



MONTHLY PERFORMANCE REPORT

**MWRA EMPLOYEES' RETIREMENT
SYSTEM**

JANUARY 31, 2023



PROPRIETARY & CONFIDENTIAL

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

	Market Value (\$)	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Composite	657,289,819	4.3	-5.2	5.6	5.0	6.6
<i>Allocation Index</i>		4.2	-4.2	6.1	5.4	7.0
<i>Policy Index</i>		4.4	-4.8	6.5	5.9	7.2

20 Years As of January 31, 2023				
	Return	Standard Deviation	Sharpe Ratio	Sortino Ratio
Composite	7.5	8.5	0.7	1.1
<i>Allocation Index</i>	6.9	8.0	0.7	1.1
<i>Policy Index</i>	7.3	8.6	0.7	1.1

Performance

- The Composite had a return of 4.3% (net) for the month, outpacing the Allocation Index (4.2%) and trailing the Policy Index (4.4%).
- Emboldened investors fueled gains of 6.3% in the S&P 500 Index in January. The risk-on sentiment was further bolstered by growth outperforming value stocks for the first time since July 2022, with the Russell 1000 Growth and Value Index up 8.3% and 5.2%, respectively. Outside the U.S., weakness in the dollar boosted equities with the MSCI EAFE and MSCI Emerging Market indexes up 8.1% and 7.9%, respectively. The portfolio's Domestic Equity composite returned 7.0% (net) and the Non-US Equity composite was up 9.3% (net).
- In fixed income, the U.S. Treasury yield curve shifted lower as slowing headline inflation numbers fueled optimism. Two- and 10-year Treasury yields declined 21 and 35 basis points, respectively, pushing the spread further into negative territory at 0.7%. As a result, the Bloomberg U.S Long Treasury Index outperformed and rose 6.4% last month. The Fixed Income composite gained 3.6% (net) for the month while the Bloomberg Agg and the Bloomberg US HY returned 3.1% and 3.8% respectively.
- This brings the total plan return for the trailing one-year period to -5.2% (net), while the Allocation Index and Policy Index returned -4.2% and -4.8%, respectively.

Returns for 20 years Risk/Return and Statistics Summary are gross of fees.

Since inception return is 8.3% gross of fees. Prior to 1999, performance history does not capture separate net and gross returns.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)						
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	657,289,819	100.0	100.0	4.3	-5.2	5.6	5.0	6.6	6.7	Jan-86
Allocation Index				4.2	-4.2	6.1	5.4	7.0		
Policy Index				4.4	-4.8	6.5	5.9	7.2		
Total Balanced	4,861,106	0.7	0.0	0.0	-8.9	6.0	3.6	4.0	4.4	Dec-10
PRIT Core Fund	4,861,106	0.7		0.0	-8.9	6.1	5.6	7.6	6.7	Apr-99
60% S&P 500 / 40% Bloomberg Aggregate				5.0	-7.9	5.3	6.4	8.3	6.1	
Total Domestic Equity	202,379,856	30.8	31.0	7.0	-8.3	8.5	8.9	11.6	7.4	May-99
Russell 3000 Index				6.9	-8.2	9.5	9.1	12.3	7.1	
Large Cap	154,960,625	23.6	24.0	6.4	-10.1	8.4	9.4	12.0	12.2	Dec-10
Rhumblin Advisors S&P 500 Index Fund	63,799,379	9.7	10.0	6.3	-8.2	9.8	9.5	12.6	8.8	Apr-97
S&P 500 Index				6.3	-8.2	9.9	9.5	12.7	8.7	
Coho Relative Value Equity	50,127,739	7.6	7.0	2.5	1.3	10.2	8.2		10.9	Mar-16
Russell 1000 Value Index				5.2	-0.4	8.5	6.9		10.9	
Polen Focused Growth	41,033,506	6.2	7.0	11.7	-23.9	3.7	9.7		12.5	Feb-16
Russell 1000 Growth Index				8.3	-16.0	9.9	11.2		15.2	
Small Cap	47,419,231	7.2	7.0	9.0	-1.8	8.5	7.7	10.7	11.3	Dec-10
Boston Partners Small Cap Value	24,464,420	3.7	3.5	10.0	0.1	9.1	6.0	8.8	10.3	Feb-97
Russell 2000 Value Index				9.5	-0.5	9.9	5.8	8.8	8.9	
Loomis Sayles Small Cap Growth	22,954,810	3.5	3.5	7.9	-3.7	7.2	8.8	12.1	6.8	Jan-97
Russell 2000 Growth Index				9.9	-6.5	4.3	4.7	9.5	6.7	
Total Non-US Equity	110,011,366	16.7	19.0	9.3	-12.3	0.6	-0.6	3.5	3.9	Mar-99
International Equity	73,084,187	11.1	12.0	10.4	-9.4	2.6	1.6	4.6	3.6	Sep-05
SEG Baxter Street	30,929,426	4.7	5.0	10.1	-7.5	1.4	2.9		6.8	May-16
MSCI AC World ex USA (Net)				8.1	-5.7	3.6	1.4		5.9	
Schroder International Alpha Trust Class 1	27,817,318	4.2	4.0	8.8	-8.0	7.8	4.3	6.3	6.6	Mar-12
MSCI AC World ex USA (Net)				8.1	-5.7	3.6	1.4	4.2	4.6	
Baillie Gifford International Growth Fund Class K	14,337,444	2.2	3.0	14.4	-15.6				-8.1	Oct-20
MSCI AC World ex USA (Net)				8.1	-5.7				6.0	
Emerging Markets Equity	36,927,178	5.6	7.0	7.2	-17.5				-15.0	Mar-21
Axiom Emerging Markets Trust Class 2	17,331,717	2.6	7.0	8.0	-20.8				-17.3	Mar-21
MSCI Emerging Markets (Net)				7.9	-12.1				-10.5	
ABS Emerging Markets MA Fund	19,595,462	3.0		6.5	-14.4				-14.2	Dec-21
MSCI Emerging Markets (Net)				7.9	-12.1				-10.5	

