

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

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

June 30, 2020

(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, 2020, 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, 2020, 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, 2020 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 9, 2021

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM

SCHEDULE OF EMPLOYER AND NONEMPLOYER ALLOCATIONS

As of and for the fiscal year ended June 30, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|--|-------------------------|--|
| <u>Non Special Funding Situations:</u> | | |
| 9045 - Commonwealth of Massachusetts: | | |
| Employer contributions..... | \$ 991,786,660 | |
| Total Commonwealth of Massachusetts..... | 991,786,660 | 91.77679% |
| 6070 - Massachusetts State College Building Authority: | | |
| Employer contributions..... | 215,188 | |
| Nonemployer contributions..... | 55,779 | |
| Total Massachusetts State College Building Authority..... | 270,967 | 0.02507% |
| 6090 - Massachusetts Convention Center Authority: | | |
| Employer contributions..... | 1,119,571 | |
| Nonemployer contributions..... | 2,032,348 | |
| Total Massachusetts Convention Center Authority..... | 3,151,919 | 0.29167% |
| 9045 - Massachusetts Department of Transportation: | | |
| Employer contributions..... | 40,765,067 | |
| Nonemployer contributions..... | 9,577,380 | |
| Total Massachusetts Department of Transportation..... | 50,342,447 | 4.65853% |
| 8060 - Assabet Valley Regional Vocational School District: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 586,660 | |
| Total Assabet Valley Regional Vocational School District..... | 586,660 | 0.05429% |
| 8100 - Blackstone Valley Regional Vocational School District: | | |
| Employer contributions..... | 166,410 | |
| Nonemployer contributions..... | 460,806 | |
| Total Blackstone Valley Regional Vocational School District..... | 627,216 | 0.05804% |
| 8080 - Bristol/Plymouth Regional Vocational Technical School District..... | | |
| Employer contributions..... | 5,116 | |
| Nonemployer contributions..... | 374,054 | |
| Total Bristol/Plymouth Regional Vocational Technical School District..... | 379,170 | 0.03509% |
| 8160 - Central Massachusetts Regional Planning Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 333,634 | |
| Total Central Massachusetts Regional Planning Commission..... | 333,634 | 0.03087% |
| 8020 - Merrimack Valley Planning Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 189,078 | |
| Total Merrimack Valley Planning Commission..... | 189,078 | 0.01750% |

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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, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|--|-------------------------|--|
| 8010 - Montachusett Regional Planning Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 175,405 | |
| Total Montachusett Regional Planning Commission..... | 175,405 | 0.01623% |
| 8090 - Montachusett Regional Vocational Technical School District: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 639,656 | |
| Total Montachusett Regional Vocational Technical School District..... | 639,656 | 0.05919% |
| 8070 - Nashoba Associated Boards of Health: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 695,342 | |
| Total Nashoba Associated Boards of Health..... | 695,342 | 0.06434% |
| 8040 - North Middlesex Council of Governments: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 157,285 | |
| Total North Middlesex Council of Governments..... | 157,285 | 0.01455% |
| 8030 - Northeast Metro Regional Vocational Technical School District: | | |
| Employer contributions..... | 507,301 | |
| Nonemployer contributions..... | - | |
| Total Northeast Metro Regional Vocational Technical School District..... | 507,301 | 0.04694% |
| 8170 - Old Colony Planning Council: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 213,360 | |
| Total Old Colony Planning Council..... | 213,360 | 0.01974% |
| 8180 - Old Colony Regional Vocational Technical School District: | | |
| Employer contributions..... | 188,657 | |
| Nonemployer contributions..... | 42,522 | |
| Total Old Colony Regional Vocational Technical School District..... | 231,179 | 0.02139% |
| 8110 - Pioneer Valley Planning Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 528,959 | |
| Total Pioneer Valley Planning Commission..... | 528,959 | 0.04895% |
| 8140 - Southeastern Regional Planning & Economic Development District: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 293,416 | |
| Total Southeastern Regional Planning & Economic Development District..... | 293,416 | 0.02715% |

