

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
INDEPENDENT AUDITORS' REPORT ON PENSION PLAN SCHEDULES
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022

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TABLE OF CONTENTS

	Page
Independent Auditors' Report	1
Schedule of Employer and Nonemployer Allocations	3
Schedule of Pension Amounts by Employer and Nonemployer	10
Notes to Schedules	11



INDEPENDENT AUDITORS' REPORT

Mr. William McNamara, Comptroller
Commonwealth of Massachusetts

Report on the Audit of the Schedules

Opinions

We have audited the accompanying schedule of employer and nonemployer allocations of the Massachusetts State Employees' Retirement System (MSERS) as of and for the fiscal year ended June 30, 2022, and the related notes. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension expense (specified column totals), included in the accompanying schedule of pension amounts by employer and nonemployer of MSERS as of and for the fiscal year ended June 30, 2022, and the related notes.

In our opinion, the schedules referred to above present fairly, in all material respects, the employer and nonemployer allocations and ending net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities of MSERS as of and for the year ended June 30, 2022, in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Schedules section of our report. We are required to be independent of MSERS 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 opinions.

Responsibilities of Management 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, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the schedules that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities for the Audit of the Schedules

Our objectives are to obtain reasonable assurance about whether the schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' 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 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 schedule of employer and nonemployer allocations and specified column totals included in the schedule of pension amounts by employer and nonemployer.

Mr. William McNamara, Comptroller
Commonwealth of Massachusetts

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the schedule of employer and nonemployer allocations and the specified totals included in the schedule of pension amounts by employer and nonemployer, 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 schedule of employer and nonemployer allocations and the specified totals included in the schedule of pension amounts by employer and nonemployer.
- 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 MSERS' 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 schedule of employer and nonemployer allocations and the specified totals included in the schedule of pension amounts by employer and nonemployer.

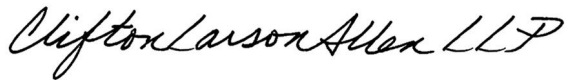
We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Commonwealth of Massachusetts as of and for the year ended June 30, 2022, and our report thereon, dated May 31, 2023, expressed an unmodified opinion on those financial statements. MSERS is reported as a pension trust fund in the financial statements of the Commonwealth of Massachusetts.

Restriction on Use

Our report is intended solely for the information and use of MSERS management, the MSERS Board of Trustees, Retirement Board, MSERS employers and their auditors, and the Commonwealth of Massachusetts and is not intended to be, and should not be, used by anyone other than these specified parties.



CliftonLarsonAllen LLP

Boston, Massachusetts
July 24, 2023

**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
<u>Non Special Funding Situations:</u>		
9045 - Commonwealth of Massachusetts:		
Employer contributions.....	\$ 1,289,931,441	
Total Commonwealth of Massachusetts.....	<u>1,289,931,441</u>	91.64783%
6070 - Massachusetts State College Building Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>307,128</u>	
Total Massachusetts State College Building Authority.....	<u>307,128</u>	0.02182%
6090 - Massachusetts Convention Center Authority:		
Employer contributions.....	1,331,604	
Nonemployer contributions.....	<u>2,309,566</u>	
Total Massachusetts Convention Center Authority.....	<u>3,641,170</u>	0.25870%
9045 - Massachusetts Department of Transportation:		
Employer contributions.....	49,113,904	
Nonemployer contributions.....	<u>18,143,085</u>	
Total Massachusetts Department of Transportation.....	<u>67,256,989</u>	4.77852%
8060 - Assabet Valley Regional Vocational School District:		
Employer contributions.....	797,930	
Nonemployer contributions.....	<u>-</u>	
Total Assabet Valley Regional Vocational School District.....	<u>797,930</u>	0.05669%
8100 - Blackstone Valley Regional Vocational School District:		
Employer contributions.....	571,194	
Nonemployer contributions.....	<u>285,514</u>	
Total Blackstone Valley Regional Vocational School District.....	<u>856,708</u>	0.06087%
8080 - Bristol/Plymouth Regional Vocational Technical School District.....		
Employer contributions.....	-	
Nonemployer contributions.....	<u>480,436</u>	
Total Bristol/Plymouth Regional Vocational Technical School District.....	<u>480,436</u>	0.03413%
8160 - Central Massachusetts Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>518,308</u>	
Total Central Massachusetts Regional Planning Commission.....	<u>518,308</u>	0.03683%
8020 - Merrimack Valley Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>265,784</u>	
Total Merrimack Valley Planning Commission.....	<u>265,784</u>	0.01888%

