



Pension Plan

Employees' Retirement System
of Milwaukee County
Monthly Update
July 31, 2016

Total Fund Composite

Manager Status

Market Value: \$1,672.5 Million and 100.0% of Fund

Investment Manager	Asset Class	Status	Reason
J.P. Morgan	Core Fixed Income	On Notice	Organizational Issues
Mellon Capital	Core Fixed Income	In Compliance	---
Boston Partners	Large-Cap Value	In Compliance	---
Mellon Capital	Large-Cap Core	In Compliance	---
Artisan Partners	Mid-Cap Growth	Alert	Performance
Geneva Capital	Mid-Cap Growth	Alert	Performance
Silvercrest Asset Management	Small-Cap Value	In Compliance	---
Mesirow	Small-Cap Value	Alert	Organizational Issues
NTGI ACWI Ex-US	Non-U.S. All-Cap Core	In Compliance	---
GMO Small-Cap	Non-U.S. Small-Cap Value	Termination	Performance
OFI Institutional Asset Management	Emerging Markets	In Compliance	---
ABS	Hedged Equity Hedge FoF	Alert	Performance
K2	Hedged Equity Hedge FoF	Termination	Organizational Issues
Parametric Defensive Equity	Long/Short Hedge Fund	In Compliance	---
American Realty Advisors	Core Real Estate	In Compliance	---
Morgan Stanley	Core Real Estate	In Compliance	---
UBS	Core Real Estate	In Compliance	---
IFM	Core Infrastructure	In Compliance	---
J.P. Morgan Infrastructure	Core Infrastructure	In Compliance	---
Adams Street	Private Equity	In Compliance	---
Siguler Guff II	U.S. Private Equity FoF	In Compliance	---
Siguler Guff III	U.S. Private Equity FoF	In Compliance	---
Mesirow VI	U.S. Private Equity FoF	In Compliance	---

Investment Manager Evaluation Terminology

The following terminology has been developed by Marquette Associates to facilitate efficient communication among the Investment Manager, Investment Consultant, and the Plan Sponsor. Each term signifies a particular status with the Fund and any conditions that may require improvement. In each case, communication is made only after consultation with the Trustees and/or the Investment Committee of the Plan.

In Compliance – The investment manager states it is acting in accordance with the Investment Policy Guidelines.

Alert – The investment manager is notified of a problem in performance (usually related to a benchmark or volatility measure), a change in investment characteristics, an alteration in management style or key investment professionals, and/or any other irregularities.

On Notice – The investment manager is notified of continued concern with one or more Alert issues. Failure to improve upon stated issues within a specific time frame justifies termination.

Termination – The Trustees have decided to terminate the investment manager. The investment manager is notified and transition plans are in place.

Total Fund Composite

Market Value: \$1,672.5 Million and 100.0% of Fund

Ending July 31, 2016

	Asset Class	Market Value (\$)	3 Mo Net Cash Flows (\$)	% of Portfolio	Policy %	Policy Difference (\$)
Total Fund Composite		1,672,473,307	-48,173,876	100.0	100.0	0
Fixed Income Composite		278,132,255	-5,320,000	16.6	18.0	-22,912,940
J.P. Morgan	Core Fixed Income	174,149,865	-55,320,000	10.4		
Mellon Capital	Core Fixed Income	103,982,390	50,000,000	6.2		
U.S. Equity Composite		426,901,981	-10,000,000	25.5	25.0	8,783,654
Boston Partners	Large-Cap Value	131,532,522	-5,000,000	7.9	8.0	-2,265,343
Mellon Capital	Large-Cap Core	104,125,325	0	6.2	6.0	3,776,927
Artisan Partners	Mid-Cap Growth	43,667,902	0	2.6	2.5	1,856,069
Geneva Capital	Mid-Cap Growth	42,496,400	-2,000,000	2.5	2.5	684,567
Mesirov	Small-Cap Value	52,189,191	0	3.1	3.0	2,014,992
Silvercrest Asset Management	Small-Cap Value	52,890,641	-3,000,000	3.2	3.0	2,716,442
International Equity Composite		323,090,993	-106,241	19.3	20.0	-11,403,668
NTGI ACWI Ex-US	Non-U.S. All-Cap Core	202,923,249	0	12.1	13.0	-14,498,281
GMO Small-Cap	Non-U.S. Small-Cap Value	68,260,962	0	4.1	4.0	1,362,030
OFI Institutional Asset Management	Emerging Markets	51,906,782	-106,241	3.1	3.0	1,732,583
Hedged Equity Composite		181,007,007	31,704	10.8	10.0	13,759,677
ABS	Hedged Equity Hedge FoF	87,037,513	31,704	5.2	5.0	3,413,848
Parametric Defensive Equity	Long/Short Hedge Fund	89,431,853	0	5.3	5.0	5,808,187
K2	Hedged Equity Hedge FoF	4,537,642	0	0.3	0.0	4,537,642
Real Estate Composite		168,782,419	-20,161,615	10.1	8.5	26,622,188
American Realty Advisors	Core Real Estate	40,342,297	-606,126	2.4		
Morgan Stanley	Core Real Estate	87,957,738	-19,247,885	5.3		
UBS	Core Real Estate	40,476,950	-307,604	2.4		
Infrastructure Composite		153,203,256	-2,090,116	9.2	8.5	11,043,025
IFM	Core Infrastructure	74,466,804	-361,954	4.5		
J.P. Morgan Infrastructure	Core Infrastructure	78,736,453	-1,728,162	4.7		

