and hedge funds and approximately 57 investments in private credit strategies. These investments seek to diversify risk 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. Most of the investments are redeemable or have a final fund term that is 10 years or less.

Real Return and Opportunistic Portfolio (in millions)

Total investments measured at the NAV	$	240.3
Unfunded commitments		79.1

This type includes approximately 35 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 millions)

Total investments measured at the NAV	$	146.9
Unfunded commitments		6.0

The balance of plan assets reported at fair value include 19 investments:

- LPs that invest in fixed income investments such as: 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 the fund.
- 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 advanced notice, subject to the sole discretion of the general partner.
- LPs that invest in private equity, private credit/loans, and tangible real assets that cannot be redeemed by limited partners. Distributions from each fund will be received as the underlying investments of the funds are liquidated.

NOTE 7 – 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 the System does not anticipate any material loss as a result of the contingent liabilities.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY
(in thousands)

	Fiscal Year									
	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	$ 28,760	$ 24,631	$ 24,718	$ 25,867	$ 24,907	$ 24,094	$ 20,908	$ 19,774	$ 19,952	$ 21,142
Interest	158,226	160,628	155,431	152,466	150,682	149,156	147,193	143,436	140,575	134,317
Changes of benefit terms	-	-	-	-	-	-	-	-	-	-
Differences between expected and actual experience	38,965	6,994	25,246	18,204	17,082	7,959	18,289	8,440	(6,998)	-
Changes of assumptions	25,724	175,311	26,560	-	58,026	106,681	94,280	-	-	36,683
Benefit payments, including refunds of member contributions	(161,333)	(155,795)	(155,429)	(149,418)	(144,193)	(137,367)	(130,208)	(119,094)	(115,469)	(110,551)
Net Change in Total Pension Liability	90,341	211,769	76,526	47,119	106,504	150,523	150,462	52,556	38,060	81,591
Total Pension Liability - Beginning	2,639,070	2,427,301	2,350,775	2,303,656	2,197,152	2,046,629	1,896,167	1,843,611	1,805,551	1,723,960
Total Pension Liability - Ending (a)	$ 2,729,410	$ 2,639,070	$ 2,427,301	$ 2,350,775	$ 2,303,656	$ 2,197,152	$ 2,046,629	$ 1,896,167	$ 1,843,611	$ 1,805,551
Plan Fiduciary Net Position										
Contributions - Employer[1]	$ 192,645	$ 89,386	$ 69,152	$ 79,165	$ 78,510	$ 84,930	$ 74,814	$ 70,505	$ 70,351	$ 58,391
Contributions - Member	4,637	4,383	3,850	4,100	3,693	3,489	3,142	3,009	2,677	2,174
Net Investment Income	138,811	(82,877)	401,735	75,047	74,725	151,529	165,384	90,811	26,236	174,085
Benefit payments, including refunds of member contributions	(161,333)	(155,795)	(155,429)	(149,418)	(144,193)	(137,367)	(130,208)	(119,094)	(115,469)	(110,551)
Administrative Expenses	(756)	(726)	(677)	(633)	(725)	(749)	(666)	(575)	(561)	(575)
Other[2]	-	-	11,215	-	-	4	27	10	3	-
Net Change in Plan Fiduciary Net Position	174,004	(145,629)	329,846	8,262	12,010	101,835	112,492	44,666	(16,762)	123,524
Plan Fiduciary Net Position - Beginning	1,696,887	1,842,516	1,512,670	1,504,408	1,492,399	1,390,564	1,278,071	1,233,405	1,250,168	1,126,643
Plan Fiduciary Net Position - Ending (b)	$ 1,870,891	$ 1,696,887	$ 1,842,516	$ 1,512,670	$ 1,504,408	$ 1,492,399	$ 1,390,564	$ 1,278,071	$ 1,233,405	$ 1,250,168
Net Pension Liability - Ending (a) - (b)	$ 858,519	$ 942,182	$ 584,785	$ 838,104	$ 799,248	$ 704,753	$ 656,066	$ 618,096	$ 610,206	$ 555,384
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	68.55%	64.30%	75.91%	64.35%	65.31%	67.92%	67.94%	67.40%	66.90%	69.24%
Covered Payroll	$ 145,633	$ 146,298	$ 131,332	$ 142,102	$ 139,660	$ 134,177	$ 125,085	$ 118,060	$ 114,278	$ 114,480
Net Pension Liability as a Percentage of Covered Payroll	589.51%	644.02%	445.27%	589.79%	572.28%	525.24%	524.50%	523.55%	533.97%	485.14%

[1] Includes a one-time appropriation for fiscal year 2023 in the amount of $100 million as a result of Public Act 166 of 2022.

[2] Includes an audit adjustment of $11,214,503 for fiscal year 2021.

SCHEDULE OF CHANGES IN NET OPEB LIABILITY
(in thousands)

	Fiscal Year						
	2023	2022	2021	2020	2019	2018	2017
Total OPEB Liability							
Service Cost	$ 9,768	$ 9,421	$ 10,031	$ 10,064	$ 8,706	$ 9,173	$ 9,855
Interest	49,130	50,932	53,337	54,744	53,114	57,650	55,607
Changes of benefit terms	-	-	-	-	-	25	-
Differences between expected and actual experience	(94,151)	(44,409)	(59,439)	(103,332)	(67,257)	(71,325)	(4,142)
Changes of assumptions	20,091	65,832	(5,789)	48,652	68,549	26,627	-
Benefit payments, including refunds of member contributions	(35,376)	(32,673)	(32,704)	(28,308)	(30,028)	(33,583)	(33,904)
Net Change in Total OPEB Liability	(50,538)	49,102	(34,564)	(18,180)	33,084	(11,432)	27,416
Total OPEB Liability - Beginning	798,878	749,776	784,340	802,520	769,435	780,868	753,452
Total OPEB Liability - Ending (a)	$ 748,340	$ 798,878	$ 749,776	$ 784,340	$ 802,520	$ 769,435	$ 780,868
Plan Fiduciary Net Position							
Contributions - Employer	$ 45,978	$ 50,743	$ 48,792	$ 58,303	$ 60,395	$ 56,779	$ 51,886
Contributions - Member	-	-	-	-	-	-	-
Net Investment Income	30,133	(18,070)	73,989	12,677	10,782	17,222	16,063
Miscellaneous Income	-	-	-	-	-	-	-
Benefit payments, including refunds of member contributions	(35,376)	(32,673)	(32,704)	(28,308)	(30,028)	(33,583)	(33,904)
Administrative Expenses	(185)	(168)	(135)	(116)	(80)	(87)	(100)
Other	733	82	7,839	445	39	10	15
Net Change in Plan Fiduciary Net Position	41,283	(87)	97,782	43,001	41,108	40,340	33,961
Plan Fiduciary Net Position - Beginning[1]	372,814	372,901	275,119	232,118	191,010	150,670	116,709
Plan Fiduciary Net Position - Ending (b)	$ 414,097	$ 372,814	$ 372,901	$ 275,119	$ 232,118	$ 191,010	$ 150,670
Net OPEB Liability - Ending (a) - (b)	$ 334,243	$ 426,064	$ 376,875	$ 509,220	$ 570,401	$ 578,424	$ 630,197
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	55.34%	46.67%	49.73%	35.08%	28.92%	24.82%	19.30%
Covered Payroll	$ 145,633	$ 146,298	$ 131,332	$ 142,102	$ 139,660	$ 134,177	$ 125,085
Net OPEB Liability as a Percentage of Covered Payroll	299.51%	291.23%	286.96%	358.35%	408.42%	431.09%	503.81%

[1] Includes an $8.4 million restatement of beginning net position for the OPEB plan in fiscal year 2021 to account for additional contributions due to the System from employer.

This schedule is required to show information for ten years; additional years will be displayed as they become available.

SCHEDULES OF CONTRIBUTIONS

PENSION BENEFITS
(in thousands)

Fiscal Year Ended Sept. 30	Actuarially Determined Contribution (ADC)	Actual Employer Contribution[1]	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	$ 61,401	$ 58,391	$ 3,010	$ 114,480	51.0 %
2015 [2]	63,271	70,351	(7,080)	114,278	61.6
2016	70,858	70,505	353	118,060	59.7
2017	72,632	74,814	(2,182)	125,085	59.8
2018	78,531	84,930	(6,399)	134,177	63.3
2019	77,400	78,510	(1,110)	139,660	56.2
2020	78,929	79,165	(235)	142,102	55.7
2021	81,078	69,152	11,926	131,332	52.7
2022	88,349	89,386	(1,037)	146,298	61.1
2023	94,276	192,645	(98,370)	145,633	132.3

1 Includes a one-time appropriation for fiscal year 2023 in the amount of $100 million as a result of Public Act 166 of 2022.
2 Revised actuarial assumptions.

OTHER POSTEMPLOYMENT BENEFITS
(in thousands)

Fiscal Year Ended Sept. 30	Actuarially Determined Contribution (ADC)	Actual Employer Contribution[2]	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	$ 43,383	$ 48,373	$ (4,990)	$ 114,480	42.3 %
2015 [1]	47,674	47,722	(48)	114,278	41.8
2016	50,857	47,348	3,509	118,060	40.1
2017	52,301	51,886	415	125,085	41.5
2018	58,368	56,779	1,589	134,177	42.3
2019	59,785	60,395	(610)	139,660	43.2
2020	53,928	58,303	(4,375)	142,102	41.0
2021	54,198	48,792	5,405	131,332	37.2
2022	52,130	50,743	1,387	146,298	34.7
2023	46,925	45,978	947	145,633	31.7

1 Revised actuarial assumptions.
2 Years 2014 through 2017 include Other Governmental Contributions.

SCHEDULES OF INVESTMENT RETURNS

PENSION BENEFITS

Fiscal Year	Annual Return[1]	
2014	13.97	%
2015	1.92	
2016	7.00	
2017	13.22	
2018	11.08	
2019	5.11	
2020	5.28	
2021	27.25	
2022	(4.26)	
2023	8.24	

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

OPEB BENEFITS

Fiscal Year	Annual Return[1]	
2017	13.26	%
2018	10.83	
2019	6.01	
2020	5.19	
2021	26.10	
2022	(2.86)	
2023	11.48	

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

This schedule is required to show information for ten years; additional years will be displayed as they become available.

NOTE A – DESCRIPTION

Ten year historical trend information designed to provide information about the System's progress made in accumulating sufficient assets to pay benefits when due is presented in the preceding schedules. Other ten year historical trend information related to the System is presented in the Statistical and Actuarial Sections of the report. This information is presented to enable the reader to assess the progress made by the System in accumulating sufficient assets to pay pension and other postemployment 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 and other postemployment benefit obligations as a factor.

The Schedules of Contributions are presented to show the responsibility of the Employer in meeting the actuarial requirements to maintain the System on a sound financial basis.

The Schedules of Changes in Net Pension Liability and OPEB Liability, Schedules of Contributions, and Schedules of Investment Returns are schedules that are required in implementing GASB Statement No. 67 for pension and No. 74 for OPEB. These schedules are required to show information for ten years; additional years will be displayed as they become available. The Schedules of Changes in the Net Pension and Net OPEB Liabilities represent, 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 Investment Returns represents a money-weighted rate of return that expresses investment performance, net of pension and OPEB plan investment expense, adjusted for the changing amounts actually invested.

The actuarially determined contributions presented in the Schedule of Contributions for pension and OPEB 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 2023 contributions reported in that schedule.

Methods and Assumptions Used to Determine Contributions for Fiscal Year 2023:

Pension and OPEB	
Valuation Date	September 30, 2020
Actuarial Cost Method	Entry Age, Normal
Amortization Method	Level percent of payroll, closed period
Remaining Amortization Period	16 Years as of October 1, 2022, ending September 30, 2038
Price Inflation	2.25%
Projected Salary Increases	3.27% - 87.75%, including wage inflation at 2.75%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility conditions.
Mortality	
Retirees	RP-2014 Male and Female Healthy Annuitant Mortality Tables 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 Tables scaled by 100% for males and 100% for females and adjusted for mortality improvements using projection scale MP-2017 from 2006.
Disabled Retirees	RP-2014 Male and Female Disabled Annuitant Mortality Tables scaled by 100% for males and 100% for females and adjusted for mortality improvements using projection scale MP-2017 from 2006.
Pension	
Asset Valuation Method	5 year smoothed fair value
Investment Rate of Return	6.80% (6.85% for Pension Plus), net of investment
OPEB	
Asset Valuation Method	5 year smoothed fair value
Investment Rate of Return	6.90%, net of investment
Healthcare Cost Trend Rates	
Medical and Prescription	
Pre-65	7.50% Year 1 Graded to 3.50% Year 15; 3.00% Year 120
Post-65	6.25% Year 1 Graded to 3.50% Year 15; 3.00% Year 120
Dental/Vision	3.50% all years; 3.00% Year 120
Aging Factors	Based on the 2013 SOA “Health Care Costs – From Birth to Death”.
Notes	Some of the assumptions used to develop the 2023 Total Pension Liability (TPL) and the 2023 Total OPEB Liability (TOL) may be different than the assumptions shown above. The assumptions used to develop the TPL are described in Note 4 (page 30) of this report and the assumptions used to develop the TOL are described in Note 5 (page 32) of this report.

