

# MWRA Employees' Retirement System

## Total Fund Performance Detail (Net) - Preliminary

January 31, 2017

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
<b>Composite</b>	<b>473,829,784</b>	<b>100.0</b>	<b>100.0</b>	<b>1.6</b>	<b>10.6</b>	<b>4.6</b>	<b>7.5</b>	<b>5.5</b>	<b>6.7</b>	<b>Jan-86</b>
Allocation Index				1.6	12.1	5.4	7.3	4.8	--	Jan-86
Policy Index				1.8	13.3	5.6	7.5	5.2	--	Jan-86
<b>Total Balanced</b>	<b>67,537,359</b>	<b>14.3</b>	<b>14.0</b>	<b>1.6</b>	<b>12.3</b>	<b>2.0</b>	<b>4.0</b>	<b>--</b>	<b>3.6</b>	<b>Dec-10</b>
PRIT Core Fund	3,065,596	0.6								
Wellington Opportunistic Investment	22,742,956	4.8	5.0	2.6	14.3	3.7	5.6	--	8.2	Nov-08
65% MSCI ACWI (Net) / 35% BBgBarc Aggregate				1.8	12.0	4.6	6.5	4.3	8.4	Nov-08
PIMCO All Asset	24,197,196	5.1	5.0	2.2	17.5	2.6	3.5	--	8.4	Dec-08
PIMCO All Asset Index				0.8	6.6	3.7	3.6	5.2	6.9	Dec-08
William Blair	17,531,612	3.7	4.0	-0.2	3.5	--	--	--	-4.5	Mar-15
60% MSCI ACWI (Net)/40% CITI WGBI				2.0	11.1	3.0	4.9	3.9	1.6	Mar-15
<b>Total Domestic Equity</b>	<b>106,820,022</b>	<b>22.5</b>	<b>21.0</b>	<b>1.9</b>	<b>16.8</b>	<b>7.6</b>	<b>12.7</b>	<b>7.2</b>	<b>6.1</b>	<b>May-99</b>
<b>Large Cap</b>	<b>75,932,019</b>	<b>16.0</b>	<b>15.0</b>	<b>2.0</b>	<b>13.3</b>	<b>8.3</b>	<b>12.8</b>	<b>--</b>	<b>12.2</b>	<b>Dec-10</b>
Rhumblin Advisors S&P 500 Index Fund	33,294,951	7.0	7.0	1.9	19.8	10.7	13.9	7.0	7.8	Apr-97
S&P 500				1.9	20.0	10.8	14.1	7.0	7.7	Apr-97
Coho Relative Value Equity	21,763,130	4.6	4.0	2.1	--	--	--	--	11.8	Mar-16
Russell 1000 Value				0.7	24.6	10.2	14.1	5.7	24.6	Mar-16
Polen Focused Growth	20,873,938	4.4	4.0	2.2	7.1	--	--	--	7.1	Feb-16
Russell 1000 Growth				3.4	17.2	10.8	13.9	8.4	17.2	Feb-16
<b>Small Cap</b>	<b>30,888,003</b>	<b>6.5</b>	<b>6.0</b>	<b>1.5</b>	<b>27.0</b>	<b>6.7</b>	<b>12.8</b>	<b>--</b>	<b>12.8</b>	<b>Dec-10</b>
Robeco Boston Partners Small Cap Value	15,756,726	3.3	3.0	0.5	34.3	8.9	13.2	8.1	11.3	Feb-97
Russell 2000 Value				-0.7	40.2	9.5	13.4	6.0	9.6	Feb-97
Loomis Sayles Small Cap Growth	15,131,277	3.2	3.0	2.7	19.7	4.3	12.2	9.4	5.2	Jan-97
Russell 2000 Growth				1.6	26.9	6.2	12.5	7.7	6.4	Jan-97
<b>Total Non-US Equity</b>	<b>79,573,370</b>	<b>16.8</b>	<b>19.0</b>	<b>4.0</b>	<b>13.9</b>	<b>-0.3</b>	<b>3.9</b>	<b>-0.5</b>	<b>3.8</b>	<b>Mar-99</b>
<b>International Equity</b>	<b>57,901,089</b>	<b>12.2</b>	<b>15.0</b>	<b>3.6</b>	<b>11.6</b>	<b>-0.3</b>	<b>4.7</b>	<b>--</b>	<b>--</b>	<b>Sep-05</b>
SEG Baxter Street	28,705,669	6.1		2.1	--	--	--	--	5.3	May-16
MSCI ACWI ex USA				3.5	16.1	0.9	4.4	1.3	5.8	May-16
Schroder International Alpha Fund	29,195,420	6.2		5.1	9.9	1.0	--	--	4.4	Mar-12
MSCI EAFE				2.9	12.0	0.7	6.0	1.0	4.9	Mar-12



