### STATE OF RHODE ISLAND INVESTMENT COMMISSION MEETING

DATA AT April 30<sup>th</sup>, 2017

May 24th, 2017 MEETING

#### MEMBERS OF THE STATE INVESTMENT COMMISSION

#### Honorable Seth Magaziner, Chair

Mr. Robert K. Benson Ms. Marie Langlois
Mr. J. Michael Costello Ms. Sylvia Maxfield
Mr. Thomas P. Fay Mr. Thomas Mullaney
Mr. Frank J. Karpinski Ms. Marcia Reback



Agenda



#### State of Rhode Island and Providence Plantations Office of the General Treasurer

Seth Magaziner General Treasurer

### RHODE ISLAND STATE INVESTMENT COMMISSION MEETING NOTICE

The next meeting of the Rhode Island State Investment Commission has been scheduled for Wednesday May 24<sup>th</sup>, 2017 at 9:00 a.m. in Room 205 of the State House.

#### **AGENDA**

- Chairperson Call to Order
- Membership Roll Call
- Approval of Minutes
  - State Investment Commission Meeting held on April 26<sup>th</sup> 2017\*
- Private Equity Re-Up Recommendation\*
  - Cliffwater, Tom Lynch
  - CVC, Esther Rombaut and Lars Haegg
- Review and Consideration of Crisis Protection Class, Systematic Trend Following Investment Policy Statement\*
  - Pension Consulting Alliance
- Review and Consideration of Crisis Protection Class, Platform Manager Investment Policy Statement\*
  - Pension Consulting Alliance
- CollegeBound 529 Update
  - Capital Cities, Tiffany Spudich
- 401(a) Quarterly Update
  - TIAA, Larry Brown and David Iden
- Legal Counsel Report
- Chief Investment Officer Report
  - Portfolio Performance
- Treasurer's General Comments

<sup>\*</sup> Commission members may be asked to vote on this item.



#### State of Rhode Island and Providence Plantations Office of the General Treasurer

Seth Magaziner General Treasurer

#### POSTED ON May 19th, 2017

Anyone wishing to attend this meeting who may have special needs for access or services such as an interpreter, please contact Tiffany Kaschel at (401) 462-7699 twenty-four hours in advance of the scheduled meeting.



**Approval of Minutes** 



#### **State Investment Commission**

Monthly Meeting Minutes Wednesday, April 26, 2017 9:00 a.m. Room 205, State House

The Monthly Meeting of the State Investment Commission (SIC) was called to order at 9:03, Wednesday, April 26<sup>th</sup>, 2017 in Room 205, State House.

#### I. Roll Call of Members

The following members were present: Mr. Michael Costello, Mr. Frank Karpinski, Ms. Marie Langlois, Ms. Sylvia Maxfield, Ms. Paula McNamara, Mr. Thomas Mullaney, Ms. Marcia Reback, and Treasurer Seth Magaziner.

The following members were absent: Mr. Robert Benson and Mr. Thomas Fay

Mr. Costello left at 11:35 a.m. Ms. Maxfield left at 11:36 a.m.

Also in attendance: Mr. John Burns and Mr. John Linder, Pension Consulting Alliance (PCA), general consultants; Mr. Grant Jaffarian and Ms. Lisa Martin, Crabel Capital Management; Mr. Ben Albrandi and Mr. Yung-Shin Kung, Credit Suisse; Dr. Patrick Welton and Mr. Neal Howe, Welton; Mr. Darren Wolf, Aberdeen Asset Management; Ms. Kimberly Shockley, Associate Director of College and Retirement Savings Plan; Mr. Frank Picarelli, Segal Marco Advisors; Ms. Kerri Baker, Treasury Cash Manager; Mr. Darren Wolf, Aberdeen Asset Management; Mr. Tim Nguyen, Treasury Chief Investment Officer (interim); Ms. Sally Dowling, Adler, Pollock & Sheehan, legal counsel; and other members of the Treasurer's staff.

Treasurer Magaziner called the meeting to order at 9:03 a.m.

#### II. Approval of Minutes

On a motion by Ms. Reback and seconded by Mr. Mullaney, it was unanimously **VOTED: to approve the draft minutes of the March 22nd, 2017 meeting of the State Investment Commission.** 

#### III. Systematic Trend Following Manager Presentations

Three Systematic Trend Following (STF) Managers presented: Crabel, Credit Suisse and Welton.

Ms. Martin provided historical background on Crabel, stating that Crabel has been running Systematic Trend Following (STF) strategies since 2004. Mr. Jaffarian explained their specific strategy in more detail, noting it is designed to respond well under stress. As an asset class, it tends to be uncorrelated, meaning it will move differently, not contrary, to stressors and will provide diversification in both markets and time frames.

The board asked questions.

Mr. Albrandi provided background on Credit Suisse. Mr. Kung went on to explain that their strategy is derived from their index and benchmarking business with an eye toward liquidity, transparency, low cost and reliability. He denoted the difference in their strategy was to minimize tracking error between their approach and the overall STF industry instead of the traditional approach of maximizing expected returns, which they assert is a more intuitive solution.

The board asked questions.

Mr. Howe stated that Dr. Welton established the Welton strategy in the 1980's and was one of the first of its kind. He explained that their product uses three different analytical designs to find trends. They allocate an equal amount of risk to each of the three to keep their algorithm diversified.

The board asked questions.

#### IV. Systematic Trend Following Manager Recommendations

Mr. Linder recalled the Board had approved the Crisis Protection Class (CPC) structure of 50% Systematic Trend Following and 50% Long-duration Treasuries, whose purpose is to protect against a market downturn. He outlined the manager due diligence process and Request for Information (RFI) evaluation that yielded the recommended managers – Crabel, Credit Suisse and Welton. He provided an expected implementation timeline if managers are approved at this meeting, with the entire CPC expected to be funded in June 2017.

Mr. Wolf provided additional context in regards to how the STF products are expected to operate within the CPC structure.

Mr. Costello asked if it necessary to have 3 managers in this area. Mr. Linder explained that it was for diversification purposes and that the mix of the three would produce a stronger outcome than any one of them could alone.

The board asked questions.

On a motion by Mr. Mullaney and seconded by Ms. Reback it was

VOTED: to approve Crabel as a Systematic Trend Following Manager, subject to legal review

On a motion by Ms. McNamara and seconded by Ms. Langlois it was

**VOTED:** to approve Credit Suisse as a Systematic Trend Following Manager, subject to legal review

On a motion by Ms. Langlois and seconded by Ms. Maxfield it was

VOTED: to approve Welton as a Systematic Trend Following Manager, subject to legal review

#### V. Defined Contribution and Deferred Compensation Vendor Selection

Ms. Shockley introduced Mr. Picarelli from Segal Marco Advisors, who facilitated the vendor selection for the defined contribution, 401(a), and deferred compensation, 457 (b), plans. He apprised the Board on the

RFP process and the companies who responded to the requests. After an evaluation of the qualified respondents, the selection committee along with Segal recommended TIAA to serve as the defined contribution and FICA vendor, and summarized the reasons behind their selection.

The board asked questions.

On a motion by Mr. Costello and seconded by Ms. Reback, it was

VOTED: to approve TIAA as the 401(a) provider, subject to contract negotiations Ms. Sylvia Maxfield recused herself

Mr. Picarelli then spoke about the deferred compensation vendor selection, noting the state mandates three providers of the 457 plans. After an evaluation of the qualified respondents, the selection committee along with Segal recommended Fidelity, TIAA and Voya to serve as the state's three deferred compensation vendors, and summarized the reasons behind their selections.

The board asked questions.

On a motion by Ms. Reback and seconded by Mr. Costello it was

VOTED: to approve TIAA as a 457(b) provider, subject to contract negotiations <u>Ms. Sylvia Maxfield recused herself</u>

On a motion by Ms. McNamara and seconded by Mr. Mullaney it was **VOTED: to approve Fidelity as a 457(b) provider, subject to contract negotiations Ms. Sylvia Maxfield recused herself** 

On a motion by Mr. Costello and seconded by Ms. Langlois it was **VOTED: to approve Voya as a 457(b) provider, subject to contract negotiations** 

#### **VI. Community Deposit Program Recommendations**

Ms. Baker refreshed the Board on the Community Deposit Program explaining it is a bank local program that provides loans to small businesses in Rhode Island. The program has steadily increased in both loans and participating lenders since the SIC approved the program in December 2016. Staff continues outreach to banks to further increase that participation.

Ms. Baker brought forth three banks: Bristol County Savings Bank, Centreville Bank and Home Loan Investment Bank. She summarized the banks characteristics that would make them eligible for short-term vendor selection and serve in the community deposit program.

The Board asked questions.

On a motion by Ms. Langlois and seconded by Mr. Mullaney it was

VOTED: to approve Bristol County Savings Bank as a short-term investment manager

On a motion by Ms. McNamara and seconded by Ms. Langlois it was

VOTED: to approve Centreville Bank as a short-term investment manager

On a motion by Ms. Langlois and seconded by Ms. McNamara it was

## VOTED: to approve Home Loan Investment Bank as a short-term investment manager VII. Legal Counsel Report

There was no legal counsel report.

#### **VIII. Chief Investment Officer Report**

Mr. Nguyen provided the performance update for March. He explained the portfolio value increased approximately \$33 million or 0.75%. The month's increase comes from \$59.3 million of positive investment performance offset by \$26.3 million of transfers to meet pension payroll. Calendar year to date, the total portfolio has increased by \$220.8 million or 4.01%. Fiscal year to date, the portfolio's 8.76% return exceeded the 8.31% benchmark and well surpassed the 7.43% 60/40 return.

#### IX. Treasurer's General Comments

Treasurer Magaziner introduced Mr. Alec Stais, who will officially join Treasury on May 1<sup>st</sup> as Chief Investment Officer (CIO). He thanked Mr. Nguyen for his service s as interim CIO, noting it had been an eventful and positive period for the office and its portfolio. In addition to Mr. Nguyen's departure, Treasurer Magaziner announced it was Ms. McNamara's last day serving on the board. He thanked Ms. McNamara for her six years on the SIC. He noted the seat occupied by Ms. McNamara is a governor appointed seat and a candidate will likely be brought before the Senate for confirmation soon, hopefully joining the Board for its next meeting.

There being no other business to come before the Board, on a motion by Ms. Reback and seconded by Ms. Langlois, the meeting adjourned at 11:49 a.m.

Respectfully submitted,

Seth Magaziner, General Treasurer

### Section III.

**Staff Summary** 

## **Portfolio Highlights**

# PORTFOLIO PERFORMANCE April 2017

On the month, the total portfolio value increased by approximately \$42.4 million to remain at \$7.9 billion. The month's increase comes from \$78.8 million of positive investment performance offset by \$36.4 million of transfers to meet pension payroll in excess of pension contributions. The portfolio benefited from positive equity and fixed income market returns for the month. On a percentage basis, the portfolio increased 1.00% lagging both the plan benchmark of 1.11% and the basic 60% global equity/40% fixed income allocation of 1.24%.

Calendar year-to-date, the total portfolio has increased by \$263.2 million, with portfolio gains of \$385.5 million offset by \$122.3 million in pension payments. The portfolio's 5.04% return lagged both the benchmark and 60/40 returns of 5.32% and 5.74%, respectively.

Fiscal year-to-date, the total portfolio has increased by \$458.5 million, with portfolio gains of \$724.9 million offset by \$266.4 million in pension payments. The portfolio's 9.84% return exceeded the 9.52% benchmark and well surpassed the 8.76% 60/40 return.

Over a 3-year time frame and when comparing against a 60/40 portfolio, the ERSRI portfolio outperformed at 4.85% while the 60/40 portfolio earned 4.38%. Over a 5-year time frame, the ERSRI portfolio earned 7.20%, outperforming the 60/40 portfolio which posted 6.40%.



### State of Rhode Island and Providence Plantations Office of the General Treasurer

#### Seth Magaziner

**General Treasurer** 

May 17, 2017

State Investment Commission State of Rhode Island, State House Providence, Rhode Island

This is to certify that the amounts so listed below belong to the credit of the Employees' Retirement, Municipal Employees', State Police and Judicial Retirement Systems of the State of Rhode Island at the close of business on April 30, 2017.

# Employees' Retirement System of Rhode Island Composite Reporting Investment Valuation April 30, 2017

Asset Class	Base Market Value
Grand Total	7,959,201,790
CASH EQUIVALENT*	583,101,979
EQUITY HEDGE FUNDS**	402,568,913
GLOBAL PUBLIC EQUTIY	3,667,439,346
CREDIT	394,721,767
INFLATION-LINKED BDS	237,135,792
PRIVATE EQUITY**	545,224,724
REAL ESTATE**	574,051,055
REAL RET HEDGE FUNDS**	344,741,306
INFRASTRUCTURE**	285,803,033
US TRADITIONAL FIXED	924,413,876

Plan Allocations	%	Base Market Value
Grand Total	100.00%	7,959,201,790
STATE EMP RET PLAN	75.3%	5,989,464,564
MUNI EMP RET PLAN	18.2%	1,450,522,017
TEACHER'S SURVIVOR BENEFIT	3.8%	306,593,420
STATE POLICE RET PL	1.6%	127,165,875
JUDICIAL RET PLAN	0.8%	66,331,801
NON-CONTRIB JUD RET	0.0%	579,669
NON-CONT ST POL RET	0.3%	18,544,444

<sup>\*</sup> Cash & Short-Term Investments, as shown, also includes amounts available within specific active-manager mandates, and thus as aggregated will not tie directly to separate cash allocations as reported elsewhere.

Und of

Investment Accounting Manager

<sup>\*\*</sup> Alternative Investments – comprising the five components as indicated – have varying degrees of liquidity and may not have readily determinable market values. As such, they may be based on appraisals only.



**Asset Allocation** 

### **Asset Summary**

Balance Date: 4/28/2017



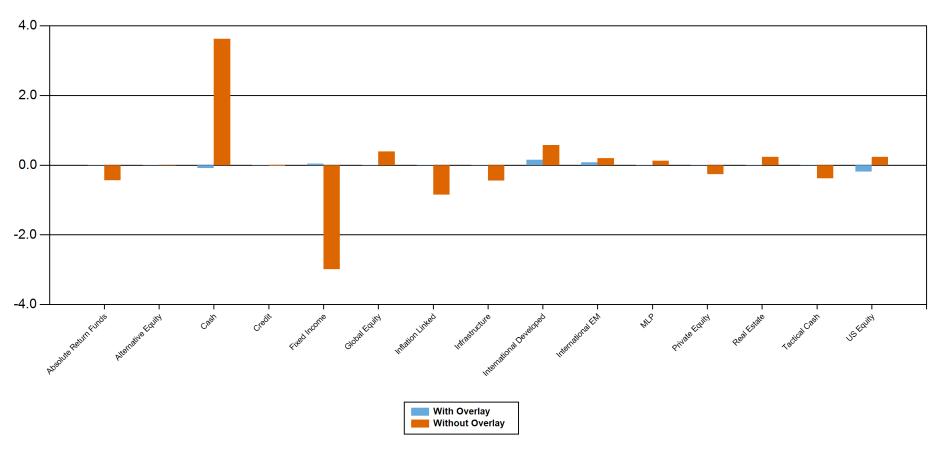
Asset Class Physical Exposure		xposure	Synthetic Ex	cposure	Net Po	sition	<u>Overlay</u>	<u>Target</u>	Policy Target		
Total Market Value	7,943.8	100.0 %	0.0	0.0 %	7,943.8	100.0 %	7,943.9	100.0 %	7,943.9	100.00 %	
Cash	287.7	3.6 %	-287.3	-3.6 %	0.4	0.0 %	7.2	0.1 %	0.0	0.00 %	
Cash	287.7	3.6 %	-287.3	-3.6 %	0.4	0.0 %	7.2	0.1 %	0.0	0.00 %	
Equity	4,617.9	58.1 %	18.2	0.2 %	4,636.0	58.4 %	4,632.9	58.3 %	4,527.2	56.99 %	
Alternative Equity	407.8	5.1 %	0.0	0.0 %	407.8	5.1 %	407.8	5.1 %	408.3	5.14 %	
Global Equity	1,143.3	14.4 %	0.0	0.0 %	1,143.3	14.4 %	1,143.3	14.4 %	1,112.1	14.00 %	
International Developed	863.1	10.9 %	-2.0	0.0 %	861.1	10.8 %	849.3	10.7 %	817.4	10.29 %	
International EM	342.5	4.3 %	3.1	0.0 %	345.6	4.4 %	339.2	4.3 %	326.5	4.11 %	
Private Equity	535.6	6.7 %	0.0	0.0 %	535.6	6.7 %	535.6	6.7 %	556.1	7.00 %	
US Equity	1,325.5	16.7 %	17.1	0.2 %	1,342.6	16.9 %	1,357.7	17.1 %	1,306.8	16.45 %	
Fixed	960.3	12.1 %	269.1	3.4 %	1,229.4	15.5 %	1,225.9	15.4 %	1,197.9	15.08 %	
Fixed Income	960.3	12.1 %	269.1	3.4 %	1,229.4	15.5 %	1,225.9	15.4 %	1,197.9	15.08 %	
Other	2,078.0	26.2 %	0.0	0.0 %	2,078.0	26.2 %	2,078.0	26.2 %	2,218.7	27.93 %	
Absolute Return Funds	357.2	4.5 %	0.0	0.0 %	357.2	4.5 %	357.2	4.5 %	391.6	4.93 %	
Credit	395.3	5.0 %	0.0	0.0 %	395.3	5.0 %	395.3	5.0 %	397.2	5.00 %	
Inflation Linked	250.7	3.2 %	0.0	0.0 %	250.7	3.2 %	250.7	3.2 %	317.8	4.00 %	
Infrastructure	123.4	1.6 %	0.0	0.0 %	123.4	1.6 %	123.4	1.6 %	158.9	2.00 %	
MLP	169.1	2.1 %	0.0	0.0 %	169.1	2.1 %	169.1	2.1 %	158.9	2.00 %	
Real Estate	574.5	7.2 %	0.0	0.0 %	574.5	7.2 %	574.5	7.2 %	556.1	7.00 %	
Tactical Cash	207.8	2.6 %	0.0	0.0 %	207.8	2.6 %	207.8	2.6 %	238.3	3.00 %	

### **Asset Summary**

Balance Date: 4/28/2017



#### **Percent Deviation from Overlay Target**



**Total Absolute Notional Value: 291.3 (USD)** 

### **Asset Summary**

Balance Date: 4/28/2017



<u>Manager</u>	Total Market	<u>Value</u>	Equity Market	<u>Value</u>	Fixed Market \	<u>Value</u>	Other Market	<u>Value</u>	Cash Balan	<u>ce</u>
Total Assets	7,943.9	100.0 %	4,617.9	58.1 %	960.3	12.1 %	2,078.0	26.2 %	287.7	3.6 %
Cash	287.7	3.6 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	287.6	3.6 %
Cash Acct (Pooled Trust)	276.2	3.5 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	276.2	3.5 %
Municipal EE's Retirement Plan	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Russell Overlay	11.5	0.1 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	11.5	0.1 %
State EE's Retirement Plan	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Tactical Cash-offset Template	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Equity	4,617.9	58.1 %	4,617.9	58.1 %	0.0	0.0 %	0.0	0.0 %	0.1	0.0 %
Alternative Equity	407.8	5.1 %	407.8	5.1 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Ascend Partners Fund II, LP	3.5	0.0 %	3.5	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Davidson Kempner	82.5	1.0 %	82.5	1.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Elliot Associates, LP	96.5	1.2 %	96.5	1.2 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
ESG	1.1	0.0 %	1.1	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Indus Asia Pacific Fund	0.3	0.0 %	0.3	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Luxor Capital Partners	5.4	0.1 %	5.4	0.1 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
PFM Diversified Fund LP	3.9	0.0 %	3.9	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Samlyn Onshore Fund LP	111.1	1.4 %	111.1	1.4 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Viking Global Equities	103.4	1.3 %	103.4	1.3 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Global Equity	1,143.4	14.4 %	1,143.3	14.4 %	0.0	0.0 %	0.0	0.0 %	0.1	0.0 %
Global Equity Transition	0.1	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.1	0.0 %
SSGA Global Fundamental Dev LC	1,143.3	14.4 %	1,143.3	14.4 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
International Developed	863.1	10.9 %	863.1	10.9 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
SSgA MSCI Canada	103.3	1.3 %	103.3	1.3 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
SSgA MSCI EAFE	759.8	9.6 %	759.8	9.6 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
International EM	342.5	4.3 %	342.5	4.3 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
SSgA Emerging Mkts	342.5	4.3 %	342.5	4.3 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Private Equity	535.6	6.7 %	535.6	6.7 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Combined Private Equity	535.6	6.7 %	535.6	6.7 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
US Equity	1,324.6	16.7 %	1,324.6	16.7 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Rhode Island Transition Acct	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
SSgA Russell 3000	1,324.6	16.7 %	1,324.6	16.7 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
US Large Cap	0.9	0.0 %	0.9	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Shott Capital	0.9	0.0 %	0.9	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Fixed	960.3	12.1 %	0.0	0.0 %	960.3	12.1 %	0.0	0.0 %	0.0	0.0 %
Fixed Income	960.3	12.1 %	0.0	0.0 %	960.3	12.1 %	0.0	0.0 %	0.0	0.0 %
MacKay Shields Core	475.4	6.0 %	0.0	0.0 %	475.4	6.0 %	0.0	0.0 %	0.0	0.0 %
Pyramis Core	484.9	6.1 %	0.0	0.0 %	484.9	6.1 %	0.0	0.0 %	0.0	0.0 %
Other	2,078.0	26.2 %	0.0	0.0 %	0.0	0.0 %	2,078.0	26.2 %	0.0	0.0 %
Tactical Cash	207.8	2.6 %	0.0	0.0 %	0.0	0.0 %	207.8	2.6 %	0.0	0.0 %
ERSRI SMA CASH	207.8	2.6 %	0.0	0.0 %	0.0	0.0 %	207.8	2.6 %	0.0	0.0 %

<sup>3</sup> Copyright © 2017 Russell Investments.
All rights reserved. All market values in millions. Numbers may not add due to rounding. Daily values are provided by custodian and are unaudited. Balances and exposures include Russell Overlay accruals and pending trades.

