

PERFORMANCE REPORT

MWRA EMPLOYEES' RETIREMENT SYSTEM



April, 2020

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BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

GOALS & OBJECTIVES

Investment Return Objective

“Its primary goal is to provide promised benefits to participants and beneficiaries of the MWRA Employees’ Retirement system. Plan assets should be equal to or greater than the present value of the projected benefit obligations (“fully funded”). When Plan assets are less than the present value of projected benefit obligations, a schedule will be established and a plan will be in place to meet a fully funded status. When achieving return objectives required to fully fund the system, the Board is intent on controlling risk. Consistency of returns and risk of loss are primary considerations. The Board has also determined that the annual performance of plan assets should not vary substantially from returns achieved by other public pension funds with similar goals and objectives.”

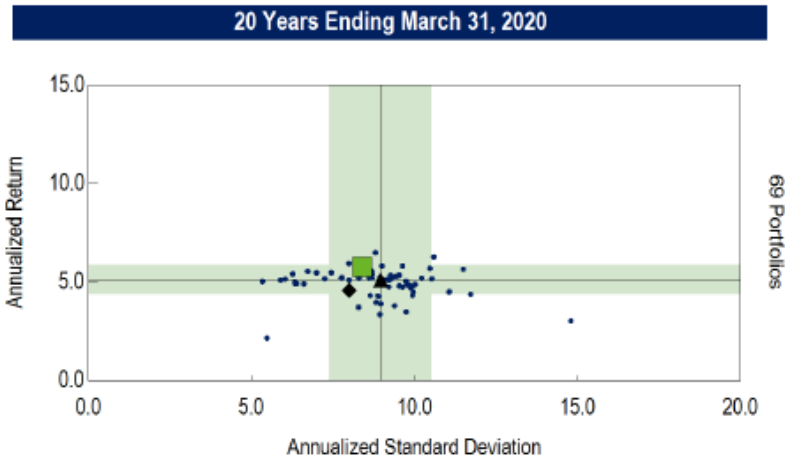
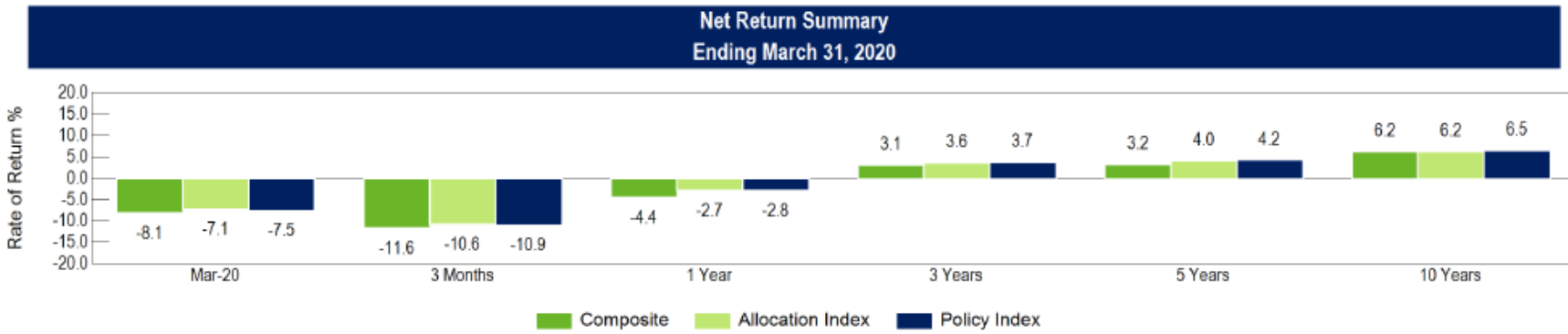
Return Expectations

The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:

- **Time Horizon:** Return assumptions will be based on a ten year time horizon with a detailed review and analysis to be made at least annually to monitor allocations and assumptions. Should a manager deviate from proscribed mandate or expected risk and return profile by a consequential degree, that manager may be reevaluated at any time.
- **Liquidity Needs:** Presently contributions exceed plan withdrawals to provide benefits, payouts, and/or plan expenses. Portfolio liquidity will be managed based on the cash flow needs of the System.
- **Regulatory Considerations:** Assets of this Fund shall be invested in a manner consistent with the fiduciary standards established under Code of Massachusetts Regulations 840 (“840 CMR”). The Board shall also use as precedent the Employee Retirement Income Security Act (ERISA).