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<b>Emerging Markets Equity</b>	<b>21,672,281</b>	<b>4.6</b>	<b>4.0</b>	<b>5.2</b>	<b>19.8</b>	<b>-0.5</b>	<b>--</b>	<b>--</b>	<b>-2.7</b>	<b>Nov-13</b>
<i>MSCI Emerging Markets</i>				5.5	25.4	1.4	0.2	2.5	-1.6	Nov-13
Lee Munder Emerging Market Equity	21,672,281	4.6	4.0	5.2	19.8	-0.5	--	--	-2.7	Dec-13
<i>MSCI Emerging Markets</i>				5.5	25.4	1.4	0.2	2.5	-1.2	Dec-13
<b>Total Fixed Income</b>	<b>104,292,259</b>	<b>22.0</b>	<b>21.0</b>	<b>1.2</b>	<b>9.1</b>	<b>3.2</b>	<b>4.6</b>	<b>6.3</b>	<b>6.9</b>	<b>Mar-99</b>
Invesco Core Bonds	40,053,283	8.5	9.0	0.4	5.0	3.2	3.3	5.1	5.2	Dec-98
<i>BBgBarc US Aggregate TR</i>				0.2	1.5	2.6	2.1	4.4	4.8	Dec-98
Loomis Sayles - Multi Sector Bonds	45,097,067	9.5	8.0	2.0	14.2	3.3	5.5	6.9	8.2	Mar-99
<i>BBgBarc US Aggregate TR</i>				0.2	1.5	2.6	2.1	4.4	5.0	Mar-99
<i>BBgBarc US High Yield TR</i>				1.5	20.8	4.9	7.0	7.5	7.1	Mar-99
Invesco Mortgage Fund	915,905	0.2		0.0	0.8	16.8	12.7	--	19.1	Apr-10
<i>BBgBarc US Aggregate TR</i>				0.2	1.5	2.6	2.1	4.4	3.5	Apr-10
Rhumbline TIPS	18,226,004	3.8	4.0	0.9	--	--	--	--	1.0	Jun-16
<i>BBgBarc US TIPS TR</i>				0.8	4.0	1.9	0.6	4.4	1.4	Jun-16
<b>Total Hedge Fund</b>	<b>40,208,351</b>	<b>8.5</b>	<b>9.0</b>	<b>0.1</b>	<b>5.6</b>	<b>0.9</b>	<b>4.1</b>	<b>2.5</b>	<b>3.1</b>	<b>Oct-06</b>
PRIM Absolute Return Fund	18,458,621	3.9	5.0							
Permal Fixed Income Holdings	11,271,107	2.4	2.0	-0.3	7.5	0.9	4.5	--	4.6	Oct-11
<i>HFRI Fund of Funds Composite Index</i>				0.9	4.2	1.6	3.2	1.3	3.3	Oct-11
EnTrust	10,478,623	2.2	2.0	0.8	3.0	-2.1	1.8	--	2.1	Jan-12
<i>HFRI Fund of Funds Composite Index</i>				0.9	4.2	1.6	3.2	1.3	3.5	Jan-12
<b>Other</b>	<b>3,070,634</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.1</b>	<b>--</b>	<b>0.1</b>	<b>Dec-10</b>
Cash Account	3,070,634	0.6		0.0	0.0	0.2	0.1	0.9	1.9	Feb-00
<i>91 Day T-Bills</i>				0.0	0.3	0.1	0.1	0.6	1.6	Feb-00
<b>Total Real Estate</b>	<b>34,736,887</b>	<b>7.3</b>	<b>7.0</b>	<b>0.0</b>	<b>6.7</b>	<b>11.5</b>	<b>12.5</b>	<b>6.0</b>	<b>7.8</b>	<b>Apr-99</b>
PRIT Core Real Estate	16,074,320	3.4								
Morgan Stanley Prime Property	7,760,502	1.6		0.0	9.2	13.0	13.4	6.3	8.8	Sep-95
Intercontinental Real Estate Investment Fund IV	38,488	0.0		0.0	-10.9	9.3	6.3	-3.8	-5.6	Jun-05
Invesco Mortgage Recovery II (\$3M commitment in '15)	1,965,485	0.4		0.0	3.1	--	--	--	3.1	Oct-15
Landmark VI (\$2m commitment in '11)	587,352	0.1		0.0	-0.1	10.0	13.2	--	13.3	Jul-11
Mesirow MFire Global (\$2m commitment in '11)	1,464,830	0.3		0.0	11.3	10.2	--	--	4.4	May-12
Cerberus (\$1.5m commitment in '12)	1,415,657	0.3		0.0	8.3	16.5	--	--	17.6	May-13
Realty Associates Fund X LP (\$3.5m commitment in '12)	3,205,666	0.7		0.0	7.3	12.2	--	--	10.4	May-13
TerraCap Partners III (Institutional), LP	2,224,587	0.5		0.0	-6.4	--	--	--	7.2	Jul-15
<i>NCREIF Property Index 1 Qtr Lag</i>				0.0	9.2	11.3	11.2	7.2	9.9	Jul-15

