

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

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

June 30, 2018

(With Independent Auditors' Report Thereon)



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

Independent Auditors' Report

Mr. Andrew W. Maylor, 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, 2018, 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 year ended June 30, 2018, 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 employer pension expense for the total of all participating entities for MSERS as of and for the year ended June 30, 2018 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
April 19, 2019

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS

As of and for the fiscal year ended June 30, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
<u>Non Special Funding Situations:</u>		
9045 - Commonwealth of Massachusetts:		
Employer contributions.....	\$ 842,275,568	
Total Commonwealth of Massachusetts.....	842,275,568	92.10614%
6070 - Massachusetts State College Building Authority:		
Employer contributions.....	115,941	
Nonemployer contributions.....	168,912	
Total Massachusetts State College Building Authority.....	284,853	0.03115%
6090 - Massachusetts Convention Center Authority:		
Employer contributions.....	788,759	
Nonemployer contributions.....	1,829,678	
Total Massachusetts Convention Center Authority.....	2,618,437	0.28634%
9045 - Massachusetts Department of Transportation:		
Employer contributions.....	29,312,615	
Nonemployer contributions.....	10,189,061	
Total Massachusetts Department of Transportation.....	39,501,676	4.31966%
8060 - Assabet Valley Regional Vocational School District:		
Employer contributions.....	-	
Nonemployer contributions.....	518,899	
Total Assabet Valley Regional Vocational School District.....	518,899	0.05674%
8100 - Blackstone Valley Regional Vocational School District:		
Employer contributions.....	-	
Nonemployer contributions.....	541,948	
Total Blackstone Valley Regional Vocational School District.....	541,948	0.05926%
8080 - Bristol/Plymouth Regional Vocational Technical School District.....		
Employer contributions.....	311,957	
Nonemployer contributions.....	29,380	
Total Bristol/Plymouth Regional Vocational Technical School District.....	341,337	0.03733%
8160 - Central Massachusetts Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	255,075	
Total Central Massachusetts Regional Planning Commission.....	255,075	0.02789%
8020 - Merrimack Valley Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	173,139	
Total Merrimack Valley Planning Commission.....	173,139	0.01893%

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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, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
8010 - Montachusett Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	174,972	
Total Montachusett Regional Planning Commission.....	174,972	0.01913%
8090 - Montachusett Regional Vocational Technical School District:		
Employer contributions.....	224,811	
Nonemployer contributions.....	325,903	
Total Montachusett Regional Vocational Technical School District.....	550,714	0.06022%
8070 - Nashoba Associated Boards of Health:		
Employer contributions.....	-	
Nonemployer contributions.....	584,312	
Total Nashoba Associated Boards of Health.....	584,312	0.06390%
8040 - North Middlesex Council of Governments:		
Employer contributions.....	-	
Nonemployer contributions.....	139,319	
Total North Middlesex Council of Governments.....	139,319	0.01524%
8030 - Northeast Metro Regional Vocational Technical School District:		
Employer contributions.....	411,344	
Nonemployer contributions.....	43,515	
Total Northeast Metro Regional Vocational Technical School District.....	454,859	0.04974%
8170 - Old Colony Planning Council:		
Employer contributions.....	-	
Nonemployer contributions.....	181,455	
Total Old Colony Planning Council.....	181,455	0.01984%
8180 - Old Colony Regional Vocational Technical School District:		
Employer contributions.....	125,281	
Nonemployer contributions.....	78,933	
Total Old Colony Regional Vocational Technical School District.....	204,214	0.02233%
8110 - Pioneer Valley Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	436,723	
Total Pioneer Valley Planning Commission.....	436,723	0.04776%
8140 - Southeastern Regional Planning & Economic Development District:		
Employer contributions.....	-	
Nonemployer contributions.....	238,616	
Total Southeastern Regional Planning & Economic Development District.....	238,616	0.02609%