(continued)

**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
8010 - Montachusett Regional Planning Commission:		
Employer contributions.....	\$ -	
Nonemployer contributions.....	229,375	
Total Montachusett Regional Planning Commission.....	229,375	0.01630%
8090 - Montachusett Regional Vocational Technical School District:		
Employer contributions.....	364,864	
Nonemployer contributions.....	630,333	
Total Montachusett Regional Vocational Technical School District.....	995,197	0.07071%
8070 - Nashoba Associated Boards of Health:		
Employer contributions.....	-	
Nonemployer contributions.....	943,386	
Total Nashoba Associated Boards of Health.....	943,386	0.06703%
8040 - North Middlesex Council of Governments:		
Employer contributions.....	-	
Nonemployer contributions.....	187,398	
Total North Middlesex Council of Governments.....	187,398	0.01331%
8030 - Northeast Metropolitan Regional Vocational School		
Employer contributions.....	673,670	
Nonemployer contributions.....	-	
Total Northeast Metro Regional Vocational Technical School District.....	673,670	0.04786%
8170 - Old Colony Planning Council:		
Employer contributions.....	-	
Nonemployer contributions.....	305,892	
Total Old Colony Planning Council.....	305,892	0.02173%
8180 - Old Colony Regional Vocational Technical School District:		
Employer contributions.....	-	
Nonemployer contributions.....	314,778	
Total Old Colony Regional Vocational Technical School District.....	314,778	0.02236%
8110 - Pioneer Valley Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	735,675	
Total Pioneer Valley Planning Commission.....	735,675	0.05227%
8140 - Southeastern Regional Planning & Economic Development District:		
Employer contributions.....	-	
Nonemployer contributions.....	424,967	
Total Southeastern Regional Planning & Economic Development District.....	424,967	0.03019%

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**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
8120 - Southeastern Regional School District:		
Employer contributions.....	-	
Nonemployer contributions.....	1,104,330	
Total Southeastern Regional School District.....	1,104,330	0.07846%
8200 - Tri-County Regional Vocational Technical School District:		
Employer contributions.....	465,915	
Nonemployer contributions.....	107,277	
Total Tri-County Regional Vocational Technical School District.....	573,192	0.04072%
8190 - Upper Blackstone Water Pollution Abatement District:		
Employer contributions.....	478,950	
Nonemployer contributions.....	479,119	
Total Upper Blackstone Water Pollution Abatement District.....	958,069	0.06807%
8130 - Upper Cape Cod Regional Vocational Technical School District:		
Employer contributions.....	-	
Nonemployer contributions.....	549,023	
Total Upper Cape Cod Regional Vocational Technical School District.....	549,023	0.03901%
<u>Special Funding Situations (Educational Collaboratives):</u>		
6013 - ACCEPT Education Collaborative:		
Employer contributions.....	265,565	
Nonemployer contributions.....	1,040,539	
Total ACCEPT Education Collaborative.....	1,306,104	0.09280%
6022 - Assabet Valley Collaborative:		
Employer contributions.....	139,804	
Nonemployer contributions.....	373,429	
Total Assabet Valley Collaborative.....	513,233	0.03646%
6004 - Bi-County Education Collaborative:		
Employer contributions.....	206,993	
Nonemployer contributions.....	552,709	
Total Bi-County Education Collaborative.....	759,702	0.05398%
6018 - C.A.S.E. Collaborative:		
Employer contributions.....	252,107	
Nonemployer contributions.....	642,486	
Total C.A.S.E. Collaborative.....	894,593	0.06356%
6016 - Cape Cod Collaborative:		
Employer contributions.....	317,758	
Nonemployer contributions.....	869,238	
Total Cape Cod Collaborative.....	1,186,996	0.08433%

