

# PERFORMANCE REPORT

## MWRA EMPLOYEES' RETIREMENT SYSTEM

February 2021

Sebastian Grzejka, CAIA, Senior Consultant  
Kiley

Fischer, Consulting 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

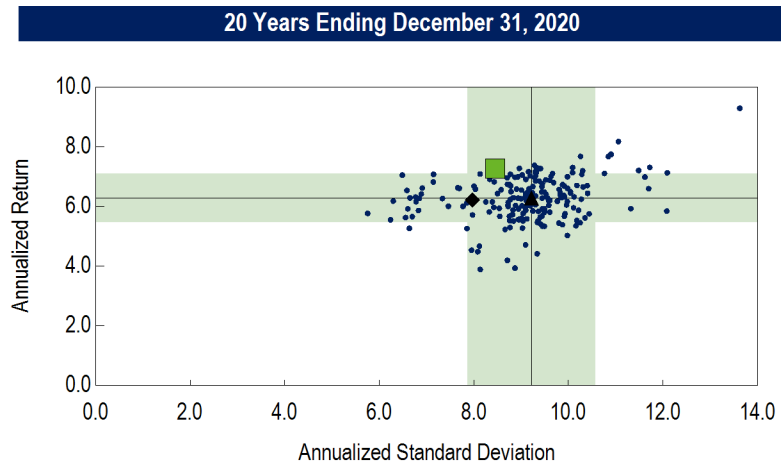
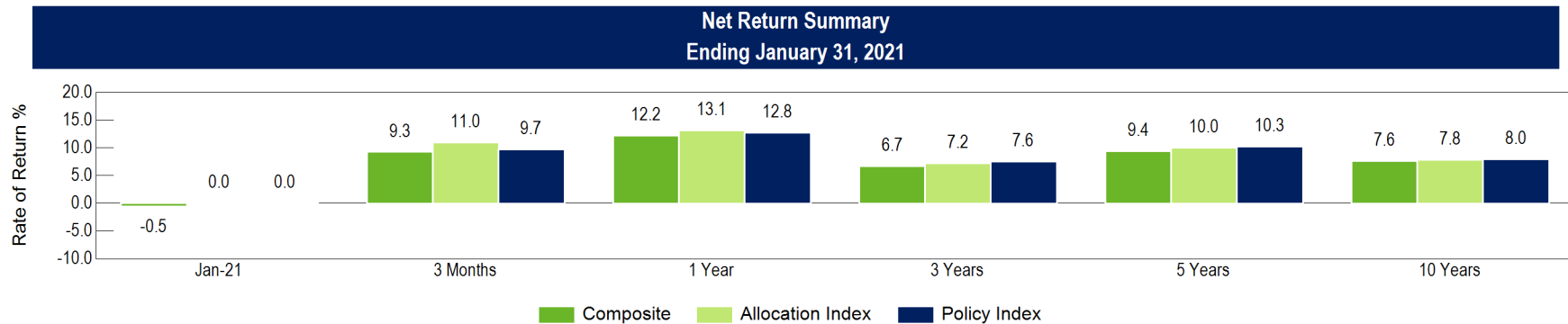
**The investment growth should be maintained in such a manner that the minimum nominal rate of return does not cause a negative real rate of return over a full market cycle:**

- **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).



# MWRA Employees' Retirement System

## EXECUTIVE SUMMARY



### Performance

- The Composite returned -0.5% (net) for the month underperforming the Allocation Index (0.0%) and Policy Index (0.0%).
- After a strong start to the year, developed market equities subsequently reversed course, ending January in the red. The market volatility was fueled by a short squeeze in a number of heavily-shortened names. The S&P 500 Index was down 1.0% for the month while the MSCI ACWI ex USA was up 0.2% for the month. The portfolio's domestic equity composite returned -1.1% (net) while International Equity returned 0.1% (net) for the month. Emerging markets exposure has been added to the portfolio through the recent funding of Axiom.
- Within fixed income, the yield curve modestly steepened with the 10- and 30-year Treasury yields rising 17 and 20 basis points, respectively. The Fixed Income Composite returned -0.4% (net) for the month while the BC Agg and BC US HY returned -0.7 and 0.3% respectively.
- This brings the total plan return for the trailing one year period to 12.2% (net), while the Allocation and Policy Index returned 13.1% (net) and 12.8% (net) respectively.

