



City of Madison 457 Deferred Compensation Plan  
Fiduciary Investment Review™  
December 12, 2018

*Presented by:*  
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Registered Fiduciary™

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# Market Review

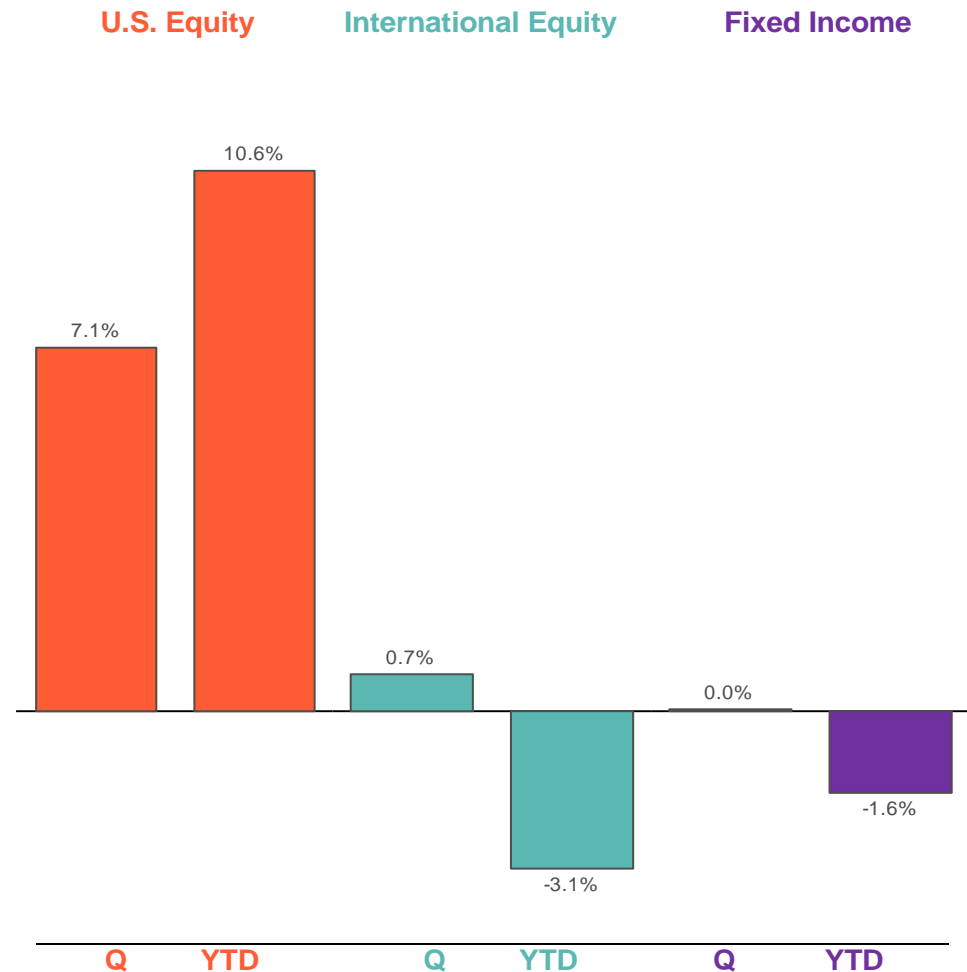
This Section provides an overview of the U.S. and International Equity and Bond Markets. Fund performance for every plan is affected by broad market activity. The first page of the Review summarizes U.S. Equity, International Equity and Fixed Income returns.

The Kaleidoscope Report shows relative performance of different asset classes for ten prior years and Year-to-Date for the current year (year 11). The Report shows the fallacy of making investment decisions based on past performance. The Report shows the importance of diversification among asset classes and the importance of re-balancing (to re-allocate earnings from higher return asset classes to other asset classes).

### SUMMARY

- U.S. equity markets advanced 7.1% (Russell 3000) on solid earnings, economic growth and a tightening labor market.
- With continuing trade tensions, international equities increased at a slower pace than domestic equities, posting a 0.7% gain over the quarter (MSCI ACWI ex U.S.).
- The U.S. fixed income market was flat for the quarter (Bloomberg Barclays Aggregate) as interest rates increased modestly. Additionally, the yield curve continued to flatten during the quarter.
- U.S. unemployment fell to 3.7% in September, which marked the lowest level since 1969. The number of job openings now exceeds the number of unemployed.
- GDP growth accelerated in the second quarter to 4.2%, the fastest pace in nearly four years.
- Growth continued to outperform value this quarter with the Russell 1000 Growth outperforming the Russell 1000 Value by 3.5%.
- The Federal Reserve raised interest rates in September for the third time this year and signaled the likelihood of one more rate hike in 2018.

### TRAILING RETURNS

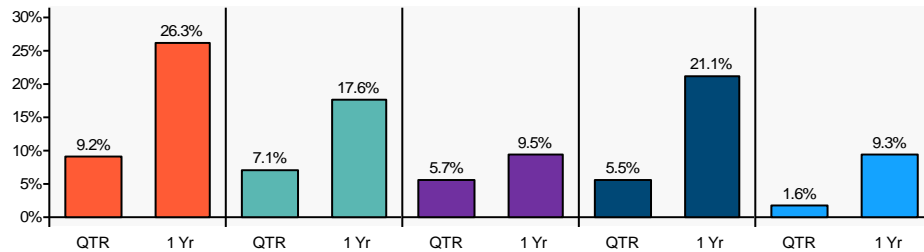


Quarterly and year-to-date returns of the following indices: U.S. Equity (Russell 3000 Index), Fixed Income (Bloomberg Barclays U.S. Aggregate Bond Index), and International Equity (MSCI ACWI ex U.S. Index)

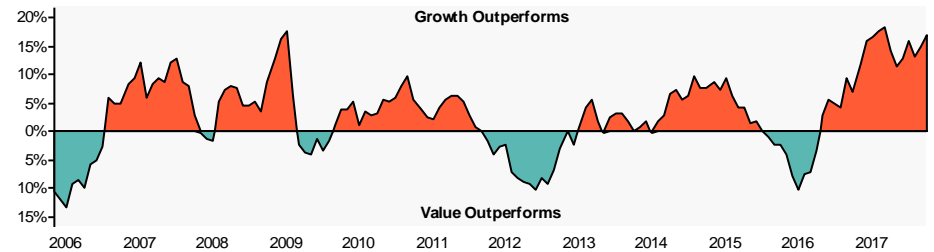
### U.S. EQUITY

- The broad U.S. equity market, as measured by the Russell 3000 Index, was up 7.1% for the quarter.
- The best performing U.S. equity index for the quarter was Russell 1000 Growth, returning a positive 9.2%.
- The worst performing U.S. equity index for the quarter was Russell 2000 Value, returning a positive 1.6%.

### INDEX PERFORMANCE (sorted by trailing quarterly performance)



### GROWTH VS. VALUE



Over the last year, growth stocks outperformed value stocks by 16.8%.  
For the trailing quarter, growth stocks outperformed value stocks by 3.5%.

The graph above is plotted using a rolling one-year time period. Growth stock performance is represented by the Russell 1000 Growth Index. Value stock performance is represented by the Russell 1000 Value Index.

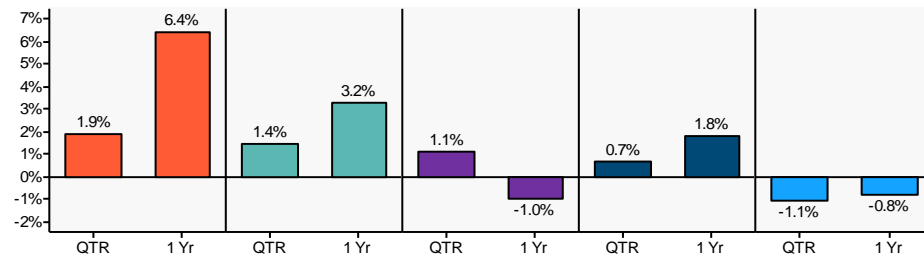
### SECTOR (sorted by trailing quarterly performance)

	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Health Care	14.3	18.0	20.0	15.6	15.9	14.7
Communication Services	10.0	1.3	4.8	9.8	6.7	8.8
Industrials	9.7	5.3	12.0	18.2	12.9	12.0
Information Technology	8.6	20.1	30.4	27.2	21.8	16.9
Consumer Discretionary	7.4	18.8	30.5	17.5	15.3	17.0
Consumer Staples	5.5	-3.0	3.2	7.6	9.3	10.2
Financials	3.9	0.4	8.7	16.8	13.6	7.8
Utilities	2.5	3.4	3.9	11.5	11.4	9.7
Energy	0.7	8.2	14.9	10.4	0.6	3.6
Real Estate	0.6	2.2	5.2	8.9	9.9	8.0
Materials	0.5	-2.1	4.5	16.7	9.1	9.2

### INTERNATIONAL EQUITY

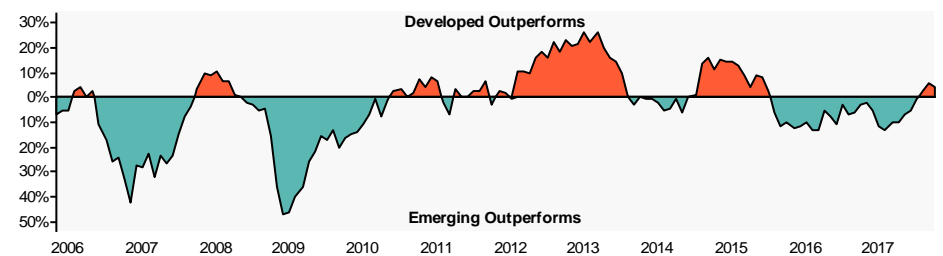
- Developed international equity returned a positive 1.4% in the last quarter (MSCI EAFE).
- Emerging market equity posted a negative 1.1% return (MSCI Emerging Markets Index).

### INDEX PERFORMANCE (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
MSCI EAFE Large Growth	1.9	1.2	6.4	10.0	5.3	6.0
MSCI EAFE	1.4	-1.0	3.2	9.8	4.9	5.9
MSCI EAFE Large Value	1.1	-3.8	-1.0	7.8	2.5	3.9
MSCI ACWI ex US	0.7	-3.1	1.8	10.0	4.1	5.2
MSCI Emg Markets	-1.1	-7.7	-0.8	12.4	3.6	5.4

### DEVELOPED VS. EMERGING MARKETS

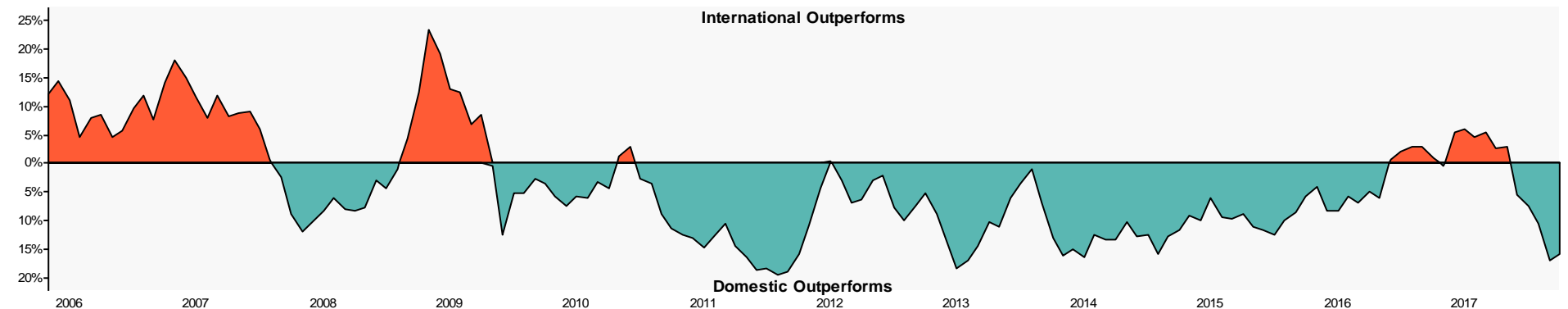


Over the last year, developed international stocks outperformed emerging market stocks by 4%.

For the trailing quarter, developed international stocks outperformed emerging market stocks by 2.5%.

The graph above is plotted using a rolling one-year time period. Developed international stock performance is represented by the MSCI EAFE Index. Emerging market stock performance is represented by the MSCI Emerging Markets Index.

### INTERNATIONAL VS. DOMESTIC

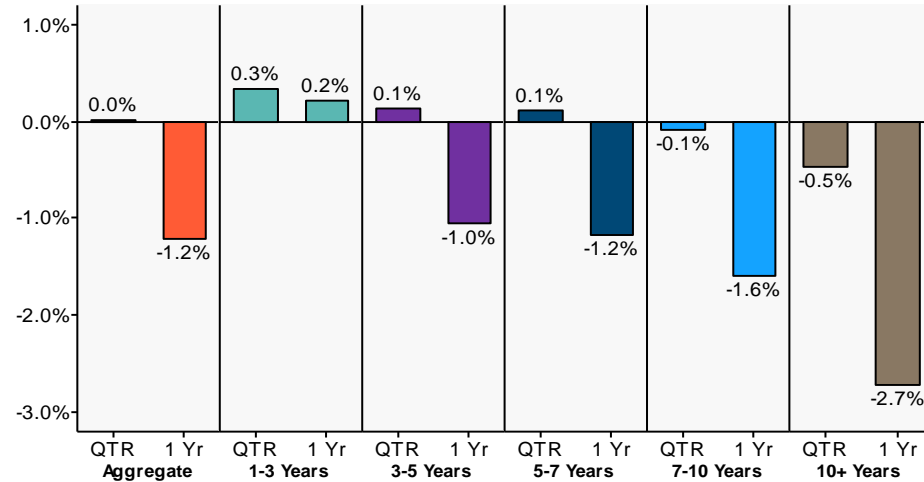


The graph above is plotted using a rolling one-year time period. International stock performance is represented by the the MSCI ACWI ex U.S. Index. Domestic stock performance is represented by the Russell 3000 Index.

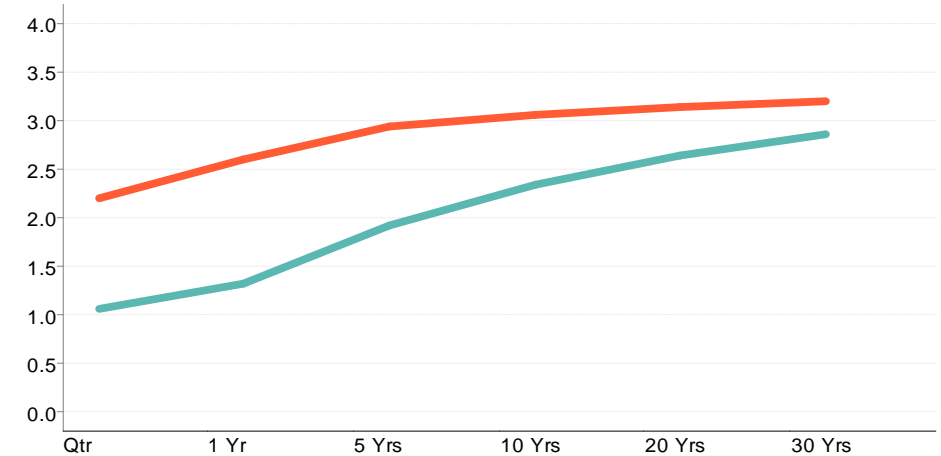
## FIXED INCOME

- The broad U.S. fixed income market returned a positive 0% (Bloomberg Barclays U.S. Aggregate) for the quarter.
- The best performing sector for the quarter was High Yield Corporate Bond, returning a positive 2.4%. The worst performing sector for the quarter was TIPS, returning a negative 0.8%.

## PERFORMANCE BY MATURITY



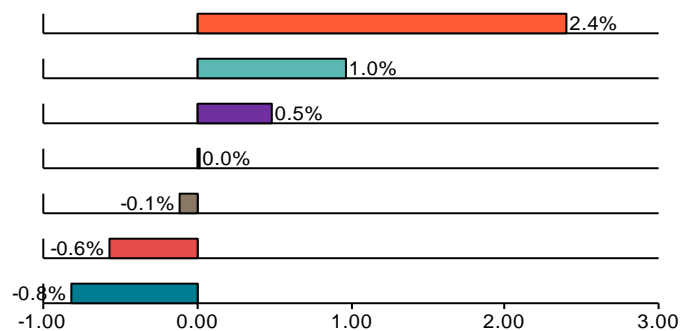
## YIELD CURVE



Source: Bloomberg Barclays U.S. Aggregate Indices

Yield Curve - Current One Year Ago

## SECTOR (sorted by trailing quarterly performance)



	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr
High Yield Corporate Bond	2.4	2.6	3.0	8.1	5.5	9.5
Corporate Investment Grade	1.0	-2.3	-1.2	3.1	3.5	6.4
Cash	0.5	1.3	1.6	0.8	0.5	0.3
Aggregate Bond	0.0	-1.6	-1.2	1.3	2.2	3.8
Mortgage Backed Securities	-0.1	-1.1	-0.9	1.0	2.0	3.3
Government	-0.6	-1.6	-1.6	0.3	1.3	2.7
TIPS	-0.8	-0.8	0.4	2.0	1.4	3.3

Source: Bloomberg Barclays U.S. Indices

### ASSET CLASS RETURNS

The following chart exhibits the volatility of asset class returns from year-to-year by ranking indices in order of performance, highlighting the importance of diversification.

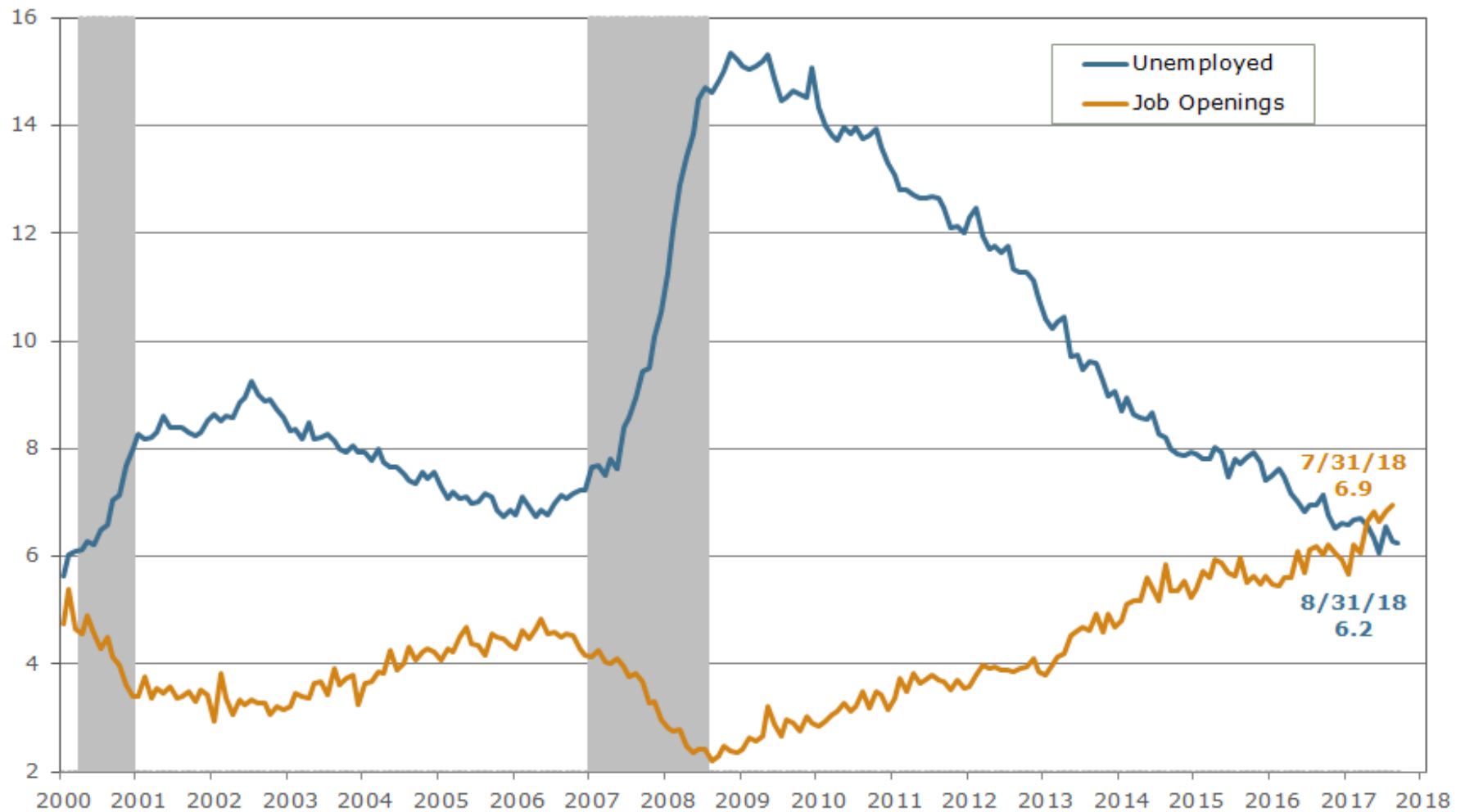
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD
International 16.65	Fixed Income 5.24	International 41.45	Sm Growth 29.09	Fixed Income 7.84	Global REIT 23.73	Sm Growth 43.30	Global REIT 22.81	Large Growth 5.67	Sm Value 31.74	Large Growth 30.21	Large Growth 17.09
Commodities 16.23	Cash 2.06	Large Growth 37.21	Sm Value 24.50	Large Growth 2.64	Sm Value 18.05	Sm Value 34.52	Large Value 13.45	Global REIT 0.59	Large Value 17.34	International 27.19	Sm Growth 15.76
Large Growth 11.81	Balanced Index -22.91	Sm Growth 34.47	Global REIT 23.44	Global REIT 1.70	Large Value 17.51	Large Growth 33.48	Large Growth 13.05	Fixed Income 0.55	Commodities 11.77	Sm Growth 22.17	Sm Value 7.14
Balanced Index 8.68	Sm Value -28.92	Global REIT 33.68	Commodities 16.83	Balanced Index 0.87	International 16.83	Large Value 32.53	Balanced Index 6.61	Cash 0.05	Sm Growth 11.32	Balanced Index 15.46	Large Value 3.92
Sm Growth 7.05	Commodities -35.65	Sm Value 20.58	Large Growth 16.71	Large Value 0.39	Large Growth 15.26	International 15.29	Fixed Income 5.97	Balanced Index -0.62	Balanced Index 7.28	Large Value 13.66	Balanced Index 3.86
Fixed Income 6.97	Large Value -36.85	Large Value 19.69	Large Value 15.51	Cash 0.10	Sm Growth 14.59	Balanced Index 13.57	Sm Growth 5.60	Sm Growth -1.38	Large Growth 7.08	Global REIT 8.63	Cash 1.30
Cash 5.00	Large Growth -38.44	Commodities 18.91	International 11.15	Sm Growth -2.91	Balanced Index 10.55	Global REIT 2.81	Sm Value 4.22	Large Value -3.83	Global REIT 6.90	Sm Value 7.84	Global REIT 0.77
Large Value -0.17	Sm Growth -38.54	Balanced Index 18.87	Balanced Index 10.74	Sm Value -5.50	Fixed Income 4.22	Cash 0.07	Cash 0.03	International -5.66	International 4.50	Fixed Income 3.54	Fixed Income -1.60
Sm Value -9.78	Global REIT -45.04	Fixed Income 5.93	Fixed Income 6.54	Commodities -13.32	Cash 0.11	Fixed Income -2.02	International -3.87	Sm Value -7.47	Fixed Income 2.65	Commodities 1.70	Commodities -2.03
Global REIT -11.13	International -45.53	Cash 0.21	Cash 0.13	International -13.71	Commodities -1.06	Commodities -9.52	Commodities -17.01	Commodities -24.66	Cash 0.33	Cash 0.86	International -3.09

Large Value (Russell 1000 Value)	Small Growth (Russell 2000 Growth)	Global REIT (S&P Global REIT)
Large Growth (Russell 1000 Growth)	International ((MSCI ACWI ex-US))	Commodities (Bloomberg Commodities)
Small Value ((Russell 2000 Value)	Fixed Income (Bloomberg Barclays Agg)	Cash (Merrill Lynch 3-Mo T-Bill)
Balanced (40% Russell 3000, 40% Bloomberg Barclay's U.S. Aggregate, 20% MSCI ACWI ex US)		



## Tight Labor Market

The U.S. labor market continues to tighten with unemployment hitting 3.7% in September. Additionally, the number of job openings (6.9 million) in the U.S. now exceeds the number of unemployed workers (6.2 million).



Source: Baird Advisors, Bloomberg

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

Citigroup Corporate Bond is an index which serves as a benchmark for corporate bond performance. You cannot invest directly in an index.

Citigroup Mortgage Master is an index which serves as a benchmark for U.S. mortgage-backed securities performance.

Citigroup WGBI Index is an index which serves as a benchmark for global bond performance, including 22 different government bond markets.

Credit Suisse High Yield Index is an unmanaged, trader priced index constructed to mirror the characteristics of the high yield bond market.

BC (Barclays Capital) U.S. Aggregate Bond Index represents securities that are U. S., domestic, taxable, and dollar denominated. The index covers the U. S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

BC Credit Bond Index includes publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

BC U.S. Corporate Investment Grade represents investment grade corporate securities that are U. S., domestic, taxable, and dollar denominated.

BC High Yield Corporate Bond represents below investment grade corporate securities that are U. S., domestic, taxable, and dollar denominated.

BC TIPS Index includes publicly issued U.S. government treasury inflation protected securities that meet the specified maturity, liquidity and other requirements.

BC Mortgage Backed Securities covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARMs) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

BC Government Index includes publicly issued U.S. government securities that meet the specified maturity, liquidity and other requirements.

BarCap U.S. Aggregate 1-3 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 1 to 3 years.

BarCap U.S. Aggregate 3-5 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 3 to 5 years.

BarCap U.S. Aggregate 5-7 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 5-7 years.

BarCap U.S. Aggregate 7-10 Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 7 to 10 years.

BarCap U.S. Aggregate 10+ Yr. TR USD Index represents securities in the BC U.S. Aggregate Index that have maturity dates over 10 years.

DJW 5000 (Full Cap) Index measures the performance of all U.S. common equity securities, and serves as an index of all stock trades in the United States.

MSCI FI Emerging Markets is a rules-based index which serves as a benchmark for emerging country fixed income performance.

MSCI FI EAFE International is a rules-based index which serves as a benchmark for developed international country fixed income performance.

MSCI EAFE Index is listed for foreign stock funds (EAFE refers to Europe, Australia, and Far East). Widely accepted as a benchmark for international stock performance, it is an aggregate of 21 individual country indexes.

MSCI EAFE Large Value represents the large cap value stocks within the MSCI EAFE Index.

MSCI EAFE Large Growth represents the large cap growth stocks within the MSCI EAFE Index.

MSCI EM (Emerging Markets) Index serves as a benchmark for each emerging country. The average size of these companies is (U.S.) \$400 million, as compared with \$300 billion for those companies in the World index.

MSCI World Index is a rules-based index that serves as a benchmark for the developed global equity markets.

MSCI Europe ex UK Index is a rules-based index that serves as a benchmark for the Europe's equity markets, excluding the United Kingdom.

MSCI Pacific ex Japan Index is a rules-based index that serves as a benchmark for Asia Pacific's equity markets, excluding Japan.

MSCI United Kingdom Index is a rules-based index that serves as a benchmark for the United Kingdom's equity markets.

MSCI Japan is a rules-based index that serves as a benchmark for Japan's equity markets.

Nareit All Reit Index includes all tax-qualified REITs with common shares that trade on the New York Stock Exchange, the American Stock Exchange or the NASDAQ National Market List.

3-Month T-bills (90 Day T-Bill Index) are government-backed short-term investments considered to be risk-free and as good as cash because the maturity is only three months.

Russell 1000 Growth Index is a market-capitalization weighted index of those firms in the Russell 1000 with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value Index is a market-capitalization weighted index of those firms in the Russell 1000 with lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Growth Index is a market-capitalization weighted index of those firms in the Russell Top 200 with higher price-to-book ratios and higher forecasted growth values.

Russell Top 200 Value Index is a market-capitalization weighted index of those firms in the Russell Top 200 with lower price-to-book ratios and lower forecasted growth values.

Russell 2000 Growth Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratio and higher forecasted growth values.

Russell 2000 Index consists of the smallest 2000 companies in the Russell 3000 Index, representing approximately 7% of the Russell 3000 total market capitalization.

Russell 2000 Value Index is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratios and lower forecasted growth values.

Russell MidCap Growth Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having higher price-to-book ratios and higher forecasted growth values.

Russell Mid-Cap Index includes firms 201 through 1000, based on market capitalization, from the Russell 3000 Index.

Russell MidCap Value Index is a market-weighted total return index that measures the performance of companies within the Russell MidCap index having lower price-to-book ratios and lower forecasted growth values.

Russell Top 200 Index consists of the 200 largest securities in the Russell 3000 Index.

Russell 3000 Index is a market-capitalization weighted index, consisting of 3,000 U.S. common equity securities, reflective of the broad U.S. equity market.

Salomon 1-10 Yr. Governments is an index which serves as a benchmark for U.S. Government bonds with maturities ranging from 1 to 10 years.

S&P 500 Index measures the performance of the largest 500 U.S. common equity securities, and serves as an index of large cap stocks traded in the United States.

S&P 1500 Energy Index measures the performance of the energy sector in the S&P 1500 Index.