SUMMARY SCHEDULE OF PENSION PLAN ADMINISTRATIVE AND OTHER EXPENSES

For Fiscal Year Ended September 30, 2023
(in thousands)

Personnel Services:	
Staff Salaries	$ 199
Staff Retirement and Social Security	112
Staff Other Fringe Benefits	42
Total	352
Professional Services:	
Accounting	22
Actuarial	89
Attorney General	31
Audit	76
Total	218
Building and Equipment:	
Building Rentals	10
Total	10
Miscellaneous:	
Postage, Telephone, and Other	16
Printing	1
Technological Support	159
Total	176
Total Administrative and Other Expenses	$ 756

SUMMARY SCHEDULE OF OPEB PLAN ADMINISTRATIVE AND OTHER EXPENSES

For Fiscal Year Ended September 30, 2023
(in thousands)

Personnel Services:		
Staff Salaries	$	55
Staff Retirement and Social Security		31
Other Staff Fringe Benefits		12
Total		98
Professional Services:		
Accounting		5
Actuarial		20
Attorney General		6
Audit		17
Total		47
Building and Equipment:		
Building Rentals		2
Total		2
Miscellaneous:		
Postage, Telephone, and Other		3
Technological Support		35
Health Fees		576
Vision Fees		3
Dental Fees		91
Total		709
Total Administrative and Other Expenses	$	856

SCHEDULE OF INVESTMENT EXPENSES

For Fiscal Year Ended September 30, 2023
(in thousands)

Securities Lending Expenses	$	3,544
Other Investment Expenses[1]		
ORS-Investment Expenses[2]		400
Custody Fees		47
Management Fees		9,232
Research Fees		291
Total Investment Expenses	$	13,513

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

[2] Does not exclude Treasury Civil Service fees recorded as a pass through in the Schedule of Investment Fee - State Treasurer. As of September 30, 2023, fees totaled $42,351.

SCHEDULE OF PAYMENTS FOR PROFESSIONAL SERVICES

For Fiscal Year Ended September 30, 2023
(in thousands)

Accounting	$	26
Actuary		109
Attorney General		36
Independent Auditors		93
Total Payments	$	266

DETAIL OF CHANGES IN PLAN FIDUCIARY NET POSITION

(Pension and Other Postemployment Benefits)

For the Fiscal Year Ended September 30, 2023
(in thousands)

	Employee Contributions	Employee Contributions Pension Plus	Employer Contributions	Employer Contributions Pension Plus
Additions:				
Contributions:				
Member contributions	$ 889	$ 3,749	$ -	$ -
Employer contributions	-	-	185,082	7,508
Other governmental contributions	-	-	-	-
Total contributions	889	3,749	185,082	7,508
Investment income (loss):				
Net increase (decrease) in fair value of investments	-	-	-	-
Interest, dividends, and other	-	-	-	-
Investment expenses:				
Other investment expenses	-	-	-	-
Securities lending activities:				
Securities lending income	-	-	-	-
Securities lending expenses	-	-	-	-
Net investment income (loss)	-	-	-	-
Non-operating revenue	-	-	-	-
Miscellaneous income	-	-	-	-
Total additions	889	3,749	185,082	7,508
Deductions:				
Benefits paid to plan members and beneficiaries:				
Retirement benefits	-	-	-	-
Health benefits	-	-	-	-
Dental/vision benefits	-	-	-	-
Refund of contributions	15	161	-	-
Administrative and other expenses	-	-	-	-
Total deductions	15	161	-	-
Net Increase (Decrease) before other changes	874	3,588	185,082	7,508
Other Changes in Net Position:				
Interest allocation	326	631	-	1,906
Transfers upon retirement	(1,389)	-	-	-
Transfers of employer shares	-	-	(82,062)	(16)
Transfers of employee shares	-	-	-	-
Transfers of investment income	-	-	-	-
Total other changes in net position	(1,063)	631	(82,062)	1,890
Net Increase (Decrease) in Net Position	(189)	4,219	103,021	9,399
Net Position Restricted for Pension Benefits and OPEB:				
Beginning of Year - restated	12,521	18,279	(301,355)	45,817
End of Year	$ 12,332	$ 22,499	$ (198,334)	$ 55,215

Retired Benefit Payments	Retired Benefit Payments Pension Plus	Undistributed Investment Income	OPEB	Total
$ -	$ -	$ -	$ -	$ 4,637
55	-	-	45,978	238,623
-	-	-	5,898	5,898
55	-	-	51,876	249,158
-	-	109,377	23,516	132,893
-	-	37,411	8,340	45,751
-	-	(8,198)	(1,771)	(9,969)
-	-	3,148	666	3,814
-	-	(2,927)	(618)	(3,544)
-	-	138,811	30,133	168,944
-	-	-	675	675
-	-	-	57	57
55	-	138,811	82,741	418,835
161,109	48	-	-	161,157
-	-	-	37,642	37,642
-	-	-	2,961	2,961
-	-	-	-	176
-	-	756	855	1,611
161,109	48	756	41,458	203,548
(161,054)	(48)	138,055	41,283	215,287
96,493	26	(99,383)	-	-
1,389	-	-	-	-
82,062	16	-	-	-
-	-	-	-	-
-	-	-	-	-
179,944	42	(99,383)	-	-
18,890	(6)	38,672	41,283	215,287
1,813,781	621	107,223	372,814	2,069,701
$ 1,832,671	$ 615	$ 145,895	$ 414,097	$ 2,284,988

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INVESTMENT SECTION

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

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 Michigan State Police Retirement System (System). The Board is responsible for investing the System's 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 System 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 System.

The Board is comprised of five members: three (3) public members appointed by the Governor 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, 2023, members of the Board were as follows: Rachael Eubanks (chair, ex-officio member), Chris Harkins (ex-officio member), Reginald G. Sanders, CFA, CAIA (public member), Dina L. Richard, CPA (public member), and Denise Ilitch (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, System's assets are to be invested in a fiduciary capacity for the sole and exclusive benefit of the members of the System.

The System's 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 System's policy.

The primary function of the System 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 System's investments pursuant to the Order and other State law. The goals of the System 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 System according to a five year asset allocation model. The System currently invests in eight different asset classes, which provides for a well-diversified portfolio.

ASSET ALLOCATION

(Excludes Collateral on Loaned Securities)

Investment Category	As of 9/30/23 Actual	Five-Year Target
Domestic Equity Pools	19.2 %	25.0 %
International Equity Pools	12.9	15.0
Private Equity Pools	23.4	16.0
Real Estate and Infrastructure Pools	10.1	10.0
Fixed Income Pools	8.9	13.0
Absolute Return Pools	10.4	9.0
Real Return and Opportunistic Pools	10.7	10.0
Short-Term Investment Pools	4.4	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 system 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.

INVESTMENT RESULTS

TOTAL PORTFOLIO RESULTS

For the fiscal year ended September 30, 2023, the total System's rate of return was 8.3% for the Pension Plan and 8.2% for the OPEB Plan as compiled by State Street Investment Analytics. Annualized rates of return for the Pension Plan for the three, five, and ten year periods ending September 30, 2023 were: 9.4%, 7.6%, and 8.7% respectively.

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 Composite 1500 index 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, 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.

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 Composite 1500 index while providing a prudent measure of 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 Composite 1500 Index

The following summarizes the weightings of the pools as of September 30, 2023:

Active	38.9	%
Passive	61.1	
Total	**100.0**	**%**

Large-Cap	73.0	%
Multi-Cap	21.8	
Mid-Cap	3.5	
Small-Cap	1.7	
Total	**100.0**	**%**

The System's Domestic Equity pools' total rate of return was 22.6% for the Pension plan and 22.9% for the OPEB plan for fiscal year 2023. This compared with 21.0% for the S&P Composite 1500 Index.

At the close of fiscal year 2023, the Domestic Equity pools represented 19.2% of total investments. The following summarizes the System's 2.3% ownership share of the Domestic Equity pools at September 30, 2023:

Domestic Equity Pools

(in thousands)

Short-Term Pooled Investments	$	13,212
Equities		416,019
Settlement Principal Payable		(195)
Settlement Proceeds Receivable		3,558
Accrued Dividends		396
Accrued Interest		57
Total	**$**	**433,047**

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 Index 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 MSCI 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.

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

The pools diversify their investments by allocating their equity strategies with consideration of the economic development status weightings of the MSCI ACWI ex USA Index.

The following summarizes the weightings of the pools as of September 30, 2023:

Active	66.8 %
Passive	33.2
Total	**100.0 %**

Developed	97.9 %
Emerging	2.1
Total	**100.0 %**

The System's International Equity pools' total rate of return was 21.5% for the Pension and OPEB Plans for fiscal year 2023. This compared with 20.4% for the MSCI ACWI ex US Index.

At the close of fiscal year 2023, the International Equity pools represented 12.9% of total investments. The following summarizes the System's 2.3% ownership share of the International Equity Pools at September 30, 2023:

International Equity Pools
(in thousands)

Short-Term Pooled Investments	$ 4,647
Equities	251,590
Fixed Income Securities	33,808
Fair Value of Equity Contracts	1,294
Settlement Principal Payable	(9)
Settlement Principal Receivable	10
Accrued Dividends and Interest	154
Total	**$ 291,494**

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 the S&P 500 Index plus 300 basis points net of fees, lagged by three months over three, five, seven and ten-year periods and a market cycle.

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, 2023:

Buyout Funds	45.3 %
Special Situation Funds	5.9
Fund of Funds	29.6
Venture Capital Funds	12.2
Liquidation Portfolio	7.0
Total	**100.0 %**

The Private Equity pools had a return of (1.3)% for the Pension and OPEB Plans for the fiscal year ended September 30, 2023, versus the benchmark of 23.1%. At the close of fiscal year 2023, the Private Equity pools represented 23.4% of total investments.

The following summarizes the System's 2.3% ownership share of the Private Equity pools at September 30, 2023:

Private Equity Pools

(in thousands)

Short-Term Pooled Investments	$ 154
Equites	528,679
Accrued Interest	1
Settlement Proceeds Receivable	14
Total	**$ 528,848**

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	34.4 %
Commercial office buildings	8.2
Hotel	8.5
Infrastructure	9.0
Industrial warehouse buildings	29.1
Single family	3.3
Retail shopping centers	3.2
Land	0.5
REIT's	2.9
Short-term investments	0.9
Total	**100.0 %**

The Real Estate and Infrastructure pools generated a return of 1.4% for the Pension and OPEB Plans for fiscal year 2023. The Real Estate and Infrastructure pools compare performance with two benchmark returns from the National Council of Real Estate Investment Fiduciaries (NCREIF): the NCREIF Property Index (less 130 basis points) was (9.6)% and the NCREIF Fund Index - Open-End Diversified Core Equity (NFI-ODCE) was (12.9)%.

At the close of fiscal year 2023, the Real Estate and Infrastructure pools represented 10.1% of total investments. The following summarizes the System's 2.3% ownership share of the Real Estate and Infrastructure pools at September 30, 2023:

Real Estate and Infrastructure Pools

(in thousands)

Real Estate Equities	$	207,413
Infrastructure Equities		20,830
Total	**$**	**228,243**

FIXED INCOME POOLS

The objective for investments made in the Fixed Income pools is to meet or exceed the Bloomberg U.S. 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 Bloomberg benchmark index.

The pools invest in fixed income and related securities in a diversified portfolio of investment grade corporate issues, mortgage-backed and asset-backed securities, U.S. Treasuries, Agencies, government sponsored enterprises and government guaranteed mortgages. The pools diversify its investments by allocating its strategies with consideration of credit risk. 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 System's Fixed Income pools' total rate of return was 2.2% for the Pension and OPEB Plans for fiscal year 2023. This compared with 0.6% for the Bloomberg U.S. Aggregate Bond Index.

At the close of fiscal year 2023, the Fixed Income pools represented 8.9% of total investments. The following summarizes the System's 2.3% ownership share of the Fixed Income pools at September 30, 2023:

Fixed Income Pools

(in thousands)

Short-Term Pooled Investments	$	2,290
Fixed Income Securities		197,141
Accrued Interest		808
Total	**$**	**200,239**

ABSOLUTE RETURN POOLS

The primary investment objective of the Absolute Return pools 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 HFRI Fund of Funds Conservative Index median net of fees over one, three, and five-year periods and a market cycle.

The Absolute Return pools' rate of return for the fiscal year was 8.4% for the Pension and OPEB Plans versus the benchmark's 4.1%.