### Statistics Summary

	Anlzd Ret	Anlzd Std Dev	Rank
Composite	7.3%	8.4%	17
Allocation Index	6.3%	8.0%	76
Policy Index	6.6%	8.6%	57
InvMetrics Public DB Gross Median	6.7%	9.3%	--

20 years Risk/Return is as of 12/31/2020. 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 8.6% 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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Composite</b>	<b>643,652,965</b>	<b>100.0</b>	<b>100.0</b>	<b>-0.5</b>	<b>12.2</b>	<b>6.7</b>	<b>9.4</b>	<b>7.6</b>	<b>7.0</b>	<b>Jan-86</b>
Allocation Index				0.0	13.1	7.2	10.0	7.8	--	Jan-86
Policy Index				0.0	12.8	7.6	10.3	8.0	--	Jan-86
<b>Total Balanced</b>	<b>4,574,038</b>	<b>0.7</b>	<b>0.0</b>	<b>-0.1</b>	<b>12.1</b>	<b>3.9</b>	<b>7.5</b>	<b>4.3</b>	<b>4.7</b>	<b>Dec-10</b>
PRIT Core Fund	4,574,038	0.7		-0.1	12.2	7.4	10.5	8.4	7.0	Apr-99
60% S&P 500 / 40% BBgBarc Aggregate				-0.9	12.9	9.6	11.5	9.8	6.5	Apr-99
<b>Total Domestic Equity</b>	<b>180,051,177</b>	<b>28.0</b>	<b>26.0</b>	<b>-1.1</b>	<b>19.0</b>	<b>12.6</b>	<b>15.9</b>	<b>13.0</b>	<b>7.8</b>	<b>May-99</b>
Russell 3000				-0.4	20.5	12.4	16.7	13.5	7.3	May-99
<b>Large Cap</b>	<b>134,887,261</b>	<b>21.0</b>	<b>20.0</b>	<b>-2.0</b>	<b>18.4</b>	<b>13.3</b>	<b>16.0</b>	<b>13.3</b>	<b>13.9</b>	<b>Dec-10</b>
Rhumblin Advisors S&P 500 Index Fund	59,613,328	9.3	8.0	-1.0	17.2	11.6	16.0	13.4	9.0	Apr-97
S&P 500				-1.0	17.2	11.7	16.2	13.5	8.9	Apr-97
Coho Relative Value Equity	37,352,131	5.8	6.0	-3.2	11.1	7.2	--	--	11.4	Mar-16
Russell 1000 Value				-0.9	4.1	4.4	10.7	10.2	10.9	Mar-16
Polen Focused Growth	37,921,802	5.9	6.0	-2.6	27.1	21.8	21.0	--	21.0	Feb-16
Russell 1000 Growth				-0.7	34.5	19.9	22.2	16.8	22.2	Feb-16
<b>Small Cap</b>	<b>45,163,916</b>	<b>7.0</b>	<b>6.0</b>	<b>1.6</b>	<b>21.3</b>	<b>11.2</b>	<b>16.1</b>	<b>12.4</b>	<b>13.1</b>	<b>Dec-10</b>
Boston Partners Small Cap Value	22,655,761	3.5	3.0	1.6	7.6	3.5	10.8	9.1	10.4	Feb-97
Russell 2000 Value				5.3	16.4	5.1	12.3	9.2	9.0	Feb-97
Loomis Sayles Small Cap Growth	22,508,155	3.5	3.0	1.6	35.6	18.7	21.2	15.4	7.8	Jan-97
Russell 2000 Growth				4.8	42.7	16.5	20.2	14.1	8.3	Jan-97
<b>Total Non-US Equity</b>	<b>142,674,280</b>	<b>22.2</b>	<b>21.0</b>	<b>0.1</b>	<b>18.6</b>	<b>4.2</b>	<b>11.4</b>	<b>4.8</b>	<b>5.0</b>	<b>Mar-99</b>
<b>International Equity</b>	<b>122,674,280</b>	<b>19.1</b>	<b>15.0</b>	<b>0.1</b>	<b>19.7</b>	<b>6.2</b>	<b>11.8</b>	<b>5.6</b>	<b>4.8</b>	<b>Sep-05</b>
SEG Baxter Street	39,999,752	6.2	5.0	-2.3	15.6	8.5	--	--	12.2	May-16
MSCI ACWI ex USA				0.2	14.0	3.1	10.5	4.8	9.0	May-16
Schroder International Alpha Trust Class 1	50,720,990	7.9	5.0	0.3	28.1	8.1	12.7	--	8.4	Mar-12
MSCI ACWI ex USA				0.2	14.0	3.1	10.5	4.8	5.9	Mar-12
Baillie Gifford International Growth Fund Class K	31,953,539	5.0		3.0	--	--	--	--	24.4	Oct-20
MSCI ACWI ex USA				0.2	14.0	3.1	10.5	4.8	17.3	Oct-20

