



PENSION RESERVES
INVESTMENT
MANAGEMENT BOARD

Presentation to the State Retiree Benefits Trust Fund Board

***PRIM Board Organizational Update
PRIT Fund and SRBT Fund Performance Review
Municipal Outreach Update***

Thursday, October 4, 2018

By

***Paul W. Todisco, Senior Client Services Officer, PRIM Board
Francesco Daniele, Senior Client Services Officer, PRIM Board
Samuel Olivier, Client Service Analyst, PRIM Board***

***Deborah B. Goldberg, Treasurer and Receiver General, Chair
Michael G. Trotsky, CFA, Executive Director and Chief Investment Officer***



Top 10 Accomplishments

1. Strong relative and absolute investment performance
2. Exceptional staff with low turnover
3. National recognition for PRIM and its staff
4. Project SAVE
5. Timely asset allocation decisions
6. Re-engineered Hedge Fund program – Portfolio Completion Strategies
 - a. Direct hedge funds
 - b. Hedge fund replication
 - c. Alternative risk premia harvesting strategies
 - d. Equity risk mitigation
7. Enhanced manager search and selection process
8. Private Equity co-investment
9. Direct Real Estate
10. Deployed risk management platform and framework



Summary of Recent National Recognition

- ❑ CFA Society Boston has elected Michael Trotsky, CFA, Executive Director and Chief Investment Officer to serve as Vice Chair of the Board of Directors. (June 2018)
- ❑ PRIM's Private Equity Portfolio has been ranked #1 among 163 U.S. public pension funds based on 10 year annualized returns as of June 30 2017 by the American Investment Council's 2018 Public Pension Study.
- ❑ PRIM was nominated for "**Team of the Year**", 2017 by *Institutional Investor Magazine*, a well regarded global publication in the asset management industry.
- ❑ *Trusted Insight*, a global network of institutional investors, recently named PRIM Executive Director and Chief Investment Officer, Michael Trotsky, CFA, as one of its 2017 "Top 30 Public Pension Chief Investment Officers." After reviewing the performance of public pension funds across the country, Trusted Insight selected honorees based on superior 1-, 3, and 5-year performance and "industry leading investment strategies." (November 2017)
- ❑ PRIM was nominated again for Institutional Investor Magazine's 15th annual **Large Public Fund of the Year Hedge Fund Industry award**. The award recognizes excellence in innovation and thought leadership in the Hedge Fund space. (May 2017)
- ❑ PRIM was awarded the **Government Finance Officer Association's Certificate of Achievement for Excellence in Financial Reporting** for the 13th consecutive year. (May 2018)
- ❑ Eric Nierenberg, Ph.D., Director of Hedge Funds & Low Volatility Strategies, was awarded Institutional Investor magazine's **Large Public Fund of the Year Award**. The award recognizes performance innovation, achievements and contributions to the industry in the past year. (June 2016).
- ❑ Michael Trotsky, CFA, Executive Director and Chief Investment Officer, was awarded *Chief Investment Officer Magazine's "CIO Innovation Award."* (December 2015)
- ❑ Michael Bailey, Senior Investment Officer – Director of Private Equity, was nominated for the *Investor Intelligence Award for Excellence in Private Equity*. The award recognizes the most outstanding and innovative public plan sponsors in North America. (December 2015)
- ❑ *Private Equity Growth Council* ranked PRIM's private equity program FIRST (#1) among 155 U.S. public pension plans. (December 2015)
- ❑ *Hedge Fund Intelligence* named PRIM #2 on its InvestHedge 30 top-performing U.S. public pension fund hedge fund programs based on performance (July 2015)



PRIT Fund Overview

❑ Oversight and staffing:

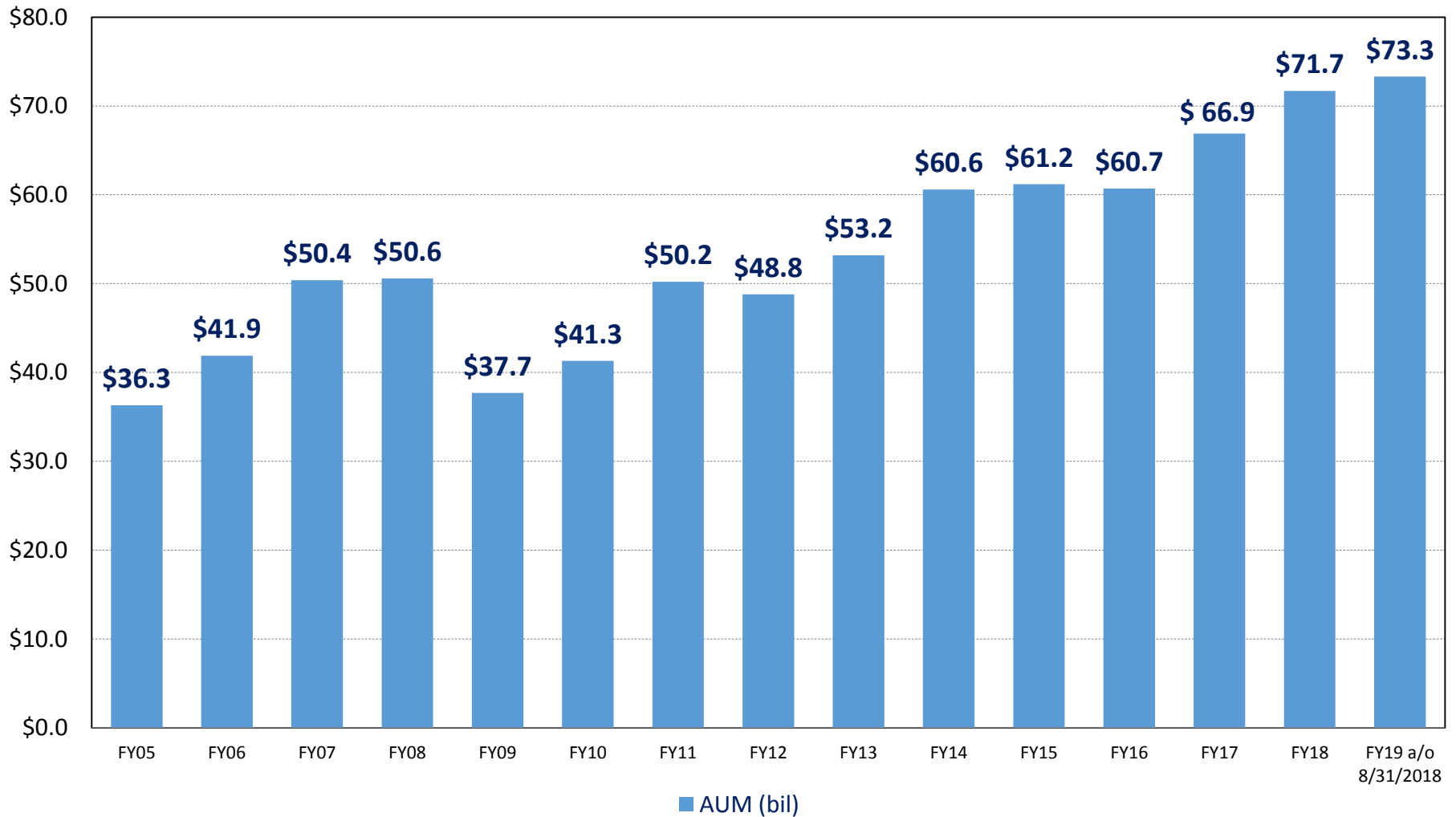
- 9 appointed and elected trustees
- 4 advisory committees consisting of 37 industry professionals and board members
- Staff of 41 professionals