#### Rhode Island - Rhode Island

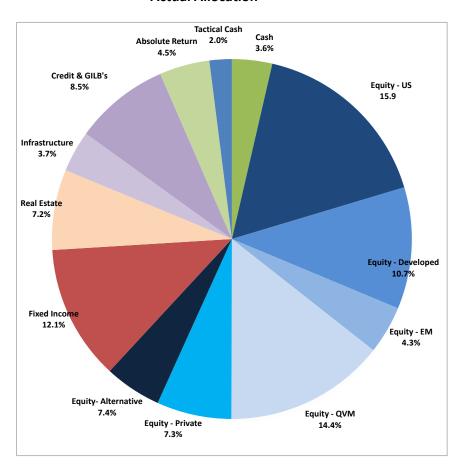
### **Asset Summary**

Balance Date: 4/28/2017

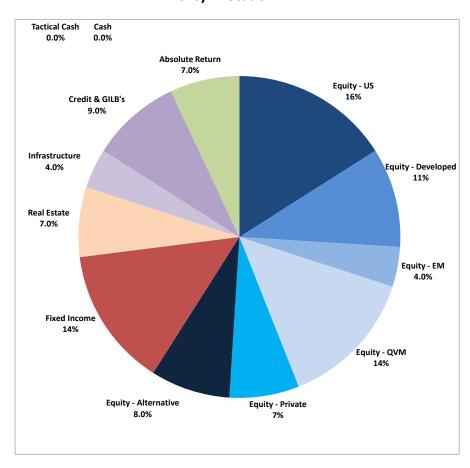


<u>Manager</u>	Total Market V	<u>'alue</u>	<b>Equity Market</b>	<u>Value</u>	Fixed Market V	/alue	Other Market \	/alue	Cash Balan	ce
Tactical Cash Template	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
Absolute Return Funds	357.2	4.5 %	0.0	0.0 %	0.0	0.0 %	357.2	4.5 %	0.0	0.0 %
Brevan Howard LP	78.9	1.0 %	0.0	0.0 %	0.0	0.0 %	78.9	1.0 %	0.0	0.0 %
Brigade Levered Capital	3.2	0.0 %	0.0	0.0 %	0.0	0.0 %	3.2	0.0 %	0.0	0.0 %
Capula Global Relative Value	69.2	0.9 %	0.0	0.0 %	0.0	0.0 %	69.2	0.9 %	0.0	0.0 %
Claren Road Cr Fund	6.6	0.1 %	0.0	0.0 %	0.0	0.0 %	6.6	0.1 %	0.0	0.0 %
D.E. Shaw Composite Fund	97.7	1.2 %	0.0	0.0 %	0.0	0.0 %	97.7	1.2 %	0.0	0.0 %
Graham Global	59.8	0.8 %	0.0	0.0 %	0.0	0.0 %	59.8	0.8 %	0.0	0.0 %
Oz Domestic Partners II	5.5	0.1 %	0.0	0.0 %	0.0	0.0 %	5.5	0.1 %	0.0	0.0 %
Winton Futures Ltd Fund	36.3	0.5 %	0.0	0.0 %	0.0	0.0 %	36.3	0.5 %	0.0	0.0 %
Credit	395.3	5.0 %	0.0	0.0 %	0.0	0.0 %	395.3	5.0 %	0.0	0.0 %
PIMCO	202.3	2.5 %	0.0	0.0 %	0.0	0.0 %	202.3	2.5 %	0.0	0.0 %
WAMCO	193.0	2.4 %	0.0	0.0 %	0.0	0.0 %	193.0	2.4 %	0.0	0.0 %
Inflation Linked	250.7	3.2 %	0.0	0.0 %	0.0	0.0 %	250.7	3.2 %	0.0	0.0 %
Brown Brothers Harriman-GILBS	250.7	3.2 %	0.0	0.0 %	0.0	0.0 %	250.7	3.2 %	0.0	0.0 %
Infrastructure	123.4	1.6 %	0.0	0.0 %	0.0	0.0 %	123.4	1.6 %	0.0	0.0 %
Combined Priv. Infrastructure	123.4	1.6 %	0.0	0.0 %	0.0	0.0 %	123.4	1.6 %	0.0	0.0 %
Infrastructure	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
MLP	169.1	2.1 %	0.0	0.0 %	0.0	0.0 %	169.1	2.1 %	0.0	0.0 %
Harvest Fund Advisor	169.1	2.1 %	0.0	0.0 %	0.0	0.0 %	169.1	2.1 %	0.0	0.0 %
Real Estate	574.5	7.2 %	0.0	0.0 %	0.0	0.0 %	574.5	7.2 %	0.0	0.0 %
Combined Real Estate	574.5	7.2 %	0.0	0.0 %	0.0	0.0 %	574.5	7.2 %	0.0	0.0 %

#### **Actual Allocation**

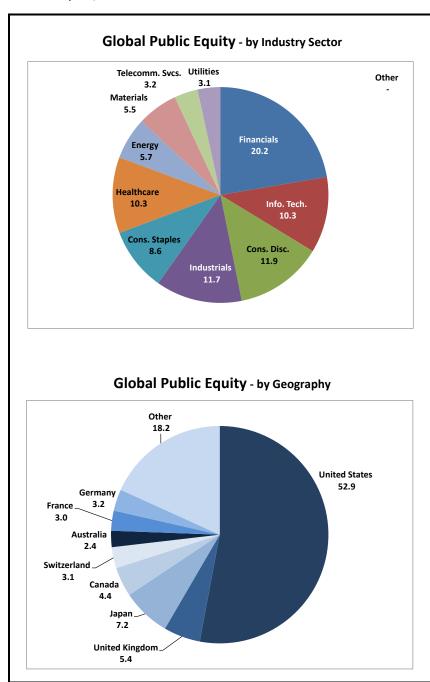


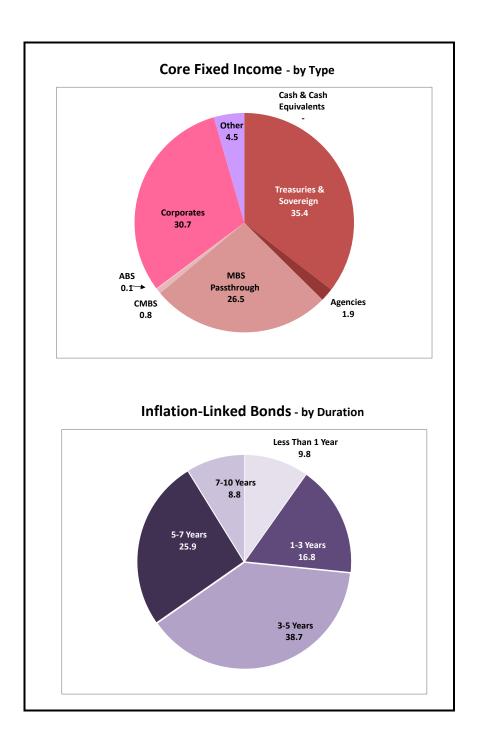
#### **Policy Allocation**



### ERSRI Asset Allocation Public-Asset Portfolios

%%% - as of April 30, 2017







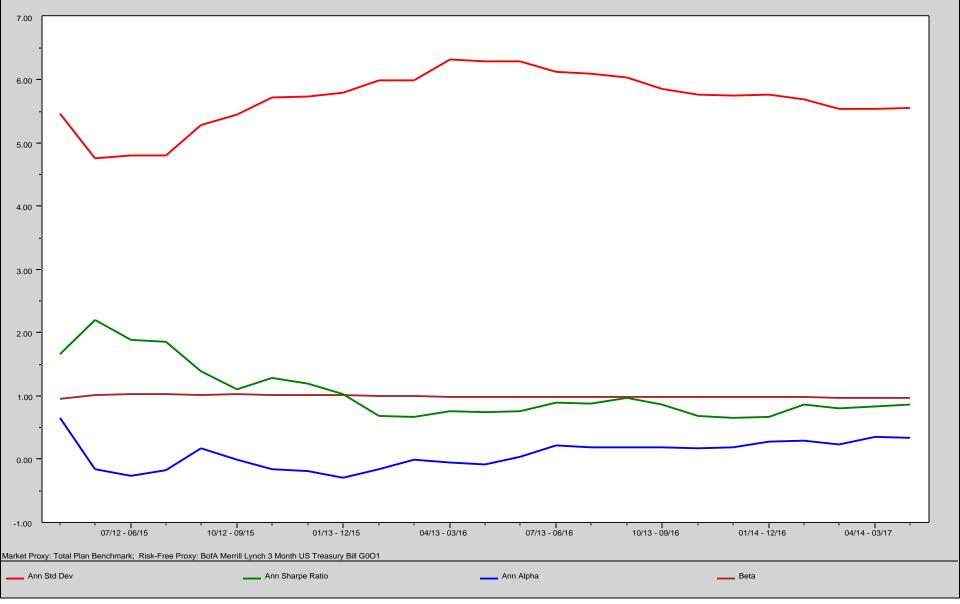
**Risk Overview** 

#### **Historical Risk - Three Year Rolling Periods**

TOTAL PLAN

5 Years Ending April 30, 2017

Trend



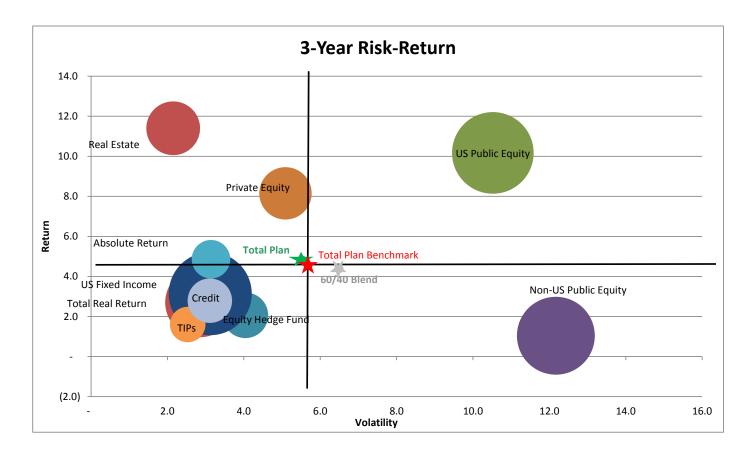
# Risk Exposures 3 Years Ending April 30, 2017

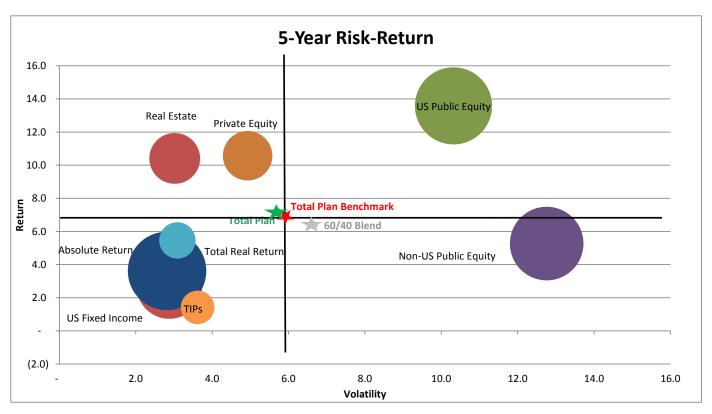
	Annualized Return	Ann Std Dev	Beta (ACWI)	Beta (BC AGG)	Beta (GSCI)	Beta (CPI)
US Public Equity	10.18	10.53	0.9	2 -0.25	0.14	1.47
Non-US Public Equity	1.04	12.17	1.09	9 0.32	0.25	3.17
Equity Hedge Funds	2.06	4.05	0.2	1 -0.28	0.03	1.14
Private Equity	8.16	5.10	-0.0	3 -0.22	0.07	1.71
Traditional Fixed Income	2.71	2.86	0.0	3 0.98	-0.03	-0.13
Real Estate	11.50	2.15	0.0	1 0.25	-0.03	-0.40
Real Return Hedge Funds	4.32	2.70	0.0	7 -0.09	0.00	0.08
Inflation-Linked Bonds	1.60	2.53	0.0	5 0.69	0.01	0.42
Cash	0.76	0.37	0.0	0 -0.01	-0.00	-0.03
Russell Overlay Fd	0.01	0.09	-0.0	0.00	-0.00	-0.04
TOTAL PLAN	4.85	5.55	0.5	2 0.13	0.11	1.38

### 5 Years Ending April 30, 2017 Comparison

	TOTAL PLAN	Total Plan Benchmark	60/40 Blend
Ann Return	7.20	6.96	6.40
Ann Ex Ret vs Mkt	0.22		
Ann Tracking Error	0.90		
Ann Std Dev	5.72	5.94	6.67
Beta	0.95		
R-Squared	0.98		
Ann Alpha	0.52		
Ann Sharpe Ratio	1.22	1.14	0.94

#### % - as of April 30, 2017





#### 3 Years Ending April 30, 2017 Correlation

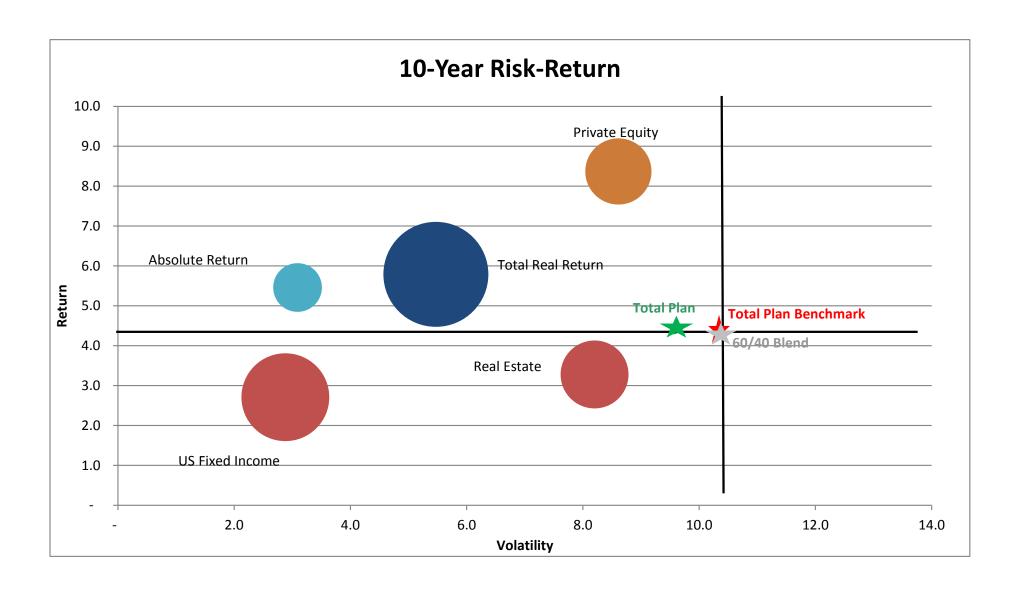
#### Ann Return

	US Pub EQ	Non-US Pub EQ	Eq HF	PE	FI	RE	RR HF	TIPS	Cash	Overlay	Total
US Pub	1.00										
Non-US P	0.78	1.00									
Eq HF	0.54	0.50	1.00								
PE	-0.03	-0.05	0.00	1.00							
FI	0.02	0.18	-0.14	-0.13	1.00						
RE	-0.02	0.08	-0.16	-0.30	0.32	1.00					
RR HF	0.35	0.20	0.53	-0.08	-0.06	-0.23	1.00				
TIPS	0.02	0.34	-0.19	-0.06	0.81	0.32	-0.05	1.00			
Cash	0.15	0.12	0.12	-0.07	-0.04	-0.29	0.12	-0.23	1.00		
Overlay	-0.25	-0.19	-0.33	-0.11	-0.07	0.17	-0.13	-0.07	-0.03	1.00	
Total	0.92	0.95	0.58	0.00	0.17	0.04	0.33	0.25	0.14	-0.25	1.00
Tot BM	0.92	0.96	0.56	-0.05	0.19	0.04	0.28	0.26	0.14	-0.24	0.99

#### 5 Years Ending April 30, 2017 Correlation

#### Ann Return

	US Pub Eq	Non-US Pub Eq	Eq HF	PE	FI	RE	RR HF	TIPS	Cash	Overlay	Total
US Pub	1.00										
Non-US P	0.79	1.00									
Eq HF	0.64	0.53	1.00								
PE	0.09	0.09	0.05	1.00							
FI	-0.01	0.21	-0.11	-0.15	1.00						
RE	0.19	0.27	0.03	-0.03	0.32	1.00					
RR HF	0.39	0.28	0.59	-0.10	0.04	0.01	1.00				
TIPS	-0.01	0.23	-0.06	-0.11	0.79	0.28	0.15	1.00			
Cash	0.07	0.04	-0.01	-0.10	-0.03	-0.05	0.06	-0.13	1.00		
Overlay	0.16	0.21	0.07	0.04	-0.12	0.20	0.07	-0.04	-0.08	1.00	
Total	0.92	0.95	0.64	0.13	0.19	0.28	0.40	0.21	0.05	0.18	1.00
Tot BM	0.92	0.96	0.61	0.09	0.18	0.26	0.34	0.16	0.05	0.21	0.99