Since inception return is 8.6% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.

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 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Emerging Markets Equity</b>	<b>20,000,000</b>	<b>3.1</b>	<b>6.0</b>	--	--	--	--	--	--	<b>Feb-21</b>
<i>MSCI Emerging Markets</i>				3.1	27.9	4.4	15.0	4.2	--	<i>Feb-21</i>
Axiom Emerging Markets Trust Class 2	20,000,000	3.1		--	--	--	--	--	--	Feb-21
<i>MSCI Emerging Markets</i>				3.1	27.9	4.4	15.0	4.2	--	<i>Feb-21</i>
<b>Total Fixed Income</b>	<b>166,023,773</b>	<b>25.8</b>	<b>27.0</b>	<b>-0.4</b>	<b>7.9</b>	<b>5.8</b>	<b>6.1</b>	<b>5.2</b>	<b>6.7</b>	<b>Mar-99</b>
Garcia Hamilton Fixed Income Aggregate	46,449,858	7.2	8.0	-0.9	5.1	--	--	--	5.4	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.7	4.7	5.5	4.0	3.8	5.9	<i>Apr-18</i>
Lord Abbett Core Fixed Income	26,520,388	4.1	4.0	-0.3	5.7	--	--	--	6.2	Apr-18
<i>BBgBarc US Aggregate TR</i>				-0.7	4.7	5.5	4.0	3.8	5.9	<i>Apr-18</i>
Rhumbline TIPS	31,897,475	5.0	5.0	0.3	8.8	6.3	--	--	4.5	Jun-16
<i>BBgBarc US TIPS TR</i>				0.3	9.1	6.3	4.8	3.8	4.6	<i>Jun-16</i>
Loomis Sayles Multisector Full Discretion Trust	49,307,959	7.7	8.0	-0.8	11.2	6.8	8.3	6.2	8.0	Mar-99
<i>BBgBarc US Aggregate TR</i>				-0.7	4.7	5.5	4.0	3.8	4.9	<i>Mar-99</i>
<i>BBgBarc US High Yield TR</i>				0.3	7.4	6.1	9.0	6.6	6.9	<i>Mar-99</i>
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	11,792,594	1.8	2.0	0.9	4.4	--	--	--	4.6	Aug-19
<i>Credit Suisse Leveraged Loan</i>				1.3	3.5	4.1	5.6	4.4	3.9	<i>Aug-19</i>
Invesco Mortgage Recovery Loans Feeder Fund	55,499	0.0		0.0	-0.3	4.9	0.7	6.7	11.9	Apr-10
<i>BBgBarc US Aggregate TR</i>				-0.7	4.7	5.5	4.0	3.8	3.9	<i>Apr-10</i>
<b>Total Hedge Fund</b>	<b>37,930,043</b>	<b>5.9</b>	<b>6.0</b>	<b>-0.4</b>	<b>6.6</b>	<b>3.5</b>	<b>4.5</b>	<b>3.6</b>	<b>3.4</b>	<b>Oct-06</b>
PRIM Portfolio Completion Strategies	14,249,776	2.2		1.7	3.0	2.4	4.6	4.1	3.8	Oct-06
Corbin Pinehurst Partners	11,544,831	1.8		-2.3	9.6	--	--	--	7.4	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				-0.9	9.6	3.8	4.9	3.2	7.1	<i>Nov-18</i>
UBS Neutral Alpha Strategies	11,383,524	1.8		-1.1	9.0	--	--	--	6.4	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				-0.9	9.6	3.8	4.9	3.2	7.1	<i>Nov-18</i>
Entrust Peru Wind Down	751,912	0.1		-0.1	-0.4	-4.0	--	--	-4.1	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				-0.9	9.6	3.8	4.9	3.2	4.6	<i>Dec-17</i>
<b>Other</b>	<b>5,214,609</b>	<b>0.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.4</b>	<b>1.7</b>	<b>1.3</b>	<b>0.7</b>	<b>0.7</b>	<b>Dec-10</b>
Cash Account	5,214,609	0.8		0.0	0.4	1.7	1.3	0.7	1.8	Feb-00
<i>91 Day T-Bills</i>				0.0	0.3	1.4	1.1	0.6	1.6	<i>Feb-00</i>