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**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6010 - CAPS Education Collaborative:		
Employer contributions.....	193,917	
Nonemployer contributions.....	591,551	
Total CAPS Education Collaborative.....	785,468	0.05581%
6035 - Central Massachusetts Special Education Collaborative:		
Employer contributions.....	144,192	
Nonemployer contributions.....	376,369	
Total Central Massachusetts Special Education Collaborative.....	520,561	0.03699%
6017 - Collaborative for Educational Services:		
Employer contributions.....	467,713	
Nonemployer contributions.....	1,151,553	
Total Collaborative for Educational Services.....	1,619,266	0.11505%
6021 - CREST Collaborative:		
Employer contributions.....	351,031	
Nonemployer contributions.....	1,026,011	
Total CREST Collaborative.....	1,377,042	0.09784%
6019 - Keystone Educational Collaborative:		
Employer contributions.....	154,037	
Nonemployer contributions.....	396,268	
Total Keystone Educational Collaborative.....	550,305	0.03910%
6034 - LABBB Collaborative:		
Employer contributions.....	105,037	
Nonemployer contributions.....	1,138,099	
Total LABBB Collaborative.....	1,243,136	0.08832%
6011 - Lower Pioneer Valley Education Collaborative:		
Employer contributions.....	632,753	
Nonemployer contributions.....	1,535,604	
Total Lower Pioneer Valley Education Collaborative.....	2,168,357	0.15406%
6014 - North River Collaborative:		
Employer contributions.....	265,509	
Nonemployer contributions.....	818,146	
Total North River Collaborative.....	1,083,655	0.07699%

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**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6006 - North Shore Education Consortium:		
Employer contributions.....	339,398	
Nonemployer contributions.....	923,368	
Total North Shore Education Consortium.....	<u>1,262,766</u>	0.08972%
6007 - Pilgrim Area Collaborative:		
Employer contributions.....	110,485	
Nonemployer contributions.....	299,906	
Total Pilgrim Area Collaborative.....	<u>410,391</u>	0.02916%
6031 - READS Collaborative:		
Employer contributions.....	151,260	
Nonemployer contributions.....	440,798	
Total READS Collaborative.....	<u>592,058</u>	0.04206%
6033 - SEEM Collaborative:		
Employer contributions.....	399,644	
Nonemployer contributions.....	1,037,886	
Total SEEMS Collaborative.....	<u>1,437,530</u>	0.10213%
6009 - Shore Educational Collaborative		
Employer contributions.....	411,086	
Nonemployer contributions.....	1,113,547	
Total Shore Education Consortium.....	<u>1,524,633</u>	0.10832%
6015 - South Coast Education Collaborative:		
Employer contributions.....	334,062	
Nonemployer contributions.....	860,893	
Total South Coast Education Collaborative.....	<u>1,194,955</u>	0.08490%
6001 - South Shore Education Collaborative:		
Employer contributions.....	328,444	
Nonemployer contributions.....	963,023	
Total South Shore Education Collaborative.....	<u>1,291,467</u>	0.09176%
6003 - Southeastern Massachusetts Education Collaborative:		
Employer contributions.....	235,465	
Nonemployer contributions.....	669,213	
Total Southeastern Massachusetts Education Collaborative.....	<u>904,678</u>	0.06428%
6002 - Southern Worcester County Education Collaborative:		
Employer contributions.....	98,075	
Nonemployer contributions.....	291,482	
Total Southern Worcester County Education Collaborative.....	<u>389,557</u>	0.02768%

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**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6027 - The Education Cooperative		
Employer contributions.....	112,448	
Nonemployer contributions.....	318,238	
Total The Educational Co-Op.....	430,686	0.03060%
6020 - Valley Collaborative:		
Employer contributions.....	296,462	
Nonemployer contributions.....	1,014,775	
Total Valley Collaborative.....	1,311,237	0.09316%
<u>Special Funding Situations (Other than Educational Collaboratives):</u>		
8150 - Berkshire Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	466,075	
Total Berkshire Regional Planning Commission.....	466,075	0.03311%
8250 - Devens Enterprise Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	69,131	
Total Devens Enterprise Commission.....	69,131	0.00491%
6037 - Franklin Regional Council of Governments:		
Employer contributions.....	-	
Nonemployer contributions.....	759,890	
Total Franklin Regional Council of Governments.....	759,890	0.05399%
8210 - Massachusetts Development Finance Agency:		
Employer contributions.....	-	
Nonemployer contributions.....	381,913	
Total Massachusetts Development Finance Agency.....	381,913	0.02713%
6200 - Massachusetts Healthcare Connector Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	1,809,213	
Total Massachusetts Healthcare Connector Authority.....	1,809,213	0.12854%
8211 - Massachusetts Life Sciences Center:		
Employer contributions.....	-	
Nonemployer contributions.....	125,145	
Total Massachusetts Life Sciences Center.....	125,145	0.00889%
6100 - Massachusetts PRIM Board:		
Employer contributions.....	-	
Nonemployer contributions.....	1,957,645	
Total Massachusetts PRIM Board.....	1,957,645	0.13909%

