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Firefighters' Retirement System of Louisiana

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**Investment Market Update  
(As of December 31, 2016)**

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## Index Performance Summary as of 12/30/2016

	2009	2010	2011	2012	2013	2014	2015	Q1	Q2	Q3	Oct	Nov	Dec	YTD
<b>Russell 2000</b>	27.2%	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	-1.5%	3.8%	9.0%	-4.8%	11.2%	2.8%	21.3%
<b>Alerian MLP</b>	76.4%	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	-4.2%	19.7%	1.1%	-4.5%	2.3%	4.4%	18.3%
<b>Russell 2500</b>	34.4%	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	0.4%	3.6%	6.6%	-4.1%	8.5%	1.9%	17.6%
<b>Barclays US Corporate HY</b>	58.2%	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	3.4%	5.5%	5.6%	0.4%	-0.5%	1.8%	17.1%
<b>Russell 1000</b>	28.4%	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	1.2%	2.5%	4.0%	-2.0%	3.9%	1.9%	12.1%
<b>S&amp;P 500</b>	26.5%	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	1.3%	2.5%	3.9%	-1.8%	3.7%	2.0%	12.0%
<b>Bloomberg Commodity</b>	18.9%	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	0.4%	12.8%	-3.9%	-0.5%	1.3%	1.8%	11.8%
<b>MSCI EM</b>	78.5%	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	5.7%	0.7%	9.0%	0.2%	-4.6%	0.2%	11.2%
<b>Barclays US Long Credit</b>	16.8%	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	6.8%	6.7%	2.3%	-2.1%	-4.9%	1.5%	10.2%
<b>JPM EMBI Global Diversified</b>	29.8%	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	5.0%	5.0%	4.0%	-1.2%	-4.1%	1.3%	10.2%
<b>JPM GBI-EM Global Div</b>	22.0%	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	11.0%	2.7%	2.7%	-0.8%	-7.0%	1.9%	9.9%
<b>Credit Suisse Lev Loan</b>	44.9%	10.0%	1.8%	9.4%	6.2%	2.1%	-0.4%	1.3%	2.9%	3.1%	0.8%	0.3%	1.1%	9.9%
<b>FTSE NAREIT Equity REITs</b>	28.0%	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	6.0%	7.0%	-1.4%	-5.7%	-1.7%	4.7%	8.5%
<b>MSCI ACWI</b>	34.6%	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	0.2%	1.0%	5.3%	-1.7%	0.8%	2.2%	7.9%
<b>BC Long US Govt/Credit</b>	1.9%	10.2%	22.5%	8.8%	-8.8%	19.3%	-3.3%	7.3%	6.5%	1.2%	-2.8%	-5.8%	0.7%	6.7%
<b>Barclays US Agg Bond</b>	5.9%	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	3.0%	2.2%	0.5%	-0.8%	-2.4%	0.1%	2.6%
<b>Barclays US Agg Interm</b>	6.5%	6.1%	6.0%	3.6%	-1.0%	4.1%	1.2%	2.3%	1.4%	0.3%	-0.4%	-1.7%	0.0%	2.0%
<b>Citi WGBI</b>	2.6%	5.2%	6.4%	1.6%	-4.0%	-0.5%	-3.6%	7.1%	3.4%	0.3%	-3.4%	-4.6%	-0.7%	1.6%
<b>Barclays US STRIPS 20+</b>	-36.0%	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	11.4%	9.6%	-0.2%	-6.2%	-10.5%	-0.9%	1.4%
<b>BC US Govt/Credit 1-3 Yr</b>	3.8%	2.8%	1.6%	1.3%	0.6%	0.8%	0.7%	1.0%	0.7%	0.0%	0.0%	-0.4%	0.1%	1.3%
<b>MSCI EAFE</b>	31.8%	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	-3.0%	-1.5%	6.4%	-2.0%	-2.0%	3.4%	1.0%
<b>Credit Suisse Hedge Fund</b>	18.6%	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	-2.2%	0.6%	1.7%	-0.2%	-0.2%	-	0.3%
<b>Barclays Municipal</b>	12.9%	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	1.7%	2.6%	-0.3%	-1.0%	-3.7%	1.2%	0.2%

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

## Market Commentary – December 2016

### Market Environment

US equities continued to march upward in December, shrugging off an appreciating dollar and a rate hike from the Federal Reserve. The S&P 500 gained 2.0% on the month, racking up returns of 12.0% in 2016; the Russell 2000 gained 2.8% in December and 19.9% for the year. International developed equities were also in the black last month with the MSCI EAFE Index posting returns of 3.4%, as strong manufacturing data fueled gains in Europe and expectations of higher inflations bolstered stocks in Japan. In emerging markets, the MSCI EM Index eked out a modest 0.2% in December, ending the year up 10.4%.

Despite the Federal Open Market Committee's decision to raise the target range for the Fed Funds rate to 0.50%-0.75%, domestic bond prices stabilized on the back of November's re-pricing. The 10-year Treasury yield closed the month up eight basis points at 2.45% but experienced a run-up to 2.60% mid-month as yields rose post-election. Spread compression in corporate issues was a tailwind for performance for the Barclays US Credit and Barclays US Corporate High Yield Indexes, which returned 0.6% and 1.9% on the month, respectively. Emerging market debt indexes were also in the black in December as the JP Morgan EMBI Index gained 1.4%. The local currency-denominated JP Morgan GBI-EM Index gained 1.9% as the Brazilian real, Russian ruble, and South African rand appreciated versus the US dollar.