❑ Core Fund Facts

- \$73.3 billion AUM as of 08/31/2018
- 46 public markets portfolios
- 14 real estate, timber and REIT managers
- 100+ private equity managers; 200+ partnerships
- 39 portfolio completion strategies managers



Total PRIT Fund Fiscal Year Market Value (\$Billions)

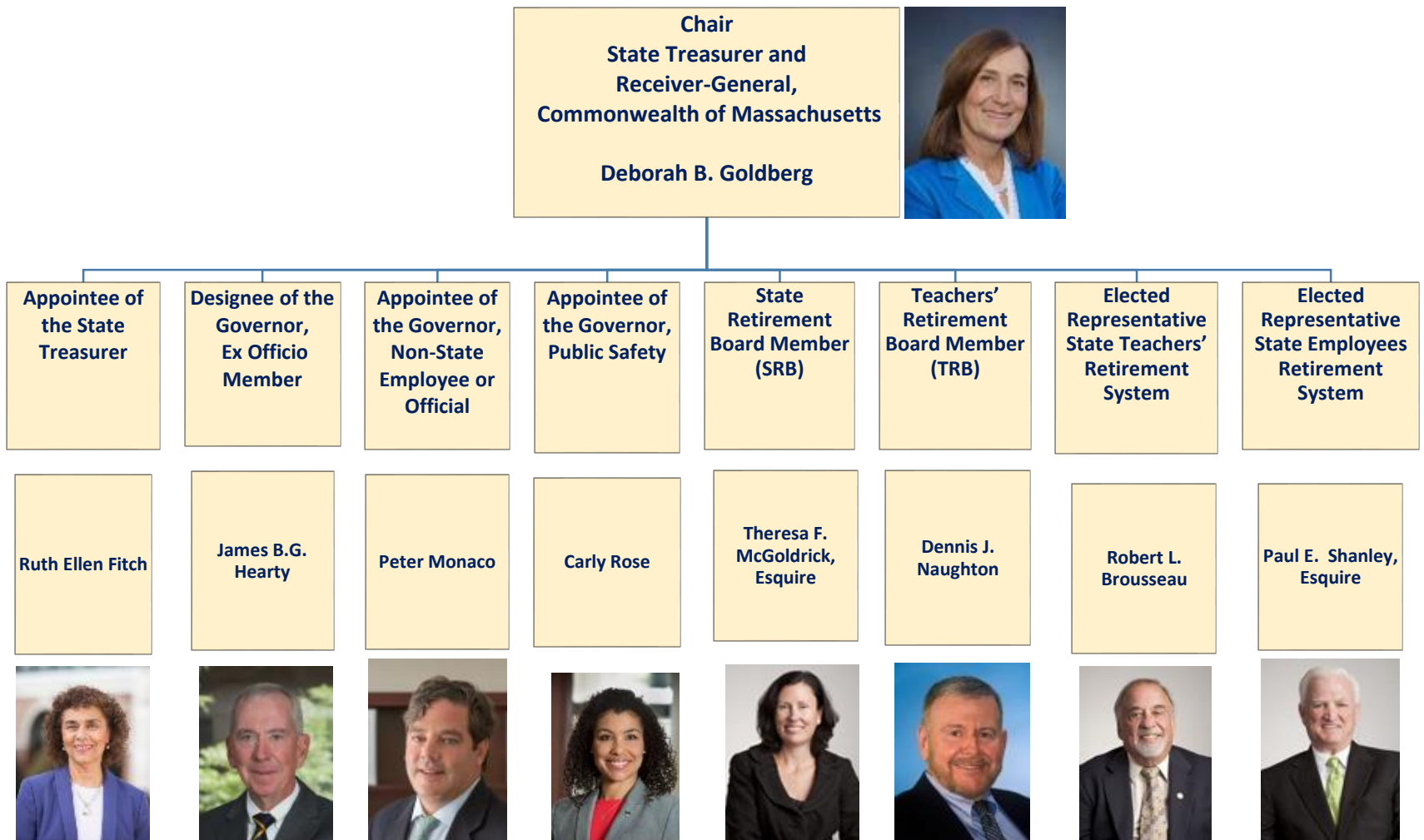




PRIM Board Organizational Update



PRIM Board Membership



PRIM Advisory Committees Membership

Investment Committee

(12 Members)

The Committee advises the Board with respect to the asset allocation policy of PRIM and related investment policies, and to assist the Board in overseeing the investment program. The mandate of the Investment Committee does not include real estate and timber.

1. Deborah B. Goldberg, Chair, Ex Officio Board Member
2. Paul E. Shanley, Board Member
3. Ruth Ellen Fitch, Board Member
4. Joseph C. Bonfiglio, Massachusetts & Northern New England Laborers' District Council
5. C. LaRoy Brantley, Investment Consultant
6. Michael Even, CFA, President and CEO, Numeric Investors
7. Constance M. Everson, CFA, Managing Director, Capital Markets Outlook Group
8. James B. G. Hearty, Partner, Clough Capital
9. Peter Monaco, Managing Director, Raptor Group
10. Philip Rotner, Chief Investment Officer, Boston Children's Hospital
11. Glenn P. Strehle, CFA, Treasurer Emeritus, MIT
12. Timothy L. Vaill, Special Advisor

Real Estate Committee

(10 Members)

The Committee advises the Board in setting investment policy within the real estate and timber portfolios and assist the Board in overseeing these portfolios.

1. Deborah B. Goldberg, Ex Officio Board Member
2. Lydia Chesnick, Esq., Partner, Bernkopf Goodman LLP
3. Robert Gifford, Robert Gifford Advisory
4. Jill S. Hatton, Chair, CRE, Real Estate Investment Professional
5. Anthony E. Hubbard, Esq., CVS Corporation
6. Jack Lutz, PhD., Forest Research Group
7. William F. (Bill) McCall, Jr., CRE, McCall & Almy, Inc.
8. Garlan Morse, Jr., CRE, Morris and Morse Company, Inc.
9. Peter F. O'Connell, Marina Bay Company
10. Carly Rose, Public Safety Union Member



PRIM Advisory Committees Membership

Administration and Audit Committee

(11 Members)

The Committee assists the Board in overseeing all issues related to the governance, administration, and audit functions of PRIM, and to provide recommendations for the Board's consideration.

