

PERFORMANCE REPORT

MWRA EMPLOYEES' RETIREMENT SYSTEM

December 19, 2019

Sebastian Grzejka, CAIA, Senior Consultant

Lebo McCallum, Analyst



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

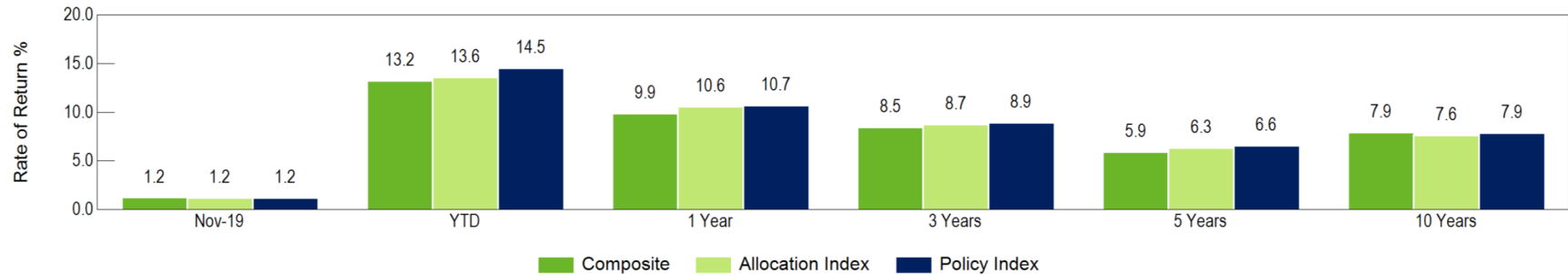
The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:

- **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).

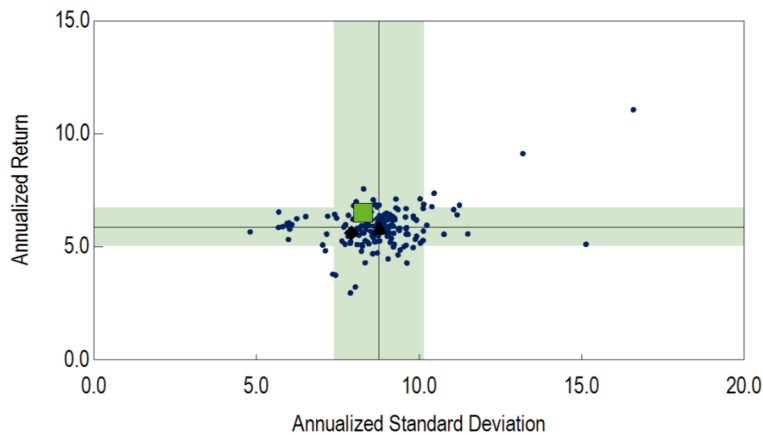


EXECUTIVE SUMMARY

Return Summary Ending Nov 30, 2019



20 Years Ending September 30, 2019



Performance

- The Composite returned 1.2% for the month in line with both the Allocation Index and Policy Index.
- US Equity continues to lead the way with the S&P 500 now up over 27% YTD. In the portfolio, strong active management from Polen, up 34.3% YTD and Boston Partners, up 26.7% YTD. In Non US Equity, SEG continues to provide strong returns up 25.5% YTD, outperforming its benchmark by 900 bps. During November, the Plan transitioned from the Schroders Mutual Funds to the CIT.
- Fixed income continue to benefit from a compression in rates and has returned 8.9% YTD. All of the Plans managers have contributed to the return. Loomis Sayles transitioned during the month from the mutual fund to the CIT.
- This brings the overall performance on a year to date basis to 13.2% while the allocation and policy index returned 13.6% and 14.5% respectively for the same period.