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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, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|---|-------------------------|--|
| 8120 - Southeastern Regional School District: | | |
| Employer contributions..... | 679,443 | |
| Nonemployer contributions..... | 248,029 | |
| Total Southeastern Regional School District..... | 927,472 | 0.08583% |
| 8200 - Tri-County Regional Vocational Technical School District: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 420,486 | |
| Total Tri-County Regional Vocational Technical School District..... | 420,486 | 0.03891% |
| 8190 - Upper Blackstone Water Pollution Abatement District: | | |
| Employer contributions..... | 482,938 | |
| Nonemployer contributions..... | 224,678 | |
| Total Upper Blackstone Water Pollution Abatement District..... | 707,616 | 0.06548% |
| 8130 - Upper Cape Cod Regional Vocational Technical School District: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 420,447 | |
| Total Upper Cape Cod Regional Vocational Technical School District..... | 420,447 | 0.03891% |
| Special Funding Situations (Educational Collaboratives): | | |
| 6013 - ACCEPT Education Collaborative: | | |
| Employer contributions..... | 387,907 | |
| Nonemployer contributions..... | 720,048 | |
| Total ACCEPT Education Collaborative..... | 1,107,955 | 0.10253% |
| 6022 - Assabet Valley Collaborative: | | |
| Employer contributions..... | 101,353 | |
| Nonemployer contributions..... | 191,861 | |
| Total Assabet Valley Collaborative..... | 293,214 | 0.02713% |
| 6004 - Bi-County Education Collaborative: | | |
| Employer contributions..... | 225,531 | |
| Nonemployer contributions..... | 426,489 | |
| Total Bi-County Education Collaborative..... | 652,020 | 0.06034% |
| 6018 - C.A.S.E. Collaborative: | | |
| Employer contributions..... | 296,566 | |
| Nonemployer contributions..... | 553,151 | |
| Total C.A.S.E. Collaborative..... | 849,717 | 0.07863% |
| 6016 - Cape Cod Collaborative: | | |
| Employer contributions..... | 278,010 | |
| Nonemployer contributions..... | 527,270 | |
| Total Cape Cod Collaborative..... | 805,280 | 0.07452% |

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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, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|---|-------------------------|--|
| 6010 - CAPS Education Collaborative: | | |
| Employer contributions..... | 152,215 | |
| Nonemployer contributions..... | 378,305 | |
| Total CAPS Education Collaborative..... | 530,520 | 0.04909% |
| 6035 - Central Massachusetts Special Education Collaborative: | | |
| Employer contributions..... | 182,184 | |
| Nonemployer contributions..... | 346,261 | |
| Total Central Massachusetts Special Education Collaborative..... | 528,445 | 0.04890% |
| 6017 - Collaborative for Educational Services: | | |
| Employer contributions..... | 347,674 | |
| Nonemployer contributions..... | 758,076 | |
| Total Collaborative for Educational Services..... | 1,105,750 | 0.10232% |
| 6021 - CREST Collaborative: | | |
| Employer contributions..... | 355,434 | |
| Nonemployer contributions..... | 720,946 | |
| Total CREST Collaborative..... | 1,076,380 | 0.09960% |
| 6030 - EDCO Collaborative: | | |
| Employer contributions..... | 256,697 | |
| Nonemployer contributions..... | 331,709 | |
| Total EDCO Collaborative..... | 588,406 | 0.05445% |
| 6019 - FLLAC Collaborative: | | |
| Employer contributions..... | 121,780 | |
| Nonemployer contributions..... | 216,734 | |
| Total FLLAC Collaborative..... | 338,514 | 0.03133% |
| 6034 - LABBB Collaborative: | | |
| Employer contributions..... | 366,865 | |
| Nonemployer contributions..... | 645,105 | |
| Total LABBB Collaborative..... | 1,011,970 | 0.09364% |
| 6011 - Lower Pioneer Valley Education Collaborative: | | |
| Employer contributions..... | 519,714 | |
| Nonemployer contributions..... | 889,824 | |
| Total Lower Pioneer Valley Education Collaborative..... | 1,409,538 | 0.13043% |
| 6014 - North River Collaborative: | | |
| Employer contributions..... | 297,149 | |
| Nonemployer contributions..... | 476,190 | |
| Total North River Collaborative..... | 773,339 | 0.07156% |