1. Deborah B. Goldberg, Ex Officio Board Member
2. Robert L. Brousseau, Chair, Board Member
3. Theresa T. McGoldrick, Esq., Board Member
4. Ted C. Alexiades, CPFO, Hingham Town Administrator
5. Patrick E. Brock, Chairman of the Hampshire County Retirement Board
6. Joseph A. Connolly, Senior Managing Director Strategic Development, TerraCap
7. Karen E. Gershman, CPA, Chief Operating Officer, Health Advances
8. Eileen Glovsky, Treasurer Appointee
9. James B. G. Hearty, Partner, Clough Capital
10. Dennis J. Naughton, Board Member
11. Michele A. Whitham, Esq., Founder & Principal, Whitham Law LLC

Compensation Committee

(5 Members)

The Committee assists the Board in overseeing staff compensation and benefit policies. The Administration and Audit Committee is responsible for assisting the Board on other human resource matters.

1. Deborah B. Goldberg, Ex Officio Board Member
2. Robert L. Brousseau, Board Member
3. Patrick E. Brock, Chairman, Hampshire County Retirement Board
4. Joseph A. Connolly, Senior Managing Director Strategic Development, TerraCap
5. Michele A. Whitham, Esq., Founder & Principal, Whitham Law LLC



Organizational Update

❑ PRIM New Hires and Promotions

- Maureen Aquino, Receptionist – August 2018
- Iris Sosa, Executive Assistant -- August 2018
- Sylvia Argiropoulos, Administrative Assistant Real Estate and Portfolio Completion Strategies – June 2018
- David Griswold, Director of Information Technology – June 2018
- Jennifer Kuhn, Director of Human Resources – May 2018
- Maria Garrahan, Investment Officer – Portfolio Completion Strategies – January 2018
- Edward Caron, Investment Operations Analyst -- November 2017
- Anthony (Tony) Falzone, Chief Operating Officer (COO) -- September 2017
- Deb Coulter, CPA, Chief Financial Officer (CFO) -- September 2017
- Matthew Liposky, Chief Investment Operating Officer (CIOO) -- September 2017
- David M. Gurtz, CPA, CFA, Deputy Chief Investment Officer- Director Public Markets -- September 2017
- Maria Clements, Administrative Assistant Private Equity -- September 2017
- Eric Nierenberg, Ph.D, Chief Strategy Officer – May 2017

❑ Maintained low employee turnover while adding key staff

- PRIM staff and advisors are considered to be the strongest in its history
- Key additions are to deepen the investment and operations teams

❑ Implemented PRIM Professional Development Program

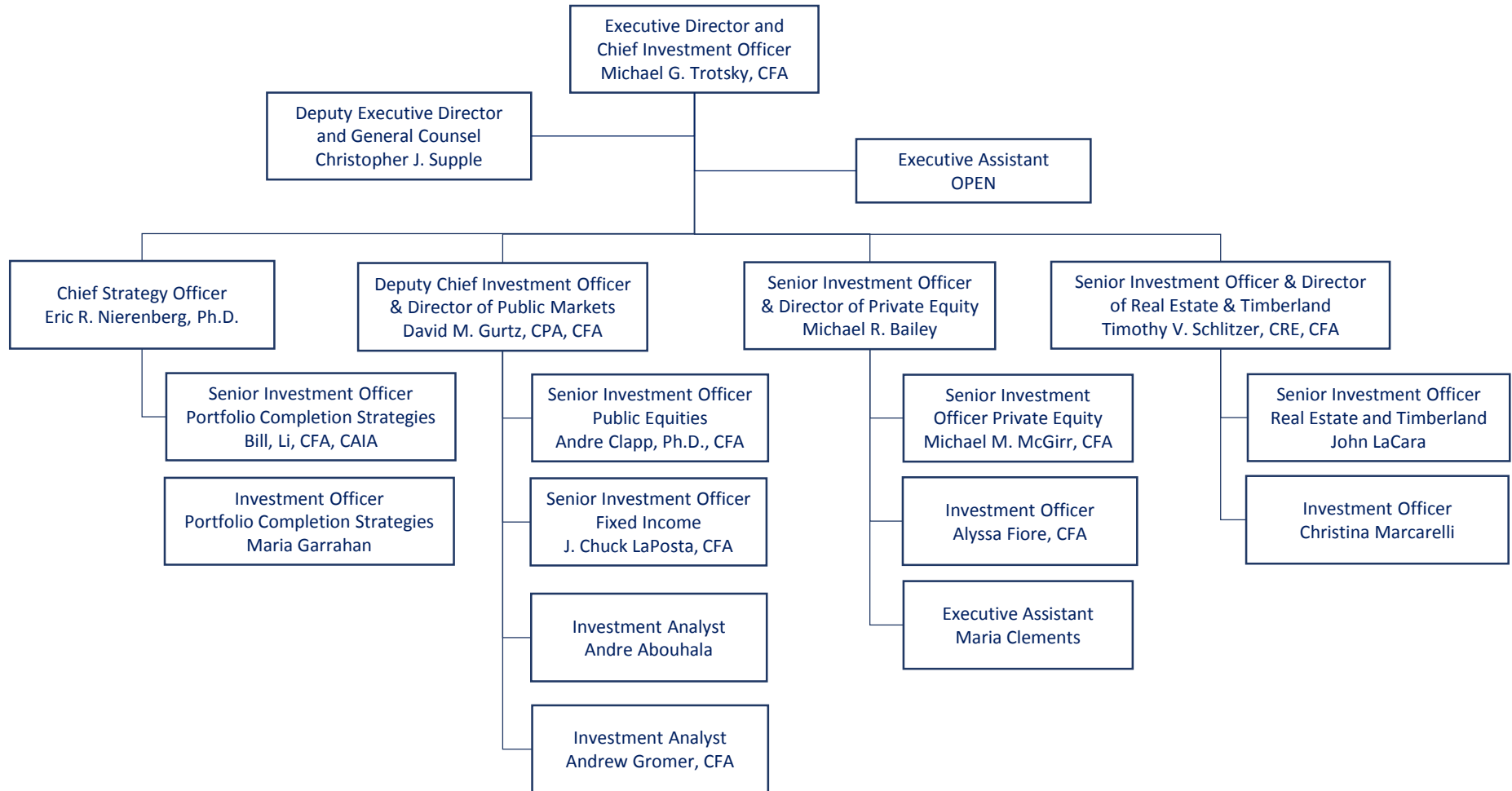
- A cross-training and career development program
- Designed to develop employee interdisciplinary skills and to reduce organizational silos
- Allows high-performing employees to grow their expertise beyond their core responsibilities
- Participants will rotate through private equity, real estate, hedge funds, and risk management for four-month intervals to learn, contribute, and encourage cross fertilization of ideas and initiatives

