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, 2020

MICHIGAN OFFICE OF RETIREMENT SERVICES
Big Plans. Small Steps.

Prepared by
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Department of Technology, Management & Budget
R1176G (Rev. 9/2021) Authority:1943 PA 240, as amended

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OAG
Office of the Auditor General
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Auditor General
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Independent Auditor's Report

Colonel John J. Wojcik, Chair
State of Michigan Retirement Board
Stevens T. Mason Building
and
Mr. Brom Stibitz, 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, 2020. We have also audited the respective totals by employer for the following columns, hereafter referred to as the specified column totals:

- September 30, 2020 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, 2020.

- September 30, 2020 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, 2020.

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.

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, 2020 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, 2020, and our report thereon, dated January 27, 2021, 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

Doug Ringler
Auditor General
September 16, 2021

Michigan State Employees' Retirement System
Schedule Of Employer Allocations
As Of And For The Fiscal Year Ended September 30, 2020

Employer Name	Total Required Employer Pension Contributions	Pension Proportionate Share	Total Required Employer OPEB Contributions	OPEB Proportionate Share
GOVERNMENTAL ACTIVITIES				
State of Michigan	$ 572,601,601	0.933846033	$ 650,349,351	0.9336886759
State Building Authority	41,478	0.000067646	36,316	0.0000521377
BUSINESS TYPE ACTIVITIES				
Information Technology Fund	26,540,962	0.043285195	30,418,556	0.0436710840
State Lottery Fund	2,634,777	0.004297012	2,983,629	0.0042835142
Liquor Purchase Revolving Fund	1,263,916	0.002061298	1,387,000	0.0019912781
Office Services Revolving Fund	1,293,714	0.002109896	1,435,881	0.0020614551
Correctional Industries Revolving Fund	558,856	0.000911429	598,601	0.0008593945
Motor Transport Fund	477,585	0.000778886	517,308	0.0007426848
Attorney Discipline System	100,852	0.000164477	107,308	0.0001540585
Risk Management Fund	106,767	0.000174124	118,341	0.0001698987
COMPONENT UNITS				
Michigan State Housing Development Authority	3,560,347	0.005806508	3,963,000	0.0056895703
Michigan Strategic Fund	856,963	0.001397606	938,745	0.0013477302
Michigan Economic Development Corporation	971,565	0.001584508	1,083,186	0.0015550999
Michigan Finance Authority	786,676	0.001282976	890,107	0.0012779025
Mackinac Bridge Authority	727,600	0.001186630	863,181	0.0012392446
Mackinac Island State Park Commission	216,931	0.000353788	252,390	0.0003623499
Michigan Education Trust	252,100	0.000411145	265,023	0.0003804859
State Land Bank Authority	135,620	0.000221180	164,995	0.0002368785
State Bar of Michigan	36,584	0.000059664	164,771	0.0002365567
Total	$ 613,164,894	1.000000000	$ 696,537,689	1.0000000000

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, 2020

Employer Name	September 30, 2020 Net Pension Liability	Deferred Outflows of Resources: Differences Between Expected and Actual Experience	Deferred Outflows of Resources: Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Deferred Outflows of Resources: Changes of Assumptions	Deferred Outflows of Resources: Changes in Proportion and Differences Between Employer Pension Contributions and Proportionate Share of Contributions	Deferred Outflows of Resources: Total Deferred Outflows of Resources
GOVERNMENTAL ACTIVITIES						
State Of Michigan	$ 6,299,351,781	$ -	$ 14,624,760	$ -	$ -	$ 14,624,760
State Building Authority	456,309	-	1,059	-	-	1,059
BUSINESS TYPE ACTIVITIES						
Information Technology Fund	291,984,608	-	677,880	-	-	677,880
State Lottery Fund	28,985,924	-	67,295	-	-	67,295
Liquor Purchase Revolving Fund	13,904,691	-	32,282	-	-	32,282
Office Services Revolving Fund	14,232,512	-	33,043	-	-	33,043
Correctional Industries Revolving Fund	6,148,133	-	14,274	-	-	14,274
Motor Transport Fund	5,254,050	-	12,198	-	-	12,198
Attorney Discipline System	1,109,499	-	2,576	-	-	2,576
Risk Management Fund	1,174,573	-	2,727	-	-	2,727
COMPONENT UNITS						
Michigan State Housing Development Authority	39,168,380	-	90,934	-	-	90,934
Michigan Strategic Fund	9,427,691	-	21,888	-	-	21,888
Michigan Economic Development Corporation	10,688,457	-	24,815	-	-	24,815
Michigan Finance Authority	8,654,444	-	20,092	-	-	20,092
Mackinac Bridge Authority	8,004,533	-	18,584	-	-	18,584
Mackinac Island State Park Commission	2,386,515	-	5,541	-	-	5,541
Michigan Education Trust	2,773,418	-	6,439	-	-	6,439
State Land Bank Authority	1,491,992	-	3,464	-	-	3,464
State Bar Of Michigan	402,467	-	934	-	-	934
Total	$ 6,745,599,977	$ -	$ 15,660,785	$ -	$ -	$ 15,660,785

