



NEPC, LLC

YOU DEMAND MORE. *So do we.*<sup>SM</sup>

## Boston Retirement System

### June Flash Report (Gross)

Mike Manning  
Will Forde

255 State Street, Boston, MA 02109 | TEL: 617.374.1300 | FAX: 617.374.1313 | [www.nepc.com](http://www.nepc.com)

**BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO**

## Index Performance Summary as of 06/30/2017

	2009	2010	2011	2012	2013	2014	2015	2016	Q1	April	May	June	Q2	YTD
<b>EM Equity</b>	78.5%	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	11.4%	2.2%	3.0%	1.0%	6.3%	18.4%
<b>Int'l Developed Equity</b>	31.8%	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	7.2%	2.5%	3.7%	-0.2%	6.1%	13.8%
<b>EM Local Credit</b>	22.0%	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	6.5%	1.2%	2.0%	0.5%	3.6%	10.4%
<b>US Large Cap</b>	26.5%	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	6.1%	1.0%	1.4%	0.6%	3.1%	9.3%
<b>US Small/Mid Cap</b>	34.4%	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	3.8%	0.8%	-1.1%	2.5%	2.1%	6.0%
<b>US Long Treasuries</b>	-12.9%	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	1.4%	1.5%	2.0%	0.4%	4.0%	5.4%
<b>US High Yield</b>	58.2%	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	2.7%	1.2%	0.9%	0.1%	2.2%	4.9%
<b>Global Credit</b>	-6.5%	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	1.8%	1.1%	1.5%	-0.1%	2.6%	4.4%
<b>US Credit</b>	5.9%	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	0.8%	0.8%	0.8%	-0.1%	1.4%	2.3%
<b>Commodities</b>	18.9%	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	-2.3%	-1.6%	-1.4%	-0.3%	-3.2%	-5.6%

Source: Bloomberg, Barclays, S&P, Russell, MSCI, JP Morgan, Credit Suisse

S&P 500 = US Large Cap  
 Russell 2500 = US Small/Mid Cap  
 MSCI EAFE = International Developed Equity  
 MSCI EM = Emerging Market Equity  
 Barclays Agg = US Credit  
 Barclays Long Treasury = US Long Treasuries  
 Barclays High Yield = US HY  
 Barclays Global Agg = Global Credit  
 GBI-EM Global Diversified = EM Local Credit  
 Bloomberg Commodity = Commodities



