

Michigan State Employees' Retirement System

A Pension and Other Postemployment Benefit Trust Fund of the State of Michigan

Schedule of Employer Allocations and Schedules of Pension and Other Postemployment Benefit Amounts by Employer for Fiscal Year Ended September 30, 2019



Prepared by
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Office of the Auditor General

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Doug A. Ringler, CPA, CIA
Auditor General

Independent Auditor's Report

Colonel John J. Wojcik, Chair
State of Michigan Retirement Board
Stevens T. Mason Building
and
Mr. Brom Stibitz, Acting Director
Department of Technology, Management, and Budget
Elliott-Larsen Building
and
Mr. Anthony J. Estell, Director
Office of Retirement Services
Stevens T. Mason Building
Lansing, Michigan

Dear Colonel Wojcik, Mr. Stibitz, and Mr. Estell:

Report on the Schedules

We have audited the accompanying schedule of employer allocations and the related notes of the Michigan State Employees' Retirement System as of and for the fiscal year ended September 30, 2019. We have also audited the respective totals by employer for the following columns, hereafter referred to as the specified column totals:

- September 30, 2019 net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension expense included in the accompanying schedule of pension amounts by employer as of and for the fiscal year ended September 30, 2019.
- September 30, 2019 net OPEB liability, total deferred outflows of resources, total deferred inflows of resources, and total employer OPEB expense included in the accompanying schedule of other postemployment benefit (OPEB) amounts by employer as of and for the fiscal year ended September 30, 2019.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

Our responsibility is to express opinions on the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer are free from material misstatement.



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Mr. Anthony J. Estell, Director
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An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer.

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

Opinions

In our opinion, the schedules referred to in the first paragraph present fairly, in all material respects, the employers' pension and OPEB allocations and the respective employers' specified column totals included in the schedule of pension amounts by employer and the schedule of OPEB amounts by employer for the Michigan State Employees' Retirement System as of and for the fiscal year ended September 30, 2019 in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the System as of and for the fiscal year ended September 30, 2019, and our report thereon, dated January 10, 2020, expressed an unmodified opinion on those financial statements.

Restriction on Use

Our report is intended solely for the information and use of the State of Michigan Retirement Board, the Department of Technology, Management, and Budget, the Office of Retirement Services, and the System's participating employers and their auditors and is not intended to be and should not be used by anyone other than these specified parties.

Sincerely,

Doug Ringler
Auditor General
September 29, 2020

Michigan State Employees' Retirement System
Schedule Of Employer Allocations
As Of And For The Fiscal Year Ended September 30, 2019

Employer Name	Total Required Employer Pension Contributions	Pension Proportionate Share	Total Required Employer OPEB Contributions	OPEB Proportionate Share
GOVERNMENTAL ACTIVITIES				
State of Michigan	\$ 555,983,657	0.930562927	\$ 710,561,375	0.9301708511
State Building Authority	43,552	0.000072895	47,381	0.0000620241
BUSINESS TYPE ACTIVITIES				
Information Technology Fund	27,358,889	0.045791216	35,353,127	0.0462795322
State Lottery Fund	2,624,934	0.004393415	3,375,149	0.0044182891
Liquor Purchase Revolving Fund	1,202,095	0.002011974	1,485,401	0.0019444856
Office Services Revolving Fund	1,274,114	0.002132515	1,604,386	0.0021002447
Correctional Industries Revolving Fund	598,709	0.001002073	728,749	0.0009539801
Motor Transport Fund	429,410	0.000718714	538,499	0.0007049294
Attorney Discipline System	96,466	0.000161457	104,348	0.0001365981
Risk Management Fund	55,459	0.000092824	74,615	0.0000976754
COMPONENT UNITS				
Michigan State Housing Development Authority	3,807,633	0.006372925	4,810,712	0.0062975330
Michigan Strategic Fund	600,522	0.001005108	747,584	0.0009786362
Michigan Economic Development Corporation	1,131,766	0.001894263	1,435,124	0.0018786705
Michigan Finance Authority	758,803	0.001270027	968,139	0.0012673560
Mackinac Bridge Authority	805,111	0.001347533	1,061,566	0.0013896583
Mackinac Island State Park Commission	237,264	0.000397114	311,303	0.0004075153
Michigan Education Trust	265,054	0.000443628	322,426	0.0004220763
Land Bank Fast Track Authority	164,152	0.000274746	220,849	0.0002891061
State Bar of Michigan	32,650	0.000054646	153,421	0.0002008385
Total	\$ 597,470,240	1.000000000	\$ 763,904,154	1.000000000

