

MWRA Employees' Retirement System

Total Fund Performance Detail (Net)

July 31, 2017

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Composite	503,588,921	100.0	100.0	1.5	9.1	10.9	5.2	8.5	5.9	6.9	Jan-86
Allocation Index				1.8	9.0	10.5	6.1	8.3	5.2	--	Jan-86
Policy Index				1.8	9.4	11.1	6.3	8.4	5.6	--	Jan-86
Total Balanced	72,295,299	14.4	15.0	1.5	8.8	10.4	2.2	5.0	--	4.4	Dec-10
PRIT Core Fund	3,386,313	0.7		1.7	10.5	11.6	6.8	9.5	4.9	6.7	Apr-99
Wellington Opportunistic Investment	24,943,995	5.0	5.0	1.9	12.6	14.5	5.0	7.4	--	8.9	Nov-08
65% MSCI ACWI (Net) / 35% BBgBarc Aggregate				2.0	10.3	10.6	5.1	7.8	4.6	8.9	Nov-08
PIMCO All Asset	25,847,965	5.1	5.0	2.0	9.2	10.6	2.4	4.2	--	8.8	Dec-08
PIMCO All Asset Index				0.7	3.8	2.7	3.4	3.4	5.3	6.9	Dec-08
William Blair	18,117,026	3.6	4.0	0.3	3.2	4.8	--	--	--	-2.3	Mar-15
60% MSCI ACWI (Net) / 40% CITI WGBI				2.4	11.3	8.7	3.8	6.5	4.2	4.9	Mar-15
Total Domestic Equity	117,657,410	23.4	21.0	2.0	12.0	15.5	9.3	13.8	8.0	6.4	May-99
Large Cap	84,237,026	16.7	15.0	2.5	13.0	14.6	9.4	13.7	--	13.0	Dec-10
Rhumblin Advisors S&P 500 Index Fund	36,452,584	7.2	7.0	2.0	11.5	15.9	10.7	14.6	7.7	8.1	Apr-97
S&P 500				2.1	11.6	16.0	10.9	14.8	7.7	8.0	Apr-97
Coho Relative Value Equity	23,044,089	4.6	4.0	1.9	7.7	7.4	--	--	--	12.4	Mar-16
Russell 1000 Value				1.3	6.0	13.8	8.5	14.0	6.2	21.2	Mar-16
Polen Focused Growth	24,740,353	4.9	4.0	3.7	20.8	19.3	--	--	--	17.0	Feb-16
Russell 1000 Growth				2.7	17.0	18.1	12.7	15.6	9.4	20.8	Feb-16
Small Cap	33,420,385	6.6	6.0	0.9	9.5	18.8	9.7	14.4	--	13.1	Dec-10
Robeco Boston Partners Small Cap Value	16,386,984	3.3	3.0	1.0	4.0	17.7	8.3	13.9	8.8	11.2	Feb-97
Russell 2000 Value				0.6	1.2	19.2	9.5	13.8	6.9	9.4	Feb-97
Loomis Sayles Small Cap Growth	17,033,400	3.4	3.0	0.9	15.3	19.4	10.8	14.7	9.7	5.7	Jan-97
Russell 2000 Growth				0.9	10.9	17.8	10.2	14.6	8.5	6.7	Jan-97