S&P 1500 Industrials measures the performance of the industrial sector in the S&P 1500 Index.

S&P 1500 Financials measures the performance of the financials sector in the S&P 1500 Index.

S&P 1500 Utilities measures the performance of the utilities sector in the S&P 1500 Index.

S&P 1500 Consumer Discretionary Index measures the performance of the consumer discretionary sector in the S&P 1500 Index.

S&P 1500 Consumer Staples Index measures the performance of the consumer staples sector in the S&P 1500 Index.

S&P 1500 Information Technology measures the performance of the information technology sector in the S&P 1500 Index.

S&P 1500 Materials measures the performance of the materials sector in the S&P 1500 Index.

S&P 1500 Health Care measures the performance of the health care sector in the S&P 1500 Index.

S&P 1500 Telecommunications Services Index measures the performance of the telecommunications services sector in the S&P 1500 Index.

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# Plan Allocation Review

Plan asset allocation is shown at the Plan level and details are provided for each investment option.



# CITY OF MADISON

## 457 DEFERRED COMPENSATION

FUTURE CONTRIBUTIONS	<input type="checkbox"/> YES	<input type="checkbox"/> NO
REALLOCATION OF EXISTING BALANCES	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ANNUAL DECEMBER AUTO REBALANCE OR <input type="checkbox"/> QUARTERLY <input type="checkbox"/> SEMI-ANNUAL <input type="checkbox"/> NONE		

Employee Name \_\_\_\_\_ Social Security # XXX-XX-

**You may check one portfolio model or choose to custom blend using the individual funds or choose 100% from one of the Target Date funds.**

			CONSERVATIVE 80%/20%	MODERATE LY CONSERVATIVE 60%/40%	MODERATE 40%/60%	MODERATE LY AGGRESSIVE 25%/75%	AGGRESSIVE 10%/90%	CUSTOM
Funds	Investment Style		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Franklin Growth R6	Large Growth	FIFRX	6%	9%	11%	12%	14%	%
Calvert Equity I	Large Growth	CEYIX	0%	0%	0%	0%	0%	%
Vanguard 500 Index Admiral	Large Blend	VFIAX	0%	0%	0%	0%	0%	%
American Fundamental Investors R6	Large Blend	RFNGX	0%	0%	0%	0%	0%	%
TIAA-CREF Social Choice Equity Inst	Large Blend	TISCX	0%	0%	0%	0%	0%	%
MFS Value R6	Large Value	MEIKX	7%	11%	14%	16%	17%	%
JP Morgan Mid Cap Equity I	Mid-Cap Growth	VSNGX	0%	2%	2%	3%	4%	%
PGIM QMA Mid Cap Value R6	Mid-Cap Value	PMVQX	2%	2%	4%	5%	6%	%
Ariel Inst	Mid-Cap Blend	ARAIX	0%	0%	0%	0%	0%	%
Parnassus Mid-Cap Inst	Mid Cap Blend	PFPMX	0%	0%	0%	0%	0%	%
Janus Henderson Venture N	Small Growth	JVTNX	0%	0%	2%	3%	4%	%
Fidelity Advisor Small Cap Value I	Small Value	FCVIX	0%	2%	3%	4%	5%	%
EuroPacific Growth R6	Foreign Blend	REGRX	5%	10%	14%	19%	23%	%
Cohen & Steers Realty Shares Inst	Specialty Real Estate	CSRIX	0%	2%	4%	5%	6%	**%
PIMCO Commodity Real Return Str. Inst	Broad Commodities	PCRIX	0%	2%	4%	5%	6%	**%
Oppenheimer Developing Markets I	Divers. Emerging	ODVIX	0%	0%	2%	3%	5%	**%
American Balanced R6	Moderate Allocation	RLBGX	0%	0%	0%	0%	0%	%
Eaton Vance High Income Opps I	High Yield Bond	EIHIX	4%	3%	2%	0%	0%	%
Baird Aggregate Bond Inst	Inter. Term Bond	BAGIX	15%	10%	5%	5%	5%	%
Templeton Global Bond R6	Global Bond	FBNRX	5%	5%	5%	5%	5%	%
BlackRock Inflation Protected Bnd K Svc	TIPS	BPLBX	16%	12%	8%	5%	0%	%
MetLife Stable Value - Class 0	Stable Value	METABG3	40%	30%	20%	10%	0%	%

INDIVIDUAL FUNDS MUST TOTAL 100% \*\* No more than 6\*\*%

100%

### OR CHOOSE 100% IN ONE TARGET MATURITY FUND

T. Rowe Price Retirement Balanced Inv	Target Date	TRRIX	Retirement Income	<input type="checkbox"/> 100%
T. Rowe Price Retirement 2020 Inv	Target Date	TRRBX	Expected Retirement Date Between 2016—2020	<input type="checkbox"/> 100%
T. Rowe Price Retirement 2030 Inv	Target Date	TRRCX	Expected Retirement Date Between 2026—2030	<input type="checkbox"/> 100%
T. Rowe Price Retirement 2040 Inv	Target Date	TRRDX	Expected Retirement Date Between 2036 - 2040	<input type="checkbox"/> 100%
T. Rowe Price Retirement 2050 Inv	Target Date	TRRMX	Expected Retirement Date Between 2046 - 2050	<input type="checkbox"/> 100%

Signed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, we certify that the above information is accurate and correct. If a model is elected with this form, it will be rebalanced annually in December. Model Investment Choices and automatic rebalance timing and frequency can be changed on the Participant Website. Existing balances will be realigned with the model selected.

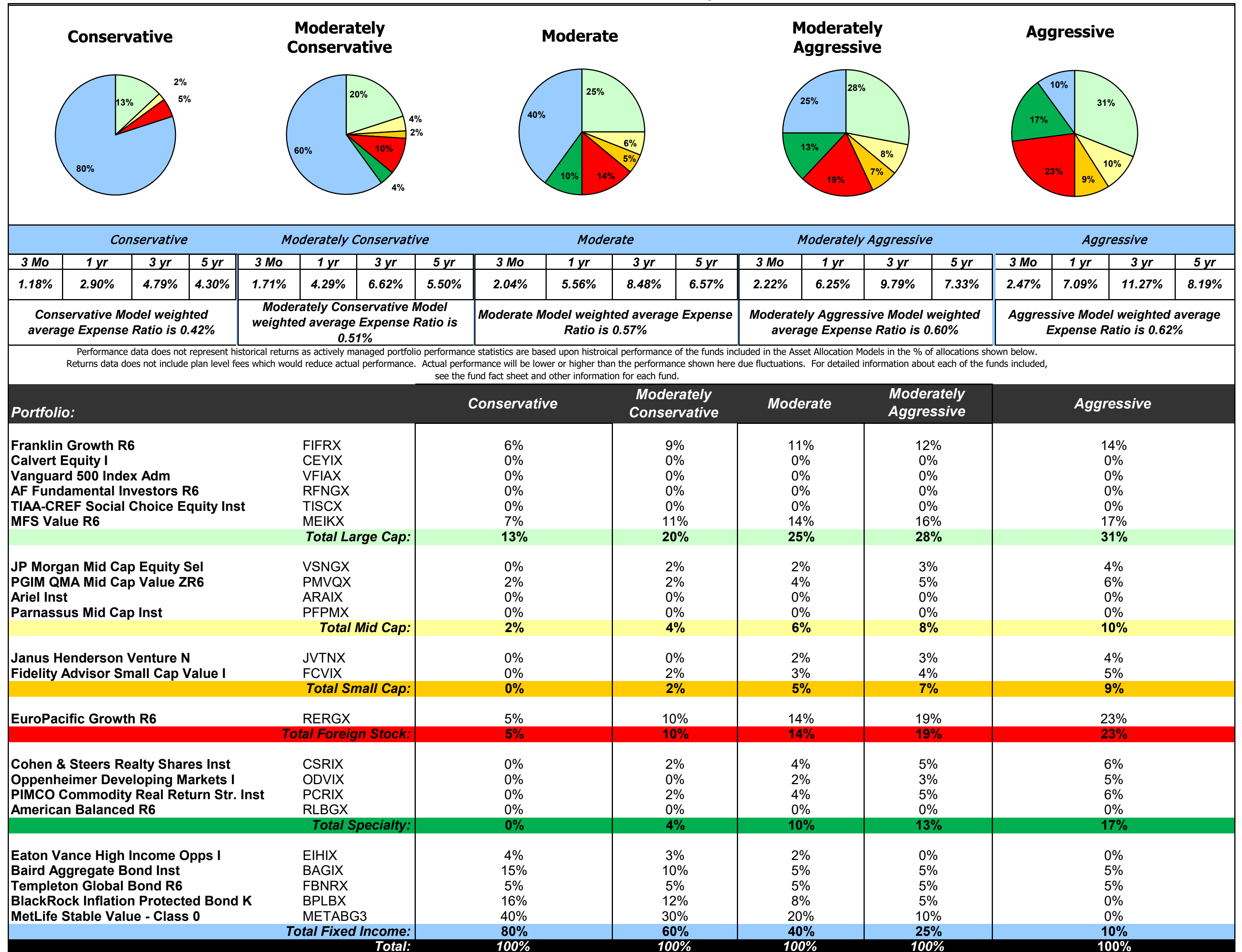
(PARTICIPANT SIGNATURE)

(10-2018)

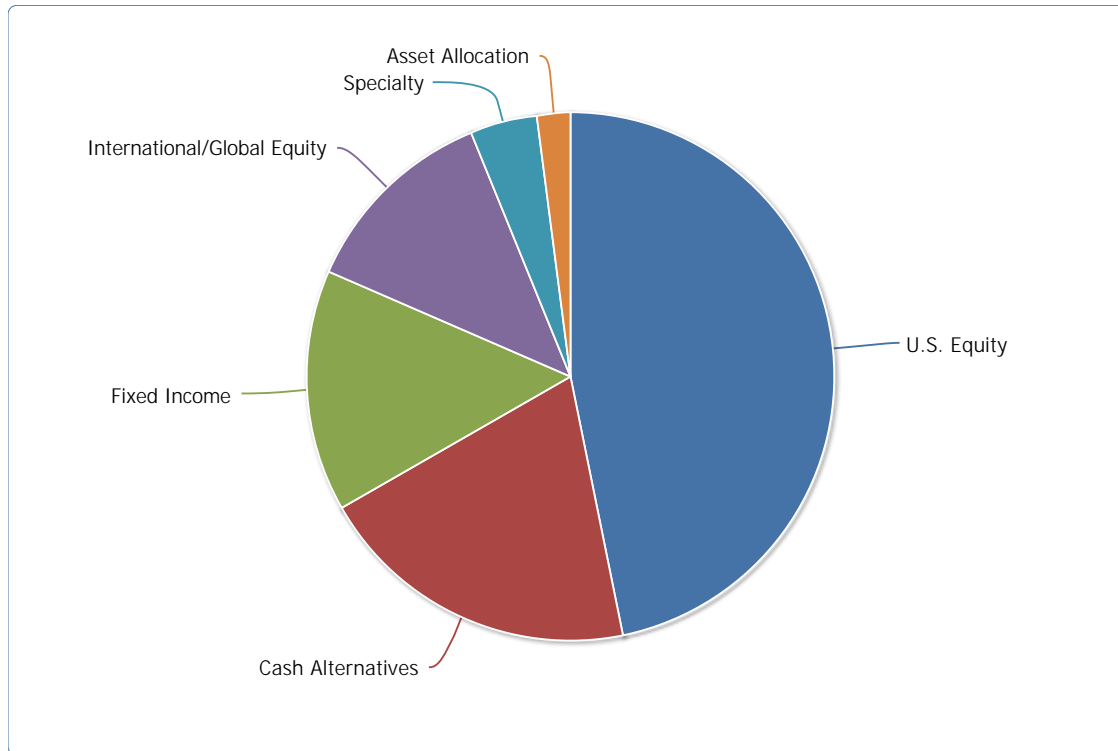
**Forward completed and signed form to: Lincoln Financial Advisors, 406 Science Drive, Suite 310, Madison, WI 53711 or fax to: (608) 287-3056 or e-mail to: Andrea.Thorsness@lfa.com Call with questions: (608) 268-5100.**

# City of Madison 457 Deferred Compensation Plan

## Model Portfolio Returns as of September 30, 2018



# Plan Allocation by Investment Type



Investment Type	Assets	Percentage
U.S. Equity	\$45,812,245.34	46.8%
Cash Alternatives	\$19,463,636.87	19.9%
Fixed Income	\$14,486,225.94	14.8%
International/Global Equity	\$12,042,610.86	12.3%
Specialty	\$4,031,020.11	4.1%
Asset Allocation	\$2,024,069.48	2.1%
<b>Total</b>	<b>\$97,859,808.60</b>	<b>100%</b>
as of 9/30/2018		

## Plan Allocation by Investment Type

Investment Name	Asset Class	Amount	Percentage	Score
<b>U.S. Equity</b>		<b>\$45,812,245</b>		
MFS Value R6	LCV	\$9,621,219	9.8 %	10
American Funds Fundamental Invs R6	LCB	\$5,452,404	5.6 %	7
TIAA-CREF Social Choice Eq Instl	LCB	\$509,782	0.5 %	6
Franklin Growth R6	LCG	\$11,834,305	12.1 %	9
Calvert Equity I	LCG	\$1,662,257	1.7 %	5
PGIM QMA Mid-Cap Value R6	MCV	\$3,212,324	3.3 %	7
Parnassus Mid Cap Institutional	MCB	\$295,981	0.3 %	8
JPMorgan Mid Cap Equity I	MCG	\$3,221,916	3.3 %	8
Fidelity Advisor Small Cap Value I	SCV	\$2,054,344	2.1 %	9
Janus Henderson Venture N	SCG	\$4,395,319	4.5 %	10
Ariel Fund Institutional	SMCV	\$254,703	0.3 %	7
Vanguard 500 Index Admiral	LCB-P	\$3,297,692	3.4 %	10
<b>Cash Alternatives</b>		<b>\$19,463,637</b>		
Metlife Stable Value Class 0	SV	\$19,463,526	19.9 %	
SCHWAB MONEY MARKET	MM-P	\$111	0.0 %	
<b>Fixed Income</b>		<b>\$14,486,226</b>		
Baird Aggregate Bond Inst	CFI	\$6,745,447	6.9 %	10
BlackRock Inflation Protected Bond K	UGT	\$3,940,595	4.0 %	7
Eaton Vance High Income Opportunities I	HY	\$1,118,733	1.1 %	9
Templeton Global Bond R6	GFI	\$2,681,451	2.7 %	8
<b>International/Global Equity</b>		<b>\$12,042,611</b>		
American Funds Europacific Growth R6	IE	\$10,715,556	10.9 %	9
Oppenheimer Developing Markets I	EME	\$1,327,055	1.4 %	6



## Plan Allocation by Investment Type

Investment Name	Asset Class	Amount	Percentage	Score
<b>Specialty</b>		<b>\$4,031,020</b>		
Cohen & Steers Instl Realty Shares	REI	\$2,236,119	2.3 %	10
PIMCO Commodity Real Ret Strat Instl	CBB	\$1,794,901	1.8 %	8
<b>Asset Allocation</b>		<b>\$2,024,069</b>		
T. Rowe Price Retirement Balanced	MC	\$28,830	0.0 %	8
T. Rowe Price Retirement Balanced Adv	MC	\$10	0.0 %	7
T. Rowe Price Retirement 2020	MOD	\$194,358	0.2 %	8
American Funds American Balanced R6	MOD	\$987,965	1.0 %	10
T. Rowe Price Retirement 2050	MA	\$110,391	0.1 %	8
T. Rowe Price Retirement 2040	MA	\$295,535	0.3 %	8
T. Rowe Price Retirement 2030	MA	\$406,980	0.4 %	8
<b>Total</b>		<b>\$97,859,809</b>	<b>100.0 %</b>	

# Returns Analysis

Performance as of 9/30/2018

Asset Allocation	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio		
				1 Year	3 Year	5 Year	10 Year				Gross	Net	
Asset Allocation													
Moderate Conservative													
Schwab Target 2020 Index	+	SWYLY	2.33	2.61	5.58	-	-	-	6.94	8/25/2016	8/25/2016	0.13	0.08
No Benchmark Data			-	-	-	-	-	-	-	-	-	-	-
T. Rowe Price Retirement Balanced	-	TRRIX	1.75	1.88	4.08	6.77	5.01	6.17	6.26	9/30/2002	9/30/2002	0.52	0.52
StyleBenchmark			2.14	2.01	4.86	6.97	5.21	5.75	-	-	-	-	-
Moderate													
T. Rowe Price Retirement 2020	-	TRRBX	2.25	2.62	5.81	9.61	7.32	8.40	8.59	9/30/2002	9/30/2002	0.61	0.61
StyleBenchmark			3.69	3.91	8.66	11.41	8.29	8.46	-	-	-	-	-
Schwab Target 2030 Index	+	SWYEX	3.33	3.78	7.96	-	-	-	9.82	8/25/2016	8/25/2016	0.12	0.08
No Benchmark Data			-	-	-	-	-	-	-	-	-	-	-
American Funds American Balanced R6		RLBGX	3.36	4.40	9.20	11.45	9.54	9.67	12.16	7/25/1975	5/1/2009	0.28	0.28
StyleBenchmark			4.00	5.15	9.41	10.62	8.40	8.35	-	-	-	-	-
Moderate Aggressive													
T. Rowe Price Retirement 2030	-	TRRCX	2.52	3.43	7.39	11.50	8.64	9.41	9.42	9/30/2002	9/30/2002	0.67	0.67
StyleBenchmark			4.36	4.95	10.47	13.15	9.36	9.16	-	-	-	-	-
T. Rowe Price Retirement 2040	-	TRRDY	2.68	3.96	8.45	12.73	9.42	9.98	9.75	9/30/2002	9/30/2002	0.72	0.72
StyleBenchmark			4.69	5.47	11.36	13.97	9.88	9.49	-	-	-	-	-
T. Rowe Price Retirement 2050	-	TRRMX	2.73	4.12	8.72	12.94	9.53	10.04	6.97	12/29/2006	12/29/2006	0.72	0.72
StyleBenchmark			4.68	5.45	11.35	13.96	9.87	9.49	-	-	-	-	-
Aggressive													
Schwab Target 2040 Index	+	SWYGY	3.91	4.44	9.36	-	-	-	11.78	8/25/2016	8/25/2016	0.12	0.08
No Benchmark Data			-	-	-	-	-	-	-	-	-	-	-

# Returns Analysis

Performance as of 9/30/2018

Asset Allocation	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio		
				1 Year	3 Year	5 Year	10 Year				Gross	Net	
Asset Allocation													
Aggressive													
Schwab Target 2050 Index	+	SWYMX	4.17	4.70	10.15	-	-	-	12.68	8/25/2016	8/25/2016	0.13	0.08
No Benchmark Data			-	-	-	-	-	-	-	-	-	-	-
Schwab Target 2060 Index	+	SWYNX	4.33	4.77	10.31	-	-	-	13.09	8/25/2016	8/25/2016	0.13	0.08
No Benchmark Data			-	-	-	-	-	-	-	-	-	-	-
Active	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio		
				1 Year	3 Year	5 Year	10 Year				Gross	Net	
U.S. Equity													
Large Cap Value													
MFS Value R6		MEIKX	5.74	1.99	7.12	13.20	10.84	10.06	8.07	1/2/1996	5/1/2006	0.49	0.49
Russell 1000 Value Index			5.70	3.92	9.45	13.55	10.72	9.79	-	-	-	-	-
Large Cap Blend													
TIAA-CREF Social Choice Eq Instl		TISCX	6.82	9.49	16.27	16.67	12.30	11.32	6.11	7/1/1999	7/1/1999	0.18	0.18
American Funds Fundamental Invs R6		RFNGX	4.70	6.93	14.11	17.34	13.24	11.71	15.33	8/1/1978	5/1/2009	0.30	0.30
Parnassus Core Equity Institutional	+	PRILX	7.90	10.60	16.74	14.42	12.41	11.55	10.61	8/31/1992	4/28/2006	0.64	0.64
Russell 1000 Index			7.42	10.49	17.76	17.07	13.67	12.09	-	-	-	-	-
Large Cap Growth													
Calvert Equity I	-	CEYIX	8.54	14.97	23.06	16.16	14.25	12.01	8.69	8/24/1987	11/1/1999	0.71	0.71
Franklin Growth R6		FIFRX	8.99	14.13	21.17	18.54	15.54	13.05	16.18	4/1/1948	5/1/2013	0.50	0.49
Russell 1000 Growth Index			9.17	17.09	26.30	20.55	16.58	14.31	-	-	-	-	-

# Returns Analysis

Performance as of 9/30/2018

Active	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
U.S. Equity												
Mid Cap Value												
PGIM QMA Mid-Cap Value R6	PMVQX	0.82	-1.91	4.97	10.59	9.64	10.99	10.97	8/19/1998	1/18/2011	0.77	0.73
Russell Mid-Cap Value Index		3.30	3.13	8.81	13.09	10.72	11.29	-	-	-	-	-
Mid Cap Blend												
Parnassus Mid Cap Institutional	PFPMX	3.58	5.29	9.66	14.29	11.09	12.02	10.39	4/29/2005	4/30/2015	0.75	0.75
Russell Mid-Cap Index		5.00	7.46	13.98	14.52	11.65	12.31	-	-	-	-	-
Mid Cap Growth												
JPMorgan Mid Cap Equity I	VSNEX	5.81	8.91	14.56	13.68	11.88	12.34	10.64	12/31/1996	12/31/1996	1.02	0.89
Russell Mid-Cap Growth Index		7.57	13.38	21.10	16.65	13.00	13.46	-	-	-	-	-
Small Cap Value												
Fidelity Advisor Small Cap Value I	FCVIX	2.04	2.34	8.85	12.47	9.84	11.93	10.97	11/3/2004	11/3/2004	0.91	0.91
Russell 2000 Value Index		1.60	7.14	9.33	16.12	9.91	9.52	-	-	-	-	-
Small Cap Growth												
Janus Henderson Venture N	JVTNX	5.65	17.50	22.26	18.35	13.34	15.19	16.67	4/30/1985	5/31/2012	0.67	0.67
Russell 2000 Growth Index		5.52	15.76	21.06	17.98	12.14	12.65	-	-	-	-	-
SMid Cap Value												
Ariel Fund Institutional	ARAIX	3.50	6.81	15.30	15.76	11.74	12.46	15.84	11/6/1986	12/30/2011	0.71	0.71
Russell 2500 Value Index		2.67	5.75	10.24	14.51	9.99	10.53	-	-	-	-	-


# Returns Analysis

Performance as of 9/30/2018

Active	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio	
				1 Year	3 Year	5 Year	10 Year				Gross	Net
International/Global Equity												
International Equity												
American Funds Europacific Growth R6	RERGX	-0.84	-2.65	1.47	9.93	6.20	6.83	9.49	4/16/1984	5/1/2009	0.49	0.49
MSCI ACWI ex USA NR		0.71	-3.09	1.76	9.97	4.12	5.18	-	-	-	-	-
Emerging Market Equity												
Oppenheimer Developing Markets I	ODVIX	-3.30	-4.36	0.55	13.32	3.54	7.50	6.40	11/18/1996	12/29/2011	0.88	0.88
MSCI EM (Emerging Markets) ND USD		-1.09	-7.68	-0.81	12.36	3.61	5.40	-	-	-	-	-
Fixed Income												
Core Fixed Income												
Baird Aggregate Bond Inst	BAGIX	0.07	-1.68	-1.24	1.76	2.68	4.66	5.11	9/29/2000	9/29/2000	0.30	0.30
BB Aggregate Bond		0.02	-1.60	-1.22	1.31	2.16	3.77	-	-	-	-	-
U.S. Government TIPS												
BlackRock Inflation Protected Bond K	BPLBX	-1.06	-1.05	0.40	1.89	0.98	3.26	4.12	6/28/2004	6/28/2004	0.40	0.34
BB TIPS		-0.82	-0.84	0.41	2.04	1.37	3.32	-	-	-	-	-
High Yield												
Eaton Vance High Income Opportunities I	EIHIX	2.11	1.97	2.25	6.84	5.49	8.34	8.35	8/19/1986	10/1/2009	0.61	0.61
BofA ML US High Yield Master II Index		2.44	2.52	2.94	8.19	5.54	9.38	-	-	-	-	-
Global Fixed Income												
Templeton Global Bond R6	FBNRX	1.02	-0.18	-1.95	3.87	1.98	5.68	1.18	9/18/1986	5/1/2013	0.63	0.56
BofA ML Global Broad Market Index		-0.99	-2.34	-1.38	1.86	0.90	2.99	-	-	-	-	-

# Returns Analysis

Performance as of 9/30/2018

Active	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio		
				1 Year	3 Year	5 Year	10 Year				Gross	Net	
Specialty													
REIT													
Cohen & Steers Instl Realty Shares	CSRIX	1.33	2.83	5.93	8.07	9.90	8.33	11.72	2/14/2000	2/14/2000	0.77	0.75	
DJUSslct REIT United States		0.72	2.56	4.59	6.88	9.14	7.21	-	-	-	-	-	
Commodities Broad Basket													
PIMCO Commodity Real Ret Strat Instl	PCRIX	-2.30	-2.04	3.19	0.96	-7.27	-4.22	2.75	6/28/2002	6/28/2002	1.39	1.24	
DJUBS US Commodity Index TR		-2.02	-2.03	2.59	-0.11	-7.18	-	-	-	-	-	-	
Passive	Ticker/ D	QTR	YTD	Annualized Returns				Since Incept.	Inception Date	Share Class Inception	Expense Ratio		
				1 Year	3 Year	5 Year	10 Year				Gross	Net	
Asset Allocation													
Conservative													
Schwab Target 2015 Index Fund Instl	 SWYBX	-	-	-	-	-	-	-	-	-	-	-	
No Benchmark Data		-	-	-	-	-	-	-	-	-	-	-	
U.S. Equity													
Large Cap Blend													
Vanguard 500 Index Admiral	VFIAX	7.70	10.53	17.87	17.27	13.91	11.95	6.45	8/31/1976	11/13/2000	0.04	0.04	
Russell 1000 Index		7.42	10.49	17.76	17.07	13.67	12.09	-	-	-	-	-	

## Disclosure

- Performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted.
- The performance data quoted may not reflect the deduction of additional fees, if applicable. Additional fees would reduce the performance quoted.
- Performance data is subject to change without prior notice. Expenses shown reflect the fund's prospectus Net and Gross expense ratios.
- Some funds, accounts, or share classes may not be available for investment. Performance history prior to inception (if applicable) reflects another share class or account reflecting the manager's historical performance record.
- Fund Inception Date - the date on which a fund commenced operations.
- Share Class Inception Date - the date on which a fund's share class was introduced.

Contact ABG Retirement Plan Services with any questions about this report or for the most current month-end performance at (309) 671-4200

# Monitoring Report

The ABG Quarterly Monitoring Report (QMR) shows the Monitoring Standards and Criteria used for each Standard. The weighting which is assigned to each Standard is also detailed.

The Monitoring Report provides detailed information for each fund's results for the most recent quarter and proceeding seven quarters. Each fund's total score is shown and any quarterly periods which do not meet the QMR criteria are shaded for emphasis.

Plan investments for which the Monitoring data is not available are included at the end of this section.

## INTRODUCTION

Your plan's Investment Policy Statement (IPS) requires monitoring of the plan's investments to ensure that the investments are appropriate for the plan and its participants. In your Investment Policy Statement, standards and criteria have been established for purposes of monitoring plan investments.

This Investment Report is intended to assist you in meeting your monitoring obligation. The report includes a Monitoring Report and a Performance Report. The Monitoring Report displays all of the plan's investments alphabetically by asset class. Each investment displays the standards and criteria specified in the IPS and how the investment has performed with respect to those criteria over the current and seven previous periods.

## INVESTMENT REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED  
COMPENSATION PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

## HOW TO USE THIS REPORT: MONITORING REPORT SAMPLE

Investment

Monitor Score

Monitor History

ABC Growth Fund (I)

Ticker: ABCGF

Fund Category: Large Growth

Notes: The investment committee decided (3/31/2008) that this fund required special attention since the fund's long-time manager was recently replaced. Even though manager tenure is not an IPS standard, we want to watch this fund given the comparative inexperience of the new management team.

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Standards	Criteria	Q1 2008	Q4 2007	Q3 2007	Q2 2007	Q1 2007	Q4 2006	Q3 2006	Q2 2006
Total Return 1 year	Top 20%	28%	26%	18%	17%	17%	13%	14%	9%
Total Return 3 year	Top 10%	9%	9%	8%	8%	8%	6%	7%	5%
Standard Deviation 3 year	Lowest 20%	24%	18%	26%	16%	17%	14%	13%	16%
Sharpe Ratio	Top 20%	19%	16%	25%	19%	14%	18%	19%	19%
Expense Ratio	Lowest 10%	9%	18%	7%	9%	10%	8%	9%	11%
Total Assets	\$500 million plus	\$1,222KK	\$1,206KK	\$1,156KK	\$1,029KK	\$932KK	\$900KK	\$872KK	\$750KK
Morningstar Rating	4 stars	3 stars	4 stars	4 stars	4 stars	4 stars	4 stars	4 stars	4 stars

Investment Note

Standards

Criteria

Period Highlight



## INVESTMENT REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED  
COMPENSATION PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

The Monitoring Report identifies investments that may merit your attention in three ways:



**1. Period Highlight** — Where an investment underperforms a standard/criteria in a particular time period, that period is highlighted in blue. For example, if your IPS specifies that an investment have a Morningstar rank of 4 stars and the investment has a 3 star rank for the most recent period, that period is highlighted in blue.

