

MWRA Employees' Retirement System

Total Fund Performance Detail (Net) - Preliminary

July 31, 2016

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Composite	466,126,501	100.0	100.0	2.5	3.8	-0.8	5.3	6.5	6.2	6.7	Jan-86
Allocation Index				2.7	5.4	2.8	6.1	6.9	5.4	--	Jan-86
Policy Index				3.0	5.6	2.6	6.0	7.0	5.8	--	Jan-86
Total Balanced	72,723,730	15.6	14.0	2.4	6.1	-0.5	2.5	2.6	--	3.3	Dec-10
PRIT Core Fund	3,033,598	0.7		2.7	6.5	4.2	7.4	7.3	5.5	6.4	Apr-99
Wellington Opportunistic Investment	27,003,436	5.8	5.0	3.8	4.5	0.2	4.5	2.9	--	8.2	Nov-08
65% MSCI ACWI (Net) / 35% BC Agg				3.0	5.9	2.0	5.5	5.8	5.1	8.7	Nov-08
PIMCO All Asset	25,391,289	5.4	5.0	2.3	11.9	3.8	1.9	2.9	--	8.5	Dec-08
PIMCO All Asset Index				1.1	7.3	6.0	4.4	4.4	5.7	7.4	Dec-08
William Blair	17,295,407	3.7	4.0	0.3	0.9	-7.7	--	--	--	-6.9	Mar-15
60% MSCI ACWI (Net)/40% CITI WGBI				2.8	8.0	4.4	4.6	4.5	4.8	2.3	Mar-15
Total Domestic Equity	102,618,391	22.0	21.0	4.3	4.4	-0.5	8.5	11.8	8.1	5.9	May-99
Large Cap	73,324,894	15.7	15.0	3.8	3.6	1.0	9.5	12.3	--	12.7	Dec-10
Rhumblin Advisors S&P 500 Index Fund	31,418,128	6.7	7.0	3.7	7.5	5.5	11.0	13.2	7.8	7.7	Apr-97
S&P 500				3.7	7.7	5.6	11.2	13.4	7.7	7.6	Apr-97
Coho Relative Value Equity	21,279,202	4.6	4.0	2.5	--	--	--	--	--	9.9	Mar-16
Russell 1000 Value				2.9	9.4	5.4	9.0	12.7	6.2	15.4	Mar-16
Polen Focused Growth	20,627,564	4.4	4.0	5.3	--	--	--	--	--	6.3	Feb-16
Russell 1000 Growth				4.7	6.1	4.3	12.9	13.6	9.5	12.4	Feb-16
Small Cap	29,293,497	6.3	6.0	5.7	6.3	-3.4	6.4	10.7	--	12.1	Dec-10
Robeco Boston Partners Small Cap Value	15,092,113	3.2	3.0	6.7	10.0	0.9	6.5	10.8	8.2	10.9	Feb-97
Russell 2000 Value				5.4	11.8	5.6	6.0	10.0	5.9	9.0	Feb-97
Loomis Sayles Small Cap Growth	14,201,384	3.0	3.0	4.7	2.7	-7.5	6.2	10.6	10.3	5.1	Jan-97
Russell 2000 Growth				6.5	4.8	-5.3	7.4	10.8	8.4	6.1	Jan-97