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, 2020

Deferred Inflows of Resources				Pension Expense		
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 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
$ -	$ -	$ -	$ -	$ 373,795,253	$ 24,675,517	$ 398,470,770
-	-	-	-	27,077	(36,283)	(9,206)
-	-	-	-	17,325,983	(17,346,146)	(20,163)
-	-	-	-	1,719,987	(646,402)	1,073,585
-	-	-	-	825,086	418,821	1,243,907
-	-	-	-	844,539	(152,063)	692,476
-	-	-	-	364,822	(625,871)	(261,049)
-	-	-	-	311,768	424,908	736,676
-	-	-	-	65,836	21,500	87,336
-	-	-	-	69,698	573,833	643,531
-	-	-	-	2,324,200	(3,926,119)	(1,601,919)
-	-	-	-	559,427	2,745,105	3,304,532
-	-	-	-	634,239	(2,164,011)	(1,529,772)
-	-	-	-	513,543	94,908	608,451
-	-	-	-	474,978	(1,111,860)	(636,882)
-	-	-	-	141,613	(303,273)	(161,660)
-	-	-	-	164,571	(224,956)	(60,385)
-	-	-	-	88,533	(371,318)	(282,785)
-	-	-	-	23,882	34,447	58,329
$ -	$ -	$ -	$ -	$ 400,275,035	$ 2,080,737	$ 402,355,772

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, 2020

Employer Name	September 30, 2020 Net OPEB Liability	Deferred Outflows of Resources: Differences Between Expected and Actual Experience	Deferred Outflows of Resources: Net Difference Between Projected and Actual Investment Earnings on OPEB Plan Investments	Deferred Outflows of Resources: Changes of Assumptions	Deferred Outflows of Resources: Changes in Proportion and Differences Between Employer OPEB Contributions and Proportionate Share of Contributions	Deferred Outflows of Resources: Total Deferred Outflows of Resources
GOVERNMENTAL ACTIVITIES						
State Of Michigan	$ 5,451,318,758	$ -	$ 31,148,104	$ 1,358,742,344	$ 33,273,331	$ 1,423,163,779
State Building Authority	304,405	-	1,739	75,873	9,398	87,010
BUSINESS TYPE ACTIVITIES						
Information Technology Fund	254,972,568	-	1,456,879	63,551,966	4,948,783	69,957,628
State Lottery Fund	25,009,194	-	142,899	6,233,547	264,383	6,640,829
Liquor Purchase Revolving Fund	11,626,029	-	66,430	2,897,790	407,595	3,371,815
Office Services Revolving Fund	12,035,756	-	68,771	2,999,915	374,451	3,443,137
Correctional Industries Revolving Fund	5,017,554	-	28,670	1,250,626	15,015	1,294,311
Motor Transport Fund	4,336,147	-	24,776	1,080,786	474,577	1,580,139
Attorney Discipline System	899,467	-	5,139	224,192	116,631	345,962
Risk Management Fund	991,949	-	5,668	247,244	541,807	794,719
COMPONENT UNITS						
Michigan State Housing Development Authority	33,218,419	-	189,806	8,279,698	7,820	8,477,324
Michigan Strategic Fund	7,868,690	-	44,961	1,961,273	3,568,267	5,574,501
Michigan Economic Development Corporation	9,079,413	-	51,879	2,263,046	557,771	2,872,696
Michigan Finance Authority	7,461,003	-	42,631	1,859,657	121,073	2,023,361
Mackinac Bridge Authority	7,235,300	-	41,342	1,803,400	13,977	1,858,719
Mackinac Island State Park Commission	2,115,571	-	12,088	527,307	-	539,395
Michigan Education Trust	2,221,458	-	12,693	553,699	292,609	859,001
State Land Bank Authority	1,383,009	-	7,902	344,715	781,471	1,134,088
State Bar Of Michigan	1,381,131	-	7,892	344,247	251,183	603,322
Total	$ 5,838,475,821	$ -	$ 33,360,269	$ 1,455,241,325	$ 46,020,142	$ 1,534,621,736

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, 2020

Deferred Inflows of Resources				OPEB Expense		
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 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
$ 2,998,138,480	$ -	$ 24,439,035	$ 3,022,577,515	$ 175,936,823	$ (3,045,398)	$ 172,891,425
167,418	-	203,859	371,277	9,824	(50,592)	(40,768)
140,230,851	-	26,741,084	166,971,935	8,229,030	(4,696,949)	3,532,081
13,754,658	-	989,665	14,744,323	807,151	(145,838)	661,313
6,394,131	-	2,061,355	8,455,486	375,221	(707,394)	(332,173)
6,619,474	-	1,822,179	8,441,653	388,444	(579,124)	(190,680)
2,759,575	-	1,061,793	3,821,368	161,937	(270,002)	(108,065)
2,384,812	-	47,871	2,432,683	139,946	127,492	267,438
494,692	-	69,093	563,785	29,030	3,737	32,767
545,556	-	1,874	547,430	32,014	125,473	157,487
18,269,601	-	5,719,569	23,989,170	1,072,097	(1,481,923)	(409,826)
4,327,654	-	360,210	4,687,864	253,955	875,229	1,129,184
4,993,533	-	3,934,335	8,927,868	293,031	(1,025,865)	(732,834)
4,103,433	-	202,132	4,305,565	240,798	(27,685)	213,113
3,979,300	-	1,114,019	5,093,319	233,513	(251,848)	(18,335)
1,163,530	-	505,896	1,669,426	68,278	(139,192)	(70,914)
1,221,766	-	284,767	1,506,533	71,696	36,828	108,524
760,633	-	349,615	1,110,248	44,635	184,908	229,543
759,600	-	19,462	779,062	44,575	50,565	95,140
$ 3,211,068,697	$ --	$ 69,927,813	$ 3,280,996,510	$ 188,431,998	$ (11,017,578)	$ 177,414,420