At the close of fiscal year 2023, the Absolute Return Pools represented 10.4% of total investments. The following summarizes the System's 2.3% ownership share of the Absolute Return Pools at September 30, 2023:

Absolute Return Pools

(in thousands)

Equities	$ 233,872
Total	**$ 233,872**

REAL RETURN AND OPPORTUNISTIC POOLS

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 Consumer Price Index (CPI) by at least four percent (4%) annually net of fees over one, three, and five-year periods and a market cycle. Opportunistic investments are targeted to earn a return that exceeds the current actuarial assumed rate of return, with the overall Real Return and Opportunistic Pool's benchmark an equal blend between the two benchmarks. If a peer universe is available, the objective is to rank above median in a nationally recognized universe of managers possessing a similar style.

The Real Return and Opportunistic pools' rate for the fiscal year was 4.3% for the Pension and OPEB Plans versus the benchmark's 7.4%.

At the close of fiscal year 2023, the Real Return and Opportunistic Pools represented 10.7% of total investments. The following summarizes the System's 2.3% ownership share of the Real Return and Opportunistic Pools at September 30, 2023.

Real Return and Opportunistic Pools

(in thousands)

Equities	$ 240,952
Total	**$ 240,952**

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 System's Short-Term Investment pools' rate of return for the fiscal year was 5.2% for the Pension Plan and 4.8% for the OPEB Plan versus the benchmark's 4.6%.

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

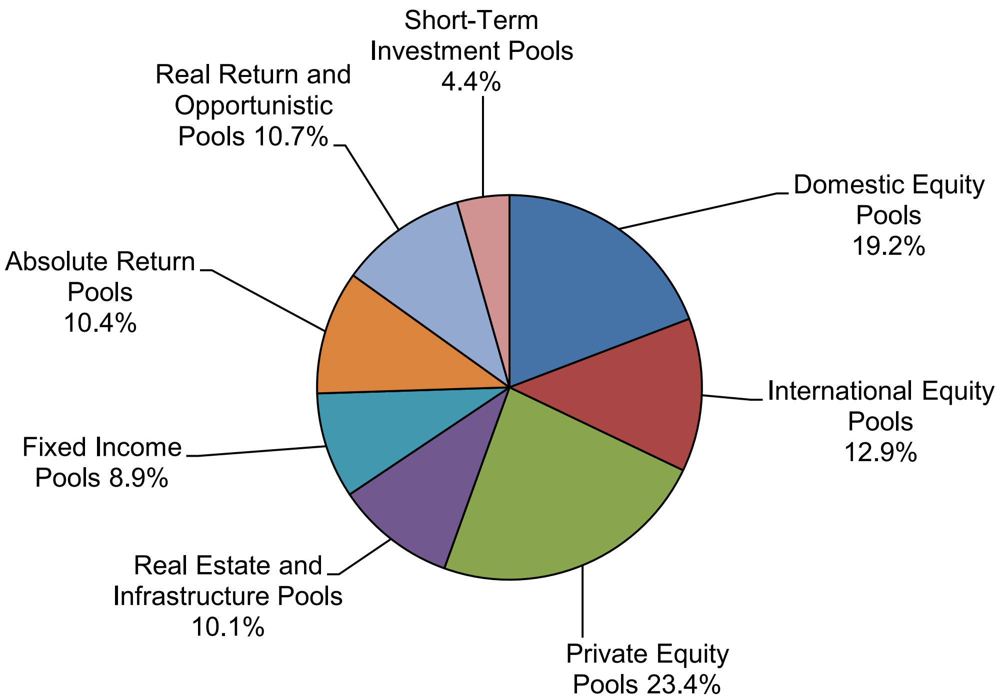
At the close of fiscal year 2023, the Short-Term Investment pools represented 4.4% of total investments. The following summarizes the System's ownership share of the Short-Term Investment pools at September 30, 2023:

Short-Term Investment Pools

(in thousands)

Short-Term Pooled Investments	$	75,135
Fixed Income Securities		26,765
Accrued Interest		390
Total	**$**	**102,289**

Asset Allocation – Security Type Only



PENSION PLAN INVESTMENT RESULTS

For the Period Ending September 30, 2023

Investment Category	Current Year	Annualized Rate of Return[1] 3 Years	5 Years	10 Years
Total Portfolio	8.3 %	9.4 %	7.6 %	8.7 %
Domestic Equity Pools	22.6	8.8	7.9	10.9
S&P Composite 1500 Index	21.0	10.3	9.5	11.6
International Equity Pools	21.5	3.4	2.9	4.1
International Blended Benchmark [2]	20.4	3.7	2.6	3.4
Private Equity Pools	(1.3)	18.2	13.9	14.0
Private Equity Benchmark [3]	23.1	18.0	15.7	16.2
Real Estate and Infrastructure Pools	1.4	12.6	7.3	9.4
NCREIF Property Blended Index [4]	(9.6)	4.7 `	3.9	6.0
Fixed Income Pools	2.2	(2.3)	1.1	2.4
Bloomberg US Aggregate Bond Index	0.6	(5.2)	0.1	1.1
Absolute Return Pools	8.4	8.9	6.6	5.6
HFRI Fund of Funds Conservative Aggregate Index	4.1	5.5	4.1	3.5
Real Return and Opportunistic Pools	4.3	12.7	10.9	11.4
Real Return and Opportunistic Benchmark [5]	7.4	8.5	7.6	7.5
Short-Term Investment Pools	5.2	2.1	2.0	1.4
30 Day Treasury Bill	4.6	1.7	1.7	1.1

[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 Real Return Benchmark is CPI + 400 bps net. Opportunistic is current Actuarial Rate of Return. History prior to 12/1/18 reflects 50% (CPI +5%) and 50% (actuarial rate 8%).

OPEB INVESTMENT RESULTS

For the Period Ending September 30, 2023

Investment Category	Current Year	Annualized Rate of Return[1] 3 Years	5 Years	10 Years
Total Portfolio	8.2 %	9.3 %	7.6 %	8.5 %
Domestic Equity Pools	22.9	9.0	8.0	11.0
S&P Composite 1500 Index	21.0	10.3	9.5	11.6
International Equity Pools	21.5	3.4	2.9	4.1
International Blended Benchmark [2]	20.4	3.7	2.6	3.4
Private Equity Pools	(1.3)	18.2	13.9	14.0
Private Equity Blended Benchmark [3]	23.1	18.0	15.7	16.2
Real Estate and Infrastructure Pools	1.4	12.6	7.3	9.4
NCREIF Property Blended Index [4]	(9.6)	4.7	3.9	6.0
Fixed Income Pools	2.2	(2.3)	1.1	2.3
Bloomberg US Aggregate Bond Index	0.6	(5.2)	0.1	1.1
Absolute Return Pools	8.4	8.9	6.6	5.6
HFRI Fund of Fund Conservative Aggregate Index	4.1	5.5	4.1	3.5
Real Return and Opportunistic Pools	4.3	12.7	10.9	11.4
Real Return and Opportunistic Benchmark [5]	7.4	8.5	7.6	7.5
Short-Term Investment Pools	4.8	1.9	2.0	1.3
30 Day Treasury Bill	4.6	1.7	1.7	1.1

[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 Real Return Benchmark is CPI + 400 bps net. Opportunistic is current Actuarial Rate of Return. History prior to 12/1/18 reflects 50% (CPI + 5%) and 50% (actuarial rate 8%)

LARGEST STOCK HOLDINGS

(By Fair Value)
September 30, 2023

Rank	Shares	Stocks	Fair Value
1	115,746	Apple Inc.	$ 19,816,874
2	62,073	Microsoft Corp.	19,599,702
3	25,972	Nvidia Corp.	11,297,763
4	74,992	Amazon.com Inc.	9,533,018
5	60,916	Alphabet Inc. CL A	7,971,441
6	434,769	AT&T Inc.	6,530,237
7	188,610	Verizon Communications Inc.	6,112,864
8	19,054	Meta Platforms Inc. Class A	5,720,239
9	37,296	Alphabet Inc. CL C	4,917,516
10	51,207	Apollo Global Management Inc.	4,596,371

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

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

LARGEST BOND HOLDINGS

(By Fair Value)
September 30, 2023

Rank	Par Amount	Bonds & Notes	Fair Value
1	16,372,606	US TREASURY N/B 2.875% 05/15/2052	$ 11,594,491
2	7,007,946	US TREASURY N/B 0.25% 05/31/2025	6,462,093
3	6,517,695	US TREASURY N/B 2.875% 05/15/2032	5,722,078
4	6,796,030	US TREASURY N/B 3.25% 05/15/2042	5,411,605
5	4,140,686	US TREASURY N/B 4.125% 11/15/2032	3,994,145
6	3,503,973	US TREASURY N/B 0.25% 11/15/2023	3,482,290
7	3,503,973	US TREASURY N/B 0.25% 03/15/2024	3,423,765
8	3,266,830	US TREASURY N/B 3.25% 06/30/2027	3,104,381
9	3,036,777	US TREASURY N/B 1% 12/15/2024	2,883,870
10	2,919,978	US TREASURY N/B 2.5% 05/15/2024	2,866,597

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

Largest Bond Holdings are exclusive of securities lending collateral.

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

Fiscal Year Ended September 30, 2023

The State of Michigan Investment Board (Board) is the investment fiduciary and custodian of the System's funds pursuant to State law. Outside advisors are utilized to augment the State of Michigan's internal staff. 72.4% of the total investment portfolio is managed by fully discretionary outside advisors. The Michigan Department of Treasury's cost of operations applicable to the System for the fiscal year amounted to $400.0 thousand or six and four tenths basis points (0.064)% of the fair value of the Assets under Management of the Board.

	Assets under Management (in thousands)	Fees (in thousands)	Basis Points*
Investment Managers' Fees:			
State of Michigan	$ 622,759	$ 400	6.4
Outside Advisors for			
Fixed Income	115,415	371	32.1
Absolute Return	233,872	1,376	58.8
Real Return and Opportunistic	240,952	937	38.9
International Equity	231,140	518	22.4
Domestic Equity	57,756	132	22.9
Private Equity	528,848	4,260	80.6
Real Estate and Infrastructure	228,243	1,637	71.7
Total	**$ 2,258,985**	**$ 9,631**	
Other Investment Services Fees:			
Assets in Custody	$ 2,233,540	$ 337	
Securities Lending Collateral	75,785	48	

* 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 12 to 150 basis points. For Absolute Return and Real Return and Opportunistic, the asset management fees range from 0 to 200 basis points. These fees, in most cases, are netted against income.

Fiscal Year Ended September 30, 2023

	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:							
BTIG LLC	$ 8,498	684,067	$ 0.01	$ 0.01	$ -	$ 3,421	$ -
Capital Institutional Services Inc.	3,128	625,319	0.01	0.01	-	6,253	-
Cowen & Company LLC	982	49,098	0.02	0.01	0.01	491	491
Drexel Hamilton LLC	345	68,942	0.01	0.01	-	689	-
J. P. Morgan Securities Inc.	1,848	92,376	0.02	0.01	0.01	924	924
Merrill Lynch,Pierce,Fenner & Smith Inc.	262	10,501	0.02	0.01	0.01	105	105
MKM Partners LLC	4,969	323,001	0.02	0.01	0.01	3,230	3,230
National Financial	-	59	-	0.01	-	-	-
Raymond James and Associates Inc.	315	12,597	0.03	0.01	0.02	126	230
Roberts & Ryan Inv.	703	35,135	0.02	0.01	0.01	351	351
Wayne & Company	6,018	1,492,015	0.00	0.01	-	7,460	-
Glen Eagle Wealth	182	18,269	0.01	0.01	-	182	-
Total	**$ 27,250**	**3,411,379**	**$ 0.01** [2]	**$ 0.01**	**$ 0.01**	**$ 23,232**	**$ 5,331**

[1] Commissions are included in purchase and sale prices of investments. The commissions and shares represent the System'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, 2023

	Fair Value [1]	Percent of Total Fair Value	Investment & Interest Income [2]	Percent of Total Investment & Interest Income
Fixed Income Pools	$ 200,238,917	8.9 %	$ 4,555,957	2.6 %
Domestic Equity Pools	433,047,021	19.2	82,321,734	46.1
Real Estate and Infrastructure Pools	228,243,350	10.1	4,767,041	2.7
Private Equity Pools	528,848,466	23.4	(2,068,226)	(1.2)
International Equities Pools	291,494,164	12.9	55,101,369	30.9
Absolute Return Pools	233,871,811	10.4	19,477,538	10.9
Real Return and Opportunistic Pools	240,952,251	10.7	10,613,923	6.0
Short-Term Investment Pools[3]	102,289,438	4.4	3,648,821	2.0
Total	$ 2,258,985,418	100.0 %	$ 178,418,157	100.0 %

[1] Fair value excludes $75,784,749 in securities lending collateral for fiscal year 2023.

[2] Total Investment & Interest Income excludes net security lending income of $269,740 for securities lending collateral.

[3] Short-term investment pools' fair value includes $25,445,040 of equity in common cash.

ACTUARIAL SECTION

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

October 20, 2023

Ms. Michelle Lange, Director
Department of Technology, Management and Budget
and
The Retirement Board
Michigan State Police Retirement System
P.O. Box 30171
Lansing, Michigan 48909

Ladies and Gentlemen:

The basic financial objective of the Michigan State Police Retirement System (SPRS) 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 System to present and future benefit recipients. The progress towards meeting these financial objectives is illustrated in the Schedules of Funding Progress and the Schedules of Employer Contributions.