Total Fund Composite

Market Value: \$1,672.5 Million and 100.0% of Fund

Ending July 31, 2016

	Asset Class	Market Value (\$)	3 Mo Net Cash Flows (\$)	% of Portfolio	Policy %	Policy Difference (\$)
Private Equity Composite		114,253,664	14,722,493	6.8	10.0	-52,993,666
Progress	U.S. Private Equity FoF	25,924	0	0.0		
Brinson 1998	U.S. Private Equity FoF	75,797	0	0.0		
Brinson 1999	U.S. Private Equity FoF	102,577	0	0.0		
Brinson 2000	U.S. Private Equity FoF	278,779	-139,914	0.0		
Brinson 2001	U.S. Private Equity FoF	743,577	0	0.0		
Brinson 2002	U.S. Private Equity FoF	444,770	0	0.0		
Brinson 2003	U.S. Private Equity FoF	425,944	-73,250	0.0		
Brinson 2004	U.S. Private Equity FoF	691,065	-107,417	0.0		
Adams Street 2005	U.S. Private Equity FoF	4,333,754	-242,588	0.3		
Adams Street 2009	U.S. Private Equity FoF	23,017,698	-9,989	1.4		
Adams Street 2012	Global Divers. Private Equity FoF	24,689,155	2,436,116	1.5		
Adams Street Co-Investment III	Private Equity Co- Investment	7,933,414	3,120,000	0.5		
Siguler Guff II	U.S. Private Equity FoF	30,943,811	659,535	1.9		
Siguler Guff III	U.S. Private Equity FoF	12,006,147	7,280,000	0.7		
Mesirov VI	U.S. Private Equity FoF	8,541,252	1,800,000	0.5		
Total Cash Equivalents		27,101,730	-25,250,101	1.6	0.0	27,101,730

Total Fund Composite

Annualized Performance (Net of Fees)

Market Value: \$1,672.5 Million and 100.0% of Fund

Ending July 31, 2016

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	2.2%	2.5%	4.3%	2.5%	4.2%	6.5%	8.3%	6.8%	8.5%	5.7%
<i>Total Fund Benchmark</i>	2.4%	2.8%	4.7%	2.4%	3.6%	5.9%	7.7%	6.6%	8.2%	5.4%
Fixed Income Composite	0.5%	2.4%	5.7%	5.7%	4.5%	4.2%	2.9%	3.7%	5.0%	5.4%
<i>Barclays Aggregate</i>	0.6%	2.5%	6.0%	5.9%	4.4%	4.2%	2.7%	3.6%	4.4%	5.1%
U.S. Equity Composite	3.8%	5.1%	6.0%	0.8%	6.4%	8.5%	13.4%	11.5%	13.4%	7.6%
<i>Wilshire 5000 Total Market</i>	3.9%	6.1%	8.1%	5.2%	8.1%	10.7%	14.4%	13.0%	14.3%	7.9%
International Equity Composite	4.7%	1.4%	3.9%	-2.1%	-2.6%	3.2%	6.8%	2.3%	5.5%	1.1%
<i>MSCI ACWI ex USA</i>	4.9%	1.6%	3.9%	-5.5%	-5.1%	1.3%	5.0%	1.4%	4.7%	2.3%
Hedged Equity Composite	2.2%	2.2%	-0.6%	-4.8%	2.5%	5.2%	7.3%	5.1%	--	--
<i>HFRX Equity Hedge Index</i>	2.0%	0.9%	-2.0%	-6.2%	-1.3%	0.2%	2.7%	0.1%	0.7%	-0.6%
<i>Russell 3000</i>	4.0%	6.0%	7.7%	4.4%	7.8%	10.6%	14.5%	13.0%	14.4%	7.8%
<i>MSCI ACWI</i>	4.3%	3.8%	5.6%	-0.4%	1.2%	5.9%	9.4%	6.6%	8.9%	4.6%
Real Estate Composite	0.0%	2.0%	3.9%	10.8%	12.8%	12.7%	12.7%	12.4%	14.7%	5.7%
<i>Custom Real Estate Benchmark</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	15.5%	5.3%
<i>NFI</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	10.3%	5.1%
Infrastructure Composite	0.1%	0.2%	3.0%	4.4%	1.1%	3.7%	5.1%	4.6%	--	--
<i>CPI +4%</i>	0.3%	1.7%	4.3%	5.0%	4.6%	5.1%	5.3%	5.4%	5.7%	5.8%
Private Equity Composite	0.0%	0.0%	-0.5%	1.4%	4.2%	9.1%	8.7%	7.5%	10.8%	8.4%
<i>Cambridge Associates All PE</i>	0.0%	0.0%	0.0%	0.6%	4.7%	10.0%	11.0%	10.0%	12.7%	9.9%

