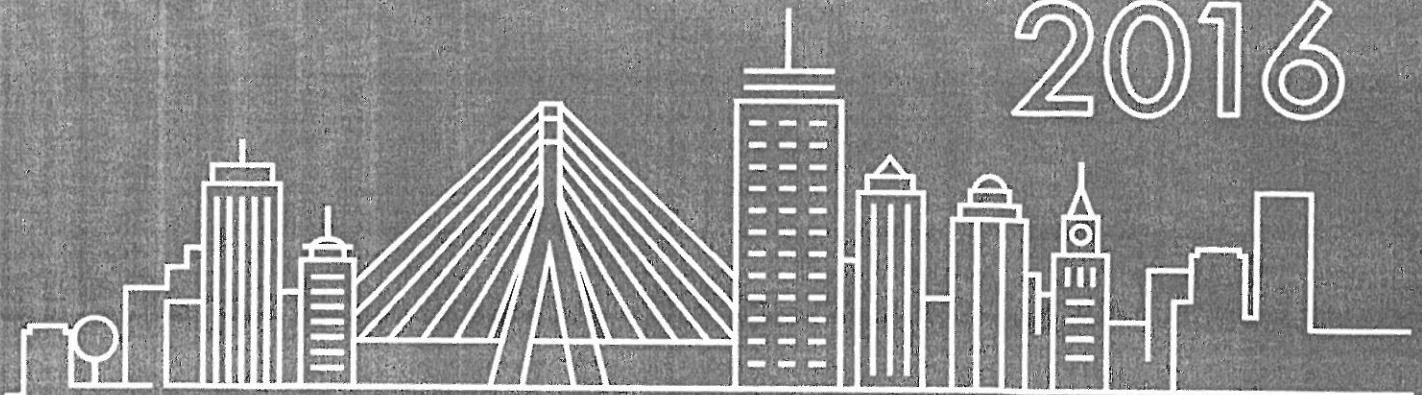


2016



WORKING TOGETHER TO ENSURE STRONG PUBLIC PENSION SYSTEMS FOR MASSACHUSETTS

INVESTMENT REPORT

COMMONWEALTH OF MASSACHUSETTS
PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION



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Joseph E. Connarton
Executive Director

Public Employee Retirement Administration Commission

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LETTER FROM THE | EXECUTIVE DIRECTOR

We are pleased to release this Investment Report for 2016. The Public Employee Retirement Administration Commission (PERAC) began issuing an Investment Report following the adoption of Chapter 68 of the Acts of 2007. The Report provides investment and funding results prior to the issuance of our Annual Report, which contains a more exhaustive analysis of the activities of the Massachusetts public pension systems. Chapter 68 of the Acts of 2007 mandates systems that do not meet certain investment and funding standards transfer assets to the Pension Reserves Investment Trust Fund (PRIT) to be invested by the Pension Reserves Investment Management Board (PRIM). In light of the impact that these results may have on some systems, the Commission believes that it is imperative that this data be disseminated as soon as possible. We anticipate that the full Annual Report for 2016 will be ready for distribution in the early summer.

The two comparative components established under Chapter 68 are funded ratio and 10-year investment performance. The funded ratio standard is 65% and, based on investment performance results for 2016, the investment standard is 3.04% (PRIM 10-year return of 5.04% minus 2.00%).

PERAC, in Memo #35, 2007, outlined the principles that it would apply in conducting analysis pursuant to that law. It is suggested that Boards review those principles. Such a review is particularly important to Boards that may be subject to a Chapter 68 Order at some point.

This report delineates investment returns for several periods: 2016, 2012-2016 inclusive, 2007-2016 inclusive, and since inception through 2016. The funded ratios are as of the date of the most recent valuation available to PERAC. Ratios based on actuarial valuations received after April 1, 2017, have not been included in this Report, however, such valuations will be used to conduct the Chapter 68 analysis.

PERAC has completed its analysis of system funded status and investment performance in accordance with Chapter 68 of the Acts of 2007. Applying the tests set forth in that statute, PERAC has determined that no retirement board will be ordered to transfer its assets to the Pension Reserves Investment Trust Fund (PRIT) based on 2016 results.