Since inception return is 8.3% 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 the transition to the CIT investment vehicle is linked to mutual fund performance history.

Preliminary performance is subject to change once finalized.

TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)						
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fixed Income	129,113,125	19.6	20.0	3.6	-6.1	0.1	1.9	2.7	5.8	Mar-99
Garcia Hamilton Fixed Income Aggregate	32,821,267	5.0	6.0	3.7	-6.9	-1.7			1.0	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				3.1	-8.4	-2.3			1.0	
Lord Abbett Core Fixed Income	35,407,960	5.4	4.0	3.4	-8.7	-1.9			1.2	Apr-18
<i>Blmbg. U.S. Aggregate Index</i>				3.1	-8.4	-2.3			1.0	
Loomis Sayles Multisector Full Discretion Trust	48,607,418	7.4	8.0	4.1	-6.6	0.7	2.3	3.3	6.9	Mar-99
<i>Blmbg. U.S. Aggregate Index</i>				3.1	-8.4	-2.3	0.9	1.4	4.0	
<i>Blmbg. U.S. Corp: High Yield Index</i>				3.8	-5.2	1.3	3.0	4.3	6.2	
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	12,261,432	1.9	2.0	2.5	0.0	2.6			2.9	Aug-19
<i>Credit Suisse Leveraged Loan</i>				2.6	1.1	3.0			3.3	
Invesco Mortgage Recovery Loans Feeder Fund	15,048	0.0		0.0	-0.7	-0.6	2.6	6.1	9.9	Apr-10
<i>Blmbg. U.S. Aggregate Index</i>				3.1	-8.4	-2.3	0.9	1.4	2.3	
Total Hedge Fund	41,936,687	6.4	6.0	0.7	-2.3	4.0	3.2	3.5	3.3	Oct-06
PRIM Portfolio Completion Strategies	15,032,294	2.3		0.0	-1.9	2.8	2.5	4.0	3.7	Oct-06
Corbin Pinehurst Partners	12,724,753	1.9		1.6	-7.1	3.9			4.4	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				2.5	-0.4	4.4			4.6	
UBS Neutral Alpha Strategies	14,114,020	2.1		0.7	6.1	7.6			6.6	Nov-18
<i>HFRI Fund of Funds Composite Index</i>				2.5	-0.4	4.4			4.6	
Entrust Peru Wind Down	65,621	0.0		-0.4	-91.2	-55.7	-40.1		-39.2	Dec-17
<i>HFRI Fund of Funds Composite Index</i>				2.5	-0.4	4.4	3.0		3.6	
Other	10,938,697	1.7	0.0	0.2	1.6	0.7	1.3	0.8	0.7	Dec-10
Cash Account	10,938,697	1.7		0.2	1.6	0.7	1.3	0.8	1.7	Feb-00
<i>90 Day U.S. Treasury Bill</i>				0.3	1.8	0.8	1.3	0.8	1.6	