This approach is implemented for all time periods and standards. Investments that warrant attention are readily identifiable.

**2. Monitor Score** — The score is based on the weights assigned to each standard and reporting period item (see following page for actual weight values). The score is a percentage calculated using the sum of the weights of the standards that meet the specified criteria over the total sum of all the weights.

For some standards/periods, data may not be available. This report is configured to not include these items in the calculation of the score.

Based on the calculated investment score, each investment will be classified using the following table

	Score	Description
	0 to 68	 Review
	69 or greater	 Satisfactory

**3. Investment Note** — The Monitor Report includes notes from previous investment reviews you have conducted and recorded. An investment may or may not have a note attached, based on your own prior decisions. The notes enable you to call attention to considerations about an investment that may be independent of the standards and criteria specified in the IPS.

The Performance Report provides additional detail concerning your plan's investments. It includes in-depth performance information for each investment and its benchmark, as well as risk/expense and other data.

## YOUR PLAN'S STANDARDS AND CRITERIA

## INVESTMENT REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION  
PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

Standards	Criteria	Weight							
		Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
Return 1 Yr Rank	Top 50%	4	4	4	3	3	3	2	2
Return 3 Yr Rank	Top 50%	4	4	4	3	3	3	2	2
Return 5 Yr Rank	Top 50%	5	5	5	4	4	4	3	3
Alpha 3 Yr Rank	Top 50%	0	0	0	0	0	0	0	0
RSquared 3 Yr Value	75% or greater	4	4	4	4	4	4	4	4
Sharpe Ratio 3 Yr Rank	Top 50%	0	0	0	0	0	0	0	0
Info Ratio 5 Yr Rank	Top 50%	0	0	0	0	0	0	0	0
Net Expense Ratio Rank	Lowest 55%	3	3	3	3	3	3	3	3
Manager Tenure	2 years or more	5	5	5	4	4	4	3	3



## YOUR PLAN'S SCORECARD

## MONITORING

## REPORT

CITY OF MADISON

CITY OF MADISON 457 DEFERRED

COMPENSATION PLAN

FOR PERIOD ENDING 30 SEPTEMBER 2018

Investment	Score
Calvert Equity Fund (I)	53 - Review
PIMCO Commodity RealReturn Stgy. Fund (I)	63 - Review
Templeton Global Bond Fund (R6)	66 - Review
PGIM QMA Mid-Cap Value Fund (R6)	67 - Review
BlackRock Infla. Protected Bond Fund (K)	69 - Satisfactory
Eaton Vance High Income Opport. Fund (I)	69 - Satisfactory
Janus Henderson Venture Fund (N)	69 - Satisfactory
Fidelity Advisor Small Cap Value Fund (I)	70 - Satisfactory
JPMorgan Mid Cap Equity Fund (I)	77 - Satisfactory
Cohen & Steers Institutional Realty Shares	80 - Satisfactory
TIAA-CREF Social Choice Equity Fund (I)	83 - Satisfactory
Vanguard 500 Index Fund (Adm)	86 - Satisfactory
Parnassus Mid Cap Fund (I)	87 - Satisfactory
Oppenheimer Developing Markets Fund (I)	88 - Satisfactory
MFS Value Fund (R6)	90 - Satisfactory
Franklin Growth Fund (R6)	91 - Satisfactory
American Funds EuroPacific Growth Fund (R6)	93 - Satisfactory
American Funds Fundamental Investors (R6)	97 - Satisfactory
Ariel Fund (I)	97 - Satisfactory
Baird Aggregate Bond Fund (I)	97 - Satisfactory
American Funds American Balanced Fund (R6)	100 - Satisfactory

# IPS STANDARDS AND CRITERIA: STATUS REPORT

## MONITORING REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

MFS Value Fund (R6)		Ticker: MEIKX		Monitor History								
<div>Fund Category: Large Value</div> <div>Notes:</div> <div><div>- Large Cap Value fund in the Asset Allocation Model Portfolios (12/15/2016)</div><div>- Changed from Share Class R4 to Share Class R6 (12/15/2016)</div><div>- Previous Share Class Scoring History: 1Q16=94; 3Q16=98 (03/31/2017)</div></div>	<div>90</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
		Category		LV	LV	LV	LV	LV	LV	LV	LV	LV
		Return 1 Yr Rank	Top 50%	87%	94%	50%	27%	41%	46%	55%	52%	
		Return 3 Yr Rank	Top 50%	54%	46%	23%	14%	5%	4%	12%	25%	
		Return 5 Yr Rank	Top 50%	32%	27%	15%	10%	9%	7%	11%	12%	
		Alpha 3 Yr Rank	Top 50%	53%	46%	28%	20%	13%	10%	18%	30%	
		RSquared 3 Yr Value	75% or greater	86.23%	91.32%	93.06%	93.11%	93.42%	94.38%	95.21%	95.45%	
		Sharpe Ratio 3 Yr Rank	Top 50%	47%	40%	20%	16%	10%	7%	14%	26%	
		Info Ratio 5 Yr Rank	Top 50%	56%	52%	33%	16%	9%	4%	13%	11%	
		Net Expense Ratio Rank	Lowest 55%	13%	13%	13%	12%	12%	12%	11%	11%	
		Manager Tenure	2 years or more	16.7 years	16.5 years	16.2 years	16 years	15.7 years	15.5 years	15.2 years	15 years	
		Monitor Score		90	94	96	96	95	95	95	--	

Category Codes: LV=Large Value

American Funds Fundamental Investors (R6)			Ticker: RFNGX		Monitor History						
<b>Fund Category: Large Blend</b>  <b>Notes:</b>  - Changed from Share Class R4 to Share Class R6 (12/15/2016) - Previous Share Class Scoring History: 1Q16=72; 3Q16=84 (03/31/2017)	<div>97</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		LB	LB	LB	LB	LB	LB	LB	LB
		Return 1 Yr Rank	Top 50%	65%	20%	18%	13%	13%	25%	11%	18%
		Return 3 Yr Rank	Top 50%	9%	3%	2%	1%	2%	4%	3%	13%
		Return 5 Yr Rank	Top 50%	28%	7%	4%	11%	7%	9%	6%	15%
		Alpha 3 Yr Rank	Top 50%	9%	6%	3%	4%	6%	7%	6%	17%
		RSquared 3 Yr Value	75% or greater	92.16%	95.84%	95.73%	95.53%	95.73%	95.98%	96.3%	97.08%
		Sharpe Ratio 3 Yr Rank	Top 50%	12%	5%	2%	2%	4%	6%	5%	18%
		Info Ratio 5 Yr Rank	Top 50%	18%	7%	4%	11%	5%	6%	6%	15%
		Net Expense Ratio Rank	Lowest 55%	15%	15%	14%	15%	14%	13%	12%	13%
		Manager Tenure	2 years or more	25.6 years	25.4 years	25.1 years	24.9 years	24.6 years	24.4 years	24.1 years	23.9 years
Monitor Score		97	100	100	100	100	98	98	--		

Category Codes: LB=Large Blend

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CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
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TIAA-CREF Social Choice Equity Fund (I)			Ticker: TISCX		Monitor History						
<b>Fund Category: Large Blend</b>  <b>Notes:</b>  -Socially Responsible fund added as the result of action taken during a special meeting of the DC Committee. (08/19/2013) -Lower Cost Share Class authorized during Special DC Committee meeting. (08/13/2018) -Scoring over previous periods: 1Q18=71; 3Q17=69; 1Q17=60 (08/13/2018)	83	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		LB	LB	LB	LB	LB	LB	LB	LB
		Return 1 Yr Rank	Top 50%	46%	42%	24%	52%	40%	30%	30%	14%
		Return 3 Yr Rank	Top 50%	27%	27%	36%	46%	49%	54%	55%	53%
		Return 5 Yr Rank	Top 50%	51%	54%	54%	44%	32%	38%	49%	53%
		Alpha 3 Yr Rank	Top 50%	33%	31%	40%	52%	53%	57%	57%	56%
		RSquared 3 Yr Value	75% or greater	97.07%	97.54%	97.33%	97.57%	97.41%	97.59%	97.67%	97.94%
		Sharpe Ratio 3 Yr Rank	Top 50%	29%	29%	36%	47%	49%	54%	53%	50%
		Info Ratio 5 Yr Rank	Top 50%	65%	62%	61%	47%	30%	37%	47%	50%
		Net Expense Ratio Rank	Lowest 55%	9%	9%	8%	9%	8%	8%	7%	7%
		Manager Tenure	2 years or more	12.8 years	12.5 years	12.3 years	12 years	11.8 years	11.5 years	11.3 years	11 years
		Monitor Score		83	--	--	--	--	--	--	--

Category Codes: LB=Large Blend

Vanguard 500 Index Fund (Adm)		Ticker: VFIAX		Monitor History								
<div>Fund Category: Large Blend</div> <div>Notes:</div> <div>- Fund added to replace Dreyfus S &amp; P 500 (PEOPX) (as a lower cost alternative) during the 3Q15 investment review. (12/14/2105)</div>	<div>86</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
		Category		LB	LB	LB	LB	LB	LB	LB	LB	LB
		Return 1 Yr Rank	Top 50%	18%	27%	35%	30%	38%	43%	33%	27%	
		Return 3 Yr Rank	Top 50%	9%	9%	11%	13%	12%	10%	7%	6%	
		Return 5 Yr Rank	Top 50%	8%	11%	13%	13%	19%	20%	12%	16%	
		Alpha 3 Yr Rank	Top 50%	16%	13%	14%	17%	16%	13%	9%	9%	
		RSquared 3 Yr Value	75% or greater	100%	100%	100%	100%	100%	100%	100%	100%	
		Sharpe Ratio 3 Yr Rank	Top 50%	7%	8%	10%	11%	10%	9%	7%	7%	
		Info Ratio 5 Yr Rank	Top 50%	92%	92%	92%	92%	92%	91%	91%	91%	
		Net Expense Ratio Rank	Lowest 55%	3%	3%	3%	3%	3%	2%	2%	3%	
		Manager Tenure	2 years or more	2.4 years	2.2 years	1.9 years	1.7 years	1.4 years	1.2 years	0.9 years	0.7 years	
		Monitor Score			86	83	80	82	84	86	88	91

Category Codes: LB=Large Blend

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CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
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Calvert Equity Fund (I)			Ticker: CEYIX		Monitor History						
<div>Fund Category: Large Growth</div> <div>Notes:</div> <div>-This fund was originally chosen as a Socially Responsible option the Plan's Investment offerings. (12/09/2014)</div> <div>-Placed "Under Scrutiny" per 1Q15 DC Committee review. It is not part of the Model Portfolio allocation percentages. (06/16/2015)</div> <div>-Scores from previous periods: 1Q18=44; 3Q17=47; 1Q17=51 (08/13/2018)</div> <div>-Lower cost share class authorized during a Special DC Committee meeting. (08/13/2018)</div> <div>-Remained "Under Scrutiny" 3Q17 and 1Q18 (08/13/2018)</div>	53	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		LG	LG	LG	LG	LG	LG	LG	LG
		Return 1 Yr Rank	Top 50%	53%	67%	44%	65%	82%	87%	95%	53%
		Return 3 Yr Rank	Top 50%	75%	68%	57%	66%	60%	50%	58%	50%
		Return 5 Yr Rank	Top 50%	54%	68%	68%	70%	68%	64%	66%	59%
		Alpha 3 Yr Rank	Top 50%	39%	40%	29%	42%	35%	25%	28%	27%
		RSquared 3 Yr Value	75% or greater	85.15%	87.22%	87.17%	87.62%	87.89%	88.36%	90.41%	91.06%
		Sharpe Ratio 3 Yr Rank	Top 50%	24%	31%	16%	34%	26%	18%	24%	27%
		Info Ratio 5 Yr Rank	Top 50%	52%	66%	--	77%	74%	71%	83%	74%
		Net Expense Ratio Rank	Lowest 55%	24%	24%	23%	22%	20%	18%	18%	14%
		Manager Tenure	2 years or more	3.3 years	3 years	2.8 years	2.6 years	2.3 years	2 years	1.8 years	1.6 years
		Monitor Score		53	--	--	--	--	--	--	--

Category Codes: LG=Large Growth

Franklin Growth Fund (R6)		Ticker: FIFRX		Monitor History								
<div>Fund Category: Large Growth</div> <div>Notes:</div> <div>- Changed from Share Class A to Share Class R6 (12/15/2016)</div> <div>-Large Cap Growth fund in the Asset Allocation Model Portfolios (12/15/2016)</div> <div>- Previous Share Class Scoring History: 1Q16=77; 3Q16=84 (03/31/2017)</div>		Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
	91	Category		LG	LG	LG	LG	LG	LG	LG	LG	LG
		Return 1 Yr Rank	Top 50%	67%	74%	58%	58%	31%	26%	18%	9%	
		Return 3 Yr Rank	Top 50%	45%	48%	36%	34%	22%	20%	16%	9%	
		Return 5 Yr Rank	Top 50%	33%	45%	35%	35%	23%	31%	29%	37%	
		Alpha 3 Yr Rank	Top 50%	21%	32%	23%	21%	13%	13%	8%	5%	
		RSquared 3 Yr Value	75% or greater	91.42%	93.11%	92.89%	92.05%	91.91%	92.81%	93.19%	93.15%	
		Sharpe Ratio 3 Yr Rank	Top 50%	4%	17%	8%	6%	4%	5%	5%	3%	
		Info Ratio 5 Yr Rank	Top 50%	9%	16%	12%	28%	11%	26%	36%	49%	
		Net Expense Ratio Rank	Lowest 55%	9%	9%	9%	8%	7%	6%	6%	6%	
		Manager Tenure	2 years or more	9.8 years	9.6 years	9.3 years	9.1 years	8.8 years	8.6 years	8.3 years	8.1 years	
		Monitor Score		91	93	95	97	97	95	93	--	

Category Codes: LG=Large Growth

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CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
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Ariel Fund (I)		Ticker: ARAIX		Monitor History							
<div><div>Fund Category: Mid-Cap Value</div><div>Notes:</div><div>-Socially Responsible Fund added as the result of action taken during a special meeting of the DC Committee (08/19/2013)</div><div>-Scoring from previous periods: 1Q18=97; 3Q17=93; 1Q17=87 (08/13/2018)</div><div>-Lower cost share class authorized during Special DC Committee meeting. (08/13/2018)</div></div>		Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		MV	MV	MV	MV	MV	MV	MB	MB
		Return 1 Yr Rank	Top 50%	4%	11%	12%	16%	34%	3%	5%	42%
		Return 3 Yr Rank	Top 50%	5%	39%	45%	37%	33%	20%	5%	39%
		Return 5 Yr Rank	Top 50%	6%	4%	4%	4%	7%	2%	4%	5%
	97	Alpha 3 Yr Rank	Top 50%	77%	89%	91%	88%	82%	66%	54%	76%
		RSquared 3 Yr Value	75% or greater	72.62%	77.25%	77.4%	75.48%	75.83%	78.42%	79.1%	81.22%
		Sharpe Ratio 3 Yr Rank	Top 50%	53%	68%	70%	77%	72%	47%	41%	61%
		Info Ratio 5 Yr Rank	Top 50%	3%	3%	2%	4%	11%	8%	6%	6%
		Net Expense Ratio Rank	Lowest 55%	20%	20%	19%	19%	19%	17%	25%	24%
		Manager Tenure	2 years or more	31.9 years	31.7 years	31.4 years	31.2 years	30.9 years	30.7 years	30.4 years	30.2 years
		Monitor Score		97	--	--	--	--	--	--	--

Category Codes: MV=Mid-Cap Value, MB=Mid-Cap Blend

PGIM QMA Mid-Cap Value Fund (R6)			Ticker: PMVQX		Monitor History							
<div><div>Fund Category: Mid-Cap Value</div><div>Notes:<ul style="list-style-type: none"><li>-This fund is the Mid Cap Value Fund within the Asset Allocation Model Portfolios. (06/16/2014)</li><li>-Lower cost share class authorized during Special DC Committee meeting. (08/13/2018)</li></ul></div></div>	<div><div>67</div></div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
		Category		MV	MV	MV	MV	MV	MV	MV	MV	MV
		Return 1 Yr Rank	Top 50%	84%	60%	71%	50%	25%	25%	16%	22%	
		Return 3 Yr Rank	Top 50%	78%	53%	53%	44%	49%	39%	19%	12%	
		Return 5 Yr Rank	Top 50%	37%	30%	25%	11%	17%	14%	8%	12%	
		Alpha 3 Yr Rank	Top 50%	73%	48%	48%	38%	40%	32%	20%	13%	
		RSquared 3 Yr Value	75% or greater	61.91%	66.06%	66.43%	66.96%	68.16%	70.25%	73.94%	74.66%	
		Sharpe Ratio 3 Yr Rank	Top 50%	83%	56%	53%	45%	50%	41%	22%	15%	
		Info Ratio 5 Yr Rank	Top 50%	28%	26%	26%	9%	18%	14%	10%	13%	
		Net Expense Ratio Rank	Lowest 55%	21%	21%	27%	26%	25%	23%	23%	21%	
		Manager Tenure	2 years or more	4.4 years	4.2 years	3.9 years	8.4 years	8.2 years	7.9 years	7.7 years	7.4 years	
		Monitor Score		67	--	--	--	--	--	--	--	--

Category Codes: MV=Mid-Cap Value



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CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
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Parnassus Mid Cap Fund (I)			Ticker: PPFMX		Monitor History						
<div>Fund Category: Mid-Cap Blend</div> <div>Notes:</div> <div>-This fund was originally chosen as a Socially Responsible option to the Plan's investment offerings ruig a special meeting of the DC Committee. (08/19/2013)</div> <div>-Lower cost share class authorized during Special DC Committee meeting. (08/13/2018)</div> <div>-Scoring for previous periods: 1Q18=93; 3Q17=95; 1Q17=94 (08/13/2018)</div>	<div>87</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		MB	MB	MB	MB	MB	MB	MB	MB
		Return 1 Yr Rank	Top 50%	61%	71%	67%	46%	72%	53%	41%	37%
		Return 3 Yr Rank	Top 50%	34%	6%	14%	25%	8%	5%	3%	13%
		Return 5 Yr Rank	Top 50%	32%	31%	35%	48%	43%	39%	26%	41%
		Alpha 3 Yr Rank	Top 50%	5%	3%	5%	9%	6%	4%	2%	5%
		RSquared 3 Yr Value	75% or greater	72.98%	76.45%	77.86%	82.51%	82.88%	82.99%	83.06%	84.84%
		Sharpe Ratio 3 Yr Rank	Top 50%	4%	3%	4%	8%	3%	3%	1%	4%
		Info Ratio 5 Yr Rank	Top 50%	35%	32%	46%	58%	45%	40%	28%	42%
		Net Expense Ratio Rank	Lowest 55%	30%	30%	32%	32%	32%	31%	28%	28%
		Manager Tenure	2 years or more	10 years	9.8 years	9.5 years	9.3 years	9 years	8.8 years	8.5 years	8.3 years
		Monitor Score		87	--	--	--	--	--	--	--

Category Codes: MB=Mid-Cap Blend


JPMorgan Mid Cap Equity Fund (I)			Ticker: VSNGX		Monitor History							
<div>Fund Category: Mid-Cap Growth</div> <div>Notes:</div> <div>- Mid Cap Growth fund in the Asset Allocation Models. Fund added to replace BlackRock Opportunities Inv A (BMEAX) as the result of action taken during the 1Q2013 review. (06/30/2013)</div>	<div>77</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
		Category		MG	MG	MG	MG	MG	MG	MG	MG	MG
		Return 1 Yr Rank	Top 50%	84%	88%	77%	76%	58%	60%	66%	32%	
		Return 3 Yr Rank	Top 50%	80%	72%	59%	56%	43%	37%	28%	16%	
		Return 5 Yr Rank	Top 50%	50%	48%	36%	26%	22%	19%	15%	11%	
		Alpha 3 Yr Rank	Top 50%	73%	67%	59%	53%	41%	37%	27%	16%	
		RSquared 3 Yr Value	75% or greater	81.62%	85.18%	83.52%	83.04%	82.91%	82.6%	81.62%	81.03%	
		Sharpe Ratio 3 Yr Rank	Top 50%	61%	63%	51%	44%	31%	33%	26%	16%	
		Info Ratio 5 Yr Rank	Top 50%	58%	55%	40%	30%	22%	19%	16%	11%	
		Net Expense Ratio Rank	Lowest 55%	29%	28%	29%	27%	26%	26%	25%	25%	
		Manager Tenure	2 years or more	15.8 years	15.5 years	15.3 years	15 years	14.8 years	14.5 years	14.3 years	14 years	
Monitor Score			77	80	84	88	93	95	97	100		

Category Codes: MG=Mid-Cap Growth

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Fidelity Advisor Small Cap Value Fund (I)			Ticker: FCVIX		Monitor History						
<b>Fund Category: Small Value</b> <b>Notes:</b> - Changed from Share Class A to Share Class I (12/15/2016) - Small Cap Value fund in the Asset Allocation Model Portfolios (12/15/2016) - Previous Share Class Scoring History: 1Q16=69; 3Q16=65 (03/31/2017)	 70	<b>Standards</b>	<b>Criteria</b>	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		SV	SV	SV	SV	SV	SV	SV	SV
		Return 1 Yr Rank	Top 50%	38%	77%	7%	21%	67%	77%	93%	80%
		Return 3 Yr Rank	Top 50%	69%	45%	20%	27%	20%	17%	23%	27%
		Return 5 Yr Rank	Top 50%	30%	37%	28%	19%	20%	12%	15%	17%
		Alpha 3 Yr Rank	Top 50%	26%	18%	5%	10%	3%	7%	9%	16%
		RSquared 3 Yr Value	75% or greater	51.73%	55.86%	53.48%	59.37%	55.53%	55.44%	56.74%	62.21%
		Sharpe Ratio 3 Yr Rank	Top 50%	21%	13%	4%	8%	2%	9%	10%	13%
		Info Ratio 5 Yr Rank	Top 50%	51%	47%	44%	24%	19%	--	15%	14%
		Net Expense Ratio Rank	Lowest 55%	25%	30%	28%	27%	26%	47%	45%	45%
		Manager Tenure	2 years or more	5.7 years	5.5 years	5.2 years	5 years	4.7 years	4.5 years	4.2 years	4 years
Monitor Score		70	71	72	71	70	72	74	--		

Category Codes: SV=Small Value

Janus Henderson Venture Fund (N)			Ticker: JVTNX		Monitor History						
<div>Fund Category: Small Growth</div> <div>Notes:</div> <div>-Fund added to replace Franklin Small Cap Growth R6 as the result of action taken during 1Q18 DC Committee review. (06/20/2018)</div> <div>-Small Cap Growth fund in the Asset Allocation Models (06/20/2018)</div>	69	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		SG	SG	SG	SG	SG	SG	SG	SG
		Return 1 Yr Rank	Top 50%	61%	51%	34%	37%	70%	71%	81%	75%
		Return 3 Yr Rank	Top 50%	46%	43%	36%	53%	26%	21%	14%	28%
		Return 5 Yr Rank	Top 50%	21%	17%	13%	18%	14%	18%	12%	14%
		Alpha 3 Yr Rank	Top 50%	52%	50%	48%	64%	44%	29%	24%	34%
		RSquared 3 Yr Value	75% or greater	64.64%	72.47%	68.31%	73.46%	71.42%	72.92%	71.48%	70.72%
		Sharpe Ratio 3 Yr Rank	Top 50%	30%	43%	36%	54%	29%	21%	17%	30%
		Info Ratio 5 Yr Rank	Top 50%	22%	16%	12%	--	12%	18%	12%	15%
		Net Expense Ratio Rank	Lowest 55%	7%	7%	6%	7%	6%	6%	6%	6%
		Manager Tenure	2 years or more	5.4 years	5.1 years	4.9 years	4.6 years	4.4 years	4.1 years	3.9 years	3.6 years
		Monitor Score		69	--	--	--	--	--	--	--

Category Codes: SG=Small Growth

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CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
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Cohen & Steers Institutional Realty Shares			Ticker: CSRIX		Monitor History							
Fund Category: Real Estate			Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
<b>Notes:</b>  Scoring from previous periods: 1Q18=77; 3Q17=75; 1Q17=74 (12/01/2010) -Specialty Real Estate fund in the Plan's Asset Allocation Models. (08/01/2011) -Lower cost share class authorized during Special DC Committee meeting (08/13/2018)	80	Category		SR	SR	SR	SR	SR	SR	SR	SR	SR
		Return 1 Yr Rank	Top 50%	5%	23%	29%	26%	36%	25%	27%	54%	
		Return 3 Yr Rank	Top 50%	17%	14%	23%	16%	14%	10%	14%	17%	
		Return 5 Yr Rank	Top 50%	8%	12%	11%	9%	11%	11%	12%	21%	
		Alpha 3 Yr Rank	Top 50%	25%	20%	26%	20%	17%	10%	16%	21%	
		RSquared 3 Yr Value	75% or greater	25.96%	26.78%	26.14%	19.27%	15.58%	19.5%	20.41%	19.88%	
		Sharpe Ratio 3 Yr Rank	Top 50%	20%	17%	24%	20%	18%	16%	17%	23%	
		Info Ratio 5 Yr Rank	Top 50%	10%	11%	11%	9%	10%	11%	12%	22%	
		Net Expense Ratio Rank	Lowest 55%	22%	21%	19%	19%	20%	19%	19%	19%	
		Manager Tenure	2 years or more	11 years	10.7 years	10.5 years	10.2 years	10 years	9.7 years	9.5 years	9.2 years	
		Monitor Score			80	--	--	--	--	--	--	--

Category Codes: SR=Real Estate

American Funds EuroPacific Growth Fund (R6)			Ticker: RERGX		Monitor History							
<div>Fund Category: Foreign Large Growth</div> <div>Notes:</div> <div>- Foreign Large Blend fund in the Asset Allocation Model Portfolios (12/15/2016)</div> <div>- Changed from Share Class R4 to Share Class R6 (12/15/2016)</div> <div>- Previous Share Class Scoring History: 1Q16=77; 3Q16=73 (03/31/2017)</div>	<div>93</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
		Category		FG	FG	FG	FG	FG	FG	FG	FG	FG
		Return 1 Yr Rank	Top 50%	76%	57%	38%	51%	21%	16%	14%	21%	
		Return 3 Yr Rank	Top 50%	47%	44%	36%	35%	33%	22%	24%	22%	
		Return 5 Yr Rank	Top 50%	30%	28%	20%	27%	27%	24%	24%	27%	
		Alpha 3 Yr Rank	Top 50%	52%	47%	38%	36%	34%	24%	24%	25%	
		RSquared 3 Yr Value	75% or greater	89.32%	91.23%	90.71%	89.24%	89.74%	89.24%	88.58%	89.22%	
		Sharpe Ratio 3 Yr Rank	Top 50%	48%	45%	27%	22%	26%	21%	23%	22%	
		Info Ratio 5 Yr Rank	Top 50%	21%	20%	11%	17%	16%	13%	12%	10%	
		Net Expense Ratio Rank	Lowest 55%	5%	5%	5%	5%	5%	5%	5%	4%	
		Manager Tenure	2 years or more	26.8 years	26.5 years	26.3 years	26 years	25.8 years	25.5 years	25.3 years	25 years	
		Monitor Score		93	95	96	93	94	93	92	--	

Category Codes: FG=Foreign Large Growth

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Oppenheimer Developing Markets Fund (I)			Ticker: ODVIX		Monitor History						
<b>Fund Category: Diversified Emerging Mkts</b>  <b>Notes:</b>  -Diversified Emerging Market fund within the Plan's Asset Allocation Model Portfolio. (08/01/2011) -Changed from Share Class A to Share Class Y (08/20/2013) -Lower cost share class authorized during Special DC Committee meeting. (08/13/2018)	88	<b>Standards</b>	<b>Criteria</b>	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		EM	EM	EM	EM	EM	EM	EM	EM
		Return 1 Yr Rank	Top 50%	10%	8%	38%	53%	41%	41%	60%	56%
		Return 3 Yr Rank	Top 50%	11%	12%	39%	63%	66%	69%	69%	70%
		Return 5 Yr Rank	Top 50%	35%	20%	26%	29%	30%	28%	23%	21%
		Alpha 3 Yr Rank	Top 50%	8%	16%	42%	67%	68%	70%	69%	69%
		RSquared 3 Yr Value	75% or greater	78.89%	80.43%	82.29%	78.92%	77.27%	78.02%	77.23%	77.42%
		Sharpe Ratio 3 Yr Rank	Top 50%	5%	12%	36%	59%	65%	70%	70%	68%
		Info Ratio 5 Yr Rank	Top 50%	36%	20%	26%	32%	36%	34%	29%	23%
		Net Expense Ratio Rank	Lowest 55%	17%	17%	17%	17%	16%	16%	15%	15%
		Manager Tenure	2 years or more	11.4 years	11.2 years	10.9 years	10.7 years	10.4 years	10.2 years	9.9 years	9.7 years
Monitor Score			88	--	--	--	--	--	--	--	