This Report is the result of the efforts of the PERAC Investment Unit and the PERAC Compliance Unit. On behalf of the Commission, I would like to thank Senior Investment Analyst Victoria Marcorelle, Investment Analyst Veronica Colon and Compliance Analyst Cheryl Johnson for their efforts in preparing this Report.

I hope you find the Report informative and helpful as you assess the state of our retirement systems.

Sincerely,

A handwritten signature in dark ink that reads "Joseph E. Connarton". The signature is written in a cursive, flowing style.

Joseph E. Connarton
Executive Director

2016 RETURNS & ANNUALIZED PAST RETURNS (IN PERCENT) | FUNDED RATIOS

	Return (2016)	5-Year Return	10-Year Return	32-Year Return
ADAMS	7.58%	5.94%	3.96%	7.69%
AMESBURY	8.12%	9.14%	4.84%	7.92%
ANDOVER	7.97%	9.19%	4.46%	8.28%
ARLINGTON	7.55%	8.86%	3.80%	8.29%
ATTLEBORO	7.40%	9.40%	5.64%	8.82%
BARNSTABLE COUNTY	8.07%	9.23%	4.82%	7.41%
BELMONT	8.89%	9.27%	6.99%	9.34%
BERKSHIRE COUNTY	8.15%	9.13%	5.10%	8.92%
BEVERLY	8.11%	9.34%	4.92%	8.49%
BLUE HILLS REGIONAL	8.03%	9.11%	5.22%	8.59%
BOSTON (CITY)	7.97%	7.86%	5.28%	8.79%
BOSTON (TEACHERS)	8.23%	9.16%	N/A	N/A
BRAINTREE	9.06%	7.89%	5.35%	8.57%
BRISTOL COUNTY	7.01%	9.22%	5.40%	8.77%
BROCKTON	8.23%	7.42%	4.28%	8.60%
BROOKLINE	8.83%	8.13%	4.63%	8.60%
CAMBRIDGE	8.80%	9.98%	5.86%	9.22%
CHELSEA	8.13%	9.18%	5.13%	7.88%
CHICOPEE	10.63%	10.02%	6.37%	8.63%
CLINTON	8.13%	9.09%	4.09%	7.64%
CONCORD	8.51%	9.26%	5.74%	8.56%
DANVERS	9.95%	8.09%	4.79%	7.95%
DEDHAM	8.30%	9.31%	5.19%	9.44%
DUKES COUNTY	7.94%	9.97%	6.38%	7.77%
EASTHAMPTON	8.02%	9.19%	5.09%	8.19%
ESSEX REGIONAL	7.86%	9.37%	5.00%	8.67%
EVERETT	8.30%	9.32%	5.18%	8.37%
FAIRHAVEN	7.99%	9.20%	5.08%	9.22%
FALL RIVER	7.92%	9.10%	4.80%	8.29%
FALMOUTH	9.84%	9.93%	5.51%	8.97%
FITCHBURG	7.86%	8.90%	4.68%	7.55%
FRAMINGHAM	8.06%	9.20%	5.10%	9.19%
FRANKLIN REGIONAL	9.16%	10.20%	6.17%	8.36%
GARDNER	8.12%	9.21%	5.07%	9.31%
GLOUCESTER	8.26%	9.20%	4.87%	8.78%
GREATER LAWRENCE	9.54%	9.23%	6.64%	7.53%

Funded Ratio	Date of Most Recent Valuation
73.1%	1/1/16
56.6%	1/1/16
47.9%	1/1/16
50.5%	1/1/16
65.7%	1/1/16
58.2%	1/1/16
51.2%	1/1/16
82.2%	1/1/15
53.1%	1/1/16
71.5%	1/1/16
75.0%	1/1/16
39.8%	1/1/16
65.4%	1/1/16
65.7%	1/1/16
64.4%	1/1/16
55.4%	1/1/16
81.1%	1/1/16
58.9%	1/1/15
72.8%	1/1/15
63.2%	1/1/15
82.5%	1/1/16
54.9%	1/1/16
85.8%	1/1/16
72.5%	1/1/16
65.5%	1/1/16
51.9%	1/1/16
49.0%	1/1/16
69.8%	1/1/16
41.3%	1/1/15
62.5%	1/1/16
44.2%	1/1/16
68.0%	1/1/16
71.4%	1/1/16
53.7%	1/1/16
45.3%	1/1/16
85.0%	1/1/15