We performed actuarial funding valuations and issued actuarial funding reports for the SPRS pension and retiree health (i.e., OPEB) plans as of September 30, 2022. The purpose of the September 30, 2022 annual actuarial valuations was to determine the contribution requirements for the fiscal year ending September 30, 2025, to measure the System's funding progress, and to provide actuarial information in connection with applicable Governmental Accounting Standards Board statements. The valuations should not be relied upon for any other purpose. The valuation process develops employer contributions that are sufficient to fund the System'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, 2022.

In addition to the funding valuation reports, separate reports are issued to provide financial reporting information for SPRS in accordance with Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 (pension benefits) and Nos. 74 and 75 (retiree health benefits, or OPEB). Reports containing the actuarial results of the financial reporting valuations are produced annually after the publication of this letter. The GASB Statement Nos. 67, 68, 74 and 75 financial reporting valuations are based upon a measurement date of September 30, 2023.

The valuations were based upon information provided by the System's administrative staff concerning System 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 System's administrative staff. The actuary summarizes and tabulates population data in order to analyze long term trends. The System's auditor audits the actuarial data annually.

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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. Each actuarial valuation takes into account allprior 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 Annual Comprehensive Financial Report (ACFR) 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 System's Membership
- Note 4 – Net Pension Liability; Summary of Actuarial Assumptions and Methods
- Note 5 – Net OPEB Liability; Summary of Actuarial Assumptions and Methods
- Note A – Methods and Assumptions Used to Determine Contributions for Fiscal Year 2023
- Schedules of Changes in the Net Pension Liability (NPL) and the Net OPEB Liability and Related Ratios
- Schedules of Contributions Multiyear
- Sensitivity of the NPL to Changes in the Discount Rate
- Sensitivity of the Net OPEB Liability to Changes in the Discount Rate
- Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate Assumption

Actuarial Section

- Summary of Actuarial Assumptions and Methods used in the September 30, 2022 Pension Funding Valuation
- Percent of Eligible Active Members Retiring Within Next Year
- Separation from Active Employment Before Age and Service Retirement, Disability and Individual Pay Increase Assumptions
- Schedule of Active Member Pension Valuation Data
- Schedule of Changes in the Retirement Rolls
- Prioritized Solvency Tests
- Analyses of System Experience
- Schedule of Active Member OPEB Valuation Data
- Schedule of Changes in OPEB Rolls
- Schedules of Funding Progress

Statistical Section

- Schedule of Retired Members by Type of Retirement and Type of Pension Benefit
- Schedule of Retired Members by Type of Health Benefit
- Schedules of Average Benefit Payments – Pension, Medical/Rx, Dental, and Vision

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The September 30, 2022 funding valuations were based upon assumptions that were recommended in connection with a study of System experience covering the period from October 1, 2012 through September 30, 2017. The pension investment return assumptions for the Non-Hybrid and Hybrid groups and the retiree health investment return assumption were updated beginning with the September 30, 2018 funding valuations in accordance with the Dedicated Gains Policy adopted by the Board of Trustees. The pension investment return assumptions for the Non-Hybrid and Hybrid groups and the retiree health investment return assumption were further updated beginning with the September 30, 2021 funding valuations in accordance with the Dedicated Gains Policy. The September 30, 2023 financial reporting valuations are based upon assumptions that were recommended in connection with a study of System experience covering the period from October 1, 2017 through September 30, 2022. 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 assumptions/methods, or applicable law. Due to the limited scope of the assignment, we did not perform an analysis of the potential range of future measurements.

The signing actuaries are independent of the plan sponsor.

The actuarial valuations of SPRS 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 M. Gates and Mita D. 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 Retirement System.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

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 pension valuation of the Non-Hybrid and Hybrid plans was 6.15% 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 6.15% investment return rate translates into an assumed real rate of return of 3.40% over wage inflation. Adopted 2021.
2. The healthy life mortality table used in evaluating allowances to be paid were the RP-2014 Male Healthy Annuitant Mortality Table scaled by 93% and for females, the RP-2014 Female Healthy Annuitant Mortality Table scaled by 99%. Both tables were 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. Adopted 2018.
4. Sample probabilities of withdrawal from service and disability, together with individual pay increase assumptions, are shown in Schedule 2 on the next page. Adopted 2018.
5. Total active member payroll is assumed to increase 2.75% per year. This represents the portion of the individual pay increase assumptions attributable to inflation. Adopted 2018.
6. An individual entry age actuarial cost method of valuation was used in determining actuarial liabilities and normal cost. Adopted 1996. Unfunded actuarial accrued liabilities, including actuarial gains and losses, are financed over a declining 14-year period ending September 30, 2038. Adopted 2018.
7. The Department of Technology, Management & Budget approved the use of market value of assets as of September 30, 2006, for actuarial valuation purposes. For investment gains and losses that occur after that date, a 5-year smoothing technique will be 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 2007.
8. The data about persons now covered and about present assets was furnished by the System'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 System's Board and the Department of Technology, Management & Budget after consulting with the State Treasurer and the actuary.
10. A 5-year experience investigation, covering the period from October 1, 2012 through September 30, 2017, was completed in 2018. The purpose of the study was to analyze the actual experience of the System versus that anticipated by the actuarial assumptions then in use.
11. Gabriel, Roeder, Smith & Co. was awarded the actuarial and consulting services contract beginning October 4, 2006.

SCHEDULE 1

PERCENT OF ELIGIBLE ACTIVE MEMBERS RETIRING WITHIN NEXT YEAR[1]

RETIREMENT AFTER 25 OR MORE YEARS OF SERVICE (NON PENSION PLUS PLAN)

Service	% Retiring
25	70%
26	60
27-39	35
40 and over	100

RETIREMENT AT OR AFTER AGE 50 WITH 10 YEARS OF SERVICE (NON PENSION PLUS PLAN) OR AFTER AGE 55 WITH 25 YEARS OF SERVICE (PENSION PLUS PLAN), OR AFTER AGE 60 WITH 10 YEARS OF SERVICE (PENSION PLUS PLAN)

Age	% Retiring
50	15%
51-52	20
53	25
54-59	30
60	40
61-64	50
65 and over	100

[1] Of those Non Pension Plus Plan members assumed to retire with 25 or more years of service, based on the percentages above, 70% are assumed to elect the DROP and 30% are assumed to retire without the DROP.

SCHEDULE 2

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

Sample Ages	Completed Years of Service	Percent of Active Members Withdrawing Within Next Year (Men and Women)	Percent of Active Members Becoming Disabled Within Next Year		Percent Increase In Pay During Next Year
All	0	15.00 %			87.75 %
	1	8.00			20.75
			Duty	Non-duty	
20	2 & Over	1.08	0.20 %	0.00 %	8.25
25	"	0.98	0.20	0.00	8.25
30	"	0.82	0.20	0.03	5.93
35	"	0.67	0.20	0.06	4.33
40	"	0.59	0.20	0.15	3.73
45	"	0.51	0.20	0.33	3.58
50	"	0.48	0.20	0.57	3.43
55	"	0.48	0.20	0.81	3.31
60 & Over	"	0.48	0.20	1.14	3.27

SCHEDULE OF ACTIVE MEMBER PENSION VALUATION DATA*

Valuation Date Sept. 30	Number	Reported Annual Payroll	Average Annual Pay	Increase (Decrease)	Average Age	Average Service
2013	1,521	$ 110,244,195	$ 72,481	(1.4) %	39.8	13.3
2014	1,603	112,453,562	70,152	(3.2)	38.8	12.3
2015	1,516	112,122,615	73,960	5.4	39.0	12.7
2016	1,688	119,044,254	70,524	(4.6)	38.0	11.8
2017	1,777	129,874,976	73,087	3.6	37.9	11.8
2018	1,787	136,695,537	76,494	4.7	37.6	11.6
2019	1,844	141,282,963	76,618	0.2	37.0	11.0
2020	1,748	138,423,695	79,190	3.4	36.4	10.3
2021	1,756	133,928,013	76,269	(3.7)	35.9	9.7
2022	1,701	140,446,182	82,567	8.3	36.0	9.8

*Excludes DROP program participants who are actively employed in the valuation date.

SCHEDULE OF ACTIVE MEMBER OPEB VALUATION DATA

Valuation Date Sept. 30	Number	Reported Annual Payroll	Average Annual Pay	Increase (Decrease)	Average Age	Average Service
2013	1,521	$ 110,244,195	$ 72,481	(1.5) %	39.8	13.3
2014	1,603	112,453,562	70,152	(3.2)	38.8	12.3
2015	1,516	112,122,615	73,960	5.4	39.0	12.7
2016	1,688	119,044,254	70,524	(4.6)	38.0	11.8
2017	1,777	129,874,976	73,087	3.6	37.9	11.8
2018	1,787	136,695,537	76,494	4.7	37.6	11.6
2019	1,844	141,282,963	76,618	0.2	37.0	11.0
2020	1,748	138,423,695	79,190	3.4	36.4	10.3
2021	1,756	133,928,013	76,269	(3.7)	35.9	9.7
2022	1,701	140,446,182	82,567	8.3	36.0	9.8

SCHEDULE OF CHANGES IN RETIREMENT ROLLS

Year Ended Sept. 30	Added to Rolls No.	Added to Rolls Annual Allowances*	Removed from Rolls No.	Removed from Rolls Annual Allowances*	Rolls – End of Year No.	Rolls – End of Year Annual Allowances*	Increase in Annual Allowances	Average Annual Allowances
2013	105	$ 5,206	65	$ 1,704	2,953	$ 105,755	3.4 %	$ 35,813
2014	95	4,797	85	2,340	2,963	108,212	2.3	36,521
2015	95	4,801	71	1,718	2,987	111,295	2.8	37,260
2016	104	5,471	73	2,023	3,018	114,743	3.1	38,019
2017	112	6,143	68	1,848	3,062	119,038	3.7	38,876
2018	133	7,474	78	2,496	3,117	124,016	4.2	39,787
2019	144	8,541	87	2,830	3,174	129,728	4.6	40,872
2020	175	10,153	92	3,308	3,257	136,572	5.3	41,932
2021	160	9,032	93	3,103	3,324	142,501	4.3	42,870
2022	135	7,969	98	3,611	3,361	146,859	3.1	43,695

* In thousands of dollars.

SCHEDULE OF CHANGES IN THE OPEB ROLLS

Year Ended Sept. 30	Added to Rolls No.	Added to Rolls Annual Allowances*	Removed from Rolls No.	Removed from Rolls Annual Allowances*	Rolls – End of Year No.	Rolls – End of Year Annual Allowances*	Increase in Annual Allowances	Average Annual Allowances
2013	90	$ 1,408	58	$ 2,397	2,653	$ 32,938	(2.9) %	$ 12,415
2014	80	1,043	79	1,476	2,654	32,504	(1.3)	12,247
2015	72	1,023	60	1,502	2,666	32,025	(1.5)	12,012
2016	89	4,223	64	1,241	2,691	35,007	9.3	13,009
2017	103	4,175	60	1,407	2,734	37,774	7.9	13,817
2018	123	2,010	70	1,832	2,787	37,953	0.5	13,618
2019	128	2,283	85	2,098	2,830	38,138	0.5	13,467
2020	159	4,032	89	2,629	2,900	39,541	3.7	13,635
2021	142	2,700	83	2,009	2,959	40,232	1.7	13,596
2022	116	1,851	97	2,122	2,978	39,961	(0.7)	13,419

* In thousands of dollars.

Notes:
No. refers to number of retiree health contracts.
Annual allowances added to rolls includes increases due to medical inflation and contract changes.
Annual allowances removed from rolls includes decreases due to contract changes.