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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, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
8120 - Southeastern Regional School District:		
Employer contributions.....	531,992	
Nonemployer contributions.....	398,716	
Total Southeastern Regional School District.....	930,708	0.10178%
8200 - Tri-County Regional Vocational Technical School District:		
Employer contributions.....	292,720	
Nonemployer contributions.....	55,484	
Total Tri-County Regional Vocational Technical School District.....	348,204	0.03808%
8190 - Upper Blackstone Water Pollution Abatement District:		
Employer contributions.....	419,122	
Nonemployer contributions.....	154,356	
Total Upper Blackstone Water Pollution Abatement District.....	573,478	0.06271%
8130 - Upper Cape Cod Regional Vocational Technical School District:		
Employer contributions.....	136,591	
Nonemployer contributions.....	167,461	
Total Upper Cape Cod Regional Vocational Technical School District.....	304,052	0.03325%
<u>Special Funding Situations (Educational Collaboratives):</u>		
6013 - ACCEPT Education Collaborative:		
Employer contributions.....	203,589	
Nonemployer contributions.....	344,467	
Total ACCEPT Education Collaborative.....	548,056	0.05993%
6022 - Assabet Valley Collaborative:		
Employer contributions.....	83,112	
Nonemployer contributions.....	130,224	
Total Assabet Valley Collaborative.....	213,336	0.02333%
6004 - Bi-County Education Collaborative:		
Employer contributions.....	182,206	
Nonemployer contributions.....	322,115	
Total Bi-County Education Collaborative.....	504,321	0.05515%
6018 - C.A.S.E. Collaborative:		
Employer contributions.....	310,915	
Nonemployer contributions.....	566,225	
Total C.A.S.E. Collaborative.....	877,140	0.09592%
6016 - Cape Cod Collaborative:		
Employer contributions.....	239,873	
Nonemployer contributions.....	371,199	
Total Cape Cod Collaborative.....	611,072	0.06682%

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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, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6010 - CAPS Education Collaborative:		
Employer contributions.....	191,429	
Nonemployer contributions.....	223,892	
Total CAPS Education Collaborative.....	415,321	0.04542%
6035 - Central Massachusetts Special Education Collaborative:		
Employer contributions.....	203,952	
Nonemployer contributions.....	283,438	
Total Central Massachusetts Special Education Collaborative.....	487,390	0.05330%
6017 - Collaborative for Educational Services:		
Employer contributions.....	322,698	
Nonemployer contributions.....	619,810	
Total Collaborative for Educational Services.....	942,508	0.10307%
6021 - CREST Collaborative:		
Employer contributions.....	368,959	
Nonemployer contributions.....	580,704	
Total CREST Collaborative.....	949,663	0.10385%
6030 - EDCO Collaborative:		
Employer contributions.....	262,848	
Nonemployer contributions.....	363,080	
Total EDCO Collaborative.....	625,928	0.06845%
6019 - FLLAC Collaborative:		
Employer contributions.....	85,935	
Nonemployer contributions.....	165,502	
Total FLLAC Collaborative.....	251,437	0.02750%
6034 - LABBB Collaborative:		
Employer contributions.....	384,056	
Nonemployer contributions.....	507,177	
Total LABBB Collaborative.....	891,233	0.09746%
6011 - Lower Pioneer Valley Education Collaborative:		
Employer contributions.....	562,066	
Nonemployer contributions.....	727,409	
Total Lower Pioneer Valley Education Collaborative.....	1,289,475	0.14101%
6014 - North River Collaborative:		
Employer contributions.....	256,523	
Nonemployer contributions.....	480,999	
Total North River Collaborative.....	737,522	0.08065%

