

MWRA Employees' Retirement System

Total Fund Performance Detail (Net) - Preliminary

November 30, 2016

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Composite	462,942,448	100.0	100.0	0.2	4.2	2.3	3.6	7.6	5.4	6.7	Jan-86
<i>Allocation Index</i>				0.3	5.4	4.4	4.2	7.5	4.7	--	Jan-86
Total Balanced	65,451,701	14.1	14.0	-1.4	6.0	4.0	0.8	4.2	--	3.1	Dec-10
PRIT Core Fund	3,031,798	0.7									
Wellington Opportunistic Investment <i>65% MSCI ACWI (Net) / 35% BC Agg</i>	21,926,701	4.7	5.0	-0.3	5.2	3.3	2.4	5.5	--	7.9	Nov-08
PIMCO All Asset <i>PIMCO All Asset Index</i>	23,242,953	5.0	5.0	-2.4	11.3	9.6	0.8	3.7	--	8.1	Dec-08
William Blair <i>60% MSCI ACWI (Net)/40% CITI WGBI</i>	17,250,249	3.7	4.0	-1.7	0.6	-2.3	--	--	--	-5.8	Mar-15
				-1.4	4.5	3.7	1.6	5.1	3.6	0.0	Mar-15
Total Domestic Equity	105,040,808	22.7	21.0	5.2	6.6	3.6	6.2	13.2	7.2	5.9	May-99
Large Cap	73,633,625	15.9	15.0	3.3	3.8	1.8	6.8	13.1	--	12.0	Dec-10
Rhumblin Advisors S&P 500 Index Fund <i>S&P 500</i>	32,045,539	6.9	7.0	3.7	9.6	7.9	8.9	14.3	6.9	7.6	Apr-97
				3.7	9.8	8.1	9.1	14.4	6.9	7.6	Apr-97
Coho Relative Value Equity <i>Russell 1000 Value</i>	21,092,436	4.6	4.0	4.1	--	--	--	--	--	8.6	Mar-16
				5.7	14.5	12.0	8.6	14.7	5.7	20.7	Mar-16
Polen Focused Growth <i>Russell 1000 Growth</i>	20,495,650	4.4	4.0	1.8	--	--	--	--	--	5.2	Feb-16
				2.2	5.8	4.2	9.1	14.1	8.2	12.0	Feb-16
Small Cap	31,407,183	6.8	6.0	10.2	13.7	8.3	5.4	13.5	--	12.7	Dec-10
Robeco Boston Partners Small Cap Value <i>Russell 2000 Value</i>	16,638,463	3.6	3.0	11.8	20.8	14.5	6.6	14.1	7.9	11.2	Feb-97
				13.3	26.5	19.8	7.5	14.5	5.9	9.5	Feb-97
Loomis Sayles Small Cap Growth <i>Russell 2000 Growth</i>	14,768,720	3.2	3.0	8.4	6.7	2.1	4.0	12.7	9.5	5.2	Jan-97
				8.9	9.8	4.6	5.3	13.4	7.6	6.3	Jan-97