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**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6060 - Massachusetts School Building Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>1,651,252</u>	
Total Massachusetts School Building Authority.....	<u>1,651,252</u>	0.11732%
1080 - Massachusetts Water Resources Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>608,782</u>	
Total Massachusetts Water Resources Authority.....	<u>608,782</u>	0.04325%
8050 - Metropolitan Area Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>2,848,908</u>	
Total Metropolitan Area Planning Commission.....	<u>2,848,908</u>	0.20241%
Total for all entities.....	<u>\$ 1,407,487,176</u>	100.00000%

See accompanying notes to schedules.

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF PENSION AMOUNTS BY EMPLOYER AND NONEMPLOYER
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022

Employer/Nonemployer	Net Pension Liability	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		
		Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Differences Between Projected and Actual Earnings on Pension Plan Investments	Changes in Proportion	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion	Total Pension Expense
Non Special Funding Situations:												
Employer:												
9045 - Commonwealth of Massachusetts	\$ 12,748,097,541	\$ 317,114,095	\$ 350,975,800	\$ 872,051	\$ 668,961,946	\$ 497,562,479	\$ 67,961,264	\$ 34,483,146	\$ 600,006,889	\$ 910,264,910	\$ (9,927,268)	\$ 900,337,642
6070 - Massachusetts State College Building Authority	3,035,276	75,504	83,566	8,459	167,529	118,468	16,181	586,038	720,687	216,731	(184,398)	32,333
6090 - Massachusetts Convention Center Authority	35,984,851	895,138	990,721	179,620	2,065,479	1,404,501	191,839	3,738,637	5,334,976	2,569,462	(1,481,870)	1,087,592
9045 - Massachusetts Department of Transportation	664,685,447	16,534,320	18,299,868	34,444,425	69,278,613	25,942,894	3,543,498	2,302,359	31,788,751	47,461,187	7,951,828	55,413,015
8060 - Assabet Valley Regional Vocational School District	7,885,760	196,161	217,108	697,826	1,111,095	307,784	42,040	375,263	725,087	563,075	177,532	740,607
8100 - Blackstone Valley Regional Vocational School District	8,466,649	210,611	233,101	296,560	740,272	330,456	45,136	40,310	415,903	604,552	86,039	690,591
8080 - Bristol/Plymouth Regional Vocational Technical School District	4,748,039	118,109	130,721	462,943	711,773	185,318	25,312	577,640	785,270	339,029	522	339,551
8160 - Central Massachusetts Regional Planning Commission	5,122,319	127,420	141,026	726,958	995,404	199,926	27,308	-	227,233	365,754	344,176	709,930
8020 - Merrimack Valley Planning Commission	2,626,683	65,340	72,317	137,401	275,058	102,520	14,003	45,470	161,993	187,556	(978)	186,578
8010 - Montachusett Regional Planning Commission	2,666,861	56,389	62,410	178,404	297,203	88,476	12,085	230,923	331,484	161,863	4,718	166,581
8090 - Montachusett Regional Vocational Technical School District	9,855,304	244,657	270,782	1,279,213	1,794,652	383,875	52,433	407,995	844,303	702,280	195,651	897,931
8070 - Nashoba Associated Boards of Health	9,323,268	231,920	256,685	288,643	777,248	363,890	49,703	32,983	446,576	665,718	41,472	707,190
8040 - North Middlesex Council of Governments	1,852,012	46,070	50,989	40,935	137,994	72,285	9,873	214,203	296,361	132,241	(39,626)	92,615
8030 - Northeast Metro Regional Vocational Technical School District	6,657,731	165,614	183,298	336,404	685,316	259,853	35,493	261,300	556,646	475,389	7,253	482,642
8170 - Old Colony Planning Council	3,023,061	75,200	83,230	254,369	412,799	117,991	16,116	22,234	156,341	215,859	84,634	300,493
8180 - Old Colony Regional Vocational Technical School District	3,110,879	77,384	85,648	263,517	426,549	121,419	16,584	368,837	506,840	222,129	(13,052)	209,077
8110 - Pioneer Valley Planning Commission	7,270,508	180,857	200,169	465,546	846,572	283,770	38,760	33,907	356,437	519,143	150,667	669,810
8140 - Southeastern Regional Planning & Economic Development District	4,199,852	104,473	115,629	382,271	602,373	163,922	22,390	28,384	214,695	299,886	96,934	396,820