❑ Implementation of PRIM Investor Advisory Council

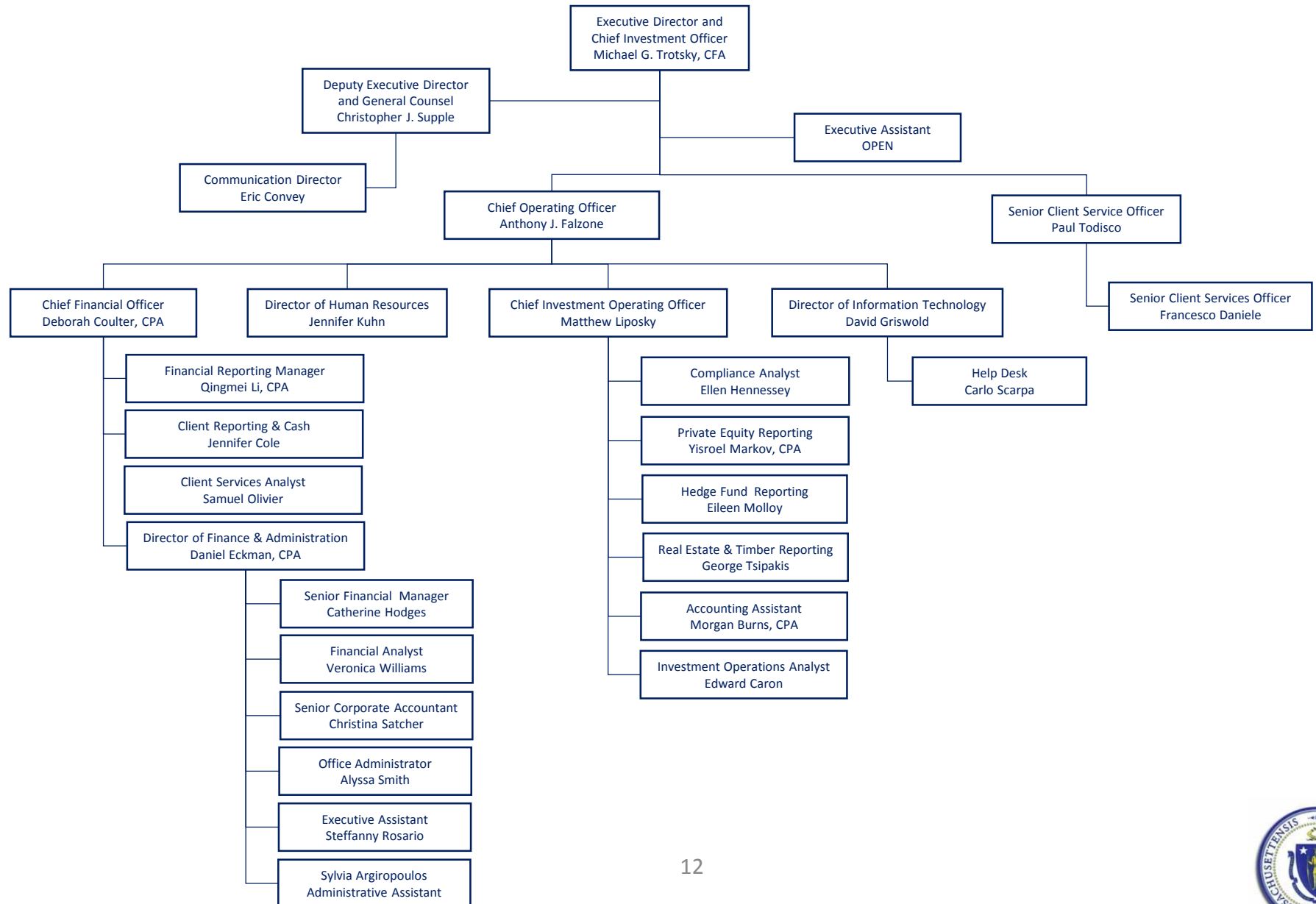
- Consists of Representatives from around the state who will serve two-year term
- Good forum to provide regular feedback to report back to the Board



PRIM Investment Organizational Chart



PRIM Finance and Operations Organizational Chart



External Advisors

Fund Advisors:

- **NEPC** - Asset Allocation
- **Callan Associates** - Public Markets
- **Aberdeen/Arden** - Hedge Fund Investments
- **Hamilton Lane** - Private Equity
- **The Townsend Group**- Real Estate & Timber
- **The International Woodland Company** - Timber

Independent Auditors:

- **KPMG, LLP** - PRIM Board and PRIT Fund, Real Estate, Timber, and SASE 16 Reviews
- **Deloitte & Touche, LLP** – PRIM Board tax Consultant

Custodian:

- **BNY Mellon Corporation**



Project SAVE Update

PROJECT SAVE as of 9/30/2017	Annualized Value Target	Annualized Value Realized	% of Target Achieved
INITIAL PROGRAMS			
Hedge Fund-of-Funds Unwind	\$40 mm	\$38.2 mm	96%
Cash Overlay Program	\$20 mm	\$49.9 mm	250%
Public Markets Fee Negotiations	\$1.5 mm	\$1.9 mm	129%
Private Equity Co-Investment	\$25 mm	\$4.2 mm	17%
Hedge Fund Fee Negotiations	\$7 mm	\$42.8 mm	611%
Hedge Fund Replication	\$7 mm	\$14.8 mm	211%
Securities Litigation	\$0.7mm	\$0.6 mm	82%
INITIAL PROGRAMS TOTALS	<u>\$101.2 mm</u>	<u>\$152.5 mm</u>	<u>151%</u>
FOLLOW-ON PROGRAMS			
Real Estate direct- or co-investment	\$2 mm	\$6.6 mm	
Securities Lending	\$15 mm	\$10.5 mm	
Private Equity Stock Distribution	\$0.3mm	\$0.1 mm	
TOTAL PROJECT SAVE PROGRAMS		<u>\$169.7 mm</u>	