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<b>Total Private Equity</b>	<b>37,590,902</b>	<b>7.9</b>	<b>9.0</b>	<b>0.0</b>	<b>-1.6</b>	<b>15.5</b>	<b>14.2</b>	<b>12.0</b>	<b>9.1</b>	<b>Apr-99</b>
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,776,777	0.4								
PRIM Vintage Year 2009 (\$1m commitment in '09)	275,518	0.1								
PRIM Vintage Year 2010 (\$1m commitment in '10)	835,891	0.2								
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,301,913	0.3								
PRIM Vintage Year 2012 (\$1m commitment in '12)	563,105	0.1								
PRIM Vintage Year 2014 (\$2m commitment in '14)	761,067	0.2								
Alcentra European DLF (\$5m commitment in '14)	4,413,219	0.9		0.0	2.3	--	--	--	7.5	Jan-15
Ascent Fund II	214,216	0.0		0.0	118.9	55.2	38.5	26.5	20.0	Jan-99
Ascent Fund IV (\$2m commitment in '04)	217,135	0.0		0.0	-64.3	-46.3	-29.9	-18.0	-14.8	Jul-04
Ascent Fund IV-B	1,492,833	0.3		0.0	--	--	--	--	-0.1	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,799,963	0.4		0.0	14.9	4.7	12.0	--	7.6	Oct-08
Ascent VI (\$3m commitment in '15)	1,014,055	0.2		0.0	-10.8	--	--	--	-15.9	Dec-15
Boston Capital	16,290	0.0		0.0	-1.3	-9.6	-0.6	12.7	8.1	Apr-99
Castile Ventures III, L.P. (\$3m commitment in '07)	957,353	0.2		0.0	-3.8	-12.5	-9.6	--	-10.0	Jan-08
Invesco Fund IV (\$3m commitment in '03)	953,873	0.2		0.0	7.4	7.7	12.3	13.6	10.5	Feb-04
Invesco Fund VI (\$5m commitment in '13)	4,578,998	1.0		0.0	3.5	14.1	--	--	12.6	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	3,109,598	0.7		0.0	33.0	--	--	--	30.1	Jan-16
Foundry 2007 (\$3m commitment in '07)	3,605,170	0.8		0.0	-27.8	44.6	26.0	--	36.0	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,222,664	0.7		0.0	-8.9	2.5	10.6	--	7.6	Jan-11
Foundry 2010 Annex	239,406	0.1		0.0	-8.9	--	--	--	-10.5	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	2,593,399	0.5		0.0	-0.5	15.3	14.1	--	6.4	Mar-08
Landmark XV (\$3m commitment in '13)	980,185	0.2		0.0	5.1	5.7	--	--	13.1	Nov-13
JFL Equity Investors IV, L.P.	1,668,920	0.4		0.0	--	--	--	--	0.0	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP	999,355	0.2								
<i>NASDAQ W/O Income</i>										



### 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 09/30/2016 and are adjusted for cash flows except for Cerberus, Intercontinental Real Estate Investment Fund IV, Morgan Stanley Prime Property and PRIT Core Real Estate which are valued as of 12/31/2016 adjusted for cash flows.
- 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 09/30/2016 and are adjusted for cash flows except for Kayne Energy Fund VII and PRIM accounts which are valued as of 12/31/2016.