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.

Axiom Emerging Markets Trust Class 2 funded as of 02/2021.



## MWRA Employees' Retirement System

# TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Real Estate</b>	<b>50,649,550</b>	<b>7.9</b>	<b>10.0</b>	<b>0.0</b>	<b>2.4</b>	<b>5.9</b>	<b>7.2</b>	<b>10.3</b>	<b>7.7</b>	<b>Apr-99</b>
<i>NCREIF Property Index</i>				0.0	1.6	4.9	5.9	9.0	8.5	Apr-99
Morgan Stanley Prime Property (\$2.8m commitment in '95)	20,148,886	3.1		0.0	1.3	5.0	6.6	10.6	8.4	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	20,577,472	3.2		0.0	5.5	--	--	--	6.0	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	1,151,262	0.2		0.0	-6.8	7.7	9.4	--	9.0	Oct-15
Landmark VI (\$2m commitment in '11)	91,255	0.0		0.0	-11.4	-11.9	-7.2	--	3.5	Jul-11
Landmark VIII (\$4m commitment in '17)	1,436,482	0.2		0.0	-4.0	1.3	--	--	13.0	Nov-17
Courtland/Mesirow MFire (\$2m commitment in '11)	628,063	0.1		0.0	-6.9	-2.9	2.2	--	2.4	May-12
Cerberus (\$1.5m commitment in '12)	579,620	0.1		0.0	11.0	10.6	7.9	--	12.4	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	367,725	0.1		0.0	-8.6	6.9	7.2	--	8.7	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,686,358	0.3		0.0	1.8	3.6	7.7	--	10.2	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,982,427	0.6		0.0	0.9	8.6	--	--	8.6	Nov-17
<b>Total Private Equity</b>	<b>56,535,495</b>	<b>8.8</b>	<b>10.0</b>	<b>0.0</b>	<b>5.8</b>	<b>7.8</b>	<b>6.6</b>	<b>12.0</b>	<b>9.1</b>	<b>Apr-99</b>
<i>CJA US All PE</i>				0.0	9.3	11.2	12.8	12.7	12.2	Apr-99
<i>NASDAQ W/O Income</i>				1.4	42.8	20.8	23.2	17.1	8.0	Apr-99
PRIM Vintage Year 2008 (\$3m commitment in '08)	1,019,267	0.2		-0.1	8.2	11.3	16.3	18.5	8.6	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	174,474	0.0		0.0	57.6	36.2	26.7	21.6	12.2	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	556,393	0.1		0.0	39.7	17.8	18.4	13.5	10.0	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	940,012	0.1		-0.1	14.4	15.3	17.9	--	4.4	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	748,486	0.1		-0.2	40.7	19.2	20.3	--	-12.0	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	1,988,755	0.3		-0.1	22.8	24.3	20.7	--	3.9	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	1,476,491	0.2		0.5	19.2	11.1	--	--	10.1	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	327,525	0.1		-0.8	--	--	--	--	8.3	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	27,505	0.0		0.0	--	--	--	--	0.0	Dec-20
Alcentra European DLF (\$5m commitment in '14)	924,753	0.1		0.0	-4.8	-0.9	2.1	--	3.9	Jan-15
Ascent Fund IV (\$2m commitment in '04)	31,080	0.0		0.0	-1.1	-52.5	-44.8	-32.9	-21.2	Jul-04
Ascent Fund IV-B (\$1m commitment in '16)	149,795	0.0		0.0	-28.9	-21.6	--	--	-13.3	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,624,903	0.3		0.0	-10.5	-5.4	0.4	5.5	4.1	Oct-08
Ascent VI (\$3m commitment in '15)	2,846,317	0.4		0.0	-7.3	0.1	2.0	--	0.3	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	5,983,869	0.9		0.0	-5.4	2.3	--	--	2.2	Dec-17
Invesco Fund IV (\$3m commitment in '03)	1,381	0.0		0.0	-14.9	-19.9	-10.1	1.1	--	Feb-04