### 10 Years Ending April 30, 2017 Correlation

#### **Ann Return**

	US Pub Eq	Non-US Pub Eq	Eq HF	PE	FI	RE	RR HF	TIPS	Cash	Overlay	Total
US Pub											
Non-US P											
Eq HF											
PE				1.00							
FI				-0.03	1.00						
RE				0.32	-0.17	1.00					
RR HF											
TIPS											
Cash				0.21	0.03	0.17			1.00		
Overlay											
Total				0.23	0.45	0.01			-0.05		1.00
Tot BM				0.16	0.45	-0.02			-0.05		0.99



**Performance Overview** 

Report ID: IPM0005

**Reporting Currency: USD** 

### TOTAL NET OF FEES 4/30/2017

							Annualized				
Account Name Benchmark Name	Market Value	% of Total	Month	YTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
SSGA R3000 INDEX Russell 3000 Index	1,324,570,398	17	1.06 1.06	6.88 6.86	16.29 16.26	18.58 18.58	10.18 <i>10.10</i>			14.07 14.01	10/1/2012 10/1/2012
US Public Equity Russell 3000 Index	1,324,570,472	17	<b>1.06</b> <i>1.06</i>	<b>6.88</b> 6.86	<b>16.29</b> <i>16.26</i>	<b>18.58</b> <i>18.58</i>	<b>10.18</b> <i>10.10</i>	<b>13.58</b> 13.57		<b>7.62</b> 7.62	<b>8/1/2007</b> 8/1/2007
SSGA MSCI EAFE MSCI EAFE Net Dividend Index	759,844,555	10	2.62 2.54	10.17 9.97	16.49 16.22	11.70 11.29	1.12 <i>0.8</i> 6			7.95 7.66	9/1/2012 9/1/2012
SSGA MSCI CANADA MSCI Canada Net Dividend Index	103,290,959	1	-2.08 -2.12	0.55 <i>0</i> .33	9.11 8.62	5.87 <i>5.27</i>	-2.14 -2.72			1.90 1.27	9/1/2012 9/1/2012
SSGA MSCI EM MSCI Emerging Markets Net Dividend Index	342,527,919	4	2.16 2.19	13.76 13.88	18.72 18.99	18.76 19.13	1.57 1.79			2.80 3. <i>0</i> 2	9/1/2012 9/1/2012
Non-US Public Equity Total International Equity BM	1,205,716,358	15	<b>2.06</b> 2.14	<b>10.23</b> <i>10.17</i>	<b>16.55</b> <i>16.31</i>	<b>13.10</b> <i>12.59</i>	<b>1.04</b> <i>0.8</i> 3	<b>5.27</b> 5.23		<b>8.44</b> 7.64	<b>5/1/2009</b> 5/1/2009
QVM Tilt MSCI World Net Dividend Index	1,143,347,405	14	1.22 1.48	7.52 7.95	14.71 <i>15.30</i>	14.59 <i>14.65</i>				13.61 13.64	10/1/2015 10/1/2015
Global Public Equity  MSCI All Country World Net Index	3,673,634,235	46	<b>1.44</b> 1.56	<b>8.14</b> 8.57	<b>15.81</b> <i>15.6</i> 9	<b>15.39</b> 15.14	<b>5.48</b> 5.29	<b>9.53</b> 8.96	<b>4.56</b> 3.71	4.33	<b>7/1/2000</b> 7/1/2000
Private Equity  ILPA All Fds Custom BM 1Q Lag	545,224,213	7	1.83 1.95	5.19 <i>5.5</i> 9	9.81 10.59	10.33 <i>11.0</i> 3	8.16 <i>9.26</i>	10.58 13.17	8.37 8.51	9.16	2/1/1989 2/1/1989
Equity Hedge Funds HFRI Equity Hedge (Total) Index	412,579,052	5	<b>0.95</b> <i>0.81</i>	<b>3.45</b> <i>4.75</i>	<b>6.81</b> 10.93	<b>7.75</b> 11.20	<b>2.06</b> 3.53	<b>5.33</b> 5.22		<b>5.39</b> 5.28	<b>11/1/2011</b> 11/1/2011
Total Equity	4,631,437,500	58	1.43	7.24	13.96	13.85	5.34	9.10	4.62	9.02	6/1/1996
MACKAY SHIELDS  Bloomberg Barclays U.S. Aggregate  Bond Index	475,368,991	6	0.81 <i>0.77</i>	1.71 1.59	-0.72 -0.98	1.13 <i>0.8</i> 3	2.63 2.66			2.01 1.91	11/1/2012 11/1/2012
PYRAMIS GLOBAL ADV  Bloomberg Barclays U.S. Aggregate  Bond Index	484,912,079	6	0.76 <i>0.77</i>	1.75 1.59	-0.05 -0.98	1.69 <i>0.83</i>	2.78 2.66			2.06 1.91	11/1/2012 11/1/2012
<b>Traditional Fixed Income</b> Bloomberg Barclays U.S. Aggregate Bond Index	960,282,794	12	<b>0.79</b> 0.77	<b>1.73</b> 1.59	<b>-0.37</b> -0.98	<b>1.42</b> 0.83	<b>2.71</b> 2.66	<b>2.72</b> 2.27	<b>4.35</b> 4.30	<b>5.25</b> 5.12	<b>7/1/2000</b> 7/1/2000

Report ID: IPM0005 **Reporting Currency: USD** 

**TOTAL NET OF FEES** 

							Annualized				
Account Name Benchmark Name	Market Value	% of Total	Month	YTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
Real Return Hedge Funds HFRI Fund of Funds Composite Index	434,745,643	5	<b>-0.07</b> 0.56	<b>1.32</b> 2.97	<b>6.77</b> 6.24	<b>7.68</b> 6.27	<b>4.32</b> 2.21	<b>4.85</b> 3.39		<b>4.80</b> 3.36	<b>11/1/2011</b> 11/1/2011
PIMCO 30%BoA1-3BB-BHY/70% JPMB/BBLLI	201,993,172	3	0.33 <i>0.47</i>	1.35 1.53	5.30 6.09	5.82 6.99	3.43 <i>4.07</i>			3.33 <i>4.20</i>	5/1/2013 5/1/2013
WAMCO 30% BoA 1-3 BB-B HY/70% CS LLI	190,651,104	2	-0.54 <i>0.5</i> 2	0.55 1.85	6.72 7.07	8.70 8.27	2.17 3.98			2.86 <i>4.</i> 27	4/1/2013 4/1/2013
Credit Aggregate Credit Aggregate	392,644,275	5	<b>-0.09</b> <i>0.4</i> 9	<b>0.96</b> 1.69	<b>6.00</b> 6.58	<b>7.23</b> 7.63	<b>2.80</b> <i>4.09</i>			<b>3.04</b> 4.22	<b>5/1/2013</b> 5/1/2013
BROWN BROTHERS HARR BBH Inflation-Linked Custom BM	250,699,687	3	0.34 <i>0.4</i> 5	1.25 1.50	0.26 <i>0.5</i> 8	1.33 1.64	1.60 1.82			0.70 <i>0.74</i>	11/1/2012 11/1/2012
Inflation-Linked Bonds Total Inflation Linked Custom	250,699,687	3	<b>0.34</b> 0.45	<b>1.25</b> <i>1.50</i>	<b>0.26</b> <i>0.58</i>	<b>1.33</b> 1.64	<b>1.60</b> <i>1.82</i>	<b>1.43</b> 1.49		<b>4.01</b> 4.03	<b>11/1/2009</b> <i>11/1/2009</i>
Harvest Fund Advisor Alerian MLP Index	169,056,004	2	-1.78 -1.28	2.53 2.62	8.50 <i>5</i> .83	16.92 <i>14.0</i> 8				-6.57 -8.23	1/1/2015 1/1/2015
Priv Listed Infrastructure	123,927,798	2	2.39	5.69	12.01	13.90				6.95	3/1/2015
Total Real Return	1,371,073,406	17	0.00	1.72	5.97	7.88	3.15	3.63	5.80	5.52	6/1/2004
Real Estate NFI-ODCE Index	574,051,055	7	0.60 <i>0.66</i>	2.82 2.55	7.47 6.42	8.83 <i>8.50</i>	11.50 <i>11.61</i>	10.41 <i>11.67</i>	3.28 7.82	3.16 9.82	1/1/2005 1/1/2005
ERSRI CASH BofA Merrill Lynch 3 Month US Treasury Bill G0O1	193,277,232	2	0.28 <i>0.07</i>	0.66 <i>0.17</i>	0.99 <i>0.</i> 35	1.07 <i>0.4</i> 0	0.91 <i>0.19</i>	0.59 <i>0.15</i>	1.46 <i>0.65</i>	12.65 1.65	7/1/2000 7/1/2000
ERSRI SMA Cash BofA Merrill Lynch United States Treasury Notes 0-1 Year (G0	232,804,809	3	0.11 <i>0.07</i>							0.18 <i>0.10</i>	2/1/2017 2/1/2017
Total Cash	429,994,828	5	0.14	0.31	0.61	0.69	0.76	0.52	1.05	2.30	4/1/2004
Russell Overlay Fd	-8,552,960	0	0.00	-0.04	0.01	-0.01	0.01	0.05		-0.06	9/1/2008



Report ID: IPM0005

Reporting Currency: USD

### TOTAL NET OF FEES 4/30/2017

Account Name Benchmark Name	Market Value	% of Total	Month	YTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
TOTAL PLAN	7,959,201,790	100	1.00	5.04	9.84	10.50	4.85	7.20	4.40	4.84	7/1/2000
Total Plan Benchmark			1.11	5.32	9.52	9.98	4.70	6.96	4.30		7/1/2000
60/40 Blend			1.24	5.74	8.76	9.25	4.38	6.40	4.32		7/1/2000
Total Plan ex PE,RE & Priv Inf	6,715,998,723	84	0.94	5.21	10.01	10.61	4.20	6.44	4.03	6.28	4/1/1996
Total Plan BM ex PE RE			1.07	5.46	9.61	9.97	3.96	6.41	3.93		4/1/1996

Report ID: IPM0005

Reporting Currency: USD

### TOTAL NET OF FEES 4/30/2017

				Cumu	ılative					
Account Name Benchmark Name	Market Value	% of Total	Month	3/1/2017 - 3/31/2017	2/1/2017 - 2/28/2017	YTD	2016	2015	2014	Inception Date
SSGA R3000 INDEX Russell 3000 Index	1,324,570,398	17	1.06 1.06	0.06 0.07	3.73 3.72	6.88 <i>6.86</i>	12.84 12.74	0.60 <i>0.4</i> 8	12.59 12.56	10/1/2012 10/1/2012
US Public Equity Russell 3000 Index	1,324,570,472	17	<b>1.06</b> <i>1.06</i>	<b>0.06</b> 0.07	<b>3.73</b> 3.72	<b>6.88</b> 6.86	<b>12.84</b> 12.74	<b>0.60</b> 0.48	<b>12.57</b> <i>12.56</i>	<b>8/1/2007</b> 8/1/2007
SSGA MSCI EAFE  MSCI EAFE Net Dividend Index	759,844,555	10	2.62 2.54	2.85 2.75	1.45 1.43	10.17 9.97	1.28 1.00	-0.59 -0.81	-4.64 -4.90	9/1/2012 9/1/2012
SSGA MSCI CANADA MSCI Canada Net Dividend Index	103,290,959	1	-2.08 -2.12	0.50 <i>0.41</i>	-1.55 -1.58	0.55 <i>0</i> .33	25.24 24.56	-23.70 -24.16	2.17 1.51	9/1/2012 9/1/2012
SSGA MSCI EM MSCI Emerging Markets Net Dividend Index	342,527,919	4	2.16 2.19	2.47 2.52	3.07 3.06	13.76 <i>13.88</i>	10.82 11.19	-15.16 <i>-14.9</i> 2	-2.34 -2.19	9/1/2012 9/1/2012
Non-US Public Equity Total International Equity BM	1,205,716,358	15	<b>2.06</b> 2.14	<b>2.53</b> 2.54	<b>1.62</b> <i>1.59</i>	<b>10.23</b> <i>10.17</i>	<b>5.01</b> 4.50	<b>-5.77</b> -5.66	<b>-3.63</b> -3.87	<b>5/1/2009</b> 5/1/2009
QVM Tilt  MSCI World Net Dividend Index	1,143,347,405	14	1.22 1.48	0.90 1.07	2.90 2.77	7.52 7.95	7.58 7.51			10/1/2015 10/1/2015
Global Public Equity  MSCI All Country World Net Index	3,673,634,235	46	<b>1.44</b> 1.56	<b>1.10</b> <i>1.22</i>	<b>2.80</b> 2.81	<b>8.14</b> 8.57	<b>8.78</b> 7.86	<b>-2.48</b> -2.36	<b>4.35</b> <i>4.16</i>	<b>7/1/2000</b> 7/1/2000
Private Equity  ILPA All Fds Custom BM 1Q Lag	545,224,213	7	1.83 1.95	1.38 <i>1.54</i>	1.69 <i>1.79</i>	5.19 <i>5.5</i> 9	9.19 <i>6.51</i>	7.08 7.16	8.02 16.39	2/1/1989 2/1/1989
Equity Hedge Funds HFRI Equity Hedge (Total) Index	412,579,052	5	<b>0.95</b> 0.81	<b>0.91</b> <i>0.90</i>	<b>0.37</b> 1.10	<b>3.45</b> <i>4.75</i>	<b>-1.06</b> 5.47	<b>1.27</b> -0.97	<b>2.64</b> 1.81	<b>11/1/2011</b> 11/1/2011
Total Equity	4,631,437,500	58	1.43	1.11	2.38	7.24	7.47	-0.95	4.51	6/1/1996
MACKAY SHIELDS  Bloomberg Barclays U.S. Aggregate Bond Index	475,368,991	6	0.81 <i>0.77</i>	-0.05 -0.05	0.71 <i>0.67</i>	1.71 1.59	2.66 2.65	0.48 <i>0.</i> 55	6.00 5.97	11/1/2012 11/1/2012
PYRAMIS GLOBAL ADV Bloomberg Barclays U.S. Aggregate Bond Index	484,912,079	6	0.76 <i>0.7</i> 7	-0.05 -0.05	0.77 <i>0.67</i>	1.75 1.59	3.61 2.65	0.01 <i>0.5</i> 5	5.83 5.97	11/1/2012 11/1/2012
<b>Traditional Fixed Income</b> Bloomberg Barclays U.S. Aggregate Bond Index	960,282,794	12	<b>0.79</b> <i>0.77</i>	<b>-0.05</b> -0.05	<b>0.74</b> <i>0.67</i>	<b>1.73</b> <i>1.59</i>	<b>3.15</b> 2.65	<b>0.25</b> 0.55	<b>5.91</b> 5.97	<b>7/1/2000</b> 7/1/2000

Report ID: IPM0005

**Reporting Currency: USD** 

#### **TOTAL NET OF FEES**

				Cumi	ılative					
Account Name Benchmark Name	Market Value	% of Total	Month	3/1/2017 - 3/31/2017	2/1/2017 - 2/28/2017	YTD	2016	2015	2014	Inception Date
Real Return Hedge Funds HFRI Fund of Funds Composite Index	434,745,643	5	<b>-0.07</b> 0.56	<b>0.07</b> 0.45	<b>0.94</b> 0.92	<b>1.32</b> 2.97	<b>7.04</b> 0.51	<b>0.86</b> -0.27	<b>4.70</b> 3.37	<b>11/1/2011</b> 11/1/2011
PIMCO 30%BoA1-3BB-BHY/70% JPMB/BBLLI	201,993,172	3	0.33 <i>0.47</i>	0.17 <i>0.15</i>	0.59 <i>0.54</i>	1.35 1.53	7.59 9.17	1.13 1.00	1.22 2.11	5/1/2013 5/1/2013
WAMCO 30% BoA 1-3 BB-B HY/70% CS LLI	190,651,104	2	-0.54 <i>0.5</i> 2	-0.08 <i>0.12</i>	0.07 <i>0.64</i>	0.55 1.85	11.69 <i>10.0</i> 9	-3.69 <i>-0.18</i>	0.10 2.03	4/1/2013 4/1/2013
Credit Aggregate Credit Aggregate	392,644,275	5	<b>-0.09</b> <i>0.4</i> 9	<b>0.05</b> <i>0.13</i>	<b>0.34</b> <i>0.59</i>	<b>0.96</b> 1.69	<b>9.59</b> <i>9.63</i>	<b>-1.29</b> <i>0.4</i> 9	<b>0.66</b> 2.11	<b>5/1/2013</b> 5/1/2013
BROWN BROTHERS HARR BBH Inflation-Linked Custom BM	250,699,687	3	0.34 <i>0.4</i> 5	0.05 <i>0.07</i>	0.10 <i>0.24</i>	1.25 1.50	3.91 <i>4.01</i>	-0.26 -0.15	1.72 2.04	11/1/2012 11/1/2012
Inflation-Linked Bonds Total Inflation Linked Custom	250,699,687	3	<b>0.34</b> <i>0.45</i>	<b>0.05</b> 0.07	<b>0.10</b> <i>0.24</i>	<b>1.25</b> <i>1.50</i>	<b>3.91</b> <i>4.01</i>	<b>-0.26</b> -0.15	<b>1.72</b> 2.04	<b>11/1/2009</b> 11/1/2009
Harvest Fund Advisor Alerian MLP Index	169,056,004	2	-1.78 -1.28	-0.23 -1.30	1.12 <i>0.40</i>	2.53 2.62	20.64 18.31	-31.01 -32.59		1/1/2015 1/1/2015
Priv Listed Infrastructure CPI + 4%	123,927,798	2	2.39	2.22 0.41	0.97 <i>0.6</i> 5	5.69	13.35 <i>6.07</i>			3/1/2015 3/1/2015
Total Real Return	1,371,073,406	17	0.00	0.19	0.64	1.72	9.30	-2.76	2.74	6/1/2004
Real Estate NFI-ODCE Index	574,051,055	7	0.60 <i>0.66</i>	0.82 1.88	0.41 <i>0.00</i>	2.82 2.55	9.77 9.08	14.22 13.86	10.90 <i>12.26</i>	1/1/2005 1/1/2005
ERSRI CASH BofA Merrill Lynch 3 Month US Treasury Bill G0O1	193,277,232	2	0.28 0.07	0.03 <i>0.0</i> 2	0.28 <i>0.04</i>	0.66 <i>0.17</i>	0.97 <i>0</i> .33	0.40 <i>0.05</i>	0.75 0.03	7/1/2000 7/1/2000
ERSRI SMA Cash BofA Merrill Lynch United States Treasury Notes 0-1 Year (G0	232,804,809	3	0.11 <i>0.07</i>	0.05 -0.02	0.01 <i>0.0</i> 5					2/1/2017 2/1/2017
Total Cash	429,994,828	5	0.14	0.05	0.05	0.31	0.91	0.38	0.74	4/1/2004
Russell Overlay Fd	-8,552,960	0	0.00	-0.01	-0.03	-0.04	0.06	0.00	-0.02	9/1/2008