Employer-level results may not add to System-wide results due to rounding.
The accompanying notes are an integral part of this schedule.

Michigan State Employees' Retirement System
Schedule Of Pension Amounts By Employer
As Of And For The Fiscal Year Ended September 30, 2019
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Employer Name	September 30, 2019 Net Pension Liability	Deferred Outflows of Resources			
		Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Pension Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources
GOVERNMENTAL ACTIVITIES					
State Of Michigan	\$ 6,204,663,961	\$ -	\$ -	\$ -	\$ -
State Building Authority	486,035	-	-	-	-
BUSINESS TYPE ACTIVITIES					
Information Technology Fund	305,319,610	-	-	-	-
State Lottery Fund	29,293,732	-	-	-	-
Liquor Purchase Revolving Fund	13,415,133	-	-	-	-
Office Services Revolving Fund	14,218,855	-	-	-	-
Correctional Industries Revolving Fund	6,681,470	-	-	-	-
Motor Transport Fund	4,792,129	-	-	-	-
Attorney Discipline System	1,076,539	-	-	-	-
Risk Management Fund	618,916	-	-	-	-
COMPONENT UNITS					
Michigan State Housing Development Authority	42,492,408	-	-	-	-
Michigan Strategic Fund	6,701,705	-	-	-	-
Michigan Economic Development Corporation	12,630,277	-	-	-	-
Michigan Finance Authority	8,468,088	-	-	-	-
Mackinac Bridge Authority	8,984,874	-	-	-	-
Mackinac Island State Park Commission	2,647,814	-	-	-	-
Michigan Education Trust	2,957,953	-	-	-	-
Land Bank Fast Track Authority	1,831,906	-	-	-	-
State Bar Of Michigan	364,363	-	-	-	-
Total	\$ 6,667,645,768	\$ -	\$ -	\$ -	\$ -

Employer-level results may not add to System-wide results due to rounding.
The accompanying notes are an integral part of this schedule.

Michigan State Employees' Retirement System
Schedule Of Pension Amounts By Employer
As Of And For The Fiscal Year Ended September 30, 2019
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Deferred Inflows of Resources					Pension Expense		
Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Pension Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Pension Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
\$ -	\$ 256,599,977	\$ -	\$ -	\$ 256,599,977	\$ 911,925,850	\$ 7,399,655	\$ 919,325,505
-	20,100	-	-	20,100	71,435	(191,098)	(119,663)
-	12,626,793	-	-	12,626,793	44,874,122	(9,545,122)	35,329,000
-	1,211,471	-	-	1,211,471	4,305,424	254,067	4,559,491
-	554,796	-	-	554,796	1,971,679	(185,282)	1,786,397
-	588,035	-	-	588,035	2,089,806	497,132	2,586,938
-	276,319	-	-	276,319	982,004	(413,218)	568,786
-	198,183	-	-	198,183	704,320	(48,221)	656,099
-	44,521	-	-	44,521	158,224	14,782	173,006
-	25,596	-	-	25,596	90,965	25,437	116,402
-	1,757,315	-	-	1,757,315	6,245,290	(725,989)	5,519,301
-	277,156	-	-	277,156	984,978	(310,580)	674,398
-	522,338	-	-	522,338	1,856,326	195,129	2,051,455
-	350,206	-	-	350,206	1,244,591	(216,375)	1,028,216
-	371,578	-	-	371,578	1,320,545	(48,875)	1,271,670
-	109,503	-	-	109,503	389,161	(108,482)	280,679
-	122,329	-	-	122,329	434,743	182,296	617,039
-	75,760	-	-	75,760	269,243	540,592	809,835
-	15,069	-	-	15,069	53,552	(1,283)	52,269
<u>\$ -</u>	<u>\$ 275,747,045</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 275,747,045</u>	<u>\$ 979,972,255</u>	<u>\$ (2,685,435)</u>	<u>\$ 977,286,823</u>

Employer-level results may not add to System-wide results due to rounding.
The accompanying notes are an integral part of this schedule.

