FUND EVALUATION REPORT

Plymouth County Retirement Association

Investment Review September 26, 2018

DRAFT



MEKETA INVESTMENT GROUP

- 1. Interim Update as of August 31, 2018
- 2. Disclaimer, Glossary, and Notes



Interim Update

	Asset Cla	ıss Net Pei	rformand	e Sumn	nary							
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	1,049,584,733	100.0	0.6	1.9	2.6	8.2	8.5	7.8	6.2	7.1	8.0	Nov-89
Custom Benchmark - Policy Benchmark			0.5	2.2	3.7	10.0	9.8	8.9	7.6			Nov-89
Domestic Equity Assets	276,963,703	26.4	4.5	6.6	13.6	23.9					18.4	Jan-16
Russell 3000			3.5	6.9	10.4	20.2	15.9	14.3	10.9	9.8	16.6	Jan-16
International Developed Market Equity Assets	160,684,383	15.3	-2.5	-0.7	-4.0	2.1					8.6	Jan-16
MSCI EAFE			-1.9	0.5	-2.3	4.4	7.0	5.7	3.7	7.0	8.2	Jan-16
International Emerging Market Equity Assets	93,014,055	8.9	-1.7	-0.9	-6.9	-0.9					12.6	Jan-16
MSCI Emerging Markets			-2.7	-0.6	-7.2	-0.7	11.4	5.0	3.4	9.7	14.0	Jan-16
Global Equity Assets	97,857,068	9.3	-0.4	1.6							-3.3	Feb-18
MSCI ACWI			0.8	3.8	3.4	11.4	11.8	9.7	6.7	8.1	-2.1	Feb-18
Domestic Fixed Income	101,302,799	9.7	0.7	0.5	-0.7	-0.6					2.5	Jan-16
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year			0.7	0.6	-0.6	-0.7	1.8	2.2			2.1	Jan-16
Value Added Fixed Income	73,476,424	7.0	0.6	1.5	2.2	3.2					7.2	Jan-16
50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged Loans			0.6	1.5	2.8	4.3	6.0	5.0	6.9	6.4	8.2	Jan-16
International Fixed Income	35,746,659	3.4	-2.8	-0.6	-3.0	-1.4					5.5	Jan-16
Custom Benchmark - Global Fixed Income			-1.7	0.8	-4.5	-3.7	4.0	3.6			4.6	Jan-16
Hedge Fund	44,756,994	4.3	0.2	2.2	2.4	5.1	4.8	5.6			5.1	Feb-10
HFRI Fund of Funds Composite Index			0.3	0.6	1.3	3.8	2.7	3.5	1.9	3.4	3.0	Feb-10
Real Estate	90,855,923	8.7	0.4	0.5	2.8	4.5					4.4	Jan-16
NCREIF ODCE			0.0	0.0	4.3	8.4	9.4	11.0	5.3	8.3	7.8	Jan-16
Private Equity	39,162,761	3.7	0.0	0.0	11.2	22.5					8.1	Jan-16
Cambridge Associates Fund of Funds Composite 1-Quarter Lag			0.0	0.0	7.8	16.2	10.4	12.0	8.0	11.7	9.5	Jan-16
Real Assets	23,448,010	2.2	0.0	0.0	-0.6	0.1					-3.0	Jan-16
CPI+3%			0.5	0.9	3.6	5.7	4.9	4.5	4.4	5.1	5.2	Jan-16
Cash and Cash Equivalent	12,315,955	1.2										



