

FLASH REPORT (GROSS)

Boston Retirement System

January 31, 2019

Mike Manning, CFA, CAIA, Managing Partner

Will Forde, CFA, CAIA, Consultant

Kiley Fischer, Analyst

Jake Mallinson, Sr. Analyst



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

CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Jan	YTD
US Large Cap	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	8.0%	8.0%
US Small/Mid Cap	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	11.5%	11.5%
Int'l Developed Equity	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	6.6%	6.6%
EM Equity	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	8.8%	8.8%
US Aggregate	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	1.1%	1.1%
US High Yield	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	4.5%	4.5%
US Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	0.7%	0.7%
EM Local Credit	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	5.5%	5.5%
Global Credit	-5.3%	-5.3%	-4.1%	2.7%	-0.6%	3.3%	2.1%	7.4%	-1.2%	1.5%	1.5%
Commodities	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	5.4%	5.4%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	1.3%	1.3%

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
 Bloomberg Barclays Aggregate = US Aggregate
 Bloomberg Barclays High Yield = US HY
 Bloomberg Barclays Long Treasury = US Long Treasuries
 GBI-EM Global Diversified = EM Local Credit
 Barclays Global Aggregate = Global Credit
 Bloomberg Commodity = Commodities
 Barclays US TIPS = BC TIPS



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Composite	4,824,337,539	100.0	100.0	5.0	2.0	-4.0	9.3	6.0	9.2	7.7	Aug-94
<i>Allocation Index</i>				4.8	2.3	-3.3	9.2	5.9	8.8	--	Aug-94
<i>Policy Index</i>				4.9	2.6	-1.8	9.9	6.4	9.4	--	Aug-94
PRIT Core Fund/Teachers*	1,677,621,707	34.8		4.2	2.2	-0.3	10.1	7.7	--	9.4	Jul-10
Total Equity	2,543,429,772	52.7	52.0	8.6	2.2	-9.6	12.4	6.9	--	--	Dec-04
Large Cap Comp	804,461,907	16.7	17.0	8.7	0.7	-2.5	15.6	11.4	16.0	9.1	Dec-04
Rhumblin Advisors	107,044,815	2.2		8.0	0.3	-2.3	14.0	10.9	15.0	9.6	Aug-94
DE Shaw Core Enhanced	81,161,973	1.7		7.4	0.1	-1.7	14.8	11.4	--	13.6	Oct-09
JP Morgan 130/30	195,186,654	4.0		8.2	0.2	-4.8	14.2	10.8	--	13.3	Oct-09
<i>S&P 500</i>				8.0	0.3	-2.3	14.0	11.0	15.0	12.9	Oct-09
DE Shaw 130/30	211,834,392	4.4		7.6	0.5	-3.3	16.0	12.0	--	14.7	Oct-09
<i>Russell 1000</i>				8.4	0.5	-2.2	14.1	10.7	15.2	12.9	Oct-09
Columbia Threadneedle	105,518,381	2.2		9.3	1.0	-6.4	15.3	9.5	15.8	9.5	Jan-97
<i>Russell 1000 Value</i>				7.8	0.3	-4.8	11.6	8.3	13.4	8.1	Jan-97
Zevenbergen Capital	51,761,219	1.1		17.8	3.7	6.9	22.9	12.1	19.3	11.9	Aug-94
Intech	51,954,473	1.1		9.3	1.1	-0.1	16.9	13.2	17.0	9.5	Oct-06
<i>Russell 1000 Growth</i>				9.0	0.7	0.2	16.6	13.0	16.9	10.2	Oct-06
Small Cap Comp	305,593,031	6.3	6.0	11.0	-1.0	-2.8	17.1	8.4	16.3	9.6	Dec-04
Westfield Capital Management	94,755,202	2.0		11.0	1.2	-3.3	17.5	8.5	17.0	10.8	Sep-03
<i>Russell 2000 Growth</i>				11.5	0.1	-2.6	15.6	7.8	15.7	9.2	Sep-03
Bernzott	110,238,207	2.3		10.6	-2.3	0.5	19.1	--	--	13.0	Nov-15
<i>Russell 2000 Value</i>				10.9	-0.9	-4.5	13.8	6.6	13.3	9.4	Nov-15
Aristotle	100,599,534	2.1		11.5	-1.6	-4.6	14.9	--	--	10.6	Nov-15
<i>Russell 2000</i>				11.2	-0.4	-3.5	14.7	7.3	14.5	9.7	Nov-15

- J&W Seligman is now named Columbia Threadneedle.

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



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	1,433,374,835	29.7	29.0	8.0	3.8	-15.9	9.0	3.3	8.6	6.0	Aug-94
International Equity	1,000,401,076	20.7	21.0	8.2	1.5	-15.5	7.2	2.4	--	5.1	Dec-10
Todd	281,860,918	5.8		10.5	2.4	-14.4	--	--	--	5.7	Apr-16
<i>MSCI ACWI ex USA</i>				7.6	3.7	-12.6	9.6	3.1	8.3	7.6	Apr-16
Panagora Asset Management	311,698,786	6.5		7.9	2.4	-13.1	8.1	3.9	10.1	5.8	Aug-94
Fisher	288,280,736	6.0		6.6	1.2	-16.1	8.7	3.4	10.2	4.2	Feb-06
<i>MSCI EAFE</i>				6.6	1.3	-12.5	7.7	2.7	8.1	3.0	Feb-06
Segall Bryant Hamill	118,158,194	2.4		7.9	-2.0	-22.1	--	--	--	-11.2	Nov-17
<i>MSCI EAFE Small Cap</i>				8.1	0.4	-15.6	9.4	5.0	12.1	-6.0	Nov-17
Emerging Markets	432,973,759	9.0	8.0	7.6	9.3	-16.7	12.6	4.9	--	2.6	Dec-10
Vontobel	98,712,157	2.0		7.0	11.5	-13.2	9.8	6.0	12.3	10.1	Oct-05
Polunin	107,658,099	2.2		7.0	8.8	-16.7	17.5	7.6	--	6.9	Oct-13
SSgA Emerging Markets	134,281,447	2.8		8.1	7.8	-15.0	14.8	3.9	--	2.1	Oct-13
<i>MSCI Emerging Markets</i>				8.8	10.2	-14.2	14.9	4.8	9.7	3.5	Oct-13
Lazard	92,322,055	1.9		8.1	9.8	-22.2	7.8	2.5	--	1.6	Oct-13
<i>MSCI Emerging Markets Small Cap</i>				5.4	9.4	-18.9	8.4	2.6	11.2	2.1	Oct-13
Total Fixed Income	1,211,278,418	25.1	22.0	1.2	2.4	1.5	2.9	3.0	4.7	4.6	Dec-04
Core Fixed Income	706,354,293	14.6	12.0	1.1	3.5	2.3	2.3	2.9	5.0	5.0	May-05
Wells Asset Management	212,398,475	4.4		1.1	3.5	2.3	2.3	2.9	5.0	5.0	May-05
BlackRock SIO	225,017,886	4.7		1.4	1.3	0.1	4.0	--	--	2.9	Aug-15
<i>BBgBarc US Aggregate TR</i>				1.1	3.5	2.3	2.0	2.4	3.7	2.1	Aug-15
IR&M	268,937,933	5.6		1.2	2.5	1.9	2.4	--	--	2.6	Jul-15
<i>IR&M Custom Benchmark</i>				1.2	2.8	1.5	1.6	2.2	3.6	1.9	Jul-15

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

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



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Value Added Fixed Income	504,924,125	10.5	10.0	3.4	1.7	-0.8	7.3	3.2	--	--	
High Yield Income	307,478,044	6.4	6.0	2.8	-0.2	1.8	7.9	4.8	9.7	7.0	Jan-06
Crescent Capital	101,773,914	2.1		2.9	0.4	1.5	6.3	--	--	4.9	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				3.5	0.2	1.9	7.7	4.0	9.5	4.1	May-15
DDJ	100,252,105	2.1		2.6	-0.1	1.7	11.6	--	--	6.4	May-15
75% BC HY 25% S&P Leverage Loan				4.0	0.8	1.8	8.5	--	--	4.4	May-15
GoldenTree Multi Spec Opp Credit	104,411,266	2.2		2.8	-0.7	1.8	--	--	--	5.0	Dec-16
Blended Index				2.9	0.6	1.7	--	--	--	4.3	Dec-16
S&P/LSTA Leveraged Loan TR				2.5	-1.0	2.0	5.9	3.4	8.1	3.8	Dec-16
Emerging Market Debt	174,104,623	3.6	4.0	4.7	4.9	-5.6	6.5	0.2	--	-0.4	Nov-11
Aberdeen EMD Plus	174,104,577	3.6		4.7	--	--	--	--	--	5.7	Nov-18
JP Morgan EMBI Global Diversified				4.4	5.4	0.0	6.7	5.8	8.5	5.8	Nov-18
Global Fixed Income	23,341,457	0.5	0.0	2.2	4.1	-1.4	4.3	1.8	4.7	5.1	Jul-95
Loomis Sayles	23,341,457	0.5		2.2	4.1	-1.4	4.3	1.8	4.7	5.7	Nov-99
FTSE WGBI TR				1.4	4.3	-1.1	2.7	0.8	2.1	4.1	Nov-99
Total Alternative Assets	1,005,603,840	20.8	26.0								
Hedge Fund Composite	234,976,647	4.9	5.0	1.7	-1.2	-1.7	2.2	0.6	3.8	3.1	Nov-04
Permal	70,417,799	1.5		1.0	-4.0	-7.7	1.2	-0.2	5.4	3.1	Nov-07
EnTrust Peruvian Bonds	5,048,391	0.1		-0.1	-2.5	-4.5	--	--	--	-4.4	Jan-18
Blackstone	77,062,799	1.6		2.0	1.3	4.0	--	--	--	4.0	Feb-18
Grosvenor	79,252,413	1.6		2.0	-1.2	-1.6	4.1	2.5	--	3.6	Jul-13
HFRI Fund of Funds Composite Index				2.4	0.2	-4.0	3.0	1.9	3.3	2.6	Jul-13
Hedge Fund Transition Account	3,195,245	0.1									
Real Estate Composite	463,464,505	9.6	10.0	0.0	2.4	9.5	9.3	10.9	5.3	--	
Private Equity & Debt	307,162,688	6.4	11.0	0.0	3.9	16.2	9.4	9.9	8.7	--	
Cash	64,025,508	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	Oct-04

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 9/30/2018.
- The Hedge Fund Transition Account is an estimation of the total values redeemed from the hedge fund portfolio and is subject to change.
- The Blended Index Benchmark consists of 30% ML HY II/ 30% S&P LSTA / 25% HFRI RV FI/ 15% BAML ABS.
- EnTrust Peruvian Bonds is preliminary.

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



Boston Retirement System

TOTAL FUND PERFORMANCE DETAIL

PE/RE Summary								
Quarter Ending September 30, 2018								
Target Weight	Weight in Fund		Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
11%	6.7%	Private Equity & Debt IRR	\$888,885,650	\$564,456,348	\$635,550,853	3.9%	16.2%	\$307,162,688
7%	3.8%	Private Equity	\$570,385,650	\$431,557,650	\$448,204,108			\$174,398,504
4%	2.9%	Private Debt	\$318,500,000	\$132,898,698	\$187,346,745			\$132,764,184
10%	10.1%	Real Estate IRR	\$900,081,937	\$713,322,048	\$778,245,832	2.4%	9.5%	\$463,464,505



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.

