

PERFORMANCE REPORT

MWRA EMPLOYEES' RETIREMENT SYSTEM



January 30, 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

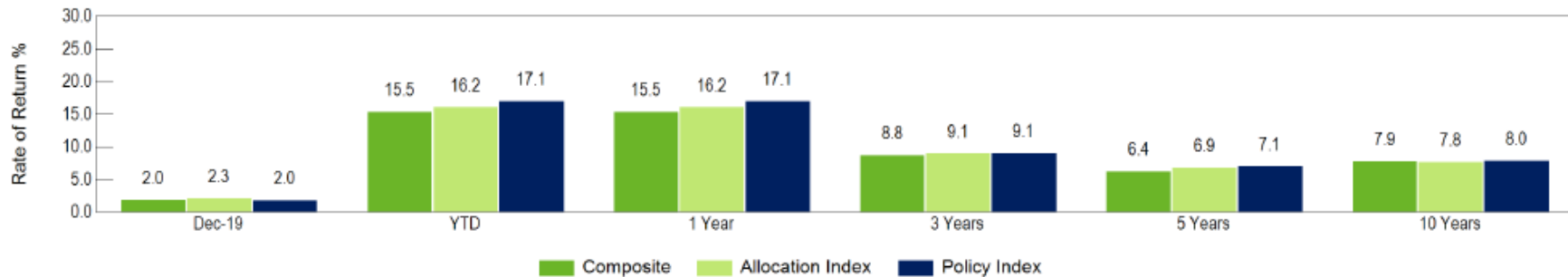
The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:

- **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).

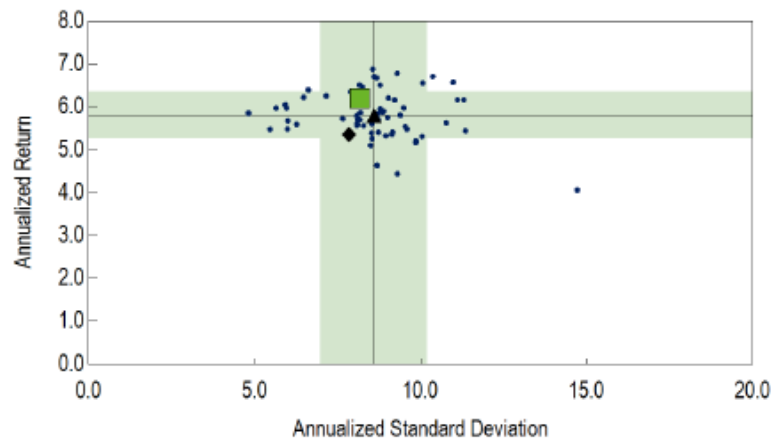


EXECUTIVE SUMMARY

Return Summary Ending Dec 31, 2019



20 Years Ending December 31, 2019



Statistics Summary

	Anlzd Ret	Anlzd Std Dev	Rank
Composite	6.2%	8.2%	28
Allocation Index	5.4%	7.8%	86
Policy Index	5.8%	8.3%	51
InvMetrics Public DB Net Median	5.8%	8.6%	--

Performance

- The Composite returned 2.0% for the month in line with the Policy Index. The allocation index returned 2.3% for the month. Active management detracted 0.3% from performance in December.
- US stocks lagged their international counter parts with the S&P 500 Index returning 3% for the month. The MSCI ACWI ex USA and MSCI Emerging Markets indexes were up 4.3% and 7.5%, respectively, for December. The portfolio's domestic equity composite returned 2.8% with large cap composite outperforming the small cap composite. The international equity composite and the emerging market equity composite returned 3.6% and 7.2% respectively.
- In fixed income rates ended slightly the month slightly higher with the asset class continuing to benefit from spread compression across the credit spectrum. The portfolio's fixed income composite returned 0.2% for the month.
- This brings the overall performance on a year to date basis to 15.5% while the allocation and policy index returned 16.2% and 17.1% respectively for the same period.

20 year Risk/Return is as of 12/31/2019. Chart reflects universe data on quarter end months only.



