

MWRA Employees' Retirement System

Total Fund Performance Detail (Net)

April 30, 2017

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Composite	487,815,065	100.0	100.0	1.2	5.4	10.4	4.7	7.5	5.5	6.8	Jan-86
Allocation Index				1.2	5.5	10.8	5.6	7.5	4.8	--	Jan-86
Policy Index				1.2	5.8	11.9	5.9	7.6	5.2	--	Jan-86
Total Balanced	70,218,845	14.4	14.0	0.9	5.7	9.4	2.0	4.2	--	4.1	Dec-10
PRIT Core Fund	3,251,983	0.7		1.3	6.1	11.2	6.2	8.5	4.6	6.5	Apr-99
Wellington Opportunistic Investment	23,843,667	4.9	5.0	1.8	7.6	12.4	4.2	6.0	--	8.6	Nov-08
65% MSCI ACWI (Net) / 35% BBgBarc Aggregate				1.3	6.1	10.0	4.5	6.7	4.3	8.7	Nov-08
PIMCO All Asset	24,975,358	5.1	5.0	0.4	5.5	10.4	2.0	3.7	--	8.6	Dec-08
PIMCO All Asset Index				0.9	2.8	4.6	3.6	3.6	5.1	6.9	Dec-08
William Blair	18,147,837	3.7	4.0	0.3	3.3	3.9	--	--	--	-2.4	Mar-15
60% MSCI ACWI (Net) / 40% CITI WGBI				1.5	6.3	7.3	2.8	5.2	3.8	3.3	Mar-15
Total Domestic Equity	112,495,709	23.1	21.0	1.4	7.1	16.7	8.2	12.2	7.4	6.3	May-99
Large Cap	80,190,139	16.4	15.0	1.3	7.6	14.7	8.3	12.2	--	12.6	Dec-10
Rhumblin Advisors S&P 500 Index Fund	35,007,547	7.2	7.0	1.0	7.1	17.8	10.3	13.5	7.2	8.0	Apr-97
S&P 500				1.0	7.2	17.9	10.5	13.7	7.2	7.9	Apr-97
Coho Relative Value Equity	22,186,989	4.5	4.0	0.2	3.8	8.4	--	--	--	11.7	Mar-16
Russell 1000 Value				-0.2	3.1	16.6	8.3	13.3	5.5	23.2	Mar-16
Polen Focused Growth	22,995,603	4.7	4.0	2.9	12.2	16.0	--	--	--	13.8	Feb-16
Russell 1000 Growth				2.3	11.4	19.5	12.1	13.9	8.9	20.6	Feb-16
Small Cap	32,305,570	6.6	6.0	1.6	6.0	23.0	8.4	12.7	--	13.1	Dec-10
Robeco Boston Partners Small Cap Value	15,913,317	3.3	3.0	0.6	1.3	22.4	7.2	12.6	7.7	11.2	Feb-97
Russell 2000 Value				0.4	0.3	27.2	8.7	13.0	6.0	9.5	Feb-97
Loomis Sayles Small Cap Growth	16,392,253	3.4	3.0	2.7	11.1	23.2	9.3	12.6	9.7	5.6	Jan-97
Russell 2000 Growth				1.8	7.3	24.1	9.3	12.9	8.0	6.6	Jan-97
Total Non-US Equity	85,810,827	17.6	19.0	3.0	12.2	14.3	0.3	5.5	-0.3	4.2	Mar-99
International Equity	62,383,397	12.8	15.0	3.4	11.6	13.3	0.3	5.8	--	--	Sep-05
SEG Baxter Street	31,254,150	6.4	5.0	4.0	11.2	14.8	--	--	--	14.8	May-16
MSCI ACWI ex USA				2.1	10.2	12.6	0.8	5.1	1.1	12.6	May-16
Schroder International Alpha Fund	31,129,247	6.4	5.0	2.8	12.1	11.8	1.5	6.0	--	5.5	Mar-12
MSCI EAFE				2.5	10.0	11.3	0.9	6.8	0.9	6.1	Mar-12