8120 - Southeastern Regional School District	10,913,841	271,486	300,476	91,715	663,677	425,971	58,183	1,609,955	2,094,109	779,292	(331,366)	447,926
8200 - Tri-County Regional Vocational Technical School District	5,664,725	140,912	155,959	208,662	505,533	221,096	30,199	15,265	266,560	404,484	84,830	489,314
8190 - Upper Blackstone Water Pollution Abatement District	9,463,777	235,530	260,680	381,420	877,630	369,554	50,477	92,783	512,814	676,089	92,877	775,329
8130 - Upper Cape Cod Regional Vocational Technical School District	5,425,869	134,971	149,383	477,337	761,691	211,773	28,926	244,034	484,733	387,429	131,776	519,205
Special Funding Situations:												
Nonemployer (Commonwealth) attributable to:												
6013 - ACCEPT Education Collaborative	12,907,927									921,677	92,920	1,014,597
6022 - Assabet Valley Collaborative	5,072,164									362,173	36,513	398,686
6004 - Bi-County Education Collaborative	7,507,961									536,098	54,047	590,145
6018 - C.A.S.E. Collaborative	8,841,058									631,287	63,644	694,931
6016 - Cape Cod Collaborative	11,730,810									837,627	84,447	922,074
6010 - CAPS Education Collaborative	7,762,601									554,281	55,881	610,162
6035 - Central Massachusetts Special Education Collaborative	5,144,585									367,344	37,034	404,378
6017 - Collaborative for Educational Services	16,002,836									1,142,666	115,200	1,257,866
6021 - CREST Collaborative	13,608,991									971,736	97,967	1,069,703
6019 - Keystone Educational Collaborative	5,438,539									388,333	39,150	427,483
6034 - LABBS Collaborative	12,285,629									877,243	88,441	965,684
6011 - Lower Pioneer Valley Education Collaborative	21,429,377									1,530,143	154,264	1,684,407
6014 - North River Collaborative	10,709,515									764,202	77,095	841,797
6006 - North Shore Education Consortium	12,479,628									891,095	89,837	980,932
6007 - Pilgrim Area Collaborative	4,055,800									289,600	29,196	318,796
6031 - READS Collaborative	5,851,174									417,797	42,121	459,918
6033 - SEEM Collaborative	14,206,780									1,014,421	102,270	1,116,691
6009 - Shore Educational Collaborative	15,067,599									1,075,887	108,467	1,184,354
6015 - South Coast Education Collaborative	11,809,467									843,243	85,013	928,256
6001 - South Shore Education Collaborative	12,763,273									911,349	91,879	1,003,228
6003 - Southeastern Massachusetts Education Collaborative	8,940,726									638,403	64,362	702,765
6002 - Southern Worcester County Education Collaborative	3,849,903									274,898	27,714	302,612
6027 - The Education Cooperative	4,256,371									303,922	30,640	334,562
6020 - Valley Collaborative	12,958,656									925,300	93,285	1,018,585
8150 - Berkshire Regional Planning Commission	4,606,113									328,895	33,158	362,053
8250 - Devens Enterprise Commission	683,206									48,784	4,918	53,702
6037 - Franklin Regional Council of Governments	7,509,819									536,231	54,061	590,292
8210 - Massachusetts Development Finance Agency	3,774,359									269,504	27,170	296,674
6200 - Massachusetts Healthcare Connector Authority	17,880,038									1,276,706	128,713	1,405,419
8211 - Massachusetts Life Sciences Center	1,236,779									88,311	8,903	97,214
6100 - Massachusetts PRIM Board	19,346,958									1,381,450	139,273	1,520,723
6060 - Massachusetts School Building Authority	6,618,946									1,165,238	117,475	1,282,713
1080 - Massachusetts Water Resources Authority	6,016,453									429,599	43,311	472,910
8050 - Metropolitan Area Planning Commission	28,155,106									2,010,387	202,680	2,213,067
Total nonemployer (Commonwealth of Massachusetts)	350,209,147	8,711,596	9,641,827	34,096,954	52,450,377	13,668,779	1,866,997	30,859,967	46,395,743	25,006,330	2,521,049	27,527,379
Totals	\$ 13,909,874,000	\$ 346,013,757	\$ 382,961,393	\$ 76,571,633	\$ 805,546,783	\$ 542,907,000	\$ 74,154,800	\$ 76,571,633	\$ 693,633,433	\$ 993,220,379	\$ -	\$ 993,220,379

See accompanying notes to schedules.