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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, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|--|-------------------------|--|
| 6006 - North Shore Education Consortium: | | |
| Employer contributions..... | 310,464 | |
| Nonemployer contributions..... | 641,809 | |
| Total North Shore Education Consortium..... | 952,273 | 0.08812% |
| 6007 - Pilgrim Area Collaborative: | | |
| Employer contributions..... | 101,789 | |
| Nonemployer contributions..... | 187,465 | |
| Total Pilgrim Area Collaborative..... | 289,254 | 0.02677% |
| 6031 - READS Collaborative: | | |
| Employer contributions..... | 156,738 | |
| Nonemployer contributions..... | 278,247 | |
| Total READS Collaborative..... | 434,985 | 0.04025% |
| 6033 - SEEMS Collaborative: | | |
| Employer contributions..... | 332,652 | |
| Nonemployer contributions..... | 773,790 | |
| Total SEEMS Collaborative..... | 1,106,442 | 0.10239% |
| 6009 - Shore Education Consortium: | | |
| Employer contributions..... | 531,012 | |
| Nonemployer contributions..... | 903,924 | |
| Total Shore Education Consortium..... | 1,434,936 | 0.13278% |
| 6015 - South Coast Education Collaborative: | | |
| Employer contributions..... | 319,689 | |
| Nonemployer contributions..... | 568,287 | |
| Total South Coast Education Collaborative..... | 887,976 | 0.08217% |
| 6001 - South Shore Education Collaborative: | | |
| Employer contributions..... | 368,214 | |
| Nonemployer contributions..... | 572,964 | |
| Total South Shore Education Collaborative..... | 941,178 | 0.08709% |
| 6003 - Southeastern Massachusetts Education Collaborative: | | |
| Employer contributions..... | 308,922 | |
| Nonemployer contributions..... | 562,524 | |
| Total Southeastern Massachusetts Education Collaborative..... | 871,446 | 0.08064% |
| 6002 - Southern Worcester County Education Collaborative: | | |
| Employer contributions..... | 117,430 | |
| Nonemployer contributions..... | 195,880 | |
| Total Southern Worcester County Education Collaborative..... | 313,310 | 0.02899% |

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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, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|---|-------------------------|--|
| 6027 - The Educational Co-Op: | | |
| Employer contributions..... | 101,005 | |
| Nonemployer contributions..... | 191,826 | |
| Total The Educational Co-Op..... | 292,831 | 0.02710% |
| 6020 - Valley Collaborative: | | |
| Employer contributions..... | 323,920 | |
| Nonemployer contributions..... | 611,699 | |
| Total Valley Collaborative..... | 935,619 | 0.08658% |
| <u>Special Funding Situations (Other than Educational Collaboratives):</u> | | |
| 8150 - Berkshire Regional Planning Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 270,686 | |
| Total Berkshire Regional Planning Commission..... | 270,686 | 0.02505% |
| 8250 - Devens Enterprise Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 52,195 | |
| Total Devens Enterprise Commission..... | 52,195 | 0.00483% |
| 6037 - Franklin Regional Council of Governments: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 495,703 | |
| Total Franklin Regional Council of Governments..... | 495,703 | 0.04587% |
| 8210 - Massachusetts Development Finance Agency: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 299,674 | |
| Total Massachusetts Development Finance Agency..... | 299,674 | 0.02773% |
| 6200 - Massachusetts Healthcare Connector Authority: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 1,361,833 | |
| Total Massachusetts Healthcare Connector Authority..... | 1,361,833 | 0.12602% |
| 8211 - Massachusetts Life Sciences Center: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 57,173 | |
| Total Massachusetts Life Sciences Center..... | 57,173 | 0.00529% |
| 6100 - Massachusetts PRIM Board: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | 1,153,627 | |
| Total Massachusetts PRIM Board..... | 1,153,627 | 0.10675% |

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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, 2020

| Employer/Nonemployer | Actual Contributions | Employer/ Nonemployer Allocation Percentage |
|--|--------------------------------|--|
| 6060 - Massachusetts School Building Authority: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | <u>1,152,295</u> | |
| Total Massachusetts School Building Authority..... | <u>1,152,295</u> | 0.10663% |
| 1080 - Massachusetts Water Resources Authority: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | <u>727,372</u> | |
| Total Massachusetts Water Resources Authority..... | <u>727,372</u> | 0.06731% |
| 8050 - Metropolitan Area Planning Commission: | | |
| Employer contributions..... | - | |
| Nonemployer contributions..... | <u>1,963,371</u> | |
| Total Metropolitan Area Planning Commission..... | <u>1,963,371</u> | 0.18168% |
| Total for all entities..... | <u><u>\$ 1,080,650,902</u></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, 2020