PRIORITIZED SOLVENCY TEST

The System's 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 the System are level in concept and soundly executed, the System 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 a system's 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 the System 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 the System and are indicative of the System's 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)[2]	Valuation Assets	Portion of AAL Covered by Assets (1)	(2)	(3)	(4)[1]
2013	$ 1,549	$ 1,173,048	$ 549,362	$ 1,069,106	100.0 %	91.0 %	- %	62.0 %
2014	3,589	1,187,229	573,236	1,133,323	100.0	95.2	-	64.2
2014 [3]	3,589	1,213,209	583,108	1,133,323	100.0	93.1	-	63.0
2015	5,971	1,233,879	611,576	1,197,222	100.0	96.6	-	64.7
2016	8,762	1,277,584	626,754	1,272,575	100.0	98.9	-	66.5
2016 [3]	8,762	1,332,226	666,516	1,272,575	100.0	94.9	-	63.4
2017	11,971	1,373,293	668,770	1,342,953	100.0	96.9	-	65.4
2017 [3]	11,971	1,427,196	707,655	1,397,866	100.0	97.1	-	65.1
2018	14,855	1,478,168	701,362	1,461,697	100.0	97.9	-	66.6
2018 [3]	14,855	1,535,688	720,614	1,499,321	100.0	96.7	-	66.0
2019	17,917	1,597,106	705,679	1,519,978	100.0	94.1	-	65.5
2020	20,836	1,678,958	674,619	1,545,272	100.0	90.9	-	65.1
2021	23,751	1,743,299	645,146	1,627,856	100.0	92.1	-	67.5
2021 [3]	23,751	1,851,370	734,130	1,752,172	100.0	93.4	-	67.2
2022	27,088	1,888,674	760,015	1,780,094	100.0	92.9	-	66.5

1 Percent funded on a total valuation asset and total actuarial accrued liability basis.

2 Includes DROP members.

3 Revised actuarial assumptions and/or methods.

OTHER POSTEMPLOYMENT BENEFITS

(in thousands)

Valuation Date Sept. 30	Actuarial Accrued Liability (AAL) (1) Active Member Contributions	(2) Retirants and Beneficiaries	(3) Active and Inactive Members (Employer Financed Portion)[2]	Valuation Assets	Portion of AAL Covered by Assets (1)	(2)	(3)	(4)[1]
2013	$ -	$ 395,655	$ 207,311	$ 52,240	- %	13.2 %	- %	8.7 %
2014	-	415,077	222,276	77,664	-	18.7	-	12.2
2015	-	431,891	243,697	94,770	-	21.9	-	14.0
2016	-	476,889	276,563	116,709	-	24.5	-	15.5
2017	-	523,813	195,210	150,670	-	28.8	-	21.0
2017 [3]	-	528,767	198,261	150,670	-	28.5	-	20.7
2018	-	536,250	191,417	186,909	-	34.9	-	25.7
2018 [3]	-	573,741	203,524	191,219	-	33.3	-	24.6
2019	-	553,567	206,031	235,042	-	42.5	-	30.9
2020	-	555,345	174,119	280,969	-	50.6	-	38.5
2021	-	564,031	151,661	334,295	-	59.3	-	46.7
2021 [3]	-	609,911	170,237	371,901	-	61.0	-	47.7
2022	-	572,053	155,442	405,565	-	70.9	-	55.7

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

[2] Includes DROP members.

[3] Revised actuarial assumptions and/or methods.

GAINS/(LOSSES) IN ACCRUED LIABILITIES

During Year Ended September 30, 2022
Resulting from Differences Between Assumed Experience & Actual Experience

	Type of Activity	Gain/(Loss)
1.	**Retirements.** (including disability retirement). If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss.	$ (836,855)
2.	**Withdrawal From Employment.** (including death-in-service). If more liabilities are released by withdrawals and deaths than assumed, there is a gain. If smaller releases, a loss.	1,713,907
3.	**Pay Increases.** If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(28,400,614)
4.	**Investment Income.** If there is greater investment income than assumed, there is a gain. If less income, a loss.	(15,155,206)
5.	**Death After Retirement.** If retirants live longer than assumed, there is a loss. If not as long, a gain.	(2,625,388)
6.	**Rehires.**	-
7.	**Other.** Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, etc.	(6,982,219)
8.	**Composite Gain (or Loss) During Year.**	$ (52,286,425)

GAINS/(LOSSES) IN ACCRUED LIABILITIES

During Year Ended September 30, 2022
Resulting from Differences Between Assumed Experience & Actual Experience

	Type of Activity	Gain/(Loss)
1.	**Premiums.** Gains and losses resulting from actual premiums in valuation year versus that assumed from prior valuation.	$ 83,448,098
2.	**Investment Income.** If there is greater investment income than assumed, there is a gain. If less income, a loss.	(8,125,206)
3.	**Demographic and Other.** Gains and losses resulting from demographic experience, data adjustments, timing of financial transactions, etc.	8,447,300
4.	**Composite Gain (or Loss) During Year.**	$ 83,770,192

SUMMARY OF PLAN PROVISIONS

Our actuarial valuation of the System as of September 30, 2022, is based on the present provisions of the Michigan State Police Retirement Act (Public Act 182 of 1986, as amended).

REGULAR RETIREMENT

(No reduction factor for age)

- **Eligibility** – 25 years of credited service with no age requirement; or age 50 with 10 years credited service.

  For members hired on or after June 10, 2012 – Defined Benefit Portion (DB Portion): Age 55 with 25 years credited Service; or age 60 with 10 years credited service. Deferred Compensation Portion (DC Portion): 50% vested in employer contributions after 2 years; 75% after 3 years and 100% after 4 years.
- **Annual Amount** – If member has 25 or more years of credited service, 60% of final average compensation; if member has less than 25 years of credited service, total credited service times 2% of final average compensation.

  For members hired on or after June 10, 2012 – DB Portion: Total credited service times 2% of final average compensation, up to 25 years of service. Benefit multiplier declines by 0.4% for each year after 25 years of service until reaching 0% after 30 years of service. DC Portion: 401(k) balance – while working employer contributions equal 50% of employee contributions up to 1% of pay maximum match.
- **Final Average Compensation** – Average of 2 final years.

  For members hired on or after June 10, 2012 – Average of 5 final years of compensation excluding overtime.

EARLY RETIREMENT

- **Eligibility** – None.

DEFERRED RETIREMENT

(Vested benefit)

- **Eligibility** – 10 years of credited service. Benefit commences at age 50. For members hired on or after June 10, 2012 – 10 years of credited service. Benefit commences at age 60.
- **Annual Amount** – Regular retirement benefit based on service and final average compensation at time of termination.

  For members hired on or after June 10, 2012 – Regular DB retirement benefit is based on credited service and final average compensation at termination.
- **Optional forms of Payment** – As provided in the collective bargaining agreement, for System members hired after July 1, 2006, the normal form of payment is a straight life annuity. These individuals may elect one of the following optional forms of payment at the time of retirement:
  - 100% Joint and survivor annuity with pop-up
  - 75% Joint and survivor annuity with pop-up
  - 50% Joint and survivor annuity with pop-up

  The option forms of payment are actuarially equivalent to the straight life annuity. Option factors are based upon the following: (1) investment return assumption of 6.75%, (2) valuation mortality assumptions for healthy retirees, (3) unisex percent of 90% and (4) calculation year of 2021. The pop-up provision and any applicable COLA are reflected in the factors.

DUTY DISABILITY RETIREMENT

- **Eligibility** – No age or service requirement; in receipt of workers' disability compensation.
- **Annual Amount** – 60% of final average compensation, disability benefit plus workers' compensation benefit, if any, shall not exceed 100% of final average compensation.

For members hired on or after June 10, 2012 – 60% of final average compensation following the survivor nomination. Disability benefit plus workers' compensation benefit, if any, shall not exceed 100% of final average compensation. The retirement allowance will be offset by the actuarially determined value of the employer funded portion plus the associated investment growth of the employer funded portion of the participant's defined contribution account balance.

NONDUTY DISABILITY RETIREMENT

- **Eligibility** – 10 years of credited service.
- **Annual Amount** – 2.4% of final average compensation times years of credited service, to a maximum of 60% of final average compensation.

  For members hired on or after June 10, 2012 – 2.4% of final average compensation times years of credited service, not to exceed 25 years of service, plus any reduction due to a survivor nomination. The retirement allowance will be offset by the actuarially determined value of the employer funded portion plus the associated investment growth of the employer funded portion of the participant's defined contribution account balance.

DUTY DEATH BEFORE RETIREMENT

- **Eligibility** – No age or service requirement.
- **Annual Amount** – 60% of final average compensation is payable to surviving spouse; additional $1,200 per year for each child under 18 is also payable; If no surviving spouse, children under 18 share in 60% benefit until attainment of age 18. If no spouse or children, dependent parents are eligible for 60% benefit (plus $1,200 per dependent sibling under 18). Retirement benefit plus workers' compensation, if any, shall not exceed 100% of final average compensation.

  For members hired on or after June 10, 2012 – 60% of final average compensation is payable to surviving spouse. If no surviving spouse, children under 18 share in 60% benefit until attainment of age 18. Retirement benefit plus workers' compensation, if any, shall not exceed 100% of final average compensation. The retirement allowance will be offset by the actuarially determined value of the employer funded portion plus the associated investment growth of the employer funded portion of the participant's defined contribution account balance.
- **Lump Sum Payment** – A $1,500 funeral benefit is also payable.

NONDUTY DEATH BEFORE RETIREMENT

- **Eligibility** – 10 years of credited service.
- **Annual Amount** – 2.4% of final average compensation times years of credited service, to a maximum of 60% of final average compensation, payable to surviving spouse; If no surviving spouse, children under 18 share in benefit until attainment of age 18.

  For members hired on or after June 10, 2012 – Calculated by years of service (up to the first 25 years) times 2.4% of final average compensation. The retirement allowance will be offset by the actuarially determined value of the employer funded portion plus the associated investment growth of the employer funded portion of the participant's defined contribution account balance. If no surviving spouse, children under 18 share in benefit until attainment of age 18.

DEATH AFTER RETIREMENT

The retired member's benefit continues to the surviving spouse. If no surviving spouse, children under 18 share in the continued benefit until attainment of age 18.

For plan members hired after July 1, 2006, surviving spouse benefits are available (100%, 75%, or 50% continuation) but the retired member's benefit is actuarially reduced for this surviving spouse coverage.

DROP PROGRAM PROVISIONS

- **DROP Eligibility** – Any age with 25 years of service. Pension Plus members hired on or after June 10, 2012, are not eligible for the DROP.
- **Maximum Years of DROP** – 6 years.
- **Retirement Benefit** – Monthly benefit frozen at date of DROP election.
- **DROP Accoun**t **- Amount credited** – 100% of the participant's Retirement Benefit if stay full six years (for all 6 years); 90% if stay 5 years; 80% if stay 4 years; 70% if stay 3 years; 60% if stay 2 years; 50% if stay 1 year; 30% if stay less than 1 year.
- **Interest Credit Rate** – 3% annually.
- **COLA** – No COLA adjustment on Retirement Benefit until the end of the DROP period.
- **Benefit Options** – At termination of DROP participation and commencement of retirement, options are lump sum of DROP account, partial lump sum, or maintain funds in account.

POSTRETIREMENT COST-OF-LIVING ADJUSTMENTS

All members retiring (or leaving employment with vested benefits), and their survivors, are eligible for automatic 2% annual (non-compounded) benefit increases, with a maximum annual increase of $500.

For members hired on or after June 10, 2012 – None.

POSTRETIREMENT HEALTHCARE BENEFITS

Persons in receipt of retirement allowances (including members who did not retire directly from the System, but come from a vested deferred status), and their dependents, are eligible for 95% State-paid health insurance coverage and 90% State-paid dental and vision insurance.

MEMBER CONTRIBUTIONS

- **Non Pension Plus Members** – Command Officers currently participate on a noncontributory basis. Effective October 1, 2012, troopers and sergeants hired before June 10, 2012 began contributing 1% of their compensation. Effective October 1, 2013 troopers and sergeants hired before June 10, 2012 began contributing 2% of their compensation.
- **Pension Plus Members** – Troopers hired on or after June 10, 2012 contribute 4% of their compensation. These contributions are for the pension component of their plan. For the DC Portion, troopers can choose how much to contribute to their DC plan.

SCHEDULE OF FUNDING PROGRESS – PENSION PLAN

(in millions)

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)	Active Payroll (c)	UAAL as a % of Active Payroll ((b-a)/c)
2013	$ 1,069.1	$ 1,724.0	$ 654.9	62.0 %	$ 110.2	594.0 %
2014	1,133.3	1,764.1	630.7	64.2	112.5	560.9
2014 [1]	1,133.3	1,799.9	666.6	63.0	112.5	592.8
2015	1,197.2	1,851.4	654.2	64.7	112.1	583.5
2016	1,272.6	1,913.1	640.5	66.5	119.0	538.1
2016 [1]	1,272.6	2,007.5	734.9	63.4	119.0	617.4
2017	1,343.0	2,054.0	711.1	65.4	129.9	547.5
2017 [1]	1,397.9	2,146.8	749.0	65.1	129.9	576.7
2018	1,461.7	2,194.4	732.7	66.6	136.7	536.0
2018 [1]	1,499.3	2,271.1	771.8	66.0	136.7	564.6
2019	1,520.0	2,320.7	800.7	65.5	141.3	566.8
2020	1,545.3	2,374.4	829.1	65.1	138.4	599.0
2021	1,627.9	2,412.2	784.3	67.5	133.9	585.6
2021 [1]	1,752.2	2,609.3	857.1	67.2	133.9	640.0
2022	1,780.1	2,675.8	895.7	66.5	140.4	637.7

[1] Revised actuarial assumptions and/or methods
Source: Gabriel, Roeder, Smith & Co.