### Market Outlook

The last two months of 2016 have not only provided surprising results for many investors, but also have given context to our recommendations as we start the new year. We believe the post-election rally in domestic stocks provides an opportune rebalancing point to express a modest overweight to international developed and emerging market equities. In both areas, we see opportunities with small-cap equities and also believe a dedicated global equity allocation is an attractive way to garner international exposure. At home, we continue to observe above average valuations with investors pricing in expectations of robust earnings growth in 2017. We think macro hedge funds offer potentially attractive returns for many investors amid sustained volatility in currencies, above-average equity valuations, and prolonged divergence in central bank policies. As we enter into 2017, we urge investors to remain committed to their diversified policy targets while also embracing a dynamic approach to capture opportunities as they arise..

# Firefighters' Retirement System of Louisiana

## Investment Performance Flash Report

December 31, 2016

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
<b>Total Plan Composite</b>	<b>1,420,662,695</b>	<b>100.0</b>	<b>100.0</b>	<b>1.6</b>	<b>1.0</b>	<b>7.2</b>	<b>5.0</b>	<b>7.2</b>	<b>1.7</b>	<b>4.6</b>	<b>2.3</b>	<b>5.6</b>	<b>Sep-92</b>
<i>Policy Index</i>				1.4	-0.1	8.1	3.9	8.1	4.1	--	--	--	Sep-92
<i>Allocation Index</i>				1.4	0.2	8.1	4.1	8.1	3.8	--	--	--	Sep-92
<b>Total Equity Composite</b>	<b>809,307,023</b>	<b>58.0</b>	<b>57.0</b>	<b>2.3</b>	<b>3.0</b>	<b>10.0</b>	<b>9.4</b>	<b>10.0</b>	<b>3.6</b>	<b>10.1</b>	<b>4.8</b>	<b>7.1</b>	<b>Sep-92</b>
<i>MSCI ACWI</i>				2.2	1.2	7.9	6.6	7.9	3.1	9.4	3.6	7.2	Sep-92
<b>Domestic Equity Composite</b>	<b>398,024,705</b>	<b>27.0</b>	<b>28.0</b>	<b>2.0</b>	<b>5.1</b>	<b>13.9</b>	<b>9.8</b>	<b>13.9</b>	<b>6.4</b>	<b>11.9</b>	<b>6.9</b>	<b>7.6</b>	<b>Sep-92</b>
<i>Russell 3000</i>				2.0	4.2	12.7	8.8	12.7	8.4	14.7	7.1	9.5	Sep-92
<i>Mellan Stock Index Fund</i>				2.0	3.8	11.9	7.8	11.9	8.8	--	--	10.2	Nov-13
<i>S&amp;P 500</i>				2.0	3.8	12.0	7.8	12.0	8.9	14.7	6.9	10.3	Nov-13
<b>SMID Cap Composite</b>	<b>123,026,506</b>	<b>8.0</b>	<b>8.7</b>	<b>2.1</b>	<b>8.0</b>	<b>18.7</b>	<b>14.6</b>	<b>18.7</b>	<b>0.6</b>	<b>--</b>	<b>--</b>	<b>7.2</b>	<b>Oct-12</b>
<i>Russell 2500</i>				1.9	6.1	17.6	13.1	17.6	6.9	14.5	7.7	13.7	Oct-12
<i>Energy Opportunities Fund</i>				1.8	0.7	7.8	26.5	12.2	26.5	-8.3	-1.1	--	Jul-07
<i>OIH/XLE Blended Energy Benchmark</i>				2.6	11.4	28.2	13.7	28.2	-6.8	0.8	--	-0.2	Jul-07
<b>SMID Cap Composite ex Energy</b>	<b>97,392,350</b>	<b>--</b>	<b>6.9</b>	<b>2.5</b>	<b>8.1</b>	<b>16.8</b>	<b>15.3</b>	<b>16.8</b>	<b>3.7</b>	<b>--</b>	<b>--</b>	<b>10.5</b>	<b>Oct-12</b>
<i>Russell 2500</i>				1.9	6.1	17.6	13.1	17.6	6.9	14.5	7.7	13.7	Oct-12
<i>Advisory Research SMID</i>				2.7	2.1	9.1	17.4	16.7	17.4	1.2	9.9	--	Jun-09
<i>Russell 2500 Value</i>				2.9	9.3	25.2	16.1	25.2	8.2	15.0	6.9	16.4	Jun-09
<i>Rothschild U.S. SMID Core</i>				4.2	2.7	7.5	16.5	14.4	16.5	--	--	5.0	Jul-15
<i>Russell 2500</i>				1.9	6.1	17.6	13.1	17.6	6.9	14.5	7.7	5.9	Jul-15
<b>International Equity Composite</b>	<b>214,502,421</b>	<b>16.0</b>	<b>15.1</b>	<b>3.5</b>	<b>0.6</b>	<b>4.9</b>	<b>9.2</b>	<b>4.9</b>	<b>-0.6</b>	<b>--</b>	<b>--</b>	<b>4.8</b>	<b>Oct-12</b>
<i>MSCI ACWI ex USA</i>				2.6	-1.3	4.5	5.6	4.5	-1.8	5.0	1.0	3.5	Oct-12
<i>LSV International Equity Value</i>				7.6	4.0	3.1	9.0	12.3	9.0	0.1	6.8	0.9	Oct-04
<i>MSCI Custom Benchmark</i>				2.6	-1.3	4.5	5.6	4.5	-1.8	5.0	0.2	4.3	Oct-04
<i>Fisher All Foreign Equity</i>				7.5	3.1	-1.8	1.0	6.2	1.0	-1.3	5.6	2.6	Oct-04
<i>MSCI ACWI ex USA</i>				2.6	-1.3	4.5	5.6	4.5	-1.8	5.0	1.0	5.3	Oct-04

Returns are net of manager fees.