Report ID: IPM0005

**Reporting Currency: USD** 

#### **TOTAL NET OF FEES**

		Cumulative										
Account Name Benchmark Name		Market Value	% of Total	Month	3/1/2017 - 3/31/2017	2/1/2017 - 2/28/2017	YTD	2016	2015	2014	Inception Date	
TOTAL PLAN Total Plan Benchmark 60/40 Blend	1	7,959,201,790	100	<b>1.00</b> 1.11 1.24	<b>0.75</b> 0.83 0.71	<b>1.66</b> 1.67 1.95	<b>5.04</b> 5.32 5.74	<b>7.35</b> 6.32 5.92	<b>-0.28</b> -0.25 -0.98	<b>4.52</b> 5.04 4.96	<b>7/1/2000</b> 7/1/2000 7/1/2000	
Total Plan ex Overlay Total Plan Benchmark		7,967,754,750	100	<b>0.99</b> 1.11	<b>0.76</b> <i>0.8</i> 3	<b>1.68</b> 1.67	<b>5.07</b> 5.32	<b>7.29</b> 6.32	<b>-0.28</b> -0.25	<b>4.54</b> 5.04	<b>8/1/2008</b> 8/1/2 <i>008</i>	
Total Plan ex PE,RE & Priv Inf Total Plan BM ex PE RE		6,715,998,723	84	<b>0.94</b> 1.07	<b>0.67</b> 0.72	<b>1.77</b> 1.76	<b>5.21</b> 5.46	<b>6.97</b> <i>6.13</i>	<b>-1.68</b> -1.64	<b>3.98</b> 3.90	<b>4/1/1996</b> 4/1/1996	



Report ID: IPM0005

Reporting Currency: USD

#### **END NOTES**

1 RI6G23000000	TOTAL PLAN	Month - Current Month
		Cumulative Months - Prior Month and Second Prior Month
		Monthly Reporting for Private Equity and Real Estate skew performance on an actual and benchmark basis due to nature of valuations
		2014, 2013, 2012 - Calendar Years
RI6G23000000	TOTAL PLAN	The current composition of the Total Plan Benchmark is as follows:
		15.0% Barclays U.S. Aggregate Bond Index
		44.5% MSCI All Country World Net Index
		7.0% HFRI Fund of Funds Composite Index
		3.0% BofA Merrill Lynch 3 Month US Treasury Bill
		8.0% HFRI Equity Hedge (Total) Index
		5.0% NFI-ODCE Index
		4.0% Barclays U.S. Treasury Inflation Notes: 1-10 Year Index
		5.0% Credit Aggregate Custom: 30% BoA1-3BB-B HY/35%CSInstLLI/35% JPM BB/B Leveraged Loan Index
		7.0% ILPA All Funds Index
		1.5% Alerian MLP Total Return Index



Hedge Fund Returns



## Employees' Retirement System of the State of Rhode Island

Hedge Fund Portfolio Portfolio Performance Summary Estimated as of April 30, 2017

						Ret	ırns					Sharpe	Incep
Fund	Market Value	Actual %	Apr	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep	Std Dev	Ratio	Date
Global Equities													
Ascend ERSRI Fund LP - Holdback	3,521,829	0.4%	0.00%	0.00%	-	-	-	-	-	0.00%	0.00%	-	Feb-17
Davidson Kempner Institutional Partners, L.P.	83,293,056	10.6%	0.89%	0.89%	3.16%	7.41%	9.06%	4.14%	6.04%	6.15%	2.01%	2.77	Nov-11
Elliott Associates, L.P.	99,480,601	12.6%	0.20%	0.20%	3.33%	11.35%	11.04%	8.58%	9.87%	9.63%	3.73%	2.38	Nov-11
ESG Cross Border Equity Fund LP - Holdback	1,095,973	0.1%	0.00%	0.00%	-4.43%	-11.13%	-8.20%	-	-	-10.18%	7.79%	-1.40	Jun-14
Indus Asia Pacific Distribution Holding Company II, 06.30.14 Series													
(liquidating trust)	349,549	0.0%	0.00%	0.00%	4.13%	16.46%	-22.46%	-22.50%	-14.44%	-12.75%	18.07%	-0.68	Jan-12
Luxor Capital Partners, LP - Holdback	1,453,695	0.2%	0.00%	0.00%	0.00%	0.00%	-	-	-	0.00%	0.00%	-	Jul-16
Luxor Capital Partners, LP - Liquidating SPV	3,992,288	0.5%	0.72%	0.72%	4.90%	-5.55%	-	-	-	-5.55%	6.76%	-	Jul-16
PFM Diversified Fund, L.P Holdback	3,925,246	0.5%	0.00%	0.00%	-	-	-	-	-	0.00%	-	-	Apr-17
Samlyn Onshore Fund, L.P.	113,068,044	14.4%	1.76%	1.76%	4.50%	10.81%	11.87%	5.20%	7.40%	7.92%	6.17%	1.20	Jan-12
Viking Global Equities, LP	105,314,398	13.4%	2.10%	2.10%	7.19%	9.31%	12.58%	7.83%	10.62%	10.95%	7.42%	1.38	Dec-11
Total Global Equities	415,494,678	52.8%	1.01%	1.01%	3.55%	6.89%	7.74%	2.24%	5.43%	5.43%	4.27%	1.16	Nov-11
MSCI AC World Index Free - Net			1.56%	1.56%	8.57%	15.69%	15.14%	5.29%	8.96%	9.46%	11.05%	0.84	Nov-11
Russell 3000 Index (DRI)			1.06%	1.06%	6.86%	16.26%	18.58%	10.10%	13.57%	14.74%	10.24%	1.36	Nov-11
HFRI Equity Hedge (Total) Index			0.81%	0.81%	4.74%	10.92%	11.20%	3.53%	5.22%	5.28%	6.03%	0.81	Nov-11
Real Return													
Brevan Howard LP	78,223,726	9.9%	-0.73%	-0.73%	-3.10%	0.98%	1.61%	0.34%	0.56%	0.77%	5.71%	0.08	Nov-11
Brigade Leveraged Capital Structures Fund LP - Holdback	3,188,048	0.4%	0.00%	0.00%	3.91%	12.94%	16.94%	3.96%	4.65%	4.82%	5.68%	0.78	Mar-12
Capula Global Relative Value Fund Ltd.	69,467,505	8.8%			2.26%	7.49%	8.11%	8.01%	7.06%	6.26%	1.93%	2.92	Dec-11
Claren Road Credit Fund, Ltd.	3,527,285	0.4%	0.00%	0.00%	0.67%	10.64%	11.83%	-3.24%	-	-1.48%	11.01%	-0.13	Apr-13
DE Shaw Composite Fund LLC	98,949,917	12.6%			3.89%	7.31%	6.39%	11.55%	13.76%	13.21%	4.16%	2.90	Nov-11
Graham Absolute Return Trading Ltd.	58,509,950	7.4%	-2.16%	-2.16%	-5.65%	5.01%	5.57%	3.80%	2.91%	2.99%	5.19%	0.51	Jan-12
OZ Domestic Partners II, L.P.	23,323,134	3.0%	0.67%	0.67%	5.17%	11.78%	12.72%	5.12%	7.24%	7.48%	4.55%	1.52	Nov-11
Winton Futures Fund Limited	36,043,166	4.6%	-0.66%	-0.66%	0.81%	-2.12%	-0.02%	3.91%	3.63%	3.45%	8.53%	0.39	Dec-11
Total Real Return	371,232,731	47.2%	-0.06%	-0.06%	1.35%	6.83%	7.71%	4.32%	4.86%	4.80%	2.61%	1.64	Nov-11
ML 3-month T-Bills			0.07%	0.07%	0.17%	0.35%	0.40%	0.19%	0.15%	0.14%	0.05%	-	Nov-11
HFRI Fund of Funds Composite Index			0.70%	0.70%	3.09%	6.36%	6.40%	2.25%	3.42%	3.39%	3.41%	0.86	Nov-11
Total Hedge Fund Portfolio	786,727,409	100.0%	0.51%	0.51%	2.49%	6.85%	7.70%	3.18%	5.16%	5.15%	3.15%	1.47	Nov-11
HFRI Fund of Funds Composite Index			0.70%	0.70%	3.09%	6.36%	6.40%	2.25%	3.42%	3.39%	3.41%	0.86	Nov-11



#### **Employees' Retirement System of the State of Rhode Island**

Hedge Fund Portfolio Portfolio Performance Summary Estimated as of April 30, 2017

	Returns									Sharpe	Incep		
Fund	Market Value	Actual %	Apr	QTD	YTD	FYTD	1 Year	3 Year	5 Year	Incep	Std Dev	Ratio	Date
Market Indices													
Libor3Month			0.10%	0.10%	0.36%	0.80%	0.92%	0.54%	0.44%	0.45%	0.07%	-	Nov-11
Barclays Aggregate Bond Index			0.77%	0.77%	1.60%	-0.97%	0.84%	2.66%	2.28%	2.51%	2.82%	0.74	Nov-11
Barclays High Yield Credit Bond Index			1.15%	1.15%	3.89%	11.59%	13.31%	4.75%	6.85%	7.51%	5.51%	1.27	Nov-11
S&P 500 TR			1.03%	1.03%	7.16%	15.54%	17.92%	10.47%	13.68%	14.84%	9.98%	1.40	Nov-11
MSCI EAFE - Net			2.54%	2.54%	9.97%	16.22%	11.29%	0.86%	6.78%	6.61%	13.20%	0.52	Nov-11
MSCI EMF (Emerging Markets Free) - Net			2.19%	2.19%	13.88%	18.99%	19.13%	1.79%	1.49%	2.06%	15.95%	0.18	Nov-11

Most recent month returns are based on manager estimates; prior months use final market values.

Hedge Fund Research, Inc. ("HFR") is the source and owner of the HFR data contained or reflected in this report. The HFR indices included in this report are revised by HFR for up to three months following their initial release. The revisions are reflected in the trailing period returns.

This report reflects information only through the date hereof. Our due diligence and reporting rely upon the accuracy and completeness of financial information (which may or may not be audited by the fund manager) and other information provided to us by the fund manager, its professional staff, and references we have contacted and other third parties. We have not conducted an independent verification of the information provided completeness of financial information and other third parties. We have not conducted an independent verification of the information provides on the reference we information contained herein is confidential commercial or financial information, the disclosure of which would cause substantial competitive harm to you, Cliffwater LLC, or the person or entity from whom the information was obtained, and may not be disclosured except as required by applicable law.

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## Employees' Retirement System of the State of Rhode Island

Hedge Fund Portfolio Fund Level Performance Report Estimated as of April 30, 2017

						Tra	iling Retu	rns		Calen	dar Year R	eturns		5 Yr		Sharpe Rat	io	Start
Fund	QTD	YTD	Apr	Mar	Feb	1 Year	3 Year	5 Year	2016	2015	2014	2013	2012	Std Dev	3 yr	5 yr	Incep.	Date
Global Equities																		
Ascend Partners Fund II LP	-0.66%	0.98%	-0.66%	-0.40%	0.75%	2.22%	1.43%	3.43%	-3.51%	2.66%	5.09%	12.22%	2.50%	3.01%	0.33	0.99	0.94	Jan-04
Davidson Kempner Institutional Partners, L.P.	0.89%	3.03%	0.89%	0.46%	0.93%	8.73%	3.99%	5.74%	6.71%	1.51%	4.45%	9.52%	6.87%	2.05%	1.67	2.53	1.59	Mar-96
Elliott Associates, L.P.	0.20%	3.33%	0.20%	0.30%	0.70%	10.65%	8.11%	9.34%	12.98%	2.51%	8.24%	12.44%	13.18%	3.55%	1.85	2.42	1.93	Jan-90
ESG Cross Border Equity Fund LP	3.50%	-1.10%	3.50%	-0.40%	-1.60%	-4.99%	-8.22%	-2.76%	-13.04%	-5.06%	-7.16%	13.59%	6.74%	7.51%	-1.06	-0.39	0.57	Jan-04
Indus Asia Pacific Fund, LP	0.00%	4.13%	0.00%	2.32%	1.67%	-22.46%	-22.49%	-14.29%	-26.00%	-33.23%	-15.60%	4.97%	8.21%	18.56%	-0.99	-0.75	0.04	Dec-00
Luxor Capital Partners, LP	0.72%	11.91%	0.72%	3.45%	-0.16%	29.94%	-4.58%	1.00%	7.80%	-19.05%	-9.83%	19.53%	5.21%	9.83%	-0.39	0.11	0.82	Apr-02
PFM Diversified Fund, L.P.	0.00%	1.74%	0.00%	1.39%	-1.89%	3.67%	2.96%	5.91%	-7.11%	8.10%	2.84%	22.17%	5.59%	8.65%	0.36	0.66	0.79	Nov-04
Samlyn Onshore Fund, L.P.	1.74%	4.33%	1.74%	0.31%	0.68%	11.64%	4.89%	7.11%	1.17%	-1.29%	9.24%	18.93%	10.49%	6.18%	0.70	1.07	1.04	Mar-07
Viking Global Equities, LP	2.10%	7.26%	2.10%	3.20%	-0.20%	12.55%	7.85%	10.57%	-3.92%	8.27%	13.47%	22.65%	12.75%	7.61%	0.87	1.30	1.43	Oct-99
Real Return																		
Brevan Howard LP	-0.73%	-3.10%	-0.73%	-2.91%	2.03%	1.60%	0.33%	0.64%	2.99%	-1.98%	-0.78%	2.68%	3.91%	6.03%	0.00	0.06	0.87	Sep-05
Brigade Leveraged Capital Structures Fund LP	-0.73%	3.49%	-0.73%	-2.91%	2.05%	16.45%	3.82%	4.57%	23.04%	-10.73%	0.61%	6.13%	6.91%	5.77%	0.00	0.73	0.87	Jan-07
Capula Global Relative Value Fund Ltd.	-0.41/0	2.22%	-0.41/0	-0.3376	2.23/0	8.12%	8.01%	7.05%	8.37%	7.54%	8.14%	7.60%	0.41%	1.82%	4.21	3.52	1.91	Oct-05
Claren Road Credit Fund, Ltd.	0.00%	0.75%	0.00%	3.02%	0.25%	-4.88%	-10.81%	-4.57%	-12.72%	-7.96%	-10.10%	5.43%	1.49%	7.21%	-1.44	-0.67	0.35	Jan-06
DE Shaw Composite Fund LLC	0.00%	3.95%	0.00%	3.0270	0.23%	6.23%	11.02%	12.41%	6.12%	13.68%	15.57%	11.51%	13.94%	4.00%	2.39	2.84	1.57	Mar-01
Graham Absolute Return Trading Ltd.	-2.16%	-5.43%	-2.16%	0.35%	-1.73%	5.72%	7.13%	6.65%	11.78%	1.50%	10.42%	10.50%	9.29%	7.57%	0.78	0.83	1.00	Jan-05
OZ Domestic Partners II, L.P.	0.67%	4.86%	0.67%	0.35%	1.11%	12.11%	4.89%	6.79%	3.79%	-0.44%	5.45%	14.20%	12.01%	4.52%	0.78	1.38	1.10	Jan-03
Winton Futures Fund Limited	-0.65%	0.82%	-0.65%	0.01%	2.58%	-0.02%	3.92%	3.64%	-3.01%	0.95%	13.88%	9.43%	-3.56%	8.85%	0.88	0.40	0.67	Oct-97
William Fatares Fulla Limitea	-0.03%	0.62%	-0.05%	0.01%	2.30%	-0.02%	3.92%	3.04%	-3.01%	0.95%	13.00%	9.45%	-3.30%	0.0370	0.40	0.40	0.67	OCI-97
Benchmark																		
HFRI Fund of Funds Composite Index	0.70%	3.09%	0.70%	0.42%	0.92%	6.40%	2.25%	3.42%	0.51%	-0.27%	3.37%	8.96%	4.79%	3.39%				Jan-90
HFRI Fund Weighted Composite Index	0.54%	3.06%	0.54%	0.40%	0.90%	8.21%	3.12%	4.28%	5.44%	-1.12%	2.98%	9.13%	6.36%	3.88%				Jan-90
Market Indices																		
3 Month Libor - BOM	0.10%	0.36%	0.10%	0.10%	0.08%	0.92%	0.54%	0.44%	0.76%	0.33%	0.23%	0.27%	0.42%	0.08%				Jan-87
Barclays Aggregate Bond Index	0.10%	1.60%	0.10%	-0.05%	0.67%	0.92%	2.66%	2.28%	2.66%	0.55%	5.94%	-2.02%	4.23%	2.86%				Jan-76
Barclays High Yield Credit Bond Index	1.15%	3.89%	1.15%	-0.03%	1.46%	13.31%	4.75%	6.85%	17.14%	-4.46%	2.46%	7.46%	15.81%	5.38%				Jul-83
S&P 500 (TR)	1.03%	7.16%	1.13%	0.12%	3.97%	17.92%	10.47%	13.68%	11.96%	1.38%	13.69%	32.39%	16.00%	10.17%				Jun-88
MSCI FAFE - Net - USD	2.54%	9.97%	2.54%	2.75%	1.43%	11.29%	0.86%	6.78%	1.00%	-0.81%	-4.90%	22.78%	17.31%	13.19%				Dec-69
MSCI EMF (EMERGING MARKETS FREE) - Net - USD	2.54%	13.88%	2.54%	2.75%	3.06%	19.13%	1.79%	1.49%	11.19%	-14.92%	-4.90% -2.19%	-2.60%	18.23%	15.35%				Dec-69 Dec-87
IVISCI LIVII (LIVILINGING IVIARRETS FREE) - IVEL - USD	2.1970	13.00%	2.1970	2.3270	3.00%	15.15%	1.7970	1.45%	11.19%	-14.9270	-2.1970	-2.00%	10.23%	13.33%				Dec-07

Note: The above is manager composite history.