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.

Preliminary performance is subject to change once finalized.



TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)						
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Estate	72,138,497	11.0	12.0	0.0	11.4	12.2	10.4	11.0	8.5	Apr-99
<i>NCREIF Property Index</i>				0.0	5.5	8.1	7.5	8.8	8.7	
Morgan Stanley Prime Property (\$2.8m commitment in '95)	25,979,519	4.0		0.0	6.1	9.3	8.4	10.5	8.7	Sep-95
TA Realty Core Property Fund, LP (\$15m commitment in '19)	28,358,966	4.3		0.0	15.3	16.4			14.5	Jun-19
Invesco Mortgage Recovery II (\$3M commitment in '15)	921,638	0.1		0.0	-6.0	-20.0	-7.3		-1.9	Oct-15
Landmark VI (\$2m commitment in '11)	6,499	0.0		0.0	-16.4	-6.3	-8.7	-0.2	2.2	Jul-11
Landmark VIII (\$4m commitment in '17)	2,136,606	0.3		0.0	20.1	17.9	12.2		19.5	Nov-17
StepStone Real Estate Fund II (\$2m commitment in '11)	367,525	0.1		0.0	-1.7	-2.0	-1.5	5.1	2.0	May-12
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)	569,979	0.1		0.0	-5.3	20.7	16.5		15.1	May-13
TA Realty Fund X LP (\$3.5m commitment in '12)	4,086	0.0		0.0	24.1	5.1	9.2		9.6	May-13
TerraCap Partners III, LP (\$2.6m commitment in '15)	1,382,202	0.2		0.0	6.7	4.2	4.3		9.0	Jul-15
TerraCap Partners IV, LP (\$4m commitment in '17)	3,565,886	0.5		0.0	3.0	8.3	10.0		10.0	Nov-17
TerraCap Partners V, LP (\$8m commitment in '22)	8,845,592	1.3		0.0					14.5	Jun-22
Total Private Equity and Debt	85,910,484	13.1	12.0	0.0	2.4	18.0	14.2	14.5	10.3	Apr-99
<i>CJA US All PE</i>				0.0	-2.7	18.1	15.7	14.7	13.1	
<i>NASDAQ W/O Income</i>				10.7	-18.6	8.2	9.3	13.9	6.7	
PRIM Vintage Year 2008 (\$3m commitment in '08)	801,810	0.1		0.0	1.1	14.5	13.9	17.8	9.8	Jun-08
PRIM Vintage Year 2009 (\$1m commitment in '09)	73,681	0.0		0.0	-12.0	35.7	32.0	26.0	14.2	Nov-09
PRIM Vintage Year 2010 (\$1m commitment in '10)	460,062	0.1		0.0	-42.1	23.0	16.8	18.7	10.8	Jun-10
PRIM Vintage Year 2011 (\$1.5m commitment in '11)	837,642	0.1		0.0	-5.6	31.6	25.0	22.5	9.9	May-11
PRIM Vintage Year 2012 (\$1m commitment in '12)	472,161	0.1		0.0	-25.9	14.4	12.5	12.4	-9.3	Jun-12
PRIM Vintage Year 2014 (\$2m commitment in '14)	2,158,189	0.3		0.0	-0.9	24.2	24.5		8.4	Jun-14
PRIM Vintage Year 2017 (\$2m commitment in '17)	2,559,371	0.4		0.0	4.8	25.0	17.5		16.0	May-17
PRIM Vintage Year 2020 (\$5m commitment in '20)	3,546,500	0.5		0.0	4.6				16.2	Mar-20
PRIM Vintage Year 2021 (\$5m commitment in '21)	2,731,766	0.4		0.0	-5.5				-1.1	Dec-20
PRIM Vintage Year 2022 (\$7.5m commitment in '22)	966,325	0.1		0.0					-5.8	Apr-22
Alcentra European DLF (\$5m commitment in '14)	197,301	0.0		0.0	9.2	23.1	13.8		11.8	Jan-15
Ascent Fund IV-B (\$1m commitment in '16)	40,322	0.0		0.0	-14.7	-21.7	-20.1		-14.7	Jul-16
Ascent Fund V (\$2m commitment in '08)	1,250,422	0.2		0.0	-14.6	-2.0	-2.3	1.9	3.8	Oct-08
Ascent VI (\$3m commitment in '15)	3,453,769	0.5		0.0	2.6	2.6	3.2		2.3	Dec-15
CVI Credit Value Fund IV A LP (\$6m commitment in '17)	5,527,001	0.8		0.0	6.8	6.9	6.7		6.5	Dec-17
Invesco Fund VI (\$5m commitment in '13)	837,127	0.1		0.0	-34.2	23.8	18.0		16.4	Jul-13