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

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

December 31, 2016

	Market Value (\$)	Policy %	% of Portfolio (%)	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Global Equity Composite</b>	<b>139,064,277</b>	<b>10.0</b>	<b>9.8</b>	<b>1.8</b>	<b>4.7</b>	<b>6.0</b>	<b>10.8</b>	<b>6.0</b>	<b>4.1</b>	<b>--</b>	<b>--</b>	<b>10.4</b>	<b>Oct-12</b>
MSCI ACWI				2.2	1.2	7.9	6.6	7.9	3.1	9.4	3.6	8.0	Oct-12
Thomson Global Opportunities	69,092,151	4.9	2.0	5.4	3.3	12.1	3.3	8.0	15.2	7.9	10.9	10.9	Oct-04
Boston Partners Global Equity	69,964,114	4.9	1.7	--	--	--	--	--	--	--	--	6.1	Nov-16
MSCI ACWI				2.2	1.2	7.9	6.6	7.9	3.1	9.4	3.6	2.9	Nov-16
<b>Emerging Markets Equity</b>	<b>57,715,620</b>	<b>5.0</b>	<b>4.1</b>	<b>0.5</b>	<b>-3.7</b>	<b>11.0</b>	<b>5.3</b>	<b>11.0</b>	<b>-3.0</b>	<b>--</b>	<b>--</b>	<b>-2.6</b>	<b>Oct-13</b>
MSCI Emerging Markets				0.2	-4.2	11.2	4.5	11.2	-2.6	1.3	1.8	-1.8	Oct-13
Acadian Emerging Markets Equity	37,190,986	2.6	0.9	-2.9	13.0	6.4	13.0	-2.0	--	--	--	-2.5	Dec-13
MSCI Emerging Markets				0.2	-4.2	11.2	4.5	11.2	-2.6	1.3	1.8	-2.9	Dec-13
OFI Emerging Markets	20,524,634	1.4	-0.2	-5.1	7.4	3.3	7.4	-3.9	--	--	--	-3.9	Jan-14
MSCI Emerging Markets				0.2	-4.2	11.2	4.5	11.2	-2.6	1.3	1.8	-2.6	Jan-14
<b>Total Fixed Income Composite</b>	<b>301,276,513</b>	<b>24.0</b>	<b>21.2</b>	<b>0.7</b>	<b>-2.9</b>	<b>3.8</b>	<b>-1.8</b>	<b>3.8</b>	<b>0.4</b>	<b>--</b>	<b>--</b>	<b>0.0</b>	<b>Oct-12</b>
Total Fixed Income Custom Benchmark				0.4	-3.4	3.8	-2.7	3.8	1.1	0.9	3.7	0.1	Oct-12
<b>Core Fixed Income</b>	<b>252,105,895</b>	<b>20.0</b>	<b>17.7</b>	<b>0.4</b>	<b>-2.2</b>	<b>2.9</b>	<b>-1.3</b>	<b>2.9</b>	<b>1.8</b>	<b>2.6</b>	<b>--</b>	<b>2.5</b>	<b>Dec-10</b>
BBoBBarc US Aggregate TR				0.1	-3.0	2.6	-2.5	2.6	3.0	2.2	4.3	2.9	Dec-10
Orleans Core Fixed Income	65,664,943	4.6	0.4	-2.6	4.2	-1.8	4.2	2.9	2.5	4.7	5.8	5.8	Aug-92
BBoBBarc US Aggregate TR				0.1	-3.0	2.6	-2.5	2.6	3.0	2.2	4.3	5.5	Aug-92
BlackRock US Debt	135,848,860	9.6	0.1	-3.0	2.6	-2.6	2.6	--	--	--	--	1.9	Nov-14
BBoBBarc US Aggregate TR				0.1	-3.0	2.6	-2.5	2.6	3.0	2.2	4.3	1.8	Nov-14
Standish	50,592,092	3.6	1.3	1.0	1.9	3.0	1.9	--	--	--	--	0.6	Oct-15
3-Month LIBOR + 4%				0.4	1.2	4.8	2.4	4.8	4.5	4.4	5.2	4.7	Oct-15
<b>Emerging Markets Debt</b>	<b>49,170,618</b>	<b>4.0</b>	<b>3.5</b>	<b>1.9</b>	<b>-6.4</b>	<b>9.0</b>	<b>-4.1</b>	<b>9.0</b>	<b>-5.5</b>	<b>--</b>	<b>--</b>	<b>-6.8</b>	<b>Nov-13</b>
JP Morgan GBI EM Global Diversified TR USD				1.9	-6.1	9.0	-4.1	9.0	-5.5	--	--	-5.2	Nov-13
Stone Harbor	49,170,618	3.5	1.9	-6.4	9.0	-3.6	9.9	-4.1	-1.3	3.8	-5.2	-6.8	Nov-13
JP Morgan GBI EM Global Diversified TR USD				1.9	-6.1	9.9	-3.6	9.9	-4.1	-1.3	3.8	-5.2	Nov-13

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

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.

Global Equity Composite market value includes \$8,012.23 in a terminated manager account. Mellon Global Equity was liquidated 10/28/2016. Liquidation settled on 11/01/2016. Boston Partners Global Equity was funded 11/02/2016.