Statistics Summary

	Anlzd Ret	Anlzd Std Dev	Rank
Composite	6.5%	8.3%	14
Allocation Index	5.6%	7.9%	67
Policy Index	6.0%	8.3%	40
InvMetrics Public DB Net Median	5.9%	8.8%	--

20 year Risk/Return is as of 9/30/2019. Chart reflect universe data on quarter end months only. Universe data as of 12/31/2019 not available at time of report production.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	569,257,807	100.0	100.0	1.2	13.2	9.9	8.5	5.9	7.9	6.8	Jan-86
<i>Allocation Index</i>				1.2	13.6	10.6	8.7	6.3	7.6	--	Jan-86
<i>Policy Index</i>				1.2	14.5	10.7	8.9	6.6	7.9	--	Jan-86
Total Balanced	32,172,051	5.7	12.0	0.2	7.6	6.3	5.2	2.8	--	3.8	Dec-10
PRIT Core Fund	4,001,641	0.7		1.1	14.0	10.9	9.9	7.2	8.5	6.8	Apr-99
PIMCO All Asset	28,170,410	4.9	6.0	0.1	9.2	8.1	6.4	3.5	5.1	7.6	Dec-08
<i>PIMCO All Asset Index</i>				0.4	10.3	10.2	5.0	3.9	4.9	6.4	Dec-08
Total Domestic Equity	146,254,921	25.7	22.0	4.0	26.9	15.1	14.9	10.3	13.4	7.2	May-99
<i>Russell 3000</i>				3.8	27.3	15.5	14.2	10.6	13.4	6.6	May-99
Large Cap	108,772,294	19.1	16.0	3.9	27.3	16.8	16.2	10.6	--	13.4	Dec-10
Rhumblin Advisors S&P 500 Index Fund	48,037,031	8.4	8.0	3.6	27.5	16.0	14.8	10.9	13.3	8.6	Apr-97
<i>S&P 500</i>				3.6	27.6	16.1	14.9	11.0	13.4	8.5	Apr-97
Coho Relative Value Equity	30,309,316	5.3	4.0	4.2	20.1	10.1	12.3	--	--	12.1	Mar-16
<i>Russell 1000 Value</i>				3.1	23.2	11.3	9.6	7.8	11.7	13.1	Mar-16
Polen Focused Growth	30,425,948	5.3	4.0	4.2	34.3	24.8	22.5	--	--	18.8	Feb-16
<i>Russell 1000 Growth</i>				4.4	32.4	21.0	19.8	13.7	15.2	18.6	Feb-16
Small Cap	37,482,627	6.6	6.0	4.3	25.6	11.0	11.8	9.6	--	12.4	Dec-10
Robeco Boston Partners Small Cap Value	19,404,840	3.4	3.0	3.6	26.7	12.6	6.5	6.9	11.5	10.6	Feb-97
<i>Russell 2000 Value</i>				2.3	18.3	4.0	5.0	6.8	11.0	8.9	Feb-97
Loomis Sayles Small Cap Growth	18,077,787	3.2	3.0	5.0	24.3	9.3	16.8	12.0	15.8	6.6	Jan-97
<i>Russell 2000 Growth</i>				5.9	25.6	10.9	12.2	9.5	13.7	7.0	Jan-97