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.

Preliminary performance is subject to change once finalized.



TOTAL FUND PERFORMANCE DETAIL (NET)

	Allocation			Performance (%)						
	Market Value (\$)	% of Portfolio	Policy(%)	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kayne Energy Fund VII (\$5m commitment in '15)	2,857,362	0.4		0.0	35.5	-14.5	-15.5		-4.3	Jan-16
Foundry 2007 (\$3m commitment in '07)	484,034	0.1		0.0	-3.5	30.2	4.2	12.1	19.7	Dec-07
Foundry 2010 (\$3m commitment in '10)	5,956,413	0.9		0.0	-1.0	34.0	22.0	15.1	14.2	Feb-11
Foundry 2010 Annex (\$0.4m commitment in '15)	1,105,234	0.2		0.0	-0.9	91.2	63.3		41.4	Sep-15
Pinebridge PEP V (\$6m commitment in '07)	449,779	0.1		0.0	-5.6	8.6	2.9	8.6	7.9	Dec-10
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)	32,657	0.0		0.0	-5.0	-12.9			-13.9	Oct-18
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)	90,621	0.0		0.0	1.5	14.9			6.1	Oct-18
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)	16,190	0.0		0.0	-22.2	192.9			118.1	Oct-18
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)	74,199	0.0		0.0	-17.7	11.7			5.9	Oct-18
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)	75,737	0.0		0.0	-23.4	-0.7			-3.8	Oct-18
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)	23,017	0.0		0.0	-12.1	-12.6	-12.1		-10.1	Jan-17
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)	90,000	0.0		0.0	-6.3	18.6			15.4	Oct-18
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)	47,358	0.0		0.0	-2.2	3.3			-2.6	Oct-18
Landmark XV (\$3m commitment in '13)	649,744	0.1		0.0	-15.7	4.5	7.3		10.7	Nov-13
JFL Equity Investors IV, L.P. (\$6m commitment in '16)	1,723,874	0.3		0.0	9.8	34.1	41.7		36.7	Jan-17
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)	4,695,956	0.7		0.0	0.5	23.1	21.7		19.1	Feb-17
Park Square Credit Opportunities III (\$3m commitment in '17)	2,775,654	0.4		0.0	3.3	6.8	6.4		6.4	Feb-18
Ironsides Constitution Opportunities (\$3m commitment in '18)	2,231,077	0.3		0.0	2.3	10.6			10.8	Oct-18
HarbourVest Dover Street X (\$9m commitment in '20)	6,689,436	1.0		0.0	4.4				60.9	Jun-20
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)	7,553,174	1.1		0.0	1.9				32.5	Jul-20
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)	13,189,202	2.0		0.0	3.7				2.9	Nov-21
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)	1,848,598	0.3		0.0						Jan-22
JFL Equity Investors V, L.P. (\$9m commitment in '20)	7,787,501	1.2		0.0	11.7				1.3	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.

FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
PRIT Core Fund	0.5 % of Assets	4,861,106	0.7	23,819	0.5
Rhumblin Advisors S&P 500 Index Fund	0.1 % of Assets	63,799,379	9.7	31,900	0.1
Coho Relative Value Equity	0.5 % of First \$75 M 0.4 % of Next \$75 M 0.4 % Thereafter	50,127,739	7.6	250,639	0.5
Polen Focused Growth	0.7 % of Assets	41,033,506	6.2	266,718	0.6
Boston Partners Small Cap Value	1.0 % of Assets	24,464,420	3.7	244,644	1.0
Loomis Sayles Small Cap Growth	0.5 % of Assets Minimum Fee: \$45,000	22,954,810	3.5	103,297	0.5
SEG Baxter Street	1.0 % of Assets	30,929,426	4.7	309,294	1.0
Schroder International Alpha Trust Class 1	0.6 % of Assets	27,817,318	4.2	152,995	0.6
Baillie Gifford International Growth Fund Class K	0.6 % of Assets	14,337,444	2.2	86,025	0.6
Axiom Emerging Markets Trust Class 2	0.7 % of Assets	17,331,717	2.6	126,522	0.7
ABS Emerging Markets MA Fund	0.8 % of Assets	19,595,462	3.0	146,966	0.7
Garcia Hamilton Fixed Income Aggregate		32,821,267	5.0	41,027	0.1
Lord Abbett Core Fixed Income	0.2 % of Assets	35,407,960	5.4	67,275	0.2
Loomis Sayles Multisector Full Discretion Trust	0.5 % of First \$20 M 0.4 % of Next \$20 M 0.3 % Thereafter	48,607,418	7.4	205,822	0.4
Octagon Senior Secured Credit Cayman Fund Ltd. - Class L Acc, Series 1	0.4 % of Assets	12,261,432	1.9	49,046	0.4
Invesco Mortgage Recovery Loans Feeder Fund		15,048	0.0		
PRIM Portfolio Completion Strategies		15,032,294	2.3		
Corbin Pinehurst Partners	0.9 % of Assets	12,724,753	1.9	108,160	0.9
UBS Neutral Alpha Strategies	0.9 % of Assets	14,114,020	2.1	127,026	0.9
Entrust Peru Wind Down	0.5 % of Assets	65,621	0.0	328	0.5
Cash Account		10,938,697	1.7		
Morgan Stanley Prime Property (\$2.8m commitment in '95)		25,979,519	4.0		
TA Realty Core Property Fund, LP (\$15m commitment in '19)		28,358,966	4.3		
Invesco Mortgage Recovery II (\$3M commitment in '15)		921,638	0.1		
Landmark VI (\$2m commitment in '11)		6,499	0.0		
Landmark VIII (\$4m commitment in '17)		2,136,606	0.3		
StepStone Real Estate Fund II (\$2m commitment in '11)		367,525	0.1		
Cerberus Institutional Real Estate Partners III (\$1.5m commitment in '12)		569,979	0.1		
TA Realty Fund X LP (\$3.5m commitment in '12)		4,086	0.0		

FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
TerraCap Partners III, LP (\$2.6m commitment in '15)		1,382,202	0.2		
TerraCap Partners IV, LP (\$4m commitment in '17)		3,565,886	0.5		
TerraCap Partners V, LP (\$8m commitment in '22)		8,845,592	1.3		
PRIM Vintage Year 2008 (\$3m commitment in '08)		801,810	0.1		
PRIM Vintage Year 2009 (\$1m commitment in '09)		73,681	0.0		
PRIM Vintage Year 2010 (\$1m commitment in '10)		460,062	0.1		
PRIM Vintage Year 2011 (\$1.5m commitment in '11)		837,642	0.1		
PRIM Vintage Year 2012 (\$1m commitment in '12)		472,161	0.1		
PRIM Vintage Year 2014 (\$2m commitment in '14)		2,158,189	0.3		
PRIM Vintage Year 2017 (\$2m commitment in '17)		2,559,371	0.4		
PRIM Vintage Year 2020 (\$5m commitment in '20)		3,546,500	0.5		
PRIM Vintage Year 2021 (\$5m commitment in '21)		2,731,766	0.4		
PRIM Vintage Year 2022 (\$7.5m commitment in '22)		966,325	0.1		
Alcentra European DLF (\$5m commitment in '14)		197,301	0.0		
Ascent Fund IV-B (\$1m commitment in '16)		40,322	0.0		
Ascent Fund V (\$2m commitment in '08)		1,250,422	0.2		
Ascent VI (\$3m commitment in '15)		3,453,769	0.5		
CVI Credit Value Fund IV A LP (\$6m commitment in '17)		5,527,001	0.8		
Invesco Fund VI (\$5m commitment in '13)		837,127	0.1		
Kayne Energy Fund VII (\$5m commitment in '15)		2,857,362	0.4		
Foundry 2007 (\$3m commitment in '07)		484,034	0.1		
Foundry 2010 (\$3m commitment in '10)		5,956,413	0.9		
Foundry 2010 Annex (\$0.4m commitment in '15)		1,105,234	0.2		
Pinebridge (AIG) PEP V Asia (\$6m commitment in '07)		32,657	0.0		
Pinebridge (AIG) PEP V Co-Investment (\$6m commitment in '07)		90,621	0.0		
Pinebridge (AIG) PEP V Europe (\$6m commitment in '07)		16,190	0.0		
Pinebridge (AIG) PEP V Large Market US Buyout (\$6m commitment in '07)		74,199	0.0		
Pinebridge (AIG) PEP V Preferred Participation Fund (\$6m commitment in '07)		75,737	0.0		
Pinebridge (AIG) PEP V Secondary (\$6m commitment in '07)		23,017	0.0		
Pinebridge (AIG) PEP V Small-Mid Market US Buyout (\$6m commitment in '07)		90,000	0.0		
Pinebridge (AIG) PEP V US Venture (\$6m commitment in '07)		47,358	0.0		
Landmark XV (\$3m commitment in '13)		649,744	0.1		
JFL Equity Investors IV, L.P. (\$6m commitment in '16)		1,723,874	0.3		
Private Advisors Small Co. Coinvestment Fund, LP (\$4m commitment in '17)		4,695,956	0.7		

FEE SCHEDULE

Account Name	Fee Schedule	Market Value (\$)	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Park Square Credit Opportunities III (\$3m commitment in '17)		2,775,654	0.4		
Ironsides Constitution Opportunities (\$3m commitment in '18)		2,231,077	0.3		
HarbourVest Dover Street X (\$9m commitment in '20)		6,689,436	1.0		
Hamilton Lane Secondary Fund V LP (\$9m commitment in '20)		7,553,174	1.1		
Constitution Ironsides Co-Investment Fund VI (\$12m commitment in '21)		13,189,202	2.0		
JFL Equity Investors V, L.P. (\$9m commitment in '20)		7,787,501	1.2		
HarbourVest Co-Investment Fund VI (\$8m commitment in '21)		1,848,598	0.3		
Investment Management Fee		657,289,819	100.0	2,341,502	0.4

The estimated fee for private markets, inclusive of carried interest, is ~\$3,541,145 annually, which brings the total expense ratio for privates to ~53 bps. This brings the total estimated expense ratio for MWRA to ~93 bps.

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 6.7% for the current month.
- 4 - Preliminary Total Composite gross of fee since inception return is 8.3% for the current month.
- 5 - Targets, Allocation Index, and Policy Index have been updated to reflect new allocation of 02/01/2022.
- 6 - Policy Index changed from Nasdaq to Cambridge All PE to reflect as of 5/1/2012.
- 7 - Policy Index Consists of: 24% S&P 500, 7% Russell 2000, 12% MSCI ACWI IMI, 7% MSCI Emerging Markets, 12% Bloomberg US Aggregate TR, 8% Bloomberg US Universal TR, 6% HFRI Fund of Funds Composite Index, 12% NCREIF Property Index, 12% CJA US All PE.
- 8 - Allocation index consists of: Weighted index of underlying managers to their respective benchmark.
- 9 - PRIM is valued as of 12/31/22. All Private Market managers are final as of 9/30/22, except for CVI, Kayne VII, Cerberus, and Morgan Stanley, which are final as of 12/31/22.

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.

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Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv