

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

Schedule of Employer and Nonemployer Allocations and
Schedule of Pension Amounts by Employer and Nonemployer

June 30, 2019

(With Independent Auditors' Report Thereon)



KPMG LLP
Two Financial Center
60 South Street
Boston, MA 02111

Independent Auditors' Report

Mr. William McNamara, Comptroller
Commonwealth of Massachusetts:

We have audited the accompanying schedule of employer and nonemployer allocations of the Massachusetts State Employees' Retirement System (MSERS) as of and for the year ended June 30, 2019, 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 pension expense (specified column totals) included in the accompanying schedule of pension amounts by employer and nonemployer of MSERS as of and for the year ended June 30, 2019, and the related notes.

Management's Responsibility for the Schedules

Management is responsible for the preparation and fair presentation of these schedules in accordance with U.S. generally accepted accounting principles; this includes 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.

Auditors' Responsibility

Our responsibility is to express opinions on the schedule of employer and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer 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 and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer, 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 and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer 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 and nonemployer allocations and the specified column totals included in the schedule of pension amounts by employer and nonemployer.

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 above present fairly, in all material respects, the employer and nonemployer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total pension expense for the total of all participating entities for MSERS as of and for the year ended June 30, 2019 in accordance with U.S. generally accepted accounting principles.

Restriction on Use

Our report is intended solely for information and use of MSERS management and its 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.

KPMG LLP

Boston, Massachusetts
May 15, 2020

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS
As of and for the fiscal year ended June 30, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
<u>Non Special Funding Situations:</u>		
9045 - Commonwealth of Massachusetts:		
Employer contributions.....	\$ 917,443,211	
Total Commonwealth of Massachusetts.....	<u>917,443,211</u>	92.12951%
6070 - Massachusetts State College Building Authority:		
Employer contributions.....	134,295	
Nonemployer contributions.....	<u>133,479</u>	
Total Massachusetts State College Building Authority.....	<u>267,774</u>	0.02689%
6090 - Massachusetts Convention Center Authority:		
Employer contributions.....	875,321	
Nonemployer contributions.....	<u>2,039,608</u>	
Total Massachusetts Convention Center Authority.....	<u>2,914,929</u>	0.29272%
9045 - Massachusetts Department of Transportation:		
Employer contributions.....	30,825,854	
Nonemployer contributions.....	<u>11,650,178</u>	
Total Massachusetts Department of Transportation.....	<u>42,476,032</u>	4.26544%
8060 - Assabet Valley Regional Vocational School District:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>542,710</u>	
Total Assabet Valley Regional Vocational School District.....	<u>542,710</u>	0.05450%
8100 - Blackstone Valley Regional Vocational School District:		
Employer contributions.....	166,410	
Nonemployer contributions.....	<u>409,495</u>	
Total Blackstone Valley Regional Vocational School District.....	<u>575,905</u>	0.05783%
8080 - Bristol/Plymouth Regional Vocational Technical School District.....		
Employer contributions.....	371,450	
Nonemployer contributions.....	<u>4,150</u>	
Total Bristol/Plymouth Regional Vocational Technical School District.....	<u>375,600</u>	0.03772%
8160 - Central Massachusetts Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>304,000</u>	
Total Central Massachusetts Regional Planning Commission.....	<u>304,000</u>	0.03053%
8020 - Merrimack Valley Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>175,969</u>	
Total Merrimack Valley Planning Commission.....	<u>175,969</u>	0.01767%