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Emerging Markets Equity	23,427,430	4.8	4.0	2.1	13.7	16.7	0.3	--	--	-0.3	Nov-13
<i>MSCI Emerging Markets</i>				2.2	13.9	19.1	1.8	1.5	2.5	0.7	Nov-13
Lee Munder Emerging Market Equity	23,427,430	4.8	4.0	2.1	13.7	16.7	0.3	--	--	-0.3	Dec-13
<i>MSCI Emerging Markets</i>				2.2	13.9	19.1	1.8	1.5	2.5	1.1	Dec-13
Total Fixed Income	114,424,353	23.5	21.0	0.7	2.7	5.0	2.6	4.4	6.1	6.9	Mar-99
Invesco Core Bonds	40,681,942	8.3	9.0	0.8	1.9	3.1	3.2	3.3	5.1	5.3	Dec-98
<i>BBgBarc US Aggregate TR</i>				0.8	1.6	0.8	2.7	2.3	4.3	4.9	Dec-98
Loomis Sayles - Multi Sector Bonds	45,914,946	9.4	8.0	0.7	3.8	8.2	2.5	5.2	6.6	8.2	Mar-99
<i>BBgBarc US Aggregate TR</i>				0.8	1.6	0.8	2.7	2.3	4.3	5.0	Mar-99
<i>BBgBarc US High Yield TR</i>				1.2	3.9	13.3	4.7	6.8	7.4	7.1	Mar-99
Invesco Mortgage Fund	398,841	0.1		0.0	0.0	-5.6	13.0	10.0	--	17.1	Apr-10
<i>BBgBarc US Aggregate TR</i>				0.8	1.6	0.8	2.7	2.3	4.3	3.6	Apr-10
Rhumbline TIPS	27,428,624	5.6	4.0	0.7	2.0	--	--	--	--	2.1	Jun-16
<i>BBgBarc US TIPS TR</i>				0.6	1.9	1.7	1.8	0.7	4.2	2.5	Jun-16
Total Hedge Fund	23,537,180	4.8	9.0	0.8	2.3	7.1	0.9	4.2	2.3	3.2	Oct-06
PRIM Absolute Return Fund	12,997,458	2.7	5.0	1.0	3.3	9.6	3.1	5.6	3.0	3.9	Oct-06
EnTrust	10,539,722	2.2	2.0	0.6	1.4	2.3	-2.5	1.7	--	2.1	Jan-12
<i>HFRI Fund of Funds Composite Index</i>				0.7	3.1	6.4	2.2	3.4	1.1	3.8	Jan-12
Other	11,267,825	2.3	0.0	0.9	0.7	0.7	0.4	0.2	--	0.2	Dec-10
Cash Account	11,267,825	2.3		0.9	0.7	0.7	0.4	0.2	0.8	1.9	Feb-00
<i>91 Day T-Bills</i>				0.1	0.2	0.4	0.2	0.1	0.5	1.6	Feb-00
Total Real Estate	35,172,551	7.2	7.0	0.2	1.8	9.1	11.4	12.8	5.8	7.9	Apr-99
PRIT Core Real Estate	16,475,844	3.4		0.5	2.5	6.9	10.2	10.7	--	12.0	Jul-10
Morgan Stanley Prime Property	7,909,895	1.6		0.0	1.9	9.3	12.7	13.2	6.0	8.8	Sep-95
Intercontinental Real Estate Investment Fund IV	37,724	0.0		0.0	-2.0	-4.1	7.7	6.0	-3.8	-5.6	Jun-05
Invesco Mortgage Recovery II (\$3M commitment in '15)	1,823,808	0.4		0.0	0.0	19.6	--	--	--	10.7	Oct-15
Landmark VI (\$2m commitment in '11)	549,828	0.1		0.0	0.0	-0.8	6.3	11.9	--	12.5	Jul-11
Mesirow MFire Global (\$2m commitment in '11)	1,319,648	0.3		0.0	0.0	11.0	10.0	4.6	--	4.6	May-12
Cerberus (\$1.5m commitment in '12)	1,311,558	0.3		0.0	1.3	9.1	15.5	--	--	16.8	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	3,042,738	0.6		0.0	2.8	2.1	9.6	--	--	9.0	May-13
TerraCap Partners III (Institutional), LP	2,701,508	0.6		0.0	0.0	24.6	--	--	--	18.0	Jul-15
<i>NCREIF Property Index 1 Qtr Lag</i>				0.0	1.7	8.0	11.0	10.9	6.9	9.5	Jul-15