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Total Non-US Equity	105,521,241	21.0	19.0	3.3	20.8	19.6	2.0	8.3	0.5	4.5	Mar-99
International Equity	82,847,851	16.5	15.0	2.8	19.4	18.4	2.5	8.5	--	--	Sep-05
SEG Baxter Street	33,563,606	6.7	5.0	2.9	19.4	19.6	--	--	--	18.2	May-16
MSCI ACWI ex USA				3.7	18.3	19.0	2.4	7.7	1.5	16.4	May-16
Schroder International Alpha Fund	27,268,144	5.4	5.0	3.2	20.0	17.9	3.7	8.6	--	6.6	Mar-12
MSCI ACWI ex USA				3.7	18.3	19.0	2.4	7.7	1.5	5.5	Mar-12
LMCG Small Cap International	22,016,102	4.4		0.2	--	--	--	--	--	0.2	Jul-17
Emerging Markets Equity	22,673,390	4.5	4.0	4.7	24.9	23.1	0.9	--	--	2.3	Nov-13
MSCI Emerging Markets				6.0	25.5	24.8	2.4	4.8	2.0	3.3	Nov-13
Lee Munder Emerging Market Equity	22,673,390	4.5	4.0	4.7	24.9	23.1	0.9	--	--	2.3	Dec-13
MSCI Emerging Markets				6.0	25.5	24.8	2.4	4.8	2.0	3.7	Dec-13
Total Fixed Income	113,264,177	22.5	22.0	0.8	4.4	3.4	2.6	4.3	6.3	6.9	Mar-99
Invesco Core Bonds	41,367,687	8.2	9.0	0.6	3.5	1.6	3.3	3.0	5.2	5.3	Dec-98
BBgBarc US Aggregate TR				0.4	2.7	-0.5	2.7	2.0	4.4	4.9	Dec-98
Loomis Sayles - Multi Sector Bonds	44,278,174	8.8	8.0	1.1	6.9	7.5	2.8	5.6	7.0	8.3	Mar-99
BBgBarc US Aggregate TR				0.4	2.7	-0.5	2.7	2.0	4.4	5.0	Mar-99
BBgBarc US High Yield TR				1.1	6.1	10.9	5.3	6.7	8.2	7.1	Mar-99
Invesco Mortgage Fund	314,065	0.1		0.0	-2.4	-9.5	10.4	9.0	--	16.1	Apr-10
BBgBarc US Aggregate TR				0.4	2.7	-0.5	2.7	2.0	4.4	3.6	Apr-10
Rhumbline TIPS	27,304,252	5.4	4.0	0.5	1.3	-0.9	--	--	--	1.3	Jun-16
BBgBarc US TIPS TR				0.4	1.3	-1.0	0.8	0.0	4.1	1.6	Jun-16



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Total Hedge Fund	23,687,786	4.7	5.0	0.3	3.0	6.1	0.6	4.4	2.1	3.2	Oct-06
PRIM Absolute Return Fund	13,107,127	2.6	5.0	0.5	4.1	8.5	2.7	5.8	2.9	3.8	Oct-06
EnTrust	10,580,659	2.1	2.0	0.0	1.8	2.7	-2.9	2.0	--	2.1	Jan-12
<i>HFRI Fund of Funds Composite Index</i>				1.1	4.3	6.0	2.0	3.9	0.9	3.8	Jan-12
Other	596,665	0.1	0.0	0.0	0.6	0.6	0.4	0.2	--	0.2	Dec-10
Cash Account	596,665	0.1		0.0	0.6	0.6	0.4	0.2	0.7	1.9	Feb-00
<i>91 Day T-Bills</i>				0.1	0.5	0.6	0.3	0.2	0.4	1.6	Feb-00
Total Real Estate	34,506,273	6.9	8.0	0.3	4.0	8.5	11.1	12.9	5.7	7.9	Apr-99
PRIT Core Real Estate (\$10.9m commitment in '10)	16,873,582	3.4		0.7	5.0	5.3	9.8	10.7	--	11.9	Jul-10
Morgan Stanley Prime Property (\$2.8m commitment in '95)	8,086,494	1.6		0.0	4.2	9.1	12.5	13.1	5.6	8.8	Sep-95
Intercontinental Real Estate Investment Fund IV (\$2m commitment in '05)	37,573	0.0		0.0	-2.4	-2.7	6.7	6.0	-3.8	-5.5	Jun-05
Invesco Mortgage Recovery II (\$3M commitment in '15)	1,096,470	0.2		0.0	2.8	15.9	--	--	--	10.9	Oct-15
Landmark VI (\$2m commitment in '11)	430,837	0.1		0.0	0.3	-0.4	5.4	11.6	--	12.0	Jul-11
Mesirow MFire Global (\$2m commitment in '11)	1,245,344	0.2		0.0	1.5	8.5	9.1	9.6	--	4.4	May-12
Cerberus (\$1.5m commitment in '12)	1,185,279	0.2		0.0	-4.2	0.7	11.1	--	--	14.2	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	2,825,867	0.6		0.0	6.4	3.0	9.6	--	--	9.3	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	2,724,827	0.5		0.0	0.8	34.1	--	--	--	17.8	Jul-15
<i>NCREIF Property Index</i>				0.0	3.3	7.0	10.2	10.5	6.4	8.4	Jul-15



