FUND EVALUATION REPORT

Worcester Retirement System

Quarterly Review
August 11, 2016

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MEKETA INVESTMENT GROUP

Boston, Massachusetts | Chicago, Illinois | Miami, Florida | Portland, Oregon | San Diego, California | London, United Kingdom

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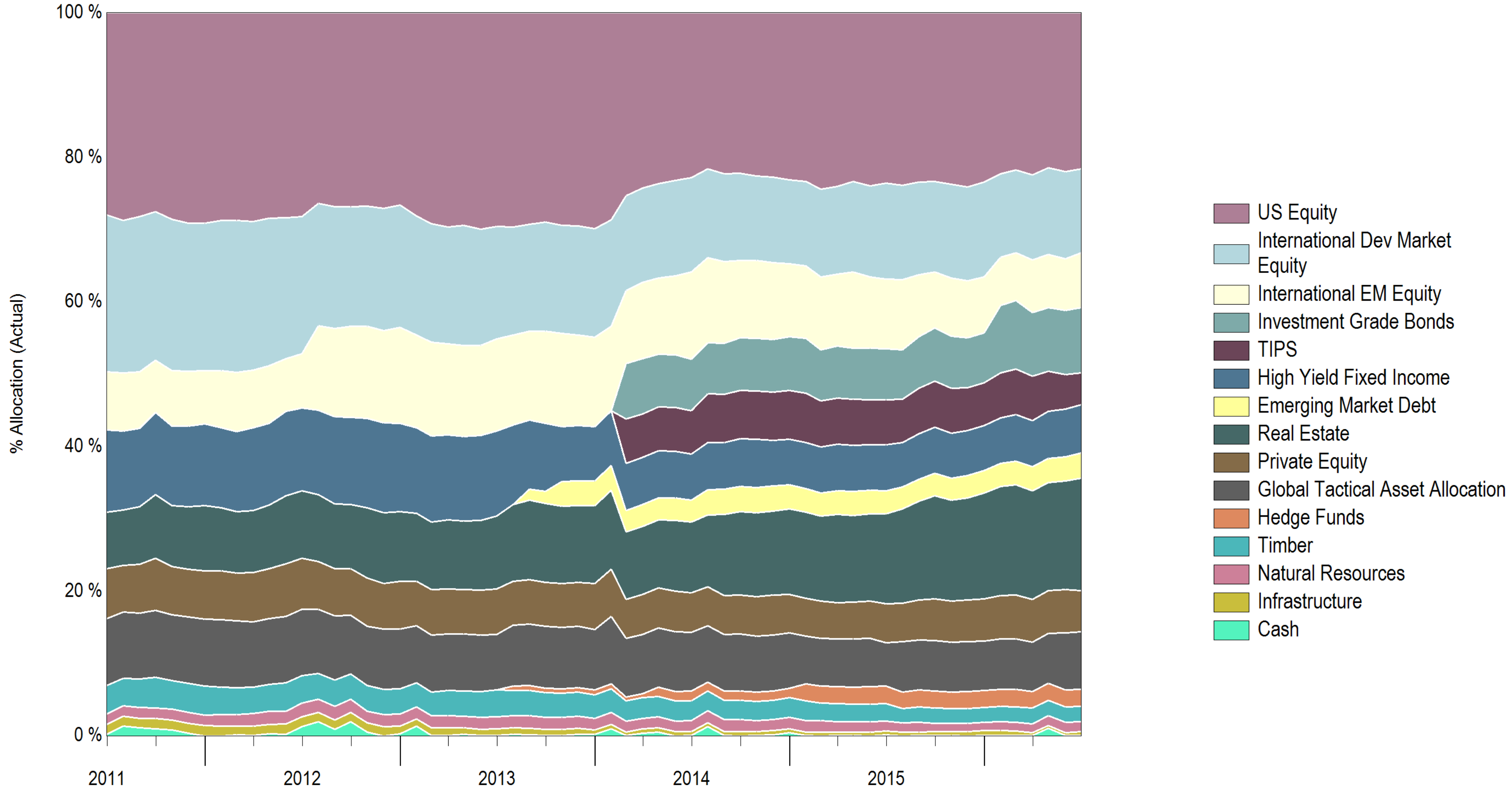
Retirement System Summary

Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
US Equity	$171,141,122	22%	22%	17% - 27%	Yes
International Dev Market Equity	$92,140,859	12%	12%	7% - 17%	Yes
International EM Equity	$59,739,244	8%	9%	6% - 12%	Yes
Investment Grade Bonds	$71,400,942	9%	9%	6% - 12%	Yes
TIPS	$35,046,824	4%	5%	2% - 8%	Yes
High Yield Fixed Income	$52,886,485	7%	4%	1% - 7%	Yes
Emerging Market Debt	$27,442,081	3%	3%	1% - 5%	Yes
Real Estate	$123,203,836	16%	10%	5% - 15%	No
Private Equity	$45,476,288	6%	10%	7% - 13%	No
Global Tactical Asset Allocation	$62,753,723	8%	7%	4% - 10%	Yes
Hedge Funds	$18,508,977	2%	2%	0% - 4%	Yes
Timber	$17,097,902	2%	3%	2% - 4%	Yes
Natural Resources	$11,104,205	1%	2%	1% - 3%	Yes
Infrastructure	$3,678,094	0%	2%	0% - 3%	Yes
Cash	$697,066	0%	0%	0% - 5%	Yes
Total	**$792,317,649**	**100%**	**100%**		

Asset Allocation History
5 Years Ending June 30, 2016



Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Retirement System	**792,317,649**	**100.0**	**1.9**	**3.7**	**0.0**	**5.4**	**5.4**	**5.0**	**7.3**	**Oct-95**
Total Retirement System (Net of Fees)			**1.8**	**3.6**	**-0.2**	**5.2**	**5.2**	**4.8**	**7.0**	
Custom Benchmark - Target Allocation			*2.1*	*4.1*	*1.1*	*6.3*	*6.1*	*5.5*	*--*	*Oct-95*
60% MSCI ACWI & 40% Barclays Global Aggregate			*1.8*	*4.4*	*1.4*	*4.9*	*4.1*	*4.6*	*5.9*	*Oct-95*
Consumer Price Index			*1.2*	*1.9*	*1.0*	*1.1*	*1.3*	*1.7*	*2.2*	*Oct-95*
Domestic Equity	**171,141,122**	**21.6**	**2.7**	**4.0**	**3.0**	**11.3**	**11.5**	**7.3**	**5.2**	**Aug-00**
Russell 3000			*2.6*	*3.6*	*2.1*	*11.1*	*11.6*	*7.4*	*4.9*	*Aug-00*
International Developed Market Equity	**92,140,859**	**11.6**	**-1.2**	**-3.6**	**-8.1**	**3.6**	**2.9**	**2.3**	**4.3**	**Aug-00**
MSCI ACWI ex USA			*-0.6*	*-1.0*	*-10.2*	*1.2*	*0.1*	*1.9*	*3.1*	*Aug-00*
International Emerging Market Equity	**59,739,244**	**7.5**	**3.8**	**12.4**	**-7.9**	**-1.0**	**-1.7**	**--**	**5.4**	**Aug-06**
MSCI Emerging Markets			*0.7*	*6.4*	*-12.1*	*-1.6*	*-3.8*	*3.5*	*3.4*	*Aug-06*
Fixed Income	**186,776,332**	**23.6**	**2.8**	**6.2**	**4.2**	**3.0**	**3.8**	**5.7**	**5.9**	**Jan-98**
Barclays U.S. Universal			*2.5*	*5.7*	*5.8*	*4.2*	*4.0*	*5.3*	*5.5*	*Jan-98*
Private Equity	**45,476,288**	**5.7**	**-2.3**	**-2.1**	**-4.9**	**5.2**	**4.9**	**10.6**	**8.6**	**Oct-00**
MSCI ACWI+3% (1 quarter lagged)			*1.1*	*6.8*	*-1.4*	*8.8*	*8.4*	*7.4*	*6.8*	*Oct-00*
Real Estate	**123,203,836**	**15.5**	**2.9**	**5.2**	**11.2**	**12.0**	**11.8**	**6.0**	**7.8**	**Oct-00**
NCREIF Property Index			*2.0*	*4.3*	*10.6*	*11.6*	*11.5*	*7.4*	*9.0*	*Oct-00*
Global Tactical Asset Allocation	**62,753,723**	**7.9**	**0.4**	**0.4**	**-9.5**	**-1.4**	**0.9**	**--**	**1.5**	**Aug-07**
Spliced Bechmark			*1.8*	*4.4*	*1.4*	*0.6*	*1.0*	*3.3*	*1.9*	*Aug-07*
Hedge Funds	**18,508,977**	**2.3**	**1.4**	**-1.2**	**-5.4**	**2.2**	**3.0**	**3.0**	**3.9**	**Jul-05**
HFRI Fund of Funds Composite Index			*0.5*	*-2.6*	*-5.4*	*1.9*	*1.6*	*1.6*	*2.4*	*Jul-05*
Real Assets	**31,880,201**	**4.0**	**2.7**	**8.8**	**2.3**	**3.1**	**3.6**	**--**	**2.8**	**Oct-06**
CPI+3%			*2.0*	*3.4*	*4.0*	*4.1*	*4.4*	*4.8*	*4.8*	*Oct-06*