**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
 NOTES TO SCHEDULES
 AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

NOTE 1 - PLAN DESCRIPTION

The Massachusetts State Employees' Retirement System (MSERS) is a public employee retirement system (PERS), that administers a cost-sharing, multiple employers defined benefit pension plan as defined by Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans*, covering substantially all employees of the Commonwealth and certain employees of independent authorities and agencies. The former Massachusetts Turnpike Authority (MTA) employees and retirees became members of MSERS upon the creation of the Massachusetts Department of Transportation (MassDOT). Other employees who transferred to MassDOT have been, and remain, members of MSERS. The assets and liabilities of the former MTA have been transferred to MSERS. MSERS is reported as a pension trust fund in the Commonwealth's Annual Comprehensive Financial Report and does not issue a stand-alone audited financial report.

Management of MSERS is vested in the Massachusetts State Retirement Board (the MSRB) which consists of five members—two elected by current and active MSERS members, one who is appointed by the State Treasurer, the State Treasurer, who serves as ex-officio and is the Chair of the MSRB, and one by the remaining members of the MSRB.

Benefits provided. MSERS provides retirement, disability, survivor and death benefits to members and their beneficiaries. Massachusetts General Laws (MGL) establishes uniform benefit and contribution requirements for all contributory PERS. These requirements provide for superannuation retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For employees hired after April 1, 2012, retirement allowances are calculated on the basis of the last five years or any five consecutive years, whichever is greater in terms of compensation. Benefit payments are based upon a member's age, length of creditable service, group creditable service, and group classification. The authority for amending these provisions rests with the Legislature.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of twenty years of creditable service or upon reaching the age of 55 with ten years of service. Normal retirement for most employees occurs at age 65; for certain hazardous duty and public safety positions, normal retirement is at age 55. Most employees who joined the system after April 1, 2012 cannot retire prior to age 60.

The MSERS' funding policies have been established by Chapter 32 of the MGL. The Legislature has the authority to amend these policies. The annuity portion of the MSERS retirement allowance is funded by employees, who contribute a percentage of their regular compensation. Costs of administering the plan are funded out of plan assets.

Member contributions for MSERS vary depending on the most recent date of membership:

Hire Date	% of Compensation
Prior to 1975.....	5% of regular compensation
1975 - 1983.....	7% of regular compensation
1984 to 6/30/1996.....	8% of regular compensation
7/1/1996 to present.....	9% of regular compensation except for State Police, which is 12% of regular compensation
7/1/2001 to present	11% of regular compensation (for teacher hired after 7/1/01 and those accepting provisions of Chapter 114 of the Acts of 2000)
1979 to present.....	An additional 2% of regular compensation in excess of \$30,000 except for teachers subject to Chapter 114 of the Acts of 2000

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
NOTES TO SCHEDULES
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022

In addition, members of Group 1 who join the system on or after April 2, 2012 will have their withholding rate reduced to 6% after achieving 30 years of creditable service.

NOTE 2 - BASIS OF PRESENTATION

The schedule of employer and nonemployer allocations and schedule of pension amounts by employer and nonemployer (the Schedules) present amounts that are elements of the financial statements of the MSERS or of its participating employers and nonemployers. Accordingly, they do not purport to be a complete presentation of the financial position or changes in financial position of the MSERS or its participating employers and nonemployers. The amounts presented in the Schedules were prepared in accordance with U.S. generally accepted accounting principles. Such preparation requires management of the MSERS to make a number of estimates and assumptions related to the reported amounts. Actual results could differ from those estimates.

The schedule of employer and nonemployer allocations are based on actual contributions adjusted for any nonemployer contributions.

The MGLs governing employer contribution requirements to MSERS are varied and vary among employers to such an extent that there is no uniform contribution method. Consequently, MSERS developed an effective contribution methodology which allocates total actual contributions amongst the employers in a consistent manner (based on an employer's share of total covered payroll). Any differences between the effective contribution and an employer's actual contributions are considered a nonemployer contribution from the Commonwealth. According to MGL, certain nonemployer contributions are the legal responsibility of the Commonwealth and have accordingly been reflected on the schedule of employer and nonemployer allocations as special funding situations.