| Employer/Nonemployer | Net Pension Liability | Deferred Outflows of Resources | | | | Deferred Inflows of Resources | | | | Pension Expense | | |
|--|-----------------------|--|--|------------------------|-----------------------|--------------------------------------|--|-----------------------|-------------------------------------|---|---|-----------------------|
| | | Differences Between Expected and Actual Experience | Net Differences Between Projected and Actual Investment Earnings on Pension Plan Investments | Changes of Assumptions | Changes in Proportion | Total Deferred Outflows of Resources | Differences Between Expected and Actual Experience | 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..... | \$ 15,746,785,526 | \$ 501,039,586 | \$ 865,607,622 | \$ 892,819,495 | \$ 11,892,121 | \$ 2,271,358,824 | \$ 101,893,442 | \$ 38,380,901 | \$ 140,274,343 | \$ 2,216,773,368 | \$ 2,088,251 | \$ 2,218,861,619 |
| 6070 - Massachusetts State College Building Authority..... | 4,302,195 | 136,890 | 236,494 | 243,928 | 165,908 | 783,220 | 27,838 | 536,190 | 564,028 | 605,647 | (64,813) | 540,834 |
| 6090 - Massachusetts Convention Center Authority..... | 50,043,618 | 1,592,314 | 2,750,919 | 2,837,399 | 478,986 | 7,659,618 | 323,820 | 1,785,147 | 2,108,967 | 7,044,953 | (820,552) | 6,224,401 |
| 9045 - Massachusetts Department of Transportation..... | 799,296,611 | 25,432,444 | 43,937,681 | 45,318,938 | 42,773,592 | 157,462,655 | 5,172,045 | 19,439,946 | 24,611,991 | 112,521,977 | (4,623,391) | 107,898,586 |
| 8060 - Assabet Valley Regional Vocational School District..... | 9,314,512 | 296,374 | 512,023 | 528,119 | 460,757 | 1,797,273 | 60,272 | 191,500 | 251,772 | 1,311,262 | 270,866 | 1,582,128 |
| 8100 - Blackstone Valley Regional Vocational School District..... | 9,958,428 | 316,863 | 547,419 | 564,628 | 154,255 | 1,583,165 | 64,438 | 213,669 | 278,107 | 1,401,910 | (44,957) | 1,356,953 |
| 8080 - Bristol/Plymouth Regional Vocational Technical School District..... | 6,020,154 | 191,552 | 330,930 | 341,334 | 285,368 | 1,149,184 | 38,955 | 286,227 | 325,182 | 847,495 | 29,861 | 877,356 |
| 8160 - Central Massachusetts Regional Planning Commission..... | 5,297,171 | 168,548 | 291,188 | 300,342 | 517,314 | 1,277,392 | 34,277 | 34,086 | 68,363 | 745,716 | 236,629 | 982,345 |
| 8020 - Merrimack Valley Planning Commission..... | 3,002,027 | 95,520 | 165,023 | 170,211 | 15,480 | 446,234 | 19,425 | 154,625 | 174,050 | 422,614 | (46,720) | 375,894 |
| 8010 - Montachusett Regional Planning Commission..... | 9,934,939 | 88,613 | 153,089 | 157,902 | 325,732 | 725,336 | 18,021 | 321,946 | 339,967 | 392,053 | 401,633 | |
| 8090 - Montachusett Regional Vocational Technical School District..... | 10,155,940 | 323,147 | 558,276 | 575,827 | 70,551 | 1,527,801 | 65,717 | 505,869 | 571,586 | 1,429,715 | (161,111) | 1,268,604 |
| 8070 - Nashoba Associated Boards of Health..... | 11,040,077 | 351,279 | 606,878 | 625,956 | 73,039 | 1,657,152 | 71,438 | 319,631 | 391,069 | 1,554,181 | (326,444) | 1,227,737 |