Trailing Net Performance												
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association Custom Benchmark - Policy Benchmark	1,049,584,733	100.0		0.6 0.5	1.9 2.2	2.6 3.7	8.2 10.0	8.5 9.8	7.8 8.9	6.2 7.6	8.0	Nov-89 <i>Nov-</i> 89
Domestic Equity Assets Russell 3000	276,963,703	26.4	26.4	4.5 3.5	6.6 6.9	13.6 10.4	23.9 20.2	 15.9	 14.3	 10.9	18.4 16.6	Jan-16 <i>Jan-16</i>
Rhumbline Russell 1000 Value Russell 1000 Value	34,672,681	3.3	12.5	1.5 <i>1.</i> 5	5.5 5.5	3.7 3.7	12.3 12.5	12.1 12.3	11.1 11.2	 8.9	11.0 <i>11.1</i>	Apr-13 <i>Apr-1</i> 3
Rhumbline Russell 1000 Growth Russell 1000 Growth	61,563,476	5.9	22.2	5.5 5.5	8.6 8.6	16.4 16.4	27.0 27.2	19.2 19.3	17.3 17.5	 12.8	16.7 16.8	Jul-09 <i>Jul-</i> 09
Fisher Midcap Value Russell MidCap Value	47,093,608	4.5	17.0	2.6 1.4	5.7 4.1	6.7 <i>4.0</i>	16.2 12.7	15.0 12.1	12.4 11.8	9.9 10.3	8.3 7.5	Apr-07 <i>Apr-</i> 07
Boston Company Small Cap Growth Russell 2000 Growth	55,529,238	5.3	20.0	10.2 6.2	9.2 8.1	27.5 18.5	40.0 30.7	19.6 <i>16.4</i>	16.6 14.2	 11.6	16.9 16.1	Aug-09 <i>Aug-</i> 09
LMCG Small Cap Value Russell 2000 Value	78,089,815	7.4	28.2	2.5 2.4	4.3 4.2	7.4 9.9	16.7 20.0	13.7 <i>15.7</i>	11.6 11.7	 9.3	10.1 10.7	Mar-11 <i>Mar-11</i>
International Developed Market Equity Assets	160,684,383	15.3	15.3	-2.5	-0.7	-4.0	2.1		-		8.6	Jan-16
MSCI EAFE				-1.9	0.5	-2.3	4.4	7.0	5.7	3.7	8.2	Jan-16
KBI Master Account MSCI EAFE	75,396,685	7.2	46.9	-3.1 -1.9	-0.4 <i>0.</i> 5	-4.9 -2.3	0.4 <i>4.4</i>	5.0 7.0	4.3 5.7	2.8 3.7	3.9 4.8	Jul-05 <i>Jul-</i> 05
HGK TS International Equity MSCI EAFE	47,312,088	4.5	29.4	-3.1 -1.9	-0.9 <i>0.5</i>	-2.1 -2.3	3.9 <i>4.4</i>	8.7 7.0	7.4 5.7	 3.7	7.0 4.5	Feb-11 Feb-11
Copper Rock International Small Cap MSCI EAFE Small Cap	37,975,610	3.6	23.6	-0.7 -0.8	-1.2 -0.2	-4.4 -1.5	 7.5	 11.4	 10.0	 7.7	-2.8 1.1	Nov-17 <i>Nov-17</i>



As of August 31, 2018 YTD Market Value % of % of 1 Mo QTD 1 Yr 3 Yrs 5 Yrs 10 Yrs Inception Inception Portfolio Sector (%) (%) (%) (%) (%) (%) (%)(%) Date **International Emerging Market Equity Assets** 93.014.055 8.9 8.9 -1.7 -0.9 -6.9 -0.9 12.6 Jan-16 --MSCI Emerging Markets -2.7 -0.6 -7.2 -0.7 11.4 5.0 3.4 14.0 Jan-16 LMCG Emerging Markets 93,014,055 8.9 100.0 -1.7 -0.9 -6.9 -0.9 9.9 2.5 Sep-13 MSCI Emerging Markets -2.7 -0.6 -7.2 -0.7 11.4 5.0 3.4 3.8 Sep-13 **Global Equity Assets** 97.857.068 9.3 Feb-18 9.3 -0.4 1.6 -3.3 MSCI ACWI 3.8 11.8 0.8 3.4 11.4 9.7 6.7 -2.1 Feb-18 First Eagle Global Value Fund 19.222.928 1.8 19.6 -0.6 0.9 -3.9 Feb-18 MSCI ACWI 0.8 3.8 3.4 11.4 11.8 9.7 6.7 -2.1 Feb-18 Kopernik Global All Cap Fund 17.154.758 1.6 17.5 -6.3 -8.5 -14.2 Feb-18 MSCI ACWI 0.8 3.8 3.4 9.7 6.7 -2.1 Feb-18 11.4 11.8 Lee Munder Global Multi-Cap Strategy 29,387,261 2.8 30.0 1.0 4.0 3.1 Mar-18 MSCI ACWI 0.8 3.8 3.4 11.4 11.8 9.7 6.7 2.1 Mar-18 Wellington Durable Enterprises, L.P. 32.092.120 3.1 32.8 1.9 6.0 7.0 Mar-18 MSCI ACWI 0.8 3.8 3.4 11.4 11.8 9.7 6.7 2.1 Mar-18 **Domestic Fixed Income** 101.302.799 9.7 9.7 0.7 0.5 -0.7 -0.6 2.5 Jan-16 ----75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 0.7 0.6 -0.6 -0.7 1.8 2.2 2.1 Jan-16 year IR&M Core Bonds 101,302,799 9.7 100.0 0.7 0.5 -0.7-0.7 1.9 2.4 3.4 4.0 Nov-04 75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 0.7 0.6 -0.6 -0.7 1.8 2.2 Nov-04 year Value Added Fixed Income Jan-16 73,476,424 7.0 7.0 0.6 1.5 2.2 3.2 --7.2 50% BBgBarc US High Yield/ 50% Credit Suisse Leveraged 0.6 6.9 8.2 1.5 2.8 4.3 6.0 5.0 Jan-16 Loans Eaton Vance High Yield 38,113,675 3.6 51.9 0.7 1.7 1.5 2.5 5.8 5.4 7.9 7.0 Apr-06 ICE BofAML US High Yield TR 0.7 1.8 1.9 3.3 7.0 5.6 8.4 7.4 Apr-06