Since inception return is 8. 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 (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Non-US Equity	118,771,866	20.9	20.0	1.0	17.2	11.3	9.7	3.6	3.9	4.4	Mar-99
International Equity	93,273,234	16.4	15.0	1.3	20.7	13.9	10.7	4.7	--	--	Sep-05
SEG Baxter Street	33,233,641	5.8	5.0	1.0	25.5	19.0	13.2	--	--	11.6	May-16
<i>MSCI ACWI ex USA</i>				0.9	16.5	11.2	9.2	3.8	4.7	7.6	May-16
LMCG Small Cap International	27,845,415	4.9	5.0	1.7	16.9	10.0	--	--	--	1.8	Aug-17
<i>MSCI EAFE Small Cap</i>				2.2	19.7	12.0	10.4	7.8	8.4	3.4	Aug-17
Schroder International Alpha Trust Class 1	32,194,179	5.7		--	--	--	--	--	--	--	Dec-19
<i>MSCI ACWI ex USA</i>				0.9	16.5	11.2	9.2	3.8	4.7	--	Dec-19
Emerging Markets Equity	25,498,632	4.5	5.0	-0.2	6.7	3.2	6.3	0.4	--	0.8	Nov-13
<i>MSCI Emerging Markets</i>				-0.1	10.2	7.3	9.0	3.1	3.3	2.5	Nov-13
LMCG Emerging Markets	25,498,632	4.5	5.0	-0.2	6.7	3.2	6.3	0.4	--	0.8	Dec-13
<i>MSCI Emerging Markets</i>				-0.1	10.2	7.3	9.0	3.1	3.3	2.8	Dec-13
Total Fixed Income	142,236,177	25.0	21.0	0.0	8.9	9.2	4.5	3.2	5.4	6.6	Mar-99
Loomis Sayles Multisector Full Discretion Trust	38,485,138	6.8		--	--	--	--	--	--	--	Dec-19
<i>BBgBarc US Aggregate TR</i>				-0.1	8.8	10.8	4.1	3.1	3.6	--	Dec-19
<i>BBgBarc US High Yield TR</i>				0.3	12.1	9.7	6.3	5.4	7.7	--	Dec-19
Rhumbline TIPS	28,816,222	5.1	5.0	0.2	8.1	8.7	3.2	--	--	2.8	Jun-16
<i>BBgBarc US TIPS TR</i>				0.2	8.0	8.6	3.2	2.3	3.1	2.9	Jun-16
Lord Abbett Core Fixed Income	22,963,123	4.0	3.0	0.0	8.6	10.4	--	--	--	5.8	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.1	8.8	10.8	4.1	3.1	3.6	6.1	Apr-18
Garcia Hamilton Fixed Income Aggregate	44,715,803	7.9	7.0	0.0	7.4	8.6	--	--	--	5.3	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.1	8.8	10.8	4.1	3.1	3.6	6.1	Apr-18
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	7,052,771	1.2		0.7	--	--	--	--	--	0.6	Aug-19
<i>Credit Suisse Leveraged Loan</i>				0.6	6.5	4.0	4.3	4.0	5.3	0.2	Aug-19
Invesco Mortgage Recovery Loans Feeder Fund	203,120	0.0		0.0	1.2	6.7	2.5	9.1	--	14.0	Apr-10
<i>BBgBarc US Aggregate TR</i>				-0.1	8.8	10.8	4.1	3.1	3.6	3.7	Apr-10

In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CI structure, resulting in a gap for reporting historical performance. The MWRA Retirement System has invested with Loomis Sayles since March 1999 and with Schroders since March 2012, in identical strategies.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Hedge Fund	33,382,121	5.9	5.0	0.4	6.0	4.6	3.3	1.5	3.5	3.1	Oct-06
PRIM Portfolio Completion Strategies	13,678,628	2.4	0.0	0.3	6.4	4.8	4.6	3.1	4.5	3.8	Oct-06
Corbin Pinehurst Partners	9,298,000	1.6		0.7	7.0	5.5	--	--	--	4.2	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.5	6.2	4.5	3.5	2.0	2.7	3.7	Nov-18
UBS Neutral Alpha Strategies	9,254,260	1.6		0.4	5.9	5.2	--	--	--	3.4	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				0.5	6.2	4.5	3.5	2.0	2.7	3.7	Nov-18
EnTrust	370,894	0.1	0.0								
Entrust Peru Wind Down	780,339	0.1									
Other	3,502,168	0.6	0.0	0.1	2.0	2.2	1.7	1.0	--	0.6	Dec-10
Cash Account	3,502,168	0.6		0.1	2.0	2.2	1.7	1.0	0.6	1.9	Feb-00
<i>91 Day T-Bills</i>				0.1	1.9	2.1	1.6	1.0	0.5	1.6	Feb-00
Total Real Estate	45,816,747	8.0	10.0	0.0	6.1	7.2	8.6	9.7	10.3	7.9	Apr-99
<i>NCREIF Property Index</i>				0.0	4.8	6.2	6.8	8.6	9.8	8.8	Apr-99
Morgan Stanley Prime Property (\$2.8m commitment in '95)	19,598,514	3.4		0.0	4.4	6.5	7.9	10.1	11.7	8.7	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	15,068,378	2.6		0.0	--	--	--	--	--	2.7	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	1,060,772	0.2		0.0	10.7	23.4	18.9	--	--	14.4	Oct-15
Landmark VI (\$2m commitment in '11)	154,407	0.0		0.0	-11.9	-13.7	-4.6	-0.3	--	6.8	Jul-11
Landmark VIII (\$4m commitment in '17)	1,063,331	0.2		0.0	7.0	9.2	--	--	--	20.4	Nov-17
Courtland/Mesirow MFire (\$2m commitment in '11)	815,856	0.1		0.0	-0.3	-0.2	4.2	7.3	--	4.4	May-12
Cerberus (\$1.5m commitment in '12)	729,086	0.1		0.0	4.6	9.0	6.2	10.2	--	12.2	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	593,277	0.1		0.0	17.6	20.6	12.3	12.6	--	11.6	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	2,312,077	0.4		0.0	1.4	10.7	14.7	--	--	12.6	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	4,421,049	0.8		0.0	2.8	7.1	--	--	--	8.6	Nov-17

