Employees’ Retirement System of the State of Rhode Island

Pension Trust Funds of the State of Rhode Island

# Comprehensive Annual Financial Report

FOR THE FISCAL YEAR ENDED JUNE 30, 2018

# 2018 Comprehensive Annual Financial Report

## For the Fiscal Year Ended June 30, 2018

## Employees' Retirement System of Rhode Island

Employees' Retirement System (ERS)

Teachers' Survivors Benefits (TSB)

Municipal Employees' Retirement System (MERS)

State Police Retirement Benefits Trust (SPRBT)

Judicial Retirement Benefits Trust (JRBT)

RI Judicial Retirement Fund Trust (RIJRFT)

RI State Police Retirement Fund Trust (SPRFT)

Rhode Island Defined Contribution Plan

**Prepared by the staff of the**

**Employees' Retirement System of Rhode Island**

***EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF RHODE ISLAND***

***FISCAL YEAR ENDED JUNE 30, 2018***

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# Introductory Section

# Employees' Retirement System of Rhode Island



December 31, 2018

Dear Governor Raimondo, Speaker Mattiello, Senate President Ruggerio, Secretary of State Gorbea, and Members of the Retirement Board for the Employees' Retirement System of Rhode Island:

We are pleased to present you with this Comprehensive Annual Financial Report of the Employees' Retirement System of Rhode Island (ERSRI) for the fiscal year ending June 30, 2018. As required by Rhode Island General Law §36-8-8, this report is intended to provide the Governor, the General Assembly, members and beneficiaries of the System, and the public with current financial information and an overall status report on the operation of the System.

## Management Responsibility

The management of ERSRI is responsible for the complete and fair presentation of the financial information and the accompanying disclosures in this report.

ERSRI management is responsible for ensuring that an adequate internal control structure is in place to provide reasonable, but not absolute, assurance regarding the safeguarding of assets against loss from unauthorized user disposition and the reliability of financial records for preparing financial statements in conformity with generally accepted accounting principles (GAAP). The concept of reasonable assurance recognizes that the costs of internal control should not exceed the benefits likely to be derived and that the evaluation of costs and benefits requires management to make estimates and judgments. The internal control structure is subject to periodic evaluation by management and the System's internal auditors to ensure compliance with applicable laws and regulations.

## Financial Information

The basic financial statements have been prepared in accordance with GAAP. The Management's Discussion and Analysis (MD&A) provides a narrative introduction, overview, and analysis to accompany the basic financial statements This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. The System's MD&A can be found immediately following the independent auditors' report.

## Profile of ERSRI

The System is administered by the fifteen members of the State of Rhode Island Retirement Board which was authorized, created and established in the Office of the General Treasurer as an independent retirement board to hold and administer, in trust, the funds of the retirement System. The composition of the Board is listed in the notes to the financial statements and Rhode Island General Law §36-8-4.

The System's purpose is to provide service retirement, disability retirement, and survivor benefits to state employees, public school teachers, certain general and public safety municipal employees, state police officers, and judges.

ERSRI is responsible to administer seven (7) defined benefit plans and one (1) defined contribution plan:

1. *The Employees' Retirement System (ERS)*, established in 1936, which includes the retirement assets of all state employees and public school teachers;

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2. *The Teachers' Survivors Benefit Plan (TSB)*, which provides survivor benefits for teachers who do not participate in Social Security;

3. *The Municipal Employees' Retirement System (MERS)*, established in 1951, which is the municipal retirement plan covering participating municipal general and public safety employers (each unit is valued independently);

4. *The Judicial Retirement Benefits Trust (JRBT)*, which includes judges appointed after December 31, 1989;

5. *The State Police Retirement Benefits Trust (SPRBT)*, which includes state police hired after July 1, 1987;

6. *The Rhode Island Judicial Retirement Fund Trust (RIJRFT)*, established July 1, 2012, which covers active judges appointed prior January 1, 1990 and do not participate in the JRBT;

7. *The State Police Retirement Fund Trust (SPRFT)*, established June 8, 2016, for the purpose of paying retirement benefits to participating members of the state police initially hired on or before July 1, 1987, or their beneficiaries;

8. *The State of Rhode Island Defined Contribution Retirement Plan*, covers members of the defined benefit plan within the Employees' Retirement System of Rhode Island with less than 20 years of service as of June 30, 2012, excluding legislators, correctional officers and MERS public safety employees who participate in Social Security. For covered employees, participation in the defined contribution plan is mandatory. Judges and State Police officers are excluded from the Plan.

Each plan's assets are accounted for separately and may be used only for the payment of benefits to the members of that plan, in accordance with the terms of each plan.

ERSRI's financial statements are included as Pension Trust Funds within the Fiduciary Funds in the Comprehensive Annual Financial Report of the State of Rhode Island and Providence Plantations. The accompanying financial statements are not intended to present the financial position and results of operations of the State of Rhode Island.

## Membership

As of June 30, 2018, active membership in the Employees' Retirement System totaled 24,275. The Municipal Employees' Retirement System totaled 7,498 and 7,151 active teachers were in the Teachers' Survivors Benefit Plan. There are currently 53 judges contributing to the Judicial Retirement Benefits Trust, 226 state police contributing to the State Police Retirement Benefits Trust, and 5 judges contributing to the Rhode Island Judicial Fund Trust. A total of 29,075 retirees and beneficiaries were receiving benefits from the System. As of June 30, 2018 there are 36,009 participants in the State of Rhode Island Defined Contribution Plan.

## Financial Performance

The major additions for all ERSRI plans are employee and employer contributions, and investment earnings. Total additions for the fiscal year ending June 30, 2018 included $733,000,000 in contributions from employers and employees and net investment income of $694,600,000.

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The deductions from the funds consist primarily of payments made to members and beneficiaries for retirement, disability, death, or survivor benefits. In total, benefit payments for the fiscal year ending June 30, 2018 were $993,300,000.

Administrative expenses of the retirement system are paid from a restricted receipt account that is used solely to pay such expenses. This account is financed through investment earnings up to a maximum of 0.175% of the average total investments before lending activities as reported in the annual report of the Auditor General for the next preceding five (5) fiscal years. Any non-encumbered funds at June 30th are transferred back to the retirement fund. Administrative expenses incurred by the System for the fiscal year ended June 30, 2018 amounted to $8,518,000.

For the fiscal year ended June 30, 2018 the administrative costs of the defined contribution plan were financed through a budgetary appropriation and participant fees, and are reflected in the State's General Fund. Administrative costs that were allocated to the defined contribution plan as part of the Office of the General Treasurer's operating budget for the fiscal year ended June 30, 2018 were $206,000. Fees paid to TIAA, custodian of the defined contribution plan, via participant fees were $1,232,000 for fiscal year ended June 30, 2018.

## Funding

The ERSRI plans are funded through three sources; (1) investment earnings, (2) employee contributions as prescribed in RI General Law for each trust, and (3) employer contributions. Employer contribution rates for ERSRI are determined actuarially. The rate consists of two pieces: the normal cost rate and the amortization rate. The normal cost rate is the employer's Entry Age normal cost, expressed as a percentage of active member payroll. The amortization rate is the contribution required to amortize the unfunded actuarial accrued liability over a number of years as a level percentage of payroll. The employer contribution rates recommended by the actuary must be approved by the ERSRI Retirement Board before they can become effective for each fiscal year.

The actuary determines the actuarial accrued liability of the Plans, which is a measure of the present value of accrued liabilities that is estimated to be payable in the future to current retirees, beneficiaries, and employees for service earned to date. The percentage computed by dividing the actuarial value of net assets for benefits by the actuarial accrued liability is referred to as the funded ratio. The higher the funded ratio, the greater the degree of overall financial health and stability for the pension fund. The funded status alone is not appropriate for assessing the need for future contributions. Also, the funded status is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the Plan's benefit obligations.

The funding objective of the ERSRI is to attempt to develop stable contribution rates and to achieve a funded status of 100%. Per the most recently available actuarial valuation dated June 30, 2017 the funded ratio for State employees decreased from 56.0% to 52.9%, while for teachers the ratio decreased from 58.3% to 54.8%. During the same period, the funded ratio decreased from 98.6% to 93.3% for the judges. For the state police, the funded ratio decreased from 91.4% to 84.1%. The funded ratio for the Rhode Island Judicial Fund Trust increased from 2.6% to 3.2%. After one year of advanced funding, the funded ratio for the State Police Retirement Fund Trust is 9.1%. During fiscal year ending June 30, 2017 the decreases in the funded status for all plans, except for RIJRFT and SPRFT, were largely attributable to a reduction in the assumed investment rate of return from 7.5% to 7.0%. Although, the plans' funded statuses decreased, the long-term benefits of the assumption changes are expected to have a positive impact and strengthen the plans' ability to become fully funded. The ratios are based on the Entry Age Normal funding method effective June 30, 1999.

The Municipal Employees' Retirement System (MERS) prepares separate valuations for each participating unit. For reference purposes only, the overall funded ratio for MERS – general employees was 80.0% and MERS – public safety employees was 76.2% and all MERS employer units combined were 78.6% per the June 30, 2017 valuation. Consequently, each unit has its own funding ratio that can be found in the Municipal Employees' Retirement System Actuarial Valuation Report at www.ersri.org.

## Net Pension Liability

The total pension liability is the actuarial present value of projected benefit payments attributed to past periods of employee service. The total pension liability is based on the Entry Age Normal funding method. The fiduciary net position is based on the fair market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations based on the Board's adopted assumptions and methods). The net pension liability is measured as the total pension liability, less the amount of the fiduciary net position.

The Net Pension Liability is an accrual accounting measurement calculated in conformity with Governmental Accounting Standard Board (GASB) Statement No. 67 for the Trust and No. 68 for the employer units. The unfunded liability is a funding measure calculated according to generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

ERSRI provides the calculation of Net Pension Liability to comply with GASB's financial reporting requirements and is not applicable for the purposes of funding each Trust or used in the development of the contribution rates for participating employers.

## Investments

Assets are invested under the direction and authority of the State Investment Commission (SIC), which meets on a monthly basis. It is authorized, created and established in the office of the General Treasurer per Rhode Island General Law §35-10.

The SIC has established an asset allocation policy which may be amended by the SIC Board by a majority vote of its members. The SIC's asset allocation policy seeks to achieve the assumed rate of return adopted by the System over the long-term while reducing risk through the prudent diversification of the portfolio across various asset classes. The approved asset allocation policy is outlined in Note 5 to the Basic Financial Statements.

NEPC serves as the General Consultant for Policy and Asset Allocation to the State Investment Commission. Pension Consulting Alliance (PCA) serves as the Senior Advisor and Real Estate Consultant to the State Investment Commission. Cliffwater serves as consultant on alternative investments, hedge funds, and private equities. Bank of New York Mellon serves as the custodian for the defined benefit plans. TIAA serves as the record keeper for the State of Rhode Island Defined Contribution Plan and J.P. Morgan is the investment custodian of the defined contribution plan.

The annual time-weighted return (net of fees) on the portfolio for the one-year, three-year, and five-year periods ended June 30, 2018 were 8.03%, 6.34%, and 7.20%, respectively. A discussion regarding annualized returns and related benchmark indices for fiscal year 2018 is explained in the MD&A.

A more detailed exhibit of investment policies and investment performance for ERSRI are in the Investment Section of this report.

## Major Initiatives

### Information Technology

During fiscal year 2018, ERSRI began the implementation of a strategic initiative to improve internal processing efficiencies to enhance the membership's experience when interacting with ERSRI. Included within this initiative were the goals to (1) expediate the processing of pension payments, (2) reduce pension processing time, and (3) provide members with the ability to receive accurate on-demand benefit estimates.

A major component in being able to achieve the stated goals is having accurate and reliable member data. ERSRI has dedicated resources to review and correct, where necessary, historic membership data from its legacy systems. ERSRI has retained the services of an outside consultant to analyze and identify data anomalies and potential data conversion issues. The methodology for this data validation project will be to identify the potential data issues, develop queries to determine the population and organizational impact, analyze the query results, evaluate effectiveness of remediation options, verify results of queries, and develop on-going process improvements to maintain a high level of data integrity.

This initiative will be a multi-year process and will require significant financial and human resources. The overall objective is to continue to review the System's member services practices and continually improve the customer service experience for our membership.

### Investments

During fiscal year 2018, the SIC continued to execute on its "Back to Basics" asset allocation strategy focused on low-cost equity investments, complemented by other assets designed to protect ERSRI against volatility and inflation risks.

During fiscal year 2017, as part of the new asset allocation strategy, the SIC established the Crisis Protection Class (CPC). The SIC completed the funding of its CPC strategy in December 2017. The CPC's investment managers' objectives are (1) to provide diversified exposure to market trends across asset classes, geographies and time horizons to generate sizable profits during the periods when growth-risk exposed assets decline significantly, (2) to generate significant medium-term capital growth independent of overall movements in traditional stock and bond markets within a rigorous risk management framework, and (3) outperform the Credit Suisse Liquid Alternative Beta Managed Futures Index (CLABT18 Index) over a 5-year period.

Finally, with the assistance of its general consultant and other advisors the SIC reviewed and refined investment policy statements and benchmarks to align them with the adopted asset allocation strategy.

## Legislation

There were no relevant pieces of legislation pertaining to ERSRI enacted by the General Assembly during the legislative session that ended June 30, 2018.

## Professional Services

Mark R. Randall, Joseph P. Newton, and Paul T. Wood of GRS Retirement Consulting provide actuarial services to the ERSRI.

Michael P. Robinson, Esquire, of the law firm Shechtman, Halperin, Savage, LLP of Pawtucket, Rhode Island serves as the Retirement Board's general counsel. Private attorneys are hired on a per diem basis to serve as hearing officers for the System on disputed retirement issues.

In addition to Dr. Christopher Ley, who serves as the Medical Advisor to the Board's Disability Subcommittee, the ERSRI hires independent physicians who conduct medical exams of the System's disability applicants.

The Office of the Auditor General conducts an annual financial audit for each trust within the Employees' Retirement System of Rhode Island.

A separate schedule of professional consultants is included in the Introductory Sections of this report.

## Reports to Members

Real-time active member information regarding contributions and creditable service, as well as retiree member information, is found on the System's website at www.ersri.org.

Active and retired members also receive newsletters and other notices on an ad hoc basis.

## Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to ERSRI for its Comprehensive Annual Financial Report for the fiscal year ended June 30, 2017. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized Comprehensive Annual Financial Report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. ERSRI believes that our Comprehensive Annual Financial Report for the fiscal year ended June 30, 2018 continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

ERSRI also received the 2018 Public Pension Standards Award from the Public Pension Coordinating Council (PPCC). The PPCC presents this award to public employee retirement systems in recognition of their achievement of high professional standards in the areas of comprehensive benefits administration, actuarial valuations, financial reporting, investments, and membership communications.

The PPCC is a coalition of three national associations that represent public retirement systems and administrators: National Association of State Retirement Administrators (NASRA), the National Council on Teacher Retirement (NCTR) and the National Conference on Public Employee Retirement Systems (NCPERS).