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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, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
8010 - Montachusett Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	149,117	
Total Montachusett Regional Planning Commission.....	149,117	0.01497%
8090 - Montachusett Regional Vocational Technical School District:		
Employer contributions.....	442,110	
Nonemployer contributions.....	161,087	
Total Montachusett Regional Vocational Technical School District.....	603,197	0.06057%
8070 - Nashoba Associated Boards of Health:		
Employer contributions.....	-	
Nonemployer contributions.....	645,985	
Total Nashoba Associated Boards of Health.....	645,985	0.06487%
8040 - North Middlesex Council of Governments:		
Employer contributions.....	-	
Nonemployer contributions.....	148,528	
Total North Middlesex Council of Governments.....	148,528	0.01492%
8030 - Northeast Metro Regional Vocational Technical School District:		
Employer contributions.....	471,395	
Nonemployer contributions.....	-	
Total Northeast Metro Regional Vocational Technical School District.....	471,395	0.04734%
8170 - Old Colony Planning Council:		
Employer contributions.....	-	
Nonemployer contributions.....	189,734	
Total Old Colony Planning Council.....	189,734	0.01905%
8180 - Old Colony Regional Vocational Technical School District:		
Employer contributions.....	188,657	
Nonemployer contributions.....	71,687	
Total Old Colony Regional Vocational Technical School District.....	260,344	0.02614%
8110 - Pioneer Valley Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	463,583	
Total Pioneer Valley Planning Commission.....	463,583	0.04655%
8140 - Southeastern Regional Planning & Economic Development District:		
Employer contributions.....	-	
Nonemployer contributions.....	252,214	
Total Southeastern Regional Planning & Economic Development District.....	252,214	0.02533%

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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, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
8120 - Southeastern Regional School District:		
Employer contributions.....	-	
Nonemployer contributions.....	1,004,780	
Total Southeastern Regional School District.....	1,004,780	0.10090%
8200 - Tri-County Regional Vocational Technical School District:		
Employer contributions.....	342,392	
Nonemployer contributions.....	47,753	
Total Tri-County Regional Vocational Technical School District.....	390,145	0.03918%
8190 - Upper Blackstone Water Pollution Abatement District:		
Employer contributions.....	430,843	
Nonemployer contributions.....	217,950	
Total Upper Blackstone Water Pollution Abatement District.....	648,793	0.06515%
8130 - Upper Cape Cod Regional Vocational Technical School District:		
Employer contributions.....	152,926	
Nonemployer contributions.....	194,818	
Total Upper Cape Cod Regional Vocational Technical School District.....	347,744	0.03492%
<u>Special Funding Situations (Educational Collaboratives):</u>		
6013 - ACCEPT Education Collaborative:		
Employer contributions.....	223,605	
Nonemployer contributions.....	493,277	
Total ACCEPT Education Collaborative.....	716,882	0.07199%
6022 - Assabet Valley Collaborative:		
Employer contributions.....	85,585	
Nonemployer contributions.....	141,400	
Total Assabet Valley Collaborative.....	226,985	0.02279%
6004 - Bi-County Education Collaborative:		
Employer contributions.....	185,850	
Nonemployer contributions.....	373,959	
Total Bi-County Education Collaborative.....	559,809	0.05622%
6018 - C.A.S.E. Collaborative:		
Employer contributions.....	337,768	
Nonemployer contributions.....	534,116	
Total C.A.S.E. Collaborative.....	871,884	0.08755%
6016 - Cape Cod Collaborative:		
Employer contributions.....	213,581	
Nonemployer contributions.....	488,447	
Total Cape Cod Collaborative.....	702,028	0.07050%

