FLASH REPORT (GROSS)

Boston Retirement System

July 31, 2019

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CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Jul	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	1.4%	20.2%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	1.6%	20.7%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	0.6%	17.7%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	1.0%	20.5%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	-1.3%	12.6%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	-1.2%	9.2%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	0.3%	16.6%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	4.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	0.4%	6.5%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	0.8%	5.9%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	0.6%	7.3%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.6%	10.6%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	0.2%	6.3%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	-0.3%	5.3%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	0.2%	11.2%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	1.2%	16.8%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	0.2%	14.9%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	0.9%	9.7%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	1.2%	12.7%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	-	6.4%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	-0.7%	4.4%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	-0.2%	16.7%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	1.3%	19.3%

Source: FactSet, Thomson One

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 (%)	Inception (%)	Inception Date
Total Fund	**5,084,791,022**	**100.0**	**100.0**	**0.2**	**1.1**	**10.5**	**2.4**	**8.1**	**5.7**	**8.3**	**7.7**	**Aug-94**
Allocation Index				*0.2*	*1.3*	*10.6*	*3.2*	*7.9*	*5.7*	*7.8*	*--*	*Aug-94*
Policy Index				*0.1*	*1.6*	*10.4*	*4.7*	*8.6*	*6.3*	*8.4*	*--*	*Aug-94*
PRIT Core Fund/Teachers*	1,665,595,057	32.8		0.3	1.9	10.3	5.2	8.9	7.3	--	9.5	Jul-10
Total Equity	**2,497,706,528**	**49.1**	**48.0**	**0.1**	**-0.1**	**15.7**	**-0.3**	**10.3**	**6.5**	**--**	**--**	**Dec-04**
Large Cap Comp	**933,687,638**	**18.4**	**17.0**	**1.5**	**1.5**	**21.0**	**6.8**	**14.6**	**11.8**	**14.9**	**9.6**	**Dec-04**
Rhumbline Advisors	159,768,869	3.1		1.4	1.7	20.2	7.9	13.3	11.3	14.0	9.9	Aug-94
DE Shaw Core Enhanced	90,619,056	1.8		1.7	1.7	20.0	7.9	14.0	11.8	--	14.2	Oct-09
JP Morgan 130/30	215,544,681	4.2		1.5	1.2	20.0	5.3	13.9	10.9	--	13.8	Oct-09
S&P 500				*1.4*	*1.7*	*20.2*	*8.0*	*13.4*	*11.3*	*14.0*	*13.4*	*Oct-09*
DE Shaw 130/30	231,623,017	4.6		1.2	0.4	18.1	4.2	13.5	12.1	--	15.0	Oct-09
Russell 1000				*1.6*	*1.8*	*20.7*	*8.0*	*13.3*	*11.2*	*14.1*	*13.5*	*Oct-09*
Columbia Threadneedle	112,503,526	2.2		1.4	-0.7	16.7	0.5	12.3	9.1	14.1	9.6	Jan-97
Russell 1000 Value				*0.8*	*1.1*	*17.2*	*5.2*	*9.4*	*8.0*	*12.4*	*8.3*	*Jan-97*
Zevenbergen Capital	61,716,999	1.2		0.9	5.3	41.0	18.2	25.0	15.2	17.6	12.5	Aug-94