2016 RETURNS & ANNUALIZED PAST RETURNS (IN PERCENT) | FUNDED RATIOS

	Return (2016)	5-Year Return	10-Year Return	32-Year Return	Funded Ratio	Date of Most Recent Valuation
GREENFIELD	8.16%	9.35%	5.19%	8.42%	56.2%	1/1/15
HAMPDEN COUNTY REGIONAL	7.93%	8.99%	4.89%	8.52%	47.5%	1/1/16
HAMPSHIRE COUNTY	8.36%	8.05%	5.02%	8.19%	58.5%	1/1/16
HAVERHILL	8.86%	8.73%	5.60%	9.85%	52.3%	1/1/16
HINGHAM	8.71%	7.89%	4.56%	9.00%	67.9%	1/1/16
HOLYOKE	8.20%	10.98%	6.16%	9.33%	62.5%	1/1/16
HULL	8.10%	9.20%	5.09%	7.83%	58.8%	1/1/16
LAWRENCE	8.09%	9.15%	4.87%	7.71%	45.9%	1/1/16
LEOMINSTER	10.20%	10.74%	5.75%	8.55%	83.3%	1/1/15
LEXINGTON	7.14%	8.51%	4.48%	8.64%	85.3%	1/1/16
LOWELL	7.58%	8.94%	4.86%	8.99%	55.0%	1/1/15
LYNN	8.03%	9.25%	4.69%	7.94%	45.5%	1/1/15
MALDEN	-0.43%	7.49%	6.04%	9.36%	71.3%	1/1/16
MARBLEHEAD	8.09%	9.22%	5.13%	9.14%	65.8%	1/1/16
MARLBOROUGH	8.52%	7.71%	5.17%	8.31%	70.7%	1/1/15
MA HOUSING FINANCE (MHFA)	10.13%	7.09%	4.50%	7.38%	78.8%	1/1/15
MASSPORT	8.60%	8.54%	5.28%	8.92%	88.6%	1/1/16
MA TEACHERS RETIREMENT SYSTEM (MTRS)	8.16%	9.28%	5.15%	9.37%	52.8%	1/1/16
MA WATER RESOURCES AUTHORITY (MWRA)	5.96%	8.36%	5.92%	8.06%*	98.3%	1/1/15
MAYNARD	8.41%	9.40%	5.35%	7.87%	69.1%	1/1/15
MEDFORD	5.54%	7.20%	5.00%	8.69%	67.3%	1/1/16
MELROSE	7.47%	8.66%	4.81%	8.29%	54.6%	1/1/15
METHUEN	8.28%	9.60%	4.97%	7.92%	50.3%	1/1/16
MIDDLESEX COUNTY	7.24%	8.79%	5.05%	8.30%	45.8%	1/1/16
MILFORD	8.18%	9.07%	4.28%	8.13%	57.8%	1/1/15
MILTON	8.12%	9.22%	5.12%	9.29%	76.6%	1/1/15
MINUTEMAN REGIONAL	7.83%	8.87%	4.95%	9.37%	86.7%	1/1/15
MONTAGUE	8.07%	9.20%	5.09%	9.04%	76.7%	1/1/16
NATICK	9.53%	10.16%	5.06%	8.07%	60.8%	1/1/15
NEEDHAM	8.14%	9.11%	5.04%	9.55%	68.6%	1/1/15
NEW BEDFORD	9.21%	9.28%	5.30%	7.98%	46.3%	1/1/16
NEWBURYPORT	7.72%	9.07%	5.02%	8.13%	61.3%	1/1/16
NEWTON	8.12%	9.14%	5.01%	8.53%	51.5%	1/1/16
NORFOLK COUNTY	9.50%	8.82%	5.18%	8.55%	62.1%	1/1/16
NORTH ADAMS	0.09%	8.13%	6.51%	9.31%	71.1%	1/1/15
NORTH ATTLEBORO	8.14%	9.82%	5.98%	8.59%	79.1%	1/1/15