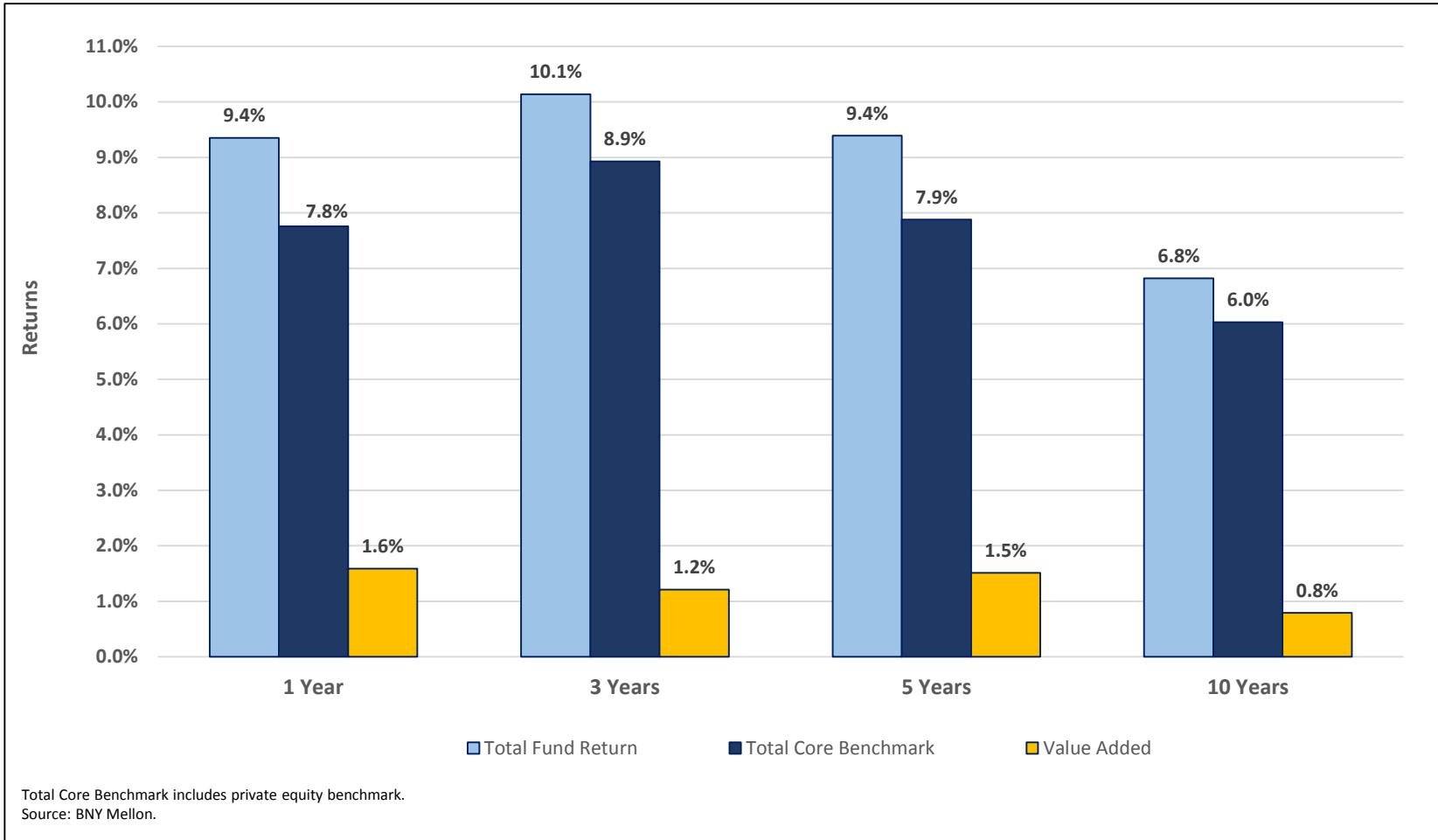
PRIT Fund Performance

As of August 31, 2018



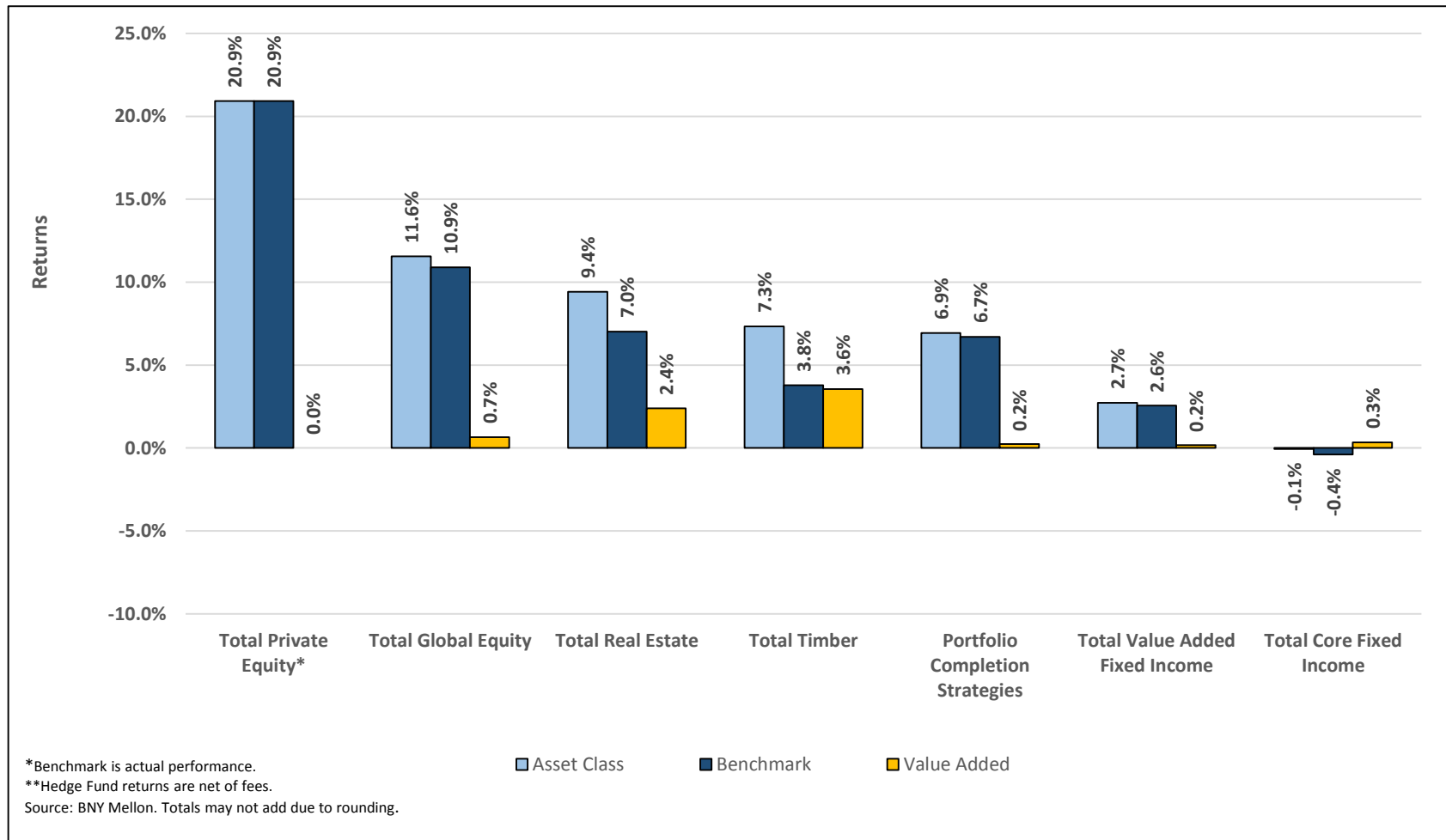
Total PRIT Fund Returns

Annualized Returns as of August 31, 2018 (Gross of Fees)



