



NEPC, LLC

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Boston Retirement System

January Flash Report (Gross)

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

Index Performance Summary as of 01/31/2017

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Jan | YTD |
|-------------------------------|--------|-------|--------|-------|--------|--------|--------|-------|------|------|
| EM Equity | 78.5% | 18.9% | -18.4% | 18.2% | -2.6% | -2.2% | -14.9% | 11.2% | 5.5% | 5.5% |
| Int'l Developed Equity | 31.8% | 7.8% | -12.1% | 17.3% | 22.8% | -4.9% | -0.8% | 1.0% | 2.9% | 2.9% |
| EM Local Credit | 22.0% | 15.7% | -1.8% | 16.8% | -9.0% | -5.7% | -14.9% | 9.9% | 2.3% | 2.3% |
| US Large Cap | 26.5% | 15.1% | 2.1% | 16.0% | 32.4% | 13.7% | 1.4% | 12.0% | 1.9% | 1.9% |
| US High Yield | 58.2% | 15.1% | 5.0% | 15.8% | 7.4% | 2.5% | -4.5% | 17.1% | 1.5% | 1.5% |
| US Small/Mid Cap | 34.4% | 26.7% | -2.5% | 17.9% | 36.8% | 7.1% | -2.9% | 17.6% | 1.4% | 1.4% |
| Global Credit | -6.5% | -5.3% | -5.3% | -4.1% | 2.7% | -0.6% | 3.3% | 2.1% | 1.1% | 1.1% |
| US Long Treasuries | -12.9% | 9.4% | 29.9% | 3.6% | -12.7% | 25.1% | -1.2% | 1.3% | 0.4% | 0.4% |
| US Credit | 5.9% | 6.5% | 7.8% | 4.2% | -2.0% | 6.0% | 0.5% | 2.6% | 0.2% | 0.2% |
| Commodities | 18.9% | 16.8% | -13.3% | -1.1% | -9.5% | -17.0% | -24.7% | 11.8% | 0.1% | 0.1% |