Investment Manager

Annualized Performance (Net of Fees)

Market Value: \$1,672.5 Million and 100.0% of Fund

Ending July 31, 2016

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	2.2%	2.5%	4.3%	2.5%	4.2%	6.5%	8.3%	6.8%	8.5%	5.7%
<i>Total Fund Benchmark</i>	2.4%	2.8%	4.7%	2.4%	3.6%	5.9%	7.7%	6.6%	8.2%	5.4%
Fixed Income Composite	0.5%	2.4%	5.7%	5.7%	4.5%	4.2%	2.9%	3.7%	5.0%	5.4%
<i>Barclays Aggregate</i>	0.6%	2.5%	6.0%	5.9%	4.4%	4.2%	2.7%	3.6%	4.4%	5.1%
J.P. Morgan	0.5%	2.4%	5.6%	5.6%	4.5%	4.2%	3.0%	3.7%	4.6%	5.2%
<i>Barclays Aggregate</i>	0.6%	2.5%	6.0%	5.9%	4.4%	4.2%	2.7%	3.6%	4.4%	5.1%
Mellon Capital	0.6%	2.4%	5.9%	5.8%	4.3%	4.2%	2.6%	3.5%	4.4%	5.0%
<i>Barclays Aggregate</i>	0.6%	2.5%	6.0%	5.9%	4.4%	4.2%	2.7%	3.6%	4.4%	5.1%
U.S. Equity Composite	3.8%	5.1%	6.0%	0.8%	6.4%	8.5%	13.4%	11.5%	13.4%	7.6%
<i>Wilshire 5000 Total Market</i>	3.9%	6.1%	8.1%	5.2%	8.1%	10.7%	14.4%	13.0%	14.3%	7.9%
Boston Partners	3.1%	2.6%	4.5%	-1.1%	3.5%	7.1%	13.5%	12.6%	13.4%	7.9%
<i>Russell 1000 Value</i>	2.9%	5.4%	9.4%	5.4%	5.9%	9.0%	14.1%	12.7%	13.7%	6.2%
Mellon Capital	3.7%	5.8%	7.6%	5.6%	8.3%	11.1%	14.4%	13.3%	14.3%	7.7%
<i>S&P 500</i>	3.7%	5.8%	7.7%	5.6%	8.4%	11.2%	14.5%	13.4%	14.3%	7.7%
Artisan Partners	5.5%	7.6%	3.1%	-2.1%	6.6%	8.4%	13.9%	11.4%	15.8%	11.0%
<i>Russell MidCap Growth</i>	5.0%	6.7%	7.2%	1.1%	7.6%	10.1%	14.9%	11.9%	15.4%	9.0%
Geneva Capital	2.2%	4.8%	4.8%	-1.8%	8.7%	8.4%	12.1%	--	--	--
<i>Russell MidCap Growth</i>	5.0%	6.7%	7.2%	1.1%	7.6%	10.1%	14.9%	11.9%	15.4%	9.0%
Mesirow	3.8%	5.2%	4.8%	-2.9%	6.0%	6.9%	12.3%	9.4%	--	--
<i>Russell 2000 Value</i>	5.4%	7.7%	11.8%	5.6%	4.9%	6.0%	12.4%	10.0%	12.6%	5.9%
Silvercrest Asset Management	5.5%	8.0%	11.5%	6.0%	8.4%	--	--	--	--	--
<i>Russell 2000 Value</i>	5.4%	7.7%	11.8%	5.6%	4.9%	6.0%	12.4%	10.0%	12.6%	5.9%
International Equity Composite	4.7%	1.4%	3.9%	-2.1%	-2.6%	3.2%	6.8%	2.3%	5.5%	1.1%
<i>MSCI ACWI ex USA</i>	4.9%	1.6%	3.9%	-5.5%	-5.1%	1.3%	5.0%	1.4%	4.7%	2.3%
NTGI ACWI Ex-US	5.0%	1.7%	4.3%	-4.3%	-4.2%	2.1%	--	--	--	--
<i>MSCI ACWI ex USA</i>	4.9%	1.6%	3.9%	-5.5%	-5.1%	1.3%	5.0%	1.4%	4.7%	2.3%
GMO Small-Cap	5.0%	-1.1%	1.6%	-4.1%	-2.9%	3.4%	10.7%	4.7%	8.7%	--
<i>MSCI EAFE Small Cap</i>	6.1%	1.1%	2.8%	1.4%	1.9%	7.3%	12.1%	6.3%	9.7%	4.5%
OFI Institutional Asset Management	2.9%	3.9%	6.8%	-2.6%	-8.6%	--	--	--	--	--
<i>MSCI Emerging Markets</i>	5.0%	5.2%	11.8%	-0.7%	-7.3%	-0.3%	0.3%	-2.7%	2.9%	3.9%