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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, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6006 - North Shore Education Consortium:		
Employer contributions.....	297,829	
Nonemployer contributions.....	503,787	
Total North Shore Education Consortium.....	801,616	0.08766%
6007 - Pilgrim Area Collaborative:		
Employer contributions.....	88,481	
Nonemployer contributions.....	138,714	
Total Pilgrim Area Collaborative.....	227,195	0.02484%
6031 - READS Collaborative:		
Employer contributions.....	186,016	
Nonemployer contributions.....	214,306	
Total READS Collaborative.....	400,322	0.04378%
6033 - SEEMS Collaborative:		
Employer contributions.....	411,333	
Nonemployer contributions.....	566,848	
Total SEEMS Collaborative.....	978,181	0.10697%
6009 - Shore Education Consortium:		
Employer contributions.....	409,937	
Nonemployer contributions.....	747,828	
Total Shore Education Consortium.....	1,157,765	0.12661%
6015 - South Coast Education Collaborative:		
Employer contributions.....	69,151	
Nonemployer contributions.....	701,580	
Total South Coast Education Collaborative.....	770,731	0.08428%
6001 - South Shore Education Collaborative:		
Employer contributions.....	254,476	
Nonemployer contributions.....	460,018	
Total South Shore Education Collaborative.....	714,494	0.07813%
6003 - Southeastern Massachusetts Education Collaborative:		
Employer contributions.....	297,556	
Nonemployer contributions.....	463,388	
Total Southeastern Massachusetts Education Collaborative.....	760,944	0.08321%
6002 - Southern Worcester County Education Collaborative:		
Employer contributions.....	96,845	
Nonemployer contributions.....	149,266	
Total Southern Worcester County Education Collaborative.....	246,111	0.02691%

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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, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6027 - The Educational Co-Op:		
Employer contributions.....	88,647	
Nonemployer contributions.....	127,347	
Total The Educational Co-Op.....	215,994	0.02362%
6020 - Valley Collaborative:		
Employer contributions.....	347,206	
Nonemployer contributions.....	443,410	
Total Valley Collaborative.....	790,616	0.08646%
<u>Special Funding Situations (Other than Educational Collaboratives):</u>		
8150 - Berkshire Regional Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	215,804	
Total Berkshire Regional Planning Commission.....	215,804	0.02360%
8250 - Devens Enterprise Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	43,724	
Total Devens Enterprise Commission.....	43,724	0.00478%
6037 - Franklin Regional Council of Governments:		
Employer contributions.....	-	
Nonemployer contributions.....	407,334	
Total Franklin Regional Council of Governments.....	407,334	0.04454%
8210 - Massachusetts Development Finance Agency:		
Employer contributions.....	-	
Nonemployer contributions.....	262,432	
Total Massachusetts Development Finance Agency.....	262,432	0.02870%
6200 - Massachusetts Healthcare Connector Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	1,070,618	
Total Massachusetts Healthcare Connector Authority.....	1,070,618	0.11708%
8211 - Massachusetts Life Sciences Center:		
Employer contributions.....	-	
Nonemployer contributions.....	45,065	
Total Massachusetts Life Sciences Center.....	45,065	0.00493%
6100 - Massachusetts PRIM Board:		
Employer contributions.....	-	
Nonemployer contributions.....	985,101	
Total Massachusetts PRIM Board.....	985,101	0.10772%

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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, 2018

Employer/Nonemployer	Actual Contributions	Employer/ Nonemployer Allocation Percentage
6060 - Massachusetts School Building Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	975,651	
Total Massachusetts School Building Authority.....	975,651	0.10669%
1080 - Massachusetts Water Resources Authority:		
Employer contributions.....	-	
Nonemployer contributions.....	837,901	
Total Massachusetts Water Resources Authority.....	837,901	0.09163%
8050 - Metropolitan Area Planning Commission:		
Employer contributions.....	-	
Nonemployer contributions.....	1,577,340	
Total Metropolitan Area Planning Commission.....	1,577,340	0.17249%
Total for all entities.....	\$ 914,461,899	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, 2018