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 (%) | 1 Yr (%) | 3 Yrs (%) | 5 Yrs (%) | 10 Yrs (%) | Return (%) | Since |
|------------------------------|----------------------|-------------------|--------------|-------------|-------------|-------------|--------------|--------------|---------------|---------------|---------------|
| Total Composite* | 4,291,078,288 | 100.0 | 100.0 | 2.1 | 4.4 | 14.1 | 5.3 | 7.4 | 5.1 | 7.8 | Aug-94 |
| Allocation Index | | | | 1.7 | 3.6 | 13.6 | 5.1 | 7.0 | 4.6 | -- | Aug-94 |
| Policy Index | | | | 1.7 | 3.8 | 14.6 | 5.6 | 7.3 | 4.9 | -- | Aug-94 |
| PRIT Core Fund/Teachers* | 1,405,832,613 | 32.8 | | 1.7 | 2.9 | 12.8 | 7.0 | 8.8 | -- | 9.5 | Jul-10 |
| Total Equity | 2,283,303,260 | 53.2 | 52.0 | 3.5 | 6.7 | 20.2 | 5.7 | 9.8 | -- | -- | |
| Large Cap Comp | 882,046,070 | 20.6 | 19.0 | 2.6 | 8.7 | 23.0 | 10.9 | 15.2 | 7.8 | 8.6 | Dec-04 |
| Rhumblin Advisors | 112,492,363 | 2.6 | | 1.9 | 7.7 | 20.0 | 10.8 | 14.0 | 7.1 | 9.5 | Aug-94 |
| DE Shaw Core Enhanced | 198,421,622 | 4.6 | | 1.8 | 7.8 | 21.2 | 11.2 | 14.8 | -- | 14.2 | Oct-09 |
| JP Morgan 130/30 | 163,150,785 | 3.8 | | 3.0 | 9.6 | 23.4 | 11.5 | 15.7 | -- | 14.3 | Oct-09 |
| S&P 500 | | | | 1.9 | 7.8 | 20.0 | 10.8 | 14.1 | 7.0 | 13.4 | Oct-09 |
| DE Shaw 130/30 | 172,983,010 | 4.0 | | 2.4 | 8.2 | 25.5 | 12.3 | 15.7 | -- | 15.6 | Oct-09 |
| Russell 1000 | | | | 2.0 | 8.0 | 20.8 | 10.5 | 14.1 | 7.1 | 13.5 | Oct-09 |
| J&W Seligman | 110,403,861 | 2.6 | | 0.5 | 11.2 | 29.5 | 10.0 | 15.6 | 8.6 | 9.6 | Jan-97 |
| Russell 1000 Value | | | | 0.7 | 9.1 | 24.6 | 10.2 | 14.1 | 5.7 | 8.3 | Jan-97 |
| Zevenbergen Capital | 75,994,897 | 1.8 | | 7.9 | 9.2 | 23.5 | 5.6 | 14.1 | 10.0 | 11.0 | Aug-94 |
| Intech | 48,599,533 | 1.1 | | 3.1 | 6.9 | 15.9 | 10.4 | 14.2 | 7.7 | 8.0 | Oct-06 |
| Russell 1000 Growth | | | | 3.4 | 6.9 | 17.2 | 10.8 | 13.9 | 8.4 | 9.0 | Oct-06 |
| Small Cap Comp | 284,849,670 | 6.6 | 6.0 | 3.4 | 13.1 | 28.0 | 6.1 | 12.3 | 8.7 | 9.3 | Dec-04 |
| Westfield Capital Management | 110,780,542 | 2.6 | | 4.5 | 10.7 | 24.3 | 4.9 | 11.6 | 10.1 | 10.3 | Sep-03 |
| Russell 2000 Growth | | | | 1.6 | 12.2 | 26.9 | 6.2 | 12.5 | 7.7 | 9.0 | Sep-03 |
| Bernzott | 86,410,019 | 2.0 | | 4.4 | 13.3 | 31.0 | -- | -- | -- | 12.0 | Nov-15 |
| Russell 2000 Value | | | | -0.7 | 17.1 | 40.2 | 9.5 | 13.4 | 6.0 | 21.4 | Nov-15 |
| Aristotle | 87,659,109 | 2.0 | | 1.1 | 16.1 | 30.2 | -- | -- | -- | 14.9 | Nov-15 |
| Russell 2000 | | | | 0.4 | 14.7 | 33.5 | 7.9 | 13.0 | 6.9 | 15.3 | Nov-15 |

