

# FUND EVALUATION REPORT

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## **Plymouth County Retirement Association**

Meeting Materials  
March 20, 2019



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M E K E T A   I N V E S T M E N T   G R O U P

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- 1. Estimated Retirement System Performance**
- 2. Interim Update As of January 31, 2019**
- 3. Bank Loan Manager Finalist Overview**
  - THL Credit
  - Octagon Credit Investors
- 4. Disclaimer, Glossary, and Notes**

# Estimated Retirement System Performance

### Estimated Aggregate Performance<sup>1</sup>

	February <sup>2</sup> (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Total Retirement System</b>	<b>1.9</b>	<b>7.5</b>	<b>-0.1</b>	<b>8.9</b>	<b>5.1</b>	<b>10.2</b>
<i>60% MSCI ACWI/40% Barclays Global Aggregate</i>	1.4	6.8	-0.4	8.5	4.2	9.0
<i>Policy Benchmark</i>	1.4	6.5	1.4	10.4	6.4	11.4

### Benchmark Returns

	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<i>Russell 3000</i>	3.5	12.4	5.1	15.2	10.2	16.8
<i>MSCI EAFE</i>	2.6	9.3	-6.0	9.3	2.1	9.6
<i>MSCI Emerging Markets</i>	0.2	9.0	-9.9	15.0	4.1	10.3
<i>Barclays Aggregate</i>	-0.1	1.0	3.2	1.7	2.3	3.7
<i>Barclays TIPS</i>	-0.0	1.3	1.9	1.8	1.5	3.8
<i>Barclays High Yield</i>	1.7	6.3	4.3	10.0	4.5	11.5
<i>JPM GBI-EM Global Diversified</i>	-1.1	4.3	-5.4	6.9	0.1	5.1
<i>S&amp;P Global Natural Resources</i>	1.5	11.3	-2.6	16.8	1.8	5.5

### Estimated Total Fund Assets

	February Estimate
<b>Total Retirement System</b>	<b>\$995,743,109</b>

<sup>1</sup> The February performance estimates are calculated using index returns as of February 28, 2018 for each asset class. No performance estimate was included for private equity, real estate, infrastructure, and private natural resources asset classes.

<sup>2</sup> As of February 28, 2019

**Interim Update  
As of January 31, 2019**

## Total Retirement Association

As of January 31, 2019

## Asset Class Net Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Retirement Association</b>	<b>978,060,628</b>	<b>100.0</b>	<b>5.5</b>	<b>-5.0</b>	<b>8.0</b>	<b>5.3</b>	<b>9.3</b>	<b>7.7</b>	<b>Nov-89</b>
60% ACWI / 40% Barclays Global Aggregate			5.3	-4.7	8.2	4.6	8.1	6.5	Nov-89
Custom Benchmark - Policy Benchmark (Net)			4.9	-2.2	9.4	6.1	9.8	--	Nov-89
<b>Domestic Equity Assets</b>	<b>226,622,968</b>	<b>23.2</b>	<b>10.6</b>	<b>-2.7</b>	<b>15.0</b>	<b>--</b>	<b>--</b>	<b>11.9</b>	<b>Jan-16</b>
Russell 3000			8.6	-2.3	14.2	10.4	15.1	11.7	Jan-16
<b>International Developed Market Equity Assets</b>	<b>123,897,481</b>	<b>12.7</b>	<b>8.2</b>	<b>-15.0</b>	<b>7.6</b>	<b>--</b>	<b>--</b>	<b>4.8</b>	<b>Jan-16</b>
MSCI EAFE			6.6	-12.5	7.7	2.7	8.1	4.9	Jan-16
<b>International Emerging Market Equity Assets</b>	<b>77,452,244</b>	<b>7.9</b>	<b>7.7</b>	<b>-17.6</b>	<b>11.7</b>	<b>--</b>	<b>--</b>	<b>9.1</b>	<b>Jan-16</b>
MSCI Emerging Markets			8.8	-14.2	14.9	4.8	9.7	12.0	Jan-16
<b>Global Equity Assets</b>	<b>95,858,163</b>	<b>9.8</b>	<b>8.1</b>	<b>-5.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-5.3</b>	<b>Feb-18</b>
MSCI ACWI			7.9	-7.5	11.6	6.7	11.3	-7.5	Feb-18
<b>Core Fixed Income</b>	<b>79,257,317</b>	<b>8.1</b>	<b>1.1</b>	<b>1.8</b>	<b>2.3</b>	<b>--</b>	<b>--</b>	<b>2.6</b>	<b>Jan-16</b>
75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year			1.1	2.1	1.9	2.1	3.5	2.3	Jan-16
<b>Value Added Fixed Income</b>	<b>107,311,549</b>	<b>11.0</b>	<b>3.3</b>	<b>1.2</b>	<b>7.6</b>	<b>--</b>	<b>--</b>	<b>6.9</b>	<b>Jan-16</b>
Custom Benchmark (1)			3.8	1.4	7.4	--	--	6.9	Jan-16
<b>Hedge Funds (2)</b>	<b>51,145,323</b>	<b>5.2</b>	<b>1.9</b>	<b>-7.8</b>	<b>3.1</b>	<b>2.4</b>	<b>--</b>	<b>3.8</b>	<b>Feb-10</b>
HFRI Fund of Funds Composite Index			2.4	-4.0	3.0	1.9	3.3	2.5	Feb-10
<b>Real Estate (3)</b>	<b>107,964,335</b>	<b>11.0</b>	<b>1.6</b>	<b>5.9</b>	<b>5.0</b>	<b>--</b>	<b>--</b>	<b>4.5</b>	<b>Jan-16</b>
80% NCREIF ODCE / 20% Wilshire REIT			2.3	9.1	8.2	--	--	7.7	Jan-16
<b>Private Equity (4)</b>	<b>45,466,561</b>	<b>4.6</b>	<b>0.0</b>	<b>1.8</b>	<b>4.0</b>	<b>--</b>	<b>--</b>	<b>3.9</b>	<b>Jan-16</b>
Cambridge Associates Fund of Funds Composite 1-Quarter Lag			0.0	15.9	11.1	12.2	9.6	10.8	Jan-16
<b>Real Assets (5)</b>	<b>45,855,674</b>	<b>4.7</b>	<b>0.0</b>	<b>-1.6</b>	<b>-3.0</b>	<b>--</b>	<b>--</b>	<b>-2.9</b>	<b>Jan-16</b>
CPI +3%			0.2	4.5	5.0	4.4	4.8	5.0	Jan-16
<b>Cash and Cash Equivalent</b>	<b>17,229,013</b>	<b>1.8</b>							