# Firefighters' Retirement System of Louisiana

## Investment Performance Flash Report

December 31, 2016

	Market Value (\$)	Policy %	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>GAA Composite</b>	<b>140,633,773</b>	<b>10.0</b>	<b>9.9</b>	<b>1.5</b>	<b>-0.6</b>	<b>7.1</b>	<b>2.2</b>	<b>7.1</b>	--	--	--	<b>1.5</b>	<b>Apr-14</b>
60% MSCI World (Net) / 40% CITI WGBI				1.2	-2.4	5.3	0.6	5.3	2.1	5.9	3.8	1.6	Apr-14
Blackrock Global Allocation	72,428,234	5.1	1.3	0.1	5.0	4.3	5.0		--	--	--	2.1	Apr-14
60% MSCI World (Net) / 40% CITI WGBI				1.2	-2.4	5.3	0.6	5.3	2.1	5.9	3.8	1.6	Apr-14
AQR Global Risk Premium – EL	40,708,568	2.9	1.5	-2.3	9.7	-1.5	9.7		--	--	--	0.5	May-14
60% MSCI World (Net) / 40% CITI WGBI				1.2	-2.4	5.3	0.6	5.3	2.1	5.9	3.8	1.3	May-14
Putnam Risk Parity	27,496,970	1.9	2.1	0.0	9.2	2.6	9.2		--	--	--	-0.3	Jul-14
60% MSCI World (Net) / 40% CITI WGBI				1.2	-2.4	5.3	0.6	5.3	2.1	5.9	3.8	0.3	Jul-14
<b>Total Alternative Composite</b>	<b>160,360,860</b>	<b>8.0</b>	<b>11.3</b>	<b>0.0</b>	<b>0.0</b>	<b>1.8</b>	<b>0.0</b>	<b>1.8</b>	<b>-4.1</b>	<b>-1.9</b>	<b>0.0</b>	<b>1.1</b>	<b>Jun-05</b>
<b>Private Equity Composite</b>	<b>47,676,713</b>	<b>4.0</b>	<b>3.4</b>	<b>0.0</b>	<b>0.0</b>	<b>2.8</b>	<b>0.0</b>	<b>2.8</b>	<b>-11.8</b>	<b>-4.5</b>	<b>-0.1</b>	<b>-4.8</b>	<b>Jul-05</b>
Cambridge Associates US All PE				0.0	0.0	8.1	3.7	8.1	8.2	11.9	9.5	12.1	Jul-05
Murphree Venture (\$2,000,000)	717,528	0.1	0.0	0.0	-54.7	0.0	-54.7	-24.3	-12.7	-7.5		-7.0	Sep-05
Louisiana Fund I (\$1,000,000)	1,976,804	0.1	0.0	0.0	-5.3	0.0	-5.3	-2.0	1.4	0.3		-6.3	Jul-05
DTC Private Equity II-Q, L.P. (\$7,500,000)	2,404,493	0.2	0.0	0.0	-3.3	0.0	-3.3	2.5	8.3	5.5		4.9	Feb-06
Greenspring Associates (\$9,230,000)	4,454,561	0.3	0.0	0.0	-10.0	0.0	-10.0	10.9	16.3	10.4		6.2	Feb-06
DCM Private Equity II (\$7,500,000)	2,643,830	0.2	0.0	0.0	-7.5	0.0	-7.5	-5.9	-0.2	-0.9		-1.6	Feb-06
FECP II (\$20,000,000)	865,315	0.1	0.0	0.0	-21.9	0.0	-21.9	3.6	9.3			8.0	Mar-08
FECP III (\$20,000,000)	2,998,472	0.2	0.0	0.0	7.1	0.0	7.1	11.2	24.7			17.9	Jul-09
GA Crossover Fund (\$25,000,000)	10,967,932	0.8	0.0	0.0	18.1	0.0	18.1	17.8	25.7			15.9	Jan-08
CCMP Capital Investors III (\$15,000,000)	9,642,433	0.7	0.0	0.0	17.1	0.0	17.1	--	--			11.9	Oct-14
Landmark Equity Partners XV (\$25,000,000)	7,155,345	0.5	0.0	0.0	2.6	0.0	2.6	--	--			13.5	Dec-14
Harbourvest IV (\$20,000,000)	3,850,000	0.3	0.0	0.0	--	--	--	--	--			0.0	Nov-16

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 06/30/2016 adjusted for cash flows.