SCHEDULE OF FUNDING PROGRESS – OPEB PLAN

(in millions)

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)	Active Payroll (c)	UAAL as a % of Active Payroll ((b-a)/c)
2013	$ 52.2	$ 603.0	$ 550.8	8.7 %	$ 110.2	499.6 %
2014	77.7	637.4	559.7	12.2	112.5	497.7
2015	94.8	675.6	580.8	14.0	112.1	518.0
2016 [1]	116.7	735.5	636.7	15.5	119.0	534.8
2017	150.7	719.0	568.3	21.0	129.9	437.6
2017 [1]	150.7	727.0	576.4	20.7	129.9	443.8
2018	186.9	727.7	540.8	25.7	136.7	395.6
2018 [1]	191.2	777.3	586.0	24.6	136.7	428.7
2019	235.0	759.6	524.6	30.9	141.3	371.3
2020	281.0	729.5	448.5	38.5	138.4	324.0
2021	334.3	715.6	381.3	46.7	138.4	248.8
2021 [1]	371.9	780.1	408.2	47.7	133.9	304.8
2022	405.6	727.5	321.9	55.7	140.4	229.2

[1] Revised actuarial assumptions and/or methods
Source: Gabriel, Roeder, Smith & Co.

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STATISTICAL SECTION

Contents

Statistical Section

Contents

This part of the System's annual comprehensive 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 the System's overall financial health.

Financial Trends

These schedules contain trend information to help the reader understand how the System's financial performance and fiscal health has changed over time. The schedules are presented for the last ten fiscal years. Schedules included are:

- Schedule of Pension Plan Additions by Source
- Schedule of OPEB Plan Additions by Source
- Schedule of Pension Plan Deductions by Type
- Schedule of OPEB Plan Deductions by Type
- Schedule of Changes in Fiduciary Net Position – Pension Plan
- Schedule of Changes in Fiduciary Net Position – OPEB Plan
- Schedule of Pension Benefit and Refunds by Type
- Schedule of OPEB Benefits and Refunds by Type

Operating Information

These schedules contain contextual information to assist the reader's understanding of how the System's financial information relates to the combination of participating members and the benefits it provides. Schedules are presented for the last ten fiscal years, except where noted. Schedules included are:

- Schedule of Retired Members by Type of Pension Benefits
- Schedule of Retired Members by Type of Other Postemployment Benefits
- Schedule of Other Postemployment Benefits
- Schedule of Average Benefit Payments – Pension
- Schedule of Average Benefit Payments – Health
- Schedule of Average Benefit Payments – Dental
- Schedule of Average Benefit Payments – Vision
- Ten Year History of Membership

SCHEDULE OF PENSION PLAN ADDITIONS BY SOURCE

Last Ten Years

Fiscal Year Ended Sept. 30	Member Contributions	Employer Contributions Dollars	Employer Contributions % of Annual Reported Payroll	Net Investment & Other Income	Total
2014	$ 2,174,031	$ 58,391,310	51.9 %	$ 174,085,069	$ 234,650,410
2015	2,677,458	70,351,036	62.7	26,239,211	99,267,706
2016	3,009,482	70,505,268	59.2	90,820,874	164,335,623
2017	3,141,638	74,813,976	57.6	165,410,872	243,366,486
2018	3,488,721	84,929,848	62.1	151,532,099	239,950,668
2019	3,692,827	78,509,525	55.6	74,725,467	156,927,819
2020	4,100,153	79,164,587	58.9	75,047,512	158,312,252
2021	3,850,277	69,151,812	51.6	401,734,848	474,736,937
2022	4,382,869	89,386,107	63.6	(82,876,595)	10,892,381
2023	4,637,149	192,645,335	N/A	138,811,300	336,093,784

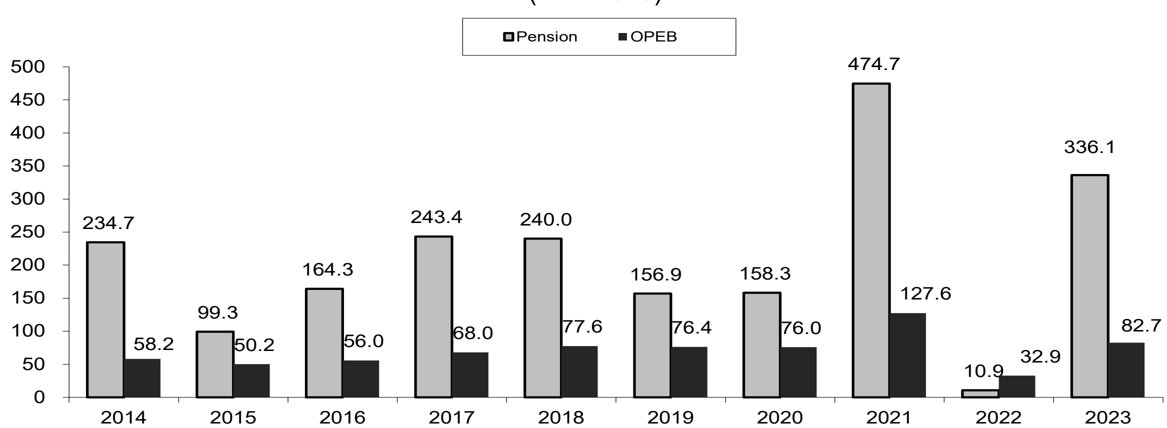
SCHEDULE OF OPEB PLAN ADDITIONS BY SOURCE

Last Ten Years

Fiscal Year Ended Sept. 30	Member Contributions	Employer Contributions Dollars	Employer Contributions % of Annual Reported Payroll	Net Investment & Other Income	Total
2014	$ 1,198,890	$ 46,614,502	41.5 %	$ 10,394,057	$ 58,207,449
2015	1,129,645	45,848,019	40.9	3,208,549	50,186,213
2016	1,160,562	45,156,857	37.9	9,691,585	56,009,004
2017	237	49,416,721	38.0	18,547,599	67,964,557
2018	-	56,779,248	41.5	20,777,421	77,556,669
2019	-	60,395,448	42.7	16,037,846	76,433,294
2020	-	62,879,463	45.4	13,122,555	76,002,018
2021	-	48,792,323	36.4	78,856,095	127,648,418
2022	-	50,742,729	36.1	(17,892,103)	32,850,626
2023	-	45,977,902	N/A	36,763,536	82,741,438

TOTAL ADDITIONS

Year Ended September 30
(in millions)



SCHEDULE OF PENSION PLAN DEDUCTIONS BY TYPE

Last Ten Years

Fiscal Year Ended Sept. 30	Benefit Payments	Refunds and Transfers	Administrative and Other Expenses	Total
2014	$ 110,542,930	$ 7,977	$ 575,108	$ 111,126,016
2015	115,466,146	2,935	561,121	116,030,202
2016	119,081,074	13,299	575,135	119,669,508
2017	130,203,073	5,196	665,820	130,874,089
2018	137,366,603	-	749,004	138,115,607
2019	144,170,669	22,767	724,858	144,918,294
2020	149,407,174	10,619	632,699	150,050,491
2021	155,315,322	113,255	677,179	156,105,756
2022	155,375,321	419,449	726,215	156,520,985
2023	161,157,318	176,073	756,165	162,089,556

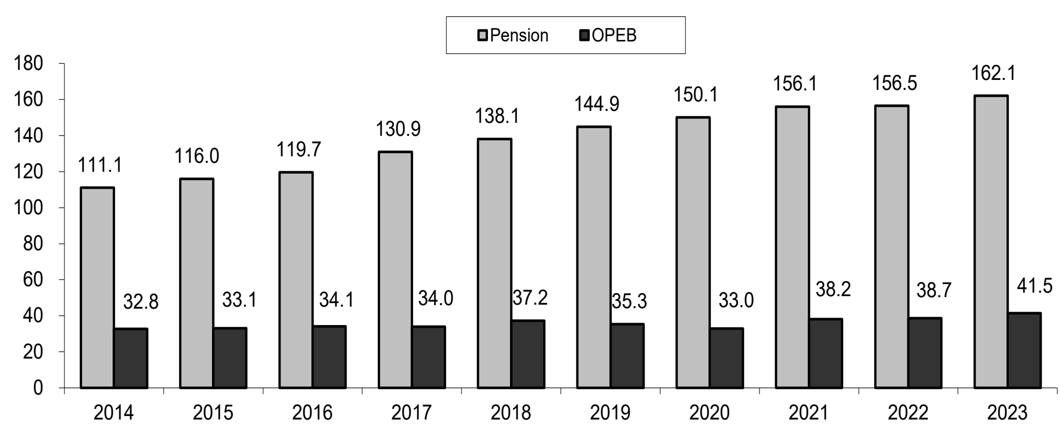
SCHEDULE OF OPEB PLAN DEDUCTIONS BY TYPE

Last Ten Years

Fiscal Year Ended Sept. 30	Benefit Payments	Refunds and Transfers	Uncollectable Accounts	Administrative and Other Expenses	Total
2014	$ 31,373,483	$ -	$ -	$ 1,409,863	$ 32,783,346
2015	31,696,743	-	-	1,383,518	33,080,261
2016	32,667,947	-	-	1,402,293	34,070,241
2017	32,657,938	-	-	1,345,546	34,003,484
2018	35,803,966	62	-	1,412,564	37,216,592
2019	33,803,356	-	-	1,521,697	35,325,053
2020	32,045,934	-	-	955,331	33,001,266
2021	36,701,237	-	744,787	800,445	38,246,469
2022	37,603,061	-	95,921	972,033	38,671,015
2023	40,602,978	-	-	855,269	41,458,247

TOTAL DEDUCTIONS

Year Ended September 30
(in millions)



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SCHEDULE OF CHANGES IN FIDUCIARY NET POSITION – PENSION PLAN

Last Ten Years
(in thousands)

	Fiscal Year 2014	2015	2016	2017
Member contributions	$ 2,174	$ 2,677	$ 3,009	$ 3,142
Employer contributions	58,391	70,351	70,505	74,814
Net investment income	174,085	26,236	90,811	165,384
Miscellaneous income	-	3	10	27
Total Additions	234,650	99,268	164,336	243,366
Pension benefits	110,543	115,466	119,081	130,203
Refunds of contributions	8	3	13	5
Administrative and other expenses	575	561	575	666
Total Deductions	111,126	116,030	119,670	130,875
Changes in net position	$ 123,524	$ (16,762)	$ 44,666	$ 112,492

SCHEDULE OF CHANGES IN FIDUCIARY NET POSITION – OPEB PLAN

Last Ten Years
(in thousands)

	Fiscal Year 2014	2015	2016	2017
Member contributions	$ 1,199	$ 1,130	$ 1,161	$ -
Employer contributions	46,615	45,848	45,157	49,417
Other governmental contributions	1,758	1,874	2,191	2,469
Net investment income	8,637	1,326	7,396	16,063
Other non-operating revenue	-	-	-	-
Miscellaneous income	-	9	104	15
Total Additions	58,207	50,186	56,009	67,965
Health benefits	31,373	31,697	32,668	32,658
Refunds of contributions	-	-	-	-
Transfers to other systems	-	-	-	-
Uncollectable accounts	-	-	-	-
Administrative and other expenses	1,410	1,384	1,402	1,346
Total Deductions	32,783	33,081	34,070	34,004
Changes in net position	$ 25,424	$ 17,106	$ 21,939	$ 33,961

Fiscal Year (continued)					
2018	2019	2020	2021	2022	2023
$ 3,489	$ 3,693	$ 4,100	$ 3,850	$ 4,383	$ 4,637
84,930	78,510	79,165	69,152	89,386	192,645
151,529	74,725	75,047	401,735	(82,877)	138,811
4	-	-	-	-	-
239,951	156,928	158,312	474,737	10,892	336,094
137,367	144,171	149,407	155,315	155,375	161,157
-	23	11	113	419	176
749	725	633	677	726	756
138,116	144,918	150,050	156,106	156,521	162,090
$ 101,835	$ 12,010	$ 8,262	$ 318,631	$ (145,629)	$ 174,004

Fiscal Year (continued)					
2018	2019	2020	2021	2022	2023
$ -	$ -	$ -	$ -	$ -	$ -
56,779	60,395	58,303	48,792	50,743	45,978
3,546	5,218	4,577	4,663	5,733	5,898
17,222	10,782	12,677	73,989	(18,070)	30,133
-	-	-	-	-	675
10	39	445	204	178	57
77,557	76,433	76,002	127,648	38,584	82,741
35,804	33,803	32,046	36,701	37,603	40,603
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	745	96	-
1,413	1,522	955	800	972	855
37,217	35,325	33,001	38,246	38,671	41,458
$ 40,340	$ 41,108	$ 43,001	$ 89,402	$ (87)	$ 41,283