Note: Market values for Real estate managers are as of 09/30/2019 and are adjusted for cash flows. PRIM accounts are valued as of 11/30/2019. Courtland/Mesirow Mfire market value is as of 06/30/2019 and adjusted for cash flows. 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.



MWRA Employees' Retirement System

TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Private Equity	47,121,755	8.3	10.0	0.0	4.3	5.2	10.2	13.3	15.8	9.3	Apr-99
<i>Cambridge Associates US All PE</i>				0.0	8.5	6.7	13.8	11.2	13.9	12.2	Apr-99
<i>NASDAQ W/O Income</i>				4.5	30.6	18.2	17.6	12.6	15.0	6.3	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,109,510	0.2		-0.1	7.3	11.9	22.2	18.7	18.8	8.7	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	143,698	0.0		-0.1	16.9	21.6	21.5	21.5	10.3	8.1	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	541,917	0.1		-0.1	-4.9	-2.0	17.3	16.8	--	7.9	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,094,035	0.2		-0.1	5.4	12.0	20.0	21.6	--	3.4	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	626,513	0.1		-0.8	4.8	8.6	18.5	14.3	--	-17.6	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	1,735,375	0.3		-0.1	10.8	19.6	23.8	14.4	--	0.2	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	695,465	0.1		-1.7	9.6	10.1	--	--	--	5.7	May-17
Alcentra European DLF (\$5m commitment in '14)	1,174,755	0.2		0.0	-5.2	-5.5	3.9	--	--	5.5	Jan-15
Ascent Fund II (\$0.8m commitment in '99)	10,961	0.0		0.0	18.7	17.7	9.2	35.7	28.3	18.5	Jan-99
Ascent Fund IV (\$2m commitment in '04)	31,724	0.0		0.0	-36.8	-77.6	-47.3	-53.1	-29.2	-22.5	Jul-04
Ascent Fund IV-B (\$1m commitment in '16)	1,257,208	0.2		0.0	-15.7	-20.8	-6.6	--	--	-5.8	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,779,010	0.3		0.0	-0.5	-1.8	-0.1	1.5	7.5	5.6	Oct-08
Ascent VI (\$3m commitment in '15)	2,674,594	0.5		0.0	-1.9	-2.0	10.2	--	--	2.3	Dec-15
Castile Ventures III, L.P. (\$3m commitment in '07)	239,126	0.0		0.0	-4.6	-38.6	-37.0	-28.7	-18.2	-17.8	Jan-08
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	4,084,023	0.7		0.0	7.1	4.2	--	--	--	4.9	Dec-17
Invesco Fund IV (\$3m commitment in '03)	368,031	0.1		0.0	0.0	0.0	-2.5	2.0	--	--	Feb-04
Invesco Fund VI (\$5m commitment in '13)	6,749,639	1.2		0.0	5.2	7.8	13.3	14.2	--	13.3	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	3,495,436	0.6		0.0	-18.2	-26.5	2.7	--	--	8.5	Jan-16
Foundry 2007 (\$3m commitment in '07)	313,939	0.1		0.0	-17.8	-53.0	-17.8	7.6	20.4	20.4	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,505,130	0.6		0.0	4.6	4.6	11.3	7.0	--	9.0	Jan-11
Foundry 2010 Annex (\$0.4m commitment in '15)	270,792	0.0		0.0	42.4	42.3	35.6	--	--	19.5	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	1,082,165	0.2		0.0	4.3	-3.8	0.5	7.6	--	--	Mar-08
Landmark XV (\$3m commitment in '13)	1,254,710	0.2		0.0	2.9	3.4	13.5	8.6	--	13.7	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	6,061,728	1.1		0.0	26.5	53.7	--	--	--	35.8	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	3,065,207	0.5		0.0	10.3	19.4	--	--	--	15.2	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	1,973,652	0.3		0.0	7.4	10.6	--	--	--	5.3	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	1,783,412	0.3		0.0	12.4	13.2	--	--	--	9.0	Sep-18

