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Firefighters' Retirement System of Louisiana

**Finalized Investment Market Update
(As of June 30, 2017)**

FINAL

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Index Performance Summary as of 06/30/2017

	2009	2010	2011	2012	2013	2014	2015	2016	Q1	April	May	June	Q2	YTD
MSCI EM	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%
MSCI EAFE	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%
MSCI ACWI	34.6%	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	6.9%	1.6%	2.2%	0.5%	4.3%	11.5%
JPM GBI-EM Global Div	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%
S&P 500	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%
Russell 1000	28.4%	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	6.0%	1.1%	1.3%	0.7%	3.1%	9.3%
BC US STRIPS 20+ Yr	-36.0%	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	1.8%	1.8%	3.1%	1.1%	6.1%	8.0%
BC US Long Credit	16.8%	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	1.7%	1.6%	2.1%	1.0%	4.7%	6.4%
JPM EMBI Glob Div	29.8%	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	3.9%	1.6%	0.9%	-0.1%	2.2%	6.2%
BC US Govt/Cred Long	1.9%	10.2%	22.5%	8.8%	-8.8%	19.3%	-3.3%	6.7%	1.6%	1.6%	2.0%	0.8%	4.4%	6.0%
Russell 2500	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%
Russell 2000	27.2%	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	2.5%	1.1%	-2.0%	3.5%	2.5%	5.0%
BC US Corporate HY	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%
BC Global Agg	-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%
BC Municipal	12.9%	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	1.6%	0.7%	1.6%	-0.4%	2.0%	3.6%
CS Hedge Fund	18.6%	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	2.1%	0.4%	0.8%	-	1.3%	3.4%
FTSE NAREIT Eqy REITs	28.0%	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	1.2%	0.1%	-0.8%	2.2%	1.5%	2.7%
BC US Agg Bond	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%
CS Leveraged Loan	44.9%	10.0%	1.8%	9.4%	6.2%	2.1%	-0.4%	9.9%	1.2%	0.4%	0.4%	-0.1%	0.8%	2.0%
BC US Agg Interm	6.5%	6.1%	6.0%	3.6%	-1.0%	4.1%	1.2%	2.0%	0.7%	0.6%	0.5%	-0.3%	0.9%	1.6%
BC TIPS	11.4%	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	1.3%	0.6%	0.0%	-0.9%	-0.4%	0.9%
BC US Govt/Cred 1-3 Yr	3.8%	2.8%	1.6%	1.3%	0.6%	0.8%	0.7%	1.3%	0.4%	0.2%	0.2%	0.0%	0.3%	0.7%
Alerian MLP	76.4%	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	3.9%	-1.3%	-4.5%	-0.6%	-6.4%	-2.7%
BBG Commodity	18.9%	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	-2.3%	-1.5%	-1.4%	-0.3%	-3.2%	-5.6%

Source: Bloomberg, Barclays, Alerian, Nareit, MSCI, JP Morgan, Credit Suisse



Market Environment

Global equities were modestly up in June with the MSCI ACWI Index returning 0.5%. At home, small-cap stocks bested large-cap equities with the S&P 500 Index gaining 0.6% and the Russell 2000 Index returning 3.5%. In Europe, stocks sold off as the European Central Bank hinted it may slow down its quantitative easing program as reflationary pressures build. The MSCI Europe Index fell 1.1% in June, but losses were partially offset as the euro gained 1.6% against the US dollar. The MSCI EAFE was nearly flat as Japanese equities rallied to balance losses in Europe. Emerging market equities rose 1.0% with the MSCI EM Index ending June up 18.4% this year.

In fixed-income, the 10-year Treasury yield rose to 2.31% and the 10-year German bund yield jumped 16 basis points to 0.47%, eroding returns in the US and Europe. The Barclays US Aggregate Bond Index fell 0.2% and the Barclays Global Aggregate Index declined 0.1% on the month. In the US, rising real rates fueled a decline in inflation-protected securities with the Barclays US TIPS Index falling 0.9%. Emerging market bonds were little changed in June, with the JPM Morgan GBI-EM Global Diversified Index eking out a return of 0.5%.