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 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 Employer Pension Expense
Non Special Funding Situations:												
Employer:												
9045 - Commonwealth of Massachusetts.....	\$ 12,185,623,139	\$ 386,424,649	\$ 1,234,937,210	\$ 32,864,277	\$ 1,654,226,136	\$ 248,343,537	\$ 423,559,669	\$ 2,316,251	\$ 674,219,458	\$ 1,489,886,224	\$ 9,470,153	\$ 1,499,356,377
6070 - Massachusetts State College Building Authority.....	4,121,111	130,687	417,649	453,366	1,001,702	83,988	143,246	122,001	349,235	503,871	93,235	597,106
6090 - Massachusetts Convention Center Authority.....	37,882,242	1,201,304	3,839,130	148,133	5,188,567	772,042	1,316,748	3,585,442	5,674,231	4,631,706	(675,006)	3,956,700
9045 - Massachusetts Department of Transportation.....	571,490,561	18,122,835	57,917,018	2,754,903	78,794,756	11,647,003	19,864,421	43,987,229	75,498,653	69,873,810	(11,893,913)	57,979,897
8060 - Assabet Valley Regional Vocational School District.....	7,507,172	238,064	760,805	1,137,076	2,135,945	152,996	260,942	-	413,938	917,871	357,861	1,275,732
8100 - Blackstone Valley Regional Vocational School District.....	7,840,634	248,638	794,600	327,349	1,370,587	159,792	272,532	318,414	750,739	958,642	(9,789)	948,853
8080 - Bristol/Plymouth Regional Vocational Technical School District.....	4,938,294	156,601	500,465	584,569	1,241,635	100,643	171,650	191,765	464,058	603,785	71,017	674,802
8160 - Central Massachusetts Regional Planning Commission.....	3,690,298	117,025	373,989	664,136	1,155,150	75,208	128,271	119,851	323,330	451,198	93,489	544,687
8020 - Merrimack Valley Planning Commission.....	2,504,889	79,434	253,855	54,761	388,050	51,050	87,067	107,253	245,370	306,262	(13,750)	292,512
8010 - Montachusett Regional Planning Commission.....	2,531,408	80,275	256,542	409,346	746,163	51,590	87,989	94,949	234,528	309,505	57,906	367,411
8090 - Montachusett Regional Vocational Technical School District.....	7,967,456	252,660	807,452	268,266	1,328,378	162,377	276,941	867,713	1,307,031	974,148	(151,879)	822,269
8070 - Nashoba Associated Boards of Health.....	8,453,535	268,074	856,713	134,288	1,259,075	172,283	293,836	1,112,828	1,578,948	1,033,579	(469,826)	563,753
8040 - North Middlesex Council of Governments.....	2,015,598	63,918	204,268	93,372	361,558	41,078	70,060	95,244	206,382	246,439	(5,786)	240,653
8030 - Northeast Metro Regional Vocational Technical School District.....	6,580,673	208,683	666,910	329,881	1,205,474	134,114	228,737	445,230	808,082	804,592	(157,402)	647,190
8170 - Old Colony Planning Council.....	2,625,201	83,249	266,048	138,417	487,714	53,502	91,249	53,695	198,446	320,973	24,258	345,231
8180 - Old Colony Regional Vocational Technical School District.....	2,954,466	93,691	299,417	215,907	609,015	60,212	102,694	255,728	418,634	361,231	(2,506)	358,725
8110 - Pioneer Valley Planning Commission.....	6,318,291	200,363	640,320	191,932	1,032,615	128,767	219,617	102,862	451,246	772,512	(37,942)	734,570
8140 - Southeastern Regional Planning & Economic Development District.....	3,452,177	109,474	349,857	18,080	477,411	70,356	119,994	156,407	346,757	422,084	(50,960)	371,124
8120 - Southeastern Regional School District.....	13,465,019	426,996	1,364,596	1,341,051	3,132,643	274,418	468,030	835,291	1,577,739	1,646,313	(63,325)	1,582,988
8200 - Tri-County Regional Vocational Technical School District.....	5,037,642	159,751	510,534	531,689	1,201,974	102,667	175,103	75,853	353,624	615,932	241,766	857,698
8190 - Upper Blackstone Water Pollution Abatement District.....	8,296,794	263,104	840,829	137,858	1,241,791	169,089	288,388	222,928	680,405	1,014,415	28,042	1,042,457