As of August 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
THL Bank Loan Select Fund Credit Suisse Leveraged Loans	35,362,749	3.4	48.1	0.4 0.4	1.2 1.2	3.1 3.6	4.1 5.3	5.2 5.0	4.7 4.3	 5.2	5.6 5.0	Sep-10 Sep-10
International Fixed Income	35,746,659	3.4	3.4	-2.8	-0.6	-3.0	-1.4		-		5.5	Jan-16
Custom Benchmark - Global Fixed Income				-1.7	0.8	-4.5	-3.7	4.0	3.6		4.6	Jan-16
Franklin Templeton Emerging Market Bonds JP Morgan EMBI Global Diversified	35,746,659	3.4	100.0	-2.8 -1.7	-0.6 <i>0.8</i>	-3.0 -4.5	-0.3 -3.4	6.2 5.1	4.2 5.6	5.9 6.6	6.7 6.9	May-06 <i>May-0</i> 6
Hedge Fund	44,756,994	4.3	4.3	0.2	2.2	2.4	5.1	4.8	5.6		5.1	Feb-10
HFRI Fund of Funds Composite Index				0.3	0.6	1.3	3.8	2.7	3.5	1.9	3.0	Feb-10
ABS Offshore SPC - Global Segregated Portfolio HFRI Fund of Funds Composite Index	21,853,711	2.1	48.8	0.0 <i>0</i> .3	1.5 <i>0</i> .6	2.6 1.3	5.2 3.8	3.4 2.7	5.8 3.5	 1.9	5.8 3.2	Aug-10 <i>Aug-10</i>
Entrust Special Opportunities Fund III, Ltd. HFRI Fund of Funds Composite Index	22,903,283	2.2	51.2	0.3 <i>0.</i> 3	3.0 <i>0.6</i>	1.8 1.3	5.1 3.8	 2.7	 3.5	 1.9	19.5 <i>5.1</i>	Oct-16 Oct-16
Real Estate	90,855,923	8.7	8.7	0.4	0.5	2.8	4.5		-		4.4	Jan-16
NCREIF ODCE				0.0	0.0	4.3	8.4	9.4	11.0	5.3	7.8	Jan-16
Core Real Estate	70,170,215	6.7	77.2	0.6	0.6	3.8	6.8	9.1	10.4	2.8	-	
PRISA I	39,075,175	3.7	55.7	0.0	0.0	3.9	7.4	9.4	10.8	3.7	6.7	Sep-04
Invesco REIT Wilshire REIT	16,755,423	1.6	23.9	2.4 3.0	2.7 3.6	3.7 5.1	6.0 6.8	9.3 9.3	10.2 10.6	7.8 7.6	11.3 10.7	Dec-02 Dec-02
TA Realty Core Property Fund, L.P.	14,339,616	1.4	20.4	0.0	0.0					-	6.0	Mar-18
Non-Core Real Estate	20,685,708	2.0	22.8	0.0	0.0	-0.1	-3.4				-4.2	Jan-16
Mesirow Financial International Real Estate Fund I	3,980,727	0.4	19.2									
DSF Multi-Family Real Estate Fund III	8,590,224	0.8	41.5									

Hedge Fund managers: The market value and performance data is based on an estimate. Invesco REIT: Market value as of August 31, 2018.