PRIT Asset Class Performance

One Year Ended August 31, 2018 (Gross of Fees)



PRIT Asset Class Performance

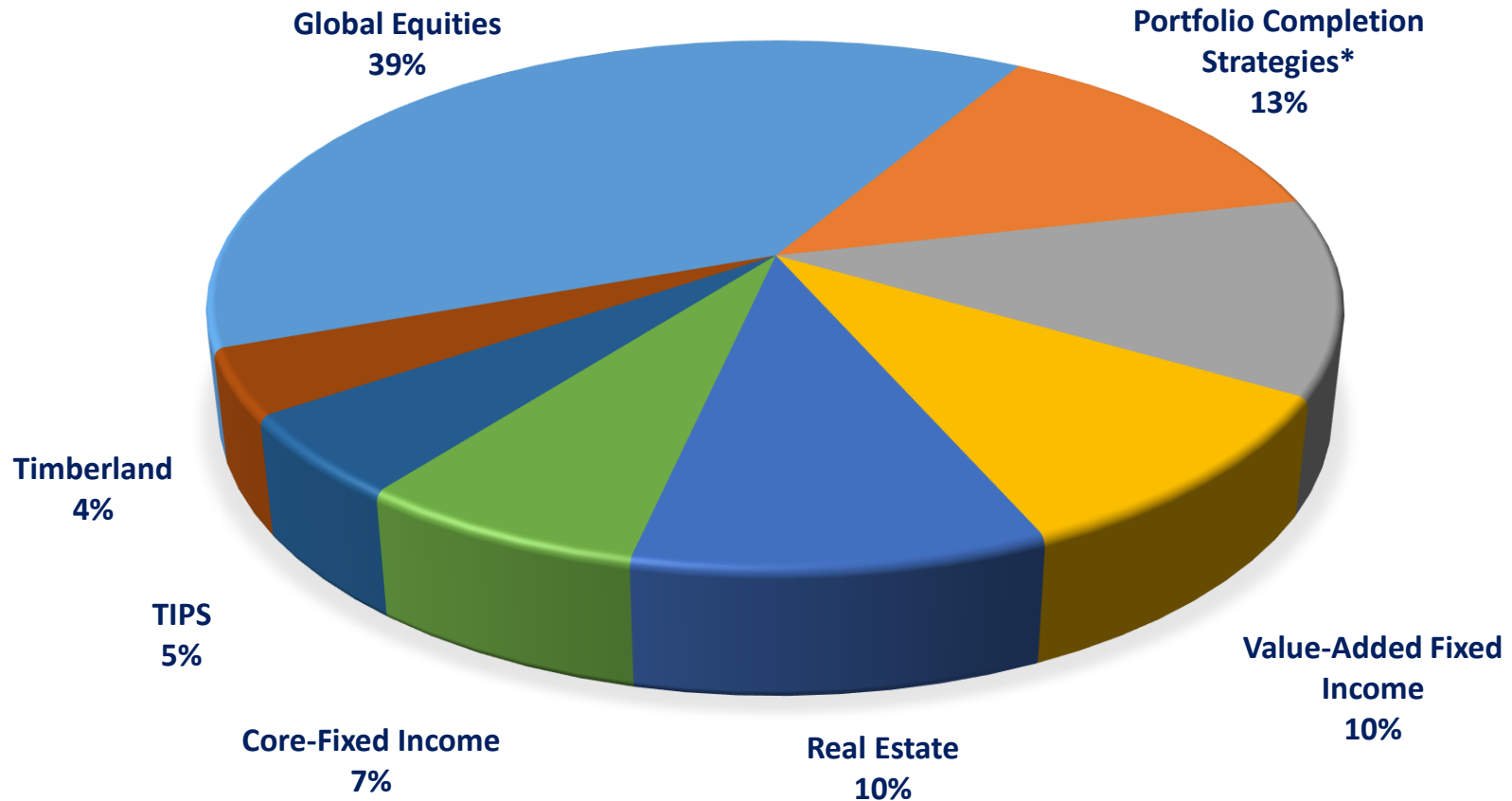
Annualized Returns as of August 31, 2018 (Gross of Fees)

Periodic Table of Returns by Asset Class

1 Year	3 Year	5 Year	10 Year
PRIVATE EQUITY 20.9%	PRIVATE EQUITY 18.3%	PRIVATE EQUITY 19.3%	PRIVATE EQUITY 13.8%
GLOBAL EQUITY 11.6%	GLOBAL EQUITY 12.8%	REAL ESTATE 11.0%	GLOBAL EQUITY 7.5%
REAL ESTATE 9.4%	REAL ESTATE 9.8%	GLOBAL EQUITY 10.2%	REAL ESTATE 6.9%
TIMBER 7.3%	VALUE-ADDED FIXED INCOME 5.9%	TIMBER 7.5%	VALUE-ADDED FIXED INCOME 6.8%
TOTAL PCS 6.9%	TIMBER 5.7%	TOTAL PCS 5.0%	TIMBER 4.6%
VALUE-ADDED FIXED INCOME 2.7%	TOTAL PCS 4.5%	VALUE-ADDED FIXED INCOME 4.6%	CORE FIXED INCOME 4.4%
CORE FIXED INCOME (0.1%)	CORE FIXED INCOME 2.9%	CORE FIXED INCOME 4.4%	TOTAL PCS 3.8%



PRIT Fund Overview – Current Asset Allocation Targets



*PCS Includes 9% allocation to Hedge Funds.



Asset Allocation 2018: Approved February 15, 2018

❑ The new target allocation will NOT be significantly different from current target.

- Based on each team's **expert views** of each asset class and on **transaction capacity**.
- Slightly increase Private Equity and Equity-Hedge PCS, with funding from Public Equity.
- PRIT Fund's **allocation bands** make it flexible to fund alternative opportunity sets.
 - IPS allows an allocation band of **+/- 5% for Global Equity** and **+/- 3% for other asset classes**.