(1) The custom benchmark is comprised of 33% BBgBarc US High Yield/ 33% Credit Suisse Leveraged Loans/ 33% JP Morgan EMBI Global diversified.

(2) The market value and performance is one month lagged.

(3) The market value and performance is one quarter lagged.

(4) The market value and performance is one quarter lagged.

(5) The market value and performance is one quarter lagged.



As of January 31, 2019

## Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Retirement Association</b>	<b>978,060,628</b>	<b>100.0</b>	<b>--</b>	<b>5.5</b>	<b>-5.0</b>	<b>8.0</b>	<b>5.3</b>	<b>9.3</b>	<b>7.7</b>	<b>Nov-89</b>
<i>60% ACWI / 40% Barclays Global Aggregate</i>				5.3	-4.7	8.2	4.6	8.1	6.5	Nov-89
<b>Domestic Equity Assets</b>	<b>226,622,968</b>	<b>23.2</b>	<b>23.2</b>	<b>10.6</b>	<b>-2.7</b>	<b>15.0</b>	<b>--</b>	<b>--</b>	<b>11.9</b>	<b>Jan-16</b>
<i>Russell 3000</i>				8.6	-2.3	14.2	10.4	15.1	11.7	Jan-16
Rhumblin Russell 1000 Value	33,059,791	3.4	14.6	7.7	-4.8	11.4	8.2	--	9.2	Apr-13
<i>Russell 1000 Value</i>				7.8	-4.8	11.6	8.3	13.4	9.4	Apr-13
Rhumblin Russell 1000 Growth	33,766,159	3.5	14.9	9.0	0.2	16.5	12.9	--	14.9	Jul-09
<i>Russell 1000 Growth</i>				9.0	0.2	16.6	13.0	16.9	15.0	Jul-09
Fisher Midcap Value	42,594,501	4.4	18.8	10.8	-7.5	14.1	8.0	15.4	7.1	Apr-07
<i>Russell MidCap Value</i>				10.3	-5.4	11.7	7.9	15.4	6.5	Apr-07
Boston Company Small Cap Growth	48,904,400	5.0	21.6	13.7	8.3	20.9	10.7	--	14.5	Aug-09
<i>Russell 2000 Growth</i>				11.5	-2.6	15.6	7.8	15.7	13.4	Aug-09
LMCG Small Cap Value	68,282,787	7.0	30.1	10.6	-7.7	10.5	6.7	--	7.6	Mar-11
<i>Russell 2000 Value</i>				10.9	-4.5	13.8	6.6	13.3	8.3	Mar-11
<b>International Developed Market Equity Assets</b>	<b>123,897,481</b>	<b>12.7</b>	<b>12.7</b>	<b>8.2</b>	<b>-15.0</b>	<b>7.6</b>	<b>--</b>	<b>--</b>	<b>4.8</b>	<b>Jan-16</b>
<i>MSCI EAFE</i>				6.6	-12.5	7.7	2.7	8.1	4.9	Jan-16
KBI Master Account	56,420,490	5.8	45.5	7.1	-14.3	6.4	1.4	7.0	3.4	Jul-05
<i>MSCI EAFE</i>				6.6	-12.5	7.7	2.7	8.1	4.2	Jul-05
HGK TS International Equity	34,045,480	3.5	27.5	9.3	-12.3	9.9	3.5	--	5.9	Feb-11
<i>MSCI EAFE</i>				6.6	-12.5	7.7	2.7	8.1	3.5	Feb-11
Copper Rock International Small Cap	33,431,511	3.4	27.0	9.1	-19.5	--	--	--	-12.6	Nov-17
<i>MSCI EAFE Small Cap</i>				8.1	-15.6	9.4	5.0	12.1	-7.7	Nov-17
<b>International Emerging Market Equity Assets</b>	<b>77,452,244</b>	<b>7.9</b>	<b>7.9</b>	<b>7.7</b>	<b>-17.6</b>	<b>11.7</b>	<b>--</b>	<b>--</b>	<b>9.1</b>	<b>Jan-16</b>
<i>MSCI Emerging Markets</i>				8.8	-14.2	14.9	4.8	9.7	12.0	Jan-16
LMCG Emerging Markets	49,651,539	5.1	64.1	8.2	-17.2	11.8	2.9	--	1.5	Sep-13
<i>MSCI Emerging Markets</i>				8.8	-14.2	14.9	4.8	9.7	3.5	Sep-13