As of August 31, 2018 Market Value % of % of 1 Mo QTD YTD 1 Yr 3 Yrs 5 Yrs 10 Yrs Inception Inception Sector (%) (%) (%) (%) (%) (%) (%) (%) Portfolio Date **AEW Partners Real Estate VIII** 4,364,192 0.4 21.1 **DSF Capital Partners IV** 2,110,813 0.2 10.2 Hunt Redevelopment & Renovation 170,431 0.0 8.0 1921 Realty, Inc 931,632 0.1 4.5 New Boston Institutional Fund, LP VII 332,860 0.0 1.6 Berkshire Multfamily Value Fund II 97,917 0.0 0.5 Carlyle Realty Partners VIII 106,912 0.0 0.5 **Private Equity** 39,162,761 3.7 Jan-16 3.7 0.0 0.0 11.2 22.5 8.1 Cambridge Associates Fund of Funds Composite 1-Quarter Lag 10.4 12.0 8.0 9.5 0.0 0.0 7.8 16.2 Jan-16 **Private Equity General** 27,657,171 2.6 70.6 Euro Choice V Programme 5,516,552 0.5 19.9 Lexington Capital Partners VII 3,257,063 0.3 11.8 TRG Growth Partnership II 2,490,492 0.2 9.0 Landmark Equity Partners XIV 1,410,882 0.1 5.1 Summit Partners Growth Equity Fund IX 4,887,715 0.5 17.7 Leeds Equity Partners V 1,794,955 0.2 6.5 Audax Mezzaine Debt IV 1,994,439 0.2 7.2 Siguler Guff Distressed Opportunities Fund III, LP 998.285 0.1 3.6 Mesirow Financial Capital Partners IX, LP 314,144 0.0 1.1 Leeds Equity Partners IV 1,006,398 0.1 3.6 DN Partners II. LP 910.497 0.1 3.3 Euro Choice II 0.0 0.6 170,561



As of August 31, 2018

											As of Augus	it 31, 2018
	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RIMCO Royalty Partners, LP	1	0.0	0.0					-				
Charles River Partnership XI	92,929	0.0	0.3									
LLR Equity Partners V, LP.	882,085	0.1	3.2									
Wellspring Capital Partners VI	430,173	0.0	1.6									
Trilantic Capital Partners, L.P.	1,500,000	0.1	5.4									
Venture Capital	11,505,590	1.1	29.4									
Ascent Ventures V	7,455,064	0.7	64.8									
Globespan Capital V	3,795,906	0.4	33.0									
Ascend Ventures II	72,247	0.0	0.6									
Ascent Ventures IV	182,373	0.0	1.6							ĺ		
Real Assets	23,448,010	2.2	2.2	0.0	0.0	-0.6	0.1				-3.0	Jan-16
CPI+3%				0.5	0.9	3.6	5.7	4.9	4.5	4.4	5.2	Jan-16
JP Morgan Global Maritime Investment	6,609,213	0.6	28.2									
Timbervest Partners III, LP	5,140,568	0.5	21.9									
BTG Pactual Global Timberland Resources	3,612,220	0.3	15.4									
Global Infrastructure Partners III	6,783,673	0.6	28.9									
Basalt Infrastructure Partners II	1,302,336	0.1	5.6									
Cash and Cash Equivalent	12,315,955	1.2	1.2									
Cash	12,315,955	1.2	100.0									

Ascend II: Market value as of June 30, 2018.