The PPCC established the Public Pension Standards to reflect minimum expectations for public retirement system management, administration, and funding. The Standards serve as a benchmark by which to measure public defined benefit plans.

## Acknowledgments

The preparation of this report is possible only through the combined efforts of the ERSRI staff. Additionally, we would like to thank the Retirement Board, the actuarial team at GRS Retirement Consulting, the Office of the Auditor General, and the Office of the State Controller. Finally, this report is intended to provide extensive and reliable information as a basis for making management decisions, determining compliance with legal provisions, and determining responsible stewardship for the assets contributed by the System's members and their employers.

We welcome your comments on the issuance of this report.

Respectfully submitted,

| | |
|---|---|
| Frank J. Karpinski | Zachary J. Saul |
| Executive Director | Chief Financial Officer |

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ERSRI
Employees' Retirement System of Rhode Island

**Seth Magaziner**
*General Treasurer, Chair*

**Frank J. Karpinski**
*Executive Director*

December 28, 2018

To the Members and Beneficiaries of the Employees' Retirement System of Rhode Island:

On behalf of the Board of the Employees' Retirement System of Rhode Island (ERSRI), I am pleased to present the Fiscal Year 2018 Comprehensive Annual Financial Report. This report describes the financial condition of the system, changes that occurred during the fiscal year, and covers important information related to the management of the System, including investment performance.

ERSRI's investments earned 8.03% in net performance, outperforming the plan's benchmark and growing to $8.3 billion in the fiscal year ending on June 30, 2018. While the investment performance was strong during the fiscal year, ERSRI invests for the long term. Over a five-year period, net performance for the fund was 7.2% and 5.8% over the ten-year period; outperforming the System's benchmarks for the respective time periods.

At the beginning of fiscal year 2018, ERSRI began using more conservative investment assumptions; resetting the pension system's target annual rate of return to 7.0% annually. Using a 7.0% assumed rate of return will enable the System to more accurately calculate the value of obligations owed to retirees who have spent their career in service to the public.

In 2015, Rhode Island was one of the first states in the nation to adopt wide-ranging transparency requirements for all our investments. During the 2018 fiscal year, the Rhode Island General Assembly passed legislation at our request that creates a legal requirement to maintain our "Transparent Treasury" investment policy. Under "Transparent Treasury" investment managers are required to consent to public reporting report fees and performance. In August 2018, the Government Finance Officers Association (GFOA) awarded ERSRI its highest form of recognition in governmental accounting and financial reporting for our fiscal year 2017 Comprehensive Annual Financial Report.

ERSRI is making steady progress improving operational efficiency across the System and we know that there is much work to be done. We hired two new retirement counselors and are working to reduce the time it takes to provide pension estimates, as well as the time it takes to process our members' retirement benefits.

In fiscal year 2018, ERSRI launched an initiative to validate information for each of our nearly 68,000 members. ERSRI staff have developed a strategic approach to identify, scope, analyze and remediate data and to date have completed fixes for nearly 30% of the System's known data issues.

Kate Brock, who currently serves as ERSRI's Deputy Director, will transition into a new role as Chief of Staff, beginning January 1, 2019. During her tenure at ERSRI, Ms. Brock has been focused on upgrading service, implementing a new technology platform for members, streamlining internal processes, and commencing ERSRI's data validation project. As Chief of Staff, she will continue an active oversight role of ERSRI, as we improve service to members.

The dedication of ERSRI's staff and board is the reason that Rhode Island's retirement system is stronger than it has been in a decade. Together, we are working to ensure retirement security for Rhode Island teachers, State and municipal employees, public safety officers and other public servants.

Sincerely,

Seth Magaziner
General Treasurer



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Government Finance Officers Association

# Certificate of Achievement for Excellence in Financial Reporting

Presented to

**Employees Retirement System of Rhode Island**

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

**June 30, 2017**

Christopher P. Morrill

Executive Director/CEO

PPCC

Public Pension Coordinating Council

# *Public Pension Standards Award For Funding and Administration 2018*

Presented to

## Employees' Retirement System of Rhode Island

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

*Presented by the Public Pension Coordinating Council, a confederation of*

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle

Alan H. Winkle
Program Administrator

The 15-member State Retirement Board oversees the Employees' Retirement System of Rhode Island.

# The State Retirement Board, as of June 30, 2018, included:

**General Treasurer Seth Magaziner**, *Chair, Ex Officio Member*

**William B. Finelli**, *Vice Chairperson*, *Teacher Representative*

**Roger P. Boudreau**, *Retired Member Representative*

**Mark A. Carruolo**, *Public Representative (appointed by the General Treasurer)*

**Brian M. Daniels**, *Director, Rhode Island League of Cities and Towns, Ex Officio Member*

**Michael DiBiase**, *Director of Administration*

**Paul L. Dion, Ph.D.**, *State Employee Representative*

**Thomas M. Lambert**, *Municipal Representative*

**John P. Maguire**, *Teacher Representative*

**Thomas A. Mullaney**, *Associate Director/State Budget Officer (appointed by Director of Administration)*

**Claire M. Newell**, *State Employee Representative*

**Marcia B. Reback**, *Retired Member Representative*

**Jean Rondeau**, *Public Representative (appointed by the Governor)*

**Dr. Laura Shawhughes**, *Public Representative (appointed by the General Treasurer)*

**Lisa A. Whiting**, *Public Representative (appointed by the General Treasurer)*

The State Investment Commission is responsible for the investment of the assets of the Employees' Retirement System, the Municipal Employees' Retirement System, the State Police Retirement Benefits Trust, the Judicial Retirement Benefits Trust, the Rhode Island Judicial Retirement Fund Trust, the State Police Retirement Fund Trust, and the State of Rhode Island Defined Contribution Retirement Plan.

## The State Investment Commission, as of June 30, 2018, included:

**General Treasurer Seth Magaziner**, *Chair*

**Robert K. Benson**, *General Treasurer's Appointee*

**Erik Carleton**, *General Treasurer's Appointee*

**J. Michael Costello**, *Governor's Appointee*

**Thomas Fay**, *Governor's Appointee*

**Karen Hammond**, *Governor's Appointee*

**Frank J. Karpinski**, *Executive Director, Non-voting Member*

**Sylvia Maxfield**, *General Treasurer's Appointee*

**Thomas Mullaney**, *Director of Administration's Designee*

**Marcia Reback**, *General Treasurer's Appointee*

### Administration and Advisors to State Investment Commission as of June 30, 2018:

**Alec Stais**, *Chief Investment Officer*

**Sarah T. Dowling**, *Legal Counsel, State Investment Commission*

**NEPC**, *General Consultant, Policy and Asset Allocation Consultant to the State Investment Commission*

**Pension Consulting Alliance (PCA)**, Senior Advisor *& Real Estate Consultant to the State Investment Commission*

**Cliffwater**, *Alternative Investments (Hedge Funds/Private Equities) Consultant to the State Investment Commission*

**Bank of New York Mellon**, *Custodian Bank*

# Employees' Retirement System of Rhode Island
# Professional Advisors, Investment Consultants, Managers & Service Providers
# Fiscal Year Ended June 30, 2018

## Actuarial Consultant
Gabriel Roeder Smith & Co.

## Legal
Adler Pollock & Sheehan P.C.
Grant & Eisenhofer P.A.
Hinckley, Allen, & Snyder LLP
Shechtman Halperin Savage LLP

## Internal Audit
BlumShaprio

## Independent Auditors
R.I. Office of the Auditor General

## Medical Advisor
Dr. Christopher Ley, MD

## Information Technology Consultant
Morneau Shepell

## Investment Advisor
Aberdeen Asset Management
Cliffwater LLC
Pension Consulting Alliance
NECP LLC

## Investment Custodian
BNY Mellon - Defined Benefit Plan
TIAA - Defined Contribution Plan

## Investment - Total Growth

### *Global Equities*
Hamilton Lane
State Street Global Advisors

### *Private Growth*

***Non-Core Real Estate***
Crow Retail Fund
Exeter Industrial Value Fund III
GEM Realty Fund V
GEM Realty Fund VI
IC Berkeley Partners III
IC Berkeley Partners IV
Lone Star Real Estate Fund IV
Magna Hotel Fund III
Tri Continental Capital VII
Waterton Venture XII

***Opportunistic Private Credit***
Avenue Special Situations Fund IV
Avenue Special Situations Fund V
Centerbridge Special Credit Partners II
Davidson Kempner LDO Fund IV
Oaktree European Principal Fund III
WLR Recovery Fund IV

***Private Equity***
Advent International GPE VII
Advent International GPE VIII
Alta BioPharma Partners III
Alta Partners VIII
Altaris Health Partners IV
Altaris Constellation Partners IV
Aurora Equity Partners III
Bain Capital Fund X
Baring Asia Fund VI

## Investment - Total Growth

### *Private Growth*

***Private Equity - continued***
Birch Hill Equity Partners III
Braemar Energy Ventures III
Carlyle Asia Partners IV
Castile Ventures III
Centerbridge Capital Partners
Centerbridge Capital Partners III
Charterhouse Capital Partners VIII
Coller International Partners V
Constellation Ventures III
CVC European Equity Partners III
CVC European Equity Partners IV
CVC European Equity Partners V
CVC European Equity Partners VI
EnCap Energy Capital Fund IX
EnCap Energy Capital Fund X
EnCap Energy Capital Fund XI
Fenway Partners Capital Fund II
Fenway Partners Capital Fund III
First Reserve Fund X
First Reserve Fund XI
Focus Ventures III
Granite Global Ventures II
Granite Global Ventures III
Green Equity Investors V
Industry Ventures Partnership Holdings III
Industry Ventures Partnership Holdings III-C
Industry Ventures Partnership Holdings IV
Kayne Anderson Energy Fund III
Kayne Anderson Energy Fund IV
Leapfrog Ventures II
Leeds Weld Equity Partners IV
Lighthouse Capital Partners VI
MHR Institutional Partners III
Nautic Partners V
Nautic Partners VI
Nautic Partners VII
Nautic Partners VIII
Nordic Capital Fund V
Nordic Capital Fund VI
Nordic Capital Fund VII
Nordic Capital Fund VIII
Paine & Partners Fund IV
Paladin III
Parthenon Investors II
Point 406 Ventures
Point Judith Venture Fund II
Providence Equity Partners IV
Providence Equity Partners V
Providence Equity Partners VI
Providence Equity Partners VII
Riverside Capital Appreciation Fund VI
Riverside Micro-Cap Fund III
RLH Investors IV
Sorenson Capital Partners III
Southvest Fund VII
Tenex Capital Partners II
Thomas, McNerney & Partners
Thomas, McNerney & Partners II
TPG Partners IV
TPG Partners V
TPG Partners VI
Trilantic Capital Partners IV
W Capital Partners
W Capital Partners II

## Investment - Income

***Private Credit***
Capital Spring Investment Partners V
Garrison Opportunity Fund IV
Owl Rock Capital
Summit Partners Credit Fund
Summit Partners Credit Fund II
Virgo Societas IV

***Income - Other***
Harvest Partners - High Yield Infrastructure
Pacific Investment Management Company (PIMCO)
Western Asset Management Company (WAMCO)

## Investment - Stability

### *Crisis Protection Class*
WAMCO - Treasury Long Duration
Mackay Shields - Treasury Long Duration
Systematic Trend Following (CPC LLC)

### *Inflation Protection*

***Core Real Estate***
AEW Core Property Trust
Heitman HART
JP Morgan Strategic Property Fund
Morgan Stanley Prime Property Fund
Prudential Real Estate Investors (PRISA)

***Private Infrastructure***
IFM Global Infrastructure, LP
ISQ Global Infrastructure Fund, LP
ISQ Global Infrastructure Fund II, LP
Stonepeak Infrastructure Fund II, LP
Stonepeak Infrastructure Fund II - C
Stonepeak Infrastructure Fund III, LP

***Stability - Other***
Brown Brothers Harriman - TIPS

### *Volatility Protection*

***Absolute Return Hedge Funds***
Brevan Howard LP
Capula Global Relative Value Fund Ltd.
Davidson Kempner Institutional Partners LP
DE Shaw Composite International Fund
Elliott Associates LP
Graham Capital
Samlyn LP
Viking Global Equities LP
Winton Futures Fund Ltd.

***Volatility Protection - Other***
Pyramis - Investment Grade Fixed Income
MacKay Shields - Investment Grade Fixed Income
Payden & Rygel

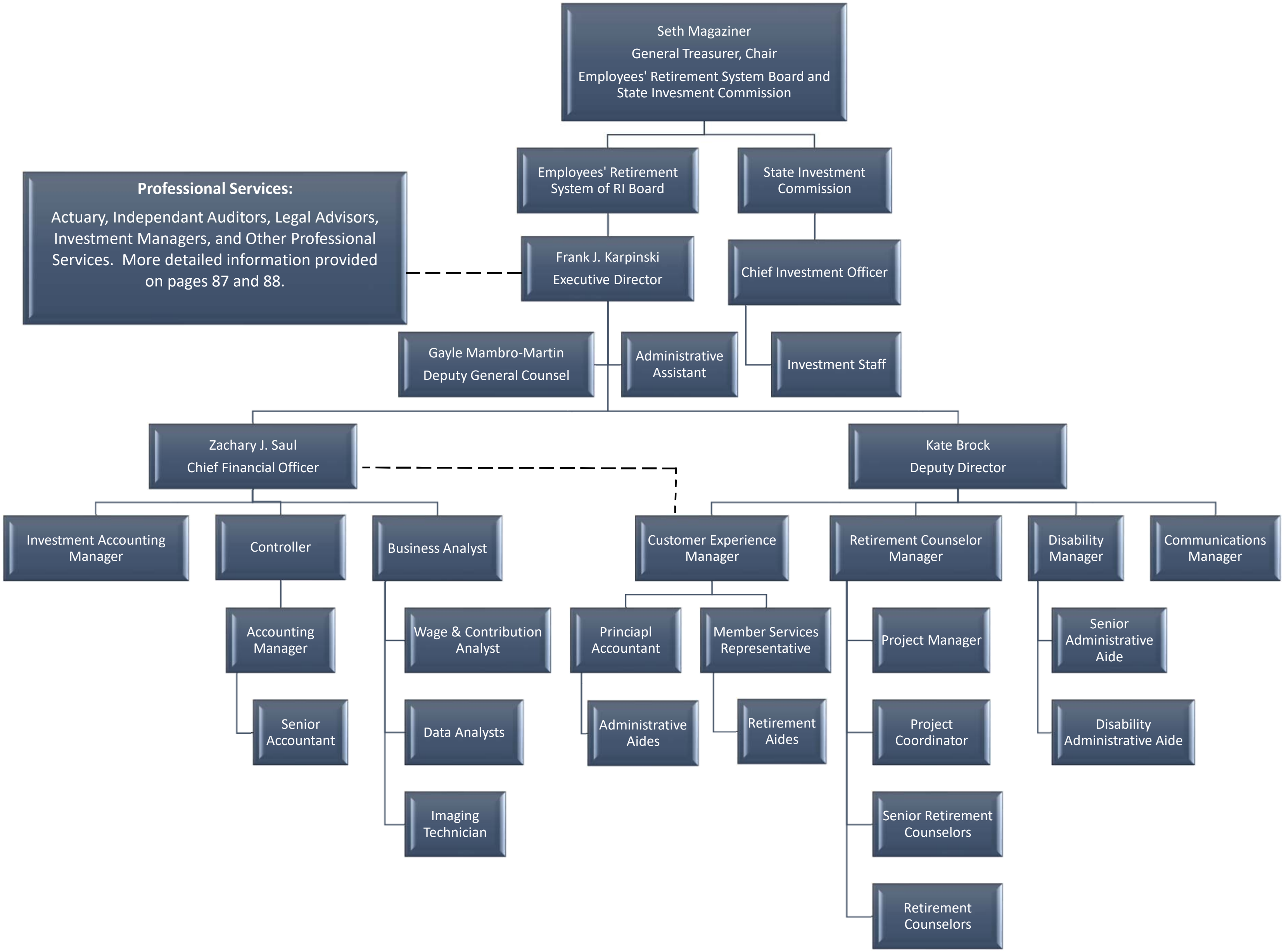
## Investment - Other
Russell Investments

# Executive Staff

Day-to-day operations of the Employees' Retirement System of Rhode Island are overseen by the following administrators (as of June 30, 2018):

**Frank J. Karpinski**, *Executive Director*
**Zachary J. Saul**, *Chief Financial Officer*
**Kate Brock**, *Deputy Director*
**Michael P. Robinson, Esquire**, *Retirement Board Counsel**

* Per Rhode Island General Law §36-8-9 legal counsel is appointed by the General Treasurer/Chair of the Retirement Board.