Michigan State Employees' Retirement System
Schedule Of Other Postemployment Benefit (OPEB) Amounts By Employer
As Of And For The Fiscal Year Ended September 30, 2019
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Employer Name	September 30, 2019 Net OPEB Liability	Deferred Outflows of Resources			
		Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer OPEB Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources
GOVERNMENTAL ACTIVITIES					
State Of Michigan	\$ 7,324,307,304	\$ -	\$ 1,220,977,757	\$ 12,938,181	\$ 1,233,915,938
State Building Authority	488,387	-	81,415	13,162	94,577
BUSINESS TYPE ACTIVITIES					
Information Technology Fund	364,412,103	-	60,748,280	6,930,912	67,679,192
State Lottery Fund	34,790,283	-	5,799,615	360,189	6,159,804
Liquor Purchase Revolving Fund	15,311,177	-	2,552,406	40,977	2,593,383
Office Services Revolving Fund	16,537,647	-	2,756,861	481,956	3,238,817
Correctional Industries Revolving Fund	7,511,785	-	1,252,231	19,456	1,271,687
Motor Transport Fund	5,550,722	-	925,317	310,721	1,236,038
Attorney Discipline System	1,075,594	-	179,304	-	179,304
Risk Management Fund	769,111	-	128,212	74,989	203,201
COMPONENT UNITS					
Michigan State Housing Development Authority	49,587,736	-	8,266,382	10,953	8,277,335
Michigan Strategic Fund	7,705,931	-	1,284,595	1,555,486	2,840,081
Michigan Economic Development Corporation	14,792,938	-	2,466,015	717,991	3,184,006
Michigan Finance Authority	9,979,355	-	1,663,580	71,668	1,735,248
Mackinac Bridge Authority	10,942,382	-	1,824,119	19,575	1,843,694
Mackinac Island State Park Commission	3,208,838	-	534,920	-	534,920
Michigan Education Trust	3,323,493	-	554,033	393,681	947,714
Land Bank Fast Track Authority	2,276,466	-	379,492	1,043,469	1,422,961
State Bar Of Michigan	1,581,433	-	263,628	20,231	283,859
Total	\$ 7,874,152,684	\$ -	\$ 1,312,638,162	\$ 25,003,597	\$ 1,337,641,759

Employer-level results may not add to System-wide results due to rounding.
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Michigan State Employees' Retirement System
Schedule Of Other Postemployment Benefit (OPEB) Amounts by Employer
As Of And For The Fiscal Year Ended September 30, 2019
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Deferred Inflows of Resources					OPEB Expense			
Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on OPEB Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer OPEB Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of OPEB Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer OPEB Contributions and Proportionate Share of Contributions	Total Employer OPEB Expense	
\$ 1,374,192,049	\$ 34,610,895	\$ -	\$ 31,727,304	\$ 1,440,530,248	\$ 512,358,080	\$ (7,452,588)	\$ 504,905,492	
91,632	2,308	-	178,180	272,120	34,164	(36,241)	(2,077)	
68,371,273	1,722,023	-	12,140,054	82,233,350	25,491,760	(881,121)	24,610,639	
6,527,379	164,401	-	140,968	6,832,748	2,433,689	49,676	2,483,365	
2,872,694	72,353	-	2,859,983	5,805,030	1,071,064	(789,494)	281,570	
3,102,806	78,148	-	2,189,028	5,369,982	1,156,860	(521,783)	635,077	
1,409,367	35,497	-	570,688	2,015,552	525,473	(132,728)	392,745	
1,041,431	26,230	-	64,457	1,132,118	388,290	72,275	460,565	
201,804	5,083	-	90,838	297,725	75,241	(21,745)	53,496	
144,301	3,634	-	2,778	150,713	53,802	19,104	72,906	
9,303,688	234,326	-	2,266,277	11,804,291	3,468,816	(596,407)	2,872,409	
1,445,793	36,414	-	466,800	1,949,007	539,054	338,254	877,308	
2,775,462	69,904	-	2,482,638	5,328,004	1,034,812	(552,873)	481,939	
1,872,334	47,157	-	263,674	2,183,165	698,087	(42,615)	655,472	
2,053,018	51,708	-	155,158	2,259,884	765,454	(33,746)	731,708	
602,045	15,163	-	274,841	892,049	224,468	(72,801)	151,667	
623,556	15,705	-	11,272	650,533	232,489	97,389	329,878	
427,112	10,757	-	4,137	442,006	159,246	260,681	419,927	
296,710	7,473	-	22,922	327,105	110,626	(536)	110,090	
\$ 1,477,354,454	\$ 37,209,179	\$ --	\$ 55,911,997	\$ 1,570,475,630	\$ 550,821,475	\$ (10,297,299)	\$ 540,524,176	