EXECUTIVE SUMMARY



Performance

- The Composite returned -8.1% for the month underperforming the Allocation Index and Policy Index which both returned -7.1% and -7.5% respectively for the same period.
- Volatility roiled markets in the first quarter as investors grappled with the potential economic fallout of the COVID-19 pandemic. Most major equity indexes entered into bear territory in March, falling as much as 20% from recent highs. The S&P 500 Index ended the month down 12.4% while outside the US, a strengthening dollar added to the trials and tribulations of the MSCI EAFE and MSCI Emerging Markets indexes, which fell 13.3% and 15.4%, respectively, in March. The portfolios Domestic Equity returned -13.7%(net) outperforming non US equity which returned -15.1% (net) for the month.
- Within fixed income, US rates moved materially lower after the Federal Reserve cut rates in two emergency sessions by 150 basis points. The Fixed Income Composite returned -3.3% (net) for the month while the BC Agg and BC US HY returned -0.6% and -11.5% respectively
- This brings the overall performance on a trailing one year period to -4.4%, while the allocation and policy index returned -2.7% and -2.8%, respectively for the same period.

Statistics Summary			
	Anlzd Ret	Anlzd Std Dev	Rank
Composite	5.8%	8.4%	9
Allocation Index	4.6%	8.0%	79
Policy Index	5.1%	8.4%	55
InvMetrics Public DB Gross Median	5.1%	9.0%	--

20 years Risk/Return is as of 03/31/2020. Chart reflects universe data on quarter end months only.
Returns for 20 years Risk/Return and Statistics Summary are gross of fees.
Since inception return is 8.1% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	515,153,002	100.0	100.0	-8.1	-11.6	-4.4	3.1	3.2	6.2	6.4	Jan-86
Allocation Index				-7.1	-10.6	-2.7	3.6	4.0	6.2	--	Jan-86
Policy Index				-7.5	-10.9	-2.8	3.7	4.2	6.5	--	Jan-86
Total Balanced	27,961,838	5.4	5.0	-11.1	-15.3	-10.6	-1.6	-0.1	--	2.1	Dec-10
PRIT Core Fund	3,668,557	0.7		-6.9	-10.1	-1.7	4.5	4.8	7.1	6.2	Apr-99
PIMCO All Asset	24,293,281	4.7	5.0	-11.7	-16.0	-10.6	-1.0	1.1	3.4	6.0	Dec-08
<i>PIMCO All Asset Index</i>				-4.2	-2.9	3.3	3.5	3.4	4.5	6.0	Dec-08
Total Domestic Equity	119,211,689	23.1	24.0	-13.7	-20.8	-8.8	5.0	5.1	9.9	6.0	May-99
<i>Russell 3000</i>				-13.8	-20.9	-9.1	4.0	5.8	10.1	5.5	May-99
Large Cap	93,181,197	18.1	18.0	-10.5	-17.3	-4.0	7.6	6.6	--	11.0	Dec-10
Rhumblin Advisors S&P 500 Index Fund	41,446,861	8.0	10.0	-12.3	-19.5	-7.0	5.0	6.6	10.4	7.5	Apr-97
<i>S&P 500</i>				-12.4	-19.6	-7.0	5.1	6.7	10.5	7.5	Apr-97
Coho Relative Value Equity	25,599,728	5.0	4.0	-7.9	-17.8	-6.0	4.7	--	--	6.7	Mar-16
<i>Russell 1000 Value</i>				-17.1	-26.7	-17.2	-2.2	1.9	7.7	4.5	Mar-16
Polen Focused Growth	26,134,608	5.1	4.0	-10.2	-13.2	2.4	14.7	--	--	14.0	Feb-16
<i>Russell 1000 Growth</i>				-9.8	-14.1	0.9	11.3	10.4	13.0	13.6	Feb-16
Small Cap	26,030,493	5.1	6.0	-23.7	-31.5	-22.5	-2.6	0.8	--	7.7	Dec-10
Robeco Boston Partners Small Cap Value	12,704,262	2.5	3.0	-28.6	-38.8	-29.1	-10.0	-3.6	4.5	8.2	Feb-97
<i>Russell 2000 Value</i>				-24.7	-35.7	-29.6	-9.5	-2.4	4.8	6.9	Feb-97
Loomis Sayles Small Cap Growth	13,326,230	2.6	3.0	-19.1	-24.0	-16.1	4.7	4.9	11.3	5.4	Jan-97
<i>Russell 2000 Growth</i>				-19.1	-25.8	-18.6	0.1	1.7	8.9	5.7	Jan-97

Since inception return is 8.1% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	94,467,780	18.3	20.0	-15.1	-23.9	-16.2	-1.5	-0.9	1.2	3.2	Mar-99
International Equity	74,037,524	14.4	15.0	-14.9	-23.5	-14.8	-0.5	-0.1	1.9	2.1	Sep-05
SEG Baxter Street	26,938,741	5.2	5.0	-14.1	-21.2	-12.2	2.8	--	--	4.8	May-16
<i>MSCI ACWI ex USA</i>				-14.5	-23.4	-15.6	-2.0	-0.6	2.1	1.0	May-16
LMCG Small Cap International	20,415,811	4.0	5.0	-18.9	-29.3	-21.6	--	--	--	-9.6	Aug-17
<i>MSCI EAFE Small Cap</i>				-17.2	-27.5	-18.1	-2.9	1.0	4.8	-7.3	Aug-17
Schroder International Alpha Trust Class 1	26,682,972	5.2	5.0	-12.6	-20.8	-12.7	0.4	0.7	--	3.3	Mar-12
<i>MSCI ACWI ex USA</i>				-14.5	-23.4	-15.6	-2.0	-0.6	2.1	1.7	Mar-12
Emerging Markets Equity	20,430,257	4.0	5.0	-15.7	-25.2	-20.8	-4.6	-3.4	--	-2.6	Nov-13
<i>MSCI Emerging Markets</i>				-15.4	-23.6	-17.7	-1.6	-0.4	0.7	-0.7	Nov-13
LMCG Emerging Markets	20,430,257	4.0	5.0	-15.7	-25.2	-20.8	-4.6	-3.4	--	-2.7	Dec-13
<i>MSCI Emerging Markets</i>				-15.4	-23.6	-17.7	-1.6	-0.4	0.7	-0.5	Dec-13
Total Fixed Income	131,101,766	25.4	25.0	-3.3	-0.2	4.8	3.6	3.2	5.1	6.4	Mar-99
Loomis Sayles Multisector Full Discretion Trust	37,707,032	7.3	8.0	-5.8	-2.6	2.8	3.4	3.5	5.5	7.5	Mar-99
<i>BBgBarc US Aggregate TR</i>				-0.6	3.1	8.9	4.8	3.4	3.9	4.9	Mar-99
<i>BBgBarc US High Yield TR</i>				-11.5	-12.7	-6.9	0.8	2.8	5.6	6.2	Mar-99
Rhumbline TIPS	26,386,445	5.1	5.0	-1.9	1.6	6.7	3.4	--	--	3.1	Jun-16
<i>BBgBarc US TIPS TR</i>				-1.8	1.7	6.9	3.5	2.7	3.5	3.2	Jun-16
Lord Abbett Core Fixed Income	20,174,649	3.9	6.0	-2.4	1.5	7.0	--	--	--	5.5	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.6	3.1	8.9	4.8	3.4	3.9	6.7	Apr-18
Garcia Hamilton Fixed Income Aggregate	40,195,204	7.8	6.0	-1.5	1.4	6.0	--	--	--	5.0	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.6	3.1	8.9	4.8	3.4	3.9	6.7	Apr-18
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	6,435,315	1.2		-9.3	-10.1	--	--	--	--	-8.3	Aug-19
<i>Credit Suisse Leveraged Loan</i>				-12.5	-13.2	-9.5	-0.7	1.2	3.3	-11.6	Aug-19
Invesco Mortgage Recovery Loans Feeder Fund	203,120	0.0		0.0	0.0	-0.2	6.0	5.1	13.5	13.5	Apr-10
<i>BBgBarc US Aggregate TR</i>				-0.6	3.1	8.9	4.8	3.4	3.9	3.9	Apr-10