Category Codes: EM=Diversified Emerging Mkts

PIMCO Commodity RealReturn Sty. Fund (I)			Ticker: PCRIX		Monitor History						
<div>Fund Category: Commodities Broad Basket</div> <div>Notes:</div> <div><div>- Changed from Share Class A to Share Class Instl (12/15/2016)</div><div>- Broad Commodities fund in the Asset Allocation Model Portfolios (12/15/2016)</div><div>- Previous Share Class Scoring History: 1Q16=70; 3Q16=68 (03/31/2017)</div></div>		Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		BB	BB	BB	BB	BB	BB	BB	BB
		Return 1 Yr Rank	Top 50%	44%	48%	61%	55%	53%	39%	24%	22%
		Return 3 Yr Rank	Top 50%	52%	61%	54%	47%	52%	61%	55%	44%
		Return 5 Yr Rank	Top 50%	58%	54%	78%	73%	74%	66%	49%	53%
		Alpha 3 Yr Rank	Top 50%	54%	64%	47%	38%	40%	35%	31%	25%
		RSquared 3 Yr Value	75% or greater	84.11%	88.31%	89.17%	88.61%	89.85%	90.45%	90.67%	91.36%
		Sharpe Ratio 3 Yr Rank	Top 50%	51%	63%	48%	37%	42%	40%	32%	31%
		Info Ratio 5 Yr Rank	Top 50%	59%	51%	76%	72%	73%	67%	51%	52%
		Net Expense Ratio Rank	Lowest 55%	64%	40%	22%	19%	18%	17%	15%	13%
		Manager Tenure	2 years or more	10.8 years	10.5 years	10.3 years	10 years	9.8 years	9.5 years	9.3 years	9 years
		Monitor Score		63	68	70	74	76	79	81	--

Category Codes: BB=Commodities Broad Basket

# IPS STANDARDS AND CRITERIA: STATUS REPORT

## MONITORING REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

Baird Aggregate Bond Fund (I)			Ticker: BAGIX		Monitor History						
<div>Fund Category: Intermediate-Term Bond</div> <div>Notes:</div> <div>Scoring from previous periods: 1Q18=94; 3Q17=93; 1Q17=97 (12/01/2010) -Intermediate Bond fund in the Plan's Asset Allocation Models. (12/14/2015) -Lower cost share class authorized during Special DC Committee meeting. (08/13/2018)</div>	<div>97</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		CI	CI	CI	CI	CI	CI	CI	CI
		Return 1 Yr Rank	Top 50%	50%	42%	37%	34%	45%	55%	52%	38%
		Return 3 Yr Rank	Top 50%	41%	26%	30%	23%	16%	14%	14%	12%
		Return 5 Yr Rank	Top 50%	23%	20%	20%	18%	18%	18%	18%	18%
		Alpha 3 Yr Rank	Top 50%	43%	32%	32%	33%	30%	24%	25%	23%
		RSquared 3 Yr Value	75% or greater	98.42%	98.31%	98.43%	98.68%	98.62%	98.59%	98.59%	98.54%
		Sharpe Ratio 3 Yr Rank	Top 50%	43%	28%	31%	27%	21%	20%	19%	17%
		Info Ratio 5 Yr Rank	Top 50%	2%	2%	2%	1%	1%	1%	1%	1%
		Net Expense Ratio Rank	Lowest 55%	8%	8%	7%	8%	8%	8%	8%	8%
		Manager Tenure	2 years or more	18 years	17.8 years	17.5 years	17.3 years	17 years	16.8 years	16.5 years	16.3 years
		Monitor Score		97	--	--	--	--	--	--	--

Category Codes: CI=Intermediate-Term Bond

Eaton Vance High Income Opport. Fund (I)			Ticker: EIHIX		Monitor History							
<div>Fund Category: High Yield Bond</div> <div>Notes:</div> <div>High Yield Bond in the asset allocation models. This fund was added replacing/accepting assets from Fidelity High Income-SPHIX as a result of the 1Q16 investment committee meeting. (06/14/2016)</div>	<div>69</div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	
		Category		HY	HY	HY	HY	HY	HY	HY	HY	HY
		Return 1 Yr Rank	Top 50%	54%	61%	38%	53%	52%	60%	73%	60%	
		Return 3 Yr Rank	Top 50%	41%	29%	22%	18%	10%	6%	8%	5%	
		Return 5 Yr Rank	Top 50%	11%	11%	8%	10%	9%	10%	9%	9%	
		Alpha 3 Yr Rank	Top 50%	40%	29%	22%	20%	11%	8%	9%	8%	
		RSquared 3 Yr Value	75% or greater	6.77%	3.18%	4.61%	1.99%	1.84%	5.43%	5.34%	5.5%	
		Sharpe Ratio 3 Yr Rank	Top 50%	9%	16%	13%	12%	9%	8%	7%	7%	
		Info Ratio 5 Yr Rank	Top 50%	4%	3%	3%	4%	2%	1%	2%	1%	
		Net Expense Ratio Rank	Lowest 55%	17%	16%	15%	16%	15%	13%	13%	15%	
		Manager Tenure	2 years or more	22.8 years	22.5 years	22.3 years	22 years	21.8 years	21.5 years	21.3 years	21 years	
		Monitor Score		69	70	71	70	72	74	76	79	

Category Codes: HY=High Yield Bond

# IPS STANDARDS AND CRITERIA: STATUS REPORT

## MONITORING REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

BlackRock Infla. Protected Bond Fund (K)		Ticker: BPLBX		Monitor History							
<div>Fund Category: Inflation-Protected Bond</div> <div>Notes:</div> <div>-Share Class change from Svc Share Class to R6 (12/15/2016)</div> <div>-TIPS in Asset Allocation Models. (12/15/2016)</div> <div>- Previous Share Class Scoring History: 1Q16=68; 3Q16=58 (03/31/2017)</div>		Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		IP	IP	IP	IP	IP	IP	IP	IP
		Return 1 Yr Rank	Top 50%	38%	22%	23%	26%	59%	51%	39%	50%
		Return 3 Yr Rank	Top 50%	46%	38%	48%	37%	47%	48%	33%	40%
		Return 5 Yr Rank	Top 50%	39%	31%	36%	39%	36%	36%	27%	31%
		Alpha 3 Yr Rank	Top 50%	45%	45%	49%	48%	56%	56%	49%	51%
		RSquared 3 Yr Value	75% or greater	69.6%	58.03%	58.46%	62.34%	59.49%	56.19%	58.53%	62.35%
		Sharpe Ratio 3 Yr Rank	Top 50%	43%	38%	49%	38%	47%	47%	38%	43%
		Info Ratio 5 Yr Rank	Top 50%	46%	40%	43%	49%	47%	47%	40%	41%
		Net Expense Ratio Rank	Lowest 55%	21%	21%	17%	17%	18%	16%	16%	16%
		Manager Tenure	2 years or more	1.6 years	1.4 years	1.1 years	7.5 years	7.2 years	7 years	6.7 years	6.5 years
		Monitor Score		69	72	74	77	77	78	83	--

Category Codes: IP=Inflation-Protected Bond


Templeton Global Bond Fund (R6)			Ticker: FBNRX		Monitor History						
<div>Fund Category: World Bond</div> <div>Notes:</div> <div><div>- Change from Share Class A to Share Class R6 (12/15/2016)</div><div>- Global Bond fund in the Asset Allocation Model Portfolios (12/15/2016)</div><div>- Previous Share Class Scoring History: 1Q16=70; 3Q16=61 (03/31/2017)</div></div>	<div><div></div><div>66</div></div>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		IB	IB	IB	IB	IB	IB	IB	IB
		Return 1 Yr Rank	Top 50%	58%	91%	97%	84%	1%	3%	2%	13%
		Return 3 Yr Rank	Top 50%	14%	80%	65%	56%	40%	30%	19%	27%
		Return 5 Yr Rank	Top 50%	32%	39%	41%	29%	15%	14%	11%	11%
		Alpha 3 Yr Rank	Top 50%	5%	33%	40%	9%	4%	7%	2%	7%
		RSquared 3 Yr Value	75% or greater	3.32%	2.11%	0.93%	1.79%	1.6%	0.52%	0.03%	0.7%
		Sharpe Ratio 3 Yr Rank	Top 50%	35%	84%	79%	68%	50%	35%	29%	32%
		Info Ratio 5 Yr Rank	Top 50%	27%	33%	43%	27%	23%	26%	22%	21%
		Net Expense Ratio Rank	Lowest 55%	16%	16%	14%	12%	12%	13%	13%	13%
		Manager Tenure	2 years or more	16.8 years	16.5 years	16.3 years	16 years	15.8 years	15.5 years	15.3 years	15 years
		Monitor Score		66	65	65	66	69	67	66	--

Category Codes: IB=World Bond

# IPS STANDARDS AND CRITERIA: STATUS REPORT

## MONITORING REPORT

CITY OF MADISON  
CITY OF MADISON 457 DEFERRED COMPENSATION PLAN  
FOR PERIOD ENDING 30 SEPTEMBER 2018

American Funds American Balanced Fund (R6)		Ticker: RLBGX		Monitor History							
<b>Fund Category: Allocation--50% to 70% Equity</b>  <b>Notes:</b> - Changed from Share Class R4 to Share Class R6 (12/15/2016) - Previous Share Class Scoring History: 1Q16=100; 3Q16=100 (03/31/2017)	 <b>100</b>	Standards	Criteria	Q3 2018	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016
		Category		MA	MA	MA	MA	MA	MA	MA	MA
		Return 1 Yr Rank	Top 50%	19%	8%	23%	14%	16%	50%	22%	21%
		Return 3 Yr Rank	Top 50%	6%	2%	2%	2%	2%	2%	3%	5%
		Return 5 Yr Rank	Top 50%	4%	3%	2%	2%	2%	3%	3%	4%
		Alpha 3 Yr Rank	Top 50%	3%	2%	2%	2%	3%	2%	3%	4%
		RSquared 3 Yr Value	75% or greater	90.42%	89.93%	90.5%	89.16%	88.48%	87.34%	87.37%	87.57%
		Sharpe Ratio 3 Yr Rank	Top 50%	1%	2%	2%	2%	3%	2%	3%	5%
		Info Ratio 5 Yr Rank	Top 50%	3%	3%	2%	2%	2%	2%	2%	2%
		Net Expense Ratio Rank	Lowest 55%	2%	2%	2%	2%	2%	2%	2%	2%
		Manager Tenure	2 years or more	21.8 years	21.5 years	21.3 years	21 years	20.8 years	20.5 years	20.3 years	20 years
Monitor Score		100	100	100	100	100	100	100	--		

Category Codes: MA=Allocation--50% to 70% Equity

# Reliance MetLife Stable Value Series 25157 - Class 0

**Benchmark**  
Money Market-Taxable

**Net Crediting Rate**  
2.95%

**Overall Morningstar Rating™**  
★★★★★

Out of 474 Stable Value investments. An investment's overall Morningstar Rating, based on its risk-adjusted return, is a weighted average of its applicable 3-, 5-, and 10-year Ratings. See disclosure page for details.

**Morningstar Return**  
High

**Morningstar Risk**  
Low

## Investment Information

### Investment Objective & Strategy

The primary investment objective of the Fund is to preserve principal while generating earnings at rates competitive over time with short-term high quality fixed income investments. The Fund invests entirely in the MetLife Group Annuity Contract 25157 which consists of separately managed investment portfolios directed by Reliance Trust Company.

### Fees and Expenses

Total Annual Operating Expense Net	0.62%
Fees per \$1,000	\$6.20

### Portfolio Manager(s)

Management Team. Since 01-00.

### Operations and Management

Inception Date	01-03-00
Trustee	Reliance Trust Company
Web Site	www.reliance-trust.com
CUSIP	759522105
Wrap Provider	Metropolitan Life Insurance Co

### Morningstar Category: Stable Value

Stable value funds seek to provide income while preventing price fluctuations. The most common stable value funds invest in a diversified portfolio of bonds and enter into wrapper agreements with financial companies to guarantee against fluctuations in their share prices. The safety of these funds therefore depends on both the fund's investments as well as the financial strength of the insurance companies and banks that back the wrapper agreements.

### What do Stable Value Funds invest in?

Stable value funds tend to invest in high-quality bonds with short- to intermediate-term maturities. They also purchase insurance contracts which aim to provide price stability on a day-to-day basis. The horizontal axis of the Morningstar Fixed Income Style Box™ shows duration, a measure of how the funds price will change in response to interest-rate changes. Because stable value funds insurance contracts usually prevent any fluctuations in the funds prices, these funds are insulated from interest-rate volatility and their duration is effectively zero.

## Volatility Analysis

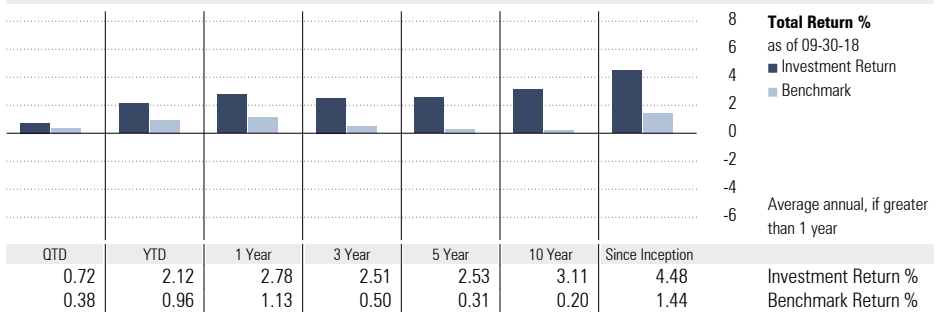
Investment



Category

In the past, this investment has shown a relatively small range of price fluctuations relative to other investments. Based on this measure, currently more than two-thirds of all investments have shown higher levels of risk. Consequently, this investment may appeal to investors looking for a conservative investment strategy.

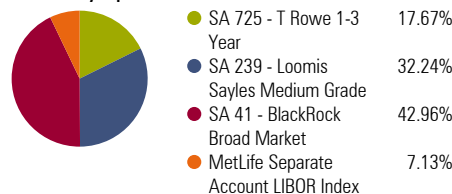
## Performance



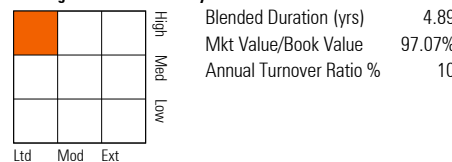
**Performance Disclosure: (1) The Fund's returns are net of operating expenses applicable to the share class. Current performance may be lower or higher. Investment value will fluctuate, and shares, when redeemed, may be worth more or less than original cost. (2) Morningstar Money Market Average. This is an average of all the Money Market Funds in the Morningstar Principia database. - - - Current Fund crediting rates and rates of return are available by contacting [Reliance\\_CITgroup@fisglobal.com](mailto:Reliance_CITgroup@fisglobal.com).**

## Portfolio Analysis

### Allocation by Separate Account



### Morningstar Fixed Income Style Box™ as of 09-30-18



### Credit Analysis: as of 09-30-18

AM Best	A+
Fitch	AA-
Moody's Investors	Aa3
Standard & Poor's	AA-
> Average Credit Qual.	AA

### Crediting Rates Class 0

2013	3rd Qtr	2.70%
	4th Qtr	2.60%
2014	1st Qtr	2.55%
	2nd Qtr	2.55%
	3rd Qtr	2.52%
	4th Qtr	2.59%
2015	1st Qtr	2.70%
	2nd Qtr	2.54%
	3rd Qtr	2.56%
	4th Qtr	2.22%
2016	1st Qtr	2.21%
	2nd Qtr	2.32%
	3rd Qtr	2.32%
	4th Qtr	2.39%
2017	1st Qtr	2.41%
	2nd Qtr	2.43%
	3rd Qtr	2.59%
	4th Qtr	2.59%
2018	1st Qtr	2.76%
	2nd Qtr	2.85%
	3rd Qtr	2.90%
	4th Qtr	2.95%

## Principal Risks

Credit and Counterparty, Extension, Inflation-Protected Securities, Prepayment (Call), Reinvestment, Long-Term Outlook and Projections, Loss of Money, Not FDIC Insured, Country or Region, Municipal Project-Specific, Active Management, High Portfolio Turnover, Income, Issuer, Interest Rate, Market/Market Volatility, Bank Loans, Convertible Securities, High-Yield Securities, Mortgage-Backed and Asset-Backed Securities, Municipal Obligations, Leases, and AMT-Subject Bonds, Repurchase Agreements, Restricted/Illiquid Securities, U.S. Government Obligations, Derivatives, Fixed-Income Securities, Maturity/Duration, Sovereign Debt, Multimanager, Investment-Grade Securities, Passive Management, Unrated Securities, Variable-Rate Securities, Zero-Coupon Bond

Please refer to the Fund's Offering Statement for more information.

For use with Institutions (Plan Fiduciary, Investment Professional and Authorized Agents of Plan Fiduciary) only, not for use with retail investors or the general public.



# Disclosure

## About the Fund

The Fund is a bank collective trust fund for which Reliance Trust Company serves as trustee and investment manager. The Fund is not FDIC-insured or registered with the Securities and Exchange Commission. Investors should carefully consider the fund's investment objectives, risks, charges and expenses before investing. To obtain an offering circular containing this and other information, contact us at [Reliance\\_CITGroup@FISglobal.com](mailto:Reliance_CITGroup@FISglobal.com).

## About Metropolitan Life Insurance Company

For over 140 years MetLife has been one of the most TruSted financial institutions in the United States and is a leading global provider of insurance, employee benefits and other financial services.

## General

This Fund is a bank collective trust fund for which Reliance Trust Company, an FIS Company, ("RTC") serves as trustee and investment manager. The Fund is not FDIC insured and is not guaranteed by Reliance Trust nor guaranteed by any governmental agency. Units of beneficial interest in the Fund are not registered under the Securities Act of 1933 in reliance on an exemption under that Act for interests in a collective trust fund maintained by a bank for certain types of employee benefit trusts.

Participation in the Fund is limited to eligible trusts that are accepted by the Trustee as participating trusts as more fully described in the Offering Statement.

## Performance

The performance information provided is historical and past performance is not a guarantee of future results. Current performance may be lower or higher than performance information shown.

RTC charges a total annualized fee for investment and administrative services equivalent to 0.62% of assets invested in the Fund. The fee will be calculated and accrued daily in the Fund's net asset value and will be paid from the Fund's assets monthly or quarterly as determined by RTC. These charges are reflected in the returns presented. Returns also include all income, realized and unrealized capital gains and losses, and all transactional and contract execution costs.

## Consider these risks before investing:

The Fund is not intended as a complete investment program, and there can be no guarantee that it will achieve its investment objective. No Fund is insured or guaranteed by any government agency, by the Trustee or by the Advisor. See also "Fund-Specific Risks" in the relevant Fund's appendix to the Offering Statement. The risk factors are not intended to be exhaustive and there may be other risks that should be taken into account in relation to an investment in a particular Fund.

## Fee and Expense Disclosure

The Fund shall have multiple class available for eligible participating trust as more fully described in the Offering Statement.

## Morningstar Rating™

The Morningstar Rating™ for funds, or "star rating", is calculated for managed products (including mutual funds, variable annuity and variable life subaccounts, exchange-traded funds, closed-end funds, and separate accounts) with at least a three-year history. Exchange-traded funds and open-ended mutual funds are considered a single population for comparative purposes. It is calculated based on a Morningstar Risk-Adjusted Return measure that accounts for variation in a managed

product's monthly excess performance, placing more emphasis on downward variations and rewarding consistent performance. The Morningstar Rating does not include any adjustment for sales loads. The top 10% of products in each product category receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars, and the bottom 10% receive 1 star. The Overall Morningstar Rating for a managed product is derived from a weighted average of the performance figures associated with its three-, five-, and 10-year (if applicable) Morningstar Rating metrics. The weights are: 100% three-year rating for 36-59 months of total returns, 60% five-year rating/40% three-year rating for 60-119 months of total returns, and 50% 10-year rating/30% five-year rating/20% three-year rating for 120 or more months of total returns. While the 10-year overall star rating formula seems to give the most weight to the 10-year period, the most recent three-year period actually has the greatest impact because it is included in all three rating periods.

## Morningstar Return

The Morningstar Return rates a fund's performance relative to other managed products in its Morningstar Category. It is an assessment of a product's excess return over a risk-free rate (the return of the 90-day Treasury Bill) in comparison with the products in its Morningstar category. In each Morningstar category, the top 10% of products earn a High Morningstar Return (High), the next 22.5% Above Average (+ Avg), the middle 35% Average (Avg), the next 22.5% Below Average (- Avg), and the bottom 10% Low (Low). Morningstar Return is measured for up to three time periods (three, five, and 10 years). These separate measures are then weighted and averaged to produce an overall measure for the product. Products with less than three years of performance history are not rated.

## Morningstar Risk

Morningstar Risk evaluates a fund's downside volatility relative to that of other products in its Morningstar Category. It is an assessment of the variations in monthly returns, with an emphasis on downside variations, in comparison with the products in its Morningstar category. In each Morningstar category, the 10% of products with the lowest measured risk are described as Low Risk (Low), the next 22.5% Below Average (-Avg), the middle 35% Average (Avg), the next 22.5% Above Average (+Avg), and the top 10% High (High). Morningstar Risk is measured for up to three time periods (three, five, and 10 years). These separate measures are then weighted and averaged to produce an overall measure for the product. Products with less than three years of performance history are not rated.

## Morningstar Style Box™

The Morningstar Style Box™ reveals a fund's investment style as of the date noted on this report.

For equity funds the vertical axis shows the market capitalization of the long stocks owned and the horizontal axis shows investment style (value, blend, or growth).

For fixed-income funds, the vertical axis shows the credit quality of the long bonds owned and the horizontal axis shows interest rate sensitivity as measured by a bond's effective duration.

Morningstar seeks credit rating information from fund companies on a periodic basis (e.g., quarterly). In compiling credit rating information Morningstar accepts credit ratings reported by fund companies that have been issued by all Nationally Recognized Statistical Rating Organizations (NRSROs). For a list of all NRSROs, please visit <http://www.sec.gov/divisions/marketreg/ratingagency.htm>.

Additionally, Morningstar accepts foreign credit ratings from widely recognized or registered rating agencies. If two rating organizations/agencies have rated a security, fund companies are to report the lower rating; if three or more organizations/agencies have rated a security, fund companies are to report the median rating, and in cases where there are more than two organization/agency ratings and a median rating does not exist, fund companies are to use the lower of the two middle ratings. PLEASE NOTE: Morningstar, Inc. is not itself an NRSRO nor does it issue a credit rating on the fund. An NRSRO or rating agency ratings can change from time-to-time.

For credit quality, Morningstar combines the credit rating information provided by the fund companies with an average default rate calculation to come up with a weighted-average credit quality. The weighted-average credit quality is currently a letter that roughly corresponds to the scale used by a leading NRSRO. Bond funds are assigned a style box placement of "low", "medium", or "high" based on their average credit quality. Funds with a low credit quality are those whose weighted-average credit quality is determined to be less than "BBB-"; medium are those less than "AA-", but greater or equal to "BBB-"; and high are those with a weighted-average credit quality of "AA-" or higher. When classifying a bond portfolio, Morningstar first maps the NRSRO credit ratings of the underlying holdings to their respective default rates (as determined by Morningstar's analysis of actual historical default rates). Morningstar then averages these default rates to determine the average default rate for the entire bond fund. Finally, Morningstar maps this average default rate to its corresponding credit rating along a convex curve.

For interest-rate sensitivity, Morningstar obtains from fund companies the average effective duration. Generally, Morningstar classifies a fixed-income fund's interest-rate sensitivity based on the effective duration of the Morningstar Core Bond Index (MCBI), which is currently three years. The classification of Limited will be assigned to those funds whose average effective duration is between 25% to 75% of MCBI's average effective duration; funds whose average effective duration is between 75% to 125% of the MCBI will be classified as Moderate; and those that are at 125% or greater of the average effective duration of the MCBI will be classified as Extensive.

For municipal bond funds, Morningstar also obtains from fund companies the average effective duration. In these cases static breakpoints are utilized. These breakpoints are as follows: (i) Limited: 4.5 years or less; (ii) Moderate: more than 4.5 years but less than 7 years; and (iii) Extensive: more than 7 years. In addition, for non-US taxable and non-US domiciled fixed income funds static duration breakpoints are used: (i) Limited: less than or equal to 3.5 years; (ii) Moderate: greater than 3.5 and less than equal to 6 years; (iii) Extensive: greater than 6 years.

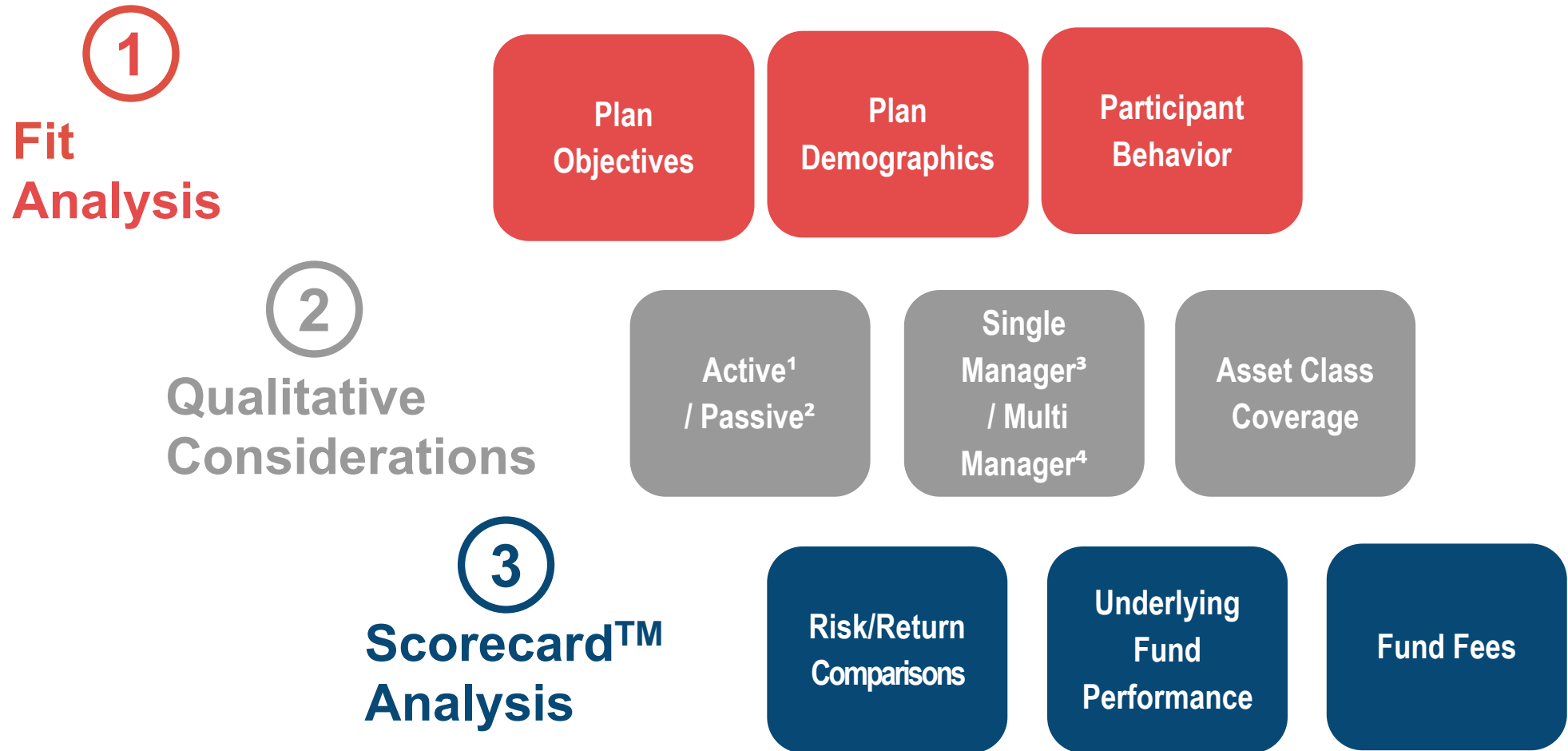
# Fiduciary Duties

Given the importance of this unique asset class, fiduciaries must take the necessary steps to ensure proper selection, due diligence and documentation.

# TDF Evaluation Methodology

A TDF is largely defined by its broad based allocations, or glidepath, and the specific investments utilized to achieve those allocations. The RPAG Risk Index classifies TDFs into risk levels based on their glidepath. Underlying funds scores give insight into the quality of the investments within each asset class.

# Process for Selecting TDFs



<sup>1</sup>Fund manager is trying to add value and outperform (for that style of investing). Typically, these investment strategies have higher associated costs due to the active involvement in the portfolio management process by the fund manager(s).

<sup>2</sup>Fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower costs than active investment strategies due to their passive nature of investing and are commonly referred to as index funds.

<sup>3</sup>One manager manages the underlying funds within the suite.

<sup>4</sup>Multiple managers manage the underlying funds within the suite.

# RPAG Glidepath Segmentation

To assist fiduciaries with glidepath identification and selection, TDFs are categorized into one of three risk postures. Several factors are taken into consideration including equity exposure at various points and the rate of transition away from riskier investments.