Many investors have likely realized strong gains due to a sustained rally in global equities through the first half of the year. We maintain our overweight recommendation for non-US developed market equities and emerging market stocks. Given the continued spread compression in US high-yield debt, we recommend investors employ dynamic credit strategies and suggest allocating to TIPS in place of core bonds.

Firefighters' Retirement System of Louisiana

Investment Performance Flash Report

June 30, 2017

Investment Performance Summary - Net of Fees

	Market Value (\$)	Policy %	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Plan Composite	1,554,983,494	100.0	100.0	0.5	3.0	7.8	13.9	13.9	3.4	6.3	2.5	5.8	Sep-92
Policy Index				0.7	3.4	8.4	13.0	13.0	5.0	--	--	--	Sep-92
Allocation Index				0.7	3.1	7.7	12.5	12.5	4.4	--	--	--	Sep-92
Total Equity Composite	889,759,410	57.0	57.2	0.7	4.0	10.8	21.2	21.2	4.9	11.6	4.9	7.4	Sep-92
MSCI ACWI				0.5	4.3	11.5	18.8	18.8	4.8	10.5	3.7	7.5	Sep-92
Domestic Equity Composite	405,919,365	27.0	26.1	0.8	1.4	6.1	16.6	16.6	6.1	12.3	6.8	7.7	Sep-92
Russell 3000				0.9	3.0	8.9	18.5	18.5	9.1	14.6	7.3	9.7	Sep-92
Mellon Stock Index Fund	294,106,245		18.9	0.6	3.1	9.3	17.9	17.9	9.6	--	--	11.5	Nov-13
S&P 500				0.6	3.1	9.3	17.9	17.9	9.6	14.6	7.2	11.5	Nov-13
SMID Cap Composite	111,813,120	8.0	7.2	1.2	-2.7	-1.1	13.3	13.3	-2.0	--	--	6.2	Oct-12
Russell 2500				2.5	2.1	6.0	19.8	19.8	6.9	14.0	7.4	13.5	Oct-12
Energy Opportunities Fund	14,977,617		1.0	-3.4	-17.9	-25.8	-16.8	-16.8	-19.9	-4.7	--	-3.2	Jul-07
OIH/XLE Blended Energy Benchmark				-2.3	-13.2	-19.4	-8.3	-8.3	-17.1	-2.5	--	-2.4	Jul-07
SMID Cap Composite ex Energy	96,835,503	--	6.2	2.0	0.2	4.7	20.7	20.7	3.6	--	--	10.4	Oct-12
Russell 2500				2.5	2.1	6.0	19.8	19.8	6.9	14.0	7.4	13.5	Oct-12
Advisory Research SMID	32,744,486		2.1	1.4	-3.9	-0.1	16.6	16.6	-0.4	8.5	--	12.2	Jun-09
Russell 2500 Value				2.7	0.3	2.0	18.4	18.4	6.2	13.7	6.5	15.6	Jun-09
Rothschild U.S. SMID Core	64,091,017		4.1	2.3	2.5	7.4	22.9	22.9	--	--	--	7.5	Jul-15
Russell 2500				2.5	2.1	6.0	19.8	19.8	6.9	14.0	7.4	7.4	Jul-15
International Equity Composite	248,902,971	15.0	16.0	0.8	7.5	16.0	26.7	26.7	2.9	--	--	7.6	Oct-12
MSCI ACWI ex USA				0.3	5.8	14.1	20.5	20.5	0.8	7.2	1.1	6.0	Oct-12
LSV International Equity Value	124,050,521		8.0	1.3	6.3	14.2	28.3	28.3	2.5	9.4	1.0	6.3	Oct-04
MSCI Custom Benchmark				0.3	5.8	14.1	20.5	20.5	0.8	7.2	0.5	5.2	Oct-04
Fisher All Foreign Equity	124,852,450		8.0	0.4	8.6	17.9	25.2	25.2	3.2	8.4	2.9	7.2	Oct-04
MSCI ACWI ex USA				0.3	5.8	14.1	20.5	20.5	0.8	7.2	1.1	6.1	Oct-04

Performance and values are preliminary and subject to change.