| 8040 - North Middlesex Council of Governments..... | 2,497,244 | 79,459 | 137,275 | 141,590 | 46,768 | 405,092 | 16,159 | 90,494 | 106,653 | 351,553 | (26,508) | 325,045 |
| 8030 - Northeast Metro Regional Vocational Technical School District..... | 8,054,507 | 256,283 | 442,760 | 456,679 | 127,432 | 1,283,154 | 52,119 | 223,223 | 275,342 | 1,133,883 | (126,488) | 1,007,395 |
| 8170 - Old Colony Planning Council..... | 3,387,557 | 107,787 | 186,215 | 192,070 | 143,831 | 629,903 | 21,920 | 69,927 | 91,847 | 476,888 | 11,788 | 488,676 |
| 8180 - Old Colony Regional Vocational Technical School District..... | 3,670,473 | 116,789 | 201,767 | 208,110 | 362,107 | 888,773 | 23,751 | 607,659 | 631,410 | 516,773 | (52,644) | 464,071 |
| 8110 - Pioneer Valley Planning Commission..... | 8,398,383 | 267,224 | 461,663 | 476,176 | 329,577 | 1,534,640 | 54,344 | 90,420 | 144,764 | 1,182,293 | 68,721 | 1,251,014 |
| 8140 - Southeastern Regional Planning & Economic Development District..... | 4,658,622 | 148,230 | 256,086 | 264,137 | 202,124 | 807,577 | 30,145 | 109,743 | 139,888 | 655,823 | (6,997) | 648,826 |
| 8120 - Southeastern Regional School District..... | 14,725,649 | 468,549 | 809,475 | 834,923 | 703,146 | 2,816,093 | 95,286 | 1,809,489 | 1,904,775 | 2,073,022 | (415,332) | 1,657,690 |
| 8200 - Tri-County Regional Vocational Technical School District..... | 6,676,136 | 212,425 | 366,990 | 378,527 | 129,620 | 1,087,562 | 43,200 | 48,660 | 91,860 | 939,841 | 177,048 | 1,116,889 |
| 8190 - Upper Blackstone Water Pollution Abatement District..... | 11,234,954 | 357,480 | 617,590 | 637,005 | 238,663 | 1,850,738 | 72,699 | 106,664 | 179,363 | 1,581,615 | 59,007 | 1,640,622 |
| 8130 - Upper Cape Cod Regional Vocational Technical School District..... | 6,675,517 | 212,405 | 366,956 | 378,492 | 581,712 | 1,539,565 | 43,196 | 81,561 | 124,757 | 939,754 | 108,254 | 1,048,008 |
| Special Funding Situations: | | | | | | | | | | | | |
| Nonemployer (Commonwealth) attributable to: | | | | | | | | | | | | |
| 6013 - ACCEPT Education Collaborative..... | 17,591,212 | | | | | | | | | 2,476,425 | 149,662 | 2,626,087 |
| 6022 - Assabet Valley Collaborative..... | 4,655,414 | | | | | | | | | 655,372 | 39,607 | 694,979 |
| 6004 - Bi-County Education Collaborative..... | 10,352,246 | | | | | | | | | 1,457,350 | 88,074 | 1,545,424 |
| 6018 - C.A.S.E. Collaborative..... | 13,491,119 | | | | | | | | | 1,899,229 | 114,779 | 2,014,008 |
| 6016 - Cape Cod Collaborative..... | 12,785,584 | | | | | | | | | 1,799,907 | 108,777 | 1,908,684 |
| 6010 - CAPS Education Collaborative..... | 8,423,167 | | | | | | | | | 1,185,782 | 71,662 | 1,257,444 |
| 6035 - Central Massachusetts Special Education Collaborative..... | 8,390,222 | | | | | | | | | 1,181,144 | 71,382 | 1,252,526 |
| 6017 - Collaborative for Educational Services..... | 17,556,203 | | | | | | | | | 2,471,496 | 149,364 | 2,620,860 |
| 6021 - CREST Collaborative..... | 17,089,890 | | | | | | | | | 2,405,851 | 145,397 | 2,551,248 |
| 6030 - EDCO Collaborative..... | 9,342,234 | | | | | | | | | 1,315,165 | 79,481 | 1,394,646 |
| 6019 - FLLAC Collaborative..... | 5,374,651 | | | | | | | | | 756,623 | 45,726 | 802,349 |
| 6034 - LABBB Collaborative..... | 16,067,240 | | | | | | | | | 2,261,886 | 136,696 | 2,398,582 |
| 6011 - Lower Pioneer Valley Education Collaborative..... | 22,379,503 | | | | | | | | | 3,150,502 | 190,399 | 3,340,901 |
| 6014 - North River Collaborative..... | 12,278,450 | | | | | | | | | 1,728,514 | 104,462 | 1,832,976 |
| 6006 - North Shore Education Consortium..... | 15,119,420 | | | | | | | | | 2,128,455 | 128,632 | 2,257,087 |
| 6007 - Pilgrim Area Collaborative..... | 4,592,541 | | | | | | | | | 646,521 | 39,072 | 685,593 |
| 6031 - READS Collaborative..... | 6,906,340 | | | | | | | | | 972,249 | 58,757 | 1,031,006 |
| 6033 - SEEMS Collaborative..... | 17,567,190 | | | | | | | | | 2,473,043 | 149,457 | 2,622,500 |
| 6009 - Shore Education Consortium..... | 22,782,752 | | | | | | | | | 3,207,270 | 193,830 | 3,401,100 |
| 6015 - South Coast Education Collaborative..... | 14,098,564 | | | | | | | | | 1,984,743 | 119,947 | 2,104,690 |
| 6001 - South Shore Education Collaborative..... | 14,943,262 | | | | | | | | | 2,103,656 | 127,134 | 2,230,790 |
| 6003 - Southeastern Massachusetts Education Collaborative..... | 13,836,114 | | | | | | | | | 1,947,796 | 117,714 | 2,065,510 |
| 6002 - Southern Worcester County Education Collaborative..... | 4,974,482 | | | | | | | | | 700,289 | 42,322 | 742,611 |
| 6027 - The Educational Co-Op..... | 4,649,334 | | | | | | | | | 654,516 | 39,555 | 694,071 |
| 6020 - Valley Collaborative..... | 14,855,001 | | | | | | | | | 2,091,231 | 126,383 | 2,217,614 |
| 8150 - Berkshire Regional Planning Commission..... | 4,297,733 | | | | | | | | | 605,019 | 36,564 | 641,583 |
| 8250 - Devens Enterprise Commission..... | 828,710 | | | | | | | | | 116,663 | 7,050 | 123,713 |
| 6037 - Franklin Regional Council of Governments..... | 7,870,371 | | | | | | | | | 1,107,961 | 66,959 | 1,174,920 |
| 8210 - Massachusetts Development Finance Agency..... | 4,757,981 | | | | | | | | | 669,811 | 40,480 | 710,291 |
| 6200 - Massachusetts Healthcare Connector Authority..... | 21,622,082 | | | | | | | | | 3,043,876 | 183,955 | 3,227,831 |
| 8211 - Massachusetts Life Sciences Center..... | 907,747 | | | | | | | | | 127,789 | 7,723 | 135,512 |
| 6100 - Massachusetts PRIM Board..... | 18,316,355 | | | | | | | | | 2,578,508 | 155,831 | 2,734,339 |
| 6060 - Massachusetts School Building Authority..... | 18,295,207 | | | | | | | | | 2,575,531 | 155,651 | 2,731,182 |
| 1080 - Massachusetts Water Resources Authority..... | 11,548,624 | | | | | | | | | 1,625,772 | 98,253 | 1,724,025 |
| 8050 - Metropolitan Area Planning Commission..... | 31,172,815 | | | | | | | | | 4,388,392 | 265,211 | 4,653,603 |
| Total nonemployer (Commonwealth of Massachusetts)..... | 429,719,760 | 13,673,056 | 23,621,881 | 24,364,478 | 24,174,684 | 85,834,099 | 2,780,607 | 18,845,190 | 21,625,797 | 60,494,337 | 3,655,952 | 64,150,289 |
| Totals..... | \$ 17,157,700,000 | \$ 545,932,817 | \$ 943,166,200 | \$ 972,816,266 | \$ 84,252,767 | \$ 2,546,168,050 | \$ 111,023,111 | \$ 84,252,767 | \$ 195,275,878 | \$ 2,415,396,615 | \$ - | \$ 2,415,396,615 |