NEPC, LLC

December 31, 2016

# Firefighters' Retirement System of Louisiana

## Investment Performance Flash Report

December 31, 2016

	Market Value (\$)	Policy %	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Real Estate Composite</b>	<b>112,684,146</b>	<b>4.0</b>	<b>7.9</b>	<b>0.0</b>	<b>0.0</b>	<b>1.5</b>	<b>0.0</b>	<b>1.5</b>	<b>4.0</b>	<b>4.8</b>	--	<b>4.5</b>	<b>Dec-09</b>
NCREIF Property Index				0.0	0.0	6.1	1.8	6.1	10.4	10.5	6.7	10.9	Dec-09
Americus Fund II (\$13,168,000)	542,781	0.0	0.0	0.0	0.0	-25.1	0.0	-25.1	-21.7	-9.9	-0.4	0.4	Dec-05
Sentinel Real Estate Fund (\$30,000,000)	34,904,270	2.5	0.0	0.0	3.8	0.0	3.8	9.4	14.9	5.8	6.0	Feb-06	
JP Morgan India (\$8,990,000)	4,471,910	0.3	0.0	0.0	-3.0	0.0	-3.0	0.2	-1.4	--	-12.7	Apr-07	
Timbervest Crossover Fund (\$16,000,000)	10,190,135	0.7	0.0	0.0	0.4	0.0	0.4	-2.0	-0.5	--	-0.3	Apr-08	
AEW Partners VI LP (\$20,000,000)	10,445,805	0.7	0.0	0.0	1.8	0.0	1.8	13.9	14.9	--	12.5	Mar-10	
AEW Core Property (\$12,000,000)	13,634,845	1.0	0.0	0.0	4.1	0.0	4.1	--	--	--	8.0	May-15	
FRS-GA (Georgia)	4,762,850	0.3	0.0	0.0	0.2	0.0	0.2	-4.4	-2.7	--	-7.9	Jun-08	
FRS-LB I (NLTP AZ)	4,463,550	0.3	0.0	0.0	-0.4	0.0	-0.4	1.3	-26.8	--	-18.5	Jun-07	
FRS-LB III (ST George UT)	4,594,816	0.3	0.0	0.0	-12.9	0.0	-12.9	-4.5	-3.7	--	-0.1	Jun-08	
ASB Real Estate Fund	12,199,135	0.9	0.0	0.0	2.4	0.0	2.4	--	--	--	2.4	Jan-16	
Heitman America Real Estate Trust	12,474,049	0.9	0.0	0.0	3.4	0.0	3.4	--	--	--	6.1	Nov-15	
<b>Total Cash (\$9 MM)</b>	<b>9,084,527</b>	<b>--</b>	<b>0.6</b>	<b>0.0</b>	<b>0.1</b>	<b>0.4</b>	<b>0.2</b>	<b>0.4</b>	<b>0.1</b>	<b>0.1</b>	<b>0.9</b>	<b>2.9</b>	<b>Jun-92</b>
91 Day T-Bills				0.0	0.1	0.3	0.2	0.3	0.1	0.1	0.7	2.5	Jun-92

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

Fiscal YTD ends June 30th.

Real Estate valuations are as of 06/30/2016 adjusted for cash flows.

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



NEPC, LLC

December 31, 2016

# Firefighters' Retirement System of Louisiana

## Current Monthly Breakdown of Change in Value

December 31, 2016

### Total Cash Flow Summary

Month Ending December 31, 2016

	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
Acadian Emerging Markets Equity	\$36,859,820	\$0	\$0	\$0	\$0	\$331,166	\$37,190,986
Advisory Research SMID	\$36,923,510	\$0	\$0	\$0	\$0	\$786,996	\$37,710,506
AEW Core Property (\$12,000,000)	\$13,634,845	\$0	\$0	\$0	\$0	\$0	\$13,634,845
AEW Partners VI LP (\$20,000,000)	\$12,151,343	-\$1,705,538	\$0	-\$1,705,538	\$0	\$0	\$10,445,805
Americus Fund II (\$13,168,000)	\$542,781	\$0	\$0	\$0	\$0	\$0	\$542,781
AQR Global Risk Premium – EL	\$40,090,049	\$0	\$0	\$0	-\$32,228	\$618,520	\$40,708,568
ASB Real Estate Fund	\$12,199,135	\$0	\$0	\$0	\$0	\$0	\$12,199,135
Blackrock Global Allocation	\$71,516,671	\$0	\$0	\$0	\$0	\$911,563	\$72,428,234
Blackrock US Debt	\$135,679,699	\$0	\$0	\$0	\$0	\$169,161	\$135,848,860
Boston Partners Global Equity	\$68,782,036	\$0	\$0	\$0	-\$37,897	\$1,182,078	\$69,964,114
Cash/Clearing Account	\$7,141,406	-\$4,887,267	\$2,437,135	-\$2,450,132	\$0	\$2,460	\$4,693,733
CCMP Capital Investors III (\$15,000,000)	\$9,642,433	\$0	\$0	\$0	\$0	\$0	\$9,642,433
DCM Private Equity II (\$7,500,000)	\$2,796,327	-\$152,497	\$0	-\$152,497	\$0	\$0	\$2,643,830
DTC Private Equity II-Q, L.P. (\$7,500,000)	\$2,404,493	\$0	\$0	\$0	\$0	\$0	\$2,404,493
Energy Opportunities Fund	\$25,461,837	\$0	\$0	\$0	\$0	\$172,318	\$25,634,156
FECP II (\$20,000,000)	\$865,315	\$0	\$0	\$0	\$0	\$0	\$865,315
FECP III (\$20,000,000)	\$2,998,472	\$0	\$0	\$0	\$0	\$0	\$2,998,472
Fisher All Foreign Equity	\$102,697,216	\$0	\$0	\$0	\$0	\$3,200,317	\$105,897,533
FRS-GA (Georgia)	\$4,762,850	\$0	\$0	\$0	\$0	\$0	\$4,762,850
FRS-LB I (NLTP AZ)	\$4,463,550	\$0	\$0	\$0	\$0	\$0	\$4,463,550
FRS-LB III (ST George UT)	\$4,594,816	\$0	\$0	\$0	\$0	\$0	\$4,594,816
GA Crossover Fund (\$25,000,000)	\$11,167,932	-\$200,000	\$0	-\$200,000	\$0	\$0	\$10,967,932
Greenspring Associates (\$9,230,000)	\$4,643,275	-\$188,714	\$0	-\$188,714	\$0	\$0	\$4,454,561
Harbourvest IV (\$20,000,000)	\$3,100,000	\$0	\$750,000	\$750,000	\$0	\$0	\$3,850,000
Heitman America Real Estate Trust	\$12,474,049	\$0	\$0	\$0	\$0	\$0	\$12,474,049