Total Retirement System

As of June 30, 2016

Trailing Performance

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Retirement System	**792,317,649**	**100.0**	**--**	**1.9**	**3.7**	**0.0**	**5.4**	**5.4**	**5.0**	**7.3**	**Oct-95**
Total Retirement System (Net of Fees)				**1.8**	**3.6**	**-0.2**	**5.2**	**5.2**	**4.8**	**7.0**	
Custom Benchmark - Target Allocation				*2.1*	*4.1*	*1.1*	*6.3*	*6.1*	*5.5*	*--*	*Oct-95*
60% MSCI ACWI & 40% Barclays Global Aggregate				*1.8*	*4.4*	*1.4*	*4.9*	*4.1*	*4.6*	*5.9*	*Oct-95*
Consumer Price Index				*1.2*	*1.9*	*1.0*	*1.1*	*1.3*	*1.7*	*2.2*	*Oct-95*
Domestic Equity	**171,141,122**	**21.6**	**21.6**	**2.7**	**4.0**	**3.0**	**11.3**	**11.5**	**7.3**	**5.2**	**Aug-00**
Russell 3000				*2.6*	*3.6*	*2.1*	*11.1*	*11.6*	*7.4*	*4.9*	*Aug-00*
SSgA S&P 500 Index (Net of Fees)	81,659,616	10.3	47.7	2.4	3.8	4.1	11.7	12.1	7.5	5.6	Aug-98
S&P 500				*2.5*	*3.8*	*4.0*	*11.7*	*12.1*	*7.4*	*5.5*	*Aug-98*
SSgA Russell 1000 Growth Index (Net of Fees)	35,012,071	4.4	20.5	0.6	1.4	3.0	13.1	12.4	--	14.3	Nov-09
Russell 1000 Growth				*0.6*	*1.4*	*3.0*	*13.1*	*12.3*	*8.8*	*14.3*	*Nov-09*
SSgA Russell 1000 Value Index (Net of Fees)	35,326,155	4.5	20.6	4.5	6.3	3.0	9.9	11.4	6.2	6.7	Jul-05
Russell 1000 Value				*4.6*	*6.3*	*2.9*	*9.9*	*11.4*	*6.1*	*6.7*	*Jul-05*
SSgA S&P Midcap 400 Index (Net of Fees)	9,562,574	1.2	5.6	4.0	7.9	1.3	10.5	10.6	--	8.9	Sep-06
S&P 400 MidCap				*4.0*	*7.9*	*1.3*	*10.5*	*10.5*	*8.6*	*8.9*	*Sep-06*
Lee Munder Small Cap Value (Net of Fees)	9,580,707	1.2	5.6	3.3	8.0	3.2	9.5	9.3	--	12.9	Nov-09
Russell 2000 Value				*4.3*	*6.1*	*-2.6*	*6.4*	*8.1*	*5.2*	*11.9*	*Nov-09*
International Developed Market Equity	**92,140,859**	**11.6**	**11.6**	**-1.2**	**-3.6**	**-8.1**	**3.6**	**2.9**	**2.3**	**4.3**	**Aug-00**
MSCI ACWI ex USA				*-0.6*	*-1.0*	*-10.2*	*1.2*	*0.1*	*1.9*	*3.1*	*Aug-00*
SSgA MSCI EAFE Index	74,042,062	9.3	80.4	-1.3	-4.2	-9.9	2.3	2.0	1.9	5.0	Sep-04
MSCI EAFE				*-1.5*	*-4.4*	*-10.2*	*2.1*	*1.7*	*1.6*	*4.7*	*Sep-04*