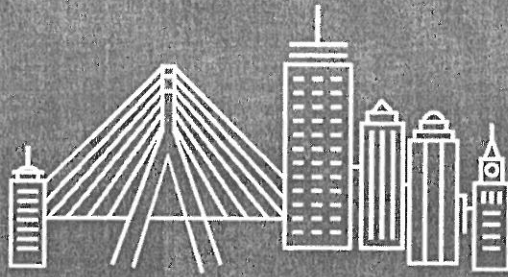
*Based on 31-year return

2016 RETURNS & ANNUALIZED PAST RETURNS (IN PERCENT) | FUNDED RATIOS

	Return (2016)	5-Year Return	10-Year Return	32-Year Return
NORTHAMPTON	-0.46%	8.01%	6.48%	9.11%
NORTHBRIDGE	8.21%	9.25%	5.15%	9.26%
NORWOOD	9.06%	8.57%	6.00%	8.99%
PEABODY	8.03%	9.23%	5.00%	8.54%
PITTSFIELD	7.97%	9.13%	4.73%	8.11%
PLYMOUTH	8.19%	10.24%	5.70%	8.75%
PLYMOUTH COUNTY	7.50%	8.47%	4.82%	9.00%
PRIM BOARD	8.02%	9.17%	5.04%	9.45%
QUINCY	7.74%	7.47%	4.42%	8.08%
READING	8.14%	9.29%	5.17%	9.18%
REVERE	8.05%	9.08%	4.96%	8.29%
SALEM	7.94%	8.73%	4.27%	8.03%
SAUGUS	8.13%	9.22%	5.13%	9.13%
SHREWSBURY	8.80%	10.17%	5.89%	9.06%
SOMERVILLE	4.29%	9.28%	6.32%	8.79%
SOUTHBRIDGE	8.13%	8.95%	3.78%	7.95%
SPRINGFIELD	8.43%	9.37%	4.99%	8.30%
STATE	8.15%	9.28%	5.15%	9.36%
STONEHAM	9.42%	9.48%	5.26%	8.76%
SWAMPSCOTT	6.42%	9.75%	5.31%	8.94%
TAUNTON	7.03%	9.37%	5.99%	9.51%
WAKEFIELD	8.09%	9.29%	5.16%	9.57%
WALTHAM	8.46%	9.66%	5.07%	8.61%
WATERTOWN	6.98%	8.99%	4.96%	8.22%
WEBSTER	7.82%	9.32%	5.66%	8.06%
WELLESLEY	8.11%	9.27%	4.82%	9.86%
WEST SPRINGFIELD	-0.15%	8.06%	5.26%	7.94%
WESTFIELD	8.14%	10.93%	6.34%	8.75%
WEYMOUTH	7.17%	9.28%	5.19%	9.73%
WINCHESTER	7.30%	7.70%	4.45%	8.90%
WINTHROP	8.13%	8.88%	4.99%	8.56%
WOBURN	9.92%	9.63%	6.08%	9.31%
WORCESTER	8.29%	7.85%	4.66%	8.69%
WORCESTER REGIONAL	7.77%	9.03%	4.53%	8.08%
COMPOSITE	8.08%	9.12%	5.18%	9.11%

Funded Ratio	Date of Most Recent Valuation
69.7%	1/1/16
67.8%	1/1/16
79.1%	1/1/16
49.9%	1/1/16
46.2%	1/1/15
49.2%	1/1/15
58.3%	1/1/15
NOT APPLICABLE	
46.5%	1/1/16
73.0%	1/1/15
53.2%	1/1/15
53.3%	1/1/16
69.5%	1/1/15
83.9%	1/1/16
62.5%	1/1/15
55.1%	1/1/16
26.2%	1/1/16
63.5%	1/1/16
70.4%	1/1/16
48.2%	1/1/15
74.9%	1/1/16
63.2%	1/1/16
55.9%	1/1/15
73.7%	1/1/15
54.8%	1/1/16
73.6%	1/1/15
62.2%	1/1/16
68.4%	1/1/15
60.9%	1/1/16
78.3%	1/1/15
75.9%	1/1/15
62.9%	1/1/16
66.0%	1/1/16
43.4%	1/1/16
NOT APPLICABLE	

NOTES |



COMMONWEALTH OF MASSACHUSETTS
PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION

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