NEPC, LLC

# Boston Retirement System

## Total Fund Performance Detail (Gross)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Total Composite*</b>	<b>4,584,715,638</b>	<b>100.0</b>	<b>100.0</b>	<b>0.5</b>	<b>3.2</b>	<b>8.7</b>	<b>14.9</b>	<b>5.0</b>	<b>8.4</b>	<b>5.0</b>	<b>7.9</b>	<b>Aug-94</b>
Allocation Index				0.8	3.2	8.1	13.6	4.8	8.0	4.7	--	Aug-94
Policy Index				0.8	3.3	8.3	14.3	5.2	8.3	5.1	--	Aug-94
PRIT Core Fund/Teachers*	1,556,285,163	33.9		0.8	3.5	8.5	13.0	6.3	9.7	--	10.0	Jul-10
<b>Total Equity</b>	<b>2,510,249,810</b>	<b>54.8</b>	<b>52.0</b>	<b>0.9</b>	<b>5.1</b>	<b>14.0</b>	<b>23.2</b>	<b>5.8</b>	<b>11.8</b>	<b>--</b>	<b>--</b>	
<b>Large Cap Comp</b>	<b>950,589,558</b>	<b>20.7</b>	<b>19.0</b>	<b>0.6</b>	<b>3.5</b>	<b>10.7</b>	<b>21.6</b>	<b>10.0</b>	<b>16.1</b>	<b>7.9</b>	<b>9.0</b>	<b>Dec-04</b>
Rhumblin Advisors	120,670,153	2.6		0.6	3.1	9.3	17.9	9.6	14.5	7.3	9.7	Aug-94
DE Shaw Core Enhanced	212,906,280	4.6		0.4	2.9	9.3	18.6	9.9	15.1	--	14.4	Oct-09
JP Morgan 130/30	173,558,975	3.8		0.2	2.1	9.8	23.5	9.8	16.6	--	14.4	Oct-09
S&P 500				0.6	3.1	9.3	17.9	9.6	14.6	7.2	13.7	Oct-09
DE Shaw 130/30	185,265,696	4.0		-0.2	2.6	10.1	20.8	11.2	16.1	--	15.8	Oct-09
Russell 1000				0.7	3.1	9.3	18.0	9.3	14.7	7.3	13.7	Oct-09
J&W Seligman	115,618,019	2.5		1.5	2.3	5.4	22.5	8.4	16.3	8.1	9.7	Jan-97
Russell 1000 Value				1.6	1.3	4.7	15.5	7.4	13.9	5.6	8.4	Jan-97
Zeavenbergen Capital	88,113,568	1.9		2.8	11.1	25.6	37.4	8.9	18.5	10.7	11.5	Aug-94
Intech	54,456,868	1.2		-0.4	6.0	15.8	17.9	11.6	15.4	8.6	8.8	Oct-06
Russell 1000 Growth				-0.3	4.7	14.0	20.4	11.1	15.3	8.9	9.6	Oct-06
<b>Small Cap Comp</b>	<b>307,440,162</b>	<b>6.7</b>	<b>6.0</b>	<b>2.1</b>	<b>3.8</b>	<b>11.8</b>	<b>24.5</b>	<b>6.5</b>	<b>14.2</b>	<b>8.6</b>	<b>9.6</b>	<b>Dec-04</b>
Westfield Capital Management	121,526,550	2.7		1.5	3.7	14.8	24.5	5.8	14.3	9.7	10.8	Sep-03
Russell 2000 Growth				3.4	4.4	10.0	24.4	7.6	14.0	7.8	9.3	Sep-03
Bernzott	90,922,186	2.0		1.5	2.8	10.0	20.9	--	--	--	12.4	Nov-15
Russell 2000 Value				3.5	0.7	0.5	24.9	7.0	13.4	5.9	16.5	Nov-15
Aristotle	94,983,433	2.1		3.4	4.8	10.0	28.1	--	--	--	16.7	Nov-15
Russell 2000				3.5	2.5	5.0	24.6	7.4	13.7	6.9	14.3	Nov-15
<b>Total Non-US Equity</b>	<b>1,252,220,091</b>	<b>27.3</b>	<b>27.0</b>	<b>0.9</b>	<b>6.7</b>	<b>17.2</b>	<b>24.2</b>	<b>2.4</b>	<b>7.9</b>	<b>2.1</b>	<b>6.5</b>	<b>Aug-94</b>
<b>International Equity</b>	<b>814,552,543</b>	<b>17.8</b>	<b>19.0</b>	<b>0.4</b>	<b>6.5</b>	<b>15.1</b>	<b>23.5</b>	<b>1.7</b>	<b>9.3</b>	<b>--</b>	<b>6.6</b>	<b>Dec-10</b>
Todd	244,912,286	5.3		1.2	5.4	14.4	19.8	--	--	--	12.0	Apr-16
MSCI ACWI ex USA Gross				0.4	6.0	14.5	21.0	1.3	7.7	1.6	16.1	Apr-16
Panagora Asset Management	310,797,928	6.8		0.0	5.7	13.8	23.8	3.8	11.1	3.3	6.3	Aug-94
Fisher	258,341,704	5.6		0.0	8.5	17.5	27.0	3.6	9.8	2.9	5.0	Feb-06
MSCI EAFE				-0.2	6.1	13.8	20.3	1.1	8.7	1.0	3.4	Feb-06

- DE Shaw 130/30 and DE Shaw Core Enhanced are preliminary.

- PRIT Core Fund valuation is based off the Policy Index as of 06/30/2017.

Note: Returns are gross of manager fees except for hedge funds and private equity which are net of fees.



NEPC, LLC

June 30, 2017

# Boston Retirement System

## Total Fund Performance Detail (Gross)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Emerging Markets</b>	<b>437,667,547</b>	<b>9.5</b>	<b>8.0</b>	<b>1.9</b>	<b>7.1</b>	<b>21.1</b>	<b>25.4</b>	<b>3.7</b>	<b>4.8</b>	<b>--</b>	<b>3.2</b>	<b>Dec-10</b>
Vontobel	97,750,299	2.1		1.5	9.1	23.4	16.3	3.8	5.5	7.1	11.3	Oct-05
Polunin	106,659,333	2.3		2.6	5.9	19.8	33.5	6.6	--	--	8.9	Oct-13
SSgA Emerging Markets	127,529,691	2.8		2.0	6.5	19.5	25.0	0.4	--	--	1.7	Oct-13
MSCI Emerging Markets				1.0	6.3	18.4	23.7	1.1	4.0	1.9	3.0	Oct-13
Lazard	105,728,223	2.3		1.6	7.4	22.3	27.1	4.9	--	--	5.8	Oct-13
MSCI Emerging Markets Small Cap				0.8	2.6	16.0	17.0	0.8	5.1	2.2	3.3	Oct-13
<b>Total Fixed Income</b>	<b>1,053,100,861</b>	<b>23.0</b>	<b>24.0</b>									
<b>Core Fixed Income</b>	<b>469,397,360</b>	<b>10.2</b>	<b>11.0</b>	<b>-0.1</b>	<b>1.2</b>	<b>2.4</b>	<b>2.1</b>	<b>3.1</b>	<b>2.9</b>	<b>5.3</b>	<b>4.9</b>	<b>Dec-04</b>
Wells Asset Management	97,299,899	2.1		-0.1	1.4	2.3	0.3	3.0	3.0	5.8	5.4	May-05
BlackRock SIO	169,000,263	3.7		0.4	1.2	2.8	6.1	--	--	--	3.2	Aug-15
IR&M	203,097,198	4.4		-0.5	1.2	2.1	0.1	--	--	--	3.5	Jul-15
IR&M Custom Benchmark				-0.4	0.8	1.6	-1.0	2.3	2.1	4.4	2.5	Jul-15
<b>Value Added Fixed Income</b>	<b>583,703,501</b>	<b>12.7</b>	<b>13.0</b>	<b>0.2</b>	<b>2.4</b>	<b>6.0</b>	<b>10.9</b>	<b>2.2</b>	<b>3.5</b>	<b>--</b>	<b>--</b>	
<b>High Yield Income</b>	<b>387,603,737</b>	<b>8.5</b>	<b>9.0</b>	<b>0.3</b>	<b>2.1</b>	<b>4.8</b>	<b>12.0</b>	<b>4.9</b>	<b>6.4</b>	<b>7.4</b>	<b>7.4</b>	<b>Jan-06</b>
Crescent Capital	130,095,436	2.8		0.2	1.8	3.7	10.1	--	--	--	6.6	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				0.0	1.5	3.4	10.0	3.9	5.7	6.1	4.8	May-15
DDJ	131,362,618	2.9		0.4	3.1	7.8	19.2	--	--	--	7.6	May-15
75% BC HY 25% S&P Leverage Loan				0.1	1.8	4.2	11.4	--	--	--	5.3	May-15
GoldenTree Multi Spec Opp Credit	124,295,676	2.7		0.2	1.3	3.3	--	--	--	--	4.3	Dec-16
3-Month LIBOR + 7%				0.7	2.0	4.0	8.1	7.6	7.5	8.1	4.7	Dec-16
S&P/LSTA U.S. Leveraged Loan				0.0	0.8	1.9	7.4	3.4	4.6	4.5	3.1	Dec-16
<b>Emerging Market Debt</b>	<b>173,444,711</b>	<b>3.8</b>	<b>4.0</b>	<b>0.0</b>	<b>2.8</b>	<b>8.8</b>	<b>10.0</b>	<b>-3.1</b>	<b>-1.1</b>	<b>--</b>	<b>-0.6</b>	<b>Nov-11</b>
Loomis Sayles Emerging Debt & Currencies	173,444,711	3.8		0.0	2.8	8.8	10.0	-3.1	-1.1	--	-0.6	Nov-11
Custom EMD				0.1	2.9	8.3	6.0	-3.4	-1.0	3.8	-0.6	Nov-11
<b>Global Fixed Income</b>	<b>22,655,053</b>	<b>0.5</b>	<b>0.0</b>	<b>0.1</b>	<b>2.8</b>	<b>5.3</b>	<b>0.2</b>	<b>0.5</b>	<b>1.5</b>	<b>4.8</b>	<b>5.3</b>	<b>Jul-95</b>
Loomis Sayles	22,655,053	0.5		0.1	2.8	5.3	0.2	0.5	1.5	4.8	6.0	Nov-99
Citi WGBI				-0.1	2.9	4.5	-4.1	-1.0	-0.2	3.5	4.2	Nov-99

- Golden Tree Multi Spec Opps Credit market value and return is preliminary.

- IR&M Custom Benchmark reflects BC Agg since inception through 04/30/2017, as of 05/01/2017 forward it reflects 60% BC Agg/40% BC US TIPS.

Note: Returns are gross of manager fees except for hedge funds and private equity which are net of fees.



NEPC, LLC

June 30, 2017

# Boston Retirement System

## Total Fund Performance Detail (Gross)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Total Alternative Assets</b>	<b>987,560,629</b>	<b>21.5</b>	<b>24.0</b>									
<b>Hedge Fund Composite</b>	<b>329,766,923</b>	<b>7.2</b>	<b>7.0</b>	<b>0.1</b>	<b>0.7</b>	<b>1.5</b>	<b>5.2</b>	<b>-0.8</b>	<b>3.7</b>	<b>1.6</b>	<b>3.4</b>	<b>Nov-04</b>
Mesirow Absolute Return Class J	60,748,531	1.3		0.3	0.6	1.3	5.1	-2.4	2.7	0.7	3.1	Nov-04
GAM	53,276,671	1.2		-0.2	-0.2	1.4	2.9	0.0	4.1	--	0.6	Nov-07
Permal	74,114,603	1.6		0.3	1.4	1.0	6.2	-0.2	4.6	--	4.1	Nov-07
Entrust	65,752,175	1.4		0.3	1.1	1.9	4.2	-2.9	2.3	--	1.8	Apr-12
Grosvenor	75,716,586	1.7		-0.2	0.3	2.1	7.4	1.6	--	--	3.9	Jul-13
<i>HFRI Fund of Funds Composite Index</i>				-0.2	0.6	3.0	6.3	1.5	3.8	0.9	3.0	Jul-13
<b>Real Estate Composite</b>	<b>429,522,418</b>	<b>9.4</b>	<b>10.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.5</b>	<b>5.7</b>	<b>10.6</b>	<b>11.0</b>	<b>3.3</b>	<b>--</b>	
<b>Private Equity</b>	<b>228,271,288</b>	<b>5.0</b>	<b>7.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.8</b>	<b>4.7</b>	<b>6.0</b>	<b>6.1</b>	<b>5.5</b>	<b>--</b>	
<b>Cash</b>	<b>33,804,337</b>	<b>0.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.5</b>	<b>1.3</b>	<b>Oct-04</b>

- Real Estate and Private Equity report on a quarterly basis, valuations are as of 12/31/2016.
- Mesirow Absolute Return Class J market value is estimated.
- Entrust market value and return is preliminary.
- Cash value is preliminary.

Note: Returns are gross of manager fees except for hedge funds and private equity which are net of fees.



NEPC, LLC

June 30, 2017

PE/RE Summary

Quarter Ending December 31, 2016

Target Weight	Weight in Fund		Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
7.0%	5.1%	Private Equity IRR	\$677,456,812	\$473,861,452	\$529,285,687	1.8%	3.3%	\$228,271,288
10.0%	9.7%	Real Estate IRR	\$808,557,801	\$737,376,726	\$635,460,532	1.5%	7.8%	\$429,522,418

# Information Disclaimer and Reporting Methodology

## Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

## Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