## Total Retirement Association

As of January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
ABS Emerging Markets	21,514,696	2.2	27.8	7.6	--	--	--	--	7.6	Dec-18
<i>MSCI Emerging Markets</i>				8.8	-14.2	14.9	4.8	9.7	5.9	Dec-18
Copper Rock Emerging Markets Small Cap	6,286,009	0.6	8.1	3.9	--	--	--	--	3.9	Dec-18
<i>MSCI Emerging Markets</i>				8.8	-14.2	14.9	4.8	9.7	5.9	Dec-18
<b>Global Equity Assets</b>	<b>95,858,163</b>	<b>9.8</b>	<b>9.8</b>	<b>8.1</b>	<b>-5.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-5.3</b>	<b>Feb-18</b>
<i>MSCI ACWI</i>				7.9	-7.5	11.6	6.7	11.3	-7.5	Feb-18
First Eagle Global Value Fund	18,907,823	1.9	19.7	7.0	-5.5	--	--	--	-5.5	Feb-18
<i>MSCI ACWI</i>				7.9	-7.5	11.6	6.7	11.3	-7.5	Feb-18
Kopernik Global All Cap Fund	18,623,456	1.9	19.4	7.8	-6.9	--	--	--	-6.9	Feb-18
<i>MSCI ACWI</i>				7.9	-7.5	11.6	6.7	11.3	-7.5	Feb-18
Lee Munder Global Multi-Cap Strategy	27,450,069	2.8	28.6	8.9	--	--	--	--	-3.8	Mar-18
<i>MSCI ACWI</i>				7.9	-7.5	11.6	6.7	11.3	-3.4	Mar-18
Wellington Durable Enterprises, L.P.	30,876,816	3.2	32.2	8.2	--	--	--	--	2.9	Mar-18
<i>MSCI ACWI</i>				7.9	-7.5	11.6	6.7	11.3	-3.4	Mar-18
<b>Core Fixed Income</b>	<b>79,257,317</b>	<b>8.1</b>	<b>8.1</b>	<b>1.1</b>	<b>1.8</b>	<b>2.3</b>	<b>--</b>	<b>--</b>	<b>2.6</b>	<b>Jan-16</b>
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>				1.1	2.1	1.9	2.1	3.5	2.3	Jan-16
IR&M Core Bonds	79,257,317	8.1	100.0	1.1	1.8	2.1	2.2	4.2	4.0	Nov-04
<i>75% Bbg Barclays Aggregate/25% Bbg Barclays US TIPs 1-10 year</i>				1.1	2.1	1.9	2.1	3.5	3.7	Nov-04
<b>Value Added Fixed Income</b>	<b>107,311,549</b>	<b>11.0</b>	<b>11.0</b>	<b>3.3</b>	<b>1.2</b>	<b>7.6</b>	<b>--</b>	<b>--</b>	<b>6.9</b>	<b>Jan-16</b>
<i>Custom Benchmark</i>				3.8	1.4	7.4	--	--	6.9	Jan-16
Eaton Vance High Yield	34,338,534	3.5	32.0	4.4	1.6	7.4	4.5	10.6	6.8	Apr-06
<i>ICE BofAML US High Yield TR</i>				4.6	1.6	9.5	4.6	10.9	7.1	Apr-06
THL Bank Loan Select Fund	35,408,648	3.6	33.0	2.5	2.1	5.9	4.1	--	5.4	Sep-10
<i>Credit Suisse Leveraged Loans</i>				2.3	2.4	6.1	3.7	7.9	4.8	Sep-10
Franklin Templeton Emerging Market Bonds	37,564,366	3.8	35.0	3.2	0.1	9.5	4.8	9.9	6.9	May-06
<i>JP Morgan EMBI Global Diversified</i>				4.4	0.0	6.7	5.8	8.5	7.0	May-06