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Acadian Non-U.S. Small Cap Equity (Net of Fees)	18,098,798	2.3	19.6	-1.0	-1.2	0.9	9.2	6.8	4.4	7.4	Feb-05
MSCI EAFE Small Cap				*-2.6*	*-3.2*	*-3.7*	*7.3*	*4.8*	*3.6*	*5.6*	*Feb-05*
International Emerging Market Equity	**59,739,244**	**7.5**	**7.5**	**3.8**	**12.4**	**-7.9**	**-1.0**	**-1.7**	**--**	**5.4**	**Aug-06**
MSCI Emerging Markets				*0.7*	*6.4*	*-12.1*	*-1.6*	*-3.8*	*3.5*	*3.4*	*Aug-06*
Lazard Emerging Markets	37,521,161	4.7	62.8	4.8	14.1	-6.7	-0.8	-1.7	--	5.5	Aug-06
MSCI Emerging Markets				*0.7*	*6.4*	*-12.1*	*-1.6*	*-3.8*	*3.5*	*3.4*	*Aug-06*
Dimensional Emerging Markets (Net of Fees)	22,218,083	2.8	37.2	2.2	9.6	-8.8	-0.2	--	--	-3.1	Mar-13
MSCI Emerging Markets				*0.7*	*6.4*	*-12.1*	*-1.6*	*-3.8*	*3.5*	*-4.4*	*Mar-13*
Fixed Income	**186,776,332**	**23.6**	**23.6**	**2.8**	**6.2**	**4.2**	**3.0**	**3.8**	**5.7**	**5.9**	**Jan-98**
Barclays U.S. Universal				*2.5*	*5.7*	*5.8*	*4.2*	*4.0*	*5.3*	*5.5*	*Jan-98*
IR&M Aggregate Bond	71,400,942	9.0	38.2	2.5	5.7	6.3	--	--	--	4.7	Feb-14
Barclays Aggregate				*2.2*	*5.3*	*6.0*	*4.1*	*3.8*	*5.1*	*4.2*	*Feb-14*
IR&M Intermediate TIPS	35,046,824	4.4	18.8	1.3	5.0	3.4	--	--	--	1.7	Feb-14
Barclays US TIPS				*1.7*	*6.2*	*4.4*	*2.3*	*2.6*	*4.7*	*2.6*	*Feb-14*
High Yield Assets	**52,886,485**	**6.7**	**28.3**	**3.6**	**5.5**	**2.9**	**5.0**	**5.6**	**6.4**	**--**	
Barclays High Yield				*5.5*	*9.1*	*1.6*	*4.2*	*5.8*	*7.6*	--	
Mezzanine Debt	9,591,859	1.2	18.1	2.9	4.7	15.2	11.4	11.0	8.8	--	
Newstone Capital Partners	398,324	0.1	4.2								
Newstone Capital Partners II	2,244,809	0.3	23.4								
Northstar Mezzanine Partners III	247,364	0.0	2.6								
Northstar Mezzanine Partners IV	528,546	0.1	5.5								
Northstar Mezzanine Partners V	2,032,238	0.3	21.2								