Note: Market values for Private Equity managers are as of 09/30/2019 and are adjusted for cash flows. PRIM accounts are valued as of 11/30/2019. CVI Credit Value Fund IV, Invesco Fund VI, Pinebridge PEP V, Castle Ventures III, L.P., and Private Advisors Small Co. market values are as of 06/30/2019 and adjusted for cash flows. Invesco Fund IV market value is as of 9/30/2018 and adjusted for cash flows. 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.



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 6.8% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.5% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 04/30/2019.
- 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.
- 8 - Returns are preliminary as of 11/30/2019, and subject to change when finalized.



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 11/30/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	\$4,001,641	0.7%	\$19,608	0.49%
PIMCO All Asset	0.87% of Assets	\$28,170,410	4.9%	\$243,674	0.87%
Rhumblin Advisors S&P 500 Index Fund	0.05% of Assets	\$48,037,031	8.4%	\$24,019	0.05%
Coho Relative Value Equity	0.50% of First 75.0 Mil, 0.40% of Next 75.0 Mil, 0.35% Thereafter	\$30,309,316	5.3%	\$151,547	0.50%
Polen Focused Growth	0.65% of Assets	\$30,425,948	5.3%	\$197,769	0.65%
Robeco Boston Partners Small Cap Value	1.00% of Assets	\$19,404,840	3.4%	\$194,048	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	\$18,077,787	3.2%	\$81,350	0.45%
SEG Baxter Street	1.00% of Assets	\$33,233,641	5.8%	\$332,336	1.00%
LMCG Small Cap International	0.85% of Assets	\$27,845,415	4.9%	\$236,686	0.85%
Schroder International Alpha Trust Class 1	0.55% of Assets	\$32,194,179	5.7%	\$177,068	0.55%
LMCG Emerging Markets	0.64% of Assets	\$25,498,632	4.5%	\$163,191	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	\$38,485,138	6.8%	\$173,941	0.45%
Rhumblin TIPS	0.05% of First 50.0 Mil, 0.04% Thereafter	\$28,816,222	5.1%	\$14,408	0.05%
Lord Abbett Core Fixed Income	0.19% of Assets	\$22,963,123	4.0%	\$43,630	0.19%
Garcia Hamilton Fixed Income Aggregate	0.25% of First 25.0 Mil, 0.20% Thereafter	\$44,715,803	7.9%	\$101,932	0.23%
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.40% of Assets	\$7,052,771	1.2%	\$28,211	0.40%
Invesco Mortgage Recovery Loans Feeder Fund	No Fee	\$203,120	0.0%	--	--
PRIM Portfolio Completion Strategies	No Fee	\$13,678,628	2.4%	--	--
Corbin Pinehurst Partners	0.85% of Assets	\$9,298,000	1.6%	\$79,033	0.85%
UBS Neutral Alpha Strategies	0.90% of Assets	\$9,254,260	1.6%	\$83,288	0.90%
EnTrust	No Fee	\$370,894	0.1%	--	--
Entrust Peru Wind Down	0.50% of Assets	\$780,339	0.1%	\$3,902	0.50%
Cash Account	No Fee	\$3,502,168	0.6%	--	--
Morgan Stanley Prime Property (\$2.8m commitment in '95)	No Fee	\$19,598,514	3.4%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 11/30/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TA Realty Core Property Fund, LP (\$15m commitment in '19)	No Fee	\$15,068,378	2.6%	--	--
Invesco Mortgage Recovery II (\$3M commitment in '15)	No Fee	\$1,060,772	0.2%	--	--
Landmark VI (\$2m commitment in '11)	No Fee	\$154,407	0.0%	--	--
Landmark VIII (\$4m commitment in '17)	No Fee	\$1,063,331	0.2%	--	--
Courtland/Mesirow MFire (\$2m commitment in '11)	No Fee	\$815,856	0.1%	--	--
Cerberus (\$1.5m commitment in '12)	No Fee	\$729,086	0.1%	--	--
TA Realty Fund X LP (\$3.5m commitment in '12)	No Fee	\$593,277	0.1%	--	--
TerraCap Partners III, LP (\$2.6m commitment in '15)	No Fee	\$2,312,077	0.4%	--	--
TerraCap Partners IV, LP (\$4m commitment in '17)	No Fee	\$4,421,049	0.8%	--	--