## Total Retirement Association

As of January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Hedge Funds</b>	<b>51,145,323</b>	<b>5.2</b>	<b>5.2</b>	<b>1.9</b>	<b>-7.8</b>	<b>3.1</b>	<b>2.4</b>	<b>--</b>	<b>3.8</b>	<b>Feb-10</b>
<i>HFRI Fund of Funds Composite Index</i>				2.4	-4.0	3.0	1.9	3.3	2.5	Feb-10
ABS Offshore SPC - Global Segregated Portfolio	20,693,181	2.1	40.5	3.7	-5.5	3.4	2.8	--	4.9	Aug-10
<i>HFRI Fund of Funds Composite Index</i>				2.4	-4.0	3.0	1.9	3.3	2.7	Aug-10
Entrust Special Opportunities Fund III, Ltd.*	22,658,468	2.3	44.3	0.0	-10.8	--	--	--	9.4	Oct-16
<i>HFRI Fund of Funds Composite Index</i>				2.4	-4.0	3.0	1.9	3.3	2.8	Oct-16
Old Farm Partners Master Fund, L.P.	4,859,556	0.5	9.5	3.6	--	--	--	--	-2.8	Oct-18
<i>HFRI Fund of Funds Composite Index</i>				2.4	-4.0	3.0	1.9	3.3	-2.7	Oct-18
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	2,934,118	0.3	5.7	0.0	--	--	--	--	0.0	Jan-19
<i>HFRI Fund of Funds Composite Index</i>				2.4	-4.0	3.0	1.9	3.3	2.4	Jan-19
<b>Real Estate</b>	<b>107,964,335</b>	<b>11.0</b>	<b>11.0</b>	<b>1.6</b>	<b>5.9</b>	<b>5.0</b>	<b>--</b>	<b>--</b>	<b>4.5</b>	<b>Jan-16</b>
<i>80% NCREIF ODCE / 20% Wilshire REIT</i>				2.3	9.1	8.2	--	--	7.7	Jan-16
<b>Core Real Estate</b>	<b>84,009,157</b>	<b>8.6</b>	<b>77.8</b>	<b>2.0</b>	<b>7.9</b>	<b>7.9</b>	<b>--</b>	<b>--</b>	<b>7.2</b>	<b>Jan-16</b>
<i>NCREIF-ODCE</i>				0.0	8.3	8.2	10.4	7.0	8.0	Jan-16
PRISA I	40,542,422	4.1	48.3	0.0	7.8	7.9	10.2	4.0	6.8	Sep-04
<i>NCREIF ODCE</i>				0.0	8.3	8.2	10.4	7.0	8.0	Sep-04
Invesco Equity Real Estate Securities Trust	17,013,378	1.7	20.3	10.9	8.0	8.1	9.2	14.8	11.1	Dec-02
<i>Wilshire REIT</i>				11.5	10.3	7.3	9.4	15.7	10.5	Dec-02
TA Realty Core Property Fund, L.P.	26,453,357	2.7	31.5	0.0	--	--	--	--	10.1	Apr-18
<i>NCREIF ODCE</i>				0.0	8.3	8.2	10.4	7.0	6.0	Apr-18
<b>Non-Core Real Estate</b>	<b>23,955,178</b>	<b>2.4</b>	<b>22.2</b>	<b>0.0</b>	<b>-0.3</b>	<b>-3.8</b>	<b>--</b>	<b>--</b>	<b>-3.7</b>	<b>Jan-16</b>
<b>Private Equity</b>	<b>45,466,561</b>	<b>4.6</b>	<b>4.6</b>	<b>0.0</b>	<b>1.8</b>	<b>4.0</b>	<b>--</b>	<b>--</b>	<b>3.9</b>	<b>Jan-16</b>
<i>Cambridge Associates Fund of Funds Composite 1-Quarter Lag</i>				0.0	15.9	11.1	12.2	9.6	10.8	Jan-16

\* The performance and market value is one month lagged.

Invesco REIT: The performance is based on real time.



## Total Retirement Association

As of January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Equity</b>	37,535,026	3.8	82.6	0.0	0.6	1.7	--	--	1.7	Jan-16
<b>Venture Capital</b>	7,931,535	0.8	17.4	0.0	6.4	11.3	--	--	11.3	Jan-16
<b>Real Assets</b>	45,855,674	4.7	4.7	0.0	-1.6	-3.0	--	--	-2.9	Jan-16
<i>CPI +3%</i>				0.2	4.5	5.0	4.4	4.8	5.0	Jan-16
<b>Cash and Cash Equivalent</b>	17,229,013	1.8	1.8							
Cash	17,229,013	1.8	100.0							