NEPC, LLC

December 31, 2016

# Firefighters' Retirement System of Louisiana

## Current Monthly Breakdown of Change in Value

December 31, 2016

	Month Ending December 31, 2016						
	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
JP Morgan India (\$8,990,000)	\$4,471,910	\$0	\$0	\$0	\$0	\$0	\$4,471,910
Landmark Equity Partners XV (\$25,000,000)	\$7,040,153	-\$190,386	\$305,578	\$115,192	\$0	\$0	\$7,155,345
Liquidating - BlackRock Global Focused	\$8,102	\$0	\$0	\$0	\$0	-\$90	\$8,012
Louisiana Asset Management Pool	\$4,388,366	\$0	\$0	\$0	\$0	\$2,428	\$4,390,794
Louisiana Fund I (\$1,000,000)	\$1,976,804	\$0	\$0	\$0	\$0	\$0	\$1,976,804
LSV International Equity Value	\$104,453,418	\$0	\$0	\$0	\$0	\$4,151,470	\$108,604,888
Mellon Stock Index Fund	\$269,594,216	\$0	\$0	\$0	\$0	\$5,403,983	\$274,998,199
Murphree Venture (\$2,000,000)	\$717,528	\$0	\$0	\$0	\$0	\$0	\$717,528
OFI Emerging Markets	\$20,574,151	\$0	\$0	\$0	-\$14,709	-\$49,517	\$20,524,634
Orleans Core Fixed Income	\$65,384,916	\$0	\$0	\$0	\$0	\$280,026	\$65,664,943
Putnam Risk Parity	\$26,919,665	\$0	\$0	\$0	-\$16,498	\$577,305	\$27,496,970
Rothschild U.S. SMID Core	\$58,090,745	\$0	\$0	\$0	-\$93,122	\$1,591,099	\$59,681,844
Sentinel Real Estate Fund (\$30,000,000)	\$34,904,270	\$0	\$0	\$0	\$0	\$0	\$34,904,270
Standish	\$49,926,784	\$0	\$0	\$0	\$0	\$665,308	\$50,592,092
Stone Harbor	\$48,238,179	\$0	\$0	\$0	-\$34,829	\$932,439	\$49,170,618
Thornburg Global Opportunities	\$67,734,878	\$0	\$0	\$0	\$0	\$1,357,273	\$69,092,151
Timbervest Crossover Fund (\$16,000,000)	\$10,190,135	\$0	\$0	\$0	\$0	\$0	\$10,190,135
<b>Total</b>	<b>\$1,402,208,080</b>	<b>-\$7,324,402</b>	<b>\$3,492,713</b>	<b>-\$3,831,689</b>	<b>-\$229,284</b>	<b>\$22,286,304</b>	<b>\$1,420,662,695</b>

Beginning Market Value may not match the Ending Market Value of the previous Flash report due to delayed reporting of private investments (private equity and real estate).

# Firefighters' Retirement System of Louisiana

## Current Fiscal YTD Breakdown of Change in Value

December 31, 2016

### Total Cash Flow Summary

Fiscal YTD Ending December 31, 2016

	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
Acadian Emerging Markets Equity	\$34,944,517	\$0	\$0	\$0	-\$133,827	\$2,246,469	\$37,190,986
Advisory Research SMID	\$32,306,260	\$0	\$0	\$0	-\$53,504	\$5,404,246	\$37,710,506
AEW Core Property (\$12,000,000)	\$13,634,845	\$0	\$0	\$0	\$0	\$0	\$13,634,845
AEW Partners VI LP (\$20,000,000)	\$12,151,343	-\$1,705,538	\$0	-\$1,705,538	\$0	\$0	\$10,445,805
Americus Fund II (\$13,168,000)	\$582,381	-\$39,600	\$0	-\$39,600	\$0	\$0	\$542,781
AQR Global Risk Premium – EL	\$41,311,508	\$0	\$0	\$0	-\$192,507	-\$602,940	\$40,708,568
ASB Real Estate Fund	\$12,168,888	-\$34,085	\$64,332	\$30,247	\$0	\$0	\$12,199,135
Blackrock Global Allocation	\$69,213,303	\$0	\$231,737	\$231,737	-\$231,737	\$2,983,194	\$72,428,234
Blackrock US Debt	\$147,959,644	-\$8,500,000	\$29,248	-\$8,470,752	-\$29,248	-\$3,640,032	\$135,848,860
Boston Partners Global Equity	--	\$0	\$66,000,000	\$66,000,000	-\$37,897	\$3,964,114	\$69,964,114
Cash/Clearing Account	\$4,966,116	-\$87,061,179	\$86,778,853	-\$282,327	\$0	\$9,943	\$4,693,733
CCMP Capital Investors III (\$15,000,000)	\$8,812,564	\$0	\$829,869	\$829,869	\$0	\$0	\$9,642,433
DCM Private Equity II (\$7,500,000)	\$2,933,335	-\$289,505	\$0	-\$289,505	\$0	\$0	\$2,643,830
DTC Private Equity II-Q, L.P. (\$7,500,000)	\$2,704,493	-\$300,000	\$0	-\$300,000	\$0	\$0	\$2,404,493
Energy Opportunities Fund	\$22,851,429	\$0	\$0	\$0	-\$116,590	\$2,782,726	\$25,634,156
FECP II (\$20,000,000)	\$1,117,338	-\$252,023	\$0	-\$252,023	\$0	\$0	\$865,315
FECP III (\$20,000,000)	\$3,122,710	-\$124,238	\$0	-\$124,238	\$0	\$0	\$2,998,472
Fisher All Foreign Equity	\$99,751,388	\$0	\$0	\$0	-\$276,688	\$6,146,145	\$105,897,533
FRS-GA (Georgia)	\$4,762,850	\$0	\$0	\$0	\$0	\$0	\$4,762,850
FRS-LB I (NLTP AZ)	\$4,463,550	\$0	\$0	\$0	\$0	\$0	\$4,463,550
FRS-LB III (ST George UT)	\$4,594,816	\$0	\$0	\$0	\$0	\$0	\$4,594,816
GA Crossover Fund (\$25,000,000)	\$11,666,189	-\$698,257	\$0	-\$698,257	\$0	\$0	\$10,967,932
Greenspring Associates (\$9,230,000)	\$5,398,918	-\$944,357	\$0	-\$944,357	\$0	\$0	\$4,454,561
Harbourvest IV (\$20,000,000)	--	\$0	\$3,850,000	\$3,850,000	\$0	\$0	\$3,850,000
Heitman America Real Estate Trust	\$12,474,049	\$0	\$0	\$0	\$0	\$0	\$12,474,049