PRIM Vintage Year 2008 (\$3m commitment in '08)	No Fee	\$1,109,510	0.2%	--	--
PRIM Vintage Year 2009 (\$1m commitment in '09)	No Fee	\$143,698	0.0%	--	--
PRIM Vintage Year 2010 (\$1m commitment in '10)	No Fee	\$541,917	0.1%	--	--
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	No Fee	\$1,094,035	0.2%	--	--
PRIM Vintage Year 2012 (\$1m commitment in '12)	No Fee	\$626,513	0.1%	--	--
PRIM Vintage Year 2014 (\$2m commitment in '14)	No Fee	\$1,735,375	0.3%	--	--
PRIM Vintage Year 2017 (\$2m commitment in '17)	No Fee	\$695,465	0.1%	--	--
Alcentra European DLF (\$5m commitment in '14)	No Fee	\$1,174,755	0.2%	--	--
Ascent Fund II (\$0.8m commitment in '99)	No Fee	\$10,961	0.0%	--	--
Ascent Fund IV (\$2m commitment in '04)	No Fee	\$31,724	0.0%	--	--
Ascent Fund IV-B (\$1m commitment in '16)	No Fee	\$1,257,208	0.2%	--	--
Ascent Fund V (\$2m commitment in '08)	No Fee	\$1,779,010	0.3%	--	--
Ascent VI (\$3m commitment in '15)	No Fee	\$2,674,594	0.5%	--	--
Castile Ventures III, L.P. (\$3m commitment in '07)	No Fee	\$239,126	0.0%	--	--
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	No Fee	\$4,084,023	0.7%	--	--
Invesco International Partnership Fund IV LP (\$3m commitment in '03)	No Fee	\$115,246	0.0%	--	--
Invesco US Buyout Partnership Fund IV LP (\$3m commitment in '03)	No Fee	\$140,630	0.0%	--	--
Invesco Venture Partnership Fund IV LP (\$3m commitment in '03)	No Fee	\$112,155	0.0%	--	--
Invesco Fund VI (\$5m commitment in '13)	No Fee	\$6,749,639	1.2%	--	--
Kayne Energy Fund VII (\$5m commitment in '15)	No Fee	\$3,495,436	0.6%	--	--
Foundry 2007 (\$3m commitment in '07)	No Fee	\$313,939	0.1%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 11/30/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Foundry 2010 (\$3m commitment in '10)	No Fee	\$3,505,130	0.6%	--	--
Foundry 2010 Annex (\$0.4m commitment in '15)	No Fee	\$270,792	0.0%	--	--
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)	No Fee	\$101,682	0.0%	--	--
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)	No Fee	\$81,037	0.0%	--	--
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)	No Fee	\$168,983	0.0%	--	--
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	No Fee	\$133,328	0.0%	--	--
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)	No Fee	\$253,678	0.0%	--	--
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)	No Fee	\$42,724	0.0%	--	--
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)	No Fee	\$163,441	0.0%	--	--
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)	No Fee	\$137,292	0.0%	--	--
Landmark XV (\$3m commitment in '13)	No Fee	\$1,254,710	0.2%	--	--
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	No Fee	\$6,061,728	1.1%	--	--
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	No Fee	\$3,065,207	0.5%	--	--
Park Square Credit Opportunities III (\$3m commitment in '17)	No Fee	\$1,973,652	0.3%	--	--
Ironsides Constitution Opportunities (\$3m commitment in '18)	No Fee	\$1,783,412	0.3%	--	--
Investment Management Fee		\$569,257,807	100.0%	\$2,349,640	0.41%

Note:

Estimate fee for privates are ~\$1,000,000 annually, which brings the total expense ratio for privates to ~18 bps. This brings the total estimated expense ratio for MWRA to ~53 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.
- 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.
- This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
- This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

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.