As of January 31, 2019

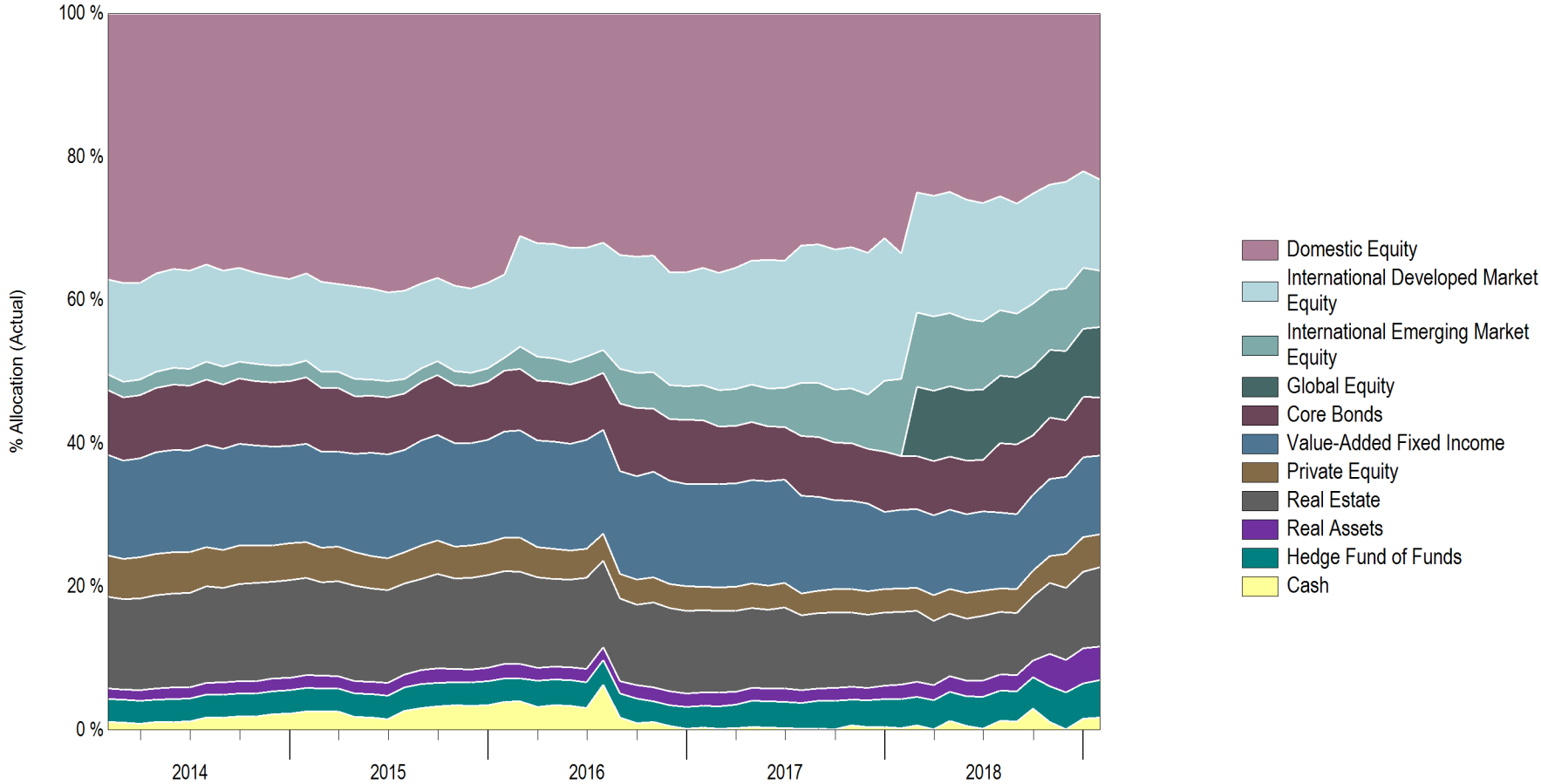
Allocation vs. Target					
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Domestic Equity	\$226,622,955	23%	26%	21% - 36%	Yes
International Developed Market Equity	\$123,897,481	13%	6%	1% - 16%	Yes
International Emerging Market Equity	\$77,452,244	8%	10%	5% - 20%	Yes
Global Equity	\$95,858,163	10%	10%	5% - 20%	Yes
Core Bonds	\$79,257,317	8%	9%	4% - 14%	Yes
Value-Added Fixed Income	\$107,311,549	11%	6%	2% - 12%	Yes
Private Equity	\$48,265,087	5%	13%	4% - 18%	Yes
Real Estate	\$107,964,335	11%	10%	5% - 15%	Yes
Real Assets	\$43,057,149	4%	6%	2% - 10%	Yes
Hedge Fund of Funds	\$51,145,323	5%	4%	2% - 6%	Yes
Cash	\$17,229,013	2%	0%	0% - 3%	Yes
<b>Total</b>	<b>\$978,060,628</b>	<b>100%</b>	<b>100%</b>		

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	\$620,442,728	63%	69%	60% - 80%	Yes
Total Fixed Income	\$186,568,865	19%	15%	5% - 25%	Yes
Total Real Assets and Real Estate	\$153,820,009	16%	16%	13% - 19%	Yes
Cash	\$17,229,013	2%	0%	0% - 3%	Yes

Plymouth County Retirement Association adopted a new asset allocation as of December 2018.



Asset Allocation History  
5 Years Ending January 31, 2019



## Investment Expense Analysis

As of January 31, 2019

## Annual Investment Expense Analysis

As Of January 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
<b>Domestic Equity Assets</b>		<b>\$226,622,968</b>		
Rhumblin Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$33,059,791	\$15,724	0.05%
Rhumblin Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$33,766,159	\$16,006	0.05%
Fisher Midcap Value	0.80% of First 25.0 Mil, 0.75% of Next 25.0 Mil, 0.67% Thereafter	\$42,594,501	\$331,959	0.78%
Boston Company Small Cap Growth	0.45% of Assets	\$48,904,400	\$220,070	0.45%
LMCG Small Cap Value	0.90% of Assets	\$68,282,787	\$614,545	0.90%
<b>International Developed Market Equity Assets</b>		<b>\$123,897,481</b>		
KBI Master Account	0.65% of Assets	\$56,420,490	\$366,733	0.65%
HGK TS International Equity	1.00% of Assets	\$34,045,480	\$340,455	1.00%
Copper Rock International Small Cap	0.85% of Assets	\$33,431,511	\$284,168	0.85%
<b>International Emerging Market Equity Assets</b>		<b>\$77,452,244</b>		
LMCG Emerging Markets	0.75% of Assets	\$49,651,539	\$372,387	0.75%
ABS Emerging Markets	0.35% Management Fee and 10% Performance/Incentive Fee.	\$21,514,696		
Copper Rock Emerging Markets Small Cap	0.85% of Assets	\$6,286,009	\$53,431	0.85%
<b>Global Equity Assets</b>		<b>\$95,858,163</b>		
First Eagle Global Value Fund	0.75% of Assets	\$18,907,823	\$141,809	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	\$18,623,456	\$148,988	0.80%
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	\$27,450,069	\$123,525	0.45%
Wellington Durable Enterprises, L.P.	0.60% of Assets	\$30,876,816	\$185,261	0.60%
<b>Core Fixed Income</b>		<b>\$79,257,317</b>		
IR&M Core Bonds	0.25% of First 50.0 Mil, 0.20% of Next 50.0 Mil, 0.15% Thereafter	\$79,257,317	\$183,515	0.23%
<b>Value Added Fixed Income</b>		<b>\$107,311,549</b>		
Eaton Vance High Yield	0.50% of Assets	\$34,338,534	\$171,693	0.50%
THL Bank Loan Select Fund	0.40% of Assets	\$35,408,648	\$141,635	0.40%
Franklin Templeton Emerging Market Bonds	0.99% of Assets	\$37,564,366	\$371,887	0.99%