In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT structure. Performance prior to transitioning to the CIT investment vehicle is linked to mutual fund performance history.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Hedge Fund	33,248,687	6.5	6.0	-7.0	-7.3	-3.4	0.4	-0.2	2.6	2.5	Oct-06
PRIM Portfolio Completion Strategies	12,625,603	2.5	0.0	-7.8	-8.8	-4.7	0.8	0.8	3.4	3.1	Oct-06
Corbin Pinehurst Partners	9,444,873	1.8		-9.1	-9.8	-5.8	--	--	--	-2.7	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				-6.2	-7.3	-3.9	0.5	0.3	1.9	-1.1	Nov-18
UBS Neutral Alpha Strategies	10,056,300	2.0		-4.4	-3.1	1.3	--	--	--	1.1	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				-6.2	-7.3	-3.9	0.5	0.3	1.9	-1.1	Nov-18
EnTrust Holdback	370,894	0.1									
Entrust Peru Wind Down	751,017	0.1		-0.2	-0.8	-6.5	--	--	--	-5.5	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				-6.2	-7.3	-3.9	0.5	0.3	1.9	-1.2	Dec-17
Other	9,890,676	1.9	0.0	0.0	0.4	2.5	2.0	1.2	--	0.7	Dec-10
Cash Account	9,890,676	1.9		0.0	0.4	2.5	2.0	1.2	0.7	1.9	Feb-00
<i>91 Day T-Bills</i>				0.1	0.4	1.9	1.7	1.1	0.6	1.6	Feb-00
Total Real Estate	50,723,436	9.8	10.0	0.8	0.8	6.0	7.9	8.8	11.0	7.9	Apr-99
<i>NCREIF Property Index</i>				0.7	0.7	5.3	6.4	7.6	10.2	8.8	Apr-99
Morgan Stanley Prime Property (\$2.8m commitment in '95)	20,018,385	3.9		0.6	0.6	5.3	7.1	8.8	12.0	8.6	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	20,412,899	4.0		1.5	1.5	--	--	--	--	6.1	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	898,438	0.2		0.0	0.0	6.5	12.4	--	--	12.4	Oct-15
Landmark VI (\$2m commitment in '11)	126,496	0.0		0.0	0.0	-6.3	-5.0	-2.0	--	6.2	Jul-11
Landmark VIII (\$4m commitment in '17)	1,278,914	0.2		0.0	0.0	0.0	--	--	--	17.4	Nov-17
Courtland/Mesirow MFire (\$2m commitment in '11)	754,941	0.1		0.0	0.0	0.4	3.3	6.5	--	4.2	May-12
Cerberus (\$1.5m commitment in '12)	746,530	0.1		0.0	0.0	8.6	6.3	8.8	--	12.3	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	329,905	0.1		0.0	0.0	13.3	14.1	11.6	--	11.3	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,763,515	0.3		0.0	0.0	2.2	6.4	--	--	11.7	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	4,393,413	0.9		0.0	0.0	11.5	--	--	--	10.8	Nov-17

Importantly, all returns in this report, including those of the private real estate managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

Corbin Pinehurst Partners, UBS Neutral Alpha Strategies, and Entrust Peru Wind Down are preliminary as of 03/31/2020, and subject to change when finalized.