Private Equity Returns

# Employees' Retirement System of Rhode Island Private Equity Performance 12/31/2016

Cumulative Cash Flows (\$)

Cumulative Performance\*

Current Partnerships	Vintage Year	Туре	Amount Committed (In \$ unless otherwise noted)	Amount Drawn	Amount Distributed	Amount Unfunded	Valuation (\$)	Net IRR (%)	Net Multiple of Investment
Paine & Partners Capital Fund IV	2015	Agriculture	30,000,000	12,812,323	736,194	17,821,286	10,239,728	-17.7	0.9
Fenway Partners Capital Fund II	1998	Buyout	15,000,000	18,513,234	20,350,029	232,336	1,676,686	4.8	
Nautic Partners V	2000	Buyout	20,000,000	20,329,437	40,413,948	651,327	1,539,358	17.2	
Providence Equity Partners IV	2000	Buyout	25,000,000	35,971,884	68,445,391	1,995,291	181,875	23.9	
CVC European Equity Partners III	2001	Buyout	20,000,000	23,158,043	59,551,716	899,966	533,757	41.1	2.6
Parthenon Investors II	2001	Buyout	23,960,000	23,409,381	37,045,489	1,821,022	921,942	12.4	1.6
Leeds Equity Partners IV	2003	Buyout	10,000,000	10,209,327	11,467,347	1,099,639	2,082,736	4.5	
Nordic Capital Fund V	2003 2003	Buyout	€ 14,615,550	21,434,529	58,016,017		838,814	21.0	
TPG Partners IV Aurora Equity Partners III	2003	Buyout Buyout	15,000,000 15,000,000	16,672,684 16,242,296	30,734,178 26,640,090	64,421 835,850	1,836,961 1,228,844	15.7 15.3	2.0 1.7
Birch Hill Equity Partners III	2004	Buyout	CAD 18,000,000	18,894,996	29,679,973	242,688	4,690,849	12.2	
CVC European Equity Partners IV	2005	Buyout	€ 16.500.000	21,285,423	36.928.783	2,019,513	3.386.332	16.7	1.0
Providence Equity Partners V	2005	Buyout	25,000,000	31,136,262	34,127,175	2,196,098	3,955,434	3.8	
Centerbridge Capital Partners	2006	Buyout	15,000,000	23,550,697	37,341,603	1,095,594	5,519,637	20.2	
Charterhouse Capital Partners VIII	2006	Buyout	€ 15.000,000	18,405,042	17.611.940	260,402	21.384	-0.7	1.0
Fenway Partners Capital Fund III	2006	Buyout	15,000,000	17,031,439	13,756,197	1,210,894	5,991,907	3.0	1.2
LNK Partners	2006	Buyout	12,500,000	12,080,416	16,825,767	421,837	2,068,040	10.2	
Nordic Capital Fund VI	2006	Buyout	€ 15,000,000	22,435,404	26,110,316	-	7,524,484	6.7	1.5
TPG Partners V	2006	Buyout	20,000,000	20,697,887	20,757,704	1,774,959	7,519,600	5.1	1.4
Green Equity Investors V	2007	Buyout	20,000,000	20,422,385	26,159,103	1,731,092	14,619,572	18.2	
Nautic Partners VI	2007	Buyout	20,000,000	23,972,088	46,510,938	777,633	6,164,522	17.4	2.2
Providence Equity Partners VI	2007	Buyout	25,000,000	29,276,773	26,478,201	1,307,759	13,023,828	6.4	
Trilantic Capital Partners IV	2007	Buyout	11,098,351	11,562,139	15,898,730	1,196,108	2,508,515	14.3	
Bain Capital Fund X	2008	Buyout	25,000,000	24,300,000	23,214,719	634,079	12,346,094	8.3	
CVC European Equity Partners V	2008	Buyout	€20,000,000	28,853,336	29,968,814	844,274	16,095,670	14.1	1.6
Nordic Capital Fund VII	2008	Buyout	€ 15,000,000	21,087,907	8,156,782	835,500	17,491,637	3.9	
TPG Partners VI	2008	Buyout	10,000,000	13,641,236	11,925,585	849,894	6,308,606	9.1	1.3
Advent International GPE VII	2012	Buyout	20,000,000	17,540,000	5,320,000	2,460,000	19,445,956	15.7	1.4
Providence Equity Partners VII	2012	Buyout	25,000,000	20,470,120	7,211,493	10,277,056	18,047,993	14.1	1.2
Nordic Capital Fund VIII Riverside Capital Appreciation Fund VI	2013 2013	Buyout Buyout	€ 15,000,000 20,000,000	9,993,872 14,472,805	368,111 1,566,127	7,485,098 6,227,450	10,689,788 15,855,232	4.8 12.4	1.1 1.2
Carlyle Asia Partners IV	2013	Buyout	30.000,000	18,208,578	1,653,589	13,485,904	18,524,551	7.0	
CVC Capital Partners VI	2014	Buyout	€ 15,000,000	9,965,439	546,229	6,952,820	9.818.924	6.0	
Nautic Partners VII	2014	Buyout	20.000,000	14.766.999	8.250,204	6,419,634	15.469.767	58.5	
Riverside Micro-Cap Fund III	2014	Buyout	20,000,000	17,758,317	(4,719)	2,241,683	22,962,534	13.9	
Sorenson Capital Partners III	2014	Buyout	30,000,000	15,139,985	(1,710)	15,302,778	15,891,695	4.2	
Baring Asia Private Equity Fund VI	2015	Buyout	15.000.000	6,468,831	22,568	8,531,169	7.003.108	11.5	
Centerbridge Capital Partners III	2015	Buyout	25,000,000	6,817,302	926,601	18,483,996	7,627,177	20.4	1.3
Advent International GPE VIII	2016	Buyout	20,000,000	420,000		19,580,000	194,343	-77.2	
Southvest Partners VII	2016	Buyout	30,000,000	2,272,488	577,053	28,304,566	752,898	-84.7	0.6
Tenex Capital Partners II	2016	Buyout	25,000,000	4,698,602	75,837	20,301,061	4,215,019	-17.8	0.9
Nautic Partners VIII	2017	Buyout	20,000,000	1,097,975	-	18,902,025	896,601	-66.6	0.8
Capital Spring Investment Partners	2016	Direct Lending	30,000,000	8,033,813		21,883,648	8,082,512	0.5	
Avenue Special Situations Fund IV	2006	Distressed Debt	20,000,000	25,179,595	32,706,000	-	161,270	8.3	1.3
MHR Institutional Partners III	2006	Distressed Debt	20,000,000	20,800,000	20,133,259	6,974,396	9,160,990	7.1	1.4
Avenue Special Situations Fund V	2007	Distressed Debt	20,000,000	20,329,267	26,322,021	-	157,806	10.6	
WLR Recovery Fund IV	2007	Distressed Debt	8,000,000	7,277,318	8,802,029	275,492	1,134,664	8.0	
Oaktree European Principal Fund III	2011	Distressed Debt	20,000,000	17,150,000	3,143,778	5,783,415	18,757,388	8.2	
Centerbridge Special Credit Partners II	2012	Distressed Debt	25,000,000	22,500,000	9,754,266	2,500,000	13,586,779	1.2	
Garrison Opportunity Fund IV	2014	Distressed Debt	30,000,000	17,744,992	(498,315)	12,200,054	19,277,434	4.6	
First Reserve Fund X	2004 2005	Energy	20,000,000	19,999,999	36,485,800	-	86,409	31.0	
Kayne Anderson Energy Fund III	2005	Energy	15,000,000	15,965,344	14,983,550	366,426	165,711	-3.0	
First Reserve Fund XI	2006	Energy	20,000,000 15.000.000	22,125,580 16.605.519	13,956,203 16.345.850	-	2,239,908 1,487,711	-8.1 2.5	
Kayne Anderson Energy Fund IV EnCap Energy Capital Fund IX	2007	Energy Energy	18,000,000	16,755,413	7,377,544	3,850,450	15,713,227	2.5	
EnCap Energy Capital Fund X	2015	Energy	25,000,000	7,893,286	295,746	17,402,460	9,462,803	33.8	
W Capital Partners	2013	Secondaries	15.000,000	14.197.500	10.229.777	802.500	465.674	-9.7	0.8
Coller International Partners V	2004	Secondaries	15,000,000	12,520,679	14.870.636	3,270,000	3,161,232	8.6	1.4
W Capital Partners II	2007	Secondaries	15,000,000	14.896.718	16.296.457	1,596,691	4,724,364	11.0	
Alta BioPharma Partners III	2003	Venture Capital	15,000,000	14,250,000	20,297,956	750,000	467,089	5.8	
Lighthouse Capital Partners V	2003	Venture Capital	11,250,000	10,462,500	12,208,726	787,500	121,221	3.9	
Granite Global Ventures II	2004	Venture Capital	15,000,000	14,333,510	18,095,258	675,000	5,927,594	6.7	1.7
Leapfrog Ventures II	2005	Venture Capital	10,000,000	9,490,000	6,811,564	510,000	3,770,570	2.0	
Alta Partners VIII	2006	Venture Capital	15,000,000	15,000,000	24,341,057	-	6,028,573	15.5	
Castile Ventures III	2006	Venture Capital	5,000,000	5,009,730	1,396,371	-	1,372,244	-11.6	0.6
Focus Ventures III	2006	Venture Capital	15,000,000	15,000,000	5,411,619	-	2,910,804	-10.9	0.6
Granite Global Ventures III	2006	Venture Capital	15,000,000	14,625,503	23,082,549	375,000	8,801,563	15.2	
Point 406 Ventures I	2006	Venture Capital	10,000,000	10,481,265	4,123,844	370,000	12,129,828	8.3	
Point Judith Venture Fund II	2006	Venture Capital	5,000,000	6,144,917	2,089,642	106,571	3,222,973	-3.0	0.9
Lighthouse Capital Partners VI	2007	Venture Capital	15,000,000	14,250,000	19,453,096	750,000	1,354,194	7.3	
Paladin III	2008	Venture Capital	10,000,000	12,527,230	5,921,179	249,873	9,901,990	6.4	1.3
Industry Ventures Partnership Holdings III	2014	Venture Capital	25,000,000	17,675,848	1,947,067	7,386,854	19,407,838	13.3	1.2
Industry Ventures Partnership Holdings III C	2015	Venture Capital	15,000,000	2,662,500	-	12,337,500	2,564,358	-4.1	1.0
Industry Ventures Partnership Holdings IV	2016	Venture Capital	10,000,000	850,000	-	9,150,000	802,125	-11.1	0.9
Other funds in aggregate**	various		120,000,000	113,813,282	105,043,266	13,026,698	46,966,121		
Total			\$ 1,460,877,586	\$ 1,274,029,189	\$ 1,282,793,617	\$ 351,155,228	\$ 551,287,365		

\*IRR refers to the fund's Internal Rate of Return, or the annualized compounded yield on an investment. This calculation is typically applied in private equity where there are multiple points at which capital is invested (capital called) and at which it is distributed. A positive IRR means that the fund's current value plus any cash distributions are greater than the cash value contributed and management fees paid. Typically a fund will have a negative IRR during the first few years of its life, a period referred to as the "J-Curve", because cash is invested upfront and it takes time to generate value. It is important to consider a fund's start date (vintage year) when assessing IRRs. Multiple of investment is another indicator of returns, and is calculated by dividing the fund's cumulative distributions and current value, after fees, by the amount of capital paid in. Please note that performance calculations are specific to the ERSRI investment, and were not prepared, reviewed or approved by the General Partners.

<sup>\*\*</sup>Other funds in aggregate are the total commitments to and amounts drawn and distributed by funds whose confidentiality provisions do not permit the disclosure of their performance data. These funds include Braemar Energy Ventures III, Constellation Ventures III, Summit Partners Credit Fund, Summit Partners Credit Fund, Summit Partners Credit Fund, Summit Partners Credit Fund, Summit Partners III.

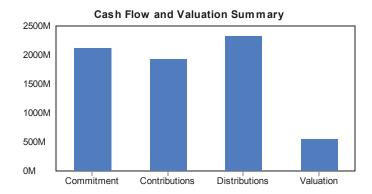
# **Portfolio Summary**

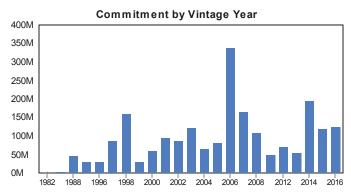
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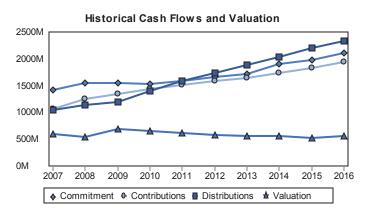
All Investments

#### Performance Summary

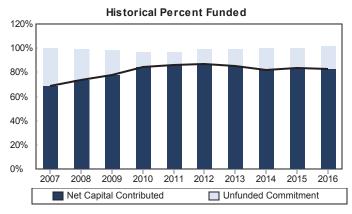
Asset Class	Investment Type	Number of Investments	Commitment	Contributions	Distributions	Adjusted Valuation	Multiple of Cost	IRR	TWR
Private Equity Fund	ls								
1. 1. 1	Agriculture	1	30,000,000	12,812,323	736,194	10,239,728	0.86	-17.68	-81.81
	Buyout	75	1,230,227,772	1,171,860,319	1,510,683,529	297,953,018	1.54	13.11	13.24
	Direct Lending	3	75,000,000	46,226,011	22,716,382	30,385,470	1.15	9.25	8.47
	Distressed Debt	14	238,000,000	218,989,906	229,215,971	71,970,987	1.38	10.27	9.92
	Energy	9	198,000,000	137,154,583	182,157,108	29,386,330	1.54	23.97	7.95
	Fund of Funds	1	45,000,000	45,000,000	106,748,821	0	2.37	19.94	-100.00
	Secondary	4	60,000,000	54,909,565	59,308,222	8,435,268	1.23	6.10	4.38
	Venture Capital	22	281,250,000	251,687,994	216,362,036	103,409,143	1.27	4.84	1.73
Total: Private Equ		129	2,157,477,772	1,938,640,700	2,327,928,263	551,779,944	1.49	13.39	10.87
Total:		129	2,157,477,772	1,938,640,700	2,327,928,263	551,779,944	1.49	13.39	10.87

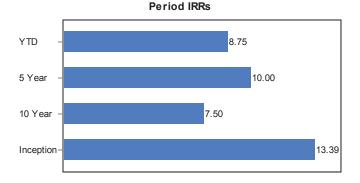














Real Estate Returns

# Employees' Retirement System of Rhode Island Real Estate Performance 12/31/2016

Cumulative Cash Flows (\$) Cumulative Performance\*

Current Partnerships	Vintage Year/Initial Investment	Туре	Amount Committed (In \$ unless otherwise noted)	Amount Drawn	Amount Distributed	Amount Unfunded	Valuation (\$)	Net IRR (%)	Net Multiple of Investment
AEW Core Property Trust	2010	Core	69,873,660	69,873,660	11,453,101	-	101,868,719	12.2%	1.4
Heitman America Real Estate Trust	2014	Core	60,000,000	60,000,000	6,380,589	-	77,218,258	12.5%	1.3
JP Morgan Strategic Property Fund	2006	Core	75,000,000	75,000,000	23,333,127	-	104,396,421	6.3%	1.6
Morgan Stanley Prime Property Fund	2005	Core	35,000,000	35,000,000	19,354,548	-	60,353,011	7.2%	1.9
Prudential (PRISA)	2005	Core	50,000,000	50,000,000	18,118,044	-	73,974,458	5.2%	1.7
Magna Hotel Fund III	2008	Value-Add	4,000,000	3,403,043	4,898,813	596,957	1,118,119	15.9%	1.8
IC Berkeley Partners III	2013	Value-Add	18,000,000	16,038,326	4,361,760	1,961,674	15,867,184	18.9%	1.3
Exeter Industrial Value Fund II	2014	Value-Add	30,000,000	27,000,000	1,912,830	3,000,000	29,714,974	19.2%	1.2
Waterton Fund XII	2014	Value-Add	35,000,000	25,218,551	2,265,976	9,781,449	30,292,910	20.5%	1.2
Crow Holdings Retail Fund	2015	Value-Add	24,000,000	18,281,125	447,458	5,718,875	18,817,898	12.5%	1.1
IC Berkeley Partners IV	2016	Value-Add	30,000,000	3,382,031	1,173,875	26,617,969	3,100,156	-17.1%	0.9
TriCon Capital Fund VII	2005	Opportunistic	15,000,000	14,571,533	3,953,566	428,467	1,245,378	-19.4%	0.3
JP Morgan Alternative Property Fund	2006	Opportunistic	20,000,000	20,000,000	14,750,429	-	173,774	-4.6%	0.7
GEM Realty Fund V	2013	Opportunistic	50,000,000	28,159,592	5,815,000	21,840,408	31,440,685	15.1%	1.2
Lone Star Real Estate Fund IV	2015	Opportunistic	24,260,817	16,947,542	2,202,542	7,313,275	16,321,286	14.9%	1.1
Total			\$ 540,134,477	\$ 462,875,403	\$ 120,421,658	\$ 77,259,074	\$ 565,903,230		

<sup>\*</sup>IRR refers to the fund's Internal Rate of Return, or the annualized compounded yield on an investment. This calculation is typically applied in private real estate where there are multiple points at which capital is invested (capital called) and at which it is distributed. A positive IRR means that the fund's current value plus any cash distributions are greater than the cash value contributed and management fees paid. Typically a fund will have a negative IRR during the first few years of its life, a period referred to as the "J-Curve", because cash is invested upfront and it takes time to generate value. It is important to consider a fund's start date (vintage year) when assessing IRRs. Multiple of investment is another indicator of returns, and is calculated by dividing the fund's cumulative distributions and current value, after fees, by the amount of capital paid in. Please note that performance calculations are specific to the ERSRI investment, and were not prepared, reviewed or approved by the General Partners.

#### **PORTFOLIO SUMMARY**

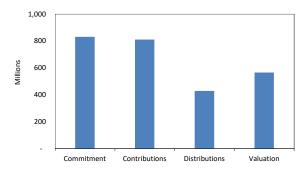
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All Portfolio Investments - Real Estate (1)

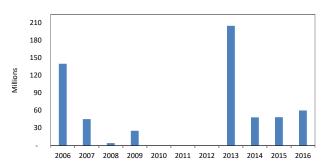
#### Performance Summary

Asset Class	Investment Type	Number of Investments	Commitment	Contributions (2), (3)	Distributions (3)	Adjusted Valuation	Multiple of Cost	IRR	TWR
Real Estate Funds	Core	8	414,873,657	479,135,351	283,358,431	417,338,141	1.5x	5.4%	5.6%
	Non-Core	21	415,260,817	330,880,555	145,057,704	147,823,066	0.9x	-3.4%	1.2%
Total: Real Estate Fun	ds	29	830,134,474	810,015,906	428,416,135	565,161,207	1.2x	3.8%	4.7%
Total:		29	830,134,474	810,015,906	428,416,135	565,161,207	1.2x	3.8%	4.7%

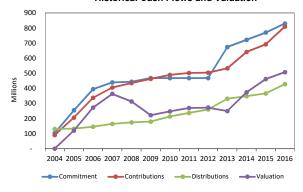
#### **Cash Flow and Valuation Summary**



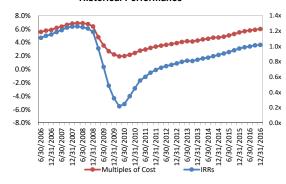
#### **Commitment by Vintage Year**



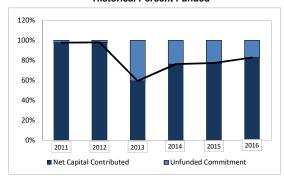
#### **Historical Cash Flows and Valuation**



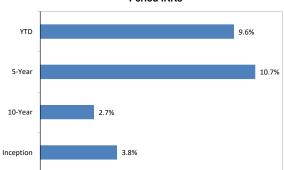
#### **Historical Performance**



## Historical Percent Funded



## Period IRRs



<sup>(1)</sup> Investment information listed as of March 31, 1989 through December 31, 2016 and includes those investments which have been liquidated.

<sup>(2)</sup> Contributions are based on cash activity and are higher than commitments primarily due to reinvestments and contributions for management fees in some of the core open-end funds.

<sup>(9)</sup> Contributions and Distributions each include activity in the amount of \$33.5 million related to a simultaneous sale and purchase of shares in a core open-end fund.