## Total Retirement Association

As of December 31, 2018

Private Equity	Commitment	Total Contributions	Total Distributions	Adjusted Value
Ascend Ventures II, L.P.	2,500,000	2,324,355	925,962	69,137
Ascent Venture Partners IV, L.P.	2,500,000	2,502,219	388,970	176,916
Ascent Venture Partners V, L.P.	5,000,000	5,004,731	3,432,862	4,369,916
Audax Mezzanine Fund IV, L.P.	10,000,000	3,570,409	1,042,071	2,693,546
Charles River Partnership XI, L.P.	1,839,000	1,820,323	1,996,788	140,604
DN Partners II, L.P.	5,000,000	2,351,918	0	898,745
Euro Choice II, L.P.	5,544,472	5,513,805	8,038,110	0
Euro Choice V, L.P.	6,088,074	5,688,459	1,504,116	5,499,684
Globespan Capital Partners V, L.P.	5,000,000	4,852,500	7,149,100	3,417,764
Ironsides Direct Investment Fund V, L.P.	12,000,000	7,228,489	0	7,228,489
Landmark Equity Partners XIV, L.P.	6,000,000	6,288,437	6,417,555	1,226,237
Leeds Equity Partners IV, L.P.	5,000,000	5,089,327	6,224,435	29,820
Leeds Equity Partners V, L.P.	2,500,000	3,570,815	3,511,052	2,195,328
Lexington Capital Partners VII, L.P.	10,000,000	10,472,973	12,384,254	3,017,697
LLR Equity Partners V, L.P.	12,000,000	3,360,000	433,003	2,877,993
Mesirow Financial Capital Partners IX, L.P.	4,000,000	3,840,731	1,897,056	234,287
Rimco Production Company, Inc	2,000,000	2,000,000	7,486,401	1
Siguler Guff Distressed Opportunities Fund III, L.	6,000,000	5,820,000	8,077,618	1,063,406
Summit Partners Growth Equity Fund IX, L.P.	10,000,000	6,400,000	997,650	6,270,492
TRG Growth Partnership II, L.P.	7,500,000	7,450,399	7,463,445	1,237,053
Trilantic Capital Partners VI (North America), L.P	12,000,000	194,243	0	2,199,300
Wellspring Capital Partners VI, L.P.	12,000,000	611,767	0	353,670
<b>Total Plymouth County - PE</b>	<b>144,471,545</b>	<b>95,955,901</b>	<b>79,370,449</b>	<b>45,200,084</b>

## Total Retirement Association

As of December 31, 2018

Real Assets	Commitment	Total Contributions	Total Distributions	Adjusted Value
Basalt Infrastructure Partners II	10,000,000	3,133,699	49,561	2,798,525
BTG Pactual Global Timberland Resources Fund, LLC	5,406,477	5,043,536	229,998	2,835,576
Global Infrastructure Partners III, L.P.	10,000,000	7,267,721	348,970	8,241,142
IFM Global Infrastructure (US), L.P.	20,000,000	20,000,000	0	20,000,000
JPMorgan Global Maritime Investment	10,000,000	9,186,014	938,504	6,614,939
Timbervest Partners III, L.P.	5,000,000	5,000,000	1,041,500	5,228,292
<b>Total Plymouth County - RA</b>	<b>60,406,477</b>	<b>49,630,970</b>	<b>2,608,534</b>	<b>45,718,474</b>

Real Estate	Commitment	Total Contributions	Total Distributions	Adjusted Value
1921 Realty, Inc.	5,000,000	5,378,194	0	933,768
AEW Partners Real Estate Fund VIII, L.P.	25,000,000	8,476,455	1,410,695	6,703,992
Berkshire Multifamily Value Fund II, L.P.	10,000,000	11,258,620	17,922,285	0
Carlyle Realty Partners VIII, L.P.	18,000,000	1,319,110	487	978,400
DSF Capital Partners IV, L.P.	5,000,000	5,000,000	5,997,885	81,181
DSF Multi-Family Real Estate Fund III, L.P.	15,000,000	11,425,148	824,248	11,277,938
Hunt Redevelopment and Renovation Fund, LLC	10,000,000	8,971,078	11,708,016	0
Invesco Equity Real Estate Securities Trust	22,000,000	23,908,825	27,000,000	15,335,003
New Boston Institutional Fund, L.P. VII	5,000,000	3,012,998	3,747,492	317,543
PRISA I	14,995,000	17,227,013	0	40,542,422
Real Estate International Partnership Fund I, L.P.	15,000,000	12,674,617	9,197,754	3,175,939
TA Realty Core Property Fund, L.P.	25,000,000	19,111,546	0	20,564,904
<b>Total Plymouth County - RE</b>	<b>169,995,000</b>	<b>127,763,605</b>	<b>77,808,862</b>	<b>99,922,595</b>