Seth Magaziner
General Treasurer, Chair
Employees' Retirement System Board and State Invesment Commission
Employees' Retirement System of RI Board
State Investment Commission
Professional Services:
Actuary, Independant Auditors, Legal Advisors, Investment Managers, and Other Professional Services. More detailed information provided on pages 87 and 88.
Frank J. Karpinski
Executive Director
Chief Investment Officer
Gayle Mambro-Martin
Deputy General Counsel
Administrative Assistant
Investment Staff
Zachary J. Saul
Chief Financial Officer
Kate Brock
Deputy Director
Investment Accounting Manager
Controller
Business Analyst
Customer Experience Manager
Retirement Counselor Manager
Disability Manager
Communications Manager
Accounting Manager
Wage & Contribution Analyst
Princiapl Accountant
Member Services Representative
Project Manager
Senior Administrative Aide
Senior Accountant
Data Analysts
Administrative Aides
Retirement Aides
Project Coordinator
Disability Administrative Aide
Imaging Technician
Senior Retirement Counselors
Retirement Counselors

# Financial Section

Independent Auditors' Report

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Office of the Auditor General
State of Rhode Island and Providence Plantations - General Assembly
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# INDEPENDENT AUDITOR'S REPORT

JOINT COMMITTEE ON LEGISLATIVE SERVICES, GENERAL ASSEMBLY
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS:

RETIREMENT BOARD OF THE EMPLOYEES' RETIREMENT SYSTEM OF THE
STATE OF RHODE ISLAND:

***Report on the Financial Statements***

We have audited the accompanying financial statements of the plans which comprise the Employees' Retirement System of the State of Rhode Island (the System) as of June 30, 2018 and for the year then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

***Auditor's Responsibility***

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Joint Committee on Legislative Services, General Assembly
Retirement Board of the Employees' Retirement System

***Opinions***

In our opinion, the financial statements of the plans referred to above present fairly, in all material respects, the financial position of the plans within the System as of June 30, 2018, and the changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

***Emphasis of Matters***

As described in Note 1, the financial statements of the System present only the pension trust funds of the State of Rhode Island and Providence Plantations (the State) and do not purport to, and do not present fairly the financial position of the State, as of June 30, 2018 and the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

The fair values of certain investments (hedge funds, private equity, real estate, certain infrastructure, and the crisis protection class - trend following investments) representing 27% of assets within the pooled investment trust, have been estimated by management in the absence of readily determinable fair values. Management's estimates are based on information provided by the fund managers or general partners.

As described in Note 3, the System changed its method of presentation for investment management expenses which were previously reported on a net of fees basis and are now presented on a gross fee basis.

As described in Note 8, the plan fiduciary net position for the RIJRFT plan represents only 3.8% of the total pension liability of that plan at the June 30, 2018 measurement date. Employer contributions were significantly less than actuarially determined amounts. Additional employer contributions will be required to provide benefits to plan members.

Our opinions are not modified with respect to these matters.

**Other Matters**

***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 4 through 11 and other required supplementary information as listed in the table of contents and pages 53 through 71 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Joint Committee on Legislative Services, General Assembly
Retirement Board of the Employees' Retirement System

***Other Information***

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The supplementary information, such as the Schedules of Investment, Administrative, and Consultant Expenses, is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The Schedules of Investment, Administrative, and Consultant Expenses are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedules of Investment, Administrative, and Consultant Expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory, investment, actuarial, and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or proved any assurance on them.

**Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have issued a report dated December 20, 2018 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Dennis E. Hoyle, CPA
Auditor General

December 20, 2018

# EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND

## Management's Discussion and Analysis

# Management's Discussion and Analysis

Management of the Employees' Retirement System of the State of Rhode Island (the System) provides this Management's Discussion and Analysis of their financial performance for the readers of the System's financial statements. This narrative provides an overview of the System's financial activity for the fiscal year ended June 30, 2018. This analysis is to be considered in conjunction with the financial statements to provide an objective analysis of the System's financial activities based on the status of the System and issues currently facing management.

## Understanding the Employees' Retirement System Financial Statements

The System administers seven defined benefit pension plans for state employees, teachers, teachers' survivors, state police, judges, and employees of participating municipalities. State employees and teachers are combined into one cost-sharing plan while teachers' survivors, state police, judges appointed after December 31, 1989, active judges appointed before January 1, 1990, and municipal employees each have separate plans. The System also administers a defined contribution plan for certain state employees, teachers, and employees of participating municipalities.

The *Statements of Fiduciary Net Position* provide a snapshot of the financial position of the System at June 30, 2018. The *Statements of Changes in Fiduciary Net Position* summarize the additions and deductions that occurred during the fiscal year.

The *Notes to the Financial Statements* provide additional information essential to a full understanding of the financial statements.

The *Required Supplementary Information* consists of schedules and related notes, which over time will be built to present 10 years of historical data. These schedules present each plan's net pension liability (asset) and changes in the net pension liability (asset) between years. A schedule of investment returns presents the annual money-weighted return for each defined benefit plan. A schedule of contributions is presented for each plan, which details required and actual contributions to the plan including covered payroll information.

## Financial Highlights for the Fiscal Year Ended June 30, 2018

- The System's fiduciary net position increased by $424.5 million from $8.8 billion at June 30, 2017 to $9.2 billion at June 30, 2018.

- Total pension benefits paid to members from the defined benefit plans were $953 million, an insignificant difference when compared to the fiscal year ended June 30, 2017.

- Contributions to all defined benefit plans from both employers and employees at June 30, 2018 were $595 million, a decrease of $15 million or 2.4% compared to the fiscal year ended June 30, 2017.

- Total employee and employer contributions into the System's defined contribution plan were $119.8 million at June 30, 2018, an increase of $3.4 million.

- Total distributions paid to members from the defined contribution plan were $16.2 million.

- The net income from investing activities within the defined benefit plans (Pooled Investment Trust) was $633.2 million for the fiscal year ended June 30, 2018. Investment gains within the defined contribution plan totaled $61.4 million.

**Management's Discussion and Analysis**

## Financial Analysis

The System provides retirement and disability benefits from the defined benefit plan to State employees, public school teachers, participating municipal general and public safety employees, state police officers and judges. The ability to provide these benefits are funded through member and employer contributions and investment income. The fiduciary net position is available to satisfy the financial obligations to members, retirees, and beneficiaries.

The total net position restricted for pensions at June 30, 2018 increased to $9.2 billion when compared to $8.8 billion at June 30, 2017.

The following tables illustrate the condensed Net Position and Condensed Changes in Net Position for ERSRI for the fiscal years ended June 30, 2018 and June 30, 2017.

**Assets, Liabilities and Fiduciary Net Position – All Plans**
**(in millions)**

| | June 30, 2018 | June 30, 2017 |
|---|---|---|
| **Assets:** | | |
| Cash and cash equivalents | $ 4.6 | $ 14.4 |
| Investments | 9,186.4 | 8,758.5 |
| Contribution and other receivables | 59.9 | 55.2 |
| Total assets | 9,250.9 | 8,828.1 |
| **Liabilities:** | | |
| Accounts payable | 5.2 | 6.9 |
| Total liabilities | 5.2 | 6.9 |
| **Fiduciary Net Position**: | $ 9,245.7 | $ 8,821.2 |

Total assets increased by $424.5 million, or 4.8%, for the fiscal year ending June 30, 2018 when compared to fiscal year ending June 30, 2017. Cash and cash equivalents at June 30, 2018 decreased $9.8 million when compared to fiscal year ending June 30, 2017. At the end of the prior fiscal year ERSRI received distributions from privately-held investments that were held in a short-term cash position, due to the timing of the distribution, until they could be reinvested. The balance at June 30, 2018 to maintain a cash reserve to meet monthly capital requirements is consistent with the historical cash position of ERSRI. The increase in the total fiduciary net position can primarily be attributed to higher investment earnings. The increase of $427.9 million, or 4.9%, of investments can be attributed to an increase in the global markets and the allocation policy of the portfolio. Contributions and other receivables increased $4.7 million, or 8.5%, due to a increase in the amounts due from employers at June 30, 2018.

Total liabilities decreased $1.7 million, or -24.6%, for the fiscal year ending June 30, 2018 due to the timing of what was owed to vendors and a decrease in the amounts due to other plans within ERSRI.

**Management's Discussion and Analysis**

| Summary of Changes in Fiduciary Net Position – All Plans (in millions) | Year Ended June 30, 2018 | Year Ended June 30, 2017 |
|---|---|---|
| **Additions:** | | |
| Contributions | $ 715.4 | $ 726.6 |
| Net investment gain | 694.6 | 942.3 |
| Service credit transfers | 17.6 | 7.4 |
| Total Additions | 1,427.6 | 1,676.3 |
| **Deductions:** | | |
| Benefits and distributions | 969.3 | 965.6 |
| Refunds of contributions | 6.4 | 7.5 |
| Administrative expenses | 9.8 | 9.5 |
| Service credit transfers | 17.6 | 7.4 |
| Total Deductions | 1,003.1 | 990.0 |
| **Increase in Net Position:** | 424.5 | 686.3 |
| **Fiduciary Net Position:** | | |
| Beginning of year | 8,821.2 | 8,134.9 |
| End of year | $ 9,245.7 | $ 8,821.2 |

## Additions to Net Position

The revenues required to fund retirement and disability benefits for the defined benefit plans are accumulated from the contributions from employees and employers, as well as investment earnings. Employee and employer contribution revenue at June 30, 2018 was $496.1 million for the defined benefit plan, a decrease of less than 1% when compared to $497.8 million at June 30, 2017. Employee and employer contributions to the defined contribution plan was $119.8 million at June 30, 2018, an increase of 2.9% when compared to $116.4 million at June 30, 2017.

The State of Rhode Island's contributions for their portion of teachers' retirement at June 30, 2018 was $98.1 million for the defined benefit plan, an increase of 1.6% when compared to $96.5 million at June 30, 2017.

Contributions from employees and employers (except for the RIJRFT and SPRFT) are based on covered payroll. During fiscal year 2018 the covered payroll for each trust, with the exception of the SPRBT, experienced an increase when compared to fiscal 2017. Also, contribution rates for the members are prescribed in Rhode Island General Law and fixed by statute. The employer contributions are actuarially determined through annual funding valuations and are adjusted accordingly to meet the financial obligations of each Trust.

ERSRI recognized $694.6 million in net investment gains at June 30, 2018. Improvement in the financial markets is the primary factor for the increase in the Net Position. The investment portfolio for the defined benefit plan recognized a net return of 8.03% at June 30, 2018.

## Deductions from Net Position

ERSRI was established to administer the funds of each Trust in order to provide lifetime retirement, survivor, and disability benefits to its membership. The primary categories that reduce the net position are benefit payments and distributions, refunds of contributions to members exiting the System, and the administrative expenses to operate ERSRI.

Benefits and distributions to members from the defined benefit plan at June 30, 2018 were $953 million, an insignificant difference of less than 1% when compared to benefits at June 30, 2017. There was a moderate cost-of-living increase to eligible retirees, an increase in the number of retirees, and an increase in benefits resulting from higher average salaries of new retirees.

Distributions to members from the defined contribution plan at June 30, 2018 were $16.2 million, an increase of 31.7% when compared to $12.3 million at June 30, 2017. The increase is the result of the increased number of retirees eligible to elect distributions from this plan. The plan was created on July 1, 2012 for eligible members that did not have 20 years of service credit at June 30, 2012. Distributions are expected to increase as this plan matures and becomes a more significant portion of a member's retirement portfolio within ERSRI.

Refunds of contributions from the defined benefit plan at June 30, 2018 were $6.4 million, a decrease of 14.7% when compared to $7.5 million at June 30, 2017. The decrease in refunds is the result of a decrease in the number and dollar value of refund requests from terminated members.

Administrative expenses for both the defined benefit and defined contribution plans at June 30, 2018 were $9.8 million, an increase of 3.2% when compared to $9.5 million at June 30, 2017. The increase in fiscal year 2018 can be attributed to costs associated with the upgrade of the ERSRI line-of-business system, professional services, and facilities charges. Details of administrative expenses are listed in the *Schedule of Administrative Expenses* in the Supplementary Information section of this report.

## Investments

The State Investment Commission (SIC) establishes long-term asset allocation policy, selects managers, and monitors investment performance of the plan. An asset allocation study is conducted every two to four years to identify an optimal diversified investment portfolio that maximizes return within an acceptable level of risk. As long-term investors, the SIC has committed to the strategic asset allocation that has been developed as part of a comprehensive asset allocation study. The asset allocation study incorporates return expectations, risks and correlations associated with each asset class, as well as the unique profile and objectives of the System.

The SIC seeks to achieve the targeted investment return set by the Retirement Board, while minimizing risk and satisfying the plan's need for steady cash flows. As a mature defined benefit plan where distributions exceed contributions, the System has to balance its short-term cash flow requirements with the much longer time horizon of its total obligations. Diversification across asset classes that respond differently to different market environments is a key tool used by the SIC to seek strong long-term returns. The allocation of assets among stocks, bonds, and alternative investments can have a significant impact on risk-adjusted investment performance.