Infrastructure Returns

# Employees' Retirement System of Rhode Island Private Infrastructure Performance 12/31/2016

Cumulative Cash Flows (\$)

Cumulative Performance\*

Current Partnerships	Year/Initial	Amount Committed (In \$ unless otherwise noted)	Amount Drawn	Amount Distributed	Amount Unfunded	Valuation (\$)	Net IRR (%)	Net Multiple of Investment
IFM Global Infrastructure, L.P.	2015	50,000,000	50,000,000	1,697,533	-	53,467,818	6.1	1.1
ISQ Global Infrastructure Fund, L.P.	2015	50,000,000	33,084,313	4,791,186	16,915,687	36,250,115	15.5	1.1
Stonepeak Infrastructure Fund II, L.P.	2016	43,000,000	18,958,451	429,861	24,041,549	22,420,112	33.6	1.2
Total	\$	143,000,000	\$ 102,042,764	\$ 6,918,580	\$ 40,957,236	\$ 112,138,045		

<sup>\*</sup>IRR refers to the fund's Internal Rate of Return, or the annualized compounded yield on an investment. This calculation is typically applied in private real estate where there are multiple points at which capital is invested (capital called) and at which it is distributed. A positive IRR means that the fund's current value plus any cash distributions are greater than the cash value contributed and management fees paid. Typically a fund will have a negative IRR during the first few years of its life, a period referred to as the "J-Curve", because cash is invested upfront and it lakes time to generate value. It is important to consider a fund's start date (vintage year) when assessing IRRs. Multiple of investment is another indicator of returns, and is calculated by dividing the fund's cumulative distributions and current value, after fees, by the amount of capital paid in. Please note that performance calculations are specific to the ERSRI investment, and were not prepared, reviewed or approved by the General Partners.

# **Portfolio Summary**

All Private Infrastructure

12/31/2016

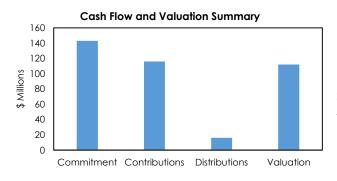


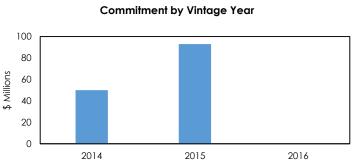
USD

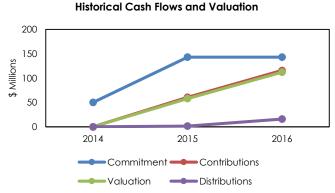
Investment	Commitment	Contributions	Distributions	Adjusted Valuation	Multiple of Cost*	Since Inception IRR*	1-yr IRR*	QTD IRR*
IFM Global Infrastructure	50,000,000	50,000,000	1,697,533	53,467,818	1.10	6.1	6.4	0.1
ISQ Global Infrastructure Fund	50,000,000	46,688,926	13,728,291	36,250,115	1.07	15.5	26.1	8.6
Stonepeak Infrastructure Fund II	43,000,000	18,958,451	429,861	22,420,112	1.21	33.6	42.0	4.0
Total	143,000,000	115,647,377	15,855,685	112,138,045	1.11	10.6	14.8	3.2

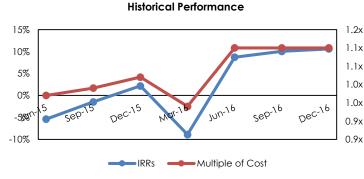
\*Net of Fees and Expenses

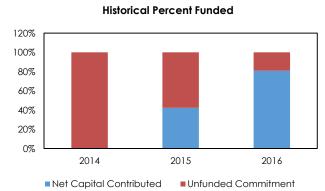
<sup>1.</sup> Recallable Distributions

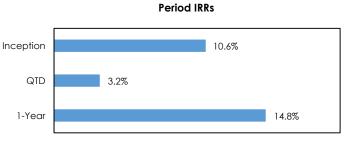














Cash Flow



# Monthly Valuation Change

Period: 2017-04-01 - 2017-04-30

Catamani	Course Assert Name	Clasing Balance	Market Value Ingrange//Decrease)	Transfer In (Out)	Onenius Palausa
Category	Source Account Name	Closing Balance	Market Value Increase/(Decrease)	Transfer In/(Out)	Opening Balance
Grand Total		7,959,201,790.02	78,803,739.63	(36,393,951.00)	7,916,792,001.39
Total Glob	oal Equity	4,086,160,288.51	57,393,512.41	(166,829,298.98)	4,195,596,075.08
Global	Equity	3,673,581,236.63	52,579,301.78	(56,813,166.45)	3,677,815,101.30
	SSGA R3000 INDEX	1,324,570,397.87	14,099,769.93	(20,957,579.30)	1,331,428,207.24
	SSGA MSCI EAFE	759,844,554.77	19,340,533.40	(14,945,024.01)	755,449,045.38
	SSGA MSCI CANADA	103,290,959.29	(2,189,942.48)	7,925.48	105,472,976.29
	SSGA MSCI EM	342,527,919.47	7,234,645.59	81,511.38	335,211,762.50
	QVM TILT	1,143,347,405.23	14,094,295.34	(21,000,000.00)	1,150,253,109.89
Global	Equity Hedge Funds	412,579,051.88	4,814,210.63	(110,016,132.53)	517,780,973.78
	DAVIDSON KEMPNER	83,293,055.75	798,724.41	0.00	82,494,331.34
	ELLIOTT ASSOCIATES	96,467,773.52	0.00	0.00	96,467,773.52
	INDUS ASIA PACIFIC	349,549.02	0.00	0.00	349,549.02
	PFM DIVERSIFIED	3,925,246.43	(10,412.28)	(74,579,682.24)	78,515,340.95
	SAMLYN ON/OFFSHORE	113,151,849.09	2,039,384.76	0.00	111,112,464.33
	VIKING GLOBAL EQUITI	105,314,397.77	1,958,135.95	0.00	103,356,261.82
	LUXOR CAP PTNS LP	5,445,981.63	28,377.79	0.00	5,417,603.84
	ESG CBE FUND LP	1,109,369.57	0.00	(35,436,450.29)	36,545,819.86
	ASCENT ERSRI FUND LP	3,521,829.10	0.00	0.00	3,521,829.10
Private Ed	quity	545,224,213.31	9,819,996.30	(4,954,336.07)	540,358,553.08
Private	Equity	545,224,213.31	9,819,996.30	(4,954,336.07)	540,358,553.08
	PRIVATE EQUITY	545,224,213.31	9,819,996.30	(4,954,336.07)	540,358,553.08
Total Fixe	d Income	960,281,070.22	7,481,529.39	0.00	952,799,540.83
Fixed II	ncome	960,281,070.22	7,481,529.39	0.00	952,799,540.83
	MACKAY SHIELDS	475,368,991.48	3,827,312.38	0.00	471,541,679.10
	PYRAMIS GLOBAL ADV	484,912,078.74	3,654,217.01	0.00	481,257,861.73
Total Real	l Return	1,371,073,406.20	(43,600.71)	(83,221,997.89)	1,454,339,004.80
Alterna	tive Absolute Return	294,762,982.54	(805,173.24)	(87,727,946.14)	383,296,101.92
	BREVAN HOWARD	78,223,726.05	(637,251.68)	0.00	78,860,977.73
	DE SHAW	98,949,916.99	1,275,391.52	0.00	97,674,525.47
	OZ DOMESTIC PTRS	23,031,673.94	123,714.00	(87,727,946.14)	110,635,906.08
	WINTON FUTURE FD	36,047,715.58	(234,916.01)	0.00	36,282,631.59
	GRAHAM ABS RETURN	58,509,949.98	(1,332,111.07)	0.00	59,842,061.05
Alterna	tive Fixed Income	139,982,659.98	436,802.21	0.00	139,545,857.77
	BRIGADE LEV CAP	63,760,951.88	0.00	0.00	63,760,951.88
	CAPULA GLOBAL	69,467,505.44	313,554.56	0.00	69,153,950.88
	CLAREN ROAD CR. FUND	6,754,202.66	123,247.65	0.00	6,630,955.0
Credit		392,644,275.40	(413,060.68)	(330,933.55)	393,388,269.63
	PIMCO	201,993,171.82	620,355.58	0.00	201,372,816.24
	WAMCO	190,651,103.58	(1,033,416.26)	(330,933.55)	192,015,453.39
GILBs		250,699,686.57	847,591.78	1,421,371.80	248,430,722.99
	BROWN BROTHERS HARR	250,699,686.57	847,591.78	1,421,371.80	248,430,722.99
Publicl	y Traded Infrastructure	292,983,801.71	(109,760.78)	3,415,510.00	289,678,052.49
	PRIV INFRASTR AGGR	123,927,798.00	2,892,165.71	415,510.00	120,620,122.29
	HARVEST FUND ADVISOR	169,056,003.71	(3,001,926.49)	3,000,000.00	169,057,930.20
Real Estat	te	574,051,055.29	3,405,473.74	5,212,445.82	565,433,135.73



# Monthly Valuation Change

Period: 2017-04-01 - 2017-04-30

Category	Source Account Name	Closing Balance	Market Value Increase/(Decrease)	Transfer In/(Out)	Opening Balance
Real Es	state	574,051,055.29	3,405,473.74	5,212,445.82	565,433,135.73
	REAL ESTATE	574,051,055.29	3,405,473.74	5,212,445.82	565,433,135.73
Total Cas	h	197,190,019.59	28,576.93	166,199,236.12	30,962,206.54
Cash A	ccounts	197,190,019.59	28,576.93	166,199,236.12	30,962,206.54
	ERSRI CASH	193,277,231.59	28,576.93	166,893,187.12	26,355,467.54
	CITIZENS CASH	3,912,788.00	0.00	(693,951.00)	4,606,739.00
Total Other	er	(8,552,959.54)	497,187.74	(25,000,000.00)	15,949,852.72
Other		(8,552,959.54)	497,187.74	(25,000,000.00)	15,949,852.72
	RUSSELL OVERLAY FD	(8,552,959.54)	497,187.74	(25,000,000.00)	15,949,852.72
Total Misc	cellaneous	969,887.80	1,631.91	0.00	968,255.89
Miscell	aneous Accounts	969,887.80	1,631.91	0.00	968,255.89
	RI TRANS ACCT	4,942.90	(124.71)	0.00	5,067.61
	SHOTT CAPITAL	910,222.54	1,466.16	0.00	908,756.38
	DOM EQUITY TRANS	74.25	0.00	0.00	74.25
	NON-US EQUITY TRANS	52,924.29	250.46	0.00	52,673.83
	FIXED INC TRANS	1,723.82	40.00	0.00	1,683.82
*unclassif	fied	232,804,808.64	219,431.92	72,200,000.00	160,385,376.72
*Unclas	ssified	232,804,808.64	219,431.92	72,200,000.00	160,385,376.72
	ERSRI SMA CASH	232,804,808.64	219,431.92	72,200,000.00	160,385,376.72

#### CASH FLOW ANALYSIS - INCOME & EXPENSES

#### **Employees Retirement System**

FISCAL YEAR 2017	FY 2016-17												
		Projected	Projected	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
	TOTAL	June	May	April	March	February	January	December	November	October	September	August	July
							2017						2016
MEMBER BENEFITS	837,973,222	70,000,000	70,000,000	68,321,756	68,332,550	68,350,261	68,285,631	68,412,007	68,470,352	68,479,638	69,638,749	80,260,148	69,422,131
ADMINISTRATIVE EXPENSES	9,160,368	1,402,923.56	718,107	738,845	892,566	768,264	484,162	1,428,567	415,373	625,257	642,177	670,460	373,667
INVESTMENT EXPENSES	9,377,987	109,133	1,202,775	874,882	1,134,860	528,297	329,085	(6,989)	1,354,605	637,021	1,260,447	1,476,800	477,072
TOTAL OUTFLOW	856,511,576	71,512,056	71,920,881	69,935,483	70,359,975	69,646,822	69,098,878	69,833,584	70,240,330	69,741,916	71,541,373	82,407,407	70,272,870
CONTRIBUTIONS	524,016,000	25,172,944	40,513,703	38,943,512	46,923,170	40,327,455	53,349,987	58,176,740	43,254,275	36,194,139	40,690,939	53,520,677	46,948,459
OTHER INCOME*	93,078,253	6,214,325	15,712,147	12,121,233	8,192,692	7,278,049	6,918,798	13,717,971	5,469,260	8,150,581	4,338,494	1,605,841	3,358,861
TOTAL INCOME	617,094,253	31,387,269	56,225,850	51,064,745	55,115,862	47,605,504	60,268,785	71,894,711	48,723,535	44,344,720	45,029,433	55,126,518	50,307,320
DIFFERENCE	(239,417,323)	(40,124,787)	(15,695,031)	(18,870,737)	(15,244,114)	(22,041,318)	(8,830,093)	2,061,127	(21,516,795)	(25,397,196)	(26,511,940)	(27,280,889)	(19,965,550)

#### **Municipal Employees Retirement System**

		Projected	Projected	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual
	TOTAL	June	May	April	March	February	January 2017	December	November	October	September	August	July 2016
							2017						2010
MEMBER BENEFITS	95,110,466	7,700,000	7,700,000	7,816,044	7,800,891	7,787,121	7,753,097	7,742,633	7,715,117	7,702,047	7,634,888	10,139,174	7,619,454
ADMINISTRATIVE EXPENSES	2,039,441	303,792	155,113	169,799	205,127	176,177	109,317	322,493	105,608	141,149	144,969	122,026	83,870
INVESTMENT EXPENSES	1,940,279	23,632	259,802	201,063	260,810	121,148	74,303	(1,578)	354,234	143,805	284,540	111,440	107,080
TOTAL OUTFLOW	99,090,185	8,027,424	8,114,915	8,186,906	8,266,828	8,084,447	7,936,718	8,063,547	8,174,960	7,987,001	8,064,397	10,372,640	7,810,403
CONTRIBUTIONS	65,793,162	302,987	4,051,743	4,706,224	6,148,074	4,495,807	6,943,950	6,219,708	5,806,255	6,763,262	5,550,861	7,700,000	7,104,291
OTHER INCOME*	20,147,504	1,345,664	3,393,857	2,785,667	1,882,821	1,668,993	1,562,174	3,096,771	476,838	1,839,957	979,396	361,465	753,901
TOTAL INCOME	85,940,666	1,648,651	7,445,600	7,491,891	8,030,895	6,164,800	8,506,124	9,316,479	6,283,093	8,603,219	6,530,257	8,061,465	7,858,192
DIFFERENCE	(13,149,519)	(6,378,773)	(669,314)	(695,016)	(235,933)	(1,919,647)	569,406	1,252,932	(1,891,867)	616,219	(1,534,140)	(2,311,175)	47,789

#### CASH FLOW ANALYSIS - INCOME & EXPENSES

State Police	

Retirement System	TOTAL	Projected June	Projected May	Actual April	Actual March	Actual February	Actual January 2017	Actual December	Actual November	Actual October	Actual September	Actual August	Actual July 2016
MEMBER BENEFITS	4,782,711	385,000	385,000	409,879	402,473	402,473	402,415	402,415	402,415	402,415	393,280	410,224	384,724
ADMINISTRATIVE EXPENSES	174,975	25,127	12,771	14,842	17,930	15,383	9,455	27,863	9,124	12,195	12,525	10,543	7,216
INVESTMENT EXPENSES	167,042	1,955	21,391	17,575	22,798	10,578	6,427	(136)	30,606	12,425	24,584	9,628	9,212
TOTAL OUTFLOW	5,124,729	412,082	419,163	442,296	443,201	428,433	418,297	430,141	442,145	427,034	430,389	430,396	401,152
CONTRIBUTIONS	6,012,259	441,275	393,221	538,081	479,665	523,635	571,989	583,556	479,499	490,382	533,942	592,292	384,724
OTHER INCOME*	1,728,097	111,301	279,439	243,498	164,579	145,725	135,118	267,558	41,198	158,971	84,619	31,230	64,861
TOTAL INCOME	7,740,357	552,576	672,660	781,579	644,244	669,359	707,106	851,114	520,697	649,352	618,561	623,523	449,585
DIFFERENCE	2,615,628	140,495	253,497	339,283	201,043	240,926	288,810	420,973	78,552	222,318	188,172	193,127	48,433

Judicial	
Dati	Curto

Retirement System	TOTAL	Projected June	Projected May	Actual April	Actual March	Actual February	Actual January 2017	Actual December	Actual November	Actual October	Actual September	Actual August	Actual July 2016
MEMBER BENEFITS	2,747,099	230,000	230,000	227,918	227,918	227,879	227,841	227,841	227,841	227,841	227,841	236,341	227,841
ADMINISTRATIVE EXPENSES	90,986	12,912	6,598	7,745	9,356	8,023	4,915	14,561	4,768	6,373	6,545	5,442	3,748
INVESTMENT EXPENSES	86,997	1,004	11,051	9,171	11,896	5,517	3,341	(71)	15,994	6,493	12,847	4,969	4,786
TOTAL OUTFLOW	2,925,082	243,917	247,649	244,833	249,170	241,419	236,096	242,330	248,603	240,706	247,233	246,752	236,375
CONTRIBUTIONS	5,612,889	291,448	263,142	632,110	625,931	612,878	602,903	590,610	454,249	443,861	436,053	431,866	227,841
OTHER INCOME*	899,191	57,197	144,363	127,059	85,878	76,001	70,235	139,821	21,529	83,075	44,220	16,119	33,694
TOTAL INCOME	6,512,080	348,645	407,505	759,168	711,809	688,879	673,138	730,430	475,778	526,936	480,273	447,984	261,534
DIFFERENCE	3,586,998	104,728	159,856	514,335	462,639	447,461	437,042	488,100	227,175	286,229	233,040	201,233	25,160

<sup>\*</sup>includes income from Real Estate Investments, Private Equity, and Cash Accounts

**FISCAL YEAR 2017** 

#### DIRECT BILLED INVESTMENT MANAGER FEES, PROFESSIONAL FEES & OPERATING EXPENSES

ERSRI & MERSRI

ACCRUAL BASIS

	Actual	Actual	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
	Jul 16	Aug	Sept	Oct	Nov	Dec	Jan 17	Feb	Mar	Apr	May	June	TOTAL
EQUITIES US													
SSGA Russell 3000			37,971			39,653			42,421			42,000	162,045
Shott Capital/Hamilton Lane			8,259			1,142			699			1,000	11,101
SSGA QVM Tilt			105,563			105,965			70,000			70,000	351,528
			151,794			146,760			113,120			119,800	179,946
FIXED INCOME													
Pyramis			175,251			168,920			180,000			180,000	704,171
Mackay Shields			181,878			170,381			180,000			180,000	712,259
Brown Bros.TIPS/GILB			82,477			77,685			84,000			84,000	328,162
			439,607			416,985			444,000			444,000	1,744,592
INT'L EQUITIES													
SSGA MSCI EAFE			54,233			52,465			54,976			65,000	226,674
SSGA MSCI CAD			7,383			7,552			7,925			8,000	30,860
SSGA MSCI Emerg Mkts			85,001			78,931			81,511			80,000	325,444
			146,617			138,948			144,413			153,000	582,978
CREDIT			-,-						, -			,	
WAMCO			129,958			130,824			100,000			100,000	460,782
PIMCO			133,852			134,840			130,000			130,000	528,692
			263,810			265,664			230,000			230,000	989,474
Infrastructure													ĺ
Harvest Partners			319,128			318,399			220,000			220,000	1,077,528
REAL ESTATE													
Direct Billed Real Estate	331,011	192,928	0	513,718	94,274	0	411,042	0	94,343	322,544	104,358	0	2,064,218
ALTERNATIVE INVESTMENTS													
Direct Billed Private Equity	267,199	428,254	1,586,067	287,868	1,880,276	(8,795)	3,044	667,372	1,339,709	782,990	1,231,877	135,737	8,601,598
SUB TOTAL-INV MGMT FEES	598,210	621,182	2,907,023	801,586	1,974,550	1,277,962	414,085	667,372	2,585,585	1,105,534	1,336,235	1,302,537	15,240,333
PROFESSIONAL FEES													
Legal	3,488	5,000	2,875	5,125	2,563	4,915	7,000	20,038	3,988	12,347	5,960	9,763	83,061
BNY Mellon - Custodial	60,277	40,948	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	431,225
Cliffwater	37,500	37,500	37,500	37,500	37,500	37,500	37,500	37,500	37,500	37,500	37,500	37,500	450,000
PCA/Russell	14,583	14,583	210,233	14,583	33,333	72,831	14,583	14,583	78,809	14,583	14,583	33,333	530,623
PCA Real Estate	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	125,004
	126,265	108,447	294,025	100,625	116,813	158,664	102,500	115,538	163,714	107,848	101,460	124,013	1,619,911
OPERATING EXPENSE		,	,	,	-,		,	-,3	,	,	,	-,	,,-11
Retirement Transfers	359,498	596,617	1,310,274	921,394	456,008	870,703	706,200	529,069	1,384,884	823,990	442,116	1,303,711	9,704,463
Other Expense	<u>0</u>	<u>0</u>	<u>4,375</u>	13,270	10,000	23,820	<u>750</u>	9,523	39,903	1,795	<u>0</u>	1,000	104,436
r	359,498	596,617	1,314,649	934,664	466,008	894,523	706,950	538,592	1,424,787	825,785	442,116	1,304,711	9,808,899
TOTAL:	1,083,973	1,326,246	4,515,697	1,836,875	2,557,371	2,331,149	1,223,536	1,321,502	4,174,085	2,039,166	1,879,811	2,731,261	26,669,144

Note: Numbers in bold are actual.