Intech	61,911,490	1.2		3.3	6.2	30.6	17.0	19.0	15.8	16.7	10.6	Oct-06
Russell 1000 Growth				*2.3*	*2.4*	*24.2*	*10.8*	*17.1*	*14.3*	*15.7*	*10.9*	*Oct-06*
Small Cap Comp	**329,072,125**	**6.5**	**6.0**	**1.1**	**0.4**	**19.9**	**-0.7**	**14.2**	**9.7**	**14.3**	**9.9**	**Dec-04**
Westfield Capital Management	104,812,872	2.1		1.3	0.9	23.2	2.3	15.6	10.1	15.4	11.2	Sep-03
Russell 2000 Growth				*1.0*	*0.7*	*21.5*	*-1.2*	*12.7*	*10.2*	*13.7*	*9.5*	*Sep-03*
Bernzott	118,227,260	2.3		2.6	1.2	18.9	0.7	15.7	--	--	13.3	Nov-15
Russell 2000 Value				*0.2*	*-2.2*	*13.6*	*-7.7*	*8.0*	*6.7*	*11.2*	*8.8*	*Nov-15*
Aristotle	106,031,294	2.1		-0.7	-1.1	18.0	-4.1	11.4	--	--	10.7	Nov-15
Russell 2000				*0.6*	*-0.7*	*17.7*	*-4.4*	*10.4*	*8.5*	*12.5*	*10.0*	*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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	**1,234,946,765**	**24.3**	**25.0**	**-1.2**	**-1.5**	**11.5**	**-5.0**	**6.5**	**2.1**	**5.5**	**6.0**	**Aug-94**
International Equity	**833,996,005**	**16.4**	**17.0**	**-1.3**	**-1.8**	**12.3**	**-5.9**	**6.3**	**2.0**	**--**	**5.3**	**Dec-10**
Todd	234,526,547	4.6		-0.6	-0.7	16.1	-4.7	7.0	--	--	6.4	Apr-16
MSCI ACWI ex USA				*-1.2*	*-0.9*	*12.2*	*-2.3*	*7.2*	*2.1*	*5.4*	*7.8*	*Apr-16*
Panagora Asset Management	233,612,062	4.6		-2.1	-2.4	8.7	-6.5	5.8	2.8	7.2	5.7	Aug-94
Fisher	250,768,235	4.9		-1.0	-0.8	16.1	-1.8	8.3	4.2	7.4	4.7	Feb-06
MSCI EAFE				*-1.3*	*-0.4*	*12.6*	*-2.6*	*6.9*	*2.4*	*5.8*	*3.3*	*Feb-06*
Segall Bryant Hamill	114,703,333	2.3		-1.5	-4.8	4.8	-15.9	--	--	--	-9.6	Nov-17
MSCI EAFE Small Cap				*-0.7*	*-2.0*	*11.7*	*-7.6*	*6.7*	*4.7*	*8.8*	*-2.5*	*Nov-17*
Emerging Markets	**400,950,760**	**7.9**	**8.0**	**-1.0**	**-0.8**	**9.7**	**-2.8**	**6.8**	**2.4**	**--**	**2.6**	**Dec-10**
Vontobel	105,726,426	2.1		0.0	-0.2	15.1	4.8	7.6	3.9	9.0	10.3	Oct-05
Polunin	108,682,504	2.1		-1.5	0.8	8.4	-1.8	9.8	4.4	--	6.5	Oct-13
SSgA Emerging Markets	92,472,006	1.8		-1.5	-2.6	5.7	-5.9	7.0	0.6	--	1.6	Oct-13
MSCI Emerging Markets				*-1.2*	*-2.7*	*9.2*	*-2.2*	*8.4*	*1.8*	*4.6*	*3.3*	*Oct-13*
Lazard	94,069,824	1.9		-0.8	-1.4	10.2	-8.0	2.7	1.0	--	1.8	Oct-13
MSCI Emerging Markets Small Cap				*-1.5*	*-2.7*	*5.1*	*-7.7*	*3.5*	*0.1*	*4.5*	*1.9*	*Oct-13*
Total Fixed Income	**1,474,550,641**	**29.0**	**26.0**									
Core Fixed Income	**940,982,199**	**18.5**	**16.0**	**0.3**	**2.8**	**6.1**	**6.8**	**3.1**	**3.5**	**4.5**	**4.8**	**Dec-04**
Wells Asset Management	311,493,341	6.1		0.3	3.4	6.5	8.2	2.5	3.4	4.7	5.2	May-05
BlackRock SIO	317,002,254	6.2		0.5	2.4	6.0	5.8	4.5	--	--	3.7	Aug-15
BBgBarc US Aggregate TR				*0.2*	*3.3*	*6.3*	*8.1*	*2.2*	*3.0*	*3.8*	*3.1*	*Aug-15*
IR&M	312,486,605	6.1		0.2	2.7	6.0	6.6	2.2	--	--	3.4	Jul-15
IR&M Custom Benchmark				*0.3*	*3.0*	*6.5*	*6.7*	*1.8*	*2.8*	*3.6*	*2.9*	*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 (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Value Added Fixed Income	**533,568,441**	**10.5**	**10.0**	**0.9**	**2.5**	**9.4**	**6.4**	**6.4**	**3.5**	**--**	**--**	