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, 2020

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 reported as a pension trust fund in the Commonwealth's Comprehensive Annual 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.

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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 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.

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
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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, 2020 are as follows (amounts in thousands):

| | |
|--|---------------|
| Total pension liability..... | \$ 45,725,000 |
| Less: | |
| Plan fiduciary net position..... | 28,567,300 |
| Employers/nonemployers' net pension liability..... | \$ 17,157,700 |
| Plan fiduciary net position as a percentage of total pension liability..... | 62.48% |

Actuarial Assumptions

The total pension liability for the June 30, 2020 measurement date was determined by an actuarial valuation as of January 1, 2019 rolled forward to June 30, 2020, using the following actuarial assumptions:

1. (a) 7.15% 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.

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
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June 30, 2020

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 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 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, 2020 are summarized in the following table:

| Asset Class | Target Allocation | Long-Term Expected Real Rate of Return |
|--------------------------------------|-------------------|--|
| Global Equity..... | 39.0% | 4.8% |
| Core Fixed Income..... | 15.0% | 0.7% |
| Private Equity..... | 13.0% | 8.2% |
| Portfolio Completion Strategies..... | 11.0% | 3.2% |
| Real Estate..... | 10.0% | 3.5% |
| Value Added Fixed Income..... | 8.0% | 4.2% |
| 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 7.15%. 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, 2020. 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 6.15% | Current Discount Rate 7.15% | 1% Increase to 8.15% |
|-------------------------|--------------------------------|-------------------------|
| \$ 22,606,331 | \$ 17,157,700 | \$ 12,679,351 |

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, 2019 | Additions | Deletions | Balance June 30, 2020 |
|---|---------------------|------------------------|-------------------------|--------------|----------------|--------------------------|
| Deferred Outflows of Resources: | | | | | | |
| Difference between expected and actual experience..... | 2015 | 5.5 years | \$ 25,000 | \$ - | \$ (25,000) | \$ - |
| | 2016 | 5.4 years | 152,707 | - | (109,075) | 43,632 |
| | 2018 | 5.3 years | 63,514 | - | (19,247) | 44,267 |
| | 2019 | 5.2 years | 244,784 | - | (58,282) | 186,502 |
| | 2020 | 5.2 years | - | 336,183 | (64,651) | 271,532 |
| Subtotal..... | | | 486,005 | 336,183 | (276,255) | 545,933 |
| Net difference between projected and actual earnings on plan investments..... | 2016 | 5 years | 268,926 | - | (268,926) | - |
| | 2017 | 5 years | (493,255) | - | 246,628 | (246,627) |
| | 2018 | 5 years | (346,325) | - | 115,441 | (230,884) |
| | 2019 | 5 years | 352,365 | - | (88,091) | 264,274 |
| | 2020 | 5 years | - | 1,445,504 | (289,101) | 1,156,403 |
| Subtotal..... | | | (218,289) | 1,445,504 | (284,049) | 943,166 |
| Change of assumptions..... | 2015 | 5.5 years | 211,819 | - | (211,819) | - |
| | 2017 | 5.4 years | 135,111 | - | (56,296) | 78,815 |
| | 2018 | 5.3 years | 387,283 | - | (117,358) | 269,925 |
| | 2019 | 5.2 years | 350,538 | - | (83,462) | 267,076 |
| | 2020 | 5.2 years | - | 442,000 | (85,000) | 357,000 |
| Subtotal..... | | | 1,084,751 | 442,000 | (553,935) | 972,816 |
| Total deferred outflows of resources..... | | | \$ 1,352,467 | \$ 2,223,687 | \$ (1,114,239) | \$ 2,461,915 |
| Deferred Inflows of Resources: | | | | | | |
| Difference between expected and actual experience..... | 2017 | 5.4 years | \$ (190,325) | \$ - | \$ 79,302 | \$ (111,023) |

MASSACHUSETTS STATE EMPLOYEES' RETIREMENT SYSTEM
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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):

| <u>Ending June 30</u> | |
|-----------------------|---------------------|
| 2021..... | \$ 463,747 |
| 2022..... | 680,548 |
| 2023..... | 709,568 |
| 2024..... | 467,100 |
| 2025..... | <u>29,929</u> |
| Total..... | <u>\$ 2,350,892</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, 2020 (amounts in thousands):

| | |
|--|---------------------|
| Service cost..... | \$ 963,828 |
| Interest on the total pension liability..... | 3,124,187 |
| Employee contributions..... | (659,015) |
| Projected earnings on plan investments..... | (2,012,823) |
| Transfers and reimbursements from other systems..... | (52,213) |
| Member make up, redeposits and payments from rollovers..... | (13,238) |
| Cost of living adjustment reimbursements..... | 37,138 |
| Other reimbursements..... | (7,493) |
| Administrative expense..... | 18,089 |
| Other expenses that do not reduce the total pension liability..... | (18,000) |
| Recognition (amortization) of deferred outflows and inflows of resources: | |
| Differences between expected and actual experience..... | 196,953 |
| Differences between projected and actual earnings on plan investments..... | 284,049 |
| Changes of assumptions..... | <u>553,935</u> |
| Pension expense..... | <u>\$ 2,415,397</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, 2020 as shown in the schedule of employer and nonemployer allocations.