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 (%) | Return (%) | Since |
|--|----------------------|-------------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|---------------|---------------|
| Total Non-US Equity | 1,116,407,521 | 26.0 | 27.0 | 4.2 | 3.7 | 16.1 | 1.7 | 4.7 | 2.0 | 6.1 | Aug-94 |
| International Equity | 733,477,482 | 17.1 | 19.0 | 3.5 | 5.1 | 12.2 | 0.8 | 6.4 | -- | 5.2 | Dec-10 |
| Todd | 223,638,091 | 5.2 | | 4.3 | 4.3 | -- | -- | -- | -- | 5.0 | Apr-16 |
| MSCI ACWI ex USA Gross | | | | 3.6 | 3.8 | 16.7 | 1.4 | 4.8 | 1.7 | 9.0 | Apr-16 |
| Panagora Asset Management | 281,862,290 | 6.6 | | 3.0 | 5.1 | 14.4 | 3.2 | 9.1 | 3.2 | 5.9 | Aug-94 |
| Fisher | 227,466,766 | 5.3 | | 3.3 | 5.9 | 14.8 | 1.8 | 6.3 | 2.9 | 3.9 | Feb-06 |
| MSCI EAFE | | | | 2.9 | 4.3 | 12.0 | 0.7 | 6.0 | 1.0 | 2.6 | Feb-06 |
| Emerging Markets | 382,930,039 | 8.9 | 8.0 | 5.6 | 1.2 | 24.3 | 3.5 | 1.1 | -- | 1.1 | Dec-10 |
| Vontobel | 82,628,258 | 1.9 | | 3.9 | -4.8 | 9.0 | 3.3 | 2.5 | 6.9 | 10.0 | Oct-05 |
| Polunin | 98,327,445 | 2.3 | | 9.6 | 10.6 | 43.0 | 8.3 | -- | -- | 7.1 | Oct-13 |
| SSgA Emerging Markets | 112,400,398 | 2.6 | | 5.4 | 1.1 | 26.5 | 0.4 | -- | -- | -1.9 | Oct-13 |
| MSCI Emerging Markets | | | | 5.5 | 0.8 | 25.4 | 1.4 | 0.2 | 2.5 | -0.2 | Oct-13 |
| Lazard | 89,573,938 | 2.1 | | 3.4 | -2.3 | 20.1 | 2.8 | -- | -- | 1.3 | Oct-13 |
| MSCI Emerging Markets Small Cap | | | | 4.7 | -0.4 | 16.2 | 1.2 | 2.4 | 3.9 | 0.6 | Oct-13 |
| Total Fixed Income | 1,021,198,362 | 23.8 | 24.0 | | | | | | | | |
| Core Fixed Income | 451,079,652 | 10.5 | 11.0 | 0.4 | -0.7 | 3.6 | 3.2 | 2.9 | 5.2 | 4.9 | Dec-04 |
| Wells Asset Management | 154,525,425 | 3.6 | | 0.2 | -1.9 | 2.3 | 3.2 | 3.1 | 5.7 | 5.4 | May-05 |
| BlackRock SIO | 155,926,988 | 3.6 | | 0.6 | 1.6 | 5.5 | -- | -- | -- | 2.6 | Aug-15 |
| IR&M | 140,627,239 | 3.3 | | 0.3 | -1.8 | 2.9 | -- | -- | -- | 3.2 | Jul-15 |
| BBgBarc US Aggregate TR | | | | 0.2 | -2.0 | 1.5 | 2.6 | 2.1 | 4.4 | 2.2 | Jul-15 |
| Value Added Fixed Income | 570,118,710 | 13.3 | 13.0 | 1.5 | 2.2 | 13.5 | 2.5 | 3.0 | -- | -- | |
| High Yield Income | 385,637,117 | 9.0 | 9.0 | 1.3 | 3.0 | 14.2 | 4.8 | 6.5 | 7.3 | 7.4 | Jan-06 |
| Crescent Capital | 126,925,274 | 3.0 | | 0.9 | 2.8 | 12.3 | -- | -- | -- | 6.6 | May-15 |
| 50/50 S&P/LSTA Leveraged Loan/BBgBarc High Yield | | | | 1.0 | 2.4 | 16.1 | 4.3 | 5.9 | 6.1 | 4.6 | May-15 |
| DDJ | 134,565,351 | 3.1 | | 2.2 | 4.8 | 22.4 | -- | -- | -- | 6.3 | May-15 |
| 75% BC HY 25% S&P Leverage Loan | | | | 1.2 | 2.6 | 18.4 | -- | -- | -- | 4.9 | May-15 |
| GoldenTree Multi Spec Opp Credit | 105,786,555 | 2.5 | | 0.9 | -- | -- | -- | -- | -- | 1.0 | Dec-16 |
| 3-Month LIBOR + 7% | | | | 0.7 | 2.0 | 7.9 | 7.5 | 7.4 | 8.2 | 1.3 | Dec-16 |
| S&P/LSTA U.S. Leveraged Loan | | | | 0.6 | 2.0 | 11.5 | 3.6 | 4.8 | 4.6 | 1.7 | Dec-16 |
| Loomis Sayles Bank Loan | 16,670,556 | 0.4 | | 0.2 | 1.4 | 8.7 | 3.5 | 4.5 | -- | 4.9 | Sep-08 |
| S&P/LSTA U.S. Leveraged Loan | | | | 0.6 | 2.0 | 11.5 | 3.6 | 4.8 | 4.6 | 5.6 | Sep-08 |
| Perella Weinberg* | 1,670,138 | 0.0 | | 0.0 | 0.0 | -14.3 | -2.7 | 4.4 | -- | 11.1 | Jul-10 |
| HFRI RV: Fixed Income-Asset Backed | | | | 1.2 | 2.1 | 7.4 | 5.1 | 8.3 | 8.1 | 8.4 | Jul-10 |

- Perella Weinberg final as of 09/30/2016.