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	579,036,876	100.0	100.0	2.0	4.8	15.5	8.8	6.4	7.9	6.9	Jan-86
<i>Allocation Index</i>				2.3	5.1	16.2	9.1	6.9	7.8	--	Jan-86
<i>Policy Index</i>				2.0	4.8	17.1	9.1	7.1	8.0	--	Jan-86
Total Balanced	33,017,302	5.7	5.0	2.6	3.9	10.4	5.6	3.7	--	4.1	Dec-10
PRIT Core Fund	4,080,725	0.7		2.0	4.5	16.2	10.0	7.6	8.6	6.8	Apr-99
PIMCO All Asset	28,936,577	5.0	5.0	2.7	4.3	12.2	6.7	4.7	5.6	7.8	Dec-08
<i>PIMCO All Asset Index</i>				0.9	1.9	11.3	5.1	4.3	5.1	6.4	Dec-08
Total Domestic Equity	150,389,089	26.0	24.0	2.8	9.4	30.4	15.5	10.8	13.3	7.3	May-99
<i>Russell 3000</i>				2.9	9.1	31.0	14.6	11.2	13.4	6.8	May-99
Large Cap	112,021,162	19.3	18.0	3.0	9.7	31.1	17.0	11.3	--	13.6	Dec-10
Rhumblin Advisors S&P 500 Index Fund	49,484,975	8.5	10.0	3.0	9.0	31.3	15.2	11.6	13.4	8.7	Apr-97
<i>S&P 500</i>				3.0	9.1	31.5	15.3	11.7	13.6	8.6	Apr-97
Coho Relative Value Equity	31,289,449	5.4	4.0	3.2	10.1	24.0	13.1	--	--	12.8	Mar-16
<i>Russell 1000 Value</i>				2.8	7.4	26.5	9.7	8.3	11.8	13.6	Mar-16
Polen Focused Growth	31,246,737	5.4	4.0	2.6	10.3	37.8	23.7	--	--	19.1	Feb-16
<i>Russell 1000 Growth</i>				3.0	10.6	36.4	20.5	14.6	15.2	19.1	Feb-16
Small Cap	38,367,927	6.6	6.0	2.3	8.8	28.5	12.1	9.8	--	12.5	Dec-10
Robeco Boston Partners Small Cap Value	19,879,987	3.4	3.0	2.4	7.6	29.7	6.3	7.2	10.9	10.7	Feb-97
<i>Russell 2000 Value</i>				3.5	8.5	22.4	4.8	7.0	10.6	9.0	Feb-97
Loomis Sayles Small Cap Growth	18,487,940	3.2	3.0	2.2	10.1	27.1	17.8	12.2	15.1	6.7	Jan-97
<i>Russell 2000 Growth</i>				2.3	11.4	28.5	12.5	9.3	13.0	7.1	Jan-97

Since inception return is 6.9% net 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	124,016,484	21.4	20.0	4.4	9.4	22.4	11.0	5.3	4.1	4.6	Mar-99
International Equity	96,689,057	16.7	15.0	3.6	8.8	25.1	11.6	6.4	--	--	Sep-05
SEG Baxter Street <i>MSCI ACWI ex USA</i>	34,180,021	5.9	5.0	2.8	6.1	29.1	13.8	--	--	12.1	May-16
LMCG Small Cap International <i>MSCI EAFE Small Cap</i>	28,868,847	5.0	5.0	3.7	10.1	21.2	--	--	--	3.3	Aug-17
Schroder International Alpha Trust Class 1 <i>MSCI ACWI ex USA</i>	33,640,188	5.8	5.0	4.4	--	--	--	--	--	4.4	Dec-19
Emerging Markets Equity	27,327,428	4.7	5.0	7.2	11.6	14.3	9.0	2.5	--	2.0	Nov-13
<i>MSCI Emerging Markets</i>				7.5	11.8	18.4	11.6	5.6	3.7	3.7	Nov-13
LMCG Emerging Markets <i>MSCI Emerging Markets</i>	27,327,428	4.7	5.0	7.2	11.6	14.3	9.0	2.5	--	2.0	Dec-13
				7.5	11.8	18.4	11.6	5.6	3.7	4.0	Dec-13
Total Fixed Income	142,479,814	24.6	25.0	0.2	0.5	9.0	4.4	3.3	5.4	6.5	Mar-99
Loomis Sayles Multisector Full Discretion Trust <i>BBgBarc US Aggregate TR</i>	38,695,794	6.7	25.0	0.5	--	--	--	--	--	0.5	Dec-19
<i>BBgBarc US High Yield TR</i>				-0.1	0.2	8.7	4.0	3.0	3.7	-0.1	Dec-19
Rhumbline TIPS <i>BBgBarc US TIPS TR</i>	28,899,046	5.0		2.0	2.6	14.3	6.4	6.1	7.6	2.0	Dec-19
<i>BBgBarc US TIPS TR</i>				0.3	0.7	8.4	3.3	--	--	2.8	Jun-16
Lord Abbett Core Fixed Income <i>BBgBarc US Aggregate TR</i>	22,920,911	4.0		0.4	0.8	8.4	3.3	2.6	3.4	2.9	Jun-16
<i>BBgBarc US Aggregate TR</i>				-0.2	0.0	8.4	--	--	--	5.4	Apr-18
Garcia Hamilton Fixed Income Aggregate <i>BBgBarc US Aggregate TR</i>	44,607,811	7.7		-0.1	0.2	8.7	4.0	3.0	3.7	5.8	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.3	-0.1	7.1	--	--	--	4.9	Apr-18
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1 <i>Credit Suisse Leveraged Loan</i>	7,153,132	1.2		-0.1	0.2	8.7	4.0	3.0	3.7	5.8	Apr-18
<i>Credit Suisse Leveraged Loan</i>				1.4	1.9	--	--	--	--	2.0	Aug-19
Invesco Mortgage Recovery Loans Feeder Fund <i>BBgBarc US Aggregate TR</i>	203,120	0.0		1.6	1.7	8.2	4.5	4.5	5.2	1.8	Aug-19
<i>BBgBarc US Aggregate TR</i>				0.0	0.0	1.2	5.1	5.5	--	13.9	Apr-10
				-0.1	0.2	8.7	4.0	3.0	3.7	3.7	Apr-10