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, 2020 (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, 2019	
Total Pension Liability	$ 18,895,537,947
Fiduciary Net Position	(12,227,892,179)
Net Pension Liability*	$ 6,667,645,768
Fiduciary Net Position as a Percentage of Total Pension Liability	64.71%
Net Pension Liability as a Percentage of Covered Payroll	207.01%

Net Pension Liability As of September 30, 2020	
Total Pension Liability	$ 18,773,136,271
Fiduciary Net Position	(12,027,536,294)
Net Pension Liability*	$ 6,745,599,977
Fiduciary Net Position as a Percentage of Total Pension Liability	64.07%
Net Pension Liability as a Percentage of Covered Payroll	199.55%

* 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, 2019	
Total OPEB Liability	$ 10,918,046,114
Fiduciary Net Position	(3,043,893,430)
Net OPEB Liability*	$ 7,874,152,684
Fiduciary Net Position as a Percentage of Total OPEB Liability	27.88%
Net OPEB Liability as a Percentage of Covered Payroll	244.47%

Net OPEB Liability As of September 30, 2020	
Total OPEB Liability	$ 9,460,694,652
Fiduciary Net Position	(3,622,218,832)
Net OPEB Liability*	$ 5,838,475,820
Fiduciary Net Position as a Percentage of Total OPEB Liability	38.29%
Net OPEB Liability as a Percentage of Covered Payroll	172.72%

* 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	$ 20,636,242,173	$ 18,773,136,271	$ 17,186,772,877
Fiduciary Net Position	(12,027,536,294)	(12,027,536,294)	(12,027,536,294)
Net Pension Liability	$ 8,608,705,879	$ 6,745,599,977	$ 5,159,236,583

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	$ 10,574,570,068	$ 9,460,694,652	$ 8,525,344,768
Fiduciary Net Position	(3,622,218,832)	(3,622,218,832)	(3,622,218,832)
Net OPEB Liability	$ 6,952,351,236	$ 5,838,475,820	$ 4,903,125,936

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	$ 8,478,314,807	$ 9,460,694,652	$ 10,596,177,755
Fiduciary Net Position	(3,622,218,832)	(3,622,218,832)	(3,622,218,832)
Net OPEB Liability	$ 4,856,095,975	$ 5,838,475,820	$ 6,973,958,923

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, 2020, are based on the results of an actuarial valuation date of September 30, 2019 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, 2019
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:	7.50% year 1 graded to 3.50% year 15; 3.00% Year 120

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 5.5768.
- Recognition period for OPEB assets in years is 5.0000
- Full actuarial assumptions are available in the 2020 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, 2020.

Expense	Total
Service Cost	$ 62,890,644
Interest on the Total Pension Liability	1,220,112,025
Current-Period Benefit Changes	-
Employee Contributions (shown as negative for addition here)	(25,264,952)
Projected Earnings on Plan Investments (shown as negative for addition here)	(792,482,117)
Pension Plan Administrative Expense	5,955,829
Other Changes in Plan Fiduciary Net Position	(72,515)
Recognition of Outflow (Inflow) of Resources due to Liabilities	27,307,703
Recognition of Outflow (Inflow) of Resources due to Assets	(98,171,583)
Total Pension Expense*	$ 400,275,034

*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
2021	$ (109,364,822)
2022	1,855,920
2023	84,522,436
2024	38,647,249
2025	-
Thereafter	-
Total	$ 15,660,783

OPEB Plan

The following table provides details of the System's OPEB expense for the fiscal year ended September 30, 2020.

Expense		Total
Service Cost	$	93,809,986
Interest on the Total OPEB Liability		746,333,359
Current-Period Benefit Changes		-
Employee Contributions (shown as negative for addition here)		-
Projected Earnings on Plan Investments (shown as negative for addition here)		(224,357,007)
OPEB Plan Administrative Expense		1,016,852
Other Changes in Plan Fiduciary Net Position		(9,815,649)
Recognition of Outflow (Inflow) of Resources due to Liabilities		(409,332,494)
Recognition of Outflow (Inflow) of Resources due to Assets		(9,223,049)
Total OPEB Expense*	$	188,431,998

*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
2021	$	(418,555,544)
2022		(400,527,967)
2023		(353,073,707)
2024		(343,407,031)
2025		(206,902,858)
Thereafter		-
Total	$	(1,722,467,107)