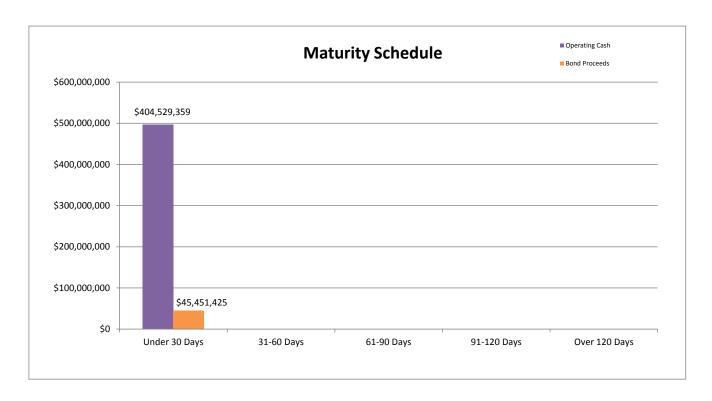


**Short-Term Investments** 

# State of Rhode Island Short Term Cash Monthly Performance Performance for April 01, 2017 to April 30, 2017

Fund Name	Ве	ginning Balance		Ending Balance	Α	verage Daily Balance	Earnings	Yield(Annual
GENERAL FUND	\$	113,213,494.73	\$	223,622,612.59	\$	213,587,553.06	\$ 131,367.86	0.7483%
H.A.V.A	\$	297.99		298.15			\$ 0.16	0.6533%
GENERAL FUND (HIST PRES)	\$	543,128.04		543,569.78		543,128.04	441.74	0.9895%
HISTORIC TAX CREDITS	\$	2,932,340.91		2,934,584.90		2,932,340.91	2,243.99	0.9311%
HIGHWAY FUND	\$	57,803,037.38	\$	64,045,877.75		55,856,370.71	42,840.37	0.9332%
r.d.i. reserve (det)	\$	93,038,484.18	\$		\$	87,098,484.18	38,778.00	0.5417%
RICAP GL FUND 21	\$	50,761,612.76	\$	44,290,545.23		47,911,612.76	28,932.47	0.7347%
BOND CAPITAL FUND	\$	5,125,417.08	\$	125,964.90		1,025,417.08	547.82	0.6500%
R.I. CLEAN WATER ACT	\$	3,213,111.70	\$	3,215,478.40		3,213,111.70	2,366.70	0.8962%
STATE LOTTERY FUND	\$	52,223,693.42	\$	50,258,329.96		47,493,693.42	34,636.54	0.8873%
ASSESSED FRINGE BEN ADM	\$	416,916.10	\$		\$	416,916.10	307.64	0.8978%
AUTO EQUIPMENT SERVICE	\$	1,256.71			\$	1,256.71	0.67	0.6487%
HEALTH INSURANCE FUND	\$	14,637,260.10		13,149,228.93		15,520,593.43	11,968.83	0.9382%
LEET REVOLVING LOAN FUND	\$	1,269,914.73		1,270,645.27		1,269,914.73	730.54	0.6999%
MPLOYEES RETIREMENT	\$	2,576,040.77		807,300.20		2,357,374.10	1,259.43	0.6500%
MUNICIPAL EMPLOYEES RET.	\$	894,584.59		845,042.93		857,917.92	458.34	0.6500%
RETIREE HEALTH FUND	\$	902,728.28	\$	903,210.60		902,728.28	482.32	0.6501%
OG RETIREE FUND	\$	953.66		954.37			\$ 0.71	0.9058%
RIPTA HEALTH FUND	\$	1,037,638.80	\$		\$		\$ 564.43	0.6618%
PERMANENT SCHOOL FUND	\$	1,954,491.91	-		\$	1,954,491.91	1,589.47	0.9894%
EACHER RETIREE HEALTH FUND	\$	581,390.91			\$	581,390.91	349.45	0.7313%
IST POL RETIREE HEALTH	\$	124,223.47			\$	124,223.47	67.23	0.6585%
LLEG RETIREE HEALTH	\$	830.66		831.10			\$ 0.44	0.6445%
I JUDICIAL RETIREE HEALTH	\$	40,574.61		40,596.29		40,574.61	21.68	0.6501%
JNIVERSITY COLLEGE	\$	12,266.80	\$	2,512,739.68		595,600.13	472.88	0.9660%
NDUS. BLDG. & MTG. INS.	\$	1,223,668.96		1,224,664.20		1,223,668.96	995.24	0.9895%
Operating Funds Totals	\$	404,529,359.25	\$	496,388,534.20	\$	486,548,084.23	\$ 301,424.95	0.754%
CCDL 2004 SERIES A	\$	-	\$	-			\$ -	
OND CCDL 2006 SERIES C	\$	742,178.33	\$	742,173.81	\$	741,611.14	\$ 603.18	0.9896%
O BND-NTAX 2007 SERIES A	\$	373,050.20	\$	373,047.92	\$	372,765.10	\$ 303.18	0.9895%
CDL10B BOND CAPITAL COMPONENT	\$	950,778.51	\$	950,772.72	\$	950,051.90	\$ 772.72	0.9896%
CDL10C	\$	160,753.93	\$	160,884.68	\$	160,753.93	\$ 130.75	0.9896%
CDL2011A	\$	5,781,769.05	\$	5,756,588.60	\$	5,765,554.11	\$ 4,689.48	0.9896%
CDL2012B	\$	6,217,859.10	\$	6,217,821.24	\$	6,213,107.29	\$ 5,053.37	0.9896%
O CCDL 2013A	\$	2,928,082.99	\$	2,702,295.24	\$	2,820,525.41	\$ 2,295.24	0.9901%
O CCDL 2013B	\$	3,129,952.78	\$	3,127,541.83	\$	3,125,330.19	\$ 2,541.83	0.9895%
O CCDL 2014A	\$	829,852.67	\$	336,914.04	\$	599,129.08	\$ 489.88	0.9948%
O CCDL 2014B	\$	40,697.59	\$	40,697.35	\$	40,666.49	\$ 33.08	0.9897%
O CCDL 2016A	\$	17,681,883.95	\$	17,517,157.73	\$	17,589,727.85	\$ 14,307.06	0.9896%
O CCDL 2016B	\$	4,740,481.52	\$	4,735,238.98	\$	4,735,467.71	\$ 3,851.70	0.9896%
LEAN WATER 2004 SERIES A	\$	146,848.95	\$	146,848.06	\$	146,736.73	\$ 119.35	0.9896%
CDL99A 1999A	\$	206,738.67	\$	206,737.41	\$	206,580.68	\$ 168.02	0.9896%
CLEAN WATER 2007 SERIES A	\$	283,484.18		283,482.45		283,267.53	\$ 230.39	0.9896%
CCDL2011A CLEAN WATER COMPONENT	\$	1,237,012.88		1,237,005.34		1,236,067.53	\$ 1,005.34	0.9896%
ond Proceeds Fund Totals	\$	45,451,425.30	\$	44,535,207.40	\$	44,987,342.67	\$ 36,594.57	0.990%

## Short-Term Investment Maturity Schedule & SIC Compliance Report at April 30, 2017

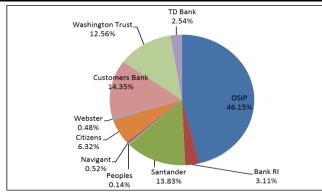


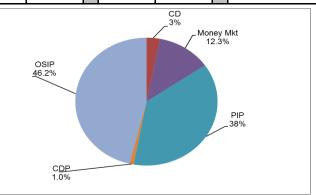
Vendor	СР	CD	Agency	Money Mkt	PIP	Repo	CDP	OSIP	Total (\$)
Guidelines-Total/Vendor	25%/10%	50%/20%	75%/35%	75%/35%	75%/35%	100%/20%	75%/35%	50%/50%	
OSIP	0	0	0	0	0	0	0	229,103,771	229,103,771
	0%	0%	0%	0%	0%	0%	0%	46%	46.2%
Bank RI	0	15,322,590	0	108,392	0	0	0	0	15,430,982
	0%	3%	0%	0%	0%	0%	0%	0%	3.1%
Santander Bank	0	0	0	0	68,644,362	0	0	0	68,644,362
	0%	0%	0%	0%	14%	0%	0%	0%	13.8%
People's Credit Union	0	0	0	0	0	0	704,522	0	704,522
	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Navigant Credit Union	0	0	0	0	0	0	2,569,666	0	2,569,666
	0%	0%	0%	0%	0%	0%	1%	0%	0.52%
Citizens Bank	0	0	0	0	31,366,286	0	0	0	31,366,286
	0%	0%	0%	0%	6%	0%	0%	0%	6.3%
Webster Bank	0	0	0	0	2,385,137	0	0	0	2,385,137
	0%	0%	0%	0%	0%	0%	0%	0%	0.5%
Customers Bank	0	0	0	0	71,234,084	0	0	0	71,234,084
	0%	0%	0%	0%	14%	0%	0%	0%	14.4%
Washington Trust	0	0	0	60,870,740	0	0	1,476,247	0	62,346,987
	0%	0%	0%	12%	0%	0%	0%	0%	12.6%
TD Bank	0	0	0	0	12,602,739	0	0	0	12,602,739
	0%	0%	0%	0%	3%	0%	0%	0%	2.5%
TOTALS	-	15,322,590	-	60,979,132	186,232,608	-	4,750,434.76	229,103,771	496,388,535
(%) PORTFOLIO	0.00%	3.09%	0.00%	12.28%	37.52%	0.00%	0.96%	46.15%	100.00%

#### State of Rhode Island Office of the General Treasurer **Short Term Investments**

#### Issuer Credit Rating April 30, 2017

			Issuer Ratings	_	S-T Deb	t Rating	L-T Deb	t Rating	Credit Outlook
Issuer	Type of Instrument*	Month End % Portfolio	Moody's		Moody's	S&P	Moody's	S&P	S&P
Bank of America		0.0%	Baa1		P-2	A-2	Baa1	BBB+	Stable
Bank RI	3,4	3.1%	N/R		N/R	N/R	N/R	N/R	N/R
Citizens Bank	4	6.3%	Baa1		P-2	A-2	A1	A-	Stable
Customers Bank	4	14.4%	N/R		N/R	N/R	N/R	N/R	N/R
Webster Bank	4	0.5%	Baa1		P-1	A-2	A1	BBB+	Stable
Washington Trust	4,7	12.6%	N/R		N/R	N/R	N/R	N/R	N/R
Santander Bank	4	13.8%	Baa2		P-1	A-2	A2	BBB+	Stable
TD Bank	4	2.5%	Aa1		P-1	A-1+	Aa1	AA-	Stable
Ocean State Investment Pool	6	46.2%	N/R		N/R	N/R	N/R	N/R	N/R
People's Credit Union	4	0.1%	N/R		N/R	N/R	N/R	N/R	N/R
Navigant Credit Union	4	0.5%	N/R		N/R	N/R	N/R	N/R	N/R





REPO	) = Repurchase Agreement	1*
CP	= Commercial Paper	2*
CD	= Certificate of Deposit	3*
CoD	= Collateralized Deposit	4*
AG	= US Government Agency Note	5*
MM	= Government Money Market	6*
GID	= Government Insured Deposit	7*

#### Moody's Short-Term Debt Ratings:

- P-1 Prime-1 have a superior ability for repayment of sr. S-T debt obligations
- P-2 Prime-1 have a strong ability for repayment of sr. S-T debt obligations
- P-3 Prime-1 have an acceptable ability for repayment of sr. S-T debt obligations
- NP Not Prime

#### Moody's Issuer Rating Symbols:

Aaa - Offer exceptional financial security (high-grade)

Aa - Offer excellent financial security (high-grade)

A - Offer good financial security

Baa - Offer adequate financial security

Ba - Offer questionable financial security

- Offer poor financial security

Caa - Offer very poor financial security

Ca - Offer extremely poor financial security

- Lowest rated class, usually in default

#### Moody's Long-Term Debt Ratings:

Aaa - Best Quality

Aa - High Quality

A - Posess many favorable investment attributes

Baa - Medium-grade obligations

Ba - Posess speculative elements

- Generally lack characteristics of desirable investments

Caa - Poor standing

Ca - Speculative in a high degree

- Lowest rated class of bonds

- 1 Higher end of letter rating category
- 2 Mid-range of letter rating category3 Lower end of letter rating category

## **Ratings Definitions**

#### S&P Short -Term Credit Ratings:

A-1 - Highest rated, strong capacity to meet obligations

A-2 - Somewhat more susceptible to adverse effects of changes in financial conditions; satisfactory

A-3 - Exhibits adequate protection parameters

B - Significant speculative characteristics, faces major ongoing uncertainties

C - Vulnerable to non-payment

D - Payment default

#### Modifiers

+ or - show relative standing within the category.

#### S&P Outlook Definitions:

Positive - A rating may be raised Negative - A rating may be lowered

Stable - A rating is not likely to change

Developing - May be raised or lowered

NM - Not meaningful

#### S&P Long-Term Debt Ratings:

AAA - Highest rating, extremely strong

 $\boldsymbol{\mathsf{A}}\boldsymbol{\mathsf{A}}\;$  - Differs slightly from highest rating, very strong

A - More susceptible to adverse effects of change in economic condition, strong

BBB - Exhibits adequate protection parameters

BB, B, - Have significant speculative characteristics. BB least speculative

CCC, CC, C - C highest degree

D - Payment default

+ or - show relative standing within the category.



**Defined Contribution Plan** 

CTIAA	20	17	YTD	Pe	rfc	rn	nar	ice	Sı	imi	ma	ry							
TIAA (A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(S)
		Mgr.	AUM	Gross	Net	Net	Rev	Recent I	Returns		Ann	ualized T	otal Re	turns as o	of 3/31/2	017		Since	Incep.
As of 4/30/17	Ticker	Tenure	\$ Millions	ER	ER	%-ile	Share	1mo.	YTD	1 Year	%-ile	3 Year	%-ile	5 Year	%-ile	10 Year	%-ile	Incep.	Date
TIAA Stable Value**** FIXED INCOME	Current c	rediting ra	ate = 2.00					0.16	0.65	1.92		1.90						1.88	3/31/201
Intermediate-Term Bond																			
Vanguard Total Bond Market Index Adm	VBTLX	4.17	177,875,.20	0.06	0.06	2	0.00	0.77	1.68	0.43	78	2.60	40	2.27	63	4.23	48	4.23	11/12/01
BBgBarc US Agg Bond TR USD								0.78	1.63	0.44		2.68		2.34		4.27			
Intermediate-Term Bond Median				0.83	0.70			0.78	1.79	1.53		2.47		2.55		4.27			
Intermediate-Term Bond Number of Funds				1017	1017						984		937		892		793		
Inflation-Linked Bond																			
PIMCO Real Return InstI	PRRIX	9.33		0.58	0.45	24	0.00	0.59	2.47	2.77	21	1.74	19	1.02	10	4.53	3		01/29/9
BBgBarc US Treasury US TIPS TR USD								0.59	1.86	1.48		2.03		0.97		4.24			
Inflation-Protected Bond Median				0.83	0.65			0.46	1.68	1.62		1.25		0.39		3.58			
Inflation-Protected Bond Number of Funds				238	238						237		216		187		145		
Equity												'							
Large Cap Blend																			
Vanguard Institutional Index I	VINIX	16.33	222,543.11	0.04	0.04	2	0.00	1.03	7.14	17.13	33	10.34	6	13.27	10	7.51	19	9.65	07/31/90
S&P 500 TR USD								1.03	7.16	17.17		10.37		13.30		7.51			
TIAA-CREF Social Choice Eq Instl	TISCX	11.33	2,544.36	0.19	0.19	6	0.00	1.33	6.48	17.32	29	8.36	54	12.23	47	7.16	32		07/01/9
Russell 3000 TR USD								1.06	6.86	18.07		9.76		13.18		7.54			
Large Blend Median				1.06	0.95			1.02	6.75	16.26		8.50		12.11		6.70			
Large Blend Number of Funds				1448	1448						1384		1324		1248		1095		
Mid Cap Blend  Vanguard Mid Cap Index I	VMCIX	18.92	83,594.77	0.07	0.07	2	0.00	1.18	7.44	16.73	58	8.69	20	12.89	24	7.85	31	9.88	05/21/98
Spliced Mid Cap Index *		.0.,2	00/07	0.07	0.07	_	0.00	1.18	7.46	16.80		8.73		12.93		7.86	•	7.00	00/2 !! / !
CRSP US Mid Cap TR USD								1.18	7.46	16.80		8.73		13.04		7.80			
Mid-Cap Blend Median				1.15	1.05			0.73	4.66	17.49		6.99		11.93		6.95			
Mid-Cap Blend Number of Funds				453	453						428		397		373		314		
Small Cap Blend																			
Vanguard Small Cap Index Adm	VSMAX	1.00	74,867.91	80.0	0.08	1	0.00	0.85	4.61	21.51	56	7.41	33	12.89	25	8.20	16	9.10	11/13/0
Spliced Small Cap Index **								0.85	4.62	21.47		7.39		12.87		8.13			
CRSP US Small Cap TR USD								0.85	4.62	21.47		7.39		13.00		8.57			
Small Blend Median				1.33	1.20			0.93	2.81	22.08	770	6.70	705	11.86	(10	6.63	E / C		
Small Blend Number of Funds				793	793						779		705		648		568		