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Northstar Mezzanine Partners VI	4,140,578	0.5	43.2								
High Yield Bonds	**43,294,626**	**5.5**	**81.9**								
Loomis Sayles - High Yield/Bank Loans	43,294,626	5.5	100.0	3.8	5.6	0.5	3.5	4.5	5.9	7.0	Jan-96
Credit Suisse Leveraged Loans				*2.9*	*4.2*	*0.9*	*3.0*	*4.0*	*4.2*	*5.0*	*Jan-96*
Barclays High Yield				*5.5*	*9.1*	*1.6*	*4.2*	*5.8*	*7.6*	*7.0*	*Jan-96*
Lazard Emerging Market Debt Blend	27,442,081	3.5	14.7	4.4	11.6	4.3	--	--	--	-0.1	Aug-13
50% JPM EMBI GD / 50% JPM GBI-EM				*3.9*	*12.2*	*6.0*	*1.8*	*2.1*	*6.9*	*1.7*	*Aug-13*
Private Equity	**45,476,288**	**5.7**	**5.7**	**-2.3**	**-2.1**	**-4.9**	**5.2**	**4.9**	**10.6**	**8.6**	**Oct-00**
MSCI ACWI+3% (1 quarter lagged)				*1.1*	*6.8*	*-1.4*	*8.8*	*8.4*	*7.4*	*6.8*	*Oct-00*
Buyouts	**33,617,861**	**4.2**	**73.9**	**-4.0**	**-3.0**	**-6.1**	**5.0**	**5.2**	**10.6**	**10.8**	**Oct-05**
American Securities Partners VI	8,487,504	1.1	25.2								
Capital International Private Equity Fund VI	2,508,959	0.3	7.5								
Charlesbank Equity Fund V	27,934	0.0	0.1								
Charlesbank Equity Fund VI	1,319,039	0.2	3.9								
Harvest Partners V	2,165,317	0.3	6.4								
Ridgemont II	784,413	0.1	2.3								
2000 Riverside Capital Appreciation	197,131	0.0	0.6								
2003 Riverside Capital Appreciation	131,553	0.0	0.4								
Riverside Capital Fund V	1,459,745	0.2	4.3								
Riverside Capital Appreciation Fund VI	4,660,647	0.6	13.9								
Riverside Europe III	950,287	0.1	2.8								

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Riverside Micro Cap Fund III	4,349,572	0.5	12.9								
TA XII	792,923	0.1	2.4								
Vitruvian Investment Partnership I	5,782,837	0.7	17.2								
Fund of Funds	**276,280**	**0.0**	**0.6**	**-3.6**	**-16.4**	**-21.5**	**-4.9**	**-4.4**	**5.2**	**8.9**	**Oct-05**
European Strategic Partners	181,677	0.0	65.8								
PRIT Vintage Year 2016	1,769	0.0	0.6								
INVESCO Private Capital II	94,603	0.0	34.2								
Venture Capital Funds	**11,580,378**	**1.5**	**25.5**	**2.8**	**3.2**	**1.5**	**7.0**	**5.8**	**8.1**	**7.7**	**Oct-05**
Ascent Venture Partners II	337,227	0.0	2.9								
Ascent Venture Partners III	305,557	0.0	2.6								
Ascent Venture Partners IV	812,890	0.1	7.0								
Ascent Venture Partners V	5,993,551	0.8	51.8								
Asecent Venture Partners VI	735,229	0.1	6.3								
Boston Capital Venture III	22,107	0.0	0.2								
Boston Millennia Partners II	1,134,916	0.1	9.8								
Boston Millennia Partners III	2,238,901	0.3	19.3								
Real Estate	**123,203,836**	**15.5**	**15.5**	**2.9**	**5.2**	**11.2**	**12.0**	**11.8**	**6.0**	**7.8**	**Oct-00**
NCREIF Property Index				*2.0*	*4.3*	*10.6*	*11.6*	*11.5*	*7.4*	*9.0*	*Oct-00*