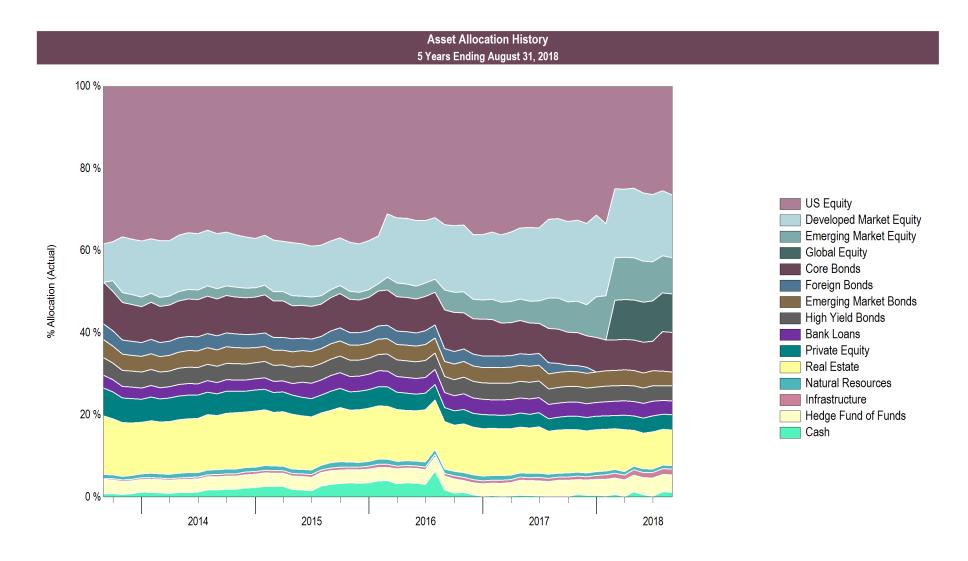
As of August 31, 2018

Allocation vs. Target									
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?				
US Equity	\$276,963,690	26%	26%	21% - 36%	Yes				
Developed Market Equity	\$160,684,383	15%	6%	1% - 16%	Yes				
Emerging Market Equity	\$93,014,055	9%	10%	5% - 20%	Yes				
Global Equity	\$97,857,068	9%	10%	5% - 20%	Yes				
Core Bonds	\$101,302,799	10%	9%	4% - 14%	Yes				
Emerging Market Bonds	\$35,746,659	3%	2%	0% - 7%	Yes				
High Yield Bonds	\$38,113,675	4%	2%	0% - 7%	Yes				
Bank Loans	\$35,362,749	3%	2%	0% - 7%	Yes				
Private Equity	\$39,162,761	4%	13%	8% - 18%	No				
Real Estate	\$90,855,923	9%	10%	5% - 15%	Yes				
Natural Resources	\$8,752,788	1%	2%	0% - 4%	Yes				
Infrastructure	\$14,695,222	1%	4%	2% - 6%	No				
Hedge Fund of Funds	\$44,756,994	4%	4%	2% - 6%	Yes				
Cash	\$12,315,955	1%	0%	0% - 3%	Yes				
Total	\$1,049,584,720	100%	100%						

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	\$712,438,951	68%	69%	60% - 80%	Yes
Total Fixed Income	\$210,525,882	20%	15%	5% - 25%	Yes
Total Real Assets	\$114,303,933	11%	16%	13% - 19%	No
Cash	\$12,315,955	1%	0%	0% - 3%	Yes

Plymouth County Retirement Association adopted a new asset allocation as of May 2017.







Annual Investment Expense Analysis As Of August 31, 2018								
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee				
Domestic Equity Assets		\$276,963,703						
Rhumbline Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$34,672,681	\$16,369	0.05%				
Rhumbline Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$61,563,476	\$25,969	0.04%				
Fisher Midcap Value	0.80% of First 25.0 Mil, 0.75% of Next 25.0 Mil, 0.67% Thereafter	\$47,093,608	\$365,702	0.78%				
Boston Company Small Cap Growth	0.45% of Assets	\$55,529,238	\$249,882	0.45%				
LMCG Small Cap Value	0.90% of Assets	\$78,089,815	\$702,808	0.90%				
International Developed Market Equity Assets		\$160,684,383						
KBI Master Account	0.65% of Assets	\$75,396,685	\$490,078	0.65%				
HGK TS International Equity	1.00% of Assets	\$47,312,088	\$473,121	1.00%				
Copper Rock International Small Cap	0.85% of Assets	\$37,975,610	\$322,793	0.85%				
International Emerging Market Equity Assets		\$93,014,055						
LMCG Emerging Markets	0.75% of Assets	\$93,014,055	\$697,605	0.75%				
Global Equity Assets		\$97,857,068						
First Eagle Global Value Fund	0.75% of Assets	\$19,222,928	\$144,172	0.75%				
Kopernik Global All Cap Fund	0.80% of First 50.0 Mil, 0.75% of Next 150.0 Mil, 0.70% of Next 250.0 Mil, 0.65% of Next 350.0 Mil	\$17,154,758	\$137,238	0.80%				
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	\$29,387,261	\$132,243	0.45%				
Wellington Durable Enterprises, L.P.	0.60% of Assets	\$32,092,120	\$192,553	0.60%				
Domestic Fixed Income		\$101,302,799						
IR&M Core Bonds	0.25% of First 50.0 Mil, 0.20% of Next 50.0 Mil, 0.15% Thereafter	\$101,302,799	\$226,954	0.22%				
Value Added Fixed Income		\$73,476,424						
Eaton Vance High Yield	0.50% of Assets	\$38,113,675	\$190,568	0.50%				
THL Bank Loan Select Fund	0.40% of Assets	\$35,362,749	\$141,451	0.40%				
International Fixed Income		\$35,746,659						
Franklin Templeton Emerging Market Bonds	0.99% of Assets	\$35,746,659	\$353,892	0.99%				



Disclaimer, Glossary, and Notes

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.



Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.



Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.



Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

Sources: <u>Investment Terminology</u>, International Foundation of Employee Benefit Plans, 1999. <u>The Handbook of Fixed Income Securities</u>, Fabozzi, Frank J., 1991.



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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.