8130 - Upper Cape Cod Regional Vocational Technical School District.....	4,398,873	139,495	445,798	77,819	663,112	89,649	152,900	202,478	445,027	537,832	(35,752)	502,080
Special Funding Situations:												
Nonemployer (Commonwealth) attributable to:												
6013 - ACCEPT Education Collaborative.....	7,929,001									969,446	75,143	1,044,589
6022 - Assabet Valley Collaborative.....	3,086,439									377,366	29,250	406,616
6004 - Bi-County Education Collaborative.....	7,296,265									892,084	69,147	961,231
6018 - C.A.S.E. Collaborative.....	12,690,024									1,551,557	120,264	1,671,821
6016 - Cape Cod Collaborative.....	8,840,685									1,080,914	83,783	1,164,697
6010 - CAPS Education Collaborative.....	6,008,657									734,654	56,944	791,598
6035 - Central Massachusetts Special Education Collaborative.....	7,051,316									862,135	66,826	928,961
6012 - CHARMS Collaborative.....	-									-	-	-
6017 - Collaborative for Educational Services.....	13,635,736									1,667,186	129,226	1,796,412
6021 - CREST Collaborative.....	13,739,251									1,679,842	130,207	1,810,049
6030 - EDCO Collaborative.....	9,055,614									1,107,193	85,820	1,193,013
6019 - FLLAC Collaborative.....	3,637,665									444,762	34,474	479,236
6034 - LABBB Collaborative.....	12,893,915									1,576,486	122,196	1,698,682
6011 - Lower Pioneer Valley Education Collaborative.....	18,655,482									2,280,929	176,799	2,457,728
6014 - North River Collaborative.....	10,670,101									1,304,590	101,121	1,405,711
6006 - North Shore Education Consortium.....	11,597,381									1,417,964	109,909	1,527,873
6007 - Pilgrim Area Collaborative.....	3,286,944									401,881	31,150	433,031
6031 - READS Collaborative.....	5,791,659									708,122	54,888	763,010
6033 - SEEMS Collaborative.....	14,151,835									1,730,287	134,117	1,864,404
6009 - Shore Education Consortium.....	16,749,967									2,047,950	158,740	2,206,690
6015 - South Coast Education Collaborative.....	11,150,552									1,363,332	105,674	1,469,006
6001 - South Shore Education Collaborative.....	10,336,943									1,263,856	97,964	1,361,820
6003 - Southeastern Massachusetts Education Collaborative.....	11,008,959									1,346,020	104,332	1,450,352
6002 - Southern Worcester County Education Collaborative.....	3,560,611									435,341	33,744	469,085
6027 - The Educational Co-Op.....	3,124,894									382,068	29,615	411,683
6020 - Valley Collaborative.....	11,438,238									1,398,507	108,401	1,506,908
8150 - Berkshire Regional Planning Commission.....	3,122,145									381,732	29,589	411,321
8250 - Devens Enterprise Commission.....	632,577									77,343	5,995	83,338
6037 - Franklin Regional Council of Governments.....	5,893,105									720,526	55,849	776,375
8210 - Massachusetts Development Finance Agency.....	3,796,735									464,211	35,982	500,193
6200 - Massachusetts Healthcare Connector Authority.....	15,489,168									1,893,797	146,791	2,040,588
8211 - Massachusetts Life Sciences Center.....	651,978									79,715	6,179	85,894
6100 - Massachusetts PRIM Board.....	14,251,950									1,742,528	135,066	1,877,594
6060 - Massachusetts School Building Authority.....	14,115,232									1,725,812	133,771	1,859,583
1080 - Massachusetts Water Resources Authority.....	12,122,334									1,482,148	114,884	1,597,032
8050 - Metropolitan Area Planning Commission.....	22,820,169									2,790,129	216,268	3,006,397
Total nonemployer (Commonwealth of Massachusetts).....	330,283,527	10,473,794	33,472,185	26,602,028	70,548,007	6,731,193	11,480,314	14,209,092	32,420,599	40,382,413	3,130,108	43,512,521
Totals.....	\$ 13,229,979,000	\$ 419,542,764	\$ 1,340,776,190	\$ 69,478,504	\$ 1,829,797,458	\$ 269,627,556	\$ 459,860,400	\$ 69,478,504	\$ 798,966,460	\$ 1,617,575,337	\$ -	\$ 1,617,575,337