(TIAA	20	17	YTD	Pe	rfc	orn	nar	nce	Sı	ımı	na	ry							
<b>TIAA</b> (A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(1)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(S)
		Mgr.	AUM	Gross	Net	Net	Rev	Recent	Returns		Annı	ualized T	otal Ret	turns as o	of 3/31/2	017		Since	Incep.
As of 4/30/17	Ticker	Tenure	\$ Millions	ER	ER	%-ile	Share	1mo.	YTD	1 Year	%-ile	3 Year	%-ile	5 Year	%-ile	10 Year	%-ile	Incep.	Date
Foreign Large Blend																			
TIAA-CREF International Eq Idx Instl	TCIEX	11.67	9,280.95	0.06	0.06	1	0.00	2.63	10.63	12.18	32	0.63	45	5.97	24	1.20	36		10/01/02
MSCI EAFE NR USD								2.54	9.97	11.67		0.50		5.83		1.05			
Foreign Large Blend Median				1.26	1.06			2.64	10.66	10.81		0.48		5.20		0.82			
Foreign Large Blend Number of Funds				751	751						717		638		607		460		
Diversified Emerging Markets																			
Vanguard Emerging Mkts Stock ldx Adm	VEMAX	8.67	70,376.49	0.14	0.14	1	0.00	1.43	12.42	17.57	44	1.91	31	0.87	56	2.70	42	5.24	06/23/06
Spliced Emerging Markets Index ***								1.64	11.91	16.72		1.81		0.89		2.76			
FTSE EMs AC China A Inclusion NR USD								1.64	11.90	16.68		2.49		1.53		3.23			
FTSE Emerging NR USD								1.91	12.29	17.54		2.20		1.18		3.09			
MSCI EM NR USD								2.19	13.88	17.22		1.18		0.81		2.72			
Diversified Emerging Mkts Median				1.74	1.42			2.33	14.55	16.89		1.08		1.28		2.33			
Diversified Emerging Mkts Number of Funds				820	820						787		659		506		258		
Miscellaneous Sector																			
TIAA Real Estate Account	VA	1.67	24,638.18	0.89	0.89		0.24	0.20	1.33	4.42		8.06		8.58		3.09			10/02/95
Lifecycle																			
Vanguard Target Retirement Income Trust I				0.07	0.07		0.00	0.83	3.33	5.43		3.87		4.69				5.01	06/22/07
Vanguard Target Retirement Income Composite								0.85	3.29	5.51		3.98		4.78					
Retirement Income Median				1.13	0.78			0.88	3.51	6.00		3.03		4.00		3.77			
Retirement Income Number of Funds				181	181						175		151		136		87		
Vanguard Target Retirement 2010 Trust I				0.07	0.07		0.00	0.84	3.37	5.61		3.95		5.38				4.59	06/22/07
Vanguard Target Retirement 2010 Composite								0.85	3.33	5.72		4.09		5.49					
Target Date 2000-2010 Median				1.03	0.71			0.93	4.08	7.35		3.81		5.40		4.12			
Target Date 2000-2010 Number of Funds				121	121						113		101		87		66		
Vanguard Target Retirement 2015 Trust I				0.07	0.07		0.00	0.99	4.43	7.79		4.68		6.56				4.84	06/28/07
				0.07															
Vanguard Target Retirement 2015 Composite				0.0.				1.01	4.36	7.87		4.79		6.65					
Vanguard Target Retirement 2015 Composite Target Date 2011-2015 Median				1.02	0.75			1.01 0.98	4.36 4.38	7.87 8.09		4.79 3.92		6.65 5.87		4.51			
											137		112		94	4.51	50		
Target Date 2011-2015 Median				1.02	0.75		0.00				137		112		94	4.51	50	5.01	06/22/07
Target Date 2011-2015 Median Target Date 2011-2015 Number of Funds				1.02 146	0.75 146		0.00	0.98	4.38	8.09	137	3.92	112	5.87	94	4.51	50	5.01	06/22/07
Target Date 2011-2015 Median Target Date 2011-2015 Number of Funds Vanguard Target Retirement 2020 Trust I				1.02 146	0.75 146		0.00	0.98 1.14	4.38 5.32	8.09 <b>9</b> .51	137	3.92 5.27	112	5.87 <b>7.45</b>	94	4.51 4.05	50	5.01	06/22/07

ATIA A	20	17 <b>`</b>	YTD	Pe	rfc	orn	nar	nce	Sı	ımı	ma	ry							
TIAA	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(S)
		Mgr.	AUM	Gross	Net	Net	Rev	Recent I	Returns		Ann	ualized T	otal Ret	urns as c	of 3/31/	2017		Since	Incep.
As of 4/30/17	Ticker	Tenure	\$ Millions	ER	ER	%-ile	Share	1mo.	YTD	1 Year	%-ile	3 Year	%-ile	5 Year	%-ile	10 Year	%-ile	Incep.	Date
Vanguard Target Retirement 2025 Trust I				0.07	0.07		0.00	1.23	5.91	10.77		5.58		8.05				4.96	06/28/07
Vanguard Target Retirement 2025 Composite								1.25	5.82	10.83		5.68		8.17					
Target Date 2021-2025 Median				1.08	0.80			0.56	4.38	10.18		4.51		6.91		4.76			
Target Date 2021-2025 Number of Funds				221	221						205		177		146		61		
Vanguard Target Retirement 2030 Trust I				0.07	0.07		0.00	1.29	6.47	11.95		5.82		8.61				4.95	06/28/07
Vanguard Target Retirement 2030 Composite								1.31	6.34	12.01		5.93		8.74					
Target Date 2026-2030 Median				1.12	0.86			1.27	6.24	11.59		4.84		7.48		4.28			
Target Date 2026-2030 Number of Funds				252	252						235		207		181		111		
Vanguard Target Retirement 2035 Trust I				0.07	0.07		0.00	1.36	7.01	13.15		6.05		9.16				5.07	06/28/07
Vanguard Target Retirement 2035 Composite								1.37	6.87	13.20		6.18		9.30					
Target Date 2031-2035 Median				1.12	0.82			1.38	6.82	12.77		5.25		8.00		4.90			
Target Date 2031-2035 Number of Funds				221	221						205		177		146		61		
Vanguard Target Retirement 2040 Trust I				0.07	0.07		0.00	1.43	7.55	14.36		6.24		9.54				5.31	06/28/07
Vanguard Target Retirement 2040 Composite								1.43	7.40	14.39		6.41		9.70					
Target Date 2036-2040 Median				1.16	0.89			1.40	7.17	13.55		5.37		8.32		4.54			
Target Date 2036-2040 Number of Funds				252	252						235		207		181		111		
Vanguard Target Retirement 2045 Trust I				0.07	0.07		0.00	1.45	7.76	14.75		6.34		9.60				5.31	06/28/07
Vanguard Target Retirement 2045 Composite								1.45	7.58	14.76		6.51		9.77					
Target Date 2041-2045 Median				1.18	0.83			1.44	7.43	13.99		5.54		8.63		4.93			
Target Date 2041-2045 Number of Funds				221	221						205		177		145		57		
Vanguard Target Retirement 2050 Trust I				0.07	0.07		0.00	1.44	7.73	14.76		6.32		9.62				5.37	02/29/08
Vanguard Target Retirement 2050 Composite								1.45	7.58	14.76		6.51		9.77					
Target Date 2046-2050 Median				1.27	0.90			1.45	7.51	14.14		5.61		8.73		4.50			
Target Date 2046-2050 Number of Funds				245	245						228		200		173		48		
Vanguard Target Retirement 2055 Trust I				0.07	0.07		0.00	1.44	7.74	14.76		6.28						10.00	10/05/10
Vanguard Target Retirement 2055 Composite								1.45	7.58	14.76		6.51							
Target Date 2051-2055 Median				1.35	0.83			1.47	7.59	14.26		5.62							
Target Date 2051-2055 Number of Funds				219	219						203		164						
Vanguard Target Retirement 2060 Trust I				0.07	0.07		0.00	1.44	7.77	14.78		6.30						9.69	03/01/12
Vanguard Target Retirement 2060 Composite								1.45	7.58	14.76		6.51							
Target Date 2060+ Median				2.80	0.81			1.50	7.69	14.45		4.84							

Target Date 2060+ Number of Funds

TIAA (A)	20	17 <b>\</b>	YTD	Pe	erfo	orn	nar	nce	Sı	ımı	na	ry							
LIAA (A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(S)
		Mgr.	AUM	Gross	Net	Net	Rev	Recent	Returns		Ann	ualized To	otal Ret	urns as o	of 3/31/2	2017		Since	Incep.
As of 4/30/17	Ticker	Tenure	\$ Millions	ER	ER	%-ile	Share	1mo.	YTD	1 Year	%-ile	3 Year	%-ile	5 Year	%-ile	10 Year	%-ile	Incep.	Date

Source: Morningstar & TIAA-CREF

Morningstar Analyst Assigned Benchmark"

Data for 1-month and YTD return as of 4/30/2017. All other data as of 3/31/2017.

#### VA = Variable Annuity

Since Incep. = Since Inception Incep. Date = Inception Date

Vanguard Index Information from available at http://www.vanguard.com

- \* = S&P MidCap 400 Index through May 16, 2003; the MSCI US Mid Cap 450 Index through January 30, 2013; and the CRSP US Mid Cap Index thereafter
- \*\* = Russell 2000 Index through May 16, 2003; the MSCI US Small Cap 1750 Index through January 30, 2013; and the CRSP US Small Cap Index thereafter
- \*\*\* = Spliced Emerging Markets Index reflects performance of the Select Emerging Markets Index through August 23, 2006; the MSCI Emerging Markets Index through January 9, 2013; FTSE Emerging Transition Index through June 27, 2013; FTSE Emerging Index through November 1, 2015; FTSE Emerging Markets All Cap China A Transition Index through September 18, 2016; and FTSE Emerging Markets All Cap China A Inclusion Index thereafter.
- \*\*\*\* = The TIAA Stable Value Inception Date represents the date that the plan's TIAA Stable Value record was initiated on TIAA-CREF's recordkeeping system which may be earlier than the date of first deposit to the contract.
- "Since Inception" performance is calculated from this date.
- \*\*\*\*\* = For definitions please visit www.tiaa-cref.org/public/assetmanagement

Note: Rankings shown for returns are calculated by Morningstar. Rankings for expense ratio, Sharpe ratio and standard deviation are calculated by TIAA-CREF and may differ based on calculation methods

Fee Disclosures: 1 The net expense ratio reflects total annual fund operating expenses excluding interest expense. Ifinterest expense was included, returns would have been lower.

2 Accumulations in mutual funds not managed by TIAA-CREF may be subject to administrative charges. These charges are subject to change. Please review current documents related to your plan.

# **Disclosures**



· %-ile --> Percentile Ranking in Morningstar Category.

The performance data quoted represents past performance and is no guarantee of future results. Your returns and the principal value of your investments will fluctuate so that your shares or accumulation units, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance quoted below. For performance current to the most recent month-end, visit the TIAACREF Website at www.tiaa-cref.org, or call 877 518-9161.

Annuity account options are available through annuity contracts issued by TIAA or CREF. These contracts are designed for retirement or other long-term goals, and offer a variety of income options, including lifetime income. Payments from the variable annuity accounts are not guaranteed and will rise or fall based on investment performance.

For the variable annuity accounts, we estimate expenses for the plan year based on projected expense and asset levels. Differences between estimated and actual expenses are adjusted quarterly and reflected in current investment results. Historically, the adjusting payments have resulted in both upward and downward adjustments.

Investing in non-investment grade securities presents special risks, including significantly higher interest-rate and credit risk.

Small-cap and mid-cap stocks may have limited marketability and may be subject to more abrupt or erratic market movements than large-cap stocks.

The risks associated with foreign investments are often magnified in emerging markets where there is greater potential for political, currency, and economic volatility.

Funds that invest in fixed-income securities are not guaranteed and are subject to interest-rate, inflation and credit risks.

Funds that invest in foreign securities are subject to special risks, including currency fluctuation and political and economic instability.

Real estate securities are subject to various risks, including fluctuations in property values, higher expenses or lower income than expected, and potential environmental problems and liability.

# **Disclosures**



Any guarantees under annuities issued by TIAA are subject to TIAA's claims-paying ability. TIAA Stable Value is guaranteed insurance contract and not an investment for Federal Securities Law purposes.

Target Date Funds share the risks associated with the types of securities held by each of the underlying funds in which they invest. In addition to the fees and expenses associated with the Target Date Funds, there is exposure to the fees and expenses associated with the underlying mutual funds as well.

TIAA-CREF Individual & Institutional Services, LLC, Teachers Personal Investors Services, Inc., and Nuveen Securities, LLC, Members FINRA and SIPC, distribute securities products. Annuity contracts and certificates are issued by Teachers Insurance and Annuity Association of America (TIAA) and College Retirement Equities Fund (CREF), New York, NY. Each is solely responsible for its own financial condition and contractual obligations.

Investment, insurance and annuity products are not FDIC insured, are not bank guaranteed, are not deposits, are not insured by any federal government agency, are not a condition to any banking service or activity, and may lose value.

You should consider the investment objectives, risks, charges and expenses carefully before investing. Please call 877 518-9161 or log on to tiaacref.org for product and fund prospectuses that contains this and other information. Please read the prospectuses carefully before investing.

Morningstar is an independent service that rates mutual funds and variable annuities, based on risk-adjusted returns. Although Morningstar data is gathered from reliable sources, neither Morningstar nor TIAA-CREF can guarantee its completeness and accuracy. Morningstar does not rate money market accounts, and the other TIAA-CREF mutual fund accounts are too new to be rated. Past performance does not guarantee future results. Accumulation net asset values and returns will vary.

For each fund/account with at least a three-year history, Morningstar calculates a Morningstar Rating<sup>TM</sup> based on a Morningstar Risk-Adjusted Return measure that accounts for variation in a fund's/account's monthly performance (including the effects of sales charges, loads, and redemption fees), placing more emphasis on downward variations and rewarding consistent performance. Where applicable, Morningstar's performance rankings are based on linked performance that considers the differences in expense ratios, while actual performance data shown does not reflect such differences. The top 10 percent of funds/accounts in a category receive five stars, the next 22.5 percent receive four stars, and the next 35 percent receive three stars, the next 22.5 percent receive two stars and the bottom 10 percent receive one star. (Each share class is counted as a fraction of one fund/account within this scale and rated separately, which may cause slight variations in the distribution percentages.) Morningstar proprietary ratings on U.S.-domiciled funds/accounts reflect historical risk-adjusted performance, are subject to change every month. They are derived from a weighted average of the performance figures associated with its three-, five- and ten-year (if applicable) Morningstar Rating metrics. Please note, Morningstar now rates group variable annuities within the open-end mutual fund universe.

# **Disclosures**



### **Prospectus Gross Expense Ratio**

The percentage of fund assets used to pay for operating expenses and management fees, including 12b-1 fees, administrative fees, and all other asset-based costs incurred by the fund, except brokerage costs. Fund expenses are reflected in the fund's NAV. Sales charges are not included in the expense ratio.

- --The expense ratio for fund of funds is the aggregate expense ratio as defined as the sum of the wrap or sponsor fees plus the estimated weighted average of the underlying fund fees.
- --Often referred to as the Annual Operating Expense, the Prospectus Gross Expense Ratio is collected annually from a fund's prospectus.

## **Prospectus Net Expense Ratio**

The percentage of fund assets, net of reimbursements, used to pay for operating expenses and management fees, including 12b-1 fees, administrative fees, and all other asset-based costs incurred by the fund, except brokerage costs. Fund expenses are reflected in the fund's NAV. Sales charges are not included in the expense ratio.

- --The expense ratio for fund of funds is the aggregate expense ratio as defined as the sum of the wrap or sponsor fees plus the estimated weighted average of the underlying fund fees.
- --Net reimbursements, the Prospectus Net Expense Ratio is collected annually from a fund's prospectus.
- --TIAA-CREF, unless noted, does not charge additional fees for record keeping a fund. 12b-1, revenue share and admin fees are all included in the Prospectus fees.
- -- Prospectus Net Expense Ratio % ile rank is the percentile rank for the fund. The better the expense ratio (lower) the lower the ranking out of 100.

TIAA-CREF reported performance may differ from Morningstar source returns for the same option over the same time period. We would expect an occasional one to two basis point difference. Morningstar Direct calculates returns by one share owned by a hypothetical investor over the requested time period. So the return for one year is calculated using the same formula as one month. TIAA-CREF calculates returns by \$1,000 owned by hypothetical investor for one month then links returns for requested time period. Both set of returns include dividends and capital gains.

By communicating the information contained in this material, TIAA is not providing impartial investment advice or giving advice in a fiduciary capacity regarding any investment by, or other transaction of, the plan(s). TIAA is acting solely in a sales capacity with respect to an arms-length sale, purchase, loan, exchange or other transaction related to the investment of securities or other investment property.



**OPEB Trust** 



Report ID: IPM0005

**Reporting Currency: USD** 

# **TOTAL NET OF FEES**

4/30/2017

								Annu	alized		
Account Name Benchmark Name	Market Value	% of Total	Month	YTD	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	ITD	Inception Date
Mackay Shields OPEB Bloomberg Barclays U.S. Aggregate Bond Index	72,801,290.0	34.1	0.79 <i>0.7</i> 7	1.61 1.59	-1.01 -0.98	0.80 <i>0</i> .83	2.51 2.66			1.84 1.92	5/1/2013 5/1/2013
SSGA S&P 500 INDX S&P 500 - Total Return Index	140,977,497.5	66.0	1.03 1.03	7.14 7.16	15.53 <i>15.54</i>	17.90 17.92	10.50 10.47	13.63 <i>13.68</i>		12.90 12.14	5/1/2011 5/1/2011
Total OPEB OPEB Custom Blend 1	213,778,787.5	100.0	<b>0.94</b> 0.94	<b>5.26</b> 5.19	<b>9.56</b> 9.54	<b>11.73</b> <i>11.72</i>	<b>7.76</b> 7.82	<b>9.05</b> 8.94		<b>8.97</b> 8.12	<b>5/1/2011</b> 5/1/2011



Report ID: IPM0005

**Reporting Currency: USD** 

# **END NOTES**

4/30/2017

1 RI7GX0903OPE

**OPEB Custom Blend** 

35% Barclays Aggregate and 65% S&P 500



Report ID: IPM0005

Reporting Currency: USD

# TOTAL NET OF FEES 4/30/2017

			Cumulative									
Account Name Benchmark Name		Market Value	% of Total	YTD	Month	3/1/2017 - 3/31/2017	2/1/2017 - 2/28/2017	2016	2015	2014	Inception Date	
Mackay Shields OPEB Bloomberg Barclays U.S. Aggrega Bond Index	te	72,801,290.0	34.1	1.61 1.59	0.79 <i>0.77</i>	-0.09 -0.05	0.70 <i>0.67</i>	2.28 2.65	0.46 <i>0.55</i>	6.03 5.97	5/1/2013 5/1/2013	
SSGA S&P 500 INDX S&P 500 - Total Return Index		140,977,497.5	66.0	7.14 7.16	1.03 1.03	0.11 <i>0.12</i>	3.96 3.97	11.99 <i>11.</i> 96	1.46 1.38	13.63 13.69	5/1/2011 5/1/2011	
Total OPEB OPEB Custom Blend	1 2	213,778,787.5	100.0	<b>5.26</b> 5.19	<b>0.94</b> 0.94	<b>0.06</b> 0.06	<b>2.86</b> 2.82	<b>8.69</b> 8.77	<b>1.16</b> <i>1.31</i>	<b>11.00</b> <i>11.00</i>	<b>5/1/2011</b> 5/1/2011	



Report ID: IPM0005

**Reporting Currency: USD** 

## **END NOTES**

4/30/2017

1 RI7G10000000	Total OPEB	YTD - Calendar Year to Date
		Month - Current Month
		Cumulative Months - Prior Month and Second Prior Month
		2013, 2012, 2011 - Calendar Year
2 RI7GX0903OPE	OPEB Custom Blend	65% S&P 500 and 35% Barclays Aggregate