Morgan Stanley Prime Property is valued as of 03/31/2020. TA Realty Core Property Fund is estimated as of 03/31/2020. Invesco Mortgage Recovery II, Landmark VI, Landmark VIII, Cerberus, TA Realty Fund X and TerraCap Partners III are valued as of 12/31/2019. Market values for all other Real estate managers are as of 09/30/2019 and are adjusted for cash flows. PRIM accounts are valued as of 03/31/2020.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Private Equity	48,547,131	9.4	10.0	0.8	0.7	4.2	10.3	9.7	13.2	9.2	Apr-99
<i>Cambridge Associates US All PE</i>				0.0	0.0	9.0	12.6	11.6	13.3	12.3	Apr-99
<i>NASDAQ W/O Income</i>				-10.1	-14.2	-0.4	9.2	9.5	12.4	5.6	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,105,695	0.2		2.6	2.4	12.6	18.5	18.5	18.7	8.7	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	148,128	0.0		1.6	1.6	17.5	21.8	20.2	13.2	8.6	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	505,365	0.1		5.2	5.0	4.3	14.1	14.3	--	7.7	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,057,717	0.2		5.8	5.6	14.8	17.4	20.3	--	3.9	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	683,159	0.1		12.7	11.3	25.5	19.4	16.4	--	-15.6	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	1,913,659	0.4		8.0	7.7	26.0	24.6	17.9	--	2.2	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	1,010,073	0.2		5.2	3.7	14.8	--	--	--	8.2	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	40,527	0.0		1.4	--	--	--	--	--	1.4	Mar-20
Alcentra European DLF (\$5m commitment in '14)	1,191,964	0.2		0.0	0.0	3.5	3.0	4.3	--	5.5	Jan-15
Ascent Fund IV (\$2m commitment in '04)	31,425	0.0		0.0	0.0	-2.2	-51.6	-48.2	-32.0	-22.2	Jul-04
Ascent Fund IV-B (\$1m commitment in '16)	453,387	0.1		0.0	0.0	-21.4	-11.0	--	--	-8.1	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,770,551	0.3		0.0	0.0	2.8	-1.6	1.6	7.8	5.4	Oct-08
Ascent VI (\$3m commitment in '15)	2,939,506	0.6		0.0	0.0	-1.5	6.4	--	--	2.1	Dec-15
Castile Ventures III, L.P. (\$3m commitment in '07)	33,379	0.0		0.0	0.0	-86.7	-64.6	-51.7	-33.0	-29.7	Jan-08
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	5,707,020	1.1		0.0	0.0	5.3	--	--	--	5.4	Dec-17
Invesco Fund IV (\$3m commitment in '03)	56,255	0.0		0.0	0.0	-0.5	-4.6	-1.4	--	--	Feb-04
Invesco Fund VI (\$5m commitment in '13)	6,586,534	1.3		0.0	0.0	3.4	11.7	10.1	--	12.6	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	3,024,442	0.6		0.0	0.0	-31.5	-3.2	--	--	3.8	Jan-16
Foundry 2007 (\$3m commitment in '07)	233,333	0.0		0.0	0.0	-24.2	-17.0	-12.4	9.2	17.0	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,260,032	0.6		0.0	0.0	-2.6	10.6	4.0	--	8.1	Jan-11
Foundry 2010 Annex (\$0.4m commitment in '15)	197,946	0.0		0.0	0.0	25.1	28.3	--	--	14.6	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	680,495	0.1		0.0	0.0	-1.5	-0.3	5.2	--	--	Mar-08
Landmark XV (\$3m commitment in '13)	1,143,666	0.2		0.0	0.0	6.4	9.6	8.8	--	12.0	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	7,118,202	1.4		0.0	0.0	38.0	41.7	--	--	37.0	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	3,386,164	0.7		0.0	0.0	3.8	13.1	--	--	13.4	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,275,806	0.4		0.0	0.0	7.6	--	--	--	5.5	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	1,992,701	0.4		0.0	0.0	10.7	--	--	--	8.4	Sep-18

Importantly, all returns in this report, including those of the private markets managers, are based on a time weighted return calculation and not based on IRRs, which can result in return differences.

PRIM accounts are valued as of 03/31/2020. Invesco Fund IV, Invesco Fund VI, and Pinebridge PEP V are valued as of 09/30/2019. All other Private Equity managers are valued as of 12/31/2019 and are adjusted for cash flows.