Returns are net of manager fees.

Results for periods longer than one year are annualized.

Fiscal Year ends June 30th.

SMID Cap and International Equity Composites start date is 10/1/2012.

MSCI Custom Benchmark is comprised of the MSCI EAFE until 12/31/2009 and MSCI ACWI ex USA beginning 1/1/2010.

Firefighters' Retirement System of Louisiana

Investment Performance Flash Report

June 30, 2017

	Market Value (\$)	Policy %	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Global Equity Composite	155,349,470	10.0	10.0	-0.2	4.7	11.7	23.8	23.8	4.9	--	--	11.8	Oct-12
MSCI ACWI				0.5	4.3	11.5	18.8	18.8	4.8	10.5	3.7	9.6	Oct-12
Thornburg Global Opportunities	62,877,863		4.0	-0.7	6.0	14.3	28.1	28.1	7.6	17.4	7.7	11.6	Oct-04
MSCI ACWI				0.5	4.3	11.5	18.8	18.8	4.8	10.5	3.7	7.0	Oct-04
Boston Partners Global Equity	92,459,315		5.9	0.1	3.8	9.8	--	--	--	--	--	16.5	Nov-16
MSCI ACWI				0.5	4.3	11.5	18.8	18.8	4.8	10.5	3.7	14.8	Nov-16
Emerging Markets Equity	79,587,604	5.0	5.1	1.2	6.0	19.6	25.9	25.9	0.5	--	--	2.5	Oct-13
MSCI Emerging Markets				1.0	6.3	18.4	23.7	23.7	1.1	4.0	1.9	3.0	Oct-13
Acadian Emerging Markets Equity	55,196,941		3.5	1.2	5.6	20.1	27.9	27.9	1.4	--	--	3.0	Dec-13
MSCI Emerging Markets				1.0	6.3	18.4	23.7	23.7	1.1	4.0	1.9	2.2	Dec-13
OFI Emerging Markets	24,390,663		1.6	1.2	7.0	18.8	22.8	22.8	-0.2	--	--	1.5	Jan-14
MSCI Emerging Markets				1.0	6.3	18.4	23.7	23.7	1.1	4.0	1.9	2.7	Jan-14
Total Fixed Income Composite	338,837,504	23.0	21.8	0.0	1.7	3.9	2.1	2.1	0.8	--	--	0.9	Oct-12
Total Fixed Income Custom Benchmark				0.0	1.8	3.5	0.7	0.7	0.7	1.1	3.9	0.8	Oct-12
Core Fixed Income	277,137,071	19.0	17.8	-0.1	1.4	2.6	1.2	1.2	2.1	2.3	--	2.7	Dec-10
BBgBarc US Aggregate TR				-0.1	1.4	2.3	-0.3	-0.3	2.5	2.2	4.5	3.0	Dec-10
Orleans Core Fixed Income	67,186,906		4.3	-0.2	1.5	2.3	0.5	0.5	2.3	2.5	4.8	5.8	Aug-92
BBgBarc US Aggregate TR				-0.1	1.4	2.3	-0.3	-0.3	2.5	2.2	4.5	5.5	Aug-92
Blackrock US Debt	148,887,976		9.6	-0.1	1.5	2.3	-0.3	-0.3	--	--	--	2.4	Nov-14
BBgBarc US Aggregate TR				-0.1	1.4	2.3	-0.3	-0.3	2.5	2.2	4.5	2.4	Nov-14
Standish	61,062,190		3.9	-0.1	1.2	3.6	6.7	6.7	--	--	--	2.5	Oct-15
3-Month LIBOR + 4%				0.4	1.3	2.6	5.1	5.1	4.6	4.5	5.0	4.9	Oct-15
Emerging Markets Debt	61,700,433	4.0	4.0	0.2	2.9	11.0	6.4	6.4	-4.0	--	--	-3.2	Nov-13
JP Morgan GBI EM Global Diversified TR USD				0.5	3.6	10.4	6.4	6.4	-2.8	-0.7	3.9	-1.9	Nov-13

Performance and values are preliminary and subject to change.