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

# TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Invesco Fund VI (\$5m commitment in '13)	6,853,465	1.1		0.0	22.2	13.8	13.2	--	14.3	Jul-13
Kayne Energy Fund VII (\$5m commitment in '15)	1,500,446	0.2		0.0	-66.8	-38.8	-17.2	--	-16.9	Jan-16
Foundry 2007 (\$3m commitment in '07)	206,805	0.0		0.0	-11.4	-21.0	-23.4	5.0	14.8	Dec-07
Foundry 2010 (\$3m commitment in '10)	3,888,104	0.6		0.0	25.9	12.2	8.5	9.9	9.9	Jan-11
Foundry 2010 Annex (\$0.4m commitment in '15)	390,580	0.1		0.0	100.9	49.4	32.0	--	27.7	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	743,228	0.1		0.0	12.7	0.4	1.8	8.7	--	Mar-08
Landmark XV (\$3m commitment in '13)	1,298,784	0.2		0.0	-0.9	7.3	9.4	--	11.6	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	6,939,534	1.1		0.0	9.7	37.5	--	--	31.5	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	4,260,351	0.7		0.0	27.7	22.2	--	--	18.2	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,634,590	0.4		0.0	5.7	5.9	--	--	5.9	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	2,356,903	0.4		0.0	5.0	--	--	--	7.5	Sep-18
HarbourVest Dover Street X (\$9m commitment in '20)	2,316,154	0.4		0.0	--	--	--	--	83.4	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	1,815,777	0.3		0.0	--	--	--	--	10.8	Jul-20
JFL Equity Investors V, L.P. (\$8m commitment in '20)	2,509,768	0.4		0.0	--	--	--	--	-7.9	Sep-20
<i>Private Equity Benchmark (1 Qtr. Lag)</i>				0.0	13.4	13.1	13.0	13.1	21.5	Sep-20