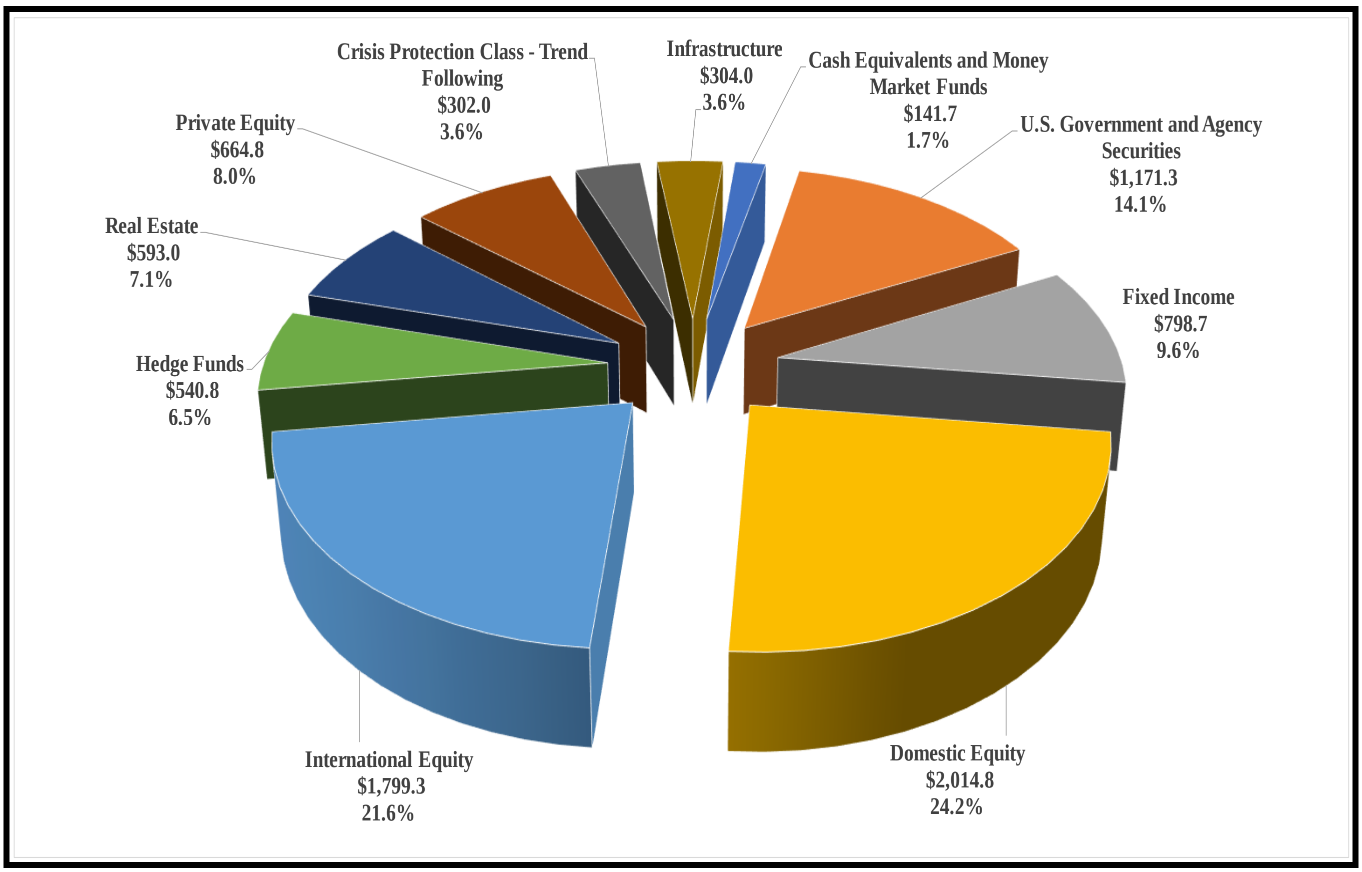
In June 2016, a new asset allocation study was carried out. Based on the study, significant changes were made to the current investment strategy. The study reframed the asset allocation, moving away from traditional classifications of asset classes and towards a more function-based asset allocation. The new

"Back to Basics" strategy was designed to improve investment performance, protect the fund in the event of a crisis, and save taxpayers millions compared to the previous strategy. The changes were led by leading pension and investment experts in the United States. Among the highlights of the "Back to Basics" strategy is a significant reduction (approximately 50%) in the use of hedge funds. The study proposed a larger allocation to private assets (equity, credit, real estate and infrastructure) and for a dedicated allocation towards "income-based" strategies. During FY 2018 initiatives were taken to implement this strategy. As proceeds from the liquidated hedge funds were received, the new Crisis Protection asset class was fully implemented. In addition, strategic asset class definitions were refined, including the Private assets, and the new increased allocation to private assets continued.

Rhode Island maintains one of the most comprehensive expense disclosure policies in the nation. Since 2015, Rhode Island only invests with fund managers who agree to have their performance and expenses published regularly, a policy that has become a leading practice replicated by other states. In 2017, The Rhode Island General Assembly codified the disclosure policy in statute. While some investment managers selected prior to 2015 are grandfathered from the individualized reporting requirement, the Treasurer's office has requested that they voluntarily allow disclosure, which many have agreed to do. In addition to displaying the fees and expenses charged by each fund individually, these financial statements include a comprehensive total of all manager fees and expenses paid out of the pension system by asset class. These totals reflect fees and expenses paid to every fund, including those grandfathered funds that declined to allow individualized disclosure.

## Pooled Investment Trust – Asset Allocation - June 30, 2018

(in millions)

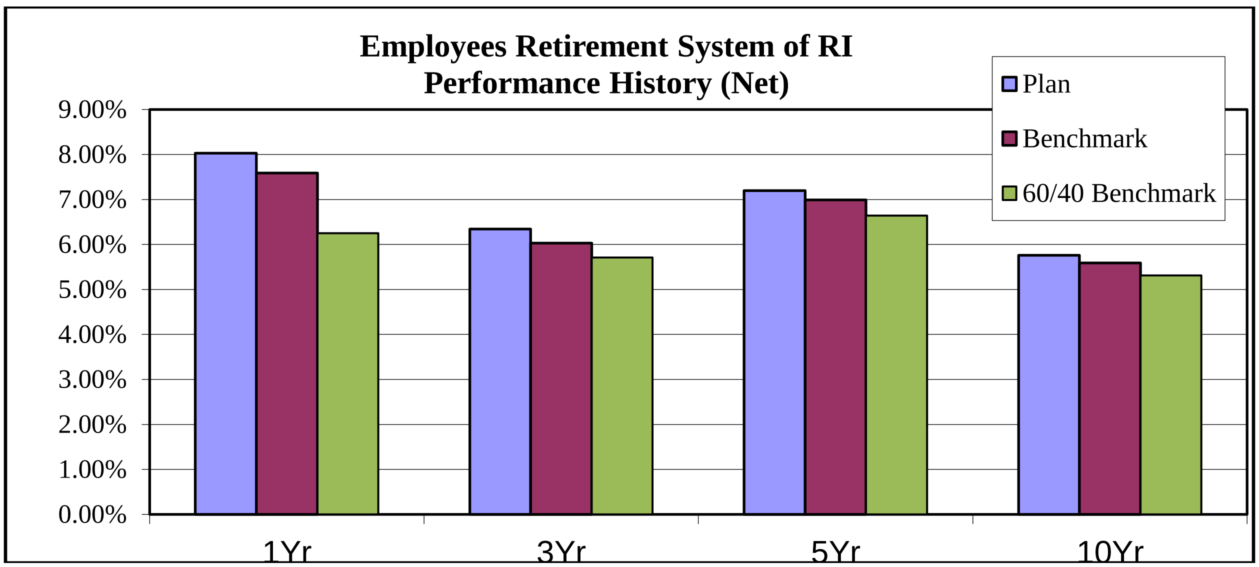



Having adopted the asset class targets of the most recent allocation study, the State Investment Commission may tactically adjust these targets based on market conditions and opportunities, as well as any timing required for prudent implementation. The SIC engages external investment managers to manage portions of the portfolio, and performance is measured in relation to benchmarks adopted for each asset category. A composite benchmark, based on weighted asset allocations, is used to measure overall manager performance. Asset allocation performance is assessed by comparing returns to a basic allocation of 60% global equities/40% domestic bonds. The SIC assesses asset classes and managers over suitably long time frames, and on the basis of expected future returns.

For the defined contribution plan (401A), the SIC has selected a menu of investment options, which are made available to participants. The options include, but are not limited to, target-date retirement funds corresponding to an employee's anticipated retirement date. Approximately 91% of defined contribution plan assets are invested in target-date retirement funds.

## Investment Performance

The System's one-year, time-weighted net rate of return was 8.03% which was above the composite benchmark (7.53%) and the 60/40 basic allocation's (6.25%) return. The three-year average was 6.34%, which was 33bps above the 6.01% benchmark return and 63bps better than the 60/40 benchmark's 5.71% return. The five-year average was 7.20%, which exceeded the 6.98.% benchmark return by 22 bps and was 56bps better than the 60/40 at 6.64%.




The composite benchmark is weighted based on asset allocation targets. It is currently comprised:

| | |
|---|---|
| 40.0% | MSCI All Country World Net Index |
| 11.0% | ILPA All Funds Index 1Q Lag |
| 11.5% | Barclays Aggregate |
| 6.5% | HFRI Fund of Funds Composite Index |
| 3.0% | Bank of America Merrill Lynch 3-month US Treasury Bill |
| 4.0% | NFI-ODCE Index |
| 1.0% | Barclays US Treasury Inflation Notes: 1-10 Year Index |
| 3.5% | custom loan and high yield index – 50.0% Bank of America Merrill Lynch US High Yield, 50.0% Credit Suisse Leveraged Loan Index |
| 2.5% | NFI-ODCE Index 1Q Lag + 2.5% |
| 1.5% | ILPA/Cambridge Distressed Securities Index |
| 3.0% | S&P LSTA Leveraged Loan Index + 3% |
| 4.0% | Credit Suisse Managed Futures (18% Vol) Liquid Index |
| 4.0% | Barclays Long Duration US Treasury Index |
| 2.0% | CPI 1 month lag + 4% |
| 1.0% | Bloomberg Barclays Commodity Total Return Index |
| 1.5% | Alerian Master Limited Partnerships Total Return Index |

The composite benchmark for each of the years shown in the chart reflects the asset allocation targets in place for that fiscal year and the related indices used to measure performance.

The 60% global equity/40% bonds benchmark is 60% MSCI All-Country World and 40% Barclays Aggregate.

## Additional Investment Performance Reporting

The investment performance discussed in the previous section is the time-weighted return, as reported by the System's investment custodian for the Pooled Investment Trust as a whole. In accordance with implementation of GASB Statement No. 67, investment performance is also measured on a money-weighted return basis for each defined benefit retirement plan. The money-weighted returns for each defined benefit plan are disclosed in the notes to the financial statements and the required supplementary information section. The money-weighted return reflects each individual plan's specific cash inflows and outflows, as well as the overall portfolio returns.

The System's actuarial investment return assumption is 7.0% for all plans except the Judicial Retirement Fund Trust which uses a 4.0% investment return assumption. This return expectation is adopted by the Retirement Board on recommendation by the plan's actuary. It is based on a thirty-year horizon. The actuarial value of assets is determined based on a five-year smoothing methodology.

Fiscal 2018 investment returns within the defined contribution plan(401A) ranged from -0.53% to +16.51% depending on investment options that plan members chose from the available options.

## Net Pension Liability (Asset) of the Plans within the System

Independent actuarial valuations of the System are conducted each year. Due to the implementation of Governmental Accounting Standards Board (GASB) Statement No. 67 – *Financial Reporting for Pension Plan*s, the System presents the accounting measures of the net pension liability (asset) for each of the defined benefit plans. Calculation of the net pension liability (asset) of the plans is performed by the actuary in accordance with GASB requirements. The total pension liability and net pension liability are based on actuarial valuations performed as of June 30, 2017, rolled-forward to June 30, 2018 using generally accepted actuarial principles from the valuation date to the plan's fiscal year end.

This accounting measure of the net pension liability (asset) of each plan is different from the actuarial valuations performed for funding purposes and the determination of annual contributions to each of the defined benefit plans. One of the principal differences is that the accounting measure of the net pension liability at June 30, 2018 utilizes each plan's fiduciary net position, which reflects the fair value of investments at that date. For funding purposes, the actuarial valuation uses the actuarial value of assets, which reflects a five-year smoothed asset valuation.

The measurement of the net pension liabilities for all defined benefit plans, except for the RIJRFT, utilized the System's investment return assumption of 7.0%. The RIJRFT utilized Fidelity's 20-Year Municipal GO AA Bond Index rate of 3.62%. The calculation of the net pension liability (asset) was measured as of June 30, 2018

The Teachers' Survivors Benefit plan was over-funded with a fiduciary net position equal to 137.4% of the plan's total pension liability at June 30, 2018. The fiduciary net position of the ERS plan covering state employees and teachers was equal to 52.5% and 54.3% respectively of the total pension liability measure for each of those employee groups. The fiduciary net position of the State Police and JRBT plans was equal to 83.6% and 92.8% respectively of the total pension liability measure for each of those employee groups. The fiduciary net position of the RIJRFT plan covering a small group of judges was equal to 3.8% of the total pension liability for that plan due to the recent formation of the plan and the State (employer) using a mostly pay-as-you-go funding approach. The fiduciary net position of the agent MERS plans covering general employees and police and fire personnel was equal to 79.6% and 76.2% respectively of the total pension liability measure for those employee groups. The fiduciary net position of a new plan created July 1, 2016 for retired state police hired before July 1, 1987 was 9.5% of the total pension liability. Prior to creation of the trust, the State followed a pay-as-you-go rather than an advance funded approach.

All employers participating in the System's plans contributed 100% of their annual actuarially determined contribution during fiscal 2018, except for the State not providing the full employer contribution for the Rhode Island Judicial Retirement Fund Trust.

## Future Contribution Rates

The fiscal 2019 employer contribution rates are based upon the actuarial valuations performed for funding purposes at June 30, 2016. The employer contribution rates for fiscal 2019 are 26.28% for State employees (reflecting an additional 0.53% to fund the impact of a retirement incentive program offered to certain state employees), 23.51% for Teachers, 20.28% for Judges, and 14.74% for State Police. For the Rhode Island Judicial Retirement Fund Trust and Non-Contributing State Police Retirement Fund Trust, the actuarially determined employer contribution is $1,240,501 and $16,546,020, respectively, for fiscal 2019.

## Contacting the System's Management

This discussion and analysis presentation is designed to provide a general overview of the System's financial activity. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Employees' Retirement System, 50 Service Avenue, Warwick, RI, 02886.

# *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

## *Statements of Fiduciary Net Position*

## *June 30, 2018*

| | Defined Benefit Plans | | | | | | | Defined Contribution Plan | Memorandum Total |
|---|---|---|---|---|---|---|---|---|---|
| | **ERS** | **TSB** | **MERS** | **SPRBT** | **JRBT** | **RIJRFT** | **SPRFT** | | |
| **Assets** | | | | | | | | | |
| Cash and cash equivalents (Note 4) | $ 1,511,136 | $ 969,942 | $ 1,049,124 | $ 53,846 | $ 686,917 | $ 184,563 | $ 100,983 | $ - | $ 4,556,511 |
| Receivables | | | | | | | | | |
| Contributions | 28,290,083 | 14,880 | 3,817,149 | 48,583 | 28,080 | | | - | 32,198,775 |
| Due from State for teachers | 19,302,971 | - | - | - | - | - | | - | 19,302,971 |
| Other | 1,527,867 | 2,539 | 245,230 | 2,606 | - | 33,251 | | - | 1,811,493 |
| Total receivables | 49,120,921 | 17,419 | 4,062,379 | 51,189 | 28,080 | 33,251 | - | - | 53,313,239 |
| Prepaid assets (Note 3) | 3,489,267 | 159,283 | 745,136 | 56,738 | 29,005 | 135 | 8,841 | - | 4,488,405 |
| Due from other plans | 1,522,394 | | 554,318 | - | - | | | - | 2,076,712 |
| Investments at fair value | | | | | | | | | |
| Equity in pooled trust (Note 5) | 6,219,834,949 | 326,618,311 | 1,555,945,701 | 138,603,526 | 72,715,269 | 588,440 | 16,152,103 | - | 8,330,458,299 |
| Defined contribution plan investments (Note 6) | - | - | - | - | - | - | | 856,009,867 | 856,009,867 |
| Total investments | 6,219,834,949 | 326,618,311 | 1,555,945,701 | 138,603,526 | 72,715,269 | 588,440 | 16,152,103 | 856,009,867 | 9,186,468,166 |
| ***Total Assets*** | 6,275,478,667 | 327,764,955 | 1,562,356,658 | 138,765,299 | 73,459,271 | 806,389 | 16,261,927 | 856,009,867 | 9,250,903,033 |
| **Liabilities** | | | | | | | | | |
| Accounts payable | 2,730,255 | (28,284) | 377,525 | 31,330 | 15,377 | 143 | 3,598 | - | 3,129,944 |
| Due to other plans | 554,318 | - | 1,522,394 | | | | | - | 2,076,712 |
| ***Total Liabilities*** | 3,284,573 | (28,284) | 1,899,919 | 31,330 | 15,377 | 143 | 3,598 | - | 5,206,656 |
| **Net position restricted for pensions** | $ 6,272,194,094 | $ 327,793,239 | $ 1,560,456,739 | $ 138,733,969 | $ 73,443,894 | $ 806,246 | $ 16,258,329 | $ 856,009,867 | $9,245,696,377 |

The accompanying notes are an integral part of this financial statement.

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *Statements of Changes in Fiduciary Net Position - Fiscal Year Ended June 30, 2018*

| | Defined Benefit Plans | | | | | | | Defined Contribution Plan | Memorandum Total |
|---|---|---|---|---|---|---|---|---|---|
| | **ERS** | **TSB** | **MERS** | **SPRBT** | **JRBT** | **RIJRFT** | **SPRFT** | | |
| **Additions** | | | | | | | | | |
| Contributions (Note 7) | | | | | | | | | |
| Member contributions | $ 89,903,432 | $ 744,035 | $ 17,709,035 | $ 2,007,867 | $ 1,142,163 | $ 116,757 | | $ 92,018,737 | $ 203,642,026 |
| Employer contributions | 315,176,351 | 744,035 | 47,003,638 | 2,797,003 | 2,057,529 | 399,012 | 16,387,092 | 27,828,956 | 412,393,616 |
| State contribution for teachers (Note 7c) | 98,120,835 | - | - | - | - | - | | - | 98,120,835 |
| Supplemental employer contributions (Note 7d) | 1,058,820 | - | - | - | - | - | | - | 1,058,820 |
| Service credit transfer payments | 14,456,756 | | 3,114,275 | | | | | | 17,571,031 |
| Interest on service credits purchased | 81,455 | - | 16,143 | 2,002 | - | - | | - | 99,600 |
| Total contributions | 518,797,649 | 1,488,070 | 67,843,091 | 4,806,872 | 3,199,692 | 515,769 | 16,387,092 | 119,847,693 | 732,885,928 |
| Investment Income | | | | | | | | | |
| Net appreciation in fair value of investments | 459,222,538 | 23,755,716 | 112,986,091 | 9,972,862 | 5,208,393 | 42,148 | 1,101,447 | 60,293,462 | 672,582,657 |
| Interest | 47,258,028 | 2,456,085 | 11,687,384 | 1,031,354 | 539,147 | 4,363 | 127,241 | - | 63,103,602 |
| Dividends | 27,605,928 | 1,434,333 | 6,827,815 | 603,795 | 315,657 | 2,554 | 70,094 | 1,137,953 | 37,998,129 |
| | 534,086,494 | 27,646,134 | 131,501,290 | 11,608,011 | 6,063,197 | 49,065 | 1,298,782 | 61,431,415 | 773,684,388 |
| Less investment expense (Note 3) | (59,058,526) | (3,093,794) | (14,735,384) | (1,309,599) | (686,434) | (5,555) | (161,844) | - | (79,051,136) |
| Net investment income | 475,027,968 | 24,552,340 | 116,765,906 | 10,298,412 | 5,376,763 | 43,510 | 1,136,938 | 61,431,415 | 694,633,252 |
| Miscellaneous revenue | 22,217 | | 147 | 245 | - | - | | 11,500 | 34,109 |
| ***Total Additions*** | 993,847,834 | 26,040,410 | 184,609,144 | 15,105,529 | 8,576,455 | 559,279 | 17,524,030 | 181,290,608 | 1,427,553,289 |
| **Deductions** | | | | | | | | | |
| Retirement benefits | 816,851,265 | 9,602,181 | 96,822,308 | 5,933,726 | 2,833,077 | 399,015 | 17,273,412 | - | 949,714,984 |
| Death benefits | 2,778,667 | - | 702,000 | - | - | - | - | - | 3,480,667 |
| Distributions | - | - | - | - | - | - | - | 16,181,976 | 16,181,976 |
| Refund of contributions | 4,678,432 | 275,135 | 1,207,726 | 90,127 | 123,329 | - | - | - | 6,374,749 |
| Service credit transfer payments | 13,424,486 | - | 4,146,545 | | | - | - | | 17,571,031 |
| Administrative expense (Note 9) | 6,407,239 | 330,288 | 1,566,863 | 136,371 | 71,270 | 646 | 5,304 | 1,232,204 | 9,750,185 |
| ***Total Deductions*** | 844,140,089 | 10,207,604 | 104,445,442 | 6,160,224 | 3,027,676 | 399,661 | 17,278,716 | 17,414,180 | 1,003,073,592 |
| **Net Increase** | 149,707,745 | 15,832,806 | 80,163,702 | 8,945,305 | 5,548,779 | 159,618 | 245,314 | 163,876,428 | 424,479,697 |
| **Net position restricted for pensions** | | | | | | | | | |
| **Beginning of year** | 6,122,486,349 | 311,960,433 | 1,480,293,037 | 129,788,664 | 67,895,115 | 646,628 | 16,013,015 | 692,133,439 | 8,821,216,680 |
| **End of year** | $ 6,272,194,094 | $ 327,793,239 | $ 1,560,456,739 | $ 138,733,969 | $ 73,443,894 | $ 806,246 | $ 16,258,329 | $ 856,009,867 | $ 9,245,696,377 |

The accompanying notes are an integral part of this financial statement.

## 1. System Description and Governance

The Employees' Retirement System of the State of Rhode Island (the System) acts as a common investment and administrative agent for pension benefits to be provided through seven defined benefit retirement plans and one defined contribution plan as listed below:

| ***Plan Name*** | ***Type of Plan*** |
|---|---|
| **Employees' Retirement System (*ERS*)** | Cost-sharing multiple-employer defined benefit plan |
| **Teachers' Survivors Benefits *(TSB*)** | Cost-sharing multiple-employer defined benefit plan |
| **Municipal Employees' Retirement System (*MERS*)** | Agent multiple-employer defined benefit plan |
| **State Police Retirement Benefits Trust (*SPRBT*)** | Single-employer defined benefit plan |
| **Judicial Retirement Benefits Trust (*JRBT*)** | Single-employer defined benefit plan |
| **RI Judicial Retirement Fund Trust *(RIJRFT)*** | Single-employer defined benefit plan |
| **RI State Police Retirement Fund Trust (SPRFT)** | Single-employer defined benefit plan |
| **Rhode Island Defined Contribution Plan** | Defined contribution plan |

Each plan's assets are accounted for separately and may be used only for the payment of benefits to the members of that plan, in accordance with the terms of that plan.

The System's financial statements are included as Pension Trust Funds within the Fiduciary Funds in the Comprehensive Annual Financial Report of the State of Rhode Island and Providence Plantations. The accompanying financial statements are not intended to present the financial position and results of operations of the State.

The System is administered by the State of Rhode Island Retirement Board which was authorized, created and established in the Office of the General Treasurer as an independent retirement board to hold and administer, in trust, the funds of the retirement system. The fifteen members of the retirement board are: the general treasurer or his or her designee who shall be a subordinate within the general treasurer's office; the director of administration or his or her designee who shall be a subordinate within the department of administration; a representative of the budget office or his or her designee from within the budget office, who shall be appointed by the director of administration; the president of the league of cities and towns or his or her designee; two (2) active state employee members of the retirement system or officials from state employee unions to be elected by active state employees; two (2) active teacher members of the retirement system or officials from a teachers union to be elected by active teachers; one active municipal employee member of the retirement system or an official from a municipal employees union to be elected by active municipal employees; two (2) retired members of the retirement system to be elected by retired members of the system; and four (4) public members, all of whom shall be competent by training or experience in the field of finance, accounting or pensions; two (2) of the public members shall be appointed by the governor, one of whom shall serve an initial term of three (3) years and one of whom shall serve an initial term of four (4) years and until his or her successor is appointed and qualified; and two (2) of the public members shall be appointed by the general treasurer, one of whom shall serve an initial term of three (3) years and one of whom shall serve an initial term of four (4) years and until his or her successor is appointed and qualified. Thereafter, the term of these four (4) public members shall be for four (4) years or until their successors are appointed and qualified by the Senate.

The System's purpose is to provide retirement benefits to state employees, public school teachers, certain general and public safety municipal employees, state police officers, and judges.

## 1. System Description and Governance (continued)

A summary of membership by plan follows:

| | *Retirees and beneficiaries* | *Terminated plan members entitled to but not yet receiving benefits* | *Active Vested* | *Active Non-vested* | *Total by Plan* |
|---|---|---|---|---|---|
| ***Actuarial valuation as of June 30, 2017*** | | | | | |
| ERS | | | | | |
| State Employees | 11,078 | 3,384 | 8,302 | 2,850 | 25,614 |
| Teachers | 11,211 | 3,501 | 11,076 | 2,234 | 28,022 |
| TSB | 573 | 3,789 | 7,121 | - | 11,483 |
| MERS | | | | | |
| General Employees | 4,636 | 2,849 | 4,211 | 1,769 | 13,465 |
| Public Safety | 801 | 206 | 1,172 | 349 | 2,528 |
| SPRBT | 71 | 47 | 26 | 206 | 350 |
| JRBT | 20 | - | 15 | 40 | 75 |
| RIJRFT | 2 | - | 5 | - | 7 |
| SPRFT | 269 | - | - | - | 269 |
| Total by type | 28,661 | 13,776 | 31,928 | 7,448 | 81,813 |

The defined contribution plan at June 30, 2018 included 160 employers and 36,009 plan participants.

## 2. Plan Membership and Benefit Provisions

Membership and benefit provisions are outlined in the Rhode Island General Laws and are subject to modification by the General Assembly. Modifications to pension benefit and eligibility provisions have been made in recent years as well as the comprehensive pension reform provisions contained in the Rhode Island Retirement Security Act enacted on November 18, 2011 and effective July 1, 2012. Legal challenges to those pension reforms were settled with the final settlement approved by the Court on July 8, 2015. The General Assembly amended the various sections of the General Laws containing those benefit provisions consistent with the terms of the settlement agreement. Those provisions are generally effective beginning July 1, 2015. The benefit provisions for each of the plans as outlined below were those in effect for fiscal 2015. Reference is made in each section to a summary of benefit and contribution provisions that will be in effect for future years.

Accordingly, specific member retirement benefit and eligibility provisions vary depending upon a number of factors including years of service, age, and vesting provisions.

The ERS was established and placed under the management of the Retirement Board for the purpose of providing retirement allowances for employees of the State of Rhode Island under the provisions of chapters 8 to 10, inclusive, of Title 36, and public school teachers under the provisions of chapters 15 to 17, inclusive, of Title 16 of the Rhode Island General Laws.

## 2. Plan Membership and Benefit Provisions (continued)

### *EMPLOYEES' RETIREMENT SYSTEM (ERS)*

***Plan members -*** The plan covers most State employees other than certain personnel at the State colleges and university (principally faculty and administrative personnel). The plan also covers teachers, including superintendents, principals, school nurses, and certain other school officials in the public schools in the cities and towns. Membership in the plan is mandatory for all covered state employees and teachers. Elected officials may become members on an optional basis and legislators may participate if elected to office prior to January 1, 1995.

Certain employees of the Rhode Island Airport Corporation (hired before July 1, 1993), the Rhode Island Commerce Corporation (active contributing members and employees of the Department of Economic Development before October 31, 1995 who elected to continue membership) and, the Narragansett Bay Water Quality District Commission (members of a collective bargaining unit) are also covered and have the same benefits as State employees.