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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, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6010 - CAPS Education Collaborative:		
Employer contributions.....	165,259	
Nonemployer contributions.....	308,227	
Total CAPS Education Collaborative.....	473,486	0.04755%
6035 - Central Massachusetts Special Education Collaborative:		
Employer contributions.....	193,130	
Nonemployer contributions.....	351,116	
Total Central Massachusetts Special Education Collaborative.....	544,246	0.05465%
6017 - Collaborative for Educational Services:		
Employer contributions.....	403,961	
Nonemployer contributions.....	629,591	
Total Collaborative for Educational Services.....	1,033,552	0.10379%
6021 - CREST Collaborative:		
Employer contributions.....	338,022	
Nonemployer contributions.....	686,974	
Total CREST Collaborative.....	1,024,996	0.10293%
6030 - EDCO Collaborative:		
Employer contributions.....	198,537	
Nonemployer contributions.....	427,471	
Total EDCO Collaborative.....	626,008	0.06286%
6019 - FLLAC Collaborative:		
Employer contributions.....	121,702	
Nonemployer contributions.....	182,312	
Total FLLAC Collaborative.....	304,014	0.03053%
6034 - LABBB Collaborative:		
Employer contributions.....	358,606	
Nonemployer contributions.....	560,827	
Total LABBB Collaborative.....	919,433	0.09233%
6011 - Lower Pioneer Valley Education Collaborative:		
Employer contributions.....	558,249	
Nonemployer contributions.....	932,756	
Total Lower Pioneer Valley Education Collaborative.....	1,491,005	0.14973%
6014 - North River Collaborative:		
Employer contributions.....	211,579	
Nonemployer contributions.....	590,631	
Total North River Collaborative.....	802,210	0.08056%

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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, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6006 - North Shore Education Consortium:		
Employer contributions.....	340,598	
Nonemployer contributions.....	563,179	
Total North Shore Education Consortium.....	<u>903,777</u>	0.09076%
6007 - Pilgrim Area Collaborative:		
Employer contributions.....	75,455	
Nonemployer contributions.....	165,017	
Total Pilgrim Area Collaborative.....	<u>240,472</u>	0.02415%
6031 - READS Collaborative:		
Employer contributions.....	153,452	
Nonemployer contributions.....	284,859	
Total READS Collaborative.....	<u>438,311</u>	0.04402%
6033 - SEEMS Collaborative:		
Employer contributions.....	367,342	
Nonemployer contributions.....	678,179	
Total SEEMS Collaborative.....	<u>1,045,521</u>	0.10499%
6009 - Shore Education Consortium:		
Employer contributions.....	526,903	
Nonemployer contributions.....	776,292	
Total Shore Education Consortium.....	<u>1,303,195</u>	0.13087%
6015 - South Coast Education Collaborative:		
Employer contributions.....	476,721	
Nonemployer contributions.....	372,027	
Total South Coast Education Collaborative.....	<u>848,748</u>	0.08523%
6001 - South Shore Education Collaborative:		
Employer contributions.....	300,396	
Nonemployer contributions.....	528,820	
Total South Shore Education Collaborative.....	<u>829,216</u>	0.08327%
6003 - Southeastern Massachusetts Education Collaborative:		
Employer contributions.....	268,358	
Nonemployer contributions.....	508,208	
Total Southeastern Massachusetts Education Collaborative.....	<u>776,566</u>	0.07798%
6002 - Southern Worcester County Education Collaborative:		
Employer contributions.....	99,528	
Nonemployer contributions.....	177,219	
Total Southern Worcester County Education Collaborative.....	<u>276,747</u>	0.02779%

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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, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6027 - The Educational Co-Op:		
Employer contributions.....	94,582	
Nonemployer contributions.....	176,459	
Total The Educational Co-Op.....	271,041	0.02722%
6020 - Valley Collaborative:		
Employer contributions.....	311,325	
Nonemployer contributions.....	698,153	
Total Valley Collaborative.....	1,009,478	0.10137%
<u>Special Funding Situations (Other than Educational Collaboratives):</u>		
8150 - Berkshire Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	239,088	
Total Berkshire Regional Planning Commission.....	239,088	0.02401%
8250 - Devens Enterprise Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	47,934	
Total Devens Enterprise Commission.....	47,934	0.00481%
6037 - Franklin Regional Council of Governments:		
Employer contributions.....	-	
Nonemployer contributions.....	452,735	
Total Franklin Regional Council of Governments.....	452,735	0.04546%
8210 - Massachusetts Development Finance Agency:		
Employer contributions.....	-	
Nonemployer contributions.....	275,912	
Total Massachusetts Development Finance Agency.....	275,912	0.02771%
6200 - Massachusetts Healthcare Connector Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	1,180,629	
Total Massachusetts Healthcare Connector Authority.....	1,180,629	0.11856%
8211 - Massachusetts Life Sciences Center:		
Employer contributions.....	-	
Nonemployer contributions.....	53,263	
Total Massachusetts Life Sciences Center.....	53,263	0.00535%
6100 - Massachusetts PRIM Board:		
Employer contributions.....	-	
Nonemployer contributions.....	1,138,563	
Total Massachusetts PRIM Board.....	1,138,563	0.11433%