In November 2019, Loomis Sayles and Schroders transitioned from a mutual fund to a CIT 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 (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Hedge Fund	33,743,575	5.8	6.0	1.1	2.0	7.2	3.4	1.8	3.6	3.1	Oct-06
PRIM Portfolio Completion Strategies	13,842,767	2.4		1.2	1.7	7.7	4.7	3.3	4.6	3.9	Oct-06
Corbin Pinehurst Partners	9,417,375	1.6		1.3	2.9	8.5	--	--	--	5.2	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				1.7	3.0	8.3	3.9	2.4	2.8	5.2	Nov-18
UBS Neutral Alpha Strategies	9,353,971	1.6		1.1	2.2	7.1	--	--	--	4.1	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				1.7	3.0	8.3	3.9	2.4	2.8	5.2	Nov-18
EnTrust	370,894	0.1									
Entrust Peru Wind Down	758,567	0.1									
Other	2,480,814	0.4	0.0	0.6	0.9	2.7	1.9	1.2	--	0.7	Dec-10
Cash Account	2,480,814	0.4		0.6	0.9	2.7	1.9	1.2	0.7	1.9	Feb-00
<i>91 Day T-Bills</i>				0.1	0.4	2.1	1.6	1.1	0.6	1.6	Feb-00
Total Real Estate	45,801,058	7.9	10.0	1.2	1.2	7.4	7.9	9.2	10.9	7.9	Apr-99
<i>NCREIF Property Index</i>				1.6	1.6	6.4	6.7	8.2	10.2	8.8	Apr-99
Morgan Stanley Prime Property (\$2.8m commitment in '95)	19,897,929	3.4		1.5	1.5	6.0	7.6	9.3	12.1	8.7	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	15,330,568	2.6		1.7	1.7	--	--	--	--	4.5	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	928,630	0.2		0.0	0.0	10.7	14.2	--	--	14.1	Oct-15
Landmark VI (\$2m commitment in '11)	143,644	0.0		0.0	0.0	-11.9	-4.2	-0.7	--	6.8	Jul-11
Landmark VIII (\$4m commitment in '17)	1,294,071	0.2		0.0	0.0	7.0	--	--	--	19.6	Nov-17
Courtland/Mesirow MFire (\$2m commitment in '11)	794,941	0.1		0.0	0.0	-0.4	3.8	6.6	--	4.3	May-12
Cerberus (\$1.5m commitment in '12)	712,354	0.1		0.0	0.0	4.6	5.1	9.0	--	12.0	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	593,277	0.1		0.0	0.0	17.6	14.4	11.8	--	11.4	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,786,082	0.3		0.0	0.0	1.4	6.5	--	--	12.3	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	4,319,561	0.7		0.0	0.0	2.8	--	--	--	8.2	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.

Morgan Stanley Prime Property is valued as of 12/31/2019. Courtland/Mesirow MFire is valued as of 6/30/2019. Market values for all other Real estate managers are as of 9/30/2019 and are adjusted for cash flows. PRIM accounts are valued as of 12/31/2019. TA Realty Core Property Fund is estimated as of 12/31/2019, and subject to change when finalized.