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Total Private Equity	34,887,775	7.2	9.0	0.0	0.5	5.6	13.7	12.1	11.8	8.9	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,696,314	0.3		0.2	7.3	16.5	16.8	19.8	--	5.5	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	261,005	0.1		0.0	1.9	12.6	20.3	19.1	--	3.6	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	803,283	0.2		0.1	3.7	12.5	17.9	17.5	--	5.0	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,314,027	0.3		0.1	8.2	20.8	22.7	15.3	--	-2.3	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	589,428	0.1		0.8	4.3	12.7	9.4	--	--	-31.4	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	878,084	0.2		-0.1	4.9	11.3	--	--	--	-16.7	Jun-14
Alcentra European DLF (\$5m commitment in '14)	4,014,144	0.8		0.0	0.0	5.1	--	--	--	7.6	Jan-15
Ascent Fund II	213,411	0.0		0.0	0.0	58.2	55.2	38.4	26.5	19.6	Jan-99
Ascent Fund IV (\$2m commitment in '04)	263,365	0.1		0.0	0.0	-51.4	-42.7	-25.4	-16.2	-13.2	Jul-04
Ascent Fund IV-B	1,492,833	0.3		0.0	0.0	--	--	--	--	1.5	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,848,735	0.4		0.0	0.0	9.1	5.6	12.8	--	7.7	Oct-08
Ascent VI (\$3m commitment in '15)	1,096,941	0.2		0.0	0.0	2.8	--	--	--	-8.3	Dec-15
Boston Capital	16,290	0.0		0.0	0.0	-1.3	-9.6	-0.6	12.3	8.0	Apr-99
Castile Ventures III, L.P. (\$3m commitment in '07)	751,600	0.2		0.0	-8.7	-23.5	-18.9	-13.8	--	-12.0	Jan-08
Invesco Fund IV (\$3m commitment in '03)	953,873	0.2		0.0	0.0	9.2	6.9	11.2	13.6	10.3	Feb-04
Invesco Fund VI (\$5m commitment in '13)	4,578,998	0.9		0.0	0.0	4.4	12.4	--	--	11.7	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	2,797,214	0.6		0.0	-2.7	31.4	--	--	--	21.3	Jan-16
Foundry 2007 (\$3m commitment in '07)	1,955,103	0.4		0.0	0.0	-14.6	32.5	14.5	--	30.6	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,140,834	0.6		0.0	0.0	-6.9	0.1	7.7	--	6.8	Jan-11
Foundry 2010 Annex	245,077	0.1		0.0	0.0	-6.6	--	--	--	-7.6	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	2,117,611	0.4		0.0	0.0	-3.4	12.2	12.2	--	5.7	Mar-08
Landmark XV (\$3m commitment in '13)	971,332	0.2		0.0	0.0	4.7	6.4	--	--	12.4	Nov-13
JFL Equity Investors IV, L.P.	1,668,920	0.3		0.0	0.0	--	--	--	--	0.0	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP	1,219,355	0.2		0.0	--	--	--	--	--	0.0	Feb-17
<i>NASDAQ W/O Income</i>				2.3	12.3	26.6	13.7	14.7	9.1	7.7	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 03/31/2017 and are adjusted for cash flows except for Landmark VI which is estimated as of 12/31/2016 adjusted for cash flows and Invesco Mortgage Recovery II, Mesirow Mfire Global, TerraCap Partners III which are valued as of 12/31/2016, PRIM accounts are valued as of 04/30/2017.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.5% for the current month.
- 5 - Market values for the all private equity managers Private Equity managers are as of 12/31/2016 and are adjusted for cash flows except for Boston Capital, Invesco Fund IV, Invesco Fund VI, and Pinebridge PEP V valued as of 09/30/2016 adjusted for cash flows, JFL Equity Investors IV, L.P. and Private Advisors Small Co. Coinvestment Fund LP are cash adjusted since inception, Landmark XV is estimated as of 12/31/2016 adjusted for cash flows, and Castille Ventures III, Kayne Energy Fund VII, and PRIM accounts which are valued as of 03/31/2017, PRIM accounts are valued as of 04/30/2017.

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.
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Reporting Methodology

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- 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.