## Conservative

- Objective: stability
- Lower equity exposure at retirement
- Incorporates a long and gradual transition away from risky assets

## Moderate

- Objective: balance
- Moderate equity exposure at retirement
- Incorporates a more steady transition away from risky assets

## Aggressive

- Objective: growth
- Higher equity exposure at retirement
- Incorporates a faster transition away from risky assets

# RPAG TDF Risk Index

The RPAG TDF Risk Index helps identify the overall risk posture of a TDF glidepath using a quantitative and qualitative review of the series. The Risk Index incorporates four key measures:

Metric	Description	Index Weight
<b>Equity exposure at retirement (age 65)</b>	Equity risk is responsible for a large portion of the volatility in broadly diversified portfolios. The time around retirement is an especially critical period for participants, and thus this metric has the highest weighting in the index.	<b>65%</b>
<b>Glidepath slope</b>	A steeper glidepath that transitions away from high-risk to risk-free assets near retirement age limits the ability to recover large losses and is more susceptible to sequencing risk.	<b>25%</b>
<b>Equity at the start of the glidepath</b>	A glidepath's beginning equity percentage.	<b>2.5%</b>
<b>Equity at end of the glidepath</b>	A glidepath's ending equity percentage, which may be at retirement age or past retirement age depending on the structure of the glidepath.	<b>7.5%</b>

The TDF Risk Index produces a number between 0 and 100—the higher the number, the more aggressive the strategy. Next, each TDF series is categorized into a risk category depending on it's risk index score:

Conservative  
<54

Moderate  
55 - 69

Aggressive  
>70

TDF data is updated at least annually, and the risk index for any particular fund may change to reflect updated information. The risk index is limited to only target date fund asset allocation series. IMPORTANT: The projections or other information generated by the risk index regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results.

# Evaluating The TDFs Underlying Funds

TDFs are typically structured as a “fund-of-funds”, comprised of underlying funds in various asset classes. While broad based asset class exposure is responsible for the majority of a TDF’s performance, the underlying fund performance can be a meaningful contributor or detractor to overall results, and as such, is an important fiduciary consideration. The DOL, in their tip sheet to plan fiduciaries released in 2013, referenced the importance of understanding and evaluating a TDF’s underlying investments.

As such, each TDF series receives an Average Underlying Fund Score, which is a statistical average of each underlying fund within a TDF series. This score can be an effective way to help measure the quality of each TDF’s underlying investments.

Active Funds		
30% Style	Avg. Style	Falls within professed quadrant.
	Style Drift	Generally passes if analytic is < 20. Blends and mid cap pass if analytic is < 25.
	R <sup>2</sup>	> 80%
30% Risk/Return	Risk/Return	Less risk or stronger return than the benchmark.
	Up/Down	Numerator must exceed denominator.
	Info Ratio	Positive IR
20% Peer Group	Return Rank	Ranked in the top 50 <sup>th</sup> percentile (lower number indicates better ranking).
	Info Ratio Rank	Ranked in the top 50 <sup>th</sup> percentile (lower number indicates better ranking).
20% Qualitative	Manager < 1½ years tenure, deduct 2 points Manager < 3½ years tenure, deduct 1 point For a fund to be awarded full 2 points, its expense ratio must be below category average for asset class.	

Passive Funds		
40% Style & Tracking	Average Style	Falls within professed quadrant (stringent as manager only tracks benchmark, as opposed to trying to outperform it)
	Style Drift	Generally pass if analytic is < 5 (stringent as index funds are designed to have very little drift)
	R <sup>2</sup>	> 95%. If not, may want to determine the index the fund is tracking.
	Tracking Error	< 4%. If larger, fund can lose additional points (see qualitative scoring below)
40% Peer Group Rankings	Tracking Error Rank	Ranks in the top 75 <sup>th</sup> percentile (lower number indicates better ranking).
	Expense Rank	Ranks in the top 75 <sup>th</sup> percentile (lower number indicates better ranking).
	Return Rank	Ranks in the top 75 <sup>th</sup> percentile (lower number indicates better ranking).
	Sharpe Ratio Rank	Ranks in the top 75 <sup>th</sup> percentile (lower number indicates better ranking).
20% Qualitative	If tracking error > 6, deduct 1 point If tracking error > 7, deduct 2 points If expense ranks in the bottom decile, deduct 1 point	

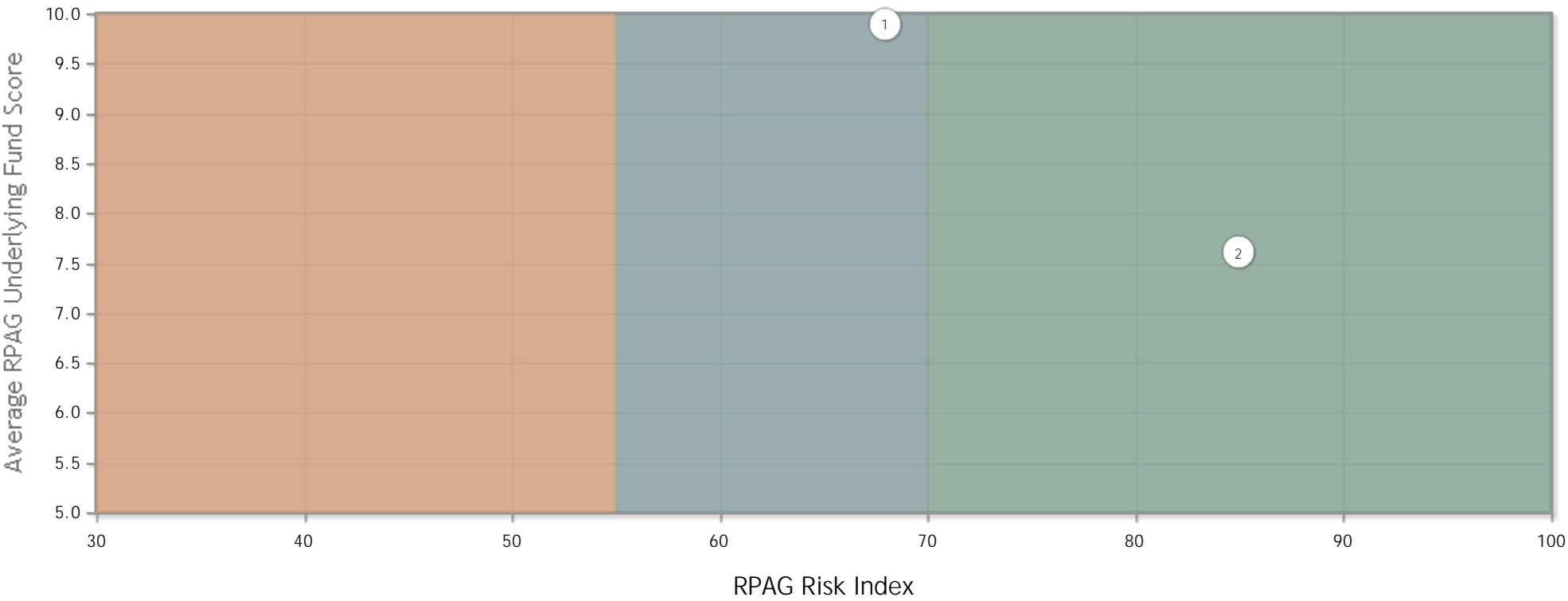


# TDF Evaluation

In order to evaluate and select a TDF series, fiduciaries should conduct a thorough quantitative and Scorecard analysis. Important factors include glidepath risk, underlying funds, fees and asset class coverage.



# Risk Index & Underlying Score



1 Schwab Target Index

2 T. Rowe Price Retirement

**Glidepath Risk Category:**

Conservative

Moderate

Aggressive

# TDF Matrix

TDF Series Name	Glidepath Risk	Risk Index	Equity Glide Path (Approx.)		Roll Down Age		Approx. Equity Exposure at 65	Management Style	Investment Type	Equity Tactical (+/-)
			Starting Eq	Ending Eq	Begin	End				
Schwab Target Index	Moderate	68	95%	25%	21	85	40%	Passive	Proprietary Funds	0%
T. Rowe Price Retirement	Aggressive	85	90%	20%	40	95	55%	Active	Proprietary Funds	5%
Industry Average	Moderate	67	92%	31%	35	75	50%			4%

# TDF Matrix Definitions

**TDF Series Name:** Name of the TDF series.

**TDF Design Analysis:** each series is placed into a risk category (aggressive, moderate, conservative) based on the Glidepath Risk Index.

**Glidepath Risk Index:** A glidepath describes the transition from equity assets to fixed-income investments as an investor approaches retirement. The Glidepath Risk Index quantifies a glidepath's overall aggressiveness by considering four key factors, as explained below:

Equity exposure at retirement (age 65): Equity risk is responsible for a large portion of the volatility in broadly diversified portfolios. This represents 65 percent of the risk index weight.

Glidepath slope: a steeper glidepath that transitions away from equity assets to fixed-income investments near retirement age limits the ability to recover large losses and is more susceptible to sequencing risk. Sequencing risk is the risk of experiencing negative returns in a period when withdrawals are being made. A steeper transition away from equity assets in this case would make it subsequently more difficult for the investor to recoup losses experienced during this time. This represents 25 percent of the index weight.

Equity at the start of the glidepath. This represents 2.5 percent of the index weight.

Equity at the end of the glidepath. This represents 7.5 percent of the risk index weight.

**Starting Eq:** A glidepath's beginning equity percentage

**Ending Eq:** A glidepath's ending equity percentage, which may be at retirement age or past retirement age depending on the structure of the glidepath.

**Begin Roll Down Age:** the participant age corresponding to the glidepath's first decline in equity percentage

**End Roll Down Age:** the participant age corresponding to the time when the glidepath reaches its lowest and final equity percentage point

**Approx. Equity Exposure at 65:** the glidepath's approximate equity percentage at participant age 65 (assumed retirement age)

**Active/Passive:** describes the management style of the underlying funds within the TDF series. Active: fund manager attempts to implement a particular strategy with the goal to outperform a benchmark. Passive: fund manager implements a strategy to match, not outperform, the performance of a particular benchmark, gross of fees.

**Investment Type:** describes the structure of the underlying funds within the series

**Tactical Asset Allocation:** A glidepath can be strategic or tactical. Every TDF has a policy glidepath, which specifies the asset allocations at given time and serves as the base glidepath to which the portfolios are rebalanced periodically. Managers implementing a strategic glidepath do not

actively deviate from these policy levels, although the policy weights can change slightly over time due to changes in long term capital market expectations. Managers implementing a tactical glidepath can actively deviate from policy allocations to act on their short term outlooks for certain asset classes in an attempt to outperform the policy allocation, in addition to changing the policy weights over time based on long term capital market expectations. This metric describes the maximum percentage deviation from the glidepath the manager is allowed to implement.

## Investment Types

**Proprietary Funds:** a TDF is labeled proprietary if the underlying funds comprising the TDF series are managed by the same investment company managing the TDF itself.

**Collective Trusts:** a collective investment fund is a fund that is operated by a trust company or a bank and handles a pooled group of trust accounts. Collective investment funds combine the assets of various individuals and organizations to create a larger, well-diversified portfolio. Collective investment trusts are not registered products.

**MultiManager:** a TDF is labeled multimanager if the underlying funds comprising the TDF series are managed by various investment companies, at least some of which are not the same investment company as the company managing the TDF itself.

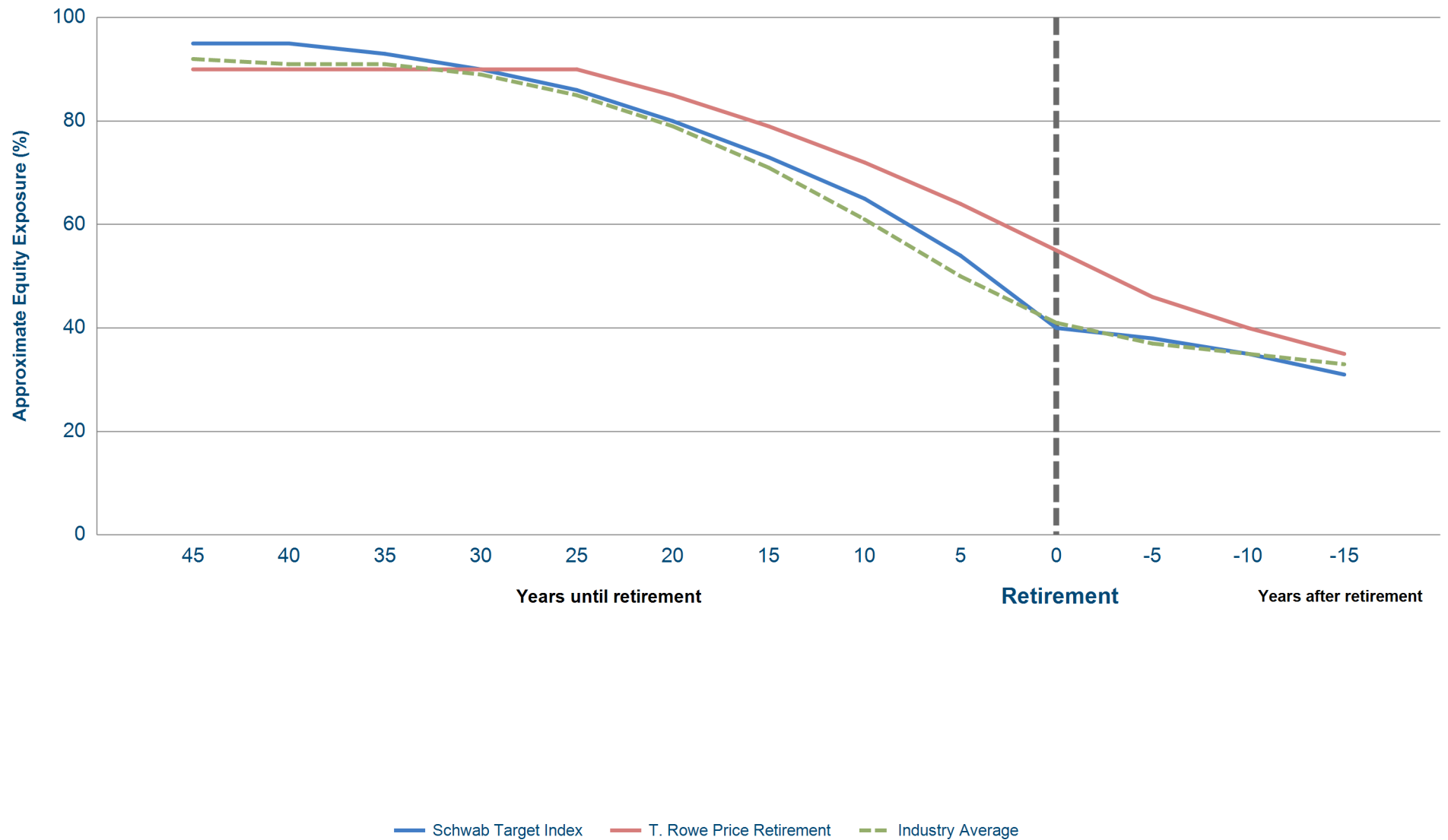
## Disclaimers

Investments in target date funds are subject to the risks of their underlying funds. The investment risk of target date funds change over time as its asset allocation changes. Asset allocation and diversification do not protect against market loss. No target date fund is considered a complete retirement program and there is no guarantee any single fund will provide sufficient retirement income at or through retirement. Principal invested is not guaranteed at any time, including at or after the funds' target dates. The target date is typically the date in which the participant is expecting to retire.

Past performance does not guarantee future results.

Mutual funds are sold by prospectus only. Before investing, investors should carefully consider the investment objectives, risks, charges and expenses of a mutual fund. The fund prospectus provides this and other important information. Please contact your representative or the Company to obtain a prospectus. Please read the prospectus carefully before investing or sending money.

# TDF Glidepath Comparision



# Asset Class Coverage

TDF Series	Schwab Target Index	T. Rowe Price Retirement
US Large Equity	✓	✓
US Mid Equity	✓	✓
US Small Equity	✓	✓
International Equity	✓	✓
Emerging Market Equity	✓	✓
US Fixed Income	✓	✓
US Tips	✓	✓
International Fixed Income		✓
REITs	✓	
Commodities		

Source: Morningstar  
Information is for illustrative purposes only and cannot be guaranteed now or in the future

# Scorecard™ - Style Box Summary

## Schwab Target Index: Underlying Fund Scores

U.S. Large Cap	U.S. Mid/Small Cap	International Large Cap Equity
Schwab US Large-Cap ETF (10)	Schwab US Small-Cap ETF (9)	Schwab International Equity ETF (10)
International Mid/Small Cap Equity	REITs	Commodities
	Schwab US REIT ETF (10)	
Core Fixed Income	Other Fixed Income	Specialty/Other
Schwab US Aggregate Bond ETF (10)	Schwab Short-Term US Treasury ETF (10) Schwab US TIPS ETF (10)	Schwab Emerging Markets Equity ETF (10)

Only ten funds will appear in each style box category for spacing purposes.

# Scorecard™ - Style Box Summary

## T. Rowe Price Retirement: Underlying Fund Scores

U.S. Large Cap	U.S. Mid/Small Cap	International Large Cap Equity
T. Rowe Price Equity Index 500 (10)	T. Rowe Price Mid-Cap Growth (10)	T. Rowe Price Overseas Stock (10)
T. Rowe Price Value (8)	T. Rowe Price Mid-Cap Value (10)	T. Rowe Price International Stock (9)
T. Rowe Price Growth Stock (7)	T. Rowe Price New Horizons (9)	T. Rowe Price International Value Eq (4) 
	T. Rowe Price Small-Cap Value (8)	
	T. Rowe Price Small-Cap Stock (7) 	
International Mid/Small Cap Equity	REITs	Commodities
Core Fixed Income	Other Fixed Income	Specialty/Other
T. Rowe Price New Income (10)	T. Rowe Price Floating Rate (9)	T. Rowe Price Emerging Markets Stock (10)
	T. Rowe Price High Yield (8)	T. Rowe Price Real Assets 
	T. Rowe Price US Treasury Long-Term (5) 	
	T. Rowe Price Ltd Dur Infl Focus Bd (3) 	
	T. Rowe Price Dynamic Global Bond Inv	
	T. Rowe Price Emerging Markets Bond	
	T. Rowe Price Intl Bd (USD Hdgd)	

Only ten funds will appear in each style box category for spacing purposes.

# Scorecard™ - Asset Allocation Underlying Funds

Glidepath Risk	Asset Allocation Series	Average Underlying Fund Score													
		Q3 2018	Q2 2018	Q1 2018	Q4 2017										
68	Schwab Target Index	9.9	9.9	9.9	10										
Asset Class	Underlying Funds - Passive	Ticker ID	Style				Peer Group				Qual	Score			
			Style	Style Drift	R2	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
LCB-P	Schwab US Large-Cap ETF	SCHX	1	1	1	1	1	1	1	1	2	10	10	10	10
			2.0/99.8	1.8	99.9	0.2	2.0	4.0	12.0	12.0		LCB-P	LCB-P	LCB-P	LCB-P
SCB-P	Schwab US Small-Cap ETF	SCHA	1	0	1	1	1	1	1	1	2	9	9	9	10
			2.2/-80.4	10.1	98.5	1.8	58.0	5.0	71.0	36.0		SCB-P	SCB-P	SCB-P	SCB-P
ILCB-P	Schwab International Equity ETF	SCHF	1	1	1	1	1	1	1	1	2	10	10	10	10
			-9.8/52.5	9.1	99.4	0.8	2.0	6.0	9.0	12.0		ILCB-P	ILCB-P	ILCB-P	ILCB-P
EME-P	Schwab Emerging Markets Equity ETF	SCHE	1	1	1	1	1	1	1	1	2	10	10	10	10
			-25.2/-99.1	7.4	98.1	2.0	52.0	8.0	42.0	47.0		EME-P	EME-P	EME-P	EME-P
CFI-P	Schwab US Aggregate Bond ETF	SCHZ	1	1	1	1	1	1	1	1	2	10	10	10	10
			-13.4/44.1	1.1	100.0	0.1	10.0	6.0	18.0	17.0		CFI-P	CFI-P	CFI-P	CFI-P
UGT-P	Schwab US TIPS ETF	SCHP	1	1	1	1	1	1	1	1	2	10	10	10	10
			-99.1/98.9	0.6	100.0	0.1	31.0	17.0	34.0	20.0		UGT-P	UGT-P	UGT-P	UGT-P
SHG-P	Schwab Short-Term US Treasury ETF	SCHO	1	1	1	1	1	1	1	1	2	10	10	10	10
			-98.1/99.1	1.0	99.8	0.0	2.0	35.0	14.0	37.0		SHG-P	SHG-P	SHG-P	SHG-P




# Scorecard™ - Asset Allocation Underlying Funds

*continued*

Asset Class	Underlying Funds - Passive	Ticker ID	Style				Peer Group				Qual	Score			
			Style	Style Drift	R2	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
REI-P	Schwab US REIT ETF	SCHH	1	1	1	1	1	1	1	1	2	10	10	10	10
			-99.6/ 99.8	0.2	100.0	0.1	2.0	1.0	21.0	22.0		REI-P	REI-P	REI-P	REI-P

# Scorecard™ - Asset Allocation Underlying Funds

Glidepath Risk	Asset Allocation Series	Average Underlying Fund Score													
		Q3 2018	Q2 2018	Q1 2018	Q4 2017										
85	T. Rowe Price Retirement	8.1	8.4	8.4	8.3										
Asset Class	Underlying Funds - Asset Allocation	Ticker ID	Style			Risk/Return			Peer Group		Qual	Score			
			Risk Level	Style Diversity	R2	Risk/Return	Up/Down	Info Ratio	Return Rank	SR Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
AGG	T. Rowe Price Real Assets 	PRAFX	0	0	0	0	0	0	0	0	0	0	0	9	9
			12.1	92.3/7.7	55.6	12.1/3.1	71.0/80.6	-0.28	95.0	95.0	S	AGG	AGG	NR	NR
MSB	T. Rowe Price Dynamic Global Bond Inv	RPIEX										-	-	-	-
												-	-	-	-
Asset Class	Underlying Funds - Active	Ticker ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R2	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
LCV	T. Rowe Price Value	TRVLX	1	1	1	0	1	0	1	1	2	8	10	10	10
			-38.1/96.3	10.1	93.0	9.6/10.5	93.1/89.2	-0.1	38.0	39.0		LCV	LCV	LCV	LCV
LCG	T. Rowe Price Growth Stock	PRGFX	1	1	1	0	0	0	1	1	2	7	10	10	9
			99.5/94.4	5.6	86.8	11.7/16.1	101.4/108.6	-0.11	8.0	9.0		LCG	LCG	LCG	LCG
MCV	T. Rowe Price Mid-Cap Value	TRMCX	1	1	1	1	1	1	1	1	2	10	10	10	9
			-94.0/-3.7	9.7	92.3	9.7/11.1	97.9/92.1	0.14	12.0	10.0		MCV	MCV	MCV	MCV
MCG	T. Rowe Price Mid-Cap Growth	RPMGX	1	1	1	1	1	1	1	1	2	10	10	10	10
			81.6/0.4	14.9	92.8	10.2/14.3	99.2/86.7	0.44	5.0	1.0		MCG	MCG	MCG	MCG



# Scorecard™ - Asset Allocation Underlying Funds

continued

Asset Class	Underlying Funds - Active	Ticker ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R2	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
SCB	T. Rowe Price Small-Cap Value	PRSVX	0	1	1	1	1	0	1	1	2	8	8	8	8
			-68.4/-72.9	10.9	92.7	12.0/10.8	86.0/80.4	-0.07	8.0	10.0		SCB	SCB	SCB	SCB
SCG	T. Rowe Price New Horizons	PRNHX	1	0	1	1	1	1	1	1	2	9	9	9	9
			96.4/-33.5	24.9	87.7	12.4/16.5	96.2/68.9	0.86	5.0	5.0		SCG	SCG	SCG	SCG
SCG	T. Rowe Price Small-Cap Stock 🇺🇸	OTCFX	0	1	1	1	1	0	1	1	1	7	7	7	6
			15.7/-75.1	18.3	94.7	12.1/12.1	85.9/78.5	0	28.0	27.0	T	SCG	SCG	SCG	SCG
IE	T. Rowe Price International Stock	PRITX	0	1	1	1	1	1	1	1	2	9	8	8	8
			60.6/45.0	10.6	90.6	10.9/5.7	92.9/81.1	0.46	8.0	5.0		IE	IE	IE	IE
ILCV	T. Rowe Price International Value Eq 🇺🇸	TRIGX	0	1	1	1	1	0	0	0	0	4	6	7	9
			-5.4/61.6	16.6	90.3	10.5/2.5	79.1/78.9	0	59.0	61.0	T	ILCV	ILCV	ILCV	ILCV
ILCB	T. Rowe Price Overseas Stock	TROSX	1	1	1	1	1	1	1	1	2	10	10	10	10
			5.9/46.5	16.1	95.2	10.3/5.0	93.5/88.5	0.24	32.0	29.0		ILCB	ILCB	ILCB	ILCB
EME	T. Rowe Price Emerging Markets Stock	PRMSX	1	1	1	1	1	1	1	1	2	10	10	10	10
			84.6/-99.4	5.3	92.8	14.7/5.5	105.4/96.1	0.48	4.0	2.0		EME	EME	EME	EME
CFI	T. Rowe Price New Income	PRCIX	1	1	1	1	1	1	1	1	2	10	9	7	7
			-21.8/56.8	15.2	95.9	2.6/2.2	97.5/93.8	0.09	42.0	44.0		CFI	CFI	CFI	CFI

# Scorecard™ - Asset Allocation Underlying Funds

continued

Asset Class	Underlying Funds - Active	Ticker ID	Style			Risk/Return			Peer Group		Qual	Score			
			Style	Style Drift	R2	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
UGT	T. Rowe Price Ltd Dur Infl Focus Bd 	TRBFX	0	1	0	1	0	0	0	1	0	3	3	3	3
			-36.3/ 32.6	3.9	64.3	1.6/ 0.3	32.0/ 36.9	-0.43	69.0	22.0	T/S	UGT	UGT	UGT	UGT
HY	T. Rowe Price High Yield	PRHYX	1	1	1	1	0	0	1	1	2	8	8	9	9
			84.3/ -84.3	4.0	96.6	4.5/ 4.9	89.6/ 92.4	-0.66	23.0	29.0		HY	HY	HY	HY
BL	T. Rowe Price Floating Rate	PRFRX	1	1	1	1	1	0	1	1	2	9	9	9	9
			-70.8/ -68.4	4.8	92.1	1.8/ 3.6	79.8/ 70.9	-1.02	28.0	30.0		BL	BL	BL	BL
GFI	T. Rowe Price Intl Bd (USD Hdgd)	TNIBX										-	-	-	-
SFI	T. Rowe Price Emerging Markets Bond	PREMX										-	-	-	-
												-	-	-	-
LOG	T. Rowe Price US Treasury Long-Term 	PRULX	1	1	1	0	0	0	0	0	2	5	5	5	5
			100.0/ 100.0	0.0	99.2	9.8/ 3.7	99.1/ 104.6	-0.74	79.0	88.0		LOG	LOG	LOG	LOG

Asset Class	Underlying Funds - Passive	Ticker ID	Style				Peer Group				Qual	Score			
			Style	Style Drift	R2	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank	2pt Max	Q3 2018	Q2 2018	Q1 2018	Q4 2017
LCB-P	T. Rowe Price Equity Index 500	PREIX	1	1	1	1	1	1	1	1	2	10	10	10	10
			1.7/ 99.3	2.8	99.7	0.5	37.0	39.0	22.0	17.0		LCB-P	LCB-P	LCB-P	LCB-P

# TDF Comparison Summary

TDF Series	Schwab Target Index	T. Rowe Price Retirement
Strategy Investment Expense	0.08%	0.66%
Glidepath Risk	Moderate	Aggressive
Management Style	Passive	Active
Average Underlying Fund Score	9.9	7.6
Number of Underlying Funds Scoring Watchlist or Below	0	4
3(38) Independent Manager Selection	No	No

Information is for illustrative purposes only and cannot be guaranteed now or in the future.

Source: Retirement Plan Advisory Group

# Appendix

# Disclosure

The information contained herein has been prepared solely for informational purposes and is not an offer to buy or sell or a solicitation of an offer to buy or sell any security or to participate in any trading strategy. This document was produced by and the opinions expressed are those of NFP Retirement as of the date of writing and are subject to change. This research is based on NFP Retirement proprietary research and analysis of global markets and investing. The information and/or analysis contained in this material have been compiled or arrived at from sources believed to be reliable, however NFP Retirement does not make any representation as their accuracy or completeness and does not accept liability for any loss arising from the use hereof. Past performance is no guarantee of future results. The use of tools cannot guarantee performance. Any decision to invest according to investment advice provided by NFP Retirement should be made after conducting such investigations as the investor deems necessary and consulting the investor's own investment, legal, accounting and tax advisors in order to make an independent determination of the suitability and consequences of an investment.

NFP Retirement and its affiliates do not provide tax advice. Accordingly, any discussion of U.S. tax matters contained herein (including any attachments) is not intended or written to be used, and cannot be used, in connection with the promotion, marketing or recommendation by anyone unaffiliated with NFP Retirement of any of the matters addressed herein or for the purpose of avoiding U.S. tax-related penalties.

Market indexes are included in this report only as context reflecting general market results during the period. NFP Retirement may provide research on funds that are not represented by such market indexes. Accordingly, no representations are made that the performance or volatility of any fund where NFP Retirement provides research will track or reflect any particular index. Market index performance calculations are gross of management and performance incentive fees.

Investing involves risks, including the lost of principal

The principal value of the funds is not guaranteed at any time including at and after the target date. Asset allocation models and diversification do not promise any level of performance or guarantee against loss of principal. Investment in the funds is subject to the risks of the underlying funds

The target date is the approximate date when investors plan to start withdrawing their money. Generally, the asset allocation of each fund will change on an annual basis with the asset allocation becoming more conservative as the fund nears the target retirement date.