***Plan vesting provisions –*** after five years of service**.**

***Retirement eligibility and plan benefits –*** are summarized in the following table:

| Schedule | | Retirement Eligibility | Benefit accrual rates | Maximum benefit |
|---|---|---|---|---|
| (A) | Completed 10 years of service on or before July 1, 2005 and eligible to retire as of September 30, 2009 | Age 60 with 10 years of service or after 28 years of service at any age | Effective until June 30, 2012:<br>1.7% for each of first ten years<br>1.9% for each of next ten years<br>3.0% for each of next fourteen years<br>2% for the 35th year<br><br>Effective July 1, 2012: 1.0% per year through June 30, 2015.<br><br>Effective July 1, 2015, for members with 20 years of service as of July 1, 2012: 2% per year | 80% of final average earnings (3 consecutive highest years) |
| (AB) | Completed 10 years of service on or before July, 1, 2005 but ineligible to retire as of September 30, 2009 | Minimum retirement age of 62 and ten years of service with a downward adjustment of the minimum retirement age based on the years of service credit as of September 30, 2009 | Effective until June 30, 2012:<br>Same accrual rates as (A) above to September 30, 2009 and then Schedule B rates (below) thereafter<br><br>Effective July 1, 2012: 1.0% per year through June 30, 2015.<br><br>Effective July 1, 2015, for members with 20 years of service as of July 1, 2012: 2% per year | 80% of final average earnings (5 consecutive highest years) |
| (B) | Less than 10 years of service before July 1, 2005 and eligible to retire as of September 30, 2009 | Age 65 with 10 years of service or after 29 years of service and age 59 | Effective until June 30, 2012:<br>1.6% for each of first ten years<br>1.8% for each of next ten years<br>2.0% for each of next five years<br>2.25% for each of next five years<br>2.5% for each of next seven years<br>2.25% for the 38th year<br><br>Effective July 1, 2012: 1.0% per year | 75% of final average earnings (5 consecutive highest years) |

## 2. Plan Membership and Benefit Provisions (continued)

| | | | | |
|---|---|---|---|---|
| (B1) | Less than 10 years of service before July 1, 2005 and ineligible to retire as of September 30, 2009 | Age 65 with ten years of service, or age 62 with at least 29 years of service with a downward adjustment of the minimum retirement age based on the years of service credit as of September 30, 2009 | Same as Schedule B | 75% of final average earnings (5 consecutive highest years) |
| (B2) | Less than 5 years of service as of July 1, 2012 | Social Security Retirement Age and 5 years of contributory service | 1.6% for each of first ten years<br><br>Effective July 1, 2012: 1.0% per year | 75% of final average earnings (5 consecutive highest years) |

Effective July 1, 2015 general employees with more than 20 years of service at July 1, 2012 increased their employee contribution rates to 11% and will participate solely in the defined benefit plan. Members will receive a benefit accrual of 2% per year based on the three or five-year average compensation.

Effective July 1, 2015 employees are eligible to retire upon the attainment of: age 65 with 30 years of service, 64 with 31 years of service, 63 with 32 years of service, or 62 with 33 years of service. Members may retire earlier if their RIRSA date is earlier or are eligible under a transition rule.

State correctional officers may retire at age 50 with 20 years of service. However, if not eligible to retire as of September 30, 2009, the minimum retirement age was modified to 55 with 25 years of service credit for correctional officers and registered nurses at the Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals.

The plan provides for survivor's benefits for service-connected death and certain lump sum death benefits.

Joint and survivor options are available to members. For members with 10 years of service as of July 1, 2005, the Service Retirement Allowance (SRA) Plus option provides for the payment of a larger benefit before the attainment of age sixty-two (62) and a reduced amount thereafter. The reduced amount is equal to the benefit before age sixty-two (62), including cost-of-living increases, minus the member's estimated social security benefit payable at age sixty-two (62).

Vested members that have 10 or more years of contributing service credit on June 30, 2012, may choose to retire at a retirement eligibility date that was calculated as of September 30, 2009, if the member continues to work and make retirement contributions until that date. If the member chooses this option, their retirement benefits will be calculated using the benefit that they have accrued as of June 30, 2012 - members will accumulate no additional defined benefits after this date, but the benefit will be paid without any actuarial reduction.

State employees and public school teachers may retire with a reduced pension benefit if they have 20 years of service credit and they are within five years of their retirement date as prescribed in the Rhode Island Retirement Security Act (RIRSA). The actuarially reduced benefit will be calculated based on how close the member is to their RIRSA eligibility date.

## 2. Plan Membership and Benefit Provisions (continued)

***Cost of Living Adjustments* –** The Cost of Living Adjustment (COLA) has been suspended until the collective ERS, SPRBT and JRBT plans reach a funded status of 80%. The COLA provision will be reviewed in a four-year interval while the plans are less than 80% funded. When the collective funding level of a plan exceeds 80%, eligible retirees may receive a COLA annually effective on their date of retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5% (5-year return – 5.0%, with a max of 4%) and 50% calculated using the increase in the CPI-U from the prior September 30 (max of 3%) for a total maximum COLA of 3.5%.

The benefit adjustments are provided to all retirees entitled to receive a benefit adjustment as of June 30, 2012 under the law then in effect, and for all other retirees, the benefit adjustments shall commence upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. For members (and their beneficiaries) retiring after June 30, 2015, the annual benefit adjustment provided in any calendar year is equal to the lesser of either the member's retirement allowance or the first $26,291 (indexed as of January 1, 2018) of retirement allowance multiplied by the percentage resulting from the COLA calculation as outlined in the preceding paragraph. The retirement amount subject to the COLA calculation is indexed annually in the same percentage as the COLA determination and is run annually regardless of the collective funding status.

For members and/or beneficiaries of members who retired on or before June 30, 2015 the current indexed amount of $26,291 is replaced with $31,549 (indexed as of January 1, 2018) until the funded ratio of the ERS, SPRBT and JRBT, calculated by the system's actuary on an aggregate basis, exceeds eighty percent (80%). At such time, the benefit adjustments will then be provided on the lower amount (currently indexed at $26,291).

***Disability retirement provisions* -** the plan also provides nonservice-connected disability benefits after five years of service and service-connected disability pensions with no minimum service requirement. Effective for applications filed after September 30, 2009, accidental disability will be available at 66 2/3% for members who are permanently and totally disabled as determined by the Retirement Board. If the disability is determined to be partial and the member is able to work in other jobs, the benefit will be limited to 50%. Disability benefits are subject to annual review by the Retirement Board.

***Other plan provisions* -** Service credit purchases, excluding contribution refund paybacks and military service, requested after June 16, 2009 are calculated at full actuarial cost.

### *TEACHERS' SURVIVORS BENEFITS (TSB)*

***Plan members* –** the TSB covers all teachers in 24 school districts who do not participate in Social Security.

***Plan vesting provisions*** – Survivors are eligible for benefits if the member has made contributions for at least six months prior to death or retirement.

***Eligibility and plan benefits* -** the plan provides a survivor benefit to public school teachers in lieu of Social Security since not all school districts participate in the plan. The cost of the benefits provided by the plan are two percent (2%) of the member's annual salary up to but not exceeding an annual salary of $11,500; one-half (1/2) of the cost is contributed by the member by deductions from his or her salary, and the other half (1/2) is contributed and paid by the respective school district by which the member is employed. These contributions are in addition to the contributions required for regular pension benefits.

## 2. Plan Membership and Benefit Provisions (continued)

Spouse, parents, family and children's benefits are payable following the death of a member. A spouse shall be entitled to benefits upon attaining the age of sixty (60) years. Children's benefits are payable to the child, including a stepchild or adopted child of a deceased member if the child is unmarried and under the age of eighteen (18) years or twenty-three (23) years and a full-time student, and was dependent upon the member at the time of the member's death. Family benefits are provided if at the time of the member's death the surviving spouse has in his or her care a child of the deceased member entitled to child benefits. Parents' benefits are payable to the parent or parents of a deceased member if the member did not leave a widow, widower, or child who could ever qualify for monthly benefits on the member's wages and the parent has reached the age of 60 years, has not remarried, and received support from the member. In January, a yearly cost-of-living adjustment for spouse's benefits is paid and based on the annual social security adjustment.

The TSB plan provides benefits based on the highest salary at the time of retirement of the teacher. Benefits are payable in accordance with the following table:

| Highest Annual Salary | Basic Monthly Spouse's or Domestic Partner's Benefit |
|---|---|
| $17,000 or less | $ 825 |
| $17,001 to $25,000 | $ 963 |
| $25,001 to $33,000 | $ 1,100 |
| $33,001 to $40,000 | $ 1,238 |
| $40,001 and over | $ 1,375 |

Benefits payable to children and families are equal to the spousal benefit multiplied by the percentage below:

| Parent and 1 Child | Parent and 2 or more Children | One Child Alone | Two Children Alone | Three or more Children Alone | Dependent Parent |
|---|---|---|---|---|---|
| 150% | 175% | 75% | 150% | 175% | 100% |

***Cost of Living Adjustments* –** current eligible members' beneficiaries of the TSB receive the same COLA granted to members of Social Security. There was a 2.0% increase as of January 1, 2018.

### *MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM (MERS)*

The MERS was established under the Rhode Island General Laws and placed under the management of the Retirement Board to provide retirement allowances to employees of municipalities, housing authorities, water and sewer districts, and municipal police and fire persons that have elected to participate.

***Plan members*** – A summary of participating employers is listed below:

| | |
|---|---|
| Municipalities, housing authorities, water and sewer districts | 69 |
| Municipal police and fire departments | 48 |
| Total participating units as of the actuarial valuation at June 30, 2017 | 117 |

***Plan vesting provisions* –** after five years of service**.**

## 2. Plan Membership and Benefit Provisions (continued)

***Retirement eligibility and plan benefits –*** For general employees prior to June 30, 2012 the plan provided retirement benefits equal to 2% of a member's final average salary multiplied by the number of years of total service up to a maximum of 75%. Such benefits are available to members at least age 58 with 10 years of service or after 30 years of service at any age. Benefits accrued at June 30, 2012 are protected under the Rhode Island Retirement Security Act until it is exceeded by the member's full years of service credit, including service after June 30, 2012, multiplied by the average of five consecutive years of compensation. Effective July 1, 2012 the retirement age mirrors the Social Security Normal Retirement Age not to exceed age 67. Members will receive a benefit accrual of 1.0% per year based on the five-year average compensation.

Effective July 1, 2015 general employees with more than 20 years of service at July 1, 2012 will increase their employee contribution rates to 8.25% (9.25% for units with a cost of living adjustment provision) and will participate solely in the defined benefit plan. Members will receive a benefit accrual of 2% per year based on the three or five-year average compensation.

Effective July 1, 2015 general employees are eligible to retire upon the attainment of: age 65 with 30 years of service, 64 with 31 years of service, 63 with 32 years of service, or 62 with 33 years of service. Members may retire earlier if their RIRSA date is earlier or are eligible under a transition rule.

Joint and survivor options are available. For members with 10 years of service as of July 1, 2005, the Service Retirement Allowance (SRA) Plus option provides for the payment of a larger benefit before the attainment of age sixty-two (62) and a reduced amount thereafter. The reduced amount is equal to the benefit before age sixty-two (62), including cost-of-living increases, minus the member's estimated social security benefit payable at age sixty-two (62).

Prior to June 30, 2012, police and fire personnel may retire at age 55 if they have 10 years of service or after 25 years of service at any age. An option may be elected to provide a 20-year service pension with a benefit equal to 2.5% for each year of service up to a maximum of 75% for police and fire personnel. Benefits are based on the average of the highest three consecutive years' earnings, exclusive of overtime.

From June 30, 2012 to June 30, 2015, retirement age for police and fire personnel is 55 years old with 25 years of total service or for members with five years of service but less than 25 years of service the new retirement age will mirror the Social Security Normal Retirement Age not to exceed 67. Police officers or firefighters, that are at least 45 years old, have 10 or more years of contributing service and are eligible to retire prior to age 52 under the law in effect on June 30, 2012, may retire at age 52. Effective July 1, 2015, police and fire personnel may retire at age 50 with 25 years of service, or any age with 27 years of service. MERS police and fire personnel will contribute 9.00% (10.00% for units with a cost of living adjustment).

As of June 30, 2012, members will continue to have a frozen benefit accrual of 2.0% per year for a standard 25 year with any age and out plan; 2.5% for a standard 20 year with any age and out plan. Effective July 1, 2012 the optional 20 and 25 year with retirement at any age plans have been eliminated. The benefit accrual for all plans will be 2.0% per year based on the five-year average compensation, exclusive of overtime. Police and fire employees may retire with a reduced pension benefit if they have 20 years of service and are within five years of their retirement eligibility. The actuarially reduced benefit will be calculated based on how close the member is to the eligibility date that is prescribed in the Rhode Island Retirement Security Act.

The plan also provides survivor's benefits; and certain lump sum death benefits.

## 2. Plan Membership and Benefit Provisions (continued)

***Cost of Living Adjustments –*** An optional cost-of-living provision may be elected for police and fire personnel and general employees. The Cost of Living Adjustment (COLA) has been suspended for any unit whose funding level is less than 80%. The COLA provision will be reviewed in a four-year interval while the plans are less than 80% funded. When the funding level of a plan exceeds 80% funded eligible retirees may receive a COLA annually effective on the date of their retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5% (5-year return – 5.0%, with a max of 4%) and 50% calculated using the increase in the CPI-U from the prior September 30 (max of 3%) for a total maximum COLA of 3.5%.

The benefit adjustments are provided to all retirees entitled to receive a benefit adjustment as of June 30, 2012 under the law then in effect, and for all other retirees the benefit adjustments shall commence upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. For police and fire employees that retired under the provisions of § 45-21.2-5(b)(1)(A), the benefit adjustment provided shall commence on the later of the third anniversary of the date of retirement or the date on which the retiree reaches age fifty-five (55); or for police and fire employees retiring under the provisions of §45-21.2-5(b)(1)(B), the benefit adjustment shall commence on the later of the third anniversary of the date of retirement or the date on which the retiree reaches age fifty (50). For all present and former employees, active and retired members, and beneficiaries receiving any retirement, disability or death allowance or benefit of any kind, the annual benefit adjustment provided in any calendar year is equal to the lesser of either the member's retirement allowance or the first $26,291 (indexed as of January 1, 2018) of retirement allowance, multiplied by the percentage resulting from the COLA calculation as outlined in the preceding paragraph. The retirement amount subject to the COLA calculation is indexed annually in the same percentage as the COLA determination and is run annually regardless of the collective funding status.

For members and/or beneficiaries of members who retired on or before June 30, 2015, the indexed amount of $26,291 is replaced with $31,549 (indexed as of January 1, 2018) until the municipal plan's funded ratio, calculated by the system's actuary, exceeds eighty percent (80%). At such time, the benefit adjustments will then be provided on the lower amount (currently indexed at $26,291).

The actual COLA paid to retirees effective January 1, 2018 within MERS units that had achieved an 80% funding status was 1.51%. Retirees within 52 MERS units received the COLA.

***Disability retirement provisions -*** The plan also provides nonservice-connected disability benefits after 5 years of service; service-connected disability pensions with no minimum service requirement.

### *STATE POLICE RETIREMENT BENEFITS TRUST (SPRBT)*

The State Police Retirement Benefits Trust was established under Rhode Island General Law Section 42-28-22.1 and was placed under the management of the Retirement Board for the purpose of providing retirement allowances to State Police.

***Plan members*** – the plan covers all State Police and Superintendents hired after July 1, 1987.

***Retirement eligibility and plan benefits –*** Prior to June 30, 2012 the plan generally provides retirement benefits equal to 50% of final salary after 20 years of service, plus 3.0% of final salary times service in excess of 20 years through 25 years to a maximum of 65% of final salary. Such benefits are available to members after 20 years of service regardless of age. The Superintendent of the State Police will receive 50% of his/her final salary and may retire after attainment of age 60 and 10 years of service.