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Total Non-US Equity	70,817,933	15.2	19.0	4.6	3.5	-6.1	0.1	0.8	0.5	3.7	Mar-99
International Equity	49,908,761	10.7	15.0	4.4	1.4	-7.6	0.7	1.7	--	--	Sep-05
SEG Baxter Street	23,705,573	5.1	5.0	4.3	--	--	--	--	--	3.1	May-16
<i>MSCI ACWI ex USA</i>				4.9	3.9	-5.5	1.3	1.4	2.3	1.6	May-16
Schroder International Alpha Fund	26,203,189	5.6	5.0	4.5	0.6	-5.3	1.8	--	--	4.2	Mar-12
<i>MSCI EAFE</i>				5.1	0.4	-7.5	2.0	3.0	2.0	4.7	Mar-12
Emerging Markets Equity	20,909,172	4.5	4.0	5.2	8.7	-2.2	--	--	--	-4.4	Nov-13
Lee Munder Emerging Market Equity	20,909,172	4.5	4.0	5.2	8.7	-2.2	--	--	--	-4.5	Dec-13
<i>MSCI Emerging Markets</i>				5.0	11.8	-0.7	-0.3	-2.7	3.9	-3.2	Dec-13
Total Fixed Income	104,340,294	22.4	21.0	1.5	8.1	5.8	4.4	4.9	6.8	7.1	Mar-99
Invesco Core Bonds	40,586,662	8.7	9.0	1.2	7.3	6.5	4.6	4.4	5.6	5.5	Dec-98
<i>Barclays Aggregate</i>				0.6	6.0	5.9	4.2	3.6	5.1	5.2	Dec-98
Loomis Sayles - Multi Sector Bonds	43,964,238	9.4	8.0	2.2	9.3	5.4	3.8	5.1	7.3	8.3	Mar-99
<i>Barclays Aggregate</i>				0.6	6.0	5.9	4.2	3.6	5.1	5.3	Mar-99
<i>Barclays High Yield</i>				2.7	12.0	5.0	4.5	6.2	7.7	6.9	Mar-99
Invesco Mortgage Fund	1,343,068	0.3		0.0	-1.2	11.9	19.2	12.2	--	20.4	Apr-10
<i>Barclays Aggregate</i>				0.6	6.0	5.9	4.2	3.6	5.1	4.2	Apr-10
Rhumblin TIPS	18,446,326	4.0	4.0	0.8	--	--	--	--	--	2.4	Jun-16
<i>Barclays US TIPS</i>				0.9	7.2	5.0	2.4	2.0	4.7	3.0	Jun-16
Total Hedge Fund	38,998,889	8.4	9.0	1.5	-0.1	-5.7	1.5	3.0	--	2.9	Oct-06
PRIM Absolute Return Fund	17,718,361	3.8	5.0	1.3	0.1	-4.6	2.9	3.9	--	3.4	Oct-06
Permal Fixed Income Holdings	10,976,663	2.4	2.0	2.0	1.6	-3.6	1.5	--	--	4.5	Oct-11
<i>HFRI Fund of Funds Composite Index</i>				1.5	-1.2	-4.3	2.0	1.8	1.7	3.1	Oct-11
EnTrust	10,303,865	2.2	2.0	1.3	-2.2	-9.6	-1.0	--	--	2.0	Jan-12
<i>HFRI Fund of Funds Composite Index</i>				1.5	-1.2	-4.3	2.0	1.8	1.7	3.3	Jan-12
Other	8,660,553	1.9	0.0	0.0	0.0	0.0	0.2	0.1	--	0.1	Dec-10
Cash Account	8,660,553	1.9		0.0	0.0	0.0	0.2	0.1	1.1	1.9	Feb-00
<i>91 Day T-Bills</i>				0.0	0.2	0.2	0.1	0.1	0.9	1.7	Feb-00