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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, 2019

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6060 - Massachusetts School Building Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>1,055,203</u>	
Total Massachusetts School Building Authority.....	<u>1,055,203</u>	0.10596%
1080 - Massachusetts Water Resources Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>719,854</u>	
Total Massachusetts Water Resources Authority.....	<u>719,854</u>	0.07229%
8050 - Metropolitan Area Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	<u>1,764,575</u>	
Total Metropolitan Area Planning Commission.....	<u>1,764,575</u>	0.17720%
Total for all entities.....	<u>\$ 995,819,055</u>	100.00000%

See accompanying notes to schedule of employer and nonemployer allocations and schedule of pension amounts by employer and nonemployer.

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
 SCHEDULE OF PENSION AMOUNTS BY EMPLOYER AND NONEMPLOYER
 As of and for the fiscal year ended June 30, 2019

Employer/Nonemployer	Deferred Outflows of Resources					Deferred Inflows of Resources				Pension Expense		
	Net Pension Liability	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 Investment 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.....	\$ 13,482,420,360	\$ 447,753,889	\$ 999,375,566	\$ 23,803,545	\$ 1,470,933,000	\$ 175,345,796	\$ 201,108,585	\$ 684,861	\$ 377,139,242	2,090,173,685	10,280,030	2,100,453,715
6070 - Massachusetts State College Building Authority.....	3,935,112	130,686	291,688	295,187	717,561	51,178	58,698	485,713	595,589	610,059	2,207	612,266
6090 - Massachusetts Convention Center Authority.....	42,836,764	1,422,618	3,175,247	628,669	5,225,534	557,114	638,968	2,614,169	3,810,252	6,640,965	(673,456)	5,967,509
9045 - Massachusetts Department of Transportation.....	624,212,716	20,730,230	46,269,358	773,659	67,773,247	8,118,207	9,310,979	35,021,184	52,450,370	96,771,422	(13,599,993)	83,171,429
8060 - Assabet Valley Regional Vocational School District.....	7,975,474	264,867	591,177	789,756	1,645,800	103,725	118,965	221,185	443,875	1,236,434	294,657	1,531,091
8100 - Blackstone Valley Regional Vocational School District.....	8,463,296	281,068	627,336	215,916	1,124,320	110,070	126,242	348,346	584,657	1,312,061	(33,312)	1,278,749
8080 - Bristol/Plymouth Regional Vocational Technical School District.....	5,519,685	183,310	409,143	447,300	1,039,753	71,786	82,334	63,922	218,042	855,714	57,141	912,855
8160 - Central Massachusetts Regional Planning Commission.....	4,467,476	148,366	331,149	731,705	1,211,220	58,102	66,638	58,433	183,173	692,591	192,357	884,948
8020 - Merrimack Valley Planning Commission.....	2,585,978	85,881	191,684	34,749	312,314	33,632	38,573	197,154	269,359	400,903	(44,114)	356,789