SCHEDULE OF PENSION BENEFITS AND REFUNDS BY TYPE

Last Ten Years

Fiscal Year Ended Sept. 30	Regular Benefits	Disability Benefits	Survivor Benefits	DROP Benefits	Refunds Employee Contribution	Refunds Employer Contribution	Total
2014	$ 89,002,543	$ 5,804,476	$ 12,932,853	$ 2,803,058	$ -	$ 7,977	$ 110,550,907
2015	91,064,812	6,132,395	13,654,166	4,614,773	2,935	-	115,469,081
2016	93,379,361	6,344,022	14,299,429	5,058,261	13,299	-	119,094,373
2017	96,616,014	6,588,327	14,692,147	12,306,585	-	5,196	130,208,269
2018	99,907,707	6,923,210	15,247,552	15,288,134	21	(21)	137,366,603
2019	104,630,721	7,186,291	16,476,104	15,877,552	12,317	10,450	144,193,436
2020	108,920,376	7,383,417	17,484,066	15,619,315	10,619	-	149,417,793
2021	115,053,753	7,659,657	18,449,241	14,115,324	113,255	-	155,391,230
2022	117,826,427	7,734,736	19,895,257	9,918,901	419,449	-	155,794,770
2023	121,540,852	7,766,054	20,806,500	11,043,912	176,073	-	161,333,391

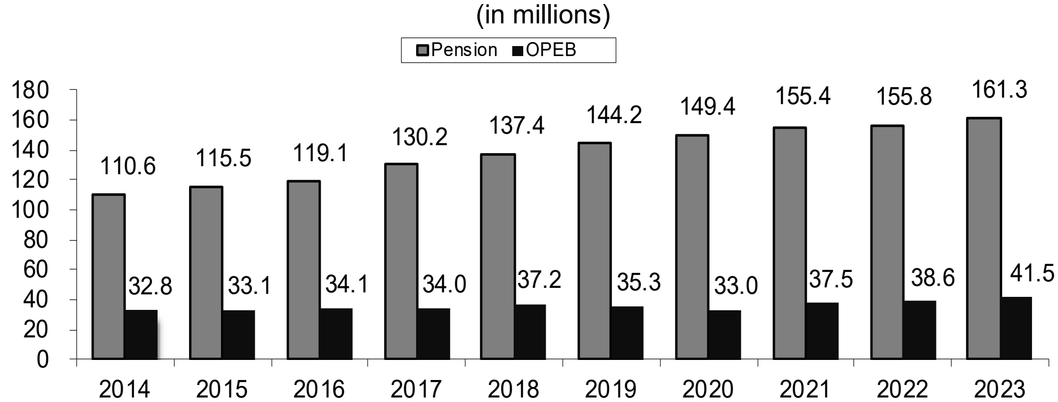
SCHEDULE OF OPEB BENEFITS AND REFUNDS BY TYPE

Last Ten Years

Fiscal Year Ended Sept. 30	Health Benefits	Dental Benefits	Vision Benefits	Administrative Expenses	Health Refunds	Total
2014	$ 28,748,890	$ 2,440,060	$ 184,533	$ 1,409,863	$ -	$ 32,783,346
2015	29,110,087	2,380,425	206,231	1,383,518	-	33,080,261
2016	30,057,236	2,401,978	208,734	1,402,293	-	34,070,241
2017	30,215,360	2,190,542	252,037	1,345,546	-	34,003,485
2018	33,328,845	2,301,342	173,779	1,412,564	62	37,216,592
2019	31,217,702	2,376,406	209,247	1,521,697	-	35,325,053
2020	29,855,744	2,008,336	181,854	955,331	-	33,001,266
2021	34,164,770	2,314,832	221,634	800,445	-	37,501,682
2022	34,932,289	2,443,686	227,086	972,033	-	38,575,094
2023	37,641,696	2,666,396	294,886	855,269	-	41,458,247

TOTAL BENEFIT DEDUCTIONS

Year Ended September 30
(in millions)



SCHEDULE OF RETIRED MEMBERS BY TYPE OF PENSION BENEFITS

September 30, 2022

Amount of Monthly Pension Benefit	Number of Retirees	Type of Retirement *						Option**
		1	2	3	4	5	6	Life
$ 1 - 400	25	19	-	2	1	3	-	25
401 - 800	107	99	4	1	-	1	2	107
801 - 1,200	113	94	8	5	3	-	3	113
1,201 - 1,600	116	69	20	11	5	10	1	116
1,601 - 2,000	148	66	44	27	6	3	2	148
2,001 - 2,400	151	82	43	10	11	4	1	151
2,401 - 2,800	124	73	28	8	9	2	4	124
2,801 - 3,200	133	83	29	14	6	-	1	133
3,201 - 3,600	348	212	98	21	11	-	6	348
3,601 - 4,000	571	419	100	37	8	3	4	571
Over 4,000	1,525	1,392	83	39	6	2	3	1,525
Totals	3,361	2,608	457	175	66	28	27	3,361

* Type of Retirement
1 – Normal retirement for age and service
2 – Survivor payment – normal retirement
3 – Duty disability retirement (including survivors)
4 – Nonduty disability retirement (including survivors)
5 – Survivor payment – duty death in service
6 – Survivor payment – nonduty death in service

** Selected Option
Life – 100% joint and survivor

Source: Gabriel, Roeder, Smith & Co.

SCHEDULE OF RETIRED MEMBERS BY TYPE OF OTHER POSTEMPLOYMENT BENEFITS

September 30, 2022

Amount of Monthly Pension Benefit	Number of Retirees	Type of Other Postemployment Benefits		
		Health	Dental	Vision
$ 1 – 400	25	1	1	1
401 – 800	107	29	28	28
801 – 1,200	113	35	35	35
1,201 – 1,600	116	62	65	65
1,601 – 2,000	148	105	106	105
2,001 – 2,400	151	124	121	120
2,401 – 2,800	124	112	113	113
2,801 – 3,200	133	129	128	129
3,201 – 3,600	348	338	341	341
3,601 – 4,000	571	548	550	551
Over 4,000	1,525	1,472	1,475	1,474
Totals	3,361	2,955	2,963	2,962

Source: Gabriel, Roeder, Smith & Co.

For Year Ended September 30, 2023
(in thousands)

Claims:	
Health Insurance	$35,483
Vision Insurance	286
Dental Insurance	2,613
Total Claims	38,382
Estimated Claims Liability:	
Health Insurance	2,158
Vision Insurance	9
Dental Insurance	54
Total Estimated Claims Liability	2,221
Administrative Fees:	
Staff Salaries	55
Staff Retirement and Social Security	31
Staff Other Fringe Benefits	12
Accounting	5
Actuary	20
Attorney General	6
Buildings Rental	2
Independent Auditors	17
Postage, Telephone, and Other	3
Technological Support	35
Health Insurance	576
Vision Insurance	3
Dental Insurance	91
Total Administrative Fees	856
Grand Total	$ 41,459

SCHEDULE OF AVERAGE BENEFIT PAYMENTS – PENSION*

Last Ten Years

Payment Periods	Credited Service (Years) as of September 30							
	0-5	5-10	10-15	15-20	20-25	25-30	30+	Total
Period 10/1/12 to 9/30/13:								
Average Monthly Benefit	$ 1,949	$ 2,197	$ 1,389	$ 1,846	$ 2,803	$ 3,147	$ 3,383	$ 2,984
Average Final Average Salary	57,421	36,625	39,204	41,154	54,177	54,952	59,512	53,953
Number of Active Retirants	58	32	150	99	165	2,153	296	2,953
Period 10/1/13 to 9/30/14:								
Average Monthly Benefit	$ 1,487	$ 2,258	$ 1,423	$ 1,989	$ 2,311	$ 3,211	$ 3,444	$ 3,043
Average Final Average Salary	12,794	37,160	39,452	45,375	43,523	57,079	60,468	55,126
Number of Active Retirants	12	33	150	109	122	2,249	288	2,963
Period 10/1/14 to 9/30/15:								
Average Monthly Benefit	$ 1,555	$ 2,220	$ 1,467	$ 2,057	$ 2,374	$ 3,276	$ 3,520	$ 3,105
Average Final Average Salary	16,277	38,261	40,035	47,567	45,227	58,215	61,447	56,247
Number of Active Retirants	13	34	153	108	125	2,275	279	2,987
Period 10/1/15 to 9/30/16:								
Average Monthly Benefit	$ 1,636	$ 2,175	$ 1,466	$ 2,158	$ 2,442	$ 3,354	$ 3,560	$ 3,168
Average Final Average Salary	16,277	41,678	40,371	50,193	46,503	59,402	61,608	57,317
Number of Active Retirants	13	37	157	116	126	2,295	274	3,018
Period 10/1/16 to 9/30/17:								
Average Monthly Benefit	$ 1,659	$ 2,229	$ 1,496	$ 2,235	$ 2,571	$ 3,424	$ 3,627	$ 3,240
Average Final Average Salary	16,277	42,625	40,370	51,448	49,672	60,635	62,457	58,538
Number of Active Retirants	13	36	157	116	131	2,342	267	3,062
Period 10/1/17 to 9/30/18:								
Average Monthly Benefit	$ 1,714	$ 2,380	$ 1,519	$ 2,279	$ 2,607	$ 3,502	$ 3,688	$ 3,316
Average Final Average Salary	17,588	44,536	40,516	52,014	50,761	62,416	63,080	60,121
Number of Active Retirants	12	33	156	115	136	2,406	259	3,117
Period 10/1/18 to 9/30/19:								
Average Monthly Benefit	$ 1,737	$ 2,409	$ 1,547	$ 2,351	$ 2,738	$ 3,603	$ 3,712	$ 3,406
Average Final Average Salary	17,588	44,536	42,501	52,783	53,418	64,302	63,165	61,841
Number of Active Retirants	12	33	161	117	133	2,460	258	3,174
Period 10/1/19 to 9/30/20:								
Average Monthly Benefit	$ 1,761	$ 2,439	$ 1,547	$ 2,383	$ 2,818	$ 3,702	$ 3,750	$ 3,494
Average Final Average Salary	17,588	44,536	43,082	52,931	55,334	66,658	63,249	63,844
Number of Active Retirants	12	33	163	116	136	2,541	256	3,257
Period 10/1/20 to 9/30/21:								
Average Monthly Benefit	$ 1,738	$ 2,580	$ 1,575	$ 2,447	$ 2,887	$ 3,787	$ 3,826	$ 3,573
Average Final Average Salary	21,384	44,785	45,458	54,283	57,550	68,470	64,318	65,630
Number of Active Retirants	12	31	172	113	144	2,609	243	3,324
Period 10/1/21 to 9/30/22								
Average Monthly Benefit	$ 1,760	$ 2,611	$ 1,578	$ 2,475	$ 2,987	$ 3,862	$ 3,880	$ 3,641
Average Final Average Salary	21,384	44,785	45,532	54,800	60,181	69,983	65,138	67,035
Number of Active Retirants	12	31	174	115	142	2,649	238	3,361

*Average monthly benefits shown are pension benefits.
Source: Gabriel, Roeder, Smith & Co.

SCHEDULE OF AVERAGE BENEFIT PAYMENTS – HEALTH*

Last Ten Years

Payment Periods	Credited Service (Years) as of September 30							
	0-5	5-10	10-15	15-20	20-25	25-30	30 +	Total
Period 10/1/12 to 9/30/13:								
Average Monthly Benefit	$ 2,813	$ 2,328	$ 1,521	$ 1,918	$ 3,040	$ 3,355	$ 3,571	$ 3,147
Average Final Average Salary	52,704	34,695	38,003	41,001	49,624	56,859	59,281	53,496
Number of Active Retirants	28	26	116	85	731	1,388	265	2,639
Period 10/1/13 to 9/30/14:								
Average Monthly Benefit	$ 1,454	$ 2,393	$ 1,550	$ 2,077	$ 3,001	$ 3,474	$ 3,645	$ 3,217
Average Final Average Salary	14,124	35,421	38,186	45,084	47,839	59,214	60,250	54,560
Number of Active Retirants	8	27	115	94	686	1,454	256	2,640
Period 10/1/14 to 9/30/15:								
Average Monthly Benefit	$ 1,546	$ 2,424	$ 1,592	$ 2,153	$ 3,047	$ 3,555	$ 3,728	$ 3,286
Average Final Average Salary	19,007	35,421	38,841	46,892	48,148	60,432	61,174	55,517
Number of Active Retirants	9	27	117	93	683	1,476	248	2,653
Period 10/1/15 to 9/30/16:								
Average Monthly Benefit	$ 1,653	$ 2,501	$ 1,591	$ 2,234	$ 3,107	$ 3,636	$ 3,775	$ 3,353
Average Final Average Salary	19,007	36,820	39,558	49,068	48,779	61,782	61,350	56,611
Number of Active Retirants	9	28	122	99	669	1,510	243	2,680
Period 10/1/16 to 9/30/17:								
Average Monthly Benefit	$ 1,676	$ 2,580	$ 1,617	$ 2,295	$ 3,170	$ 3,711	$ 3,854	$ 3,426
Average Final Average Salary	19,007	37,902	39,682	50,621	49,644	63,152	62,303	57,844
Number of Active Retirants	9	27	122	99	672	1,559	236	2,724
Period 10/1/17 to 9/30/18:								
Average Monthly Benefit	$ 1,750	$ 2,717	$ 1,636	$ 2,361	$ 3,215	$ 3,807	$ 3,909	$ 3,512
Average Final Average Salary	21,316	40,630	39,834	50,988	50,078	65,257	62,705	59,437
Number of Active Retirants	8	25	123	97	666	1,630	230	2,779
Period 10/1/18 to 9/30/19:								
Average Monthly Benefit	$ 1,774	$ 2,751	$ 1,676	$ 2,433	$ 3,304	$ 3,913	$ 3,943	$ 3,609
Average Final Average Salary	21,316	40,630	41,025	51,917	51,272	67,360	62,727	61,220
Number of Active Retirants	8	25	124	99	649	1,689	228	2,822
Period 10/1/19 to 9/30/20:								
Average Monthly Benefit	$ 1,798	$ 2,752	$ 1,728	$ 2,471	$ 3,371	$ 4,035	$ 3,993	$ 3,715
Average Final Average Salary	21,316	39,848	52,002	52,002	2,249	70,087	62,974	63,357
Number of Active Retirants	8	24	97	97	645	1,764	226	2,885
Period 10/1/20 to 9/30/21								
Average Monthly Benefit	$ 1,890	$ 2,847	$ 1,709	$ 2,526	$ 3,440	$ 4,130	$ 4,062	$ 3,802
Average Final Average Salary	22,894	41,288	43,303	53,174	53,362	71,977	63,813	65,086
Number of Active Retirants	7	23	126	96	647	1,827	216	2,942
Period 10/1/21 to 9/30/22								
Average Monthly Benefit	$ 1,915	$ 2,881	$ 1,745	$ 2,563	$ 3,534	$ 4,215	$ 4,125	$ 3,885
Average Final Average Salary	22,894	41,288	44,353	54,161	54,880	73,371	64,725	66,504
Number of Active Retirants	7	23	128	97	638	1,851	211	2,955

*Average monthly benefits shown are pension benefits.
Source: Gabriel, Roeder, Smith & Co.