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

# ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 1/31/2021	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.49% of Assets	\$4,574,038	0.7%	\$22,413	0.49%
Rhumbline Advisors S&P 500 Index Fund	0.05% of Assets	\$59,613,328	9.3%	\$29,807	0.05%
Coho Relative Value Equity	0.50% of First 75.0 Mil, 0.40% of Next 75.0 Mil, 0.35% Thereafter	\$37,352,131	5.8%	\$186,761	0.50%
Polen Focused Growth	0.65% of Assets	\$37,921,802	5.9%	\$246,492	0.65%
Boston Partners Small Cap Value	1.00% of Assets	\$22,655,761	3.5%	\$226,558	1.00%
Loomis Sayles Small Cap Growth	0.45% of Assets	\$22,508,155	3.5%	\$101,287	0.45%
SEG Baxter Street	1.00% of Assets	\$39,999,752	6.2%	\$399,998	1.00%
Schroder International Alpha Trust Class 1	0.55% of Assets	\$50,720,990	7.9%	\$278,965	0.55%
Baillie Gifford International Growth Fund Class K	0.60% of Assets	\$31,953,539	5.0%	\$191,721	0.60%
Axiom Emerging Markets Trust Class 2	No Fee	\$20,000,000	3.1%	--	--
Garcia Hamilton Fixed Income Aggregate	0.25% of First 25.0 Mil, 0.20% Thereafter	\$46,449,858	7.2%	\$105,400	0.23%
Lord Abbett Core Fixed Income	0.19% of Assets	\$26,520,388	4.1%	\$50,389	0.19%
Rhumbline TIPS	0.05% of First 50.0 Mil, 0.04% Thereafter	\$31,897,475	5.0%	\$15,949	0.05%
Loomis Sayles Multisector Full Discretion Trust	0.50% of First 20.0 Mil, 0.40% of Next 20.0 Mil, 0.30% Thereafter	\$49,307,959	7.7%	\$207,924	0.42%
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.40% of Assets	\$11,792,594	1.8%	\$47,170	0.40%
Invesco Mortgage Recovery Loans Feeder Fund	No Fee	\$55,499	0.0%	--	--
PRIM Portfolio Completion Strategies	No Fee	\$14,249,776	2.2%	--	--
Corbin Pinehurst Partners	0.85% of Assets	\$11,544,831	1.8%	\$98,131	0.85%
UBS Neutral Alpha Strategies	0.90% of Assets	\$11,383,524	1.8%	\$102,452	0.90%
Entrust Peru Wind Down	0.50% of Assets	\$751,912	0.1%	\$3,760	0.50%
Cash Account	No Fee	\$5,214,609	0.8%	--	--
Morgan Stanley Prime Property (\$2.8m commitment in '95)	No Fee	\$20,148,886	3.1%	--	--
TA Realty Core Property Fund, LP (\$15m commitment in '19)	No Fee	\$20,577,472	3.2%	--	--
Invesco Mortgage Recovery II (\$3M commitment in '15)	No Fee	\$1,151,262	0.2%	--	--
Landmark VI (\$2m commitment in '11)	No Fee	\$91,255	0.0%	--	--





## MWRA Employees' Retirement System

# ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 1/31/2021	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Landmark VIII (\$4m commitment in '17)	No Fee	\$1,436,482	0.2%	--	--
Courtland/Mesirow MFire (\$2m commitment in '11)	No Fee	\$628,063	0.1%	--	--
Cerberus (\$1.5m commitment in '12)	No Fee	\$579,620	0.1%	--	--
TA Realty Fund X LP (\$3.5m commitment in '12)	No Fee	\$367,725	0.1%	--	--
TerraCap Partners III, LP (\$2.6m commitment in '15)	No Fee	\$1,686,358	0.3%	--	--
TerraCap Partners IV, LP (\$4m commitment in '17)	No Fee	\$3,982,427	0.6%	--	--
PRIM Vintage Year 2008 (\$3m commitment in '08)	No Fee	\$1,019,267	0.2%	--	--
PRIM Vintage Year 2009 (\$1m commitment in '09)	No Fee	\$174,474	0.0%	--	--
PRIM Vintage Year 2010 (\$1m commitment in '10)	No Fee	\$556,393	0.1%	--	--
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	No Fee	\$940,012	0.1%	--	--
PRIM Vintage Year 2012 (\$1m commitment in '12)	No Fee	\$748,486	0.1%	--	--
PRIM Vintage Year 2014 (\$2m commitment in '14)	No Fee	\$1,988,755	0.3%	--	--
PRIM Vintage Year 2017 (\$2m commitment in '17)	No Fee	\$1,476,491	0.2%	--	--
PRIM Vintage Year 2020 (\$5m commitment in '20)	No Fee	\$327,525	0.1%	--	--
PRIM Vintage Year 2021 (\$5m commitment in '21)	No Fee	\$27,505	0.0%	--	--
Alcentra European DLF (\$5m commitment in '14)	No Fee	\$924,753	0.1%	--	--
Ascent Fund IV (\$2m commitment in '04)	No Fee	\$31,080	0.0%	--	--
Ascent Fund IV-B (\$1m commitment in '16)	No Fee	\$149,795	0.0%	--	--
Ascent Fund V (\$2m commitment in '08)	No Fee	\$1,624,903	0.3%	--	--
Ascent VI (\$3m commitment in '15)	No Fee	\$2,846,317	0.4%	--	--
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	No Fee	\$5,983,869	0.9%	--	--
Invesco Partnership Fund IV (\$3m commitment in '03)	No Fee	\$1,381	0.0%	--	--
Invesco Fund VI (\$5m commitment in '13)	No Fee	\$6,853,465	1.1%	--	--
Kayne Energy Fund VII (\$5m commitment in '15)	No Fee	\$1,500,446	0.2%	--	--
Foundry 2007 (\$3m commitment in '07)	No Fee	\$206,805	0.0%	--	--
Foundry 2010 (\$3m commitment in '10)	No Fee	\$3,888,104	0.6%	--	--
Foundry 2010 Annex (\$0.4m commitment in '15)	No Fee	\$390,580	0.1%	--	--
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)	No Fee	\$59,005	0.0%	--	--
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)	No Fee	\$61,898	0.0%	--	--
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)	No Fee	\$27,626	0.0%	--	--