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, 2018

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, and 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 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, 2018 are as follows (amounts in thousands):

Total pension liability.....	\$ 41,225,000
Less:	
Plan fiduciary net position.....	<u>27,995,021</u>
Employers/nonemployers' net pension liability....	<u>\$ 13,229,979</u>
Plan fiduciary net position as a percentage of total pension liability.....	<u>67.91%</u>

Actuarial Assumptions

The total pension liability for the June 30, 2018 measurement date was determined by an actuarial valuation as of January 1, 2018 rolled forward to June 30, 2018. This valuation used the following assumptions:

1. (a) 7.35% 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.

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, 2018 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity.....	39.0%	5.0%
Portfolio Completion Strategies.....	13.0%	3.7%
Core Fixed Income.....	12.0%	0.9%
Private Equity.....	12.0%	6.6%
Real Estate.....	10.0%	3.8%
Value Added Fixed Income.....	10.0%	3.8%
Timberland/Natural Resources....	4.0%	3.4%
Total.....	<u>100.0%</u>	

Discount Rate

The discount rate used to measure the total pension liability was 7.35%. 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.

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Sensitivity Analysis

The following illustrates the sensitivity of the collective net pension liability to changes in the discount rate as of June 30, 2018. 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 6.35%	Current Discount Rate 7.35%	1% Increase to 8.35%
\$ 17,831,800	\$ 13,229,979	\$ 9,297,900

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 Ju1y 1, 2017	Additions	Deletions	Balance June 30, 2018
Deferred Outflows of Resources:						
Difference between expected and actual experience.....	2015	5.5 years	\$ 125,000	\$ -	\$ (50,000)	\$ 75,000
	2016	5.4 years	370,858	-	(109,076)	261,782
	2018	5.3 years	-	102,008	(19,247)	82,761
Subtotal.....			495,858	102,008	(178,323)	419,543
Change of assumptions.....	2014	5.5 years	27,817	-	(18,544)	9,273
	2015	5.5 years	1,059,092	-	(423,637)	635,455
	2017	5.4 years	247,704	-	(56,297)	191,407
	2018	5.3 years	-	622,000	(117,359)	504,641
Subtotal.....			1,334,613	622,000	(615,837)	1,340,776
Total deferred outflows of resources.....			<u>\$ 1,830,471</u>	<u>\$ 724,008</u>	<u>\$ (794,160)</u>	<u>\$ 1,760,319</u>
Deferred Inflows of Resources:						
Difference between expected and actual experience.....	2017	5.4 years	\$ (348,930)	\$ -	\$ 79,302	\$ (269,628)
Net difference between projected and actual earnings on plan investments.....	2014	5 years	(380,945)	-	380,945	-
	2015	5 years	407,872	-	(203,935)	203,937
	2016	5 years	806,778	-	(268,926)	537,852
	2017	5 years	(986,512)	-	246,629	(739,883)
	2018	5 years	-	(577,207)	115,441	(461,766)
Subtotal.....			(152,807)	(577,207)	270,154	(459,860)
Total deferred inflows of resources.....			<u>\$ (501,737)</u>	<u>\$ (577,207)</u>	<u>\$ 349,456</u>	<u>\$ (729,488)</u>

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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	
2019.....	\$ 816,378
2020.....	366,350
2021.....	(204,840)
2022.....	11,961
2023.....	<u>40,982</u>
Total.....	<u>\$ 1,030,831</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, 2018 (amounts in thousands):

Service cost.....	\$ 856,200
Interest on the total pension liability.....	2,852,239
Employee contributions.....	(600,705)
Projected earnings on plan investments.....	(1,883,541)
Transfers and reimbursements from other systems.....	(41,747)
Member make up, redeposits and payments from rollovers.....	(24,802)
Cost of living adjustment reimbursements.....	(19,500)
Other reimbursements.....	(32,075)
Administrative expense.....	16,369
Other expenses that do not reduce the total pension liability.....	50,433
Recognition (amortization) of deferred outflows and inflows of resources:	
Differences between expected and actual experience.....	99,021
Differences between projected and actual earnings on plan investments...	(270,154)
Changes of assumptions.....	<u>615,837</u>
Pension expense.....	<u>\$ 1,617,575</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, 2018 as shown in the schedule of employer and nonemployer allocations.