High Yield Income	**321,040,129**	**6.3**	**6.0**	**0.5**	**0.8**	**7.4**	**4.8**	**6.9**	**5.2**	**8.2**	**7.1**	**Jan-06**
Crescent Capital	106,632,586	2.1		0.7	1.9	8.0	5.7	5.7	--	--	5.5	May-15
50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield				*0.7*	*1.2*	*8.6*	*5.5*	*5.9*	*4.5*	*7.2*	*4.8*	*May-15*
DDJ	103,708,526	2.0		0.4	-0.5	6.5	4.2	9.1	--	--	6.6	May-15
75% BC HY 25% S&P Leverage Loan				*0.6*	*1.4*	*9.6*	*6.2*	*6.3*	--	--	*5.1*	*May-15*
GoldenTree Multi Sector Opp Credit	109,537,061	2.2		0.4	1.1	7.8	4.4	--	--	--	5.9	Dec-16
Blended Index				*0.6*	*1.4*	*7.6*	*5.2*	*5.4*	--	--	*5.2*	*Dec-16*
S&P/LSTA Leveraged Loan TR				*0.8*	*0.8*	*6.6*	*4.0*	*5.0*	*3.8*	*5.8*	*4.6*	*Dec-16*
Emerging Market Debt	**188,453,433**	**3.7**	**4.0**	**1.6**	**5.4**	**13.4**	**9.3**	**5.9**	**0.0**	**--**	**0.7**	**Nov-11**
Aberdeen EMD Plus	188,453,120	3.7		1.6	5.4	13.4	--	--	--	--	14.5	Dec-18
JP Morgan EMBI Global Diversified				*1.2*	*5.1*	*12.7*	*11.0*	*5.3*	*5.5*	*7.6*	*14.2*	*Dec-18*
Global Fixed Income	**24,074,879**	**0.5**	**0.0**	**-0.4**	**3.0**	**5.8**	**5.3**	**1.9**	**1.8**	**3.7**	**5.1**	**Jul-95**
Loomis Sayles	24,074,879	0.5		-0.4	3.0	5.8	5.3	1.9	1.8	3.7	5.7	Nov-99
FTSE WGBI TR				*-0.5*	*3.6*	*4.9*	*5.4*	*0.7*	*0.9*	*2.0*	*4.1*	*Nov-99*
Total Alternative Assets	**1,064,386,518**	**20.9**	**26.0**									
Hedge Fund Composite	**238,525,076**	**4.7**	**5.0**	**0.4**	**1.2**	**4.2**	**0.6**	**2.2**	**0.0**	**3.1**	**3.0**	**Nov-04**
EnTrust Peruvian Bonds	4,991,286	0.1		-0.2	-0.4	-1.0	-4.0	--	--	--	-3.6	Jan-18
Blackstone	115,151,018	2.3		0.6	2.0	5.9	5.9	--	--	--	5.3	Feb-18
Grosvenor	115,879,363	2.3		0.3	0.4	3.9	-0.9	4.3	2.4	--	3.6	Jul-13
HFRI Fund of Funds Composite Index				*0.3*	*0.8*	*6.4*	*1.2*	*3.8*	*2.3*	*3.1*	*3.1*	*Jul-13*
Hedge Fund Transition Account	2,503,409	0.0										
Real Estate Composite	**483,800,001**	**9.5**	**10.0**	**0.0**	**1.9**	**3.5**	**7.8**	**8.6**	**10.4**	**9.2**	**--**	
Private Equity & Debt	**342,061,441**	**6.7**	**11.0**	**0.0**	**2.2**	**0.8**	**7.9**	**9.7**	**8.5**	**8.6**	**--**	
Cash	**48,147,336**	**0.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.1**	**Oct-04**

- Real Estate and Private Equity & Debt report on a quarterly basis, valuations are as of 3/31/2019.
- 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 preliminary as of 7/31/2019.

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 March 31, 2019

	Committed Capital	Cumulative Distribution	Contributed Capital	QTR	Last Year	Valuation
Private Equity & Debt IRR	**$971,371,856**	**$567,080,348**	**$674,193,868**	**2.2%**	**7.9%**	**$342,061,441**
Private Equity	$604,393,355	$443,863,187	$477,289,111			$193,210,897
Private Debt	$366,978,504	$123,271,161	$196,904,757			$148,850,544
Real Estate IRR	**$886,763,453**	**$736,469,772**	**$805,413,879**	**1.9%**	**7.8%**	**$483,800,001**

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- 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.
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