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Total Non-US Equity	75,853,078	16.4	19.0	-2.6	1.6	-0.6	-3.3	3.5	-0.6	3.5	Mar-99
International Equity	55,121,965	11.9	15.0	-2.0	-0.8	-2.7	-2.9	4.3	--	--	Sep-05
SEG Baxter Street	27,764,601	6.0	5.0	-1.0	--	--	--	--	--	1.9	May-16
<i>MSCI ACWI ex USA</i>				-2.3	1.9	0.0	-2.3	4.2	1.0	-0.3	May-16
Schroder International Alpha Fund	27,357,364	5.9	5.0	-3.1	-2.7	-3.8	-2.0	--	--	3.2	Mar-12
<i>MSCI EAFE</i>				-2.0	-2.3	-3.7	-2.2	5.6	0.7	3.8	Mar-12
Emerging Markets Equity	20,731,113	4.5	4.0	-4.1	7.8	4.9	-4.3	--	--	-4.2	Nov-13
Lee Munder Emerging Market Equity	20,731,113	4.5	4.0	-4.1	7.8	4.9	-4.3	--	--	-4.3	Dec-13
<i>MSCI Emerging Markets</i>				-4.6	10.9	8.5	-3.1	1.0	2.3	-3.1	Dec-13
Total Fixed Income	102,478,784	22.1	21.0	-1.6	6.5	5.2	2.9	5.2	6.0	6.9	Mar-99
Invesco Core Bonds	39,637,347	8.6	9.0	-2.4	4.8	4.1	3.3	3.8	5.0	5.2	Dec-98
<i>BBgBarc US Aggregate TR</i>				-2.4	2.5	2.2	2.8	2.4	4.3	4.9	Dec-98
Loomis Sayles - Multi Sector Bonds	43,703,317	9.4	8.0	-0.9	8.7	6.7	2.5	6.1	6.5	8.1	Mar-99
<i>BBgBarc US Aggregate TR</i>				-2.4	2.5	2.2	2.8	2.4	4.3	5.0	Mar-99
<i>BBgBarc US High Yield TR</i>				-0.5	15.0	12.1	4.2	7.5	7.4	6.9	Mar-99
Invesco Mortgage Fund	1,054,585	0.2		0.0	0.6	-0.5	19.8	12.7	--	19.6	Apr-10
<i>BBgBarc US Aggregate TR</i>				-2.4	2.5	2.2	2.8	2.4	4.3	3.5	Apr-10
Rhumblin TIPS	18,083,534	3.9	4.0	-1.7	--	--	--	--	--	0.5	Jun-16
<i>BBgBarc US Tips TR</i>				-1.9	4.8	4.0	1.8	0.9	4.1	0.7	Jun-16
Total Hedge Fund	39,451,753	8.5	9.0	0.4	1.1	-0.3	0.5	4.0	2.6	2.9	Oct-06
PRIM Absolute Return Fund	18,151,980	3.9	5.0								
Permal Fixed Income Holdings	11,171,027	2.4	2.0	1.5	3.4	1.6	0.8	4.5	--	4.6	Oct-11
<i>HFRI Fund of Funds Composite Index</i>				-0.2	-0.7	-1.1	1.2	3.1	1.4	3.0	Oct-11
EnTrust	10,128,746	2.2	2.0	0.0	-3.8	-5.6	-2.9	--	--	1.5	Jan-12
<i>HFRI Fund of Funds Composite Index</i>				-0.2	-0.7	-1.1	1.2	3.1	1.4	3.2	Jan-12
Other	4,466,210	1.0	0.0	0.0	0.0	0.0	0.2	0.1	--	0.1	Dec-10
Cash Account	4,466,210	1.0		0.0	0.0	0.0	0.2	0.1	1.0	1.9	Feb-00
<i>91 Day T-Bills</i>				0.0	0.3	0.3	0.1	0.1	0.7	1.6	Feb-00