Asset	Current Target	New Strategic Target	New Strategic Mid-Point
Global Equity	40%	34% - 44%	39%
<i>US Equity</i>	18%		17.5%
<i>Int'l Developed Equities</i>	16%		15.5%
<i>Emerging Int'l Equities</i>	6%		6%
Core Fixed Income	12%	9% - 15%	12%
<i>Core Bonds</i>	5%		5%
<i>Long-duration Treasury</i>	2%		2%
<i>Inflation Linked Bonds</i>	5%		5%
Value-Add Fixed Income	10%	7% - 13%	10%
Private Equity	11%	9% - 15%	12%
Real Estate	10%	7% - 13%	10%
Timberland	4%	1% - 7%	4%
PCS	13%	10% - 16%	13%
<i>Equity-Hedge PCS</i>	1.3%	1% - 5%	3%
Sum	100%		100%



Asset Allocation 2018: Approved February 15, 2018

Asset Allocation	Current Target	New Strategic Target	New Strategic Mid-Point
Global Equity	40%	34% - 44%	39%
Core Fixed Income	12%	9% - 15%	12%
Value-Add FI	10%	7% - 13%	10%
Private Equity	11%	9% - 15%	12%
Real Estate	10%	7% - 13%	10%
Timberland	4%	1% - 7%	4%
PCS	13%	10% - 16%	13%
Equity-Hedge PCS	1.3%	1% - 5%	3%

Factor Allocation	Current Target	New Strategic Mid-Point
Growth	54.8%	54.7%
Real Rates	7.3%	8.0%
Inflation	15.9%	15.7%
Currency	10.4%	10.1%
Illiquidity	11.6%	11.5%

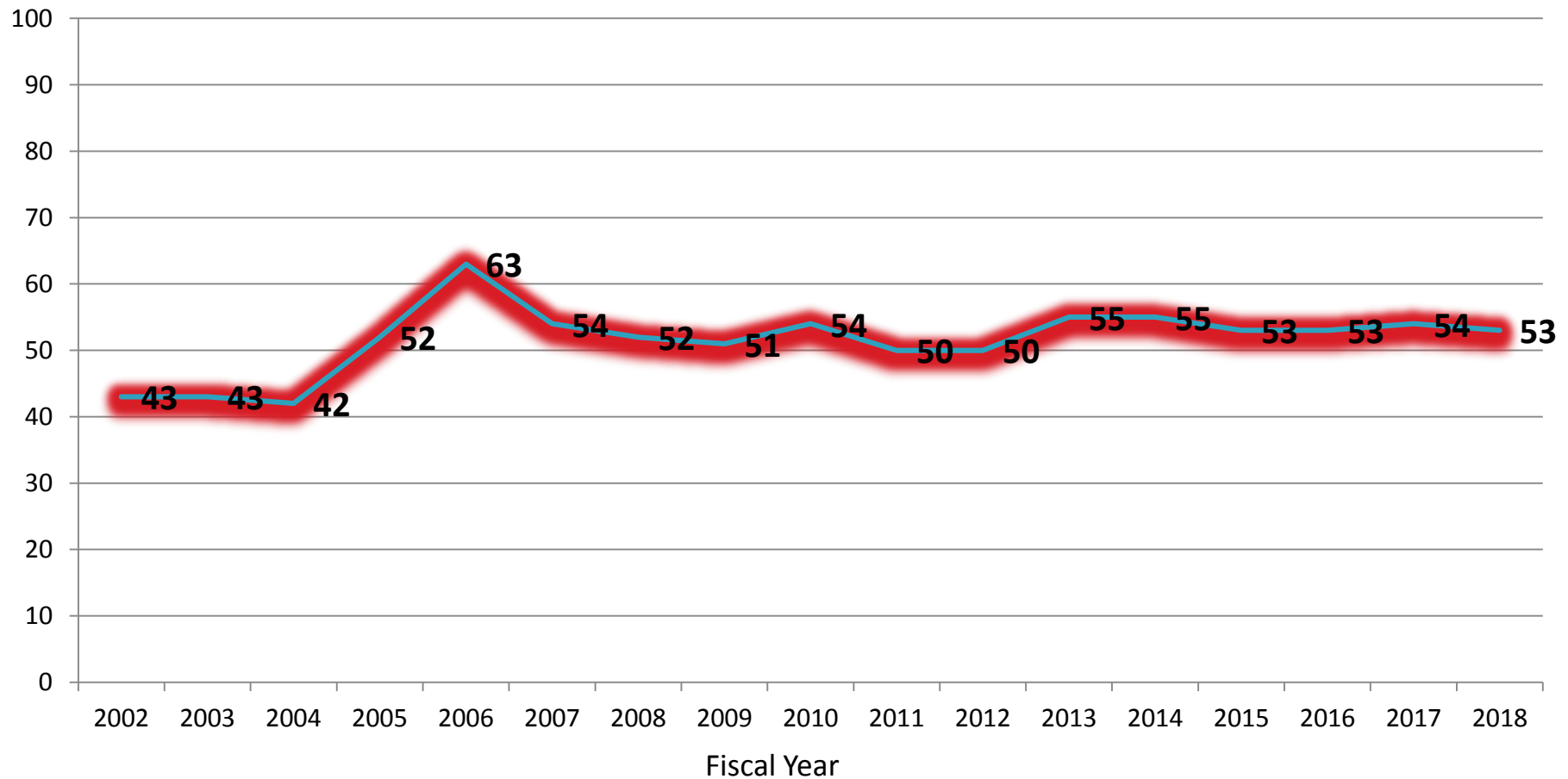
Asset Allocation Assumptions	2017 Current Target	2018 Current Target	2018 New Target ¹
5-7 Yr. Returns	6.8%	6.6%	6.6%
30 Yr. Returns	7.7%	7.7%	7.7%
Volatility	12.5%	12.4%	12.6%
Sharpe Ratio 30 Yr.	0.38	0.40	0.39