Employer-level results may not add to System-wide results due to rounding.
The accompanying notes are an integral part of this schedule.

Michigan State Employees' Retirement System
Notes to the Schedule of Employer Allocations and
Schedules of Pension and OPEB Amounts by Employer

Note 1: Plan Description

Organization

The Michigan State Employees' Retirement System (System) is a single-employer, state-wide, defined benefit public employee retirement plan governed by the State of Michigan (State) and created under Public Act 240 of 1943, as amended. Section 2 of this act established the board's authority to promulgate or amend the provisions of the System. Executive Order 2015-13 signed by the Governor on October 27, 2015 established the State of Michigan Retirement Board. The executive order establishes the board's authority to promulgate or amend the provision of the System.

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

Plan Membership

The System's pension and Other Postemployment Benefit (OPEB) plans were established by the State to provide retirement, survivor and disability benefits to state employees. Members are eligible to receive a monthly benefit when they meet certain age and service requirements. In addition, the System's OPEB plan provides all retirees with the option of receiving health, dental, and vision coverages under the Michigan State Employees' Retirement Act as well as eligible Special Duty Officers from the Military Retirement Provisions (MRP).

Effective March 31, 1997, Public Act 487 of 1996 closed the pension plan to new entrants. All new employees become members of the defined contribution plan. The Public Act allows returning employees and members who left State employment on or before March 31, 1997, to elect the defined benefit plan instead of the defined contribution plan.

Public Act 185 of 2010 established a pension supplement. Members who retired under the retirement incentive of the legislation agreed to forfeit accumulated leave balances, excluding banked leave time; in exchange they receive a pension supplement for 60 months to their retirement allowance payments equal to 1/60 of the amount forfeited from funds, beginning January 1, 2011.

Public Act 264 of 2011 closed the premium subsidy component of the OPEB plan to new employees hired on or after January 1, 2012. These employees become participants in the Personal Healthcare Fund (PHF). Former nonvested members of the premium subsidy component of the OPEB plan who are reemployed by the State on or after January 1, 2014, are not eligible for the premium subsidy benefit but will become participants in the PHF. Both groups of employees are eligible for a credit into a health reimbursement account at termination if they terminated with at least 10 years of service. The credit will be \$2,000 for participants who are at least 60 years old or \$1,000 for participants who are less than 60 years old at termination.

The System's financial statements are available on the ORS website at michigan.gov/ORSstatedb.

Note 2: Summary of Significant Accounting Policies

Governmental Accounting Standards Board (GASB) Statements 68 and 75

Employers participating in the System are required to report pension information in their financial statements for fiscal periods beginning on or after June 15, 2014, in accordance with Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions*.

Employers participating in the System are required to report information about OPEB in their financial statements for fiscal periods beginning on or after June 15, 2017, in accordance with Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*.