## **Bank Loan Manager Finalist Overview**



## Background

- On December 5, 2018, Meketa Investment Group issued a \$35 million bank loan RFP on behalf of the Plymouth County Retirement Association. The search was subsequently posted to Meketa's website, sent to PERAC, and picked up by a variety of news sources.
- A total of 18 managers submitted responses to this search. At the last meeting, Meketa presented an overview of all respondents, and gave ratings to each manager based on the criteria presented.
- The Board selected the following two managers, both rated as "Highly Advantageous", to participate in finalist presentations at today's meeting:
  - THL Credit Bank Loan Select
  - Octagon Senior Secured Credit

## THL Credit

### Organization:

- THL Credit was founded in 2007 when THL Partners, a large private equity firm, brought in senior credit professionals to begin a credit investment firm. THL Credit and THL Partners are run and managed separately. The bank loan team, called the Tradable Credit Team within THL Credit, was purchased from McDonnell Investment Management in 2012.
- THL Credit as a whole has over 70 employees and manages over \$9 billion in assets. The Tradable Credit team is based in Chicago, IL and oversees CLOs and traditional bank loan strategies.

### Team:

- The Tradable Credit Team is led by Jim Fellows and Brian Good with the remainder of the team consisting of three other portfolio managers, four sector portfolio managers and fifteen credit analysts. Senior members of the team have worked together for over 20 years, previously working together at McDonnell and other organizations.
- The Bank Loan Select Fund is managed by Mr. Fellows and Mr. Good, but they rely heavily on the sector portfolio managers to drive credit and trading recommendations within their areas of coverage.

## THL Credit (continued)

### Investment Philosophy & Process:

- THL's bank loan strategy seeks to outperform the index by identifying bank loans that will outperform the index through bottom-up fundamental credit analysis. They will augment this approach with relative value trading activity and by making active adjustments to portfolio positioning and weights versus the index. THL will also opportunistically invest in high yield bonds in an attempt to increase the portfolio's expected return potential.
- The investment process involves constant collaboration between analysts, traders, and portfolio managers. In addition to daily credit meetings, the investment committee meets weekly to discuss portfolio strategy and active weights relative to the broad market. The portfolio managers are very comfortable with having large industry overweights (underweights) relative to the index if their fundamental research indicates certain areas appear significantly attractive (unattractive).
- Analysts evaluate the full capital structure of issuers to assess value and risk. The team seeks to consider creditworthiness through a "multi-dimensional approach", meaning they combine top down analysis of the market, an industry analysis, qualitative business analysis, and their own proprietary quantitative scoring.
- All potential investments are discussed by the investment committee with final decisions made by the lead portfolio managers.
- The portfolio will typically own 200 to 300 holdings with no single issuer accounting for more than 3% of the portfolio.

## Octagon Credit Investors

### Organization:

- Octagon Credit Investors was founded in 1994 in New York and is exclusively focused on managing credit strategies, primarily consisting of high yield bonds, bank loans and CLOs. The firm manages over \$20 billion in assets with more than \$15 billion in CLOs, over \$3.5 billion in separately managed accounts and approximately \$2 billion in commingled funds. The bank loan commingled fund has approximately \$100 million in assets.
- In 2016, Conning & Company, an investment management company owned by Taiwan-based Cathay Financial Holdings, purchased 82% of the firm. Current employees own the remaining 18%.

### Team:

- Co-Chief Investment Officers Andrew Gordon and Michael Nechamkin lead the investment team. The remainder of the team consists of three other portfolio managers and a large team of more than fifteen research analysts. Octagon has added significantly to the team recently with nine analyst additions in the past year.
- Mr. Nechamkin is the lead day-to-day portfolio manager for the bank loan strategy. He has worked at Octagon for over 20 years and has nearly 30 years of investment experience. The remaining portfolio managers support other strategies, primarily the CLOs, but credit decisions across all strategies are made collectively by this group.

## Octagon Credit Investors (continued)

### Investment Philosophy & Process:

- Octagon seeks to build a portfolio that will outperform the bank loan market in most market environments. They are focused on income generation and capital preservation. The team seeks to achieve their return objective by bottom-up credit selection, relative value selection and active portfolio management. The strategy can invest up to 10% of assets in 2<sup>nd</sup> lien loans and high yield bonds.
- Octagon's investment process is very collaborative and involves constant interaction between portfolio managers and analysts where they discuss opportunities and risks in the credit markets. Research analysts are organized into industry-focused teams and are responsible for reviewing all new issue and secondary market investment opportunities.
- A credit committee must approve all loans for purchase, and Michael Nechamkin is responsible for building the portfolio and managing risk by using the approved list of credits. The team is constantly evaluating relative value in the market and the portfolio and will frequently trade positions. Portfolio turnover tends to be over 150% per annum.
- The portfolio typically owns 125 to 175 issuers. Single issuer concentration is limited to 5% and the portfolio cannot have more than 5% in loans rated below B-.