Investment Manager

Annualized Performance (Net of Fees)

Market Value: \$1,672.5 Million and 100.0% of Fund

Ending July 31, 2016

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Hedged Equity Composite	2.2%	2.2%	-0.6%	-4.8%	2.5%	5.2%	7.3%	5.1%	--	--
<i>HFRX Equity Hedge Index</i>	2.0%	0.9%	-2.0%	-6.2%	-1.3%	0.2%	2.7%	0.1%	0.7%	-0.6%
<i>Russell 3000</i>	4.0%	6.0%	7.7%	4.4%	7.8%	10.6%	14.5%	13.0%	14.4%	7.8%
<i>MSCI ACWI</i>	4.3%	3.8%	5.6%	-0.4%	1.2%	5.9%	9.4%	6.6%	8.9%	4.6%
ABS	2.9%	1.0%	-5.7%	-7.0%	0.9%	4.2%	6.8%	4.2%	--	--
<i>HFRX Equity Hedge Index</i>	2.0%	0.9%	-2.0%	-6.2%	-1.3%	0.2%	2.7%	0.1%	0.7%	-0.6%
<i>Russell 3000</i>	4.0%	6.0%	7.7%	4.4%	7.8%	10.6%	14.5%	13.0%	14.4%	7.8%
<i>MSCI ACWI</i>	4.3%	3.8%	5.6%	-0.4%	1.2%	5.9%	9.4%	6.6%	8.9%	4.6%
Parametric Defensive Equity	1.6%	3.6%	4.9%	--	--	--	--	--	--	--
<i>HFRX Equity Hedge Index</i>	2.0%	0.9%	-2.0%	-6.2%	-1.3%	0.2%	2.7%	0.1%	0.7%	-0.6%
<i>S&P 500</i>	3.7%	5.8%	7.7%	5.6%	8.4%	11.2%	14.5%	13.4%	14.3%	7.7%
K2										
Real Estate Composite	0.0%	2.0%	3.9%	10.8%	12.8%	12.7%	12.7%	12.4%	14.7%	5.7%
<i>Custom Real Estate Benchmark</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	15.5%	5.3%
<i>NFI</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	10.3%	5.1%
American Realty Advisors	0.0%	1.0%	3.4%	9.6%	11.2%	11.3%	11.1%	11.1%	--	--
<i>NFI</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	10.3%	5.1%
Morgan Stanley	0.0%	2.4%	4.3%	11.4%	13.7%	13.6%	13.9%	13.9%	--	--
<i>NFI</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	10.3%	5.1%
UBS	0.0%	1.8%	3.5%	9.9%	10.7%	10.2%	9.8%	--	--	--
<i>NFI</i>	0.0%	1.3%	3.9%	9.6%	11.5%	11.6%	11.5%	11.4%	10.3%	5.1%
Infrastructure Composite	0.1%	0.2%	3.0%	4.4%	1.1%	3.7%	5.1%	4.6%	--	--
<i>CPI +4%</i>	0.3%	1.7%	4.3%	5.0%	4.6%	5.1%	5.3%	5.4%	5.7%	5.8%
IFM	0.2%	1.4%	4.8%	8.1%	3.3%	4.3%	6.3%	5.4%	--	--
<i>CPI +4%</i>	0.3%	1.7%	4.3%	5.0%	4.6%	5.1%	5.3%	5.4%	5.7%	5.8%
J.P. Morgan Infrastructure	0.0%	-1.0%	1.3%	1.2%	-0.7%	3.4%	4.1%	4.0%	--	--
<i>CPI +4%</i>	0.3%	1.7%	4.3%	5.0%	4.6%	5.1%	5.3%	5.4%	5.7%	5.8%