Results for periods longer than one year are annualized.

Fiscal YTD ends June 30th.

Global Equity Composite and Total Fixed Income Composite start date is 10/1/2012.

Total Fixed Income Custom Benchmark is comprised of the Barclays Aggregate from 10/1/2012 to 10/31/2013; 75% Barclays Aggregate/25% JPM GBI EM Diversified from 11/1/2013 to 2/29/2016; 85% Barclays Aggregate/15% JPM GBI EM Diversified going forward.



NEPC, LLC

June 30, 2017

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June 30, 2017

	Market Value (\$)	Policy %	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Stone Harbor	61,700,433		4.0	0.2	2.9	11.0	6.4	6.4	-4.0	--	--	-3.2	Nov-13
<i>JP Morgan GBI EM Global Diversified TR USD</i>				0.5	3.6	10.4	6.4	6.4	-2.8	-0.7	3.9	-1.9	Nov-13
GAA Composite	148,480,317	10.0	9.5	-0.5	1.8	5.4	7.8	7.8	1.8	--	--	2.9	Apr-14
<i>60% MSCI World (Net) / 40% CITI WGBI</i>				0.2	3.6	8.2	8.8	8.8	2.9	6.7	4.1	3.8	Apr-14
Blackrock Global Allocation	78,233,417		5.0	0.3	3.1	7.7	12.3	12.3	3.3	--	--	4.1	Apr-14
<i>60% MSCI World (Net) / 40% CITI WGBI</i>				0.2	3.6	8.2	8.8	8.8	2.9	6.7	4.1	3.8	Apr-14
AQR Global Risk Premium – EL	41,615,218		2.7	-1.7	-0.2	2.2	0.7	0.7	-0.3	--	--	1.1	May-14
<i>60% MSCI World (Net) / 40% CITI WGBI</i>				0.2	3.6	8.2	8.8	8.8	2.9	6.7	4.1	3.6	May-14
Putnam Risk Parity	28,631,682		1.8	-0.8	1.1	4.1	6.9	6.9	1.1	--	--	1.1	Jul-14
<i>60% MSCI World (Net) / 40% CITI WGBI</i>				0.2	3.6	8.2	8.8	8.8	2.9	6.7	4.1	2.9	Jul-14
Total Alternative Composite	166,928,841	10.0	10.7	1.5	1.7	3.7	9.3	9.3	2.8	-0.5	0.2	1.8	Jun-05
Private Equity Composite	46,780,470	4.0	3.0	-0.4	0.3	2.6	8.0	8.0	-0.2	-3.7	0.9	-3.8	Jul-05
<i>Cambridge Associates US All PE</i>				3.6	3.6	8.0	17.3	17.3	9.7	13.5	9.3	12.7	Jul-05
Murphree Venture (\$2,000,000)	769,721		0.0	-52.4	-52.4	-52.5	-50.9	-50.9	-22.6	-9.8	-6.9	-6.2	Sep-05
Louisiana Fund I (\$1,000,000)	1,827,193		0.1	-0.4	-0.4	-0.6	-7.6	-7.6	-4.4	-3.1	0.4	-6.7	Jul-05
DTC Private Equity II-Q, L.P. (\$7,500,000)	2,219,623		0.1	5.9	5.9	12.8	20.0	20.0	8.0	10.5	7.4	6.4	Feb-06
Greenspring Associates (\$9,230,000)	4,622,603		0.3	-0.4	-0.4	0.4	7.0	7.0	9.9	15.7	11.0	6.5	Feb-06
DCM Private Equity II (\$7,500,000)	2,523,993		0.2	-2.5	-2.5	-2.2	-0.2	-0.2	-7.2	-1.2	-0.8	-1.6	Feb-06
FECF II (\$20,000,000)	400,014		0.0	-3.6	-3.6	5.0	-41.5	-41.5	-25.0	-3.8	--	1.4	Mar-08
FECF III (\$20,000,000)	0		0.0	0.0	13.3	15.4	17.3	17.3	8.9	25.0	--	19.1	Jul-09
GA Crossover Fund (\$25,000,000)	4,650,211		0.3	-0.2	-0.2	-7.4	6.5	6.5	16.2	24.8	--	15.8	Jan-08
CCMP Capital Investors III (\$15,000,000)	12,478,526		0.8	4.3	4.3	7.8	11.9	11.9	--	--	--	14.2	Oct-14

Results for periods longer than one year are annualized. Results are preliminary and subject to change.

Fiscal YTD ends June 30th.

Harbourvest IV was funded 10/01/2016.

Private Equity valuations are as of 06/30/2017 adjusted for cash flows.

Firefighters' Retirement System of Louisiana

Investment Performance Flash Report

June 30, 2017

	Market Value (\$)	Policy %	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Landmark Equity Partners XV (\$25,000,000)	9,368,945		0.6	4.3	4.3	8.5	14.9	14.9	--	--	--	16.9	Dec-14
Harbourvest IV (\$20,000,000)	7,919,641		0.5	-3.2	-3.2	10.0	--	--	--	--	--	8.5	Nov-16
Real Estate Composite	120,148,371	6.0	7.7	2.3	2.3	4.1	9.8	9.8	6.1	7.3	--	5.5	Dec-09
<i>NCREIF Property Index</i>				1.8	1.8	3.3	7.0	7.0	10.2	10.5	6.4	10.9	Dec-09
Americus Fund II (\$13,168,000)	82,049		0.0	-69.0	-69.0	-70.8	-68.9	-68.9	-46.4	-29.9	-11.0	-9.3	Dec-05
Sentinel Real Estate Fund (\$30,000,000)	36,304,026		2.3	1.9	1.9	4.5	8.7	8.7	10.4	14.1	6.1	6.5	Feb-06
JP Morgan India (\$8,990,000)	2,962,169		0.2	-3.6	-3.6	0.9	-1.4	-1.4	-2.4	-1.6	-5.5	-12.3	Apr-07
Timbervest Crossover Fund (\$16,000,000)	9,370,496		0.6	0.0	0.0	0.1	-4.1	-4.1	-3.3	-2.1	--	-0.7	Apr-08
AEW Partners VI LP (\$20,000,000)	10,570,056		0.7	2.2	2.2	4.5	20.6	20.6	17.9	18.4	--	14.6	Mar-10
AEW Core Property (\$12,000,000)	14,538,320		0.9	1.5	1.5	4.5	6.6	6.6	--	--	--	9.3	May-15
FRS-GA (Georgia)	3,490,920		0.2	-26.7	-26.7	-26.7	-26.7	-26.7	-9.5	-8.5	--	-10.6	Jun-08
FRS-LB I (NLTP AZ)	7,400,101		0.5	65.8	65.8	65.8	65.8	65.8	19.9	11.5	-13.6	-13.5	Jun-07
FRS-LB III (ST George UT)	9,286,064		0.6	0.1	0.1	0.1	36.0	36.0	5.8	3.4	--	3.3	Jun-08
ASB Real Estate Fund	12,730,740		0.8	0.7	0.7	2.0	4.3	4.3	--	--	--	4.5	Jan-16
Heitman America Real Estate Trust	13,413,430		0.9	1.1	1.1	2.2	7.5	7.5	--	--	--	8.8	Nov-15
Total Cash (\$9 MM)	10,977,422	--	0.7	0.1	0.2	0.4	0.6	0.6	0.3	0.2	0.7	2.9	Jun-92
<i>91 Day T-Bills</i>				0.1	0.2	0.4	0.5	0.5	0.2	0.2	0.4	2.5	Jun-92

Results for periods longer than one year are annualized.

Fiscal YTD ends June 30th.

Real Estate valuations are as of 06/30/2017 adjusted for cash flows.

FRS - LB I is part of the Real Estate Composite as of 12/1/2012.



NEPC, LLC

June 30, 2017

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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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.