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	47,108,740	8.1	10.0	0.2	0.2	4.4	10.5	11.4	13.4	9.2	Apr-99
<i>Cambridge Associates US All PE</i>				0.0	0.0	10.9	12.9	11.5	13.5	12.3	Apr-99
<i>NASDAQ W/O Income</i>				3.5	12.2	35.2	18.6	13.6	14.7	6.4	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,112,967	0.2		0.8	0.9	8.1	20.3	18.4	19.0	8.7	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	149,661	0.0		5.6	5.4	23.4	21.9	21.5	11.7	8.6	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	518,395	0.1		-4.2	-4.1	-9.0	13.6	15.2	--	7.4	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	1,062,258	0.2		-0.2	-0.2	5.2	18.3	20.7	--	3.4	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	632,687	0.1		1.2	1.5	6.0	16.5	13.8	--	-17.3	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	1,778,943	0.3		4.5	4.4	15.7	23.5	15.4	--	1.0	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	739,377	0.1		5.3	3.6	15.3	--	--	--	7.5	May-17
Alcentra European DLF (\$5m commitment in '14)	1,174,755	0.2		0.0	0.0	-5.2	3.2	5.4	--	5.4	Jan-15
Ascent Fund II (\$0.8m commitment in '99)	10,712	0.0		-2.3	-2.3	16.0	8.5	31.4	25.7	18.3	Jan-99
Ascent Fund IV (\$2m commitment in '04)	31,724	0.0		0.0	0.0	-36.8	-50.6	-52.5	-30.9	-22.4	Jul-04
Ascent Fund IV-B (\$1m commitment in '16)	1,257,208	0.2		0.0	0.0	-15.7	-7.1	--	--	-5.7	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,779,010	0.3		0.0	0.0	-0.5	-1.0	1.6	7.9	5.5	Oct-08
Ascent VI (\$3m commitment in '15)	2,674,594	0.5		0.0	0.0	-1.9	7.4	--	--	2.2	Dec-15
Castile Ventures III, L.P. (\$3m commitment in '07)	131,715	0.0		0.0	0.0	-47.4	-45.7	-36.4	-23.2	-21.7	Jan-08
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	4,727,143	0.8		0.0	0.0	8.3	--	--	--	5.2	Dec-17
Invesco Fund IV (\$3m commitment in '03)	56,255	0.0		0.0	0.0	0.1	-3.0	-1.3	--	--	Feb-04
Invesco Fund VI (\$5m commitment in '13)	6,586,534	1.1		0.0	0.0	5.6	12.0	11.0	--	13.2	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	3,538,709	0.6		0.0	0.0	-18.2	1.2	--	--	8.3	Jan-16
Foundry 2007 (\$3m commitment in '07)	313,939	0.1		0.0	0.0	-17.8	-9.0	0.4	12.6	20.3	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,505,130	0.6		0.0	0.0	4.6	12.3	4.8	--	8.9	Jan-11
Foundry 2010 Annex (\$0.4m commitment in '15)	270,792	0.0		0.0	0.0	42.4	34.5	--	--	19.1	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	918,010	0.2		0.0	0.0	1.2	0.9	5.9	--	--	Mar-08
Landmark XV (\$3m commitment in '13)	1,244,359	0.2		0.0	0.0	2.9	11.2	11.8	--	13.5	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	6,080,688	1.1		0.0	0.0	26.3	34.6	--	--	34.6	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	3,059,758	0.5		0.0	0.0	10.0	--	--	--	14.7	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	1,970,004	0.3		0.0	0.0	7.2	--	--	--	4.9	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	1,783,412	0.3		0.0	0.0	12.4	--	--	--	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.

Ascent Fund II is valued as 12/31/2019. PRIM accounts are valued as of 12/31/2019. Pinebridge PEP V is valued as of 6/30/2019. All other Private Equity managers are valued as of 9/30/2019.