The TDF Series included in the TDF Analyzer are mutual fund and CIT vehicles that are included in the RPAG Practice Management Portal (PMP) system, which may not include all TDF Series in the universe. Those TDFs not considered may have characteristics similar or superior to those being analyzed. The RPAG PMP system is an online technology platform for retirement advisors and delivers quantitative and qualitative metrics on 25,000+ funds and dozens of investment platforms. Data included in the RPAG PMP system is gathered from Morningstar or directly from the fund company. Data is updated periodically to reflect changes in glidepath allocations. The TDFs included in the industry are subject to change.

# Glossary

**Active strategies:** investment strategies where the fund manager is trying to add value and out-perform the market averages (for that style of investing). Typically, these investment strategies have higher associated costs due to the active involvement in the portfolio management process by the fund manager(s). For this type of investment strategy, the **Scorecard<sup>SM</sup>** System is trying to identify those managers who can add value on a consistent basis within their own style of investing.

**Alpha:** a measure used to quantify a fund manager's value added. Alpha measures the difference between a portfolio's actual returns and what it might be expected to deliver based on its level of risk. A positive alpha means the fund has beaten expectations and implies a skillful manager. A negative alpha means that the manager failed to match performance with the given risk level.

**Asset allocation strategies:** investment strategies that invest in a broad array of asset classes that may include U.S. equity, international equity, emerging markets, real estate, fixed income, high yield bonds and cash (to name a few asset classes). These strategies are typically structured in either a risk-based format (the strategies are managed to a level of risk, e.g., conservative or aggressive) or, in an age-based format (these strategies are managed to a retirement date or life expectancy date, typically growing more conservative as that date is approached). For this type of investment strategy, the **Scorecard<sup>SM</sup>** System is focused on how well these managers can add value from both asset allocation and manager selection.

**Beta:** a measure of risk that gauges the sensitivity of a manager to movements in the benchmark (market). If the market returns change by some amount  $x$ , then the manager returns can be expected to change by Beta times  $x$ . A Beta of 1 implies that you can expect the movement of a fund's return series to match that of the benchmark. A portfolio with a beta of 2 would move approximately twice as much as the benchmark.

**Downside Deviation:** also referred to as downside risk. The downside standard deviation shows the average size of the deviations (from the mean) when the return is negative.

**Excess Return:** the difference between the returns of a mutual fund and its benchmark.

**Explained Variance:** the explained variance measures the variance of the fund that is explained by the benchmark (similar to the R-squared statistic).

**Information Ratio:** a measure of the consistency of excess return. The ratio is calculated by taking the annualized excess return over a benchmark (numerator) and dividing it by the standard deviation of excess return (denominator). The result is a measure of the portfolio management's performance against risk and return relative to a benchmark. This is a straightforward way to evaluate the return a fund manager achieves, given the risk they take on.

**Median Rank:** refers to the midpoint of the range numbers that are arranged in order of value (lowest to highest).

**Passive strategies:** investment strategies where the fund manager is trying to track or replicate some area of the market. These types of strategies may be broad-based in nature (e.g., the fund manager is trying to track/replicate the entire U.S. equity market like the S&P 500) or may be more specific to a particular area of the market (e.g., the fund manager may be trying to track/replicate the technology sector). These investment strategies typically have lower costs than active investment strategies due to their passive nature of investing and are commonly referred to as index funds. For this type of investment strategy, the **Scorecard<sup>SM</sup>** System is focused on how well these managers track and/or replicate a particular area of the market with an emphasis on how they compare against their peers

**R-squared:** measures (on a scale of 0 to 100) the amount of movement of a fund's return that can be explained by that fund's benchmark. An R-squared of 100 means that all movements of a fund are completely explained by movements in the associated index (benchmark).

**Returns Based Style Analysis:** uses a fund's return series to help identify the style of the fund. This is done by comparing those returns across a specific time period to a series of index returns of various styles (Large Cap Growth, Small Cap Value, etc.) over the same period. Through quadratic optimization, the best fit style is calculated. Once the best fit is found, the fund's style can then be analyzed and weightings toward each asset class can be made.

**Sharpe Ratio:** a ratio developed by Bill Sharpe to measure risk-adjusted performance. It is calculated by subtracting the risk free rate from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns to measure reward on a per unit of risk basis. For example if a bond fund returns 6% and has a standard deviation of 4% and the risk free rate is 2% then the Sharpe Ratio for this fund will be 1.  $(6-2)/4 = 1$ .

**Significance Level:** indicates the level of confidence (on a percentage basis) with which the statement "the manager's annualized excess return over the benchmark is positive" or "the manager's annualized excess return over the benchmark is negative," as the case may be, holds true.

**Standard Deviation:** of return measures the average deviations of a return series from its mean (average) return. A large standard deviation implies that there have been large swings in the return series of the manager. The larger the swing, the more volatile the fund's returns and hence more implied risk. For smaller swings the opposite is true. Standard deviation helps us analyze risk by revealing how much the return on the fund is deviating.

**Style Drift:** is the tendency of a fund to deviate from its investment style over time is style drift. This generally occurs because of a change in the fund's strategy, the manager's philosophy or even a portfolio manager change. During the 1990's dotcom boom, for example, many managers – regardless of the strategies they were initially bound by – were able to justify buying tech stocks for their portfolio, in hopes of capitalizing on the tech boom in the market at that time. Consequently, their styles "drifted" from their original strategy.

**Tracking Error:** refers to the standard deviation of excess returns or the divergence between the return behavior of a portfolio and the return behavior of a benchmark. Tracking error is reported as a "standard deviation percentage" difference that accounts for the volatility between the return of a fund versus its benchmark.

**Volatility of Rank:** is measured by taking the median of a series of numbers, or taking the absolute value of the distance of each individual number to that median, then finding the median of those distances. Volatility is used because it makes a better companion to the median than the standard deviation. Standard deviation is commonly used when measuring volatility around the mean (average), while volatility of rank is used for medians.

**Up/Down Capture:** a measure of how well a manager was able to replicate or improve on periods of positive benchmark returns, and how badly the manager was affected by periods of negative benchmark returns. For example, if a fund has an up capture of 120 that means that the fund goes up 12% when the benchmark moves up 10%. The same fund has a down capture of 90 so that means the fund returns a -9% when the benchmark returns a -10%.



# Asset Class Definitions

**Conservative (CON):** a diversified asset allocation strategy including equity with an emphasis on fixed income. Demonstrates a lower overall volatility (risk) level when compared to the other asset allocation categories.

**Moderate Conservative (MC):** a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON, but lower volatility level when compared to MOD, MA and AGG.

**Moderate (MOD):** a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON and MC, but lower volatility level when compared to MA and AGG.

**Moderate Aggressive (MA):** a diversified asset allocation strategy including equity and fixed income. Demonstrates a higher overall volatility (risk) level when compared to CON, MC, and MOD, but lower volatility level when compared to AGG.

**Aggressive (AGG):** a diversified asset allocation strategy including fixed income with an emphasis on equity. Demonstrates a higher overall volatility (risk) level when compared to the other asset allocation categories.

**Large Cap Value (LCV):** large capitalization companies who have lower prices in relation to their earnings or book value.

**Large Cap Blend (LCB):** large capitalization companies who display both value and growth-like characteristics.

**Large Cap Growth (LCG):** large capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher forecasted or expected growth rate.

**Mid Cap Value (MCV):** mid-capitalization companies who have lower prices in relation to their earnings or book value.

**Mid Cap Blend (MCB):** mid-capitalization companies who display both value and growth-like characteristics.

**Mid Cap Growth (MCG):** mid-capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher expected growth rate.

**Small Cap Value (SCV):** small capitalization companies who have lower prices in relation to their earnings or book value.

**Small Cap Blend (SCB):** small capitalization companies who display both value and growth-like characteristics.

**Small Cap Growth (SCG):** small capitalization companies who have higher prices relative to their earnings or book value, generally due to a higher forecasted or expected growth rate.

**SMid Value (SMCV):** includes any fund categorized as SCV or MCV within Morningstar and whose primary prospectus benchmark is the Russell 2500 Value, which consists primarily of small and mid-capitalization companies who have lower prices in relation to their earnings or book value

**SMid Growth (SMCG):** includes any fund categorized as SCG or MCG within Morningstar and whose primary prospectus benchmark is the Russell 2500 Growth, which consists primarily of small and mid-capitalization companies who have higher prices in relation to their earnings or book value, generally due to a higher forecasted or expected growth rate.

**SMid Blend (SMCB):** includes any fund categorized as SCB or MCB within Morningstar and whose primary prospectus benchmark is the Russell 2500, which consists primarily of small and mid-capitalization companies who display both value and growth-like characteristics.

**Bank Loans (BL):** an array of loans to corporations made by banks and other financial outfits that do not pay a fixed interest rate but rather an adjustable one and are therefore often referred to as floating rate loans.

**International Equity (IE):** includes any fund whose primary prospectus benchmark is the MSCI ACWI ex USA, which includes both developed and emerging markets, and is intended to provide a broad measure of stock performance throughout the world, with the exception of U.S. based companies.

**International Large Cap Value (ILCV):** primarily large capitalization foreign companies displaying value-like characteristics.

**International Large Cap Blend (ILCB):** primarily large capitalization foreign companies displaying both value and growth-like characteristics

**International Large Cap Growth (ILCG):** primarily large capitalization foreign companies displaying growth-like characteristics.

**International Small-Mid Cap Value (ISMV):** primarily small and mid capitalization foreign companies displaying both value-like characteristics.

**International Small-Mid Cap Growth (ISMG):** primarily small and mid capitalization foreign companies displaying both growth-like characteristics.

**Emerging Market Equity (EME):** foreign companies in countries that are not considered to have fully developed markets or economies.

**Global Equity (GE):** large capitalization domestic and foreign companies displaying both value and growth-like characteristics.

**Core Fixed Income (CFI):** domestic fixed income securities representing a broad array of fixed income securities including government, credit and mortgage backed securities.

**Intermediate Government (IG):** domestic Government or Government-backed fixed income securities.

**U.S. Government TIPS (UGT):** treasury inflation protected securities which are Government securities designed to offer inflation protection by adjusting the principal based on changes in the Consumer Price Index.

**Short-Term Bond (STB):** a broad array of fixed income securities that have short durations and/or maturities (typically 1-3 years).

**High Yield (HY):** below investment grade domestic fixed income securities, which have a higher likelihood of default.

**Global Fixed Income (GFI):** a broad array of fixed income securities across many different countries.

**Multisector Bond (MB):** a broad array of fixed income securities across many different sectors including domestic government, corporate, sovereign and emerging markets debt. They generally have few limitations when it comes to domicile, sectors, maturities or credit ratings.

**Specialty Fixed Income (SFI):** a particular segment of the stock market focused on utility companies.

**Stable Value (SV):** a conservative fixed income strategy that is designed to preserve capital.

**Money Market (MM):** conservative, short-term oriented money market securities.

**Guaranteed Investment Contract (GIC):** products that have some type of guarantee from the issuer or provider.

**REIT (RE):** real estate securities traded on a stock exchange.

**Technology (TEC):** a particular segment of the stock market focused on technology related companies.

**Natural Resources (NR):** a particular segment of the stock market focused on natural resource related companies.

**HealthCare (HC):** a particular segment of the stock market focused on healthcare related companies.

**Communication (COM):** a particular segment of the stock market focused on communications related companies.

**Financial Services (FS):** a particular segment of the stock market focused on financial services companies.

**Utilities (UTI):** a particular segment of the stock market focused on utility companies.

**Specialty (SPC):** a unique area of the market.

**-P:** Asset Class abbreviations with a "-P" after the abbreviation indicate that the strategy was classified as passively managed. When not indicated, all other strategies are classified as actively managed and/or asset allocation.

# Index Disclosure

Performance of indexes reflects the unmanaged result for the market segment the selected stocks represent. Indexes are unmanaged and not available for direct investment.

**Citigroup Corporate Bond** is an index which serves as a benchmark for corporate bond performance. You cannot invest directly in an index.

**Citigroup Mortgage Master** is an index which serves as a benchmark for U.S. mortgage- backed securities performance.

**Citigroup WGBI Index** is an index which serves as a benchmark for global bond performance, including 22 different government bond markets.

**Credit Suisse High Yield Index** is an unmanaged, trader priced index constructed to mirror the characteristics of the high yield bond market.

**BC (Barclays Capital) U.S. Aggregate Bond Index** represents securities that are U. S., domestic, taxable, and dollar denominated. The index covers the U. S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

**BC Credit Bond Index** includes publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

**BC U.S. Corporate Investment Grade** represents investment grade corporate securities that are U. S., domestic, taxable, and dollar denominated.

**BC High Yield Corporate Bond** represents below investment grade corporate securities that are U. S., domestic, taxable, and dollar denominated.

**BC TIPS Index** includes publicly issued U.S. government treasury inflation protected securities that meet the specified maturity, liquidity and other requirements.

**BC Mortgage Backed Securities** covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARMs) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

**BC Muni Bond** covers the USD-denominated long term tax exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

**BC Government Index** includes publicly issued U.S. government securities that meet the specified maturity, liquidity and other requirements.

**BarCap U.S. Aggregate 1-3 Yr. TR USD Index** represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 1 to 3 years.

**BarCap U.S. Aggregate 3-5 Yr. TR USD Index** represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 3 to 5 years.

**BarCap U.S. Aggregate 5-7 Yr. TR USD Index** represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 5-7 years.

**BarCap U.S. Aggregate 7-10 Yr. TR USD Index** represents securities in the BC U.S. Aggregate Index that have maturity dates over the next 7 to 10 years.

**BarCap U.S. Aggregate 10+ Yr. TR USD Index** represents securities in the BC U.S. Aggregate Index that have maturity dates over 10 years.

**DJW 5000 (Full Cap) Index** measures the performance of all U.S. common equity securities, and serves as an index of all stock trades in the United States.

**MSCI FI Emerging Markets** is a rules-based index which serves as a benchmark for emerging country fixed income performance.

**MSCI FI EAFE International** is a rules-based index which serves as a benchmark for developed international country fixed income performance.

**MSCI EAFE Index** is listed for foreign stock funds (EAFE refers to Europe, Australia, and Far East). Widely accepted as a benchmark for international stock performance, it is an aggregate of 21 individual country indexes.

**MSCI EAFE Large Value** represents the large cap value stocks within the MSCI EAFE Index.

**MSCI EAFE Large Growth** represents the large cap growth stocks within the MSCI EAFE Index.

**MSCI EAFE Mid Value** represents the mid cap value stocks within the MSCI EAFE Index.

**MSCI EAFE Mid Growth** represents the mid cap growth stocks within the MSCI EAFE Index.

**MSCI EAFE Small Value** represents the small cap value stocks within the MSCI EAFE Index.

**MSCI EAFE Small Growth** represents the small cap growth stocks within the MSCI EAFE Index.

**MSCI EM (Emerging Markets) Index** serves as a benchmark for each emerging country. The average size of these companies is (U.S.) \$400 million, as compared with \$300 billion for those companies in the World index.

**MSCI World Index** is a rules-based index that serves as a benchmark for the developed global equity markets.

**MSCI Europe ex UK Index** is a rules-based index that serves as a benchmark for the Europe's equity markets, excluding the United Kingdom.

**MSCI Pacific ex Japan Index** is a rules-based index that serves as a benchmark for Asia Pacific's equity markets, excluding Japan.

**MSCI United Kingdom Index** is a rules-based index that serves as a benchmark for the United Kingdom's equity markets.

**MSCI Japan** is a rules-based index that serves as a benchmark for Japan's equity markets.

**NAREIT All REIT Index** includes all tax-qualified REITs with common shares that trade on the New York Stock Exchange, the American Stock Exchange or the NASDAQ National Market List.

**3-Month T-bills** (90 Day T-Bill Index) are government-backed short-term investments considered to be risk-free and as good as cash because the maturity is only three months.

**Russell 1000 Growth Index** is a market-capitalization weighted index of those firms in the Russell 1000 with higher price-to-book ratios and higher forecasted growth values.

**Russell 1000 Value Index** is a market-capitalization weighted index of those firms in the Russell 1000 with lower price-to-book ratios and lower forecasted growth values.

**Russell Top 200 Growth Index** is a market-capitalization weighted index of those firms in the Russell Top 200 with higher price-to-book ratios and higher forecasted growth values.

**Russell Top 200 Value Index** is a market-capitalization weighted index of those firms in the Russell Top 200 with lower price-to-book ratios and lower forecasted growth values.

# Index Disclosure

**Russell 2000 Growth Index** is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having higher price-to-book ratio and higher forecasted growth values.

**Russell 2000 Index** consists of the smallest 2000 companies in the Russell 3000 Index, representing approximately 7% of the Russell 3000 total market capitalization.

**Russell 2000 Value Index** is a market-weighted total return index that measures the performance of companies within the Russell 2000 Index having lower price-to-book ratios and lower forecasted growth values.

**Russell MidCap Growth Index** is a market-weighted total return index that measures the performance of companies within the Russell MidCap Index having higher price-to-book ratios and higher forecasted growth values.

**Russell Mid-Cap Index** includes firms 201 through 1000, based on market capitalization, from the Russell 3000 Index.

**Russell MidCap Value Index** is a market-weighted total return index that measures the performance of companies within the Russell MidCap index having lower price-to-book ratios and lower forecasted growth values.

**Russell Top 200 Index** consists of the 200 largest securities in the Russell 3000 Index.

**Russell 3000 Index** is a market-capitalization weighted index, consisting of 3,000 U.S. common equity securities, reflective of the broad U.S. equity market.

**Salomon 1-10 Yr. Governments** is an index which serves as a benchmark for U.S. Government bonds with maturities ranging from 1 to 10 years.

**S&P 500 Index** measures the performance of the largest 500 U.S. common equity securities, and serves as an index of large cap stocks traded in the United States.

**S&P 500 Energy Index** measures the performance of the energy sector in the S&P 500 Index.

**S&P 500 Industrials** measures the performance of the industrial sector in the S&P 500 Index.

**S&P 500 Financials** measures the performance of the financials sector in the S&P 500 Index.

**S&P 500 Utilities** measures the performance of the utilities sector in the S&P 500 Index.

**S&P 500 Consumer Discretionary** Index measures the performance of the consumer discretionary sector in the S&P 500 Index.

**S&P 500 Consumer Staples** Index measures the performance of the consumer staples sector in the S&P 500 Index.

**S&P 500 Information Technology** measures the performance of the information technology sector in the S&P 500 Index.

**S&P 500 Materials** measures the performance of the materials sector in the S&P 500 Index.

**S&P 500 Health Care** measures the performance of the health care sector in the S&P 500 Index.

**S&P 500 Telecommunications Services Index** measures the performance of the telecommunications services sector in the S&P 500 Index.

## General Disclosure

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# Investment Risk Disclosure

Consider the investment objectives, risks, and charges and expenses of the investment company carefully before investing. The prospectus contains this and other information about the investment company. Please contact your advisor for the most recent prospectus. Prospectus should be read carefully before investing.

**International/Emerging Markets:** The investor should note that funds that invest in international securities involve special additional risks. These risks include, but are not limited to, currency risk, political risk, and risk associated with varying accounting standards. Investing in emerging markets may accentuate these risks.

**Sector Funds:** The investor should note that funds that invest exclusively in one sector or industry involve additional risks. The lack of industry diversification subjects the investor to increased industry-specific risks.

**Non-Diversified Funds:** The investor should note that funds that invest more of their assets in a single issuer involve additional risks, including share price fluctuations, because of the increased concentration of investments.

**Small-Cap Stocks:** The investor should note that funds that invest in stocks of small cap companies involve additional risks. Smaller companies typically have a higher risk of failure, and are not as well established as larger blue-chip companies. Historically, smaller-company stocks have experienced a greater degree of market volatility than the overall market average.

**Mid-Cap Stocks:** The investor should note that funds that invest in companies with market capitalization below \$10 billion involve additional risks. The securities of these companies may be more volatile and less liquid than the securities of larger companies.

**High-Yield Bonds:** The investor should note that funds that invest in lower- rated debt securities (commonly referred to as junk bonds) involve additional

risks because of the lower credit quality of the securities in the portfolio. The investor should be aware of the possible higher level of volatility, and increased risk of default.

**Bond/Fixed Income Funds:** The investor should note that funds that invest in bonds (fixed income securities), including government, corporate and mortgage- backed securities, involve additional risks. Interest rate risk may cause bonds to lose their value. The investor should be aware that it is possible in a rising rate environment for investment grade bond strategies to lose value and experience negative returns over certain time periods.

**Stable Value Funds:** The investor should note that these funds invest in short to intermediate term securities that can and may lose value. These funds, while managed to protect principal, do not guarantee the investor's principal, nor are they insured or guaranteed by the FDIC or any other government agency.

**Money Market Funds:** The investor should note that these funds invest in short term securities that can and may lose value. These funds, while managed to protect principal, do not guarantee the investor's principal, nor are they insured or guaranteed by the FDIC or any other government agency.

**Guaranteed Investment Contract (GIC):** Contract that guarantees the repayment of principal and a fixed or floating rate over a specified period of time. The guarantee is backed by the provider, typically an insurance company.

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Contact your advisor with any questions about this report or for the most current month-end performance.

The information presented within this market commentary is intended for informational purposes only and cannot be guaranteed. Please direct all questions and comments concerning this report to your advisor.



# Considerations

Considerations for investment changes, if any, are included in this Section.

The Summary of Considerations shows:

Watch List - No current action will be taken.

Eliminate - The fund will be removed from the plan.

Add - Shows a fund which will be added to the investment menu.

Map To - States where assets held in an “Eliminate” fund will be automatically moved.

# Considerations

Eliminate T. Rowe Price Retirement Target Date Series AND Map to Schwab Target Index Series Institutional														
Asset Allocation Series	Ticker/ ID	CON	MC		MOD		MA		AGG		Score			
											9/30 2018	6/30 2018	3/31 2018	12/31 2017
Average Score														
T. Rowe Price Retirement Target Date Series	-				8		8, 8, 8				8	9	9	8
Asset Allocation	Ticker/ ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Risk Level	Style Diversity	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	SR Rank	(2pt. max)	9/30 2018	6/30 2018	3/31 2018	12/31 2017
Asset Allocation														
Moderate														
T. Rowe Price Retirement 2020	TRRBX	1	0	1	1	1	0	1	1	2	8	8	8	7
		6.4	76.5/ 23.5	97.9	6.4/ 7.3	85.2/ 83.3	-0.7	21.0	24.0		MOD	MOD	MOD	MOD
Moderate Aggressive														
T. Rowe Price Retirement 2030	TRRCX	1	0	1	1	1	0	1	1	2	8	8	9	8
		7.7	88.9/ 11.1	97.7	7.7/ 8.6	88.2/ 85.3	-0.48	24.0	10.0		MA	MA	MA	MA
T. Rowe Price Retirement 2040	TRRDY	1	0	1	1	1	0	1	1	2	8	10	10	8
		8.6	94.6/ 5.4	97.3	8.6/ 9.4	92.4/ 90.3	-0.3	8.0	20.0		MA	AGG	AGG	MA
T. Rowe Price Retirement 2050	TRRMX	1	0	1	1	1	0	1	1	2	8	10	10	8
		8.6	94.5/ 5.5	97.4	8.6/ 9.5	93.2/ 90.6	-0.22	7.0	18.0		MA	AGG	AGG	MA

# Considerations

Asset Allocation Series	Ticker/ ID	CON	MC	MOD	MA	AGG	Score							
							9/30 2018	6/30 2018	3/31 2018	12/31 2017				
Average Score														
Schwab Target Index Series Institutional	-										-	-	-	-
Asset Allocation	Ticker/ ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Risk Level	Style Diversity	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	SR Rank	(2pt. max)	9/30 2018	6/30 2018	3/31 2018	12/31 2017
Asset Allocation														
Moderate Conservative														
Schwab Target 2020 Index	SWYLYX	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-
Moderate														
Schwab Target 2030 Index	SWYEX	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-
Aggressive														
Schwab Target 2040 Index	SWYGX	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-
Schwab Target 2050 Index	SWYMX	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-
Schwab Target 2060 Index	SWYNX	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-




Eliminate Funds T. Rowe Price Retirement Balanced AND Map to Schwab Target 2015 Index Fund Instl														
Asset Allocation	Ticker/ ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Risk Level	Style Diversity	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	SR Rank	(2pt. max)	9/30 2018	6/30 2018	3/31 2018	12/31 2017
Asset Allocation														
Moderate Conservative														
T. Rowe Price Retirement Balanced	TRRIX	1	0	1	1	1	0	1	1	2	8	7	7	6
		4.2	45.4/54.7	97.3	4.2/5.0	95.0/93.9	-0.28	34.5	26.0		MC	MC	MC	MC
Passive	Ticker/ ID	Style			Peer Group				Qual.	Score				
		Style	Style Drift	R <sup>2</sup>	Tracking Error	TE Rank	Expense Rank	Return Rank	SR Rank	(2pt. max)	9/30 2018	6/30 2018	3/31 2018	12/31 2017
Asset Allocation														
Conservative														
Schwab Target 2015 Index Fund Instl	SWYBX	-	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-




# Considerations

Eliminate Funds Calvert Equity I AND Map to Parnassus Core Equity Institutional														
Active	Ticker/ ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Style	Style Drift	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	Info Ratio Rank	(2pt. max)	9/30 2018	6/30 2018	3/31 2018	12/31 2017
U.S. Equity														
Large Cap Growth														
Calvert Equity I	CEYIX	1	1	1	1	0	0	0	0	1	5	5	5	5
		69.5/84.2	15.0	91.4	9.3/14.3	84.8/85.4	-0.75	60.0	70.0	T	LCG	LCG	LCG	LCG
Active	Ticker/ ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Style	Style Drift	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	Info Ratio Rank	(2pt. max)	9/30 2018	6/30 2018	3/31 2018	12/31 2017
U.S. Equity														
Large Cap Blend														
Parnassus Core Equity Institutional	PRILX	1	0	1	1	0	0	1	1	2	7	9	8	9
		1.8/70.0	29.1	88.2	8.9/12.4	89.9/90.1	-0.38	43.0	35.0		LCB	LCB	LCB	LCB



# Summary of Considerations

Add	Asset Class	Fund	Score
	Group Series	Schwab Target Index Series Institutional	-
	CON-P	Schwab Target 2015 Index Fund Instl	-
	LCB	Parnassus Core Equity Institutional	7

Eliminate	Asset Class	Fund	Score	Action	Asset Class	Fund	Score
	Group Series	T. Rowe Price Retirement Target Date Series	8	map to	Group Series	Schwab Target Index Series Institutional	-
	MC	T. Rowe Price Retirement Balanced	8	map to	CON-P	Schwab Target 2015 Index Fund Instl	-
	LCG	Calvert Equity I	5	map to	LCB	Parnassus Core Equity Institutional	7

Considerations:  Add  Delete  Watchlist

# Parnassus Core Equity Institutional

## Category: Large Cap Blend

PRILX  
9/30/2018

### Fund Strategy

The investment seeks to achieve both capital appreciation and current income. The fund's objective is to achieve both capital appreciation and current income by investing primarily in a diversified portfolio of equity securities. Equity securities include common and preferred stock. Under normal circumstances, the fund will invest a minimum of 80% of its net assets (plus borrowings for investment purposes) in equity securities. At least 75% of the fund's total assets will normally be invested in equity securities that pay interest or dividends.

### Fund Information

Strategy Asset (\$ mm):	16890.00
Share Class Assets (\$ mm):	7475.00
Manager:	Todd C. Ahlsten
Manager Tenure:	17 Years

### Portfolio Statistics

Alpha*:	-0.40	P/E:	26.11
Beta*:	0.86	P/B:	4.65
Std Dev:	8.43	SEC Yield (%):	-
R <sup>2</sup> :	88.00	Turnover:	24.52
as of date 8/31/2018		as of date 9/30/2018	

\*Best fit index: S&P 500 TR USD  
\*3-year statistic: S&P 500 TR USD

### Top 10 Holdings (%)

as of 8/31/2018

CVS Health Corp / CVS	5.01
Walt Disney Co / DIS	4.41
Praxair Inc / PX	4.22
3M Co / MMM	3.95
Mastercard Inc A / MA	3.66
American Express Co / AXP	3.23
United Parcel Service Inc Class B / UPS	3.21
Clorox Co / CLX	3.16
VF Corp / VFC	3.13
Gilead Sciences Inc / GILD	3.06
% in Top 10 Holdings	37.04
# of Holdings	38

### Scorecard System

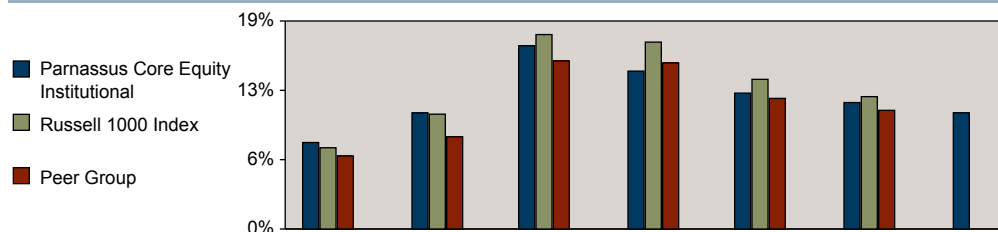
Active Strategies	Ticker	Style			Risk/Return			Peer Group		Qual. (2pt max)	Score 9/30/201
		Style	Style Drift	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	Info Ratio Rank		
Large Cap Blend											
Parnassus Core Equity Institutional	PRILX	1	0	1	1	0	0	1	1	2	7
		1.78/69.97	29.14	88.23	8.90/12.41	89.86/90.10	-0.38	43.00	35.00		LCB

Active Strategies	Score 9/30/2018	Score 6/30/2018	Score 3/31/2018	Score 12/31/2017	Score 9/30/2017	Score 6/30/2017	Score 3/31/2017	Score 12/31/2016
Parnassus Core Equity Institutional	7	9	8	9	9	8	9	9
	LCB	LCB	LCB	LCB	LCB	LCB	LCB	LCB

The Scorecard System methodology incorporates both quantitative and qualitative factors into evaluating fund managers and their investment strategies. To be scored, there is a fund history requirement (5 years for active strategies and 3 years for passive strategies). The scoring system is built around pass/fail criteria, on a scale of 0-10 (with 10 being the best). 80% of the score is quantitative and 20% is qualitative. For Active and Asset Allocation Strategies, the scorecard factors are weighted 30% to style, 30% to risk/return, 20% to peer group rankings and 20% to qualitative factors (manager tenure, expense ratio relative to category average and strength of statistics). For Passive Strategies the scorecard factors are weighted 40% to style, 40% to peer group rankings and 20% to qualitative factors (expense ratio relative to category average, strength of statistics). For active, asset allocation and passive strategies, other significant factors may be considered into a fund's qualitative score. For further explanation of the Scorecard System, please refer to the Scorecard Tutorial.