MWRA Employees' Retirement System

NOTES

- 1 - Results for periods longer than one year are annualized.
- 2 - Total Balances, Large Cap, Small Cap, and Other Composite performance starts 12/1/2010.
- 3 - Preliminary Total Composite net of fee since inception return is 6.4% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.1% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 04/01/2019.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Entrust liquidated on 10/30/2018. Remaining balance is a holdback.



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 3/31/2020	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	\$3,668,557	0.7%	\$17,976	0.49%
PIMCO All Asset	0.87% of Assets	\$24,293,281	4.7%	\$210,137	0.87%
Rhumblin Advisors S&P 500 Index Fund	0.05% of Assets	\$41,446,861	8.0%	\$20,723	0.05%
Coho Relative Value Equity	0.50% of First 75.0 Mil, 0.40% of Next 75.0 Mil, 0.35% Thereafter	\$25,599,728	5.0%	\$127,999	0.50%
Polen Focused Growth	0.65% of Assets	\$26,134,608	5.1%	\$169,875	0.65%
Robeco Boston Partners Small Cap Value	1.00% of Assets	\$12,704,262	2.5%	\$127,043	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	\$13,326,230	2.6%	\$59,968	0.45%
SEG Baxter Street	1.00% of Assets	\$26,938,741	5.2%	\$269,387	1.00%
LMCG Small Cap International	0.85% of Assets	\$20,415,811	4.0%	\$173,534	0.85%
Schroder International Alpha Trust Class 1	0.55% of Assets	\$26,682,972	5.2%	\$146,756	0.55%
LMCG Emerging Markets	0.64% of Assets	\$20,430,257	4.0%	\$130,754	0.64%
Loomis Sayles Multisector Full Discretion Trust	0.50% of First 20.0 Mil, 0.40% of Next 20.0 Mil, 0.30% Thereafter	\$37,707,032	7.3%	\$170,828	0.45%
Rhumblin TIPS	0.05% of First 50.0 Mil, 0.04% Thereafter	\$26,386,445	5.1%	\$13,193	0.05%
Lord Abbett Core Fixed Income	0.19% of Assets	\$20,174,649	3.9%	\$38,332	0.19%
Garcia Hamilton Fixed Income Aggregate	0.25% of First 25.0 Mil, 0.20% Thereafter	\$40,195,204	7.8%	\$92,890	0.23%
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.40% of Assets	\$6,435,315	1.2%	\$25,741	0.40%
Invesco Mortgage Recovery Loans Feeder Fund	No Fee	\$203,120	0.0%	--	--
PRIM Portfolio Completion Strategies	No Fee	\$12,625,603	2.5%	--	--
Corbin Pinehurst Partners	0.85% of Assets	\$9,444,873	1.8%	\$80,281	0.85%
UBS Neutral Alpha Strategies	0.90% of Assets	\$10,056,300	2.0%	\$90,507	0.90%
EnTrust Holdback	No Fee	\$370,894	0.1%	--	--
Entrust Peru Wind Down	0.50% of Assets	\$751,017	0.1%	\$3,755	0.50%
Cash Account	No Fee	\$9,890,676	1.9%	--	--
Morgan Stanley Prime Property (\$2.8m commitment in '95)	No Fee	\$20,018,385	3.9%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 3/31/2020	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TA Realty Core Property Fund, LP (\$15m commitment in '19)	No Fee	\$20,412,899	4.0%	--	--
Invesco Mortgage Recovery II (\$3M commitment in '15)	No Fee	\$898,438	0.2%	--	--
Landmark VI (\$2m commitment in '11)	No Fee	\$126,496	0.0%	--	--
Landmark VIII (\$4m commitment in '17)	No Fee	\$1,278,914	0.2%	--	--
Courtland/Mesirow MFire (\$2m commitment in '11)	No Fee	\$754,941	0.1%	--	--
Cerberus (\$1.5m commitment in '12)	No Fee	\$746,530	0.1%	--	--
TA Realty Fund X LP (\$3.5m commitment in '12)	No Fee	\$329,905	0.1%	--	--
TerraCap Partners III, LP (\$2.6m commitment in '15)	No Fee	\$1,763,515	0.3%	--	--
TerraCap Partners IV, LP (\$4m commitment in '17)	No Fee	\$4,393,413	0.9%	--	--