The schedule of pension amounts presents each employer in sufficient detail to permit each contributing employer as well as each employer considered to be in a special funding situation to derive the necessary information for the preparation of their individual financial statements.

For entities considered to be in a 100% special funding situation there is no net pension liability, deferred outflows, and deferred inflows recognized. However, the notes to the financial statements for these entities must disclose the portion of the nonemployer contributing entity's total proportionate share of the net pension liability as well its portion of pension expense as both revenue and pension expense.

The special funding situations created by MGL are described below.

Educational Collaboratives

Collaboratives contribute amounts equal to the normal cost of employees' benefits at a rate established by the Public Employees' Retirement Administration Commission (PERAC), currently 6.1% of covered payroll. Legally, the collaboratives are only responsible for contributing the annual normal cost of their employees' benefits (i.e., the present value of the benefits earned by those employees in any given year) and are not legally responsible for the past service cost attributable to those employees or previously retired employees of the collaboratives. The Commonwealth as a nonemployer is legally responsible for the entire past service cost related to the collaboratives and therefore has a 100% special funding situation.

**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
 NOTES TO SCHEDULES
 AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Other Special Funding Situations

MGLs established certain entities whose employees are members of MSERS. However, MGL does not provide an employer funding mechanism for these entities. Consequently, the Commonwealth is considered the nonemployer contributor and is considered legally responsible to make all actuarially determined employer contributions on behalf of these entities. Therefore, these entities are also considered to be in a 100% special funding situation as defined by GASB.

NOTE 3 - COLLECTIVE NET PENSION LIABILITY

Components of the collective net pension liability at June 30, 2022 are as follows (amounts in thousands):

Total pension liability.....	\$ 48,041,000
Less:	
Plan fiduciary net position.....	34,131,126
Employers/nonemployers' net pension liability....	\$ 13,909,874
Plan fiduciary net position as a percentage of total pension liability.....	71.05%

Actuarial Assumptions

The total pension liability for the June 30, 2022 measurement date was determined by an actuarial valuation as of January 1, 2022 rolled forward to June 30, 2022, using the following actuarial assumptions:

1. (a) 2.5% inflation rate (b) 7.00% investment rate of return, (c) 3.50% interest rate credited to the annuity savings fund; and (d) 3.00% cost of living increase on the first \$13,000 of allowance each year.
2. Salary increases are based on analyses of past experience but range from 4.00% to 9.00% depending on group and length of service.
3. Mortality rates were as follows:
 - Pre-retirement - reflects RP-2014 Blue Collar Employees Table projected generationally with Scale MP-2020, set forward 1 year for females.
 - Post-retirement - reflects RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2020, set forward 1 year for females.
 - Disability - the mortality rate reflects the post-retirement mortality described above, set forward 1 year.
4. Experience studies were performed as follows:
 - Dated February 27, 2014 and encompasses the period January 1, 2006 to December 31, 2011, updated to reflect actual experience from 2012 through 2020 for post-retirement mortality.

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
NOTES TO SCHEDULES
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022

Investment assets of MSERS are with the Pension Reserves Investment Trust (PRIT) Fund. 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 rates of return 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 rates of return by the target asset allocation percentage. Best estimates of geometric rates of return for each major asset class included in the PRIT Fund's target asset allocation as of June 30, 2022 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Global Equity.....	38.0%	4.2%
Core Fixed Income.....	15.0%	0.5%
Private Equity.....	15.0%	7.3%
Portfolio Completion Strategies.....	10.0%	2.7%
Real Estate.....	10.0%	3.3%
Value Added Fixed Income.....	8.0%	3.7%
Timberland/Natural Resources....	4.0%	3.9%
Total.....	<u>100.0%</u>	

Discount Rate

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rates and the Commonwealth's contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rates. Based on those assumptions, the 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 Analysis

The following illustrates the sensitivity of the collective net pension liability to changes in the discount rate as of June 30, 2022. In particular, the table presents the MSERS collective net pension liability assuming it was calculated using a single discount rate that is one-percentage-point lower or one-percentage-point higher than the current discount rate (amounts in thousands):

<u>1% Decrease to 6.00%</u>	<u>Current Discount Rate 7.00%</u>	<u>1% Increase to 8.00%</u>
<u>\$ 19,184,883</u>	<u>\$ 13,909,874</u>	<u>\$ 9,446,450</u>