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



NEPC, LLC

January 31, 2017

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 (%) | Return (%) | Since |
|--|----------------------|-------------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|---------------|---------------|
| Emerging Market Debt | 162,604,417 | 3.8 | 4.0 | 2.0 | 0.9 | 12.5 | -2.0 | -2.5 | -- | -1.8 | Nov-11 |
| Loomis Sayles Emerging Debt & Currencies | 162,604,417 | 3.8 | | 2.0 | 0.9 | 12.5 | -2.0 | -2.5 | -- | -1.8 | Nov-11 |
| Custom EMD | | | | 1.8 | -2.3 | 12.1 | -1.9 | -2.3 | 4.1 | -1.8 | Nov-11 |
| Global Fixed Income | 21,877,177 | 0.5 | 0.0 | 1.5 | -2.7 | 5.8 | 0.7 | 0.8 | 4.5 | 5.2 | Jul-95 |
| Loomis Sayles | 21,877,177 | 0.5 | | 1.5 | -2.7 | 5.8 | 0.7 | 0.8 | 4.6 | 5.9 | Nov-99 |
| Citi WGBI | | | | 1.0 | -4.3 | 1.2 | -0.9 | -1.1 | 3.2 | 4.1 | Nov-99 |
| Total Alternative Assets | 966,019,104 | 22.5 | 24.0 | | | | | | | | |
| Hedge Fund Composite | 326,848,372 | 7.6 | 7.0 | 0.5 | 2.2 | 4.2 | 0.2 | 3.5 | 2.1 | 3.4 | Nov-04 |
| Mesirow Absolute Return Class J | 60,266,357 | 1.4 | | 0.5 | 1.0 | 1.5 | -0.8 | 2.5 | 1.5 | 3.1 | Nov-04 |
| Federal Street Offshore LTD | 715,929 | 0.0 | | | | | | | | | |
| GAM | 52,903,385 | 1.2 | | 0.6 | 0.9 | 1.5 | 0.8 | 4.1 | -- | 0.5 | Nov-07 |
| Permal | 73,107,951 | 1.7 | | -0.3 | 2.4 | 7.6 | 0.9 | 4.5 | -- | 4.2 | Nov-07 |
| Entrust | 65,049,819 | 1.5 | | 0.8 | 3.4 | 3.1 | -2.0 | -- | -- | 1.7 | Apr-12 |
| Grosvenor | 74,804,931 | 1.7 | | 0.9 | 3.0 | 6.5 | 2.1 | -- | -- | 4.0 | Jul-13 |
| HFRI Fund of Funds Composite Index | | | | 0.7 | 1.9 | 4.0 | 1.6 | 3.2 | 1.3 | 2.7 | Jul-13 |
| Real Estate Composite | 419,309,031 | 9.8 | 10.0 | 0.0 | 4.8 | 12.4 | 13.0 | 12.2 | 4.2 | -- | |
| Private Equity | 219,861,701 | 5.1 | 7.0 | 0.0 | 1.3 | 1.4 | 6.3 | 6.5 | 5.7 | -- | |
| Cash | 20,557,562 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.3 | Oct-04 |

- Perella Weinberg, PE & RE report on a quarterly basis; Perella Weinberg final as of 09/30/2016.
- Real Estate and Private Equity valuations are as of 09/30/2016.
- Entrust market value and return is preliminary.

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



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January 31, 2017

PE/RE Summary

Quarter Ending September 30, 2016

| Target Weight | Weight in Fund | | Committed Capital | Cumulative Distribution | Contributed Capital | QTR | Last Year | Valuation |
|---------------|----------------|--------------------|-------------------|-------------------------|---------------------|------|-----------|---------------|
| 7.0% | 5.2% | Private Equity IRR | \$656,498,636 | \$473,868,447 | \$519,971,989 | 1.3% | 1.4% | \$219,861,701 |
| 10.0% | 10.0% | Real Estate IRR | \$789,674,338 | \$627,459,413 | \$725,623,807 | 4.8% | 12.4% | \$419,309,031 |

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.
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- 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.