The requirements of GASB 68 and 75 incorporate provisions intended to reflect the effects of transactions and events related to pensions and OPEB in the measurement of employer liabilities and recognition of expense and deferred outflows of resources and deferred inflows of resources related to pensions and OPEB.

The Schedule of Employer Allocations recognizes the employers' proportionate share of net pension and OPEB liabilities determined in conformity with GASB 68 and 75. The Schedule of Pension Amounts by Employer recognizes the pension expense, including ending net pension liability, deferred inflows of resources and deferred outflows of resources related to the System's pension plan. The Schedule of OPEB Amounts by Employer recognizes the OPEB expense, including ending net OPEB liability, deferred inflows of resources and deferred outflows of resources related to the System's OPEB plan. These schedules were prepared by ORS with assistance from its third-party actuaries and provide employers with the required information for financial reporting related to the System's pension and OPEB plans as of and for the fiscal year ended September 30, 2019 (the measurement period).

Basis of Accounting and Presentation

The System's financial statements are prepared using the accrual basis of accounting, in accordance with accounting principles generally accepted in the United States (GAAP). Employer contributions 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 Schedule of Employer Allocations, Schedule of Pension Amounts by Employer, and Schedule of OPEB Amounts by Employer were prepared in conformity with GAAP. The preparation of these schedules required management to make estimates and assumptions that affect certain amounts and disclosures. Actual results could differ from those estimates.

The schedules present elements of the financial statements of the System and its participating employers and are not a complete financial presentation of the System or its participating employers.

Proportionate Share Allocation Methodology

The primary government and certain component units participate in the System, which is classified for financial reporting purposes as a single-employer. However, GASB 68 and 75 require that, in stand-alone financial statements, each government should account for and report its participation in the single-employer plan as if it was a cost-sharing employer. Therefore, these allocations are to identify the primary government activities, business-type activities, and component units' proportionate shares of the collective net pension and OPEB liabilities.

In determining the proportionate share allocation, GASB 68 and 75 require that the proportion for each employer be consistent with the determination of the System's contributions. The System has determined that utilizing the statutorily required employer pension and OPEB contributions based on reportable compensation during the System's fiscal year is an appropriate allocation methodology. Each employer's proportionate share allocation is determined by dividing each employer's statutorily required contributions to the system during the measurement period by the percent of pension and OPEB contributions required from all applicable employers during the measurement period.

In December 2003, a settlement was reached between the State Employees Retirement System, the State Bar of Michigan, the Attorney Grievance Commission, and the Attorney Discipline Board. Based on the settlement agreement, State Bar of Michigan and Attorney Discipline System pay retiree premiums for eligible former employees who qualify for the premium subsidy benefit. Because the agreement was determined before the System began prefunding OPEB benefits, the original funding process remains in place. The sum of the retiree premiums invoiced to these employers for the applicable fiscal year comprises their statutorily required contributions for the proportionate share calculation in this report.

The Schedule of Employer Allocations has been rounded and presents the first ten decimal places.

Note 3: Net Pension and OPEB Liability

The System's net pension liability is measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this is the accrued liability less the market value of assets.

Net Pension Liability As of September 30, 2018

Total Pension Liability	\$ 18,444,887,372
Fiduciary Net Position	(12,398,001,517)
Net Pension Liability*	<u><u>\$ 6,046,885,855</u></u>

Fiduciary Net Position as a Percentage of Total Pension Liability	67.22%
Net Pension Liability as a Percentage of Covered Payroll	194.11%

Net Pension Liability As of September 30, 2019

Total Pension Liability	\$ 18,895,537,947
Fiduciary Net Position	(12,227,892,179)
Net Pension Liability*	<u><u>\$ 6,667,645,768</u></u>

Fiduciary Net Position as a Percentage of Total Pension Liability	64.71%
Net Pension Liability as a Percentage of Covered Payroll	207.01%

* Employer-level results may not add to System-wide results due to rounding.

The System's net OPEB liability is measured as the total OPEB liability, less the amount of the OPEB plan's fiduciary net position. In actuarial terms, this is the accrued liability less the market value of assets.