Total Retirement System

As of June 30, 2016

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Non-Core Real Estate	**8,197,760**	**1.0**	**6.7**	**2.3**	**8.3**	**15.3**	**16.2**	**19.5**	**--**	**12.6**	**Oct-05**
AEW Partners VII	5,123,325	0.6	62.5								
AEW Partners VI	2,983,132	0.4	36.4								
AREA Property Partners Fund II	26,500	0.0	0.3								
Intercontinental Real Estate Investment Fund IV	64,803	0.0	0.8								
Open-End Real Estate	**115,006,076**	**14.5**	**93.3**	**3.0**	**5.0**	**11.0**	**11.9**	**11.1**	**4.9**	**7.3**	**Jan-99**
PRIT Real Estate	64,532,361	8.1	56.1	2.7	5.4	12.1	12.2	11.9	--	12.8	Apr-10
NCREIF-ODCE				*2.1*	*4.4*	*11.8*	*13.0*	*12.7*	*6.2*	*14.1*	*Apr-10*
INVESCO Core Real Estate USA	50,473,715	6.4	43.9	3.6	5.1	11.0	12.7	12.1	6.0	6.5	Apr-06
NCREIF-ODCE				*2.1*	*4.4*	*11.8*	*13.0*	*12.7*	*6.2*	*6.4*	*Apr-06*
NCREIF ODCE Equal Weighted				*2.2*	*4.7*	*12.2*	*13.0*	*12.7*	*5.9*	*6.2*	*Apr-06*
NCREIF Property Index				*2.0*	*4.3*	*10.6*	*11.6*	*11.5*	*7.4*	*7.6*	*Apr-06*
Global Tactical Asset Allocation	**62,753,723**	**7.9**	**7.9**	**0.4**	**0.4**	**-9.5**	**-1.4**	**0.9**	**--**	**1.5**	**Aug-07**
Spliced Bechmark				*1.8*	*4.4*	*1.4*	*0.6*	*1.0*	*3.3*	*1.9*	*Aug-07*
William Blair Macro Allocation Strategy (Net of Fees)	54,678,870	6.9	87.1	0.4	0.4	-9.5	--	--	--	-10.3	Jun-15
60% MSCI ACWI & 40% Barclays Aggregate				*1.5*	*3.0*	*0.3*	*5.4*	*5.0*	*5.0*	*-1.4*	*Jun-15*
PRIT General Allocation Fund (Net of Fees)	8,074,853	1.0	12.9	--	--	--	--	--	--	0.9	Jun-16
65% Russell 3000 / 35% Barclays Aggregate				*2.5*	*4.3*	*3.7*	*8.8*	*9.0*	*6.9*	*0.8*	*Jun-16*
Hedge Funds	**18,508,977**	**2.3**	**2.3**	**1.4**	**-1.2**	**-5.4**	**2.2**	**3.0**	**3.0**	**3.9**	**Jul-05**
HFRI Fund of Funds Composite Index				*0.5*	*-2.6*	*-5.4*	*1.9*	*1.6*	*1.6*	*2.4*	*Jul-05*
PRIT Hedge Fund (Net of Fees)	18,508,977	2.3	100.0	1.4	-1.2	-5.4	2.8	--	--	2.8	Jul-13
HFRI Fund of Funds Composite Index				*0.5*	*-2.6*	*-5.4*	*1.9*	*1.6*	*1.6*	*1.9*	*Jul-13*

Total Retirement System

As of June 30, 2016

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Real Assets	**31,880,201**	**4.0**	**4.0**	**2.7**	**8.8**	**2.3**	**3.1**	**3.6**	**--**	**2.8**	**Oct-06**
CPI+3%				*2.0*	*3.4*	*4.0*	*4.1*	*4.4*	*4.8*	*4.8*	*Oct-06*
Timber	**17,097,902**	**2.2**	**53.6**	**0.9**	**4.5**	**0.7**	**1.7**	**2.3**	**2.1**	**2.4**	**Oct-05**
RMK Select Timberland Investment Fund II	3,758,782	0.5	22.0								
RMK Balanced Timberland B	2,029,750	0.3	11.9								
RMK Select Timberland Investment Fund I	5,679,820	0.7	33.2								
Hancock Timberland VII	5,629,550	0.7	32.9								
Natural Resources (Public)	**6,480,720**	**0.8**	**20.3**	**9.7**	**19.6**	**-9.2**	**-4.1**	**-7.2**	**--**	**-8.2**	**May-11**
SSgA Global Natural Resources Stock Index	6,480,720	0.8	100.0	9.7	19.6	-9.2	-4.1	-7.2	--	-8.2	May-11
S&P Global LargeMidCap Commodity and Resources GR USD				*9.7*	*19.9*	*-9.2*	*-4.0*	*-6.9*	*2.6*	*-7.8*	*May-11*
Natural Resources (Private)	**4,623,485**	**0.6**	**14.5**	**-2.7**	**-7.1**	**-24.3**	**-12.0**	**4.3**	**--**	**7.0**	**Jul-10**
White Deer Energy II	2,937,827	0.4	63.5								
White Deer Energy	1,685,658	0.2	36.5								
Infrastructure	**3,678,094**	**0.5**	**11.5**	**7.2**	**31.5**	**70.8**	**37.4**	**25.9**	**--**	**15.7**	**Jun-08**
Global Infrastructure Partners	3,560,790	0.4	96.8								
Global Infrastructure Partners III	117,304	0.0	3.2								
Cash	**697,066**	**0.1**	**0.1**								
State Street STIF - Cash	697,066	0.1	100.0								