SCHEDULE OF AVERAGE BENEFIT PAYMENTS – DENTAL*

Last Ten Years

Payment Periods	Credited Service (Years) as of September 30							
	0-5	5-10	10-15	15-20	20-25	25-30	30+	Total
Period 10/1/12 to 9/30/13:								
Average Monthly Benefit	$ 2,813	$ 2,328	$ 1,549	$ 1,918	$ 3,048	$ 3,364	$ 3,578	$ 3,156
Average Final Average Salary	52,704	34,695	38,683	40,777	49,851	57,062	59,413	53,705
Number of Active Retirants	28	26	117	84	725	1,384	265	2,629
Period 10/1/13 to 9/30/14:								
Average Monthly Benefit	$ 1,454	$ 2,393	$ 1,578	$ 2,078	$ 3,010	$ 3,480	$ 3,653	$ 3,224
Average Final Average Salary	14,124	35,421	38,870	44,925	48,067	59,324	60,387	54,710
Number of Active Retirants	8	27	116	93	683	1,447	256	2,630
Period 10/1/14 to 9/30/15:								
Average Monthly Benefit	$ 1,546	$ 2,424	$ 1,620	$ 2,155	$ 3,053	$ 3,561	$ 3,736	$ 3,293
Average Final Average Salary	19,007	35,421	39,508	46,752	48,316	60,581	61,315	55,675
Number of Active Retirants	9	27	118	92	680	1,470	248	2,644
Period 10/1/15 to 9/30/16:								
Average Monthly Benefit	$ 1,653	$ 2,501	$ 1,622	$ 2,236	$ 3,114	$ 3,642	$ 3,783	$ 3,361
Average Final Average Salary	19,007	36,820	40,063	48,958	48,953	61,928	61,494	56,771
Number of Active Retirants	9	28	122	98	666	1,505	243	2,671
Period 10/1/16 to 9/30/17:								
Average Monthly Benefit	$ 1,676	$ 2,580	$ 1,648	$ 2,297	$ 3,176	$ 3,716	$ 3,862	$ 3,433
Average Final Average Salary	19,007	37,902	40,186	50,527	49,822	63,270	62,452	57,985
Number of Active Retirants	9	27	122	98	669	1,552	236	2,713
Period 10/1/17 to 9/30/18:								
Average Monthly Benefit	$ 1,750	$ 2,717	$ 1,667	$ 2,364	$ 3,220	$ 3,812	$ 3,917	$ 3,518
Average Final Average Salary	21,316	40,630	40,334	50,895	50,224	65,374	62,858	59,579
Number of Active Retirants	8	25	123	96	663	1,627	230	2,772
Period 10/1/18 to 9/30/19								
Average Monthly Benefit	$ 1,774	$ 2,751	$ 1,707	$ 2,436	$ 3,308	$ 3,915	$ 3,951	$ 3,614
Average Final Average Salary	21,316	4,063	41,521	51,836	51,388	67,415	62,881	61,312
Number of Active Retirants	8	25	124	98	647	1,685	228	2,815
Period 10/1/19 to 9/30/20								
Average Monthly Benefit	$ 1,798	$ 2,752	$ 1,728	$ 2,471	$ 3,371	$ 4,035	$ 3,993	$ 3,715
Average Final Average Salary	21,316	39,848	42,247	52,002	52,249	70,087	62,974	63,357
Number of Active Retirants	8	24	124	97	645	1,764	226	2,888
Period 10/1/20 to 9/30/21								
Average Monthly Benefit	$ 1,890	$ 2,847	$ 1,746	$ 2,529	$ 3,441	$ 4,133	$ 4,062	$ 3,805
Average Final Average Salary	22,894	41,288	43,706	53,104	53,388	72,065	63,803	65,141
Number of Active Retirants	7	23	127	95	651	1,827	217	2,947
Period 10/1/21 to 9/30/22								
Average Monthly Benefit	$ 1,915	$ 2,881	$ 1,725	$ 2,556	$ 3,534	$ 4,217	$ 4,125	$ 3,884
Average Final Average Salary	22,894	41,288	43,598	53,643	54,837	73,404	64,711	66,443
Number of Active Retirants	7	23	128	97	644	1,852	212	2,963

*Average monthly benefits shown are pension benefits.
Source: Gabriel, Roeder, Smith & Co.

SCHEDULE OF AVERAGE BENEFIT PAYMENTS – VISION*

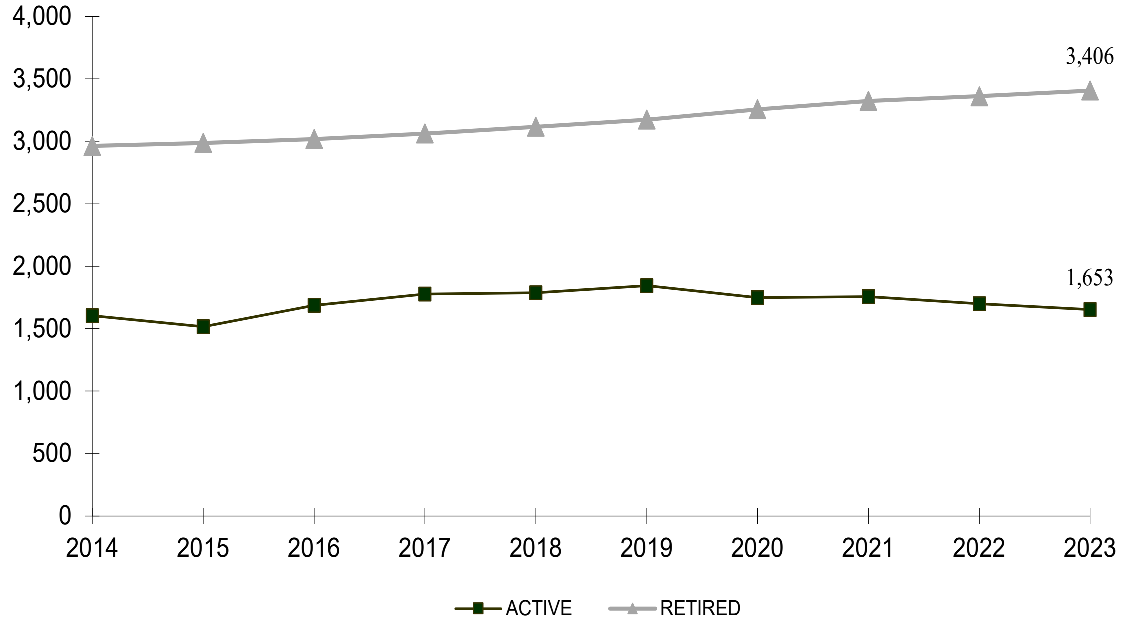
Last Ten Years

Payment Periods	Credited Service (Years) as of September 30							
	0-5	5-10	10-15	15-20	20-25	25-30	30 +	Total
Period 10/1/12 to 9/30/13								
Average Monthly Benefit	$ 2,813	$ 2,328	$ 1,550	$ 1,918	$ 3,048	$ 3,365	$ 3,578	$ 3,157
Average Final Average Salary	52,704	34,695	38,928	40,777	49,820	57,084	59,413	53,729
Number of Active Retirants	28	26	116	84	727	1,390	265	2,636
Period 10/1/13 to 9/30/14								
Average Monthly Benefit	$ 1,454	$ 2,393	$ 1,580	$ 2,078	$ 3,010	$ 3,483	$ 3,653	$ 3,227
Average Final Average Salary	14,124	35,421	39,119	44,925	48,043	59,417	60,387	54,786
Number of Active Retirants	8	27	115	93	683	1,455	256	2,637
Period 10/1/14 to 9/30/15								
Average Monthly Benefit	$ 1,546	$ 2,424	$ 1,621	$ 2,155	$ 3,055	$ 3,564	$ 3,736	$ 3,296
Average Final Average Salary	19,007	35,421	39,758	46,752	48,347	60,650	61,315	55,754
Number of Active Retirants	9	27	117	92	679	1,477	248	2,649
Period 10/1/15 to 9/30/16								
Average Monthly Benefit	$ 1,653	$ 2,501	$ 1,623	$ 2,236	$ 3,116	$ 3,645	$ 3,783	$ 3,364
Average Final Average Salary	19,007	36,820	40,309	48,958	48,986	62,000	61,494	56,852
Number of Active Retirants	9	28	121	98	665	1,511	243	2,675
Period 10/1/16 to 9/30/17								
Average Monthly Benefit	$ 1,676	$ 2,580	$ 1,650	$ 2,297	$ 3,178	$ 3,719	$ 3,862	$ 3,437
Average Final Average Salary	19,007	37,902	40,434	50,527	49,856	63,335	62,452	58,063
Number of Active Retirants	9	27	121	98	668	1,558	236	2,717
Period 10/1/17 to 9/30/18								
Average Monthly Benefit	$ 1,750	$ 2,717	$ 1,668	$ 2,364	$ 3,220	$ 3,813	$ 3,917	$ 3,520
Average Final Average Salary	21,316	40,630	40,581	50,895	50,188	65,409	62,858	59,624
Number of Active Retirants	8	25	122	96	661	1,631	230	2,773
Period 10/1/18 to 9/30/19								
Average Monthly Benefit	$ 1,774	$ 2,751	$ 1,707	$ 2,436	$ 3,308	$ 3,917	$ 3,951	$ 3,615
Average Final Average Salary	21,316	40,630	41,521	51,836	51,355	67,443	62,881	61,337
Number of Active Retirants	8	25	124	98	645	1,689	228	2,817
Period 10/1/19 to 9/30/20								
Average Monthly Benefit	$ 1,798	$ 2,752	$ 1,728	$ 2,471	$ 3,371	$ 4,035	$ 3,993	$ 3,716
Average Final Average Salary	21,316	39,848	42,247	52,002	52,218	70,099	62,974	63,370
Number of Active Retirants	8	24	124	97	643	1,766	226	2,888
Period 10/1/20 to 9/30/21								
Average Monthly Benefit	$ 1,890	$ 2,847	$ 1,746	$ 2,529	$ 3,441	$ 4,133	$ 4,062	$ 3,806
Average Final Average Salary	22,894	41,288	43,706	53,104	53,361	72,076	63,803	65,154
Number of Active Retirants	7	23	127	95	649	1,829	217	2,947
Period 10/1/21 to 9/30/22								
Average Monthly Benefit	$ 1,915	$ 2,881	$ 1,725	$ 2,556	$ 3,534	$ 4,216	$ 4,125	$ 3,884
Average Final Average Salary	22,894	41,288	43,598	53,643	54,815	73,373	64,711	66,429
Number of Active Retirants	7	23	128	97	642	1,853	212	2,962

*Average monthly benefits shown are pension benefits.
Source: Gabriel, Roeder, Smith & Co.

TEN YEAR HISTORY OF MEMBERSHIP

Fiscal Year Ended September 30



Source: Gabriel, Roeder, Smith & Co.

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ACKNOWLEDGMENTS

ACKNOWLEDGMENTS

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Management:

Jacqueline Huhn, Director
Aver Hamilton, Accounting Manager
Paula Webb, Accounting Manager

Accountants:

Dan Harry
Samuel Kangethe
Amanda Lamp
Rick Legal
Hope Richardson
Carol Wheaton

Technical and Support Staff:

Cari Beach
Jamin Schroeder

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