Net OPEB Liability As of September 30, 2018

Total OPEB Liability	\$ 10,498,001,476
Fiduciary Net Position	(2,562,821,123)
Net OPEB Liability*	<u><u>\$ 7,935,180,353</u></u>

Fiduciary Net Position as a Percentage of Total OPEB Liability	24.41%
Net OPEB Liability as a Percentage of Covered Payroll	254.72%

Net OPEB Liability As of September 30, 2019

Total OPEB Liability	\$ 10,918,046,114
Fiduciary Net Position	(3,043,893,430)
Net OPEB Liability*	<u><u>\$ 7,874,152,684</u></u>

Fiduciary Net Position as a Percentage of Total OPEB Liability	27.88%
Net OPEB Liability as a Percentage of Covered Payroll	244.47%

* Employer-level results may not add to System-wide results due to rounding.

Discount Rate

A discount rate of 6.70% was used to measure the total pension liability and 6.90% to measure the total OPEB liability. This discount rate was based on the expected rate of return on pension and OPEB plan investments of 6.70% and 6.90% respectively. The projection of cash flows used to determine this discount rate assumed that 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 fiduciary net positions of both the pension and OPEB plans were 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 and OPEB plan investments was applied to all periods of projected benefit payments to determine the total pension and OPEB liabilities.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

As required by GASB Statement No. 68, the following presents the System's net pension liability, as well as what the System's net pension liability would be if it were calculated using a discount rate that is one percent lower or one percent higher.

	1% Decrease 5.7%	Current Discount Rate 6.7%	1% Increase 7.7%
Total Pension Liability	\$ 20,807,045,605	\$ 18,895,537,947	\$ 17,271,011,723
Fiduciary Net Position	(12,227,892,179)	(12,227,892,179)	(12,227,892,179)
Net Pension Liability	<u>\$ 8,579,155,426</u>	<u>\$ 6,667,645,768</u>	<u>\$ 5,043,119,544</u>

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

As required by GASB Statement No. 75, the following presents the System's net OPEB liability, as well as what the System's net OPEB liability would be if it were calculated using a discount rate that is one percent lower or one percent higher.

	1% Decrease 5.9%	Current Discount Rate 6.9%	1% Increase 7.9%
Total OPEB Liability	\$ 12,225,033,103	\$ 10,918,046,114	\$ 9,823,561,029
Fiduciary Net Position	(3,043,893,430)	(3,043,893,430)	(3,043,893,430)
Net OPEB Liability	<u>\$ 9,181,139,673</u>	<u>\$ 7,874,152,684</u>	<u>\$ 6,779,667,599</u>

Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate

As required by GASB Statement No. 75, the following presents the System's net OPEB liability calculated using assumed trend rates, as well as what the System's net OPEB liability would be if it were calculated using a trend rate that is one percent lower or one percent higher.

	1% Decrease	Current Healthcare Cost Trend Rate	1% Increase
Total OPEB Liability	\$ 9,764,870,906	\$ 10,918,046,114	\$ 12,256,507,725
Fiduciary Net Position	(3,043,893,430)	(3,043,893,430)	(3,043,893,430)
Net OPEB Liability	<u>\$ 6,720,977,476</u>	<u>\$ 7,874,152,684</u>	<u>\$ 9,212,614,295</u>

Timing of the Pension and OPEB Valuations

Actuarial valuations to determine the total pension liability and total OPEB liability are required to be performed every two years. The System's pension and OPEB valuations are performed every year. If the actuarial valuations are not calculated as of the System's fiscal year end, the total pension liability or total OPEB liability is required to be rolled forward from the actuarial valuation date to the System's fiscal year end.

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

Actuarial Valuations and Assumptions

Actuarial valuations for the pension and 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 and mortality.

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.

In the fall of 2017, the Department of Technology, Management, and Budget Director and the State of Michigan Retirement Board adopted a dedicated gains policy to lower the discount rate in years where investment returns exceed the current assumption based on a schedule determined by the plan actuary. Excess investment gains in the 2018 fiscal year were sufficient to reduce the discount rate for the System's pension plan from 7.00% to 6.70%; and to reduce the System's OPEB plan discount rate from 7.00% to 6.90% beginning with the September 30, 2018 actuarial valuations.