## 2. Plan Membership and Benefit Provisions (continued)

The General Laws were amended such that any member of the state police, other than the superintendent, who is hired on or after July 1, 2007 and who has served for twenty-five (25) years shall be entitled to a retirement allowance of 50% of the final salary. In addition, any member may serve up to a maximum of 30 years, and shall be allowed an additional amount equal to 3.0% for each completed year served after 25 years to a maximum retirement allowance not to exceed 65% of the final salary.

Benefits are based on the final base salary earned at retirement including longevity increment, holiday pay, clothing allowance and up to 400 overtime hours.

Effective July 1, 2012 state police officers are eligible to retire once they have accrued a retirement benefit equal to 50% of their whole salary, with mandatory retirement once they have accrued a retirement benefit equal to 65% of their whole salary. State police officers will earn a 2% accrual rate for each year of contributing service. Benefits will be calculated on the average of the highest five consecutive years of salary, including up to 400 hours of mandatory overtime service. Benefits accrued as of June 30, 2012 will be protected under the Rhode Island Retirement Security Act.

***Cost of Living Adjustments –*** The Cost of Living Adjustment (COLA) has been suspended until the collective ERS, SPRBT and JRBT plans reach a funded status of 80%. The COLA provision will be reviewed in a four-year interval while the plans are less than 80% funded. When the collective funding level of a plan exceeds 80%, eligible retirees may receive a COLA annually effective on their date of retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5% (5-year return – 5.0%, with a max of 4%) and 50% calculated using the increase in the CPI-U from the prior September 30 (max of 3%) for a total maximum COLA of 3.5%.

The benefit adjustments are provided to all retirees entitled to receive a benefit adjustment as of June 30, 2012 under the law then in effect, and for all other retirees, the benefit adjustments shall commence upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. For members (and their beneficiaries) retiring after June 30, 2015, the annual benefit adjustment provided in any calendar year is equal to the lesser of either the member's retirement allowance or the first $26,291 (indexed as of January 1, 2018) of retirement allowance multiplied by the percentage resulting from the COLA calculation as outlined in the preceding paragraph. The retirement amount subject to the COLA calculation is indexed annually in the same percentage as the COLA determination and is run annually regardless of the collective funding status.

For members and/or beneficiaries of members who retired on or before June 30, 2015 the current indexed amount of $26,291 is replaced with $31,549 (indexed as of January 1, 2018) until the funded ratio of the ERS, SPRBT and JRBT, calculated by the system's actuary on an aggregate basis, exceeds eighty percent (80%). At such time, the benefit adjustments will then be provided on the lower amount (currently indexed at $26,291).

***Disability retirement provisions*** **-** the plan provides nonservice-connected disability benefits after 10 years of service and service-connected disability pensions with no minimum service requirement.

## 2. Plan Membership and Benefit Provisions (continued)

### *JUDICIAL RETIREMENT BENEFITS TRUST (JRBT)*

The Judicial Retirement Benefits Trust was established under Rhode Island General Laws 8-8.2-7; 8-3-16; 8-8-10.1; 28-30-18.1; and was placed under the management of the Retirement Board for the purpose of providing retirement allowances to Justices of the Traffic Tribunal, Supreme, Superior, Family, District and Workers Compensation courts.

***Plan members*** – the plan covers all Judges appointed after December 31, 1989.

***Retirement eligibility and plan benefits –*** are summarized in the following table:

| Judges appointed | Retirement benefit |
|---|---|
| *After:*<br><br>December 31, 1989 but before July 2, 1997 | 75% of the final salary at the time of retirement after 20 years of service, or 10 years of service and attainment of age 65. Judges retiring after 20 years of service after age 65 or 15 years of service after age 70 receive full retirement benefits, which is the final salary at time of retirement. |
| *After:*<br><br>July 2, 1997 but before January 1, 2009 | Same as above except, salary is the average highest three (3) consecutive years of compensation rather than final salary. |
| *After:*<br><br>January 1, 2009 but before July 1, 2009 | Judges with 20 years of service after age 65 or judges with 15 years of service after age 70 will receive 90% of the average of the highest three consecutive years of compensation. Judges appointed on or after January 1, 2009 with 10 years of service and age 65 or 20 years of service at any age are entitled to a reduced benefit of 70% of the average highest three consecutive years of compensation.<br><br>Judges designating a survivor benefit with 20 years of service and age 65 or 15 years of service and age 70 receive a reduced benefit equal to 80% of the average highest three consecutive years of compensation. Judges designating a survivor benefit with 10 years of service after age 65 or 20 years of service at any age receive a reduced benefit equal to 60% of the average highest three consecutive years of compensation. |
| *After:*<br><br>July 1, 2009 | Judges with 20 years of service after age 65 or with 15 years of service after age 70 will receive 80% of the average of the highest five consecutive years of compensation. Judges with 10 years of service and age 65 or 20 years of service at any age are entitled to a reduced benefit of 65% of the average highest five consecutive years of compensation.<br><br>Judges designating a survivor benefit with 20 years of service and age 65 or 15 years of service and age 70 receive a reduced benefit equal to 70% of average highest five consecutive years of compensation. Judges designating a survivor benefit with 10 years of service after age 65 or 20 years of service at any age receive a reduced benefit equal to 55% of average highest five consecutive years of compensation. |

Certain survivor benefits are also provided to judges who are plan members, which is 50% of the benefit amount payable to the judicial member.

## 2. Plan Membership and Benefit Provisions (continued)

***Cost of Living Adjustments*** **–** The Cost of Living Adjustment (COLA) has been suspended until the collective ERS, SPRBT and JRBT plans reach a funded status of 80%. The COLA provision will be reviewed in a four-year interval while the plans are less than 80% funded. When the collective funding level of a plan exceeds 80%, eligible retirees may receive a COLA annually effective on their date of retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5% (5-year return – 5.0%, with a max of 4%) and 50% calculated using the increase in the CPI-U from the prior September 30 (max of 3%) for a total maximum COLA of 3.5%.

The benefit adjustments are provided to all retirees entitled to receive a benefit adjustment as of June 30, 2012 under the law then in effect, and for all other retirees, the benefit adjustments shall commence upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. For members (and their beneficiaries) retiring after June 30, 2015, the annual benefit adjustment provided in any calendar year is equal to the lesser of either the member's retirement allowance or the first $26,291 (indexed as of January 1, 2018) of retirement allowance multiplied by the percentage resulting from the COLA calculation as outlined in the preceding paragraph. The retirement amount subject to the COLA calculation is indexed annually in the same percentage as the COLA determination and is run annually regardless of the collective funding status.

For members and/or beneficiaries of members who retired on or before June 30, 2015 the current indexed amount of $26,291 is replaced with $31,549 (indexed as of January 1, 2018) until the funded ratio of the ERS, SPRBT and JRBT, calculated by the system's actuary on an aggregate basis, exceeds eighty percent (80%). At such time, the benefit adjustments will then be provided on the lower amount (currently indexed at $26,291).

### *STATE OF RHODE ISLAND JUDICIAL RETIREMENT FUND TRUST (RIJRFT)*

Effective July 1, 2012 and pursuant to Rhode Island General Law section 8-3-16, the retirement board established a trust to collect proceeds for the purpose of paying retirement benefits to participating judges or their beneficiaries.

***Plan members*** – the plan covers seven (7) judges appointed prior to January 1, 1990. These members are active judges (as of June 30, 2012) appointed prior to January 1, 1990 that do not participate in the Judicial Retirement Benefit Trust. Prior to creating the trust, benefits for these members were intended to be funded on a pay-as-you-go basis. To the extent assets in the trust are insufficient to fund member benefits, the State would also fund retirement benefits on a pay-as-you-go basis as it does for sixty-five (65) retired judges and surviving beneficiaries that were not members of either judicial plan. The employee contribution rate is 12% of salary (except for members of the Supreme Court who contribute 8.75%).

***Retirement eligibility and plan benefits*** – The plan generally provides retirement benefits for members who have served as a justice of the supreme court, the superior court, the family court, the district court, for 20 years (or a combination of service in various courts) and has reached the age of 65 years, or has served 15 years, and reached the age of 70 years may retire from regular service and receive a benefit equal to the annual salary the justice was receiving at the time of their retirement. Members of the traffic tribunal who served as a justice for 20 years, or has served for 10 years and reached age 65 years may retire from regular service and receive a benefit equal to 75% of the annual salary at the time of retirement. However, any traffic tribunal judge who has served 20 years and has reached age 65 years, or has served

## 2. Plan Membership and Benefit Provisions (continued)

for 15 years and reached age 70 years may retire from active service and receive a benefit equal to annual salary the justice was receiving at the time of their retirement.

***Cost of Living Adjustments*** **–** The Cost of Living Adjustment (COLA) has been suspended until the collective ERS, SPRBT and JRBT plans reach a funded status of 80%. The COLA provision will be reviewed in a four-year interval while the plans are less than 80% funded. When the collective funding level of a plan exceeds 80%, eligible retirees may receive a COLA annually effective on their date of retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5% (5-year return – 5.0%, with a max of 4%) and 50% calculated using the increase in the CPI-U from the prior September 30 (max of 3%) for a total maximum COLA of 3.5%.

The benefit adjustments are provided to all retirees entitled to receive a benefit adjustment as of June 30, 2012 under the law then in effect, and for all other retirees, the benefit adjustments shall commence upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. For members (and their beneficiaries) retiring after June 30, 2015, the annual benefit adjustment provided in any calendar year is equal to the lesser of either the member's retirement allowance or the first $26,291 (indexed as of January 1, 2018) of retirement allowance multiplied by the percentage resulting from the COLA calculation as outlined in the preceding paragraph. The retirement amount subject to the COLA calculation is indexed annually in the same percentage as the COLA determination and is run annually regardless of the collective funding status.

For members and/or beneficiaries of members who retired on or before June 30, 2015 the current indexed amount of $26,291 is replaced with $31,549 (indexed as of January 1, 2018) until the funded ratio of the ERS, SPRBT and JRBT, calculated by the system's actuary on an aggregate basis, exceeds eighty percent (80%). At such time, the benefit adjustments will then be provided on the lower amount (currently indexed at $26,291).

### *STATE OF RHODE ISLAND STATE POLICE RETIREMENT FUND TRUST (SPRFT)*

Effective June 8, 2016 and pursuant to Rhode Island General Law section 42-28-22.1, the retirement board established a trust to collect proceeds for the purpose of paying retirement benefits to participating members of the state police initially hired on or before July 1, 1987, or their beneficiaries.

The trust was established to reduce the amount of the unfunded liability attributable to the retirement benefits for members of the state police hired on or before July 1, 1987. The trust was funded with monies obtained from the Department of Justice's Equitable Sharing Program, resulting from a settlement in which $45 million of such settlement was allocated for use by the state police. Pursuant to Rhode Island General Law section 42-28-22.2, the State shall deposit contributions for the members of the state police initially hired on or before July 1, 1987 to be held in trust. The trust was established with a $15 million supplemental contribution (from funds available to the State from the Department of Justice's Equitable Sharing Program) that was deposited in fiscal 2017. Taking into account the initial supplemental contribution, as certified by the State's actuary, the unfunded actuarial liability will be amortized over an 18 year period. The State will make annual contributions into the trust for this funding period, or until the unfunded accrued liability is fully amortized. This trust is a closed plan because there are no longer any active members.

## 2. Plan Membership and Benefit Provisions (continued)

***Plan members*** – the plan covers members of the state police hired on or before July 1, 1987. Prior to creating the trust, benefits for these members were intended to be funded on a pay-as-you-go basis.

***Retirement eligibility and plan benefits*** – The plan generally provides retirement benefits equal to 50% of final salary after 20 years of service, members that retired after July 1, 1972 could earn an additional 3.0% of final salary times service in excess of 20 years through 25 years to a maximum of 65% of final salary. Such benefits are available to members after 20 years of service regardless of age.

***Cost of Living Adjustments* –** The Cost of Living Adjustment (COLA) has been suspended until the collective ERS, SPRBT and JRBT plans reach a funded status of 80%. The COLA provision will be reviewed in a four-year interval while the plans are less than 80% funded. When the collective funding level of a plan exceeds 80%, eligible retirees may receive a COLA annually effective on their date of retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5% (5-year return – 5.0%, with a max of 4%) and 50% calculated using the increase in the CPI-U from the prior September 30 (max of 3%) for a total maximum COLA of 3.5%.

The benefit adjustments are provided to all retirees entitled to receive a benefit adjustment as of June 30, 2012 under the law then in effect, and for all other retirees, the benefit adjustments shall commence upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. For members (and their beneficiaries) retiring after June 30, 2015, the annual benefit adjustment provided in any calendar year is equal to the lesser of either the member's retirement allowance or the first $26,291 (indexed as of January 1, 2018) of retirement allowance multiplied by the percentage resulting from the COLA calculation as outlined in the preceding paragraph. The retirement amount subject to the COLA calculation is indexed annually in the same percentage as the COLA determination and is run annually regardless of the collective funding status.

For members and/or beneficiaries of members who retired on or before June 30, 2015 the current indexed amount of $26,291 is replaced with $31,549 (indexed as of January 1, 2018) until the funded ratio of the ERS, SPRBT and JRBT, calculated by the system's actuary on an aggregate basis, exceeds eighty percent (80%). At such time, the benefit adjustments will then be provided on the lower amount (currently indexed at $26,291).

### *DEFINED CONTRIBUTION PLAN*

The State of Rhode Island Defined Contribution Retirement Plan (the "Plan") is a defined contribution (money purchase) plan that operates under Section 401(a) of the Internal Revenue Code. The Plan was established under Rhode Island General Law section 36-10.3-2 and was placed under the management of the Retirement Board. The Retirement Board is the Plan administrator and Plan trustee. The law authorizes the State Investment Commission to select the appropriate third-party administrator for the Plan and to adopt Plan, trust, and/or custodial documents subject to certain guidelines outlined in the statute. The State Investment Commission is responsible for implementing the investment policy of the Plan and selecting the investment options available to members. TIAA-CREF serves as record keeper for the Plan and Plan assets are held by J.P. Morgan as investment custodian.

## 2. Plan Membership and Benefit Provisions (continued)

***Plan members*** – The plan covers members of the defined benefit plan within the Employees' Retirement System of Rhode Island with less than 20 years of service as of June 30, 2012, excluding legislators, correction officers, judges, state police, and MERS general police and fire employees who participate in Social Security. For covered employees, participation in the defined contribution plan is mandatory.

***Plan vesting provisions*** – The total amount contributed by the member, including associated investment gains and losses, shall immediately vest in the member's account and is non-forfeitable. The total amount contributed by the employer, including associated investment gains and losses, vests with the member and is non-forfeitable upon completion of three (3) years of contributory service. Service credit under ERS or MERS prior to July 1, 2012 is credited to the member for vesting purposes.

***Member accounts*** – Each member's account is credited with the member and employer's contribution and an allocation of the plan's earnings. Allocations are based on a relationship of the member's account balance in each investment fund to the total of all account balances in that fund. The retirement benefit to which a member is entitled is the benefit that can be provided from the member's account.