8010 - Montachusett Regional Planning Commission.....	2,191,371	72,776	162,434	299,143	534,353	28,500	32,687	455,140	516,327	339,727	(37,040)	302,687
8090 - Montachusett Regional Vocational Technical School District.....	8,864,369	294,387	657,066	189,415	1,140,868	115,286	132,224	599,764	847,274	1,374,239	(146,374)	1,227,865
8070 - Nashoba Associated Boards of Health.....	9,493,167	315,270	703,675	140,627	1,159,572	123,464	141,603	642,937	908,004	1,471,721	(357,541)	1,114,180
8040 - North Middlesex Council of Governments.....	2,182,715	72,488	161,792	67,101	301,381	28,387	32,558	88,773	149,718	338,385	(19,228)	319,157
8030 - Northeast Metro Regional Vocational Technical School District.....	6,927,458	230,062	513,493	215,925	959,480	90,095	103,332	385,197	578,625	1,073,961	(239,242)	834,719
8170 - Old Colony Planning Council.....	2,788,264	92,599	206,678	98,546	397,823	36,263	41,591	105,893	183,747	432,263	(4,279)	427,984
8180 - Old Colony Regional Vocational Technical School District.....	3,825,923	127,060	283,594	515,081	925,735	49,758	57,069	173,201	280,028	593,131	83,340	676,471
8110 - Pioneer Valley Planning Commission.....	6,812,652	226,250	504,983	130,438	861,671	88,602	101,620	145,248	335,470	1,056,162	(43,052)	1,013,110
8140 - Southeastern Regional Planning & Economic Development District.....	3,706,448	123,092	274,738	9,607	407,437	48,204	55,287	170,019	273,510	574,609	(71,399)	503,210
8120 - Southeastern Regional School District.....	14,765,891	490,378	1,094,512	1,008,862	2,593,752	192,038	220,253	499,685	911,976	2,289,150	(110,365)	2,178,785
8200 - Tri-County Regional Vocational Technical School District.....	5,733,433	190,408	424,987	327,548	942,943	74,568	85,522	33,458	193,546	888,852	296,047	1,184,899
8190 - Upper Blackstone Water Pollution Abatement District.....	9,534,432	316,640	706,734	309,460	1,332,834	124,000	142,219	162,751	428,970	1,478,119	65,837	1,543,956
8130 - Upper Cape Cod Regional Vocational Technical School District.....	5,110,323	169,715	378,799	211,166	759,680	66,462	76,227	139,820	282,510	792,251	7,852	800,103
Special Funding Situations:												
Nonemployer (Commonwealth) attributable to:												
6013 - ACCEPT Education Collaborative.....	10,535,044									1,633,243	116,785	1,750,028
6022 - Assabet Valley Collaborative.....	3,335,691									517,131	36,977	554,108
6004 - Bi-County Education Collaborative.....	8,226,755									1,275,390	91,196	1,366,586
6018 - C.A.S.E. Collaborative.....	12,812,898									1,986,378	142,036	2,128,414
6016 - Cape Cod Collaborative.....	10,316,755									1,599,402	114,365	1,713,767
6010 - CAPS Education Collaborative.....	6,958,182									1,078,724	77,134	1,155,858
6035 - Central Massachusetts Special Education Collaborative.....	7,998,046									1,239,934	88,661	1,328,595