Total Fund Composite

Fee Schedule

Market Value: \$1,672.5 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee ¹	Industry Average ²
Core Fixed Income	J.P. Morgan	0.20% on the first \$100 million 0.15% on the Balance	0.18% \$311,225	0.24%
Core Fixed Income	Mellon Capital	0.04% on the first \$200 million 0.02% on the Balance	0.04% \$41,593	0.08%
Large-Cap Value	Boston Partners	0.40% on the first \$15 million 0.30% on the next \$25 million 0.20% on the next \$25 million 0.15% on the next \$35 million 0.10% on the Balance	0.20% \$269,033	0.51%
Large-Cap Core	Mellon Capital	0.04% on the first \$200 million 0.02% on the Balance	0.04% \$41,650	0.09%
Mid-Cap Growth	Artisan Partners	0.80% on the first \$50 million 0.60% on the next \$50 million 0.50% on the Balance	0.80% \$349,343	0.78%
Mid-Cap Growth	Geneva Capital	0.55% on the Balance	0.55% \$233,730	0.78%
Small-Cap Value	Silvercrest Asset Management	0.65% on the first \$50 million 0.55% on the Balance	0.64% \$340,899	0.83%
Small-Cap Value	Mesirow	0.70% on the first \$10 million 0.65% on the next \$40 million 0.60% on the next \$25 million 0.50% on the Balance	0.66% \$343,135	0.83%
Non-U.S. All-Cap Core	NTGI ACWI Ex-US	0.08% on the Balance	0.08% \$162,339	0.09%
Non-U.S. Small-Cap Value	GMO Small-Cap	0.75% on the Balance	0.75% \$511,957	1.16%
Emerging Markets	OFI Institutional Asset Management	0.85% on the first \$50 million 0.80% on the next \$50 million 0.70% on the Balance	0.85% \$440,254	0.92%
Hedged Equity Hedge FoF	ABS	0.85% on the Balance *redemptions quarterly with 45 days notice	0.85% \$739,819	1.37%
Long/Short Hedge Fund	Parametric Defensive Equity	0.35% on the Balance	0.35% \$313,011	1.69%
Core Real Estate	American Realty Advisors	0.95% on the Balance	0.95% \$383,252	1.03%

Total Fund Composite

Fee Schedule

Market Value: \$1,672.5 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee ¹	Industry Average ²
Core Real Estate	Morgan Stanley	0.90% on the Balance	0.90% \$791,620	1.03%
Core Real Estate	UBS	0.955% on the first \$10 million 0.825% on the next \$15 million 0.805% on the next \$25 million 0.79% on the next \$50 million 0.67% on the next \$150 million 0.60% on the Balance	0.85% \$343,839	1.03%
Core Infrastructure	IFM	0.97% on the Balance Performance Fee: 20% of return above 8% on a rolling three year basis	0.97% \$722,328	1.80%
Core Infrastructure	J.P. Morgan Infrastructure	1.00% on the Balance Performance Fee: 15% with 7% Hurdle	1.00% \$787,365	1.80%
Private Equity	Adams Street	0.67% on the first \$50 million 0.60% on the Balance 10% carry on secondaries and co-invest (Effective Rate Over 15 Yr Term)	0.66% \$411,419	1.11%
U.S. Private Equity FoF	Siguler Guff II	0.69% on commitment	0.89% \$276,000	1.43%
U.S. Private Equity FoF	Siguler Guff III	0.89% on commitment	2.96% \$355,200	3.70%
U.S. Private Equity FoF	Mesirow VI	0.70% on commitment	2.46% \$210,000	3.90%
Cash Overlay	Northern Trust	0.07% on the first \$100 million 0.06% on the next \$150 million 0.05% on the Balance	0.07% \$18,971	0.20%
Total Investment Management Fees			0.50% \$8,397,982	0.80%
Custodian	BNY Mellon	\$100,000 Annual Fee (approximate)	\$100,000	N/A
Total Fund			0.51% \$8,497,982	

¹ Expense Ratio & Estimated Annual Fee are Based on Market Value at Month End.

² Source: 2010 Marquette Associates Investment Management Fee Study.