

# **FLASH REPORT (GROSS)**

## **Boston Retirement System**

**DECEMBER 2017**

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

## Index Performance Summary as of 12/31/2017

	2010	2011	2012	2013	2014	2015	2016	Q1	Q2	Q3	Oct	Nov	Dec	Q4	YTD
<b>EM Equity</b>	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	11.4%	6.3%	7.9%	3.5%	0.2%	3.6%	7.4%	37.3%
<b>Int'l Developed Equity</b>	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	7.2%	6.1%	5.4%	1.5%	1.0%	1.6%	4.2%	25.0%
<b>US Large Cap</b>	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	6.1%	3.1%	4.5%	2.3%	3.1%	1.1%	6.6%	21.8%
<b>US Small/Mid Cap</b>	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	3.8%	2.1%	4.7%	1.5%	3.3%	0.3%	5.2%	16.8%
<b>EM Local Credit</b>	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	6.5%	3.6%	3.6%	-2.8%	1.7%	2.0%	0.8%	15.2%
<b>US Long Treasuries</b>	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	1.4%	4.0%	0.6%	-0.1%	0.7%	1.7%	2.4%	8.5%
<b>US High Yield</b>	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	2.7%	2.2%	2.0%	0.4%	-0.3%	0.3%	0.5%	7.5%
<b>Global Credit</b>	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	1.8%	2.6%	1.8%	-0.4%	1.1%	0.3%	1.1%	7.4%
<b>US Credit</b>	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	0.8%	1.4%	0.8%	0.1%	-0.1%	0.5%	0.4%	3.5%
<b>BC TIPS</b>	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	1.3%	-0.4%	0.9%	0.2%	0.1%	0.9%	1.3%	3.0%
<b>Commodities</b>	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	-2.3%	-3.2%	2.5%	2.1%	-0.5%	3.0%	4.7%	1.7%

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  
 Barclays US TIPS = US TIPS



# TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Total Composite*</b>	<b>4,930,357,376</b>	<b>100.0</b>	<b>100.0</b>	<b>1.1</b>	<b>3.3</b>	<b>17.4</b>	<b>7.7</b>	<b>8.6</b>	<b>5.6</b>	<b>8.1</b>	<b>Aug-94</b>
Allocation Index				1.4	3.8	16.7	7.7	8.3	5.2	--	Aug-94
Policy Index				1.4	3.5	16.4	8.0	8.5	5.6	--	Aug-94
PRIT Core Fund/Teachers*	1,572,852,101	31.9		1.9	4.0	17.8	8.8	9.9	--	10.5	Jul-10
<b>Total Equity</b>	<b>2,778,437,562</b>	<b>56.4</b>	<b>52.0</b>	<b>1.5</b>	<b>5.4</b>	<b>27.5</b>	<b>10.4</b>	<b>12.1</b>	<b>--</b>	<b>--</b>	
<b>Large Cap Comp</b>	<b>1,048,140,173</b>	<b>21.3</b>	<b>19.0</b>	<b>1.1</b>	<b>6.9</b>	<b>24.9</b>	<b>12.6</b>	<b>17.2</b>	<b>9.3</b>	<b>9.6</b>	<b>Dec-04</b>
Rhumblin Advisors	134,382,888	2.7		1.1	6.6	21.8	11.4	15.7	8.6	10.0	Aug-94
DE Shaw Core Enhanced	238,755,666	4.8		1.2	6.9	22.7	12.1	16.4	--	15.1	Oct-09
JP Morgan 130/30	193,837,426	3.9		1.5	7.1	23.1	11.2	17.2	--	15.0	Oct-09
S&P 500				1.1	6.6	21.8	11.4	15.8	8.5	14.3	Oct-09
DE Shaw 130/30	211,576,263	4.3		1.0	6.6	26.2	15.2	17.5	--	16.6	Oct-09
Russell 1000				1.1	6.6	21.7	11.2	15.7	8.6	14.3	Oct-09
J&W Seligman	133,216,870	2.7		1.9	8.5	21.7	11.8	17.2	9.7	10.2	Jan-97
Russell 1000 Value				1.5	5.3	13.7	8.7	14.0	7.1	8.6	Jan-97
Zevenbergen Capital	73,865,189	1.5		0.9	4.0	35.3	12.3	19.4	10.5	11.6	Aug-94
Intech	62,505,872	1.3		-0.8	7.5	33.2	14.1	17.7	9.6	9.8	Oct-06
Russell 1000 Growth				0.8	7.9	30.2	13.8	17.3	10.0	10.5	Oct-06
<b>Small Cap Comp</b>	<b>347,607,013</b>	<b>7.1</b>	<b>6.0</b>	<b>0.5</b>	<b>5.8</b>	<b>26.7</b>	<b>10.5</b>	<b>14.5</b>	<b>10.2</b>	<b>10.3</b>	<b>Dec-04</b>
Westfield Capital Management	139,207,466	2.8		1.6	9.7	31.7	9.7	14.6	10.5	11.4	Sep-03
Russell 2000 Growth				0.1	4.6	22.2	10.3	15.2	9.2	9.8	Sep-03
Bernzott	105,603,159	2.1		0.0	5.5	28.0	--	--	--	17.3	Nov-15
Russell 2000 Value				-1.0	2.0	7.8	9.5	13.0	8.2	16.2	Nov-15
Aristotle	102,786,272	2.1		-0.4	1.2	19.4	--	--	--	17.0	Nov-15
Russell 2000				-0.4	3.3	14.6	10.0	14.1	8.7	15.4	Nov-15

- PRIT Core Fund valuation is based off the Policy Index as of 12/31/2017.

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



## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Total Non-US Equity</b>	<b>1,382,690,375</b>	<b>28.0</b>	<b>27.0</b>	<b>2.0</b>	<b>4.3</b>	<b>29.8</b>	<b>8.7</b>	<b>7.4</b>	<b>3.0</b>	<b>6.8</b>	<b>Aug-94</b>
<b>International Equity</b>	<b>894,853,204</b>	<b>18.1</b>	<b>19.0</b>	<b>1.4</b>	<b>3.4</b>	<b>27.0</b>	<b>8.4</b>	<b>8.6</b>	<b>--</b>	<b>7.6</b>	<b>Dec-10</b>
Todd	219,566,349	4.5		0.7	2.6	26.7	--	--	--	14.9	Apr-16
MSCI ACWI ex USA Gross				2.3	5.1	27.8	8.3	7.3	2.3	18.5	Apr-16
Panagora Asset Management	292,125,308	5.9		2.0	3.5	24.1	9.9	10.1	4.3	6.5	Aug-94
Fisher	236,945,611	4.8		0.4	2.5	29.0	9.4	9.2	3.8	5.6	Feb-06
MSCI EAFE				1.6	4.2	25.0	7.8	7.9	1.9	4.0	Feb-06
Segall Bryant Hamill	145,797,183	3.0		2.9	--	--	--	--	--	6.4	Nov-17
MSCI EAFE Small Cap				2.7	6.1	33.0	14.2	12.9	5.8	4.3	Nov-17
<b>Emerging Markets</b>	<b>487,837,171</b>	<b>9.9</b>	<b>8.0</b>	<b>3.2</b>	<b>6.1</b>	<b>35.4</b>	<b>9.7</b>	<b>4.8</b>	<b>--</b>	<b>4.6</b>	<b>Dec-10</b>
Vontobel	107,279,594	2.2		2.7	5.8	36.0	8.4	5.3	6.1	11.7	Oct-05
Polunin	122,291,900	2.5		4.6	7.5	38.6	13.2	--	--	11.6	Oct-13
SSgA Emerging Markets	144,329,216	2.9		3.2	5.3	35.3	7.5	--	--	4.5	Oct-13
MSCI Emerging Markets				3.6	7.4	37.3	9.1	4.3	1.7	6.2	Oct-13
Lazard	113,936,461	2.3		2.3	5.7	31.8	10.2	--	--	7.0	Oct-13
MSCI Emerging Markets Small Cap				3.7	9.2	33.8	8.4	5.4	2.8	6.5	Oct-13
<b>Total Fixed Income</b>	<b>1,100,984,942</b>	<b>22.3</b>	<b>24.0</b>	<b>0.5</b>	<b>0.7</b>	<b>4.2</b>	<b>2.9</b>	<b>2.7</b>	<b>4.9</b>	<b>4.9</b>	<b>Dec-04</b>
<b>Core Fixed Income</b>	<b>507,542,343</b>	<b>10.3</b>	<b>11.0</b>	<b>0.5</b>	<b>0.7</b>	<b>4.2</b>	<b>2.9</b>	<b>2.7</b>	<b>4.9</b>	<b>4.9</b>	<b>Dec-04</b>
Wells Asset Management	118,615,411	2.4		0.5	0.4	3.7	2.7	2.6	5.4	5.3	May-05
BlackRock SIO	173,069,085	3.5		0.6	1.0	5.6	--	--	--	3.6	Aug-15
BBgBarc US Aggregate TR				0.5	0.4	3.5	2.2	2.1	4.0	2.5	Aug-15
IR&M	215,857,847	4.4		0.5	0.5	3.5	--	--	--	3.3	Jul-15
IR&M Custom Benchmark				0.6	0.7	3.2	2.1	2.0	4.0	2.6	Jul-15

- 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.



## TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Value Added Fixed Income</b>	<b>593,442,599</b>	<b>12.0</b>	<b>13.0</b>	<b>0.8</b>	<b>1.0</b>	<b>9.7</b>	<b>4.9</b>	<b>3.1</b>	<b>--</b>	<b>--</b>	
<b>High Yield Income</b>	<b>389,193,482</b>	<b>7.9</b>	<b>9.0</b>	<b>0.6</b>	<b>1.0</b>	<b>8.2</b>	<b>6.4</b>	<b>5.8</b>	<b>7.5</b>	<b>7.4</b>	<b>Jan-06</b>
Crescent Capital	122,348,696	2.5		0.3	0.3	6.0	--	--	--	6.2	May-15
<i>50/50 S&amp;P/LSTA Leveraged Loan/BBgBarc High Yield</i>				0.3	0.8	5.8	5.4	4.9	6.5	4.8	May-15
DDJ	136,581,476	2.8		0.8	1.6	12.2	--	--	--	7.8	May-15
<i>75% BC HY 25% S&amp;P Leverage Loan</i>				0.3	0.6	6.7	--	--	--	5.2	May-15
GoldenTree Multi Spec Opp Credit	128,477,306	2.6		0.6	1.0	6.8	--	--	--	7.2	Dec-16
<i>3-Month LIBOR + 7%</i>				0.7	2.1	8.4	7.8	7.6	7.8	8.4	Dec-16
<i>S&amp;P/LSTA U.S. Leveraged Loan</i>				0.4	1.1	4.1	4.4	4.0	4.9	4.9	Dec-16
<b>Emerging Market Debt</b>	<b>180,908,520</b>	<b>3.7</b>	<b>4.0</b>	<b>1.4</b>	<b>0.9</b>	<b>13.5</b>	<b>1.9</b>	<b>-2.0</b>	<b>--</b>	<b>0.1</b>	<b>Nov-11</b>
Loomis Sayles Emerging Debt & Currencies	180,908,520	3.7		1.4	0.9	13.5	1.9	-2.0	--	0.1	Nov-11
<i>Custom EMD</i>				1.3	0.7	12.3	1.7	-2.0	3.3	0.1	Nov-11
<b>Global Fixed Income</b>	<b>23,340,597</b>	<b>0.5</b>	<b>0.0</b>	<b>0.4</b>	<b>0.9</b>	<b>8.7</b>	<b>3.0</b>	<b>1.4</b>	<b>4.2</b>	<b>5.3</b>	<b>Jul-95</b>
Loomis Sayles	23,340,597	0.5		0.4	0.9	8.7	3.0	1.4	4.2	6.0	Nov-99
<i>Citi WGBI</i>				0.2	1.0	7.5	1.7	0.1	2.7	4.3	Nov-99
<b>Total Alternative Assets</b>	<b>1,011,302,240</b>	<b>20.5</b>	<b>24.0</b>								
<b>Hedge Fund Composite</b>	<b>337,257,717</b>	<b>6.8</b>	<b>7.0</b>	<b>0.9</b>	<b>1.1</b>	<b>4.1</b>	<b>0.2</b>	<b>3.1</b>	<b>1.7</b>	<b>3.4</b>	<b>Nov-04</b>
Mesirow	2,580,733	0.1		0.5	0.6	3.4	-2.3	2.4	0.8	3.1	Nov-04
GAM	0	0.0		0.9	1.6	4.3	1.1	3.6	1.0	0.9	Nov-07
Permal	75,961,614	1.5		1.6	0.6	3.6	1.4	3.7	4.2	4.2	Nov-07
Entrust	65,887,153	1.3		0.6	0.6	2.1	-2.2	1.1	--	1.6	Apr-12
Grosvenor	78,791,778	1.6		1.0	2.4	6.2	2.8	--	--	4.4	Jul-13
<i>HFRI Fund of Funds Composite Index</i>				0.8	1.9	7.6	2.6	4.0	1.1	3.7	Jul-13
Hedge Fund Transition Account	113,945,683	2.3									
<b>Real Estate Composite</b>	<b>433,786,417</b>	<b>8.8</b>	<b>10.0</b>	<b>0.0</b>	<b>0.0</b>	<b>5.9</b>	<b>8.9</b>	<b>11.0</b>	<b>3.2</b>	<b>--</b>	
<b>Private Equity &amp; Debt</b>	<b>240,258,106</b>	<b>4.9</b>	<b>7.0</b>	<b>0.0</b>	<b>0.0</b>	<b>7.3</b>	<b>4.9</b>	<b>7.4</b>	<b>5.2</b>	<b>--</b>	
<b>Cash</b>	<b>39,632,633</b>	<b>0.8</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>0.3</b>	<b>1.2</b>	<b>Oct-04</b>

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 06/30/2017.
- GoldenTree and Grosvenor are preliminary.
- EnTrust is estimated and does not reflect the year end redemption.
- A full redemption from the Mesirow Absolute Return Class J was made 12/29/17. The remaining holdings are now held directly in the Mesirow Opportunity Fund.
- The Hedge Fund Transition Account is an estimation of the total values redeemed from the hedge fund portfolio and is subject to change.

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



# TOTAL FUND PERFORMANCE DETAIL

## PE/RE Summary

Quarter Ending June 30, 2017

Target Weight	Weight in Fund		Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
7.0%	5.1%	Private Equity & Debt IRR	\$717,509,174	\$492,363,783	\$533,131,808	3.4%	8.6%	\$240,258,106
10.0%	9.1%	Real Estate IRR	\$839,996,934	\$656,819,675	\$744,785,046	2.4%	8.2%	\$433,786,417



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- 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.
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- 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.