1. Asset classes modeled at the midpoint of the range

Source: NEPC



PRIT Fund Ratio of Expenses in Basis Points





SRBT Fund Performance

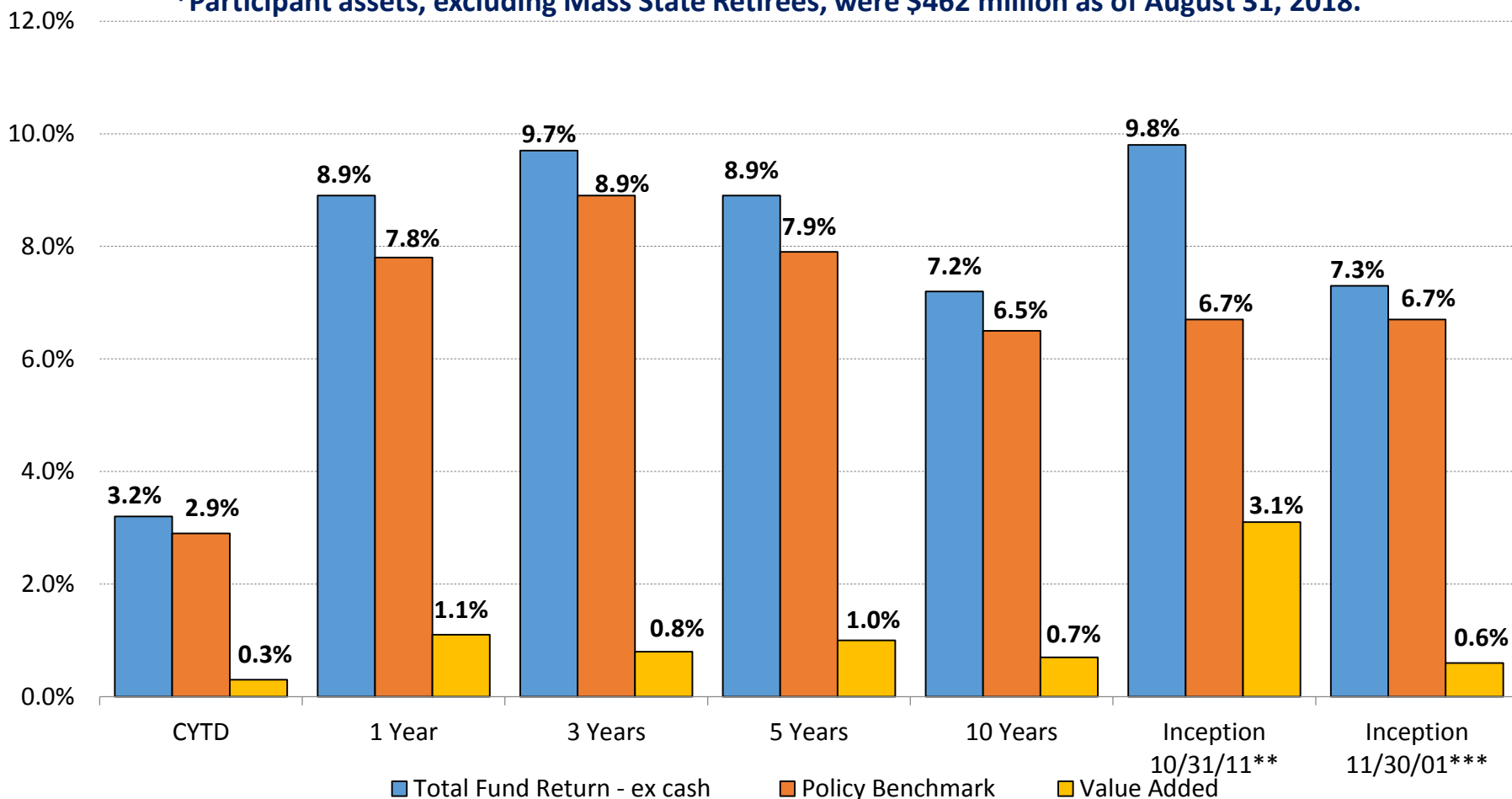
As of August 31, 2018



Total SRBT Fund Returns (Net of Fees) - \$1.594 Billion*

Annualized Returns as of August 31, 2018

*Participant assets, excluding Mass State Retirees, were \$462 million as of August 31, 2018.



The inception date for the SRBTF's investment in the PRIT Fund General Allocation Account (PRIT GA) was 10/31/2011, when 82% of the fund was transitioned from separate accounts to PRIT GA. The remaining 18% of separate account assets were transitioned over the following 14 months with 100% of assets invested in PRIT GA by 12/31/2012. **The ITD return of 10.1% reflects the inception-to-date return for PRIT GA assets only.

*** The inception date for the TOTAL FUND was 11/30/2001. This ITD value reflects the true inception-to-date return for all SRBTF assets including legacy separate account investments as well as the PRIT GA investments.





Municipal Outreach



Municipal Outreach

1. Acton-Boxborough Regional School District
2. Amherst-Pelham Regional School District
3. Andover
4. Ayer Shirley Regional School District
5. Belmont
6. Bernardston
7. Bridgewater
8. Byfield Water District
9. Cape Cod Regional Transit Authority
10. Chelmsford Water District
11. Dalton (submission pending)
12. Dartmouth
13. Dracut
14. Freetown
15. Foxboro
16. Greater Lawrence Sanitary District
17. Greater Lowell Technical Regional High School
18. Greenfield
19. Halifax
20. Haverhill
21. Hull
22. Longmeadow
23. Lynn
24. Massachusetts Association of Regional Planning Agencies (MARPA)
25. Massachusetts Housing Finance Authority
26. Medway
27. Melrose
28. Mohawk/Hawlemont Regional School District (Buckland)
29. Nauset Regional High School
30. Newbury
31. Pepperell
32. Somerset
33. Springfield
34. Sudbury
35. Tri-County Educational Collaborative (Franklin, MA)
36. Truro
37. Waltham
38. West Boylston Municipal Light Department
39. West Newbury
40. Woburn

*New listing



Governmental Entities Participating in the SRBTF

- | | |
|---|---|
| 1. Town of Acton | 37. Manchester Essex Regional School District |
| 2. Town of Amherst | 38. Town of Marblehead |
| 3. Town of Ayer | 39. Marblehead Municipal Light Department |
| 4. Town of Bedford | 40. Massachusetts School Building Authority |
| 5. City of Beverly | 41. Mass State Retirees (SRBTF) |
| 6. BiCounty Educational Collaborative, Franklin, MA | 42. Mass Water Resources Authority |
| 7. Town of Blackstone | 43. Town of Medfield |
| 8. Boston Redevelopment Authority | 44. Town of Middleton |
| 9. Town of Boxford | 45. Town of Milton |
| 10. Town of Braintree | 46. Town of Montague |
| 11. Town of Brewster | 47. Nashoba Regional School District |
| 12. Town of Brookline | 48. Town of Needham |
| 13. Town of Burlington | 49. City of New Bedford |
| 14. Town of Chelmsford | 50. City of Newburyport |
| 15. Concord Area Special Education (CASE) Collaborative | 51. City of Newton |
| 16. Town of Cohasset | 52. Town of North Andover |
| 17. Town of Dracut | 53. Town of Northborough |
| 18. Town of Dedham | 54. Old Rochester Regional School District |
| 19. Fall River Housing Authority | 55. Town of Orleans |
| 20. City of Fitchburg | 56. Pilgrim Area Collaborative (PAC), Pembroke, MA |
| 21. Town of Franklin | 57. Town of Provincetown |
| 22. Franklin Regional Council of Governments | 58. Shawsheen Valley Technical High School, Billerica, MA |
| 23. Town of Harvard | 59. Town of Sherborn |
| 24. Town of Hingham | 60. Town of Stockbridge |
| 25. Town of Holliston | 61. Town of Tewksbury |
| 26. Town of Ipswich | 62. Town of Wakefield |
| 27. Town of Lancaster | 63. Wakefield Municipal Gas & Light Department |
| 28. Lawrence Housing Authority | 64. Town of Wayland |
| 29. Town of Lenox | 65. Town of Wellesley |
| 30. City of Leominster | 66. Town of Westwood |
| 31. Town of Lincoln | 67. Town of Wilmington |
| 32. Lincoln-Sudbury Regional School District | |
| 33. Town of Longmeadow | |
| 34. Lowell Regional Transit Authority (LRTA) | |
| 35. Lower Pioneer Valley Educational Collaborative | |
| 36. Town of Manchester-By-The-Sea | |