### Performance Analysis

as of 9/30/2018



	Qtr	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Parnassus Core Equity Institutional	7.90%	10.60%	16.74%	14.42%	12.41%	11.55%	10.61%
Russell 1000 Index	7.42%	10.49%	17.76%	17.07%	13.67%	12.09%	-
Peer Group Performance*	6.67%	8.42%	15.35%	15.17%	11.93%	10.84%	-
Peer Group Rank*	18	17	43	71	50	34	-
Peer Group Size (funds)*	-	-	1383	1196	1058	794	-

\*Morningstar Peer Group: Large Blend

The performance analysis displayed is reflective of past performance. Past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate over time. Current performance may differ from the performance displayed. Investing includes risk, including potential loss of principal. Carefully consider any and all investment objectives, risk factors and charges and expenses before investing. Contact your financial advisor or consultant for fund's current performance and a copy of the most recent prospectus. Contact (800) 959-0071 for most recent month end performance.

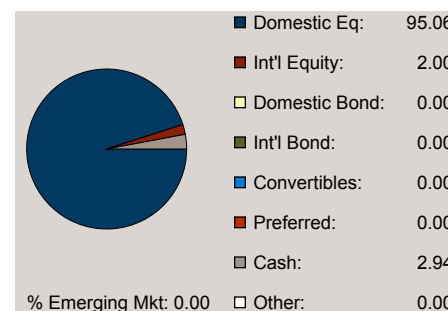
### Sector Allocation

as of 8/31/2018

Comm:	0.00	
Real Estate:	1.85	-
Energy:	2.23	-
Utilities:	2.23	-
Cons Defensive:	7.71	
Basic Materials:	10.11	
Cons Cyclical:	10.52	
Financial Services:	11.96	
Healthcare:	15.50	
Industrials:	18.11	
Technology:	19.79	

### Asset Allocation (%)

as of 8/31/2018



### Additional Information

Prospectus Net Exp. Ratio:	0.64
Prospectus Gross Exp. Ratio:	0.64
Avg Exp Ratio Morningstar (%):	0.95
12b-1 fees (%):	-
Closed - New Inv:	-
Closed - All Inv:	-
Min Investment:	\$100000
Waiver Amt:	-
Waiver Exp Date:	-
Strategy Inception:	8/31/1992
Share Class Inception:	4/28/2006



# Cost Analysis

Plan Sponsors, and those with decision making authority on a plan, have a responsibility to understand the fees paid from plan assets. This responsibility includes confirmation that the fees paid are “reasonable”.

The Benchmarking Report in this Section is provided by an independent organization. The Report compares this plan’s expenses with those of a large number of similar size (assets and participants) plans.

# Total Cost Analysis

Alliance Benefit Group								
Asset Class	Assets		Score	Fund Name	Expense		Revenue Sharing	
	(\$)	(%)			(%)	(\$)	(%)	(\$)
MOD	\$194,358	0.20%	8	T. Rowe Price Retirement 2020	0.61%	\$1,186	0.13%	\$253
MA	\$406,980	0.42%	8	T. Rowe Price Retirement 2030	0.67%	\$2,727	0.13%	\$529
MA	\$295,535	0.30%	8	T. Rowe Price Retirement 2040	0.72%	\$2,128	0.13%	\$384
MA	\$110,391	0.11%	8	T. Rowe Price Retirement 2050	0.72%	\$795	0.13%	\$144
MC	\$10	0.00%	7	T. Rowe Price Retirement Balanced Adv	0.77%	\$0	0.38%	\$0
MC	\$28,830	0.03%	8	T. Rowe Price Retirement Balanced	0.52%	\$150	0.13%	\$37
MOD	\$987,965	1.01%	10	American Funds American Balanced R6	0.28%	\$2,766	0.00%	\$0
LCV	\$9,621,219	9.83%	10	MFS Value R6	0.49%	\$47,144	0.00%	\$0
LCB	\$509,782	0.52%	6	TIAA-CREF Social Choice Eq Instl	0.18%	\$918	0.00%	\$0
LCB	\$3,297,692	3.37%	10	Vanguard 500 Index Admiral	0.04%	\$1,319	0.00%	\$0
LCB	\$5,452,404	5.57%	7	American Funds Fundamental Invs R6	0.30%	\$16,357	0.00%	\$0
LCG	\$1,662,257	1.70%	5	Calvert Equity I	0.71%	\$11,802	0.00%	\$0
LCG	\$11,834,306	12.09%	9	Franklin Growth R6	0.49%	\$57,988	0.00%	\$0
MCV	\$3,212,324	3.28%	7	PGIM QMA Mid-Cap Value R6	0.73%	\$23,450	0.00%	\$0
MCB	\$295,981	0.30%	8	Parnassus Mid Cap Institutional	0.75%	\$2,220	0.08%	\$237
MCG	\$3,221,916	3.29%	8	JPMorgan Mid Cap Equity I	0.89%	\$28,675	0.23%	\$7,410
SCV	\$2,054,344	2.10%	9	Fidelity Advisor Small Cap Value I	0.91%	\$18,695	0.23%	\$4,725
SCG	\$4,395,319	4.49%	10	Janus Henderson Venture N	0.67%	\$29,449	0.00%	\$0
SMCV	\$254,703	0.26%	7	Ariel Fund Institutional	0.71%	\$1,808	0.08%	\$204
IE	\$10,715,556	10.95%	9	American Funds Europacific Growth R6	0.49%	\$52,506	0.00%	\$0
EME	\$1,327,055	1.36%	6	Oppenheimer Developing Markets I	0.88%	\$11,678	0.00%	\$0
CFI	\$6,745,447	6.89%	10	Baird Aggregate Bond Inst	0.30%	\$20,236	0.03%	\$2,024
UGT	\$3,940,595	4.03%	7	BlackRock Inflation Protected Bond K	0.34%	\$13,398	0.00%	\$0
HY	\$1,118,733	1.14%	9	Eaton Vance High Income Opportunities I	0.61%	\$6,824	0.13%	\$1,454
GFI	\$2,681,451	2.74%	8	Templeton Global Bond R6	0.56%	\$15,016	0.00%	\$0
SV	\$19,463,526	19.89%	-	Metlife Stable Value Class 0	0.00%	\$0	0.00%	\$0
MM	\$111	0.00%	-	Schwab Money Market	0.00%	\$0	0.00%	\$0
REI	\$2,236,119	2.29%	10	Cohen & Steers Instl Realty Shares	0.75%	\$16,771	0.08%	\$1,789
CBB	\$1,794,901	1.83%	8	PIMCO Commodity Real Ret Strat Instl	1.24%	\$22,257	0.00%	\$0
Totals	\$97,859,809	100.00%			%	\$		

# Total Cost Analysis

Alliance Benefit Group							
Asset Class	Assets (\$)	Assets (%)	Score	Fund Name	Expense (%)	Expense (\$)	Revenue Sharing (%) (\$)
Weighted Investment Expense					0.42%	\$408,262	0.02% \$19,190
Asset-Based Fees					0.30%	\$293,580	
Billed Fees					0.00%	\$0	
<b>TOTALS</b>					<b>0.72%</b>	<b>\$701.842</b>	

Information is for illustrative purposes only and cannot be guaranteed now or in the future.

## Fee Detail- City of Madison

### Administration Fees

Annual Base Fee			Included
Annual Compliance Fee			Included
Asset Based Admin Fee	0.10%	x \$97,859,809	\$97,860
Annual Advisor Fee	0.05%	x \$97,859,809	\$48,930
Custody			<u>Included</u>

### Total Administration Fees

\$146,790 0.15%

### Advisor Fees

Annual Participant Education Fee	0.15%	x \$97,859,809	<u>\$146,790</u>	0.15%
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### Total Annual Fee

\$293,579 0.30%

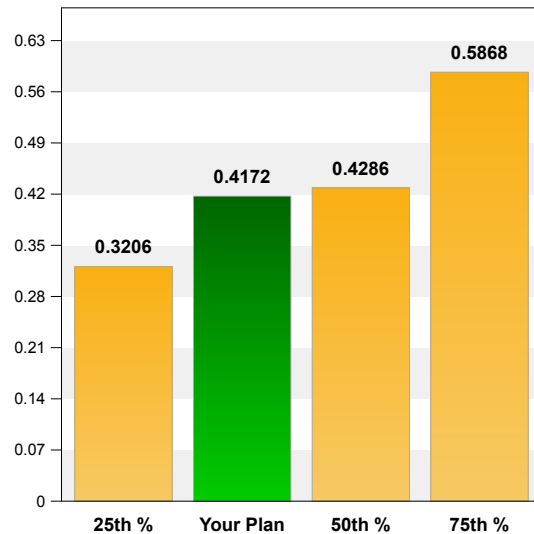
# PLAN COMPARISON | AXIS UNIVERSE OF AVERAGES REPORT

**Your Plan:** City of Madison Deferred Compensation Plan  
**Plan Asset Value:** \$97,859,809  
**Number of Participants:** 1,094

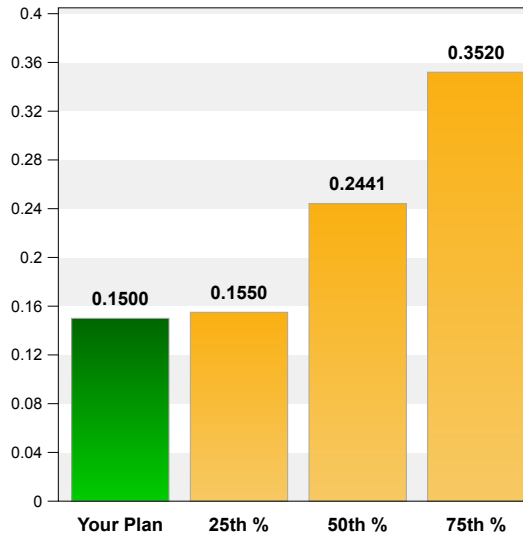
**AXIS Universe Band:** 283 Plans  
**Plan Asset Value:** \$50 Million to \$100 Million  
**Number of Participants:** 1,000 - 5,000

	Plan Cost (Dollars)	Plan Cost (%)	AXIS Universe (Dollars)	AXIS Universe (%)
Fund Expense Fees	\$408,271	0.4172	\$419,427	0.4286
Recordkeeping and Administration Fees	\$146,790	0.1500	\$238,876	0.2441
Advisor Fees	\$146,790	0.1500	\$141,701	0.1448
<b>Total Fees</b>	<b>\$701,851</b>	<b>0.7172</b>	<b>\$800,004</b>	<b>0.8175</b>
Average Fee per Participant	\$642	0.0007	\$731	0.0007

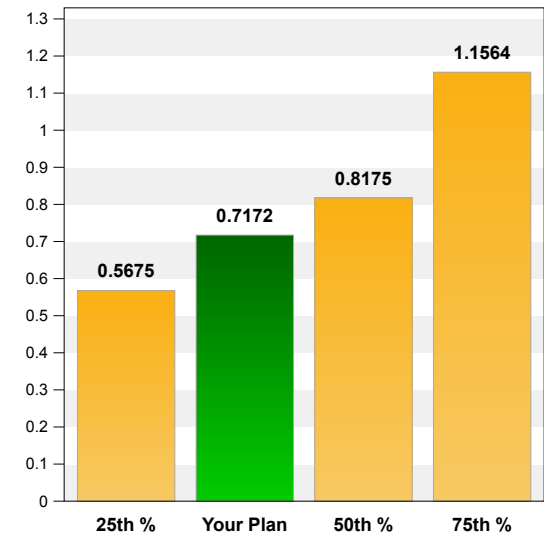
Fund Expense Fees



Recordkeeping and Administration Fees



Total Fees\*



\* Total Fees are calculated using Fund Expense, Recordkeeping and Administration, and Advisor Fees.

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# Committee Topics

As time permits, these items may be topics of discussion during the meeting.



## Summary of Plan Activity

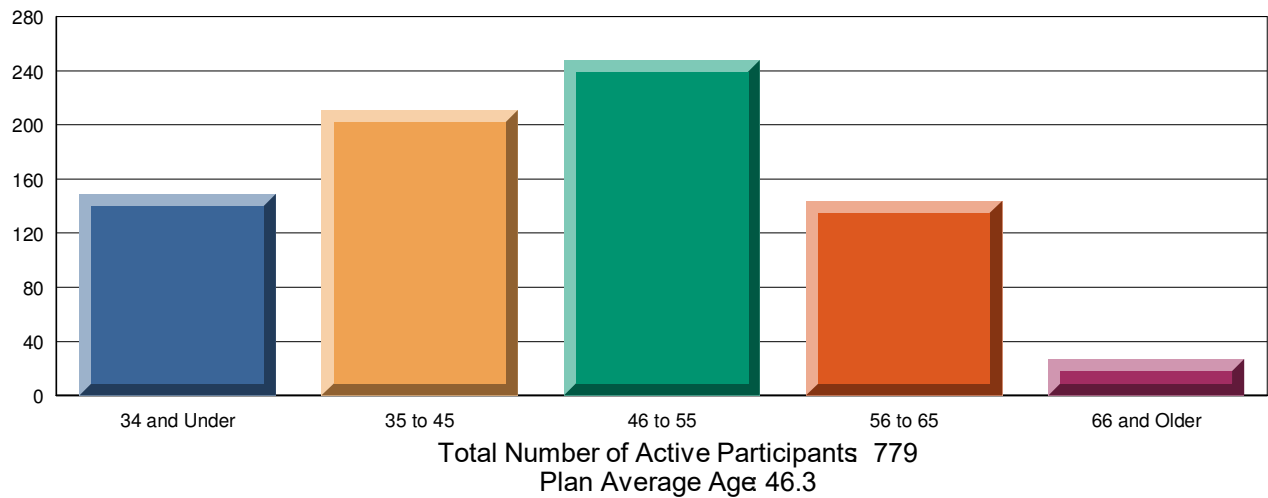
<b>Ending Balance as of September 30, 2016</b>	<b>\$81,775,186.50</b>
<b>Ending Balance as of September 29, 2017</b>	<b>\$91,541,028.25</b>
<b>Beginning Balance as of September 30, 2017</b>	<b>\$91,541,028.25</b>
Employee Contributions	3,769,989.83
Employer Contributions	
Transfers and Rollovers	388,009.62
Withdrawals	(4,788,349.14)
Forfeitures	0.00
Earnings	7,181,604.99
Other	34,701.36
Expenses	(267,176.31)
<b>Ending Balance as of September 30, 2018</b>	<b>\$97,859,808.60</b>
<b>Vested Balance as of September 30, 2018</b>	<b>\$97,859,808.60</b>

At the beginning of the period there were 1,077 participants with account balances. During the period 740 made contributions, 64 entered the plan and 45 left the plan. As of the end of the period, there are 1,096 participants with account balances.

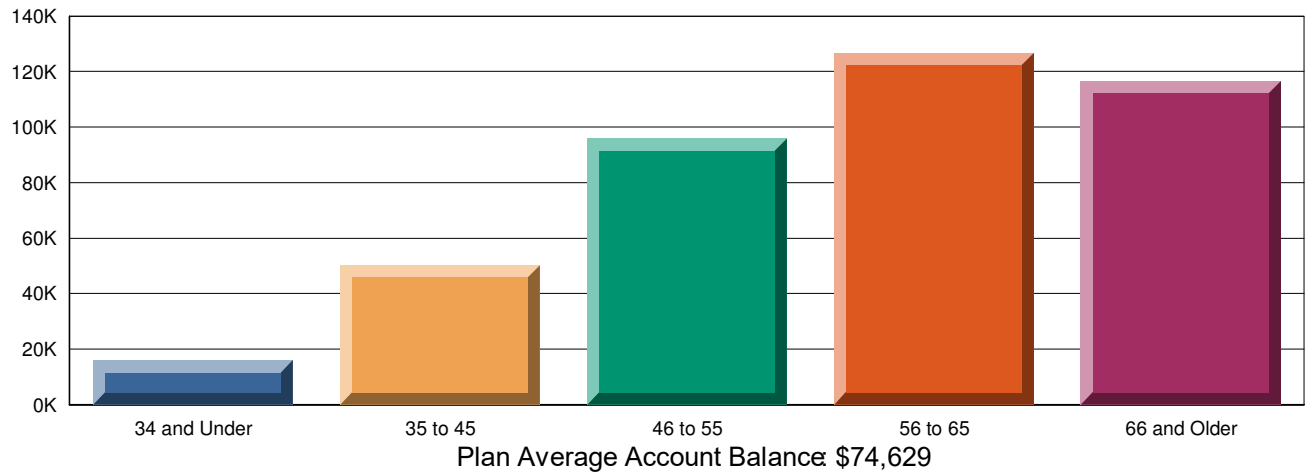
*For additional information, or participant level details, please visit our Plan Sponsor website at [www.abgil.com](http://www.abgil.com). If you should need assistance, please contact your designated Account Manager at 800-242-2356. We appreciate your business. Thank you for choosing ABG!*

# Participation Summary

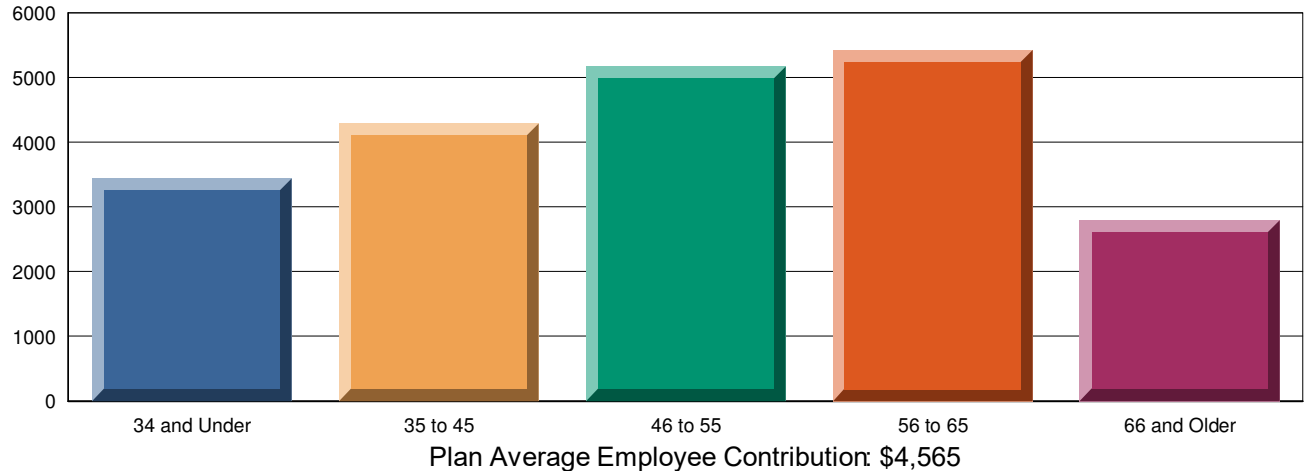
Number of Active Participants



Average Account Balance of Active Participants

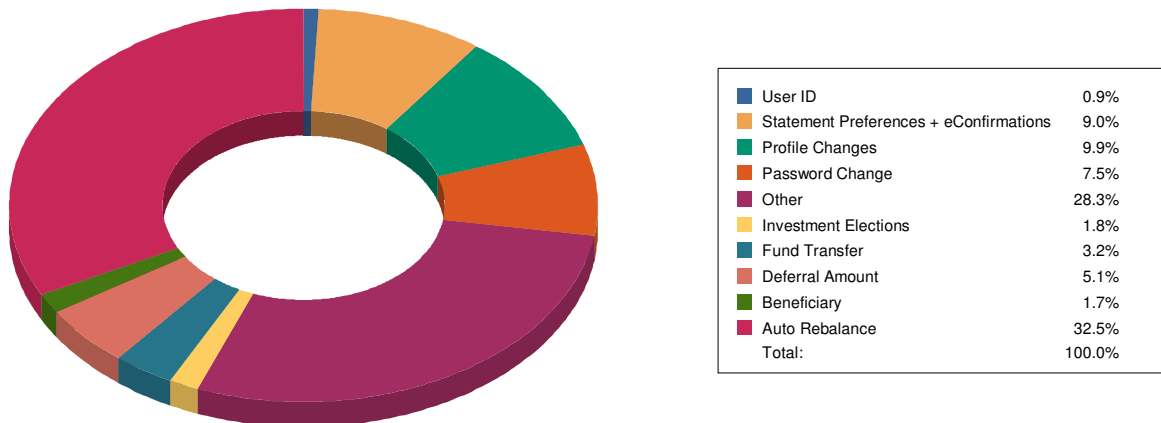


Average Amount Contributed During Report Period by Active Participants



# Web/VRU Activity Summary

This chart represents participant initiated Web/VRU transactions from September 30, 2017 through September 30, 2018 as a percentage of all participant initiated transactions.



Description	Participants	Transactions	Percentage
User ID	27	27	0.9%
Statement Preferences + eConfirmations	76	262	9.0%
Profile Changes	85	288	9.9%
Password Change	151	218	7.5%
Other	375	821	28.3%
Investment Elections	36	51	1.8%
Fund Transfer	47	94	3.2%
Deferral Amount	83	149	5.1%
Beneficiary	44	48	1.7%
Auto Rebalance	473	942	32.5%
	<b>678</b>	<b>2,900</b>	<b>100.0%</b>

July	<b>Thursday</b>	7/5 9:30am - 11am 7/5 11:30am - 1pm 7/5 1:30pm-3pm	<b>Station 10</b> <b>Station 8</b> <b>Traffic Engineering</b>	1517 Troy Dr. 3945 Lien Rd. 1120 Sayle St.
	<b>Tuesday</b>	7/10 9am - 10:30am 7/10 11am-12:30pm 7/10 1pm-2:30pm	<b>Station 12</b> <b>Station 7</b> <b>Station 9</b>	400 S Point Rd. 1810 McKenna Blvd 201 N Midvale Blvd
	<b>Wednesday</b>	7/11 12pm - 3pm	HR	CCB
	<b>Wednesday</b>	7/18 11am - 12:30pm 7/18 2pm-4pm	<b>Station 9</b> <b>MPD West</b>	201 Midvale Blvd 1710 McKenna Blvd
	<b>Wednesday</b>	7/25 9am - 10:30am 7/25 11am-12:30pm 7/25 1pm - 4pm	<b>Station 9</b> <b>Station 4</b> <b>Metro</b>	201 Midvale Blvd 1437 Monroe St. 1101 E Washington
August	<b>Friday</b>	8/3 8:30am-10:30am 8/3 11am-12:30pm 8/3 1pm-3pm	<b>MPD East</b> <b>Station 10</b> <b>MPD North</b>	809 S Thompson Dr. 1517 Troy Dr. 2033 Londonderry Dr.
	<b>Wednesday</b>	8/8 12pm - 3pm	HR	CCB
	<b>Thursday</b>	8/9 10am-12pm 8/9 2pm-4pm	<b>Central Library</b> <b>MPD Central</b>	201 W Mifflin St. 211 N Carroll St.
	<b>Thursday</b>	8/16 10am - 11:30am 8/16 12pm - 1:30pm	<b>Station 7</b> <b>Station 3</b>	1810 McKenna Blvd 1217 Williamson St.
	<b>Thursday</b>	8/23 9am-11pm 8/23 11:30am-1pm 8/23 1:30pm-3:30pm	<b>MPD South</b> <b>Station 6</b> <b>Parks West</b>	825 Hughes Pl 825 W Badger 1402 Wingra Creek
	<b>Tuesday</b>	8/28 11:30am-1pm 8/28 1:30pm - 3pm	<b>Station 6</b> <b>Streets East</b>	825 W Badger Rd 4602 Sycamore st.
September	<b>Thursday</b>	9/6 9:30am-11pm 9/6 11:30am - 1pm 9/6 1:30pm-3pm	<b>Station 7</b> <b>Station 2</b> <b>Streets West</b>	1810 McKenna Blvd 421 Grand Canyon 1501 W Badger Rd.
	<b>Wednesday</b>	9/12 9:30am - 11am 9/12 11:30am - 1pm 9/12 12pm -3pm	<b>Station 1</b> <b>Station 4</b> HR	316 W Dayton St. 1437 Monroe St CCB
	<b>Thursday</b>	9/20 10:30AM - 12PM 9/20 12:30am - 2pm 9/20 2:30pm-4:30pm	<b>Station 4</b> <b>Station 3</b> <b>Water Utility</b>	1437 Monroe St. 1217 Williamson St. 921 E Main Street
	<b>Thursday</b>	9/27 8am-10:30am 9/27 11am-12:30pm 9/27 12:30pm-2pm	<b>Water Utility (Olin)</b> <b>Station 1</b> <b>Fire Admin</b>	119 E Olin 316 W Dayton W Dayton
October	<b>Wednesday</b>	10/3 9:30am-11am 10/3 11:30am - 1pm 10/3 1:30pm-2:30pm	<b>Station 4</b> <b>Station 3</b> <b>Traffic Engineering</b>	1437 Monroe St. 1217 Williamson St. 1120 Sayle St.
	<b>Tuesday</b>	10/9 9:30am-11am 10/9 11:30am-1pm	<b>Station 5</b> <b>Station 6</b>	4418 Cottage Grove Rd. 825 W Badger Rd

		10/9 3pm-4:30pm	Construction Engineering	1602 Emil St.
	Wednesday	10/10 12pm - 3pm	HR	CCB
	Wednesday	10/17 9:30am - 11am	Station 5	825 W Badger Rd
		10/17 11:30am - 1pm	Station 6	4418 Cottage Grove Rd
	Wednesday	10/24 10am - 11:30am	Station 2	421 Grand Canyon Dr.
		10/24 12pm-1:30pm	Station 7	1810 McKenna Blvd
		10/24 2pm-4pm	MPD West	1710 McKenna Blvd
	Tuesday	10/30 9:30am - 11am	Station 11	4011 Morgan Way
		10/30 11:30am - 1pm	Station 13	6350 Town Center Dr.
		10/30 1:30pm - 3pm	Station 8	3945 Lien Rd.
November	Wednesday	11/7 9am-11am	MPD North	2033 Londonderry Dr.
		11/7 11am-12:30pm	Station 10	Troy Dr.
		11/7 1pm - 2:30	Station 8	3945 Lien Rd.
		11/7 12pm - 3pm	HR	CCB
		11/7 2:45pm-4:30pm	Water Utility	921 E Main Street
	Tuesday	11/13 9am-11pm	MPD East	809 S Thompson Dr.
		11/13 11:30am - 1pm	Station 13	6350 Town Center Dr.
	Tuesday	11/20 9am - 11am	Station 8	3945 Lien Rd.
	Tuesday	11/27 9am-11am	MPD Central	211 N Carroll
		11/27 11:30am-1pm	Station 11	4011 Morgan Way
December	Wednesday	12/5 9:30am - 11:30am	Fleet Services	200 N First St.
		12/5 12pm - 3pm	Metro	1101 E Washington Ave
	Wednesday	12/12 9am - 10:30am	Station 9	201 Midvale Blvd
		12/12 10:45am - 12:30pm	Monona Terrace	1 John Nolen Dr.
		12/12 12pm - 3pm	HR	CCB
		12/12 1pm-3pm	Streets East	4602 Sycamore St.
	Wednesday	12/19 11am - 12:30pm	Station 9	201 Midvale Blvd
		12/5 1:30pm-3:30pm	Parks West	1402 Wingra Creek

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# Appendix

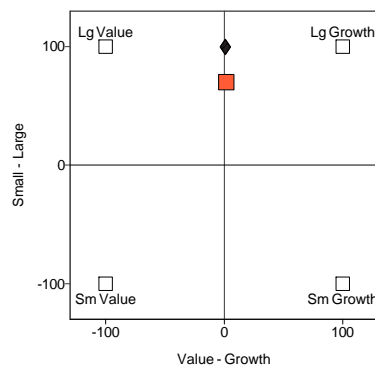
The Appendix includes background data and in depth information supporting the report and fund considerations presented.