NEPC, LLC

December 31, 2016

# Firefighters' Retirement System of Louisiana

## Current Fiscal YTD Breakdown of Change in Value

December 31, 2016

	Fiscal YTD Ending December 31, 2016						
	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
JP Morgan India (\$8,990,000)	\$4,471,910	\$0	\$0	\$0	\$0	\$0	\$4,471,910
Landmark Equity Partners XV (\$25,000,000)	\$7,246,880	-\$1,097,267	\$1,005,732	-\$91,535	\$0	\$0	\$7,155,345
Liquidating - BlackRock Global Focused	\$38,504	-\$30,796	\$926	-\$29,869	\$0	-\$622	\$8,012
Louisiana Asset Management Pool	\$4,379,144	\$0	\$0	\$0	\$0	\$11,650	\$4,390,794
Louisiana Fund I (\$1,000,000)	\$1,976,804	\$0	\$0	\$0	\$0	\$0	\$1,976,804
LSV International Equity Value	\$96,703,747	\$0	\$0	\$0	-\$43,025	\$11,901,140	\$108,604,888
Mellon Stock Index Fund	\$258,331,649	-\$3,500,000	\$18,515	-\$3,481,485	-\$37,538	\$20,148,035	\$274,998,199
Murphree Venture (\$2,000,000)	\$717,528	\$0	\$0	\$0	\$0	\$0	\$717,528
OFI Emerging Markets	\$19,860,080	\$0	\$0	\$0	-\$90,302	\$664,553	\$20,524,634
Orleans Core Fixed Income	\$66,864,691	\$0	\$0	\$0	-\$47,458	-\$1,199,748	\$65,664,943
Putnam Risk Parity	\$26,791,354	\$0	\$0	\$0	-\$48,863	\$705,616	\$27,496,970
Rothschild U.S. SMID Core	\$52,150,941	\$0	\$0	\$0	-\$182,001	\$7,530,902	\$59,681,844
Sentinel Real Estate Fund (\$30,000,000)	\$35,289,933	-\$385,663	\$0	-\$385,663	\$0	\$0	\$34,904,270
Standish	\$49,048,765	\$0	\$62,104	\$62,104	-\$62,104	\$1,481,223	\$50,592,092
Stone Harbor	\$51,284,146	\$0	\$0	\$0	-\$216,152	-\$2,113,528	\$49,170,618
Thornburg Global Opportunities	\$61,655,743	\$0	\$0	\$0	-\$171,965	\$7,436,407	\$69,092,151
Timbervest Crossover Fund (\$16,000,000)	\$10,574,135	-\$384,000	\$0	-\$384,000	\$0	\$0	\$10,190,135
Z Terminated Mellon Global Equity	\$63,767,414	-\$66,186,500	\$5,854	-\$66,180,646	-\$5,854	\$2,413,232	--
<b>Total</b>	<b>\$1,365,045,805</b>	<b>-\$171,533,008</b>	<b>\$158,877,170</b>	<b>-\$12,655,838</b>	<b>-\$1,977,261</b>	<b>\$68,272,728</b>	<b>\$1,420,662,695</b>

Beginning Market Value may not match the Ending Market Value of the previous Flash report due to delayed reporting of private investments (private equity and real estate).