# MWRA Employees' Retirement System

## Estimated Fee Schedule

January 31, 2017

Account	Fee Schedule	Market Value As of 1/31/2017	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	\$3,065,596	\$15,021	0.49%
Wellington Opportunistic Investment	0.65% of Assets	\$22,742,956	\$147,829	0.65%
PIMCO All Asset	0.87% of Assets	\$24,197,196	\$210,516	0.87%
William Blair	1.04% of Assets	\$17,531,612	\$182,329	1.04%
Rhumblin Advisors S&P 500 Index Fund	0.05% of Assets	\$33,294,951	\$16,647	0.05%
Coho Relative Value Equity	0.50% of Assets	\$21,763,130	\$108,816	0.50%
Polen Focused Growth	0.65% of Assets	\$20,873,938	\$135,681	0.65%
Robeco Boston Partners Small Cap Value	1.00% of Assets	\$15,756,726	\$157,567	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	\$15,131,277	\$68,091	0.45%
SEG Baxter Street	1.00% of Assets	\$28,705,669	\$287,057	1.00%
Schroder International Alpha Fund	0.80% of Assets	\$29,195,420	\$233,563	0.80%
Lee Munder Emerging Market Equity	0.75% of Assets	\$21,672,281	\$162,542	0.75%
Invesco Core Bonds	0.28% of Assets	\$40,053,283	\$112,149	0.28%
Loomis Sayles - Multi Sector Bonds	0.57% of Assets	\$45,097,067	\$257,053	0.57%
Invesco Mortgage Fund	No Fee	\$915,905	--	--
Rhumblin TIPS	0.05% of Assets	\$18,226,004	\$9,113	0.05%
PRIM Absolute Return Fund	No Fee	\$18,458,621	--	--
Permal Fixed Income Holdings	0.90% of Assets	\$11,271,107	\$101,440	0.90%
EnTrust	1.40% of Assets	\$10,478,623	\$146,701	1.40%
Cash Account	No Fee	\$3,070,634	--	--
PRIT Core Real Estate	No Fee	\$16,074,320	--	--
Morgan Stanley Prime Property	No Fee	\$7,760,502	--	--

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January 31, 2017

Account	Fee Schedule	Market Value As of 1/31/2017	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Intercontinental Real Estate Investment Fund IV	No Fee	\$38,488	--	--
Invesco Mortgage Recovery II (\$3M commitment in '15)	No Fee	\$1,965,485	--	--
Landmark VI (\$2m commitment in '11)	No Fee	\$587,352	--	--
Mesirow MFire Global (\$2m commitment in '11)	No Fee	\$1,464,830	--	--
Cerberus (\$1.5m commitment in '12)	No Fee	\$1,415,657	--	--
Realty Associates Fund X LP (\$3.5m commitment in '12)	No Fee	\$3,205,666	--	--
TerraCap Partners III (Institutional), LP	No Fee	\$2,224,587	--	--
PRIM Vintage Year 2008 (\$3m commitment in '08)	No Fee	\$1,776,777	--	--
PRIM Vintage Year 2009 (\$1m commitment in '09)	No Fee	\$275,518	--	--
PRIM Vintage Year 2010 (\$1m commitment in '10)	No Fee	\$835,891	--	--
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	No Fee	\$1,301,913	--	--
PRIM Vintage Year 2012 (\$1m commitment in '12)	No Fee	\$563,105	--	--
PRIM Vintage Year 2014 (\$2m commitment in '14)	No Fee	\$761,067	--	--
Alcentra European DLF (\$5m commitment in '14)	No Fee	\$4,413,219	--	--
Ascent Fund II	No Fee	\$214,216	--	--
Ascent Fund IV (\$2m commitment in '04)	No Fee	\$217,135	--	--
Ascent Fund IV-B	No Fee	\$1,492,833	--	--
Ascent Fund V (\$2m commitment in '08)	No Fee	\$1,799,963	--	--
Ascent VI (\$3m commitment in '15)	No Fee	\$1,014,055	--	--
Boston Capital	No Fee	\$16,290	--	--
Castile Ventures III, L.P. (\$3m commitment in '07)	No Fee	\$957,353	--	--
Invesco Fund IV (\$3m commitment in '03)	No Fee	\$953,873	--	--

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Account	Fee Schedule	Market Value As of 1/31/2017	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Invesco Fund VI (\$5m commitment in '13)	No Fee	\$4,578,998	--	--
Kayne Energy Fund VII (\$5m commitment in '15)	No Fee	\$3,109,598	--	--
Foundry 2007 (\$3m commitment in '07)	No Fee	\$3,605,170	--	--
Foundry 2010 (\$3m commitment in '10)	No Fee	\$3,222,664	--	--
Foundry 2010 Annex	No Fee	\$239,406	--	--
Pinebridge PEP V (\$6m commitment in '07)	No Fee	\$2,593,399	--	--
Landmark XV (\$3m commitment in '13)	No Fee	\$980,185	--	--
JFL Equity Investors IV, L.P.	No Fee	\$1,668,920	--	--
Private Advisors Small Co. Coinvestment Fund, LP	No Fee	\$999,355	--	--
<b>Investment Management Fee</b>		<b>\$473,829,784</b>	<b>\$2,352,115</b>	<b>0.50%*</b>

\*Excludes private manager fees. Weighted fees for traditional managers is 0.62%

## 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.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
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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.