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Total Private Equity	36,060,070	7.2	10.0	0.1	2.6	7.0	13.0	14.0	11.6	8.9	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,682,186	0.3		1.1	19.2	30.0	19.7	21.6	--	6.6	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	253,003	0.1		0.1	6.7	16.4	19.9	20.6	--	4.1	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	787,453	0.2		0.2	9.1	16.9	17.2	18.7	--	5.5	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,301,659	0.3		-0.1	14.6	23.9	23.9	17.4	--	-1.3	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	634,946	0.1		1.5	14.8	22.9	13.1	6.2	--	-28.9	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	976,398	0.2		-0.4	10.4	18.2	4.4	--	--	-14.1	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	39,190	0.0		0.1	--	--	--	--	--	0.1	May-17
Alcentra European DLF (\$5m commitment in '14)	3,774,090	0.7		0.0	1.9	4.7	--	--	--	7.6	Jan-15
Ascent Fund II (\$0.8m commitment in '99)	213,121	0.0		0.0	-0.1	-0.6	52.4	38.5	24.6	19.3	Jan-99
Ascent Fund IV (\$2m commitment in '04)	276,313	0.1		0.0	4.9	26.1	-41.8	-25.1	-15.3	-12.7	Jul-04
Ascent Fund IV-B (\$1m commitment in '16)	1,581,721	0.3		0.0	2.0	3.5	--	--	--	3.2	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,870,563	0.4		0.0	1.2	4.2	4.4	13.5	--	7.6	Oct-08
Ascent VI (\$3m commitment in '15)	1,333,980	0.3		0.0	2.5	9.3	--	--	--	-5.7	Dec-15
Boston Capital (\$0.8m commitment in '99)	16,290	0.0		0.0	0.0	0.0	-2.7	-7.1	7.0	7.8	Apr-99
Castile Ventures III, L.P. (\$3m commitment in '07)	645,212	0.1		0.0	-21.6	-32.8	-20.8	-16.9	--	-13.1	Jan-08
Invesco Fund IV (\$3m commitment in '03)	952,070	0.2		0.0	5.1	4.5	6.7	11.5	12.7	10.1	Feb-04
Invesco Fund VI (\$5m commitment in '13)	5,006,418	1.0		0.0	0.9	8.6	13.1	--	--	12.3	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	3,050,135	0.6		0.0	6.7	45.1	--	--	--	24.7	Jan-16
Foundry 2007 (\$3m commitment in '07)	1,912,558	0.4		0.0	-2.2	-9.4	23.4	21.0	--	29.4	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,055,868	0.6		0.0	-2.7	-8.4	-1.2	7.5	--	6.1	Jan-11
Foundry 2010 Annex (\$0.4m commitment in '15)	237,803	0.0		0.0	-3.0	-12.0	--	--	--	-8.1	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	2,029,187	0.4		0.0	3.5	0.8	11.9	12.9	--	6.0	Mar-08
Landmark XV (\$3m commitment in '13)	1,056,624	0.2		0.0	-0.8	8.1	5.8	--	--	12.8	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	2,120,415	0.4		0.0	-2.1	--	--	--	--	-2.1	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	1,252,864	0.2		0.0	--	--	--	--	--	2.7	Feb-17
<i>NASDAQ W/O Income</i>				3.4	17.9	23.0	13.3	16.6	9.6	13.1	Feb-17



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 Real Estate managers are as of 06/30/2017 except for Invesco Mortgage Recovery II, Mesirow Mfire Global and TerraCap Partners III which are valued as of 03/31/2017.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.6% for the current month.
- 5 - Market values for the all private equity managers Private Equity managers are as of 03/31/2017 and are adjusted for cash flows except for Boston Capital as of 12/31/2016 adjusted for cash flows, and Castille Ventures III, Foundry 2007, Foundry 2010, Foundry 20110 Annex, Kayne Energy Fund VII, and PRIM accounts which are valued as of 06/30/2017.
- 6 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 07/31/2017.

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.
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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.