6017 - Collaborative for Educational Services.....	15,188,714									2,354,700	168,372	2,523,072
6021 - CREST Collaborative.....	15,062,978									2,335,207	166,978	2,502,185
6030 - EDCO Collaborative.....	9,199,592									1,426,209	101,981	1,528,190
6019 - FLLAC Collaborative.....	4,467,682									692,623	49,526	742,149
6034 - LABBB Collaborative.....	13,511,662									2,094,707	149,782	2,244,489
6011 - Lower Pioneer Valley Education Collaborative.....	21,911,281									3,396,896	242,894	3,639,790
6014 - North River Collaborative.....	11,788,994									1,827,643	130,685	1,958,328
6006 - North Shore Education Consortium.....	13,281,587									2,059,039	147,231	2,206,270
6007 - Pilgrim Area Collaborative.....	3,533,891									547,858	39,174	587,032
6031 - READS Collaborative.....	6,441,263									998,586	71,404	1,069,990
6033 - SEEMS Collaborative.....	15,364,606									2,381,968	170,322	2,552,290
6009 - Shore Education Consortium.....	19,151,292									2,969,016	212,299	3,181,315
6015 - South Coast Education Collaborative.....	12,472,900									1,933,668	138,267	2,071,935
6001 - South Shore Education Collaborative.....	12,185,865									1,889,169	135,085	2,024,254
6003 - Southeastern Massachusetts Education Collaborative.....	11,412,139									1,769,219	126,508	1,895,727
6002 - Southern Worcester County Education Collaborative.....	4,066,976									630,501	45,084	675,585
6027 - The Educational Co-Op.....	3,983,123									617,502	44,154	661,656
6020 - Valley Collaborative.....	14,834,931									2,299,853	164,451	2,464,304
8150 - Berkshire Regional Planning Commission.....	3,513,553									544,705	38,949	583,654
8250 - Devens Enterprise Commission.....	704,421									109,206	7,809	117,015
6037 - Franklin Regional Council of Governments.....	6,653,233									1,031,448	73,753	1,105,201
8210 - Massachusetts Development Finance Agency.....	4,054,705									628,599	44,948	673,547
6200 - Massachusetts Healthcare Connector Authority.....	17,350,105									2,689,779	192,332	2,882,111
8211 - Massachusetts Life Sciences Center.....	782,734									121,347	8,677	130,024
6100 - Massachusetts PRIM Board.....	16,731,918									2,593,942	185,479	2,779,421
6060 - Massachusetts School Building Authority.....	15,506,889									2,404,026	171,899	2,575,925
1080 - Massachusetts Water Resources Authority.....	10,578,719									1,640,014	117,269	1,757,283
8050 - Metropolitan Area Planning Commission.....	25,931,569									4,020,160	287,461	4,307,621
Total nonemployer (Commonwealth of Massachusetts).....	369,850,693	12,282,816	27,414,940	25,698,115	65,395,871	4,810,098	5,516,825	13,644,667	23,971,590	57,337,792	4,099,927	61,437,719
Totals.....	\$ 14,634,204,000	\$ 486,004,856	\$ 1,084,750,773	\$ 56,941,520	\$ 1,627,697,149	\$ 190,325,333	\$ 218,289,000	\$ 56,941,520	\$ 465,555,853	2,268,734,196	-	2,268,734,196