# Firefighters' Retirement System of Louisiana

## Since Inception Breakdown of Change in Value

### Total Cash Flow Summary

	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Net Investment Change	Ending Market Value
	Ending December 31, 2016					
Z Terminated - Commonwealth	--	-\$9,671,012	\$30,000,000	\$20,328,988	-\$20,328,988	--
Acadian Emerging Markets Equity	--	\$0	\$40,000,000	\$40,000,000	-\$2,809,014	\$37,190,986
Advisory Research SMID	--	-\$42,800,000	\$34,937,469	-\$7,862,531	\$45,573,037	\$37,710,506
AEW Core Property (\$12,000,000)	--	\$0	\$12,000,000	\$12,000,000	\$1,634,845	\$13,634,845
AEW Partners VI LP (\$20,000,000)	--	-\$18,245,300	\$18,420,450	\$175,150	\$10,270,655	\$10,445,805
Americus Fund II (\$13,168,000)	--	-\$15,693,930	\$12,044,774	-\$3,649,156	\$4,191,937	\$542,781
AQR Global Risk Premium – EL	--	\$0	\$40,100,000	\$40,100,000	\$608,568	\$40,708,568
ASB Real Estate Fund	--	-\$34,085	\$12,069,665	\$12,035,580	\$163,556	\$12,199,135
Blackrock Global Allocation	--	\$0	\$67,545,078	\$67,545,078	\$4,883,156	\$72,428,234
Blackrock US Debt	--	-\$58,500,000	\$188,553,225	\$130,053,225	\$5,795,635	\$135,848,860
Boston Partners Global Equity	--	\$0	\$66,000,000	\$66,000,000	\$3,964,114	\$69,964,114
Cash/Clearing Account	--	-\$1,960,949,919	\$1,962,518,765	\$1,568,846	\$3,124,888	\$4,693,733
CCMP Capital Investors III (\$15,000,000)	--	-\$129,294	\$8,179,681	\$8,050,387	\$1,592,046	\$9,642,433
DCM Private Equity II (\$7,500,000)	--	-\$5,979,476	\$8,340,318	\$2,360,842	\$282,989	\$2,643,830
DTC Private Equity II-Q, L.P. (\$7,500,000)	--	-\$6,637,500	\$5,476,825	-\$1,160,675	\$3,565,168	\$2,404,493
Energy Opportunities Fund	--	-\$28,002,876	\$50,000,000	\$21,997,124	\$3,637,031	\$25,634,156
FECP II (\$20,000,000)	--	-\$21,752,423	\$19,188,998	-\$2,563,425	\$3,428,740	\$865,315
FECP III (\$20,000,000)	--	-\$28,380,311	\$19,206,359	-\$9,173,952	\$12,172,424	\$2,998,472
Fisher All Foreign Equity	--	-\$55,165,618	\$117,000,000	\$61,834,383	\$44,063,150	\$105,897,533
FRS-GA (Georgia)	--	\$0	\$9,416,075	\$9,416,075	-\$4,653,225	\$4,762,850
FRS-LB I (NLTP AZ)	--	\$0	\$24,900,208	\$24,900,208	-\$20,436,658	\$4,463,550
FRS-LB III (ST George UT)	--	\$0	\$4,646,040	\$4,646,040	-\$51,224	\$4,594,816
GA Crossover Fund (\$25,000,000)	--	-\$38,451,478	\$25,000,000	-\$13,451,478	\$24,419,410	\$10,967,932
Greenspring Associates (\$9,230,000)	--	-\$11,258,794	\$8,491,600	-\$2,767,194	\$7,221,755	\$4,454,561
Harbourvest IV (\$20,000,000)	--	\$0	\$3,850,000	\$3,850,000	\$0	\$3,850,000

Cash flow statistics exclude management fees and expenses.

# Firefighters' Retirement System of Louisiana

## Since Inception Breakdown of Change in Value

	Beginning Market Value		Withdrawals	Contributions	Net Cash Flow	Net Investment Change	Ending Market Value
	<b>Ending December 31, 2016</b>						
Heitman America Real Estate Trust	--		\$0	\$12,000,000	\$12,000,000	\$474,049	\$12,474,049
JP Morgan India (\$8,990,000)	--		-\$2,256,002	\$8,307,355	\$6,051,353	-\$1,579,442	\$4,471,910
Landmark Equity Partners XV (\$25,000,000)	--		-\$4,830,080	\$10,564,061	\$5,733,981	\$1,421,364	\$7,155,345
Liquidating - BlackRock Global Focused	--		-\$59,568,544	\$46,832,890	-\$12,735,654	\$12,743,666	\$8,012
Louisiana Asset Management Pool	--		-\$944,296,689	\$943,990,965	-\$305,724	\$4,696,518	\$4,390,794
Louisiana Fund I (\$1,000,000)	--		\$0	\$1,010,000	\$1,010,000	\$966,804	\$1,976,804
LSV International Equity Value	--		-\$17,281,912	\$103,500,000	\$86,218,088	\$22,386,799	\$108,604,888
Mellon Stock Index Fund	--		-\$83,500,001	\$275,292,760	\$191,792,760	\$83,205,440	\$274,998,199
Murphree Venture (\$2,000,000)	--		-\$848,459	\$2,058,578	\$1,210,119	-\$492,591	\$717,528
OFI Emerging Markets	--		-\$8,500,000	\$31,500,000	\$23,000,000	-\$2,475,366	\$20,524,634
Orleans Core Fixed Income	\$0		-\$91,022,995	\$126,099,081	\$35,076,086	\$30,588,857	\$65,664,943
Putnam Risk Parity	--		\$0	\$27,400,000	\$27,400,000	\$96,970	\$27,496,970
Rothschild U.S. SMID Core	--		\$0	\$55,500,000	\$55,500,000	\$4,181,844	\$59,681,844
Sentinel Real Estate Fund (\$30,000,000)	--		-\$13,227,081	\$30,000,000	\$16,772,919	\$18,131,350	\$34,904,270
Standish	--		\$0	\$50,183,006	\$50,183,006	\$409,086	\$50,592,092
Stone Harbor	--		\$0	\$63,000,000	\$63,000,000	-\$13,829,382	\$49,170,618
The Clinton Group Magnolia	--		-\$70,657,406	\$25,000,000	-\$45,657,406	\$45,657,406	--
Thornburg Global Opportunities	--		-\$55,362,310	\$47,500,000	-\$7,862,310	\$76,954,460	\$69,092,151
Timbervest Crossover Fund (\$16,000,000)	--		-\$5,952,000	\$13,600,000	\$7,648,000	\$2,542,135	\$10,190,135

Cash flow statistics exclude management fees and expenses.

# 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.
- 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.