Additional information as of the latest actuarial valuation follows:

Summary of Actuarial Assumptions

Valuation Date:	September 30, 2018
Actuarial Cost Method:	Entry-Age, Normal
Wage Inflation Rate:	2.75%
Projected Salary Increases:	2.75% – 11.75%, including wage inflation at 2.75%
Investment Rate of Return:	
– Pension Plan	6.70%
– OPEB Plan	6.90%
Healthcare Cost Trend Rate:	8.25% year 1 graded to 3.50% year 10
Mortality:	
Retirees	RP-2014 Male and Female Healthy Annuitant Mortality Table scaled by 93% for males and 98% for females and adjusted for mortality improvements using projection scale MP-2017 from 2006.
Active	RP-2014 Male and Female Employee Annuitant Mortality Table scaled by 100% for males and 100% for females and adjusted for mortality improvements using projection scale MP-2017 from 2006.

Notes:

- Assumption changes as a result of an experience study for the periods 2012 through 2017 have been adopted by the System for use in the determination of the total pension and OPEB liabilities beginning with the September 30, 2017 valuation.
- Recognition period for pension liabilities is the average of the expected remaining service lives of all employees in years is 1.0000.
- Recognition period for pension assets in years is 5.0000
- Recognition period for OPEB liabilities is the average of the expected remaining service lives of all employees in years is 5.4863.
- Recognition period for OPEB assets in years is 5.0000
- Full actuarial assumptions are available in the 2019 State Employees' Retirement System CAFR available on the ORS website at michigan.gov/ORSstatedb.

Note 4: Pension and OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions and OPEB

Pension Plan

The following table provides details of the System's pension expense for the fiscal year ended September 30, 2019.

Expense	Total
Service Cost	\$ 64,689,583
Interest on the Total Pension Liability	1,244,462,904
Current-Period Benefit Changes	-
Employee Contributions (shown as negative for addition here)	(28,442,002)
Projected Earnings on Plan Investments (shown as negative for addition here)	(840,516,382)
Pension Plan Administrative Expense	6,987,894
Other Changes in Plan Fiduciary Net Position	4,405,626
Recognition of Outflow (Inflow) of Resources due to Liabilities	539,879,452
Recognition of Outflow (Inflow) of Resources due to Assets	(11,494,820)
Total Pension Expense*	\$ 979,972,255

*Employer-level results may not add to System-wide results due to rounding.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in future years' pension expense as follows:

Fiscal Year Ending September 30	Net Deferred (Inflows) and Outflows of Resources
2020	\$ (136,818,832)
2021	(148,012,071)
2022	(36,791,329)
2023	(45,875,187)
2024	-
Thereafter	-
Total	\$ (275,747,045)

OPEB Plan

The following table provides details of the System's OPEB expense for the fiscal year ended September 30, 2019.

Expense	Total
Service Cost	\$ 90,759,860
Interest on the Total OPEB Liability	723,057,502
Current-Period Benefit Changes	-
Employee Contributions (shown as negative for addition here)	-
Projected Earnings on Plan Investments (shown as negative for addition here)	(191,190,614)
OPEB Plan Administrative Expense	376,972
Other Changes in Plan Fiduciary Net Position	(65,566)
Recognition of Outflow (Inflow) of Resources due to Liabilities	(50,624,350)
Recognition of Outflow (Inflow) of Resources due to Assets	(21,492,329)
Total OPEB Expense*	\$ 550,821,475

*Employer-level results may not add to System-wide results due to rounding.

Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in future years' OPEB expense as follows:

Fiscal Year Ending September 30	Net Deferred (Inflows) and Outflows of Resources
2020	\$ (72,116,679)
2021	(72,116,680)
2022	(54,089,103)
2023	(6,634,843)
2024	3,031,835
Thereafter	-
Total	\$ (201,925,470)