***Forfeitures*** – Non-vested employer contributions are forfeited upon termination of employment. Such forfeitures can be used by employers to offset future remittances to the plan.

***Contributions*** – The plan's benefits are funded by contributions from the participants and the employer, as specified in Rhode Island General Law 36-10.3-4 and 36-10.3-5.

Eligible state employees and teachers and MERS general employees that participate in Social Security contribute 5% of the member's compensation. Teachers and MERS general employees not covered by Social Security must contribute 7% of their compensation.

Employers contribute to these member's individual accounts an amount equal to 1% to 1.5% of the member's compensation depending upon years of service for those participating in Social Security. For eligible members who do not participate in Social Security, the employers contribute an amount equal to 3.0% to 3.5% depending upon years of service.

***Investment options*** – Member and employer contributions may be invested in a variety of investment options broadly diversified with distinct risk and return characteristics. The investment options provide opportunities to diversify across the risk-return spectrum with a range of investment choices within varied asset classes.

The investment programs are managed by TIAA-CREF and have various investment strategies.

***Retirement benefits*** – Benefits may be paid to a member after severance from employment, death, Plan termination, or upon a deemed severance from employment for participants performing qualified military service. At a minimum, retirement benefits must begin no later than April 1 of the calendar year following the year in which you attain age 70 ½ or terminate employment, if later. Members have the option to receive benefit payments in the form of a Single Life Annuity, Two Life Annuity, Lump Sum Benefit, or Installments. These payments are subject to any restrictions in the investment vehicles.

# 3. Summary of Significant Accounting Policies

These financial statements were prepared in accordance with accounting principles generally accepted in the United States of America as prescribed by the Governmental Accounting Standards Board (GASB). The Governmental Accounting Standards Board (GASB) is responsible for establishing generally accepted accounting principles for defined benefit and defined contribution plans established and administered by governmental entities.

**Basis of Accounting -** The financial statements of the System are prepared on the accrual basis of accounting. Under this method, revenues are recorded when earned and expenses are recorded when incurred.

**Cash and Cash Equivalents -** Cash represents cash held in trust in a financial institution. Cash equivalents are highly liquid investments with a maturity of three months or less at the time of purchase.

**Investments -** Investment transactions are recorded on a trade date basis. Gains or losses on foreign currency exchange contracts are included in income consistent with changes in the underlying exchange rates. Dividend income is recorded on the ex-dividend date.

**Method Used to Value Investments -** Investments are recorded in the financial statements at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Short-term investments are generally carried at cost or amortized cost, which approximates fair value.

The fair value of fixed income securities and domestic and international equity securities is generally based on published market prices and quotations from national security exchanges and securities pricing services.

Commingled funds include institutional domestic equity index and international equity index funds. The fair value of these commingled funds is based on the reported net asset value (NAV) based upon the fair value of the underlying securities or assets held in the fund.

Derivative investments (e.g., futures contracts and credit default swaps) are valued at the settlement price established each day by the board of trade or exchange on which they are traded.

The System also trades in foreign exchange contracts to manage exposure to foreign currency risks. Such contracts are used to purchase and sell foreign currency at a guaranteed future price. The change in the estimated fair value of these contracts, which reflects current foreign exchange rates, is included in the determination of the fair value of the System's investments.

Other investments that are not traded on a national security exchange (primarily private equity, real estate, hedge funds, infrastructure investments, and Crisis Protection Class – Trend Following) are valued based on the reported Net Asset Value (NAV) by the fund manager or general partner. Publicly traded investments held by the partnerships are valued based on quoted market prices. If not publicly traded, the fair value is determined by the general partner following U.S. generally accepted accounting principles. Financial Accounting Standards Board ASC Topic 820, *Fair Value Measurements and Disclosures,* requires the limited partnership general partners for these investment types to value non-publicly traded assets at current fair value, taking into consideration the financial performance of the issuer, cash flow analysis, recent sales prices, market comparable transactions, a new round of financing, a change in economic conditions, and other pertinent information.

## 3. Summary of Significant Accounting Policies (continued)

Hedge funds, private equity, real estate, infrastructure and crisis protection class – trend following investments represented 6.5%, 8.0%, 7.1%, 1.8%, and 3.6% respectively of the total reported fair value of all ERSRI investments at June 30, 2018.

**Investment expenses –** Investment expenses include investment consultant fees, custodial fees, direct investment expenses paid to managers, and certain indirect expenses allocated by managers to fund or partnership investors. Certain Office of the General Treasurer expenses associated with oversight of the pooled investment trust are also allocated and included as investment expenses. When indirect investment expenses for certain types of investments (e.g., hedge funds, private equity, real estate, infrastructure, and crisis protection class), are not reported separately to System management and the investment custodian, additional information is obtained to allow reporting of the System's share of such indirect investment expenses on a gross fee basis.

The System changed its method of reporting investment expenses in fiscal 2018 from reporting certain investment income and related expenses on a net of fees basis to reporting all material investment expenses on a gross fee basis to enhance transparency of all investment related expenses. The change had no effect on net position of the defined benefit plans participating in the pooled investment trust.

Net investment income within the defined contribution plan is reported on a net-of-fees basis.

**Contributions -** Plan member contributions for the defined benefit plans are recognized in the period in which the wages, subject to required contributions, are earned for the performance of duties for covered employment. Employer contributions to each defined benefit plan are recognized when due and the employer has made a formal commitment to provide the contributions.

Plan member and employer contributions for the defined contribution plan are contributed to the member's individual account in the plan as a defined percentage of the member's compensation paid during the plan year ending June 30.

**Benefits -** Benefits and refunds are recognized when due and payable in accordance with the terms of each plan.

**Prepaid Assets –** These assets represent the amounts paid to a vendor pursuant to a contract to design, transition, and implement new line-of-business, general ledger accounting system, and payroll administration systems. Under the new system development and operations contract, the vendor will supply and operate the system for the contract period. Consequently, no capital asset related to the new system are recognized or depreciated. The amounts paid before the system became operational have been accounted for as prepaid assets items in prior years. Beginning in fiscal year 2017, when system operations fully commenced, that prepaid amount is amortized ratably over the remaining contract period.

**Memorandum Total Columns -** Total columns on the financial statements are captioned "memorandum only" to indicate that they are presented only to facilitate financial analysis. Data in these columns are not comparable to a consolidation. Inter-fund eliminations have not been made in the aggregation of this data.

**Use of Estimates –** The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingencies. These estimates are subject to a certain amount of uncertainty in the near term, which could result in changes in the values reported for those assets in the statements of fiduciary net position. Because of the

## 3. Summary of Significant Accounting Policies (continued)

inherent uncertainty in the valuation of privately held securities, the fair value may differ from the values that would have been used if a ready market for such securities existed, and the difference can be material. Estimates also affect the reported amounts of income/additions and expenses/deductions during the reporting period. Actual results could differ from these estimates.

## 4. Cash Deposits and Cash Equivalents

At June 30, 2018, the carrying amounts of the plans' cash deposits are listed below:

| Cash Deposits | ERS/TSB | MERS | SPRBT | JRBT | RIJRFT | SPRFT | Total |
|---|---|---|---|---|---|---|---|
| Book Balance | $ 2,481,078 | $ 1,049,124 | $ 53,846 | $ 686,917 | $ 184,563 | $ 100,983 | $ 4,556,511 |
| Bank Balance | $ 2,578,464 | $ 1,064,317 | $ 53,846 | $ 686,917 | $ 184,563 | $ 100,983 | $ 4,669,090 |

The bank and book balances represent the plans' deposits in short-term trust accounts, which include demand deposit accounts and interest-bearing, collateralized bank deposit accounts. The bank balances, include interest-bearing collateralized bank deposits and are either federally insured or collateralized (102%) with U.S. Treasury, agencies, and federal home loan bank letters of credit held by a third party custodian.

In accordance with Rhode Island General Law Chapter 35-10.1, depository institutions holding deposits of the State, its agencies or governmental subdivisions of the State shall, at a minimum, insure or pledge eligible collateral equal to one hundred percent of time deposits with maturities greater than sixty days. Any of these institutions that do not meet minimum capital standards prescribed by federal regulators shall insure or pledge eligible collateral equal to one hundred percent of deposits, regardless of maturity. None of the System's deposits were required to be collateralized at June 30, 2018 (excluding the collateralized interest-bearing deposits). However, the State Investment Commission has adopted a collateralization requirement for institutions holding the State's deposits. Financial institutions are required to pledge collateral equal to 102% of the deposit amounts that are not insured by federal depository insurance. Unless FHLB letters of credit are used as collateral, in which case those are required at 100%.

The General Treasurer makes certain short-term investments on a daily basis. Rhode Island General Law Section 35-10-11 (b)(3) requires that all investments shall be made in securities as would be acquired by prudent persons of discretion and intelligence who are seeking a reasonable income and the preservation of capital.

## 5. Investments – Pooled Investment Trust

### (a). General

The custodian bank holds assets of the System in a Pooled Investment Trust and each plan holds units in the trust. The number of units held by each plan is a function of each plans' respective contributions to, or withdrawals from, the trust.

**Investment policy -** The State Investment Commission (SIC) oversees all investments made by the State of Rhode Island, including those made for the System's Pooled Investment Trust. The establishment of the SIC, its legal authority and investment powers are outlined in Chapter 35-10 of the Rhode Island General Laws.

## 5. Investments – Pooled Investment Trust (continued)

The SIC has adopted a Defined Benefit Investment Policy Statement which includes specific asset allocation targets and asset class policies. The most recent policy statement was adopted by the SIC on June 27, 2018 and may be amended by a majority vote of SIC members. The SIC's asset allocation policy seeks to achieve the assumed rate of return adopted by the System over the long-term while reducing risk through the prudent diversification of the portfolio across various asset classes.

The following was the SIC's adopted asset allocation policy targets as of June 30, 2018:

| Asset Class | Target Asset Allocation |
|---|---|
| ***GROWTH*** | |
| **Global Equity** | **40.0%** |
| **Private Growth** | **15.0%** |
| ***INCOME*** | **8.0%** |
| ***STABILITY*** | |
| **Crisis Protection Class** | **8.0%** |
| **Inflation Protection** | **8.0%** |
| **Volatility Protection** | **21.0%** |
| **Total** | **100.0%** |

Consistent with a target asset allocation model adopted by the State Investment Commission (SIC), the System directs its separate-account investment managers to maintain, within the mandate specified by the SIC, diversified portfolios by sector, credit rating and issuer using the prudent person standard, which is the standard of care employed solely in the interest of the participants and beneficiaries of the funds and for the exclusive purpose of providing benefits to participants and defraying reasonable expenses of administering the funds.

Specific manager performance objectives are outlined and generally stated in relation to a benchmark or relevant index. These guidelines also include prohibited investments, limitations on maximum exposure to a single industry or single issuer, a minimum number of holdings within the manager's portfolio and, for fixed income managers, minimum credit quality ratings and duration/maturity targets.

Investment expense is allocated to each plan based on the plan's units in the Pooled Investment Trust at the end of each month.

The following table presents the fair value of investments by type that are held within the Pooled Investment Trust for the defined benefit plans at June 30, 2018:

## 5. Investments – Pooled Investment Trust (continued)

| Investment Type | | Fair Value |
|---|---|---|
| Cash and Cash Equivalents: | | |
| US Cash | $ | 4,558,508 |
| Commercial Paper | | 39,954,074 |
| Repurchase Agreements | | 21,300,000 |
| Non-US Cash | | 6,830,392 |
| Money Market Mutual Funds | | 109,460,241 |
| US Government Securities | | 897,273,498 |
| US Government Agency Securities | | 274,245,506 |
| Non-US Government Securities | | 4,162,181 |
| Collateralized Mortgage Obligations | | 11,310,671 |
| Corporate Bonds | | 496,934,899 |
| Term Loans | | 286,239,366 |
| Commingled Funds - Domestic Equity | | 1,307,512,229 |
| Commingled Funds - International Equity | | 1,300,805,657 |
| Domestic Equity Securities | | 707,264,758 |
| International Equity Securities | | 498,525,713 |
| Private Equity | | 664,803,143 |
| Real Estate | | 593,000,787 |
| Hedge Funds | | 540,853,644 |
| Crisis Protection Class - Trend Following - Limited partnerships | | 302,006,176 |
| Infrastructure | | 304,028,083 |
| Derivatives: | | |
| Futures | | 458,319 |
| Credit Default Swaps | | 231,252 |
| **Investments at Fair Value** | $ | 8,371,759,098 |
| Investment receivable | | 885,054,759 |
| Investment payable | | (926,355,558) |
| **Total Pooled Investment Trust** | **$** | **8,330,458,299** |

Repurchase agreements included as cash equivalent investments are collateralized with U.S. Government Securities equal to or exceeding 102% of the agreement amount. Such collateral is held by a third-party agent.

### (b) Fair value hierarchy

The fair value hierarchy categorizes the inputs to valuation techniques used to measure fair value into three levels:

Level 1 inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date.

Level 2 inputs are other than quoted prices included within Level 1—that are observable for an asset or liability, either directly or indirectly.

Level 3 includes unobservable inputs for an asset or liability.

# 5. Investments – Pooled Investment Trust (continued)

The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3 inputs. If the fair value of an asset or a liability is measured using inputs from more than one level of the fair value hierarchy, the measurement is considered to be based on the lowest priority level input that is significant to the entire measurement.

### Investments and Derivative Instruments Measured at Fair Value

| Investments at Fair Value | Fair Value June 30, 2018 | Quoted Prices in Active Market for Identical Assets (level 1) | Significant Other Observable Inputs (level 2) | Significant Unobservable Inputs (level 3) |
|---|---|---|---|---|
| **Equity Investments** | | | | |
| Global Equity | $ 1,205,790,471 | $ 1,205,790,471 | $ | $ |
| Infrastructure-publicly traded | 154,003,176 | 154,003,176 | | |
| | **1,359,793,647** | **1,359,793,647** | **-** | **-** |
| **Fixed Income** | | | | |
| US Government Securities | 897,273,498 | 897,273,498 | | |
| US Government Agency Securities | 274,245,506 | | 274,245,506 | |
| Non - US Government Securities | 4,162,181 | | | 4,162,181 |
| Corporate Bonds | 496,934,899 | | 496,934,899 | |
| Collateralized Mortgage Obligations | 11,310,671 | | 11,310,671 | |
| Term loans | 286,239,366 | | | 286,239,366 |
| | **1,970,166,121** | **897,273,498** | **782,491,076** | **290,401,547** |
| **Derivative Investments** | | | | |
| Equity and Fixed Income Index Futures | 458,319 | 458,319 | | |
| Other Derivatives | 231,252 | | 231,252 | |
| | **689,571** | **458,319** | **231,252** | |
| Repurchase Agreements | **21,300,000** | | 21,300,000 | |
| Commercial Paper | **39,954,074** | | 39,954,074 | |
| **Total Investment at Fair Value Level** | **$ 3,391,903,413** | **$ 2,257,525,464** | **