### Portfolio Characteristics (As of December 31, 2018)

	THL	Octagon	CSFB Leveraged Loan Index
<b>Pricing:</b>			
Average Dollar Price (\$)	\$94.99	\$95.41	\$94.04
Average Spread (%)	3.4	3.8	3.5
Average Maturity	5.4 years	5.9 years	5.2 years
<b>Quality Structure:</b>			
Average Credit Quality	B+	B+	BB-
BBB & Above (%)	3	8	8
BB (%)	32	35	32
B (%)	58	54	52
CCC and below (%)	6	3	6
Non-Rated (%)	1	0	2
<b>Sector Allocation:</b>			
Bank Loan – 1st Lien (%)	93	91	96
Bank Loan – 2nd Lien, other (%)	3	2	4
High Yield Bond (%)	4	4	0
Cash (%)	0	3	0
Other (%)	0	0	0
Number of Issuers	262	149	1,356
Percentage in Top 10 (%)	15	21	6
Percentage in Top 25 (%)	28	41	12

- Octagon's average spread (3.8%) is slightly higher than both THL and the index.
- THL's portfolio is more diversified than Octagon.

## Net Trailing and Calendar Year Performance<sup>1</sup>

(As of December 31, 2018)

	THL Credit	Octagon	<i>CSFB Leveraged Loan Index</i>
<b>Trailing Period Returns (%):</b>			
1 year	0.7	1.5	1.1
3 years	4.9	5.7	5.0
5 years	3.8	4.1	3.3
Common Period	5.3	5.3	4.3
<b>Calendar Year Returns (%):</b>			
2018	0.7	1.5	1.1
2017	4.4	6.0	4.2
2016	9.9	9.8	9.9
2015	1.4	1.0	-0.4
2014	2.9	2.7	2.1
2013	8.0	7.0	6.2
2012	12.8	-	9.4
2011	0.4	-	1.8
2010	14.9	-	10.0

- Over the common period, both managers outpaced the benchmark.
- THL's bank loan fund has a longer track record than the Octagon fund.

<sup>1</sup> Data shown is net-of-fees and for the longest common period available, from February 2012 through December 2018. Net-of-fees performance for THL is estimated using the fees negotiated by Meketa Investment Group.

## Common Period Returns and Risk Statistics<sup>1</sup>

(February 2012– December 2018)

	THL Credit	Octagon	CSFB Leveraged Loan Index
<b>Performance:</b>			
Common Period Performance (%)	5.3	5.3	4.3
% of Periods Above Index (%)	65	67	N/A
Best 3 Months (%)	4.8	4.8	5.5
Worst 3 Months (%)	-3.1	-3.3	-3.1
<b>Risk Measures:</b>			
Standard Deviation (%)	2.5	2.3	2.5
Tracking Error (%)	0.7	0.6	N/A
Beta	0.93	0.90	1.00
Correlation to Benchmark	0.95	0.97	1.00
Downside Deviation (%)	1.7	1.8	1.9
Upside Capture (%)	108	107	100
Downside Capture (%)	72	70	100
<b>Risk-Adjusted Performance:</b>			
Jensen's Alpha (%)	1.2	1.3	N/A
Sharpe Ratio	1.9	2.1	1.5
Information Ratio	1.3	1.6	N/A

<sup>1</sup> Data shown is net of fees and for the longest common period available, from February 2012 through December 2018. Net of fees performance for THL is estimated using the fees negotiated by Meketa Investment Group.





**Fees and Terms**

	THL Credit	Octagon
Proposed Investment Vehicle	Commingled Fund	Commingled Fund
Liquidity	Monthly	Monthly
Management Fee	0.35%	0.40
Operating Expenses	0.05% (cap)	0.15% (cap)
All-in Fee	0.40%	0.55%

- Both Octagon and THL offer monthly liquid commingled funds.
- THL (0.40%) offers a lower all-in fee with a ranking that is in the top quartile of peers.
- The median management fee for the bank loan universe is 0.48% and the top quartile cutoff is 0.45%.

**Relative Strengths & Weaknesses**

	Relative Strengths	Relative Weaknesses
THL	<ul style="list-style-type: none"> <li>• Senior investment team (portfolio managers and senior analysts) more tenured and experienced working as a group</li> <li>• Longer bank loan fund track record</li> <li>• Very attractive proposed fee relative to the bank loan universe</li> </ul>	<ul style="list-style-type: none"> <li>• Slightly underperformed index over 1- and 3-year periods</li> </ul>
Octagon	<ul style="list-style-type: none"> <li>• Slightly lower volatility and more attractive risk-adjusted returns over common period</li> </ul>	<ul style="list-style-type: none"> <li>• Higher fees relative to THL and slightly above median fees for peer group</li> </ul>

## **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.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$ .

**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 its 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%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.  
[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991.

The Russell Indices<sup>®</sup>, TM, SM are trademarks/service marks of the Frank Russell Company.

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.