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Total Real Estate	35,503,264	7.6	7.0	0.7	4.2	10.4	12.6	12.9	6.2	7.8	Apr-99
PRIT Core Real Estate	16,024,533	3.4		1.6	6.9	12.4	12.3	11.7	--	13.0	Jul-10
Morgan Stanley Prime Property	7,410,874	1.6		0.0	4.3	11.4	14.0	14.1	6.7	8.8	Sep-95
Intercontinental Real Estate Investment Fund IV	38,618	0.0		0.0	-10.6	-13.3	12.0	6.9	-4.3	-5.8	Jun-05
Invesco Mortgage Recovery II (\$3M commitment in '15)	2,178,174	0.5		0.0	-2.8	--	--	--	--	-1.8	Oct-15
Landmark VI (\$2m commitment in '11)	768,889	0.2		0.0	-0.7	4.9	12.7	14.8	--	14.6	Jul-11
Mesirow MFire Global (\$2m commitment in '11)	1,504,264	0.3		0.0	2.4	6.9	9.2	--	--	2.9	May-12
Cerberus (\$1.5m commitment in '12)	1,646,696	0.4		0.0	3.1	12.9	20.4	--	--	18.7	May-13
Realty Associates Fund X LP (\$3.5m commitment in '12)	3,586,688	0.8		0.0	4.7	12.6	12.7	--	--	11.3	May-13
TerraCap Partners III (Institutional), LP	2,344,527	0.5		0.0	-3.8	3.1	--	--	--	2.8	Jul-15
<i>NCREIF Property Index 1 Qtr Lag</i>				<i>0.0</i>	<i>5.2</i>	<i>11.8</i>	<i>11.9</i>	<i>11.9</i>	<i>7.6</i>	<i>10.9</i>	<i>Jul-15</i>
Total Private Equity	32,463,446	7.0	9.0	0.0	-9.2	-13.5	15.8	10.7	11.8	8.9	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,813,062	0.4		0.1	3.1	13.1	19.6	18.5	--	4.0	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	294,554	0.1		-0.1	4.5	20.6	23.6	17.4	--	2.4	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	803,224	0.2		-0.1	5.8	15.3	20.6	13.1	--	3.8	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,215,893	0.3		-0.3	11.0	23.3	21.8	-4.6	--	-5.5	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	544,806	0.1		0.2	6.1	3.6	10.3	--	--	-37.6	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	576,418	0.1		-0.8	2.4	6.5	--	--	--	-25.9	Jun-14
Alcentra European DLF (\$5m commitment in '14)	4,342,729	0.9		0.0	-0.6	3.5	--	--	--	8.0	Jan-15
Ascent Fund II	214,506	0.0		0.0	119.2	147.2	73.5	40.2	26.5	20.6	Jan-99
Ascent Fund IV (\$2m commitment in '04)	541,914	0.1		0.0	-11.0	-32.3	-27.4	-17.9	-9.5	-8.7	Jul-04
Ascent Fund V (\$2m commitment in '08)	2,539,429	0.5		0.0	14.7	8.9	9.4	12.5	--	8.1	Oct-08
Ascent VI (\$3m commitment in '15)	815,261	0.2		0.0	-9.5	--	--	--	--	-17.1	Dec-15
Boston Capital	16,510	0.0		0.0	0.0	-1.3	-9.3	-0.4	14.9	8.4	Apr-99
Castile Ventures III, L.P. (\$3m commitment in '07)	960,174	0.2		0.0	-3.5	-9.3	-13.5	-9.1	--	-10.5	Jan-08
Invesco Fund IV (\$3m commitment in '03)	1,058,874	0.2		0.0	-1.6	-3.5	13.2	10.2	13.7	10.2	Feb-04
Invesco Fund VI (\$5m commitment in '13)	4,184,443	0.9		0.0	-0.9	1.1	13.6	--	--	13.2	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	2,006,604	0.4		0.0	-2.3	--	--	--	--	-2.3	Jan-16
Foundry 2007 (\$3m commitment in '07)	3,205,225	0.7		0.0	-42.5	-53.8	36.9	15.8	--	34.9	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,289,961	0.7		0.0	-5.7	-8.3	5.4	12.6	--	9.0	Jan-11
Foundry 2010 Annex	182,419	0.0		0.0	3.0	--	--	--	--	-3.4	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	2,992,530	0.6		0.0	-1.6	13.1	19.1	13.0	--	6.7	Mar-08
Landmark XV (\$3m commitment in '13)	864,908	0.2		0.0	1.5	-0.3	--	--	--	14.1	Nov-13

Notes

- 1 - Results for periods longer than one year are annualized.
- 2 - Total Balanced, Large Cap, Small Cap, and Other Composite performance starts 12/1/2010.
- 3 - Market values for the following private equity managers Real Estate managers are as of 03/31/2016 and are adjusted for cash flows: Invesco Mortgage Recovery II, Mesirov MFIRE, and TerraCap Partners III. All other Real Estate Managers are valued as of 06/30/2016, except PRIT Core Real Estate which is as of 07/31/2016.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.5% for the current month.
- 5 - Market values for the following private equity managers Private Equity managers are as of 06/30/2016 and are adjusted for cash flows: Ascent II, Ascent V, Ascent VI, Castile III, Foundry 2007, Foundry 2010, Kayne Anderson VII. Alcentra DLF, Ascent IV, Boston Capital, Invesco IV, Invesco VI, Landmark XV Pinebridge PEP V accounts are as of 03/31/2016. PRIM accounts are as of 07/31/2016.

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.
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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.