## MWRA Employees' Retirement System

# ESTIMATED FEE SCHEDULE

Account	Fee Schedule	Market Value As of 1/31/2021	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	No Fee	\$127,137	0.0%	--	--
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)	No Fee	\$239,501	0.0%	--	--
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)	No Fee	\$34,233	0.0%	--	--
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)	No Fee	\$96,198	0.0%	--	--
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)	No Fee	\$97,630	0.0%	--	--
Landmark XV (\$3m commitment in '13)	No Fee	\$1,298,784	0.2%	--	--
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	No Fee	\$6,939,534	1.1%	--	--
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	No Fee	\$4,260,351	0.7%	--	--
Park Square Credit Opportunities III (\$3m commitment in '17)	No Fee	\$2,634,590	0.4%	--	--
Ironsides Constitution Opportunities (\$3m commitment in '18)	No Fee	\$2,356,903	0.4%	--	--
HarbourVest Dover Street X (\$9m commitment in '20)	No Fee	\$2,316,154	0.4%	--	--
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	No Fee	\$1,815,777	0.3%	--	--
JFL Equity Investors V, L.P. (\$8m commitment in '20)	No Fee	\$2,509,768	0.4%	--	--
<b>Investment Management Fee</b>		<b>\$643,652,965</b>	<b>100.0%</b>	<b>\$2,315,174</b>	<b>0.36%</b>

**Note:**

Estimate fee for privates are ~\$1,301,900 annually, which brings the total expense ratio for privates to ~20 bps. This brings the total estimated expense ratio for MWRA to ~56 bps.



## 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 7.0% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.6% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 06/01/2020.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Policy Index consists of: 20% S&P 500, 6% Russell 2000, 10% MSCI EAFE, 5% MSCI ACWI IMI , 6% MSCI Emerging Markets, 12% BBgBarc US Aggregate TR, 5% BBgBarc US TIPS TR, 8% BBgBarc US Universal TR, 10% NCREIF Property Index, 10% C|A US All PE , 6% HFRI Fund of Funds Composite Index, 2% Credit Suisse Leveraged Loan.
- 8 - Allocation Index consists of: Weighted index of underlying managers to their respective benchmark.



# DISCLAIMERS & DISCLOSURES

- Past performance is no guarantee of future results.
- Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.
- A “since inception” return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.
- NEPC’s preferred data source is the plan’s custodian bank or record-keeper. If data cannot be obtained from one of the preferred data sources, data provided by investment managers may be used. Information on market indices and security characteristics is received from additional providers. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within. In addition, some index returns displayed in this report or used in calculation of a policy index, allocation index or other custom benchmark may be preliminary and subject to change.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- The opinions presented herein represent the good faith views of NEPC as of the date of this presentation and are subject to change at any time. Neither fund performance nor universe rankings contained in this report should be considered 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.