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 6.9% 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 04/01/2019.
- 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 12/31/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	\$4,080,725	0.7%	\$19,996	0.49%
PIMCO All Asset	0.87% of Assets	\$28,936,577	5.0%	\$250,301	0.87%
Rhumblin Advisors S&P 500 Index Fund	0.05% of Assets	\$49,484,975	8.5%	\$24,742	0.05%
Coho Relative Value Equity	0.50% of First 75.0 Mil, 0.40% of Next 75.0 Mil, 0.35% Thereafter	\$31,289,449	5.4%	\$156,447	0.50%
Polen Focused Growth	0.65% of Assets	\$31,246,737	5.4%	\$203,104	0.65%
Robeco Boston Partners Small Cap Value	1.00% of Assets	\$19,879,987	3.4%	\$198,800	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	\$18,487,940	3.2%	\$83,196	0.45%
SEG Baxter Street	1.00% of Assets	\$34,180,021	5.9%	\$341,800	1.00%
LMCG Small Cap International	0.85% of Assets	\$28,868,847	5.0%	\$245,385	0.85%
Schroder International Alpha Trust Class 1	0.55% of Assets	\$33,640,188	5.8%	\$185,021	0.55%
LMCG Emerging Markets	0.64% of Assets	\$27,327,428	4.7%	\$174,896	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	\$38,695,794	6.7%	\$174,783	0.45%
Rhumblin TIPS	0.05% of First 50.0 Mil, 0.04% Thereafter	\$28,899,046	5.0%	\$14,450	0.05%
Lord Abbett Core Fixed Income	0.19% of Assets	\$22,920,911	4.0%	\$43,550	0.19%
Garcia Hamilton Fixed Income Aggregate	0.25% of First 25.0 Mil, 0.20% Thereafter	\$44,607,811	7.7%	\$101,716	0.23%
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.40% of Assets	\$7,153,132	1.2%	\$28,613	0.40%
Invesco Mortgage Recovery Loans Feeder Fund	No Fee	\$203,120	0.0%	--	--
PRIM Portfolio Completion Strategies	No Fee	\$13,842,767	2.4%	--	--
Corbin Pinehurst Partners	0.85% of Assets	\$9,417,375	1.6%	\$80,048	0.85%
UBS Neutral Alpha Strategies	0.90% of Assets	\$9,353,971	1.6%	\$84,186	0.90%
EnTrust	No Fee	\$370,894	0.1%	--	--
Entrust Peru Wind Down	0.50% of Assets	\$758,567	0.1%	\$3,793	0.50%
Cash Account	No Fee	\$2,480,814	0.4%	--	--
Morgan Stanley Prime Property (\$2.8m commitment in '95)	No Fee	\$19,897,929	3.4%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 12/31/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TA Realty Core Property Fund, LP (\$15m commitment in '19)	No Fee	\$15,330,568	2.6%	--	--
Invesco Mortgage Recovery II (\$3M commitment in '15)	No Fee	\$928,630	0.2%	--	--
Landmark VI (\$2m commitment in '11)	No Fee	\$143,644	0.0%	--	--
Landmark VIII (\$4m commitment in '17)	No Fee	\$1,294,071	0.2%	--	--
Courtland/Mesirow MFire (\$2m commitment in '11)	No Fee	\$794,941	0.1%	--	--
Cerberus (\$1.5m commitment in '12)	No Fee	\$712,354	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	\$1,786,082	0.3%	--	--
TerraCap Partners IV, LP (\$4m commitment in '17)	No Fee	\$4,319,561	0.7%	--	--
PRIM Vintage Year 2008 (\$3m commitment in '08)	No Fee	\$1,112,967	0.2%	--	--
PRIM Vintage Year 2009 (\$1m commitment in '09)	No Fee	\$149,661	0.0%	--	--
PRIM Vintage Year 2010 (\$1m commitment in '10)	No Fee	\$518,395	0.1%	--	--
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	No Fee	\$1,062,258	0.2%	--	--
PRIM Vintage Year 2012 (\$1m commitment in '12)	No Fee	\$632,687	0.1%	--	--
PRIM Vintage Year 2014 (\$2m commitment in '14)	No Fee	\$1,778,943	0.3%	--	--
PRIM Vintage Year 2017 (\$2m commitment in '17)	No Fee	\$739,377	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	\$10,712	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	\$131,715	0.0%	--	--
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	No Fee	\$4,727,143	0.8%	--	--
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	1.1%	--	--
Kayne Energy Fund VII (\$5m commitment in '15)	No Fee	\$3,538,709	0.6%	--	--



MWRA Employees' Retirement System

ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 12/31/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Foundry 2007 (\$3m commitment in '07)	No Fee	\$313,939	0.1%	--	--
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	\$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	\$156,233	0.0%	--	--
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	No Fee	\$106,394	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	\$106,238	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	\$1,244,359	0.2%	--	--
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	No Fee	\$6,080,688	1.1%	--	--
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	No Fee	\$3,059,758	0.5%	--	--
Park Square Credit Opportunities III (\$3m commitment in '17)	No Fee	\$1,970,004	0.3%	--	--
Ironsides Constitution Opportunities (\$3m commitment in '18)	No Fee	\$1,783,412	0.3%	--	--
Investment Management Fee		\$579,036,876	100.0%	\$2,414,825	0.42%

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.
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- 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.