See accompanying notes to schedule of employer and nonemployer allocations and schedule of pension amounts by employer and nonemployer.

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
Notes to the Schedule of Employer and Nonemployer Allocations and
the Schedule of Pension Amounts by Employer and Nonemployer
June 30, 2019

NOTE 1 - PLAN DESCRIPTION

The Massachusetts State Employees' Retirement System (MSERS) is a public employee retirement system (PERS), that administers a cost-sharing, multiple employer 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 part of the Commonwealth's reporting entity 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.

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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
1979 to present.....	An additional 2% of regular compensation in excess of \$30,000

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 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.

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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 5.6% 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.

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, 2019 are as follows (amounts in thousands):

Total pension liability.....	\$ 43,398,000
Less:	
Plan fiduciary net position.....	28,763,796
Employers/nonemployers' net pension liability.....	\$ 14,634,204
Plan fiduciary net position as a percentage of total pension liability.....	66.28%

Actuarial Assumptions

The total pension liability for the June 30, 2019 measurement date was determined by an actuarial valuation as of January 1, 2019 rolled forward to June 30, 2019. This valuation used the following assumptions:

1. (a) 7.25% investment rate of return, (b) 3.50% interest rate credited to the annuity savings fund and (c) 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.

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3. Mortality rates were as follows:

- Pre-retirement - reflects RP-2014 Blue Collar Employees Table projected generationally with Scale MP-2016, set forward 1 year for females
- Post-retirement - reflects RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2016, set forward 1 year for females
- Disability - the mortality rate reflects RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2016, 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 2016 for post-retirement mortality.

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, 2019 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity.....	39.0%	4.9%
Core Fixed Income.....	15.0%	1.3%
Private Equity.....	13.0%	8.2%
Portfolio Completion Strategies.....	11.0%	3.9%
Real Estate.....	10.0%	3.6%
Value Added Fixed Income.....	8.0%	4.7%
Timberland/Natural Resources.....	4.0%	4.1%
Total.....	<u>100.0%</u>	

Discount Rate

The discount rate used to measure the total pension liability was 7.25%. 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

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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, 2019. 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):

1% Decrease to 6.25%	Current Discount Rate 7.25%	1% Increase to 8.25%
\$ 19,478,600	\$ 14,634,204	\$ 10,494,900

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, 2018	Additions	Deletions	Balance June 30, 2019
Deferred Outflows of Resources:						
Difference between expected and actual experience.....	2015	5.5 years	\$ 75,000	\$ -	\$ (50,000)	\$ 25,000
	2016	5.4 years	261,782	-	(109,075)	152,707
	2018	5.3 years	82,761	-	(19,247)	63,514
	2019	5.2 years	-	303,066	(58,282)	244,784
Subtotal.....			419,543	303,066	(236,604)	486,005
Change of assumptions.....	2014	5.5 years	9,273	-	(9,273)	-
	2015	5.5 years	635,456	-	(423,637)	211,819
	2017	5.4 years	191,407	-	(56,296)	135,111
	2018	5.3 years	504,641	-	(117,358)	387,283
	2019	5.2 years	-	434,000	(83,462)	350,538
Subtotal.....			1,340,777	434,000	(690,026)	1,084,751
Total deferred outflows of resources.....			\$ 1,760,320	\$ 737,066	\$ (926,630)	\$ 1,570,756

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	Year of Deferral	Amortization Period	Balance July 1, 2018	Additions	Deletions	Balance June 30, 2019
Deferred Inflows of Resources:						
Difference between expected and actual experience.....	2017	5.4 years	\$ (269,627)	\$ -	\$ 79,302	\$ (190,325)
Net difference between projected and actual earnings on plan investments.....	2015	5 years	203,937	-	(203,937)	-
	2016	5 years	537,852	-	(268,926)	268,926
	2017	5 years	(739,883)	-	246,628	(493,255)
	2018	5 years	(461,766)	-	115,441	(346,325)
	2019	5 years	-	440,456	(88,091)	352,365
Subtotal.....			(459,860)	440,456	(198,885)	(218,289)
Total deferred inflows of resources.....			\$ (729,487)	\$ 440,456	\$ (119,583)	\$ (408,614)

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	
2020.....	\$ 596,185
2021.....	24,995
2022.....	241,796
2023.....	270,817
2024.....	28,349
Total.....	\$ 1,162,142

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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, 2019 (amounts in thousands):

Service cost.....	\$ 897,600
Interest on the total pension liability.....	2,965,890
Employee contributions.....	(632,730)
Projected earnings on plan investments.....	(1,983,854)
Transfers and reimbursements from other systems.....	28,286
Member make up, redeposits and payments from rollovers.....	(56,056)
Cost of living adjustment reimbursements.....	(19,800)
Other reimbursements.....	(57,195)
Administrative expense.....	15,853
Other expenses that do not reduce the total pension liability.....	64,527
Recognition (amortization) of deferred outflows and inflows of resources:	
Differences between expected and actual experience.....	157,302
Differences between projected and actual earnings on plan investments.....	198,885
Changes of assumptions.....	<u>690,026</u>
 Pension expense.....	 <u><u>\$ 2,268,734</u></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, 2019 as shown in the schedule of employer and nonemployer allocations.