PRIM Vintage Year 2008 (\$3m commitment in '08)	No Fee	\$1,105,695	0.2%	--	--
PRIM Vintage Year 2009 (\$1m commitment in '09)	No Fee	\$148,128	0.0%	--	--
PRIM Vintage Year 2010 (\$1m commitment in '10)	No Fee	\$505,365	0.1%	--	--
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	No Fee	\$1,057,717	0.2%	--	--
PRIM Vintage Year 2012 (\$1m commitment in '12)	No Fee	\$683,159	0.1%	--	--
PRIM Vintage Year 2014 (\$2m commitment in '14)	No Fee	\$1,913,659	0.4%	--	--
PRIM Vintage Year 2017 (\$2m commitment in '17)	No Fee	\$1,010,073	0.2%	--	--
PRIM Vintage Year 2020 (\$5m commitment in '20)	No Fee	\$40,527	0.0%	--	--
Alcentra European DLF (\$5m commitment in '14)	No Fee	\$1,191,964	0.2%	--	--
Ascent Fund IV (\$2m commitment in '04)	No Fee	\$31,425	0.0%	--	--
Ascent Fund IV-B (\$1m commitment in '16)	No Fee	\$453,387	0.1%	--	--
Ascent Fund V (\$2m commitment in '08)	No Fee	\$1,770,551	0.3%	--	--
Ascent VI (\$3m commitment in '15)	No Fee	\$2,939,506	0.6%	--	--
Castile Ventures III, L.P. (\$3m commitment in '07)	No Fee	\$33,379	0.0%	--	--
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	No Fee	\$5,707,020	1.1%	--	--
Invesco Fund IV (\$3m commitment in '03)	No Fee	\$56,255	0.0%	--	--
Invesco International Partnership Fund IV LP (\$3m commitment in '03)	No Fee	\$0	0.0%	--	--
Invesco US Buyout Partnership Fund IV LP (\$3m commitment in '03)	No Fee	\$0	0.0%	--	--
Invesco Venture Partnership Fund IV LP (\$3m commitment in '03)	No Fee	\$0	0.0%	--	--
Invesco Fund VI (\$5m commitment in '13)	No Fee	\$6,586,534	1.3%	--	--
Kayne Energy Fund VII (\$5m commitment in '15)	No Fee	\$3,024,442	0.6%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 3/31/2020	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Foundry 2007 (\$3m commitment in '07)	No Fee	\$233,333	0.0%	--	--
Foundry 2010 (\$3m commitment in '10)	No Fee	\$3,260,032	0.6%	--	--
Foundry 2010 Annex (\$0.4m commitment in '15)	No Fee	\$197,946	0.0%	--	--
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)	No Fee	\$80,326	0.0%	--	--
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)	No Fee	\$81,762	0.0%	--	--
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)	No Fee	\$6,477	0.0%	--	--
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	No Fee	\$99,790	0.0%	--	--
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)	No Fee	\$250,314	0.0%	--	--
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)	No Fee	\$39,397	0.0%	--	--
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)	No Fee	\$25,083	0.0%	--	--
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)	No Fee	\$97,346	0.0%	--	--
Landmark XV (\$3m commitment in '13)	No Fee	\$1,143,666	0.2%	--	--
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	No Fee	\$7,118,202	1.4%	--	--
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	No Fee	\$3,386,164	0.7%	--	--
Park Square Credit Opportunities III (\$3m commitment in '17)	No Fee	\$2,275,806	0.4%	--	--
Ironsides Constitution Opportunities (\$3m commitment in '18)	No Fee	\$1,992,701	0.4%	--	--
Investment Management Fee		\$515,153,002	100.0%	\$1,969,680	0.38%

Note:

Estimate fee for privates are ~\$997,801 annually, which brings the total expense ratio for privates to ~20 bps. This brings the total estimated expense ratio for MWRA to ~58 bps.



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.