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
NOTES TO SCHEDULES
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022

NOTE 4 - DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES

The following table summarizes the changes in both deferred outflows and deferred inflows of resources excluding employer specific amounts (change in proportion) (amounts in thousands):

	Year of Deferral	Amortization Period	Balance July 1, 2021	Additions	Deletions	Balance June 30, 2022
Deferred Outflows of Resources:						
Difference between expected and actual experience.....	2018	5.3 years	\$ 25,021	\$ -	\$ (19,247)	\$ 5,774
	2019	5.2 years	128,220	-	(58,282)	69,938
	2020	5.2 years	206,882	-	(64,651)	142,231
	2022	4.9 years	-	160,909	(32,838)	128,070
Subtotal.....			<u>360,123</u>	<u>160,909</u>	<u>(175,018)</u>	<u>346,014</u>
Change of assumptions.....	2017	5.4 years	\$ 22,519	\$ -	\$ (22,519)	\$ -
	2018	5.3 years	152,566	-	(117,358)	35,208
	2019	5.2 years	183,615	-	(83,462)	100,153
	2020	5.2 years	272,000	-	(85,000)	187,000
	2021	5.0 years	80,800	-	(20,200)	60,600
Subtotal.....			<u>711,500</u>	<u>-</u>	<u>(328,539)</u>	<u>382,961</u>
Total deferred outflows of resources.....			<u>\$ 1,071,623</u>	<u>\$ 160,909</u>	<u>\$ (503,557)</u>	<u>\$ 728,975</u>
Deferred Inflows of Resources:						
Difference between expected and actual experience.....	2017	5.4 years	\$ (31,721)	\$ -	\$ 31,721	\$ -
	2021	5.0 years	(723,876)	-	180,969	(542,907)
Subtotal.....			<u>(755,597)</u>	<u>-</u>	<u>212,690</u>	<u>\$ (542,907)</u>
Net difference between projected and actual earnings on plan investments.....	2018	5.0 years	\$ (115,441)	\$ -	\$ 115,441	\$ -
	2019	5.0 years	176,182	-	(88,091)	88,091
	2020	5.0 years	867,302	-	(289,101)	578,201
	2021	5.0 years	(5,019,768)	-	1,254,942	(3,764,826)
	2022	5.0 years	-	3,780,473	(756,095)	3,024,378
Subtotal.....			<u>(4,091,725)</u>	<u>3,780,473</u>	<u>237,096</u>	<u>(74,156)</u>
Total deferred inflows of resources.....			<u>\$ (4,847,322)</u>	<u>\$ 3,780,523</u>	<u>\$ 449,786</u>	<u>\$ (617,063)</u>

**MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
NOTES TO SCHEDULES
AS OF AND FOR THE FISCAL YEAR ENDED JUNE 30, 2022**

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in the collective pension expense as follows (amounts in thousands):

Fiscal Year Ending June 30	
2023.....	\$ 82,789
2024.....	(159,678)
2025.....	(596,848)
2026.....	<u>785,649</u>
Total.....	<u>\$ 111,912</u>

NOTE 5 - COLLECTIVE PENSION EXPENSE

The following table shows the components of pension expense, excluding employer specific pension expense for changes in proportion, as of June 30, 2022 (amounts in thousands):

Service cost.....	\$	981,998
Interest on the total pension liability.....		3,223,993
Employee contributions.....		(693,853)
Projected earnings on plan investments.....		(2,483,009)
Transfers and reimbursements from other systems.....		(57,413)
Member make up, redeposits and payments from rollovers.....		(9,685)
Cost of living adjustment reimbursements.....		34,817
Other reimbursements.....		(56,860)
Administrative expense.....		14,461
Other expenses that do not reduce the total pension liability.....		(15,000)
Recognition (amortization) of deferred outflows and inflows of resources:		
Differences between expected and actual experience.....		(37,672)
Differences between projected and actual earnings on plan investments.....		(237,097)
Changes of assumptions.....		<u>328,539</u>
Pension expense.....	\$	<u>993,220</u>

The employer/nonemployer proportionate share of the collective pension expense is equal to the collective pension expense multiplied by the employer/nonemployer proportionate share percentage for the fiscal year ending June 30, 2022 as shown in the schedule of employer and nonemployer allocations.