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Total Real Estate	35,286,085	7.6	7.0	0.0	4.4	8.1	11.9	12.7	6.1	7.7	Apr-99
PRIT Core Real Estate	15,996,703	3.5									
Morgan Stanley Prime Property	7,581,325	1.6		0.0	6.7	10.0	13.4	13.5	6.5	8.8	Sep-95
Intercontinental Real Estate Investment Fund IV	38,555	0.0		0.0	-10.8	-15.5	11.0	6.1	-4.1	-5.6	Jun-05
Invesco Mortgage Recovery II (\$3M commitment in '15)	2,043,625	0.4		0.0	-8.8	-7.8	--	--	--	-6.7	Oct-15
Landmark VI (\$2m commitment in '11)	745,511	0.2		0.0	-0.1	1.2	10.8	14.4	--	13.8	Jul-11
Mesirow MFire Global (\$2m commitment in '11)	1,504,264	0.3		0.0	5.2	7.3	9.9	--	--	3.3	May-12
Cerberus (\$1.5m commitment in '12)	1,640,893	0.4		0.0	5.0	7.8	17.5	--	--	17.4	May-13
Realty Associates Fund X LP (\$3.5m commitment in '12)	3,250,419	0.7		0.0	7.3	11.3	13.6	--	--	11.0	May-13
TerraCap Partners III (Institutional), LP	2,484,790	0.5		0.0	-6.4	7.6	--	--	--	8.1	Jul-15
<i>NCREIF Property Index 1 Qtr Lag</i>				<i>0.0</i>	<i>7.3</i>	<i>10.6</i>	<i>11.6</i>	<i>11.5</i>	<i>7.4</i>	<i>9.8</i>	<i>Jul-15</i>
Total Private Equity	34,914,029	7.5	9.0	0.0	-2.1	-7.8	17.8	12.5	12.3	9.2	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,742,013	0.4									
PRIM Vintage Year 2009 (\$1m commitment in '09)	282,186	0.1									
PRIM Vintage Year 2010 (\$1m commitment in '10)	795,766	0.2									
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,288,833	0.3									
PRIM Vintage Year 2012 (\$1m commitment in '12)	547,926	0.1									
PRIM Vintage Year 2014 (\$2m commitment in '14)	675,362	0.1									
Alcentra European DLF (\$5m commitment in '14)	4,441,941	1.0		0.0	1.7	3.5	--	--	--	7.8	Jan-15
Ascent Fund II	214,216	0.0		0.0	118.9	148.8	73.6	40.2	26.5	20.2	Jan-99
Ascent Fund IV (\$2m commitment in '04)	217,135	0.0		0.0	-64.3	-72.0	-46.6	-30.6	-18.2	-15.0	Jul-04
Ascent Fund IV-B	1,492,833	0.3		0.0	--	--	--	--	--	-0.1	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,656,046	0.4		0.0	8.1	9.5	6.0	11.4	--	7.0	Oct-08
Ascent VI (\$3m commitment in '15)	1,014,055	0.2		0.0	-10.8	-18.2	--	--	--	-18.2	Dec-15
Boston Capital	16,290	0.0		0.0	-1.3	-2.1	-9.7	-0.7	14.8	8.2	Apr-99
Castile Ventures III, L.P. (\$3m commitment in '07)	957,353	0.2		0.0	-3.8	-8.3	-11.2	-10.8	--	-10.1	Jan-08
Invesco Fund IV (\$3m commitment in '03)	917,451	0.2		0.0	2.6	4.5	11.7	11.4	14.2	10.3	Feb-04
Invesco Fund VI (\$5m commitment in '13)	4,215,839	0.9		0.0	-0.1	0.2	13.9	--	--	12.1	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	2,969,306	0.6		0.0	27.0	--	--	--	--	27.0	Jan-16
Foundry 2007 (\$3m commitment in '07)	3,605,170	0.8		0.0	-27.8	-40.7	47.7	21.0	--	36.8	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,458,565	0.7		0.0	-0.8	-4.4	6.0	14.5	--	9.4	Jan-11
Foundry 2010 Annex	212,246	0.0		0.0	-8.9	-14.3	--	--	--	-11.8	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	3,328,533	0.7		0.0	9.4	9.0	21.7	16.3	--	7.7	Mar-08
Landmark XV (\$3m commitment in '13)	864,963	0.2		0.0	2.6	-1.9	13.3	--	--	12.9	Nov-13

- 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 09/30/2016 and are adjusted for cash flows except Mesirow MFIRE and Invesco Mortgage Recovery Fund which are valued as of 06/30/2016, PRIT Core Real Estate is valued as of 10/31/2016.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.4% 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: Alcentra DLF, Boston Capital, Invesco IV, Invesco VI, Kayne Anderson VII, Landmark XV, and Pinebridge PEP V. Ascent II, Ascent IV, Ascent IV-B, Ascent V, Ascent VI, Castile III, Foundry 2007, Foundry 2010, Foundry 2010 Annex accounts are valued as of 09/30/2016. PRIM accounts are valued as of 10/31/2016.
- 6 - Invesco Core Bonds value is estimated using the benchmark. Loomis Sayles - Multi Sector Bonds, Schroder International Alpha Fund, and SEG Baxter Street values are estimated using manager returns. Entrust, PRIM Absolute Return Fund, and PRIT Core Fund values are carried over from 10/31/2016.

Information Disclaimer and Reporting Methodology

Information Disclaimer

- Past performance is no guarantee of future results.
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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.
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