Returns Analysis	QTR	YTD	1 Yr	3 Yr Ann.	5 Yr Ann.	10 Yr Ann.	Since Inception	Manager Name	Manager Tenure (Years)	Fund Inception	Net Exp. Ratio	Gross Exp. Ratio
■ Parnassus Core Equity Institutional	7.90	10.60	16.74	14.42	12.41	11.55	10.61	Todd C. Ahlsten	17.43	08/31/1992	0.64	0.64
◆ Russell 1000 Index	7.42	10.49	17.76	17.07	13.67	12.09						
Large Cap Blend Average	6.43	7.65	14.17	14.66	11.36	10.25					0.99	1.09

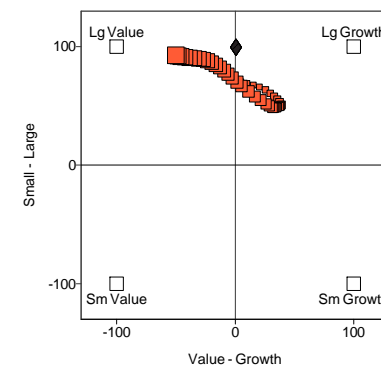
Calendar Year Returns	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD
■ Parnassus Core Equity Institutional	28.96	9.10	3.38	15.64	34.15	14.70	-0.33	10.60	16.81	10.60
◆ Russell 1000 Index	28.43	16.10	1.50	16.42	33.11	13.24	0.92	12.05	21.69	10.49
Large Cap Blend Average	29.18	13.75	-1.50	14.91	31.85	10.49	-0.80	10.23	20.11	7.65

Scorecard - Active	Ticker/ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Style	Style Drift	R <sup>2</sup>	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	(2pt. max)	09/28 2018	06/29 2018	03/29 2018	12/29 2017
Parnassus Core Equity Institutional	PRILX	1	0	1	1	0	0	1	1	2	7	9	8	9
		1.78/69.97	29.14	88.23	8.90/12.41	89.86/90.10	-0.38	43.00	35.00		LCB	LCB	LCB	LCB

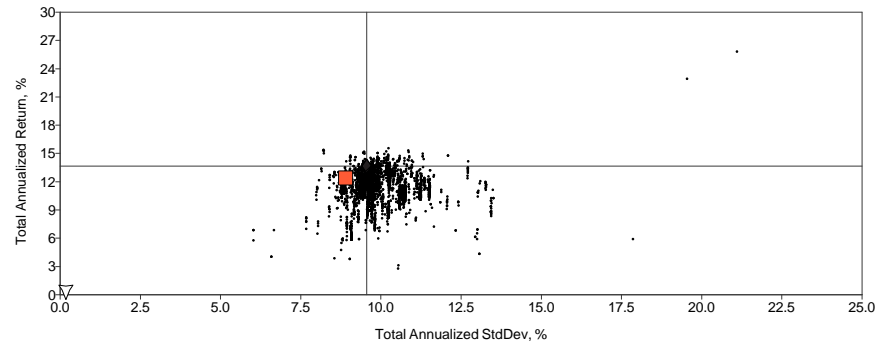
## Average Style Oct 13 - Sep 18



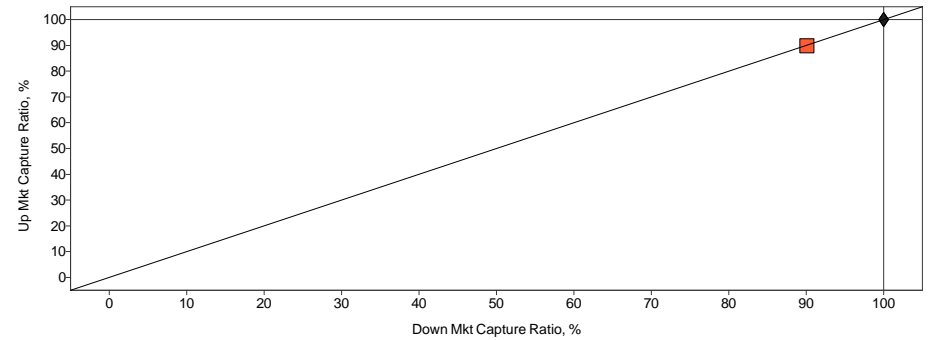
## Style Drift 36 Month rolling windows, Oct 13 - Sep 18



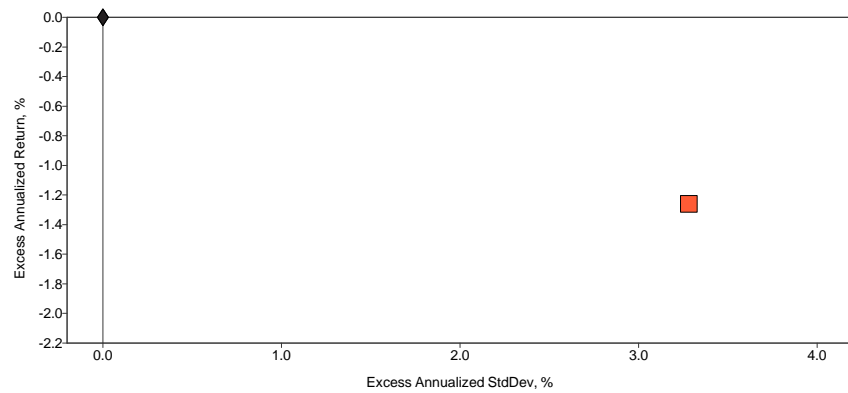
Risk / Return *Single Computation, Oct 13 - Sep 18*



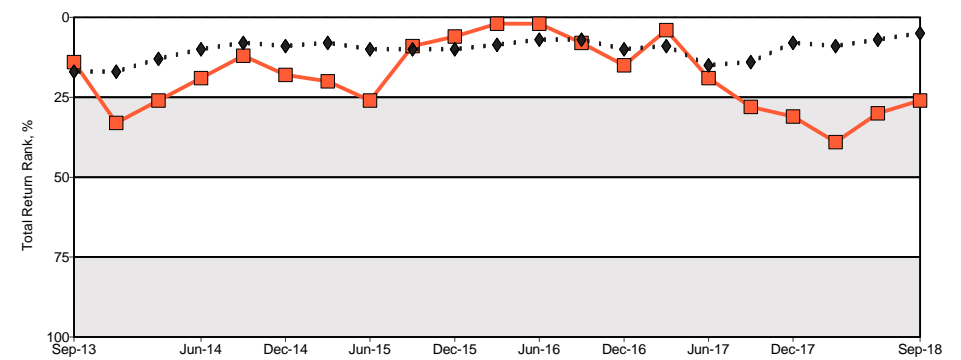
Up/Down Capture *Oct 13 - Sep 18*



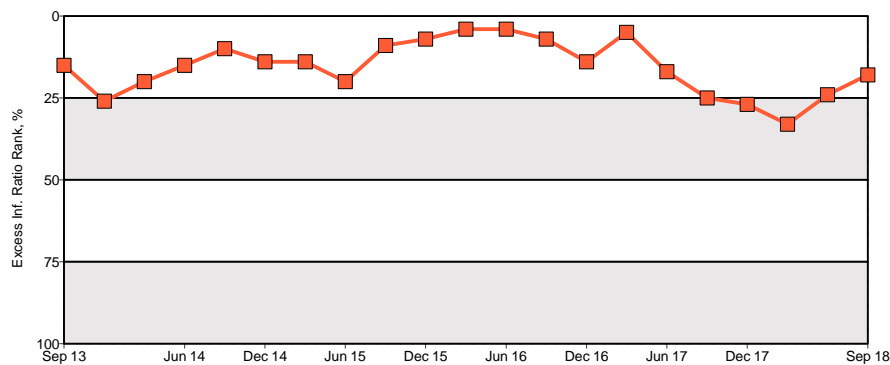
Relative Risk Return *Oct 13 - Sep 18*



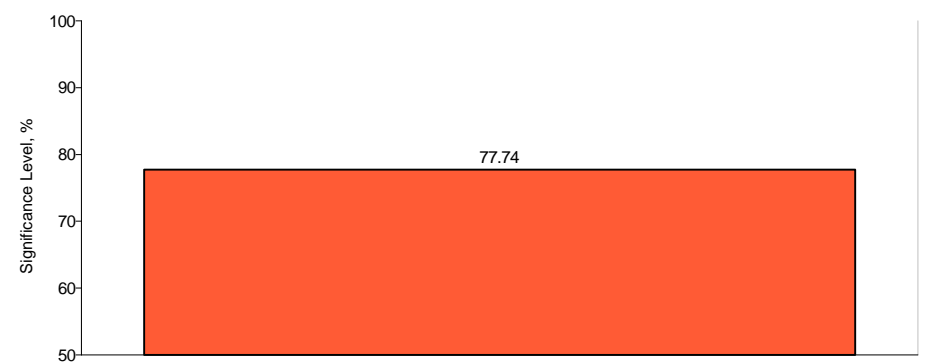
Rolling 5 Year Return Rank *20 quarter rolling windows, Oct 08 - Sep 18*



Rolling 5 Year Information Ratio Rank *20 quarter rolling windows, Oct 08 - Sep 18*



Significance Level *Oct 13 - Sep 18*



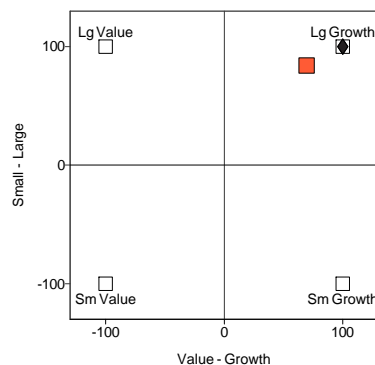


Returns Analysis	QTR	YTD	1 Yr	3 Yr Ann.	5 Yr Ann.	10 Yr Ann.	Since Inception	Manager Name	Manager Tenure (Years)	Fund Inception	Net Exp. Ratio	Gross Exp. Ratio
Calvert Equity I	8.54	14.97	23.06	16.16	14.25	12.01	8.69	Lance V. Garrison	3.29	08/24/1987	0.71	0.71
Russell 1000 Growth Index	9.17	17.09	26.30	20.55	16.58	14.31						
Large Cap Growth Average	7.12	15.86	23.06	17.86	14.16	12.48					1.03	1.17

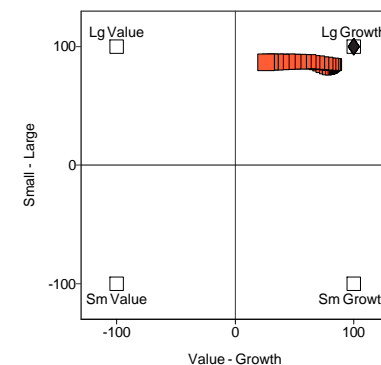
Calendar Year Returns	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD
Calvert Equity I	34.21	17.86	-1.70	16.14	31.17	11.57	4.19	2.71	26.24	14.97
Russell 1000 Growth Index	37.21	16.71	2.64	15.26	33.48	13.05	5.67	7.08	30.21	17.09
Large Cap Growth Average	37.07	14.99	-2.19	15.88	34.06	10.04	4.55	2.96	28.36	15.86

Scorecard - Active	Ticker/ID	Style			Risk/Return			Peer Group		Qual.	Score			
		Style	Style Drift	R <sup>2</sup>	Risk/Return	Up/Down	Info Ratio	Return Rank	Info Ratio Rank	(2pt. max)	09/28 2018	06/29 2018	03/29 2018	12/29 2017
Calvert Equity I	CEYIX	1	1	1	1	0	0	0	0	1	5	5	5	5
		69.53/84.19	15.03	91.35	9.25/14.25	84.81/85.42	-0.75	60.00	70.00	T	LCG	LCG	LCG	LCG

## Average Style Oct 13 - Sep 18

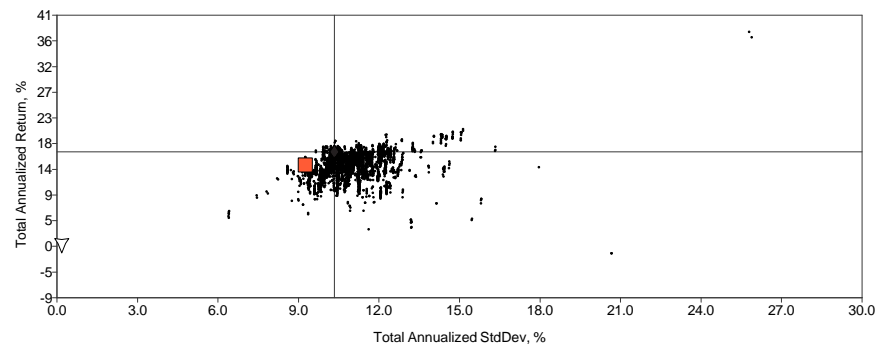


## Style Drift 36 Month rolling windows, Oct 13 - Sep 18



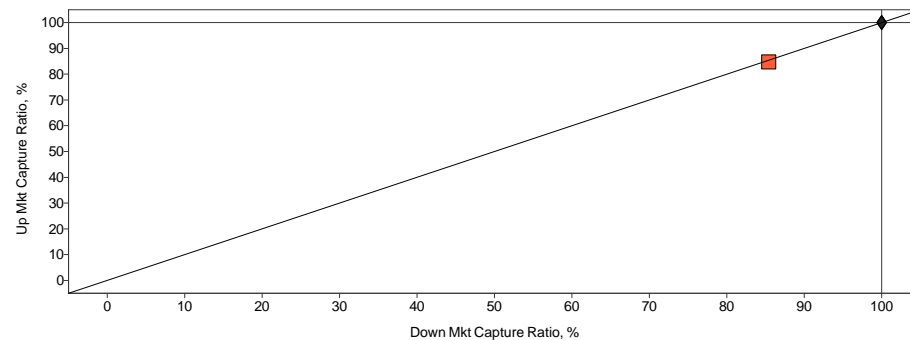
Risk / Return

Single Computation, Oct 13 - Sep 18



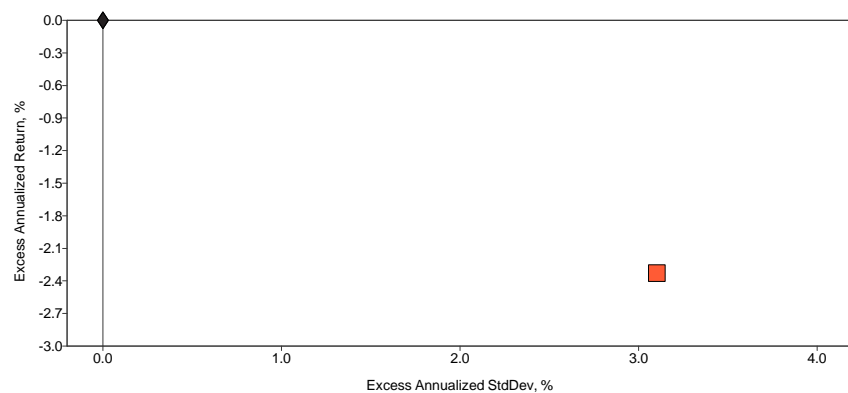
Up/Down Capture

Oct 13 - Sep 18



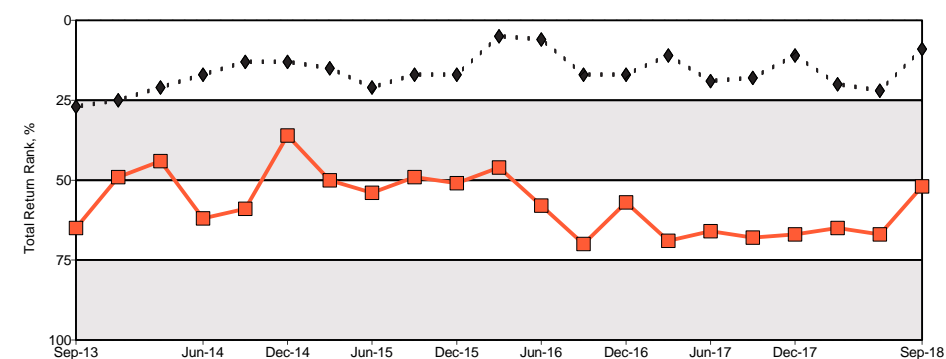
Relative Risk Return

Oct 13 - Sep 18



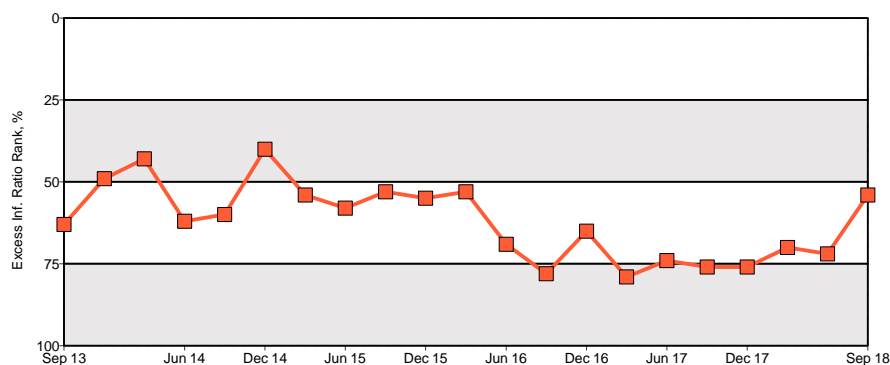
Rolling 5 Year Return Rank

20 quarter rolling windows, Oct 08 - Sep 18



Rolling 5 Year Information Ratio Rank

20 quarter rolling windows, Oct 08 - Sep 18



Significance Level

Oct 13 - Sep 18



# Parnassus Core Equity Institutional

## Category: Large Cap Blend

PRILX  
9/30/2018

### Fund Strategy

The investment seeks to achieve both capital appreciation and current income. The fund's objective is to achieve both capital appreciation and current income by investing primarily in a diversified portfolio of equity securities. Equity securities include common and preferred stock. Under normal circumstances, the fund will invest a minimum of 80% of its net assets (plus borrowings for investment purposes) in equity securities. At least 75% of the fund's total assets will normally be invested in equity securities that pay interest or dividends.

### Fund Information

Strategy Asset (\$ mm):	16890.00
Share Class Assets (\$ mm):	7475.00
Manager:	Todd C. Ahlsten
Manager Tenure:	17 Years

### Portfolio Statistics

Alpha*:	-0.40	P/E:	26.11
Beta*:	0.86	P/B:	4.65
Std Dev:	8.43	SEC Yield (%):	-
R <sup>2</sup> *:	88.00	Turnover:	24.52
as of date 8/31/2018		as of date 9/30/2018	

\*Best fit index: S&P 500 TR USD  
\*3-year statistic: S&P 500 TR USD

### Top 10 Holdings (%)

as of 8/31/2018

CVS Health Corp / CVS	5.01
Walt Disney Co / DIS	4.41
Praxair Inc / PX	4.22
3M Co / MMM	3.95
Mastercard Inc A / MA	3.66
American Express Co / AXP	3.23
United Parcel Service Inc Class B / UPS	3.21
Clorox Co / CLX	3.16
VF Corp / VFC	3.13
Gilead Sciences Inc / GILD	3.06
% in Top 10 Holdings	37.04
# of Holdings	38

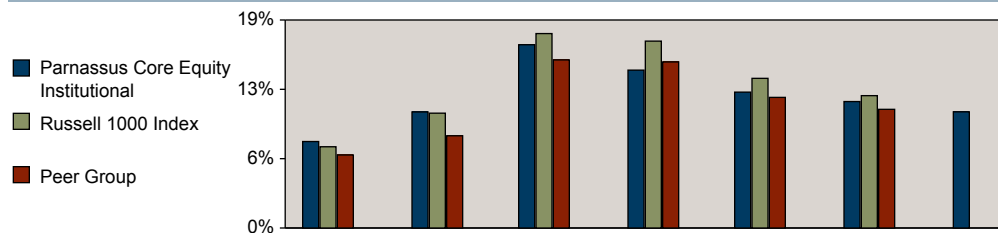
### Scorecard System

Active Strategies	Ticker	Style			Risk/Return			Peer Group		Qual. (2pt max)	Score 9/30/2018
		Style	Style Drift	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	Info Ratio Rank		
Large Cap Blend											
Parnassus Core Equity Institutional	PRILX	1	0	1	1	0	0	1	1	2	7
		1.78/69.97	29.14	88.23	8.90/12.41	89.86/90.10	-0.38	43.00	35.00		LCB
Active Strategies	Score 9/30/2018	Score 6/30/2018	Score 3/31/2018	Score 12/31/2017	Score 9/30/2017	Score 6/30/2017	Score 3/31/2017	Score 12/31/2016			
Parnassus Core Equity Institutional	7	9	8	9	9	8	9	9			
	LCB	LCB	LCB	LCB	LCB	LCB	LCB	LCB			

The Scorecard System methodology incorporates both quantitative and qualitative factors into evaluating fund managers and their investment strategies. To be scored, there is a fund history requirement (5 years for active strategies and 3 years for passive strategies). The scoring system is built around pass/fail criteria, on a scale of 0-10 (with 10 being the best). 80% of the score is quantitative and 20% is qualitative. For Active and Asset Allocation Strategies, the scorecard factors are weighted 30% to style, 30% to risk/return, 20% to peer group rankings and 20% to qualitative factors (manager tenure, expense ratio relative to category average and strength of statistics). For Passive Strategies the scorecard factors are weighted 40% to style, 40% to peer group rankings and 20% to qualitative factors (expense ratio relative to category average, strength of statistics). For active, asset allocation and passive strategies, other significant factors may be considered into a fund's qualitative score. For further explanation of the Scorecard System, please refer to the Scorecard Tutorial.

### Performance Analysis

as of 9/30/2018



	Qtr	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Parnassus Core Equity Institutional	7.90%	10.60%	16.74%	14.42%	12.41%	11.55%	10.61%
Russell 1000 Index	7.42%	10.49%	17.76%	17.07%	13.67%	12.09%	-
Peer Group Performance*	6.67%	8.42%	15.35%	15.17%	11.93%	10.84%	-
Peer Group Rank*	18	17	43	71	50	34	-
Peer Group Size (funds)*	-	-	1383	1196	1058	794	-

\*Morningstar Peer Group: Large Blend

The performance analysis displayed is reflective of past performance. Past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate over time. Current performance may differ from the performance displayed. Investing includes risk, including potential loss of principal. Carefully consider any and all investment objectives, risk factors and charges and expenses before investing. Contact your financial advisor or consultant for fund's current performance and a copy of the most recent prospectus. Contact (800) 959-0071 for most recent month end performance.

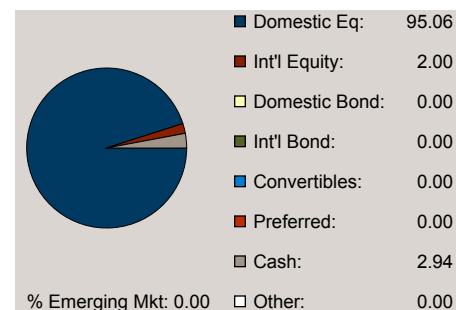
### Sector Allocation

as of 8/31/2018

Comm:	0.00	
Real Estate:	1.85	-
Energy:	2.23	-
Utilities:	2.23	-
Cons Defensive:	7.71	
Basic Materials:	10.11	
Cons Cyclical:	10.52	
Financial Services:	11.96	
Healthcare:	15.50	
Industrials:	18.11	
Technology:	19.79	

### Asset Allocation (%)

as of 8/31/2018



### Additional Information

Prospectus Net Exp. Ratio:	0.64
Prospectus Gross Exp. Ratio:	0.64
Avg Exp Ratio Morningstar (%):	0.95
12b-1 fees (%):	-
Closed - New Inv:	-
Closed - All Inv:	-
Min Investment:	\$100000
Waiver Amt:	-
Waiver Exp Date:	-
Strategy Inception:	8/31/1992
Share Class Inception:	4/28/2006

# Calvert Equity I

## Category: Large Cap Growth

CEYIX  
9/30/2018

### Fund Strategy

The investment seeks growth of capital through investment in stocks believed to offer opportunities for potential capital appreciation. The fund normally invests at least 80% of its net assets, including borrowings for investment purposes, in equity securities (common stock). It invests primarily in common stocks of U.S. large-cap companies. The managers define large-cap companies as those whose market capitalization falls within the range of the Russell 1000 Index at the time of investment.

### Fund Information

Strategy Asset (\$ mm):	2411.00
Share Class Assets (\$ mm):	962.00
Manager:	Lance V. Garrison
Manager Tenure:	3 Years

### Portfolio Statistics

Alpha*:	1.21	P/E:	28.75
Beta*:	0.74	P/B:	5.55
Std Dev:	8.82	SEC Yield (%):	-
R <sup>2</sup> *:	90.90	Turnover:	29.00
as of date 7/31/2018		as of date 9/30/2018	

\*Best fit index: Morningstar US Large Growth TR USD  
\*3-year statistic: Morningstar US Large Growth TR USD

### Top 10 Holdings (%)

as of 7/31/2018

Thermo Fisher Scientific Inc / TMO	4.88
Danaher Corp / DHR	4.66
Alphabet Inc Class C / GOOG	4.62
Visa Inc Class A / V	4.60
Microsoft Corp / MSFT	4.60
Praxair Inc / PX	3.86
Dollar General Corp / DG	3.63
Zoetis Inc Class A / ZTS	3.61
Mastercard Inc A / MA	3.45
Intuit Inc / INTU	3.36
% in Top 10 Holdings	41.25
# of Holdings	86

### Scorecard System

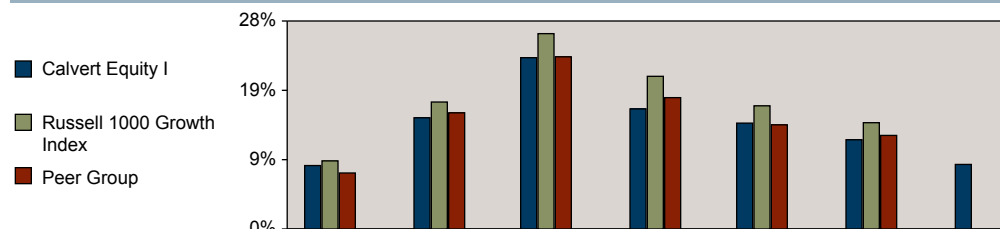
Active Strategies	Ticker	Style			Risk/Return			Peer Group		Qual. (2pt max)	Score 9/30/201
		Style	Style Drift	R <sup>2</sup>	Risk / Return	Up / Down	Info Ratio	Return Rank	Info Ratio Rank		
Large Cap Growth											
Calvert Equity I	CEYIX	1	1	1	1	0	0	0	0	1	5
		69.53/ 84.19	15.03	91.35	9.25/ 14.25	84.81/ 85.42	-0.75	60.00	70.00	T	LCG

Active Strategies	Score 9/30/2018	Score 6/30/2018	Score 3/31/2018	Score 12/31/2017	Score 9/30/2017	Score 6/30/2017	Score 3/31/2017	Score 12/31/2016
Calvert Equity I	5	5	5	5	6	7	6	6
	LCG	LCG	LCG	LCG	LCG	LCG	LCG	LCG

The Scorecard System methodology incorporates both quantitative and qualitative factors into evaluating fund managers and their investment strategies. To be scored, there is a fund history requirement (5 years for active strategies and 3 years for passive strategies). The scoring system is built around pass/fail criteria, on a scale of 0-10 (with 10 being the best). 80% of the score is quantitative and 20% is qualitative. For Active and Asset Allocation Strategies, the scorecard factors are weighted 30% to style, 30% to risk/return, 20% to peer group rankings and 20% to qualitative factors (manager tenure, expense ratio relative to category average and strength of statistics). For Passive Strategies the scorecard factors are weighted 40% to style, 40% to peer group rankings and 20% to qualitative factors (expense ratio relative to category average, strength of statistics). For active, asset allocation and passive strategies, other significant factors may be considered into a fund's qualitative score. For further explanation of the Scorecard System, please refer to the Scorecard Tutorial.

### Performance Analysis

as of 9/30/2018



	Qtr	YTD	1 Year	3 Year	5 Year	10 Year	Since Inception
Calvert Equity I	8.54%	14.97%	23.06%	16.16%	14.25%	12.01%	8.69%
Russell 1000 Growth Index	9.17%	17.09%	26.30%	20.55%	16.58%	14.31%	-
Peer Group Performance*	7.54%	15.64%	23.18%	17.68%	14.02%	12.60%	-
Peer Group Rank*	28	54	52	72	52	64	-
Peer Group Size (funds)*	-	-	1430	1258	1129	818	-

\*Morningstar Peer Group: Large Growth

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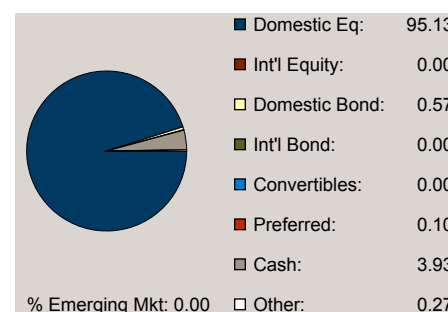
### Sector Allocation

as of 7/31/2018

Energy:	0.00
Utilities:	0.00
Real Estate:	1.05
Comm:	4.17
Basic Materials:	7.24
Cons Cyclical:	7.60
Cons Defensive:	10.92
Industrials:	11.15
Financial Services:	15.86
Healthcare:	18.72
Technology:	23.29

### Asset Allocation (%)

as of 7/31/2018



### Additional Information

Prospectus Net Exp. Ratio:	0.71
Prospectus Gross Exp. Ratio:	0.71
Avg Exp Ratio Morningstar (%):	1.08
12b-1 fees (%):	-
Closed - New Inv:	-
Closed - All Inv:	-
Min Investment:	\$250000
Waiver Amt:	0.02
Waiver Exp Date:	1/31/2019
Strategy Inception:	8/24/1987
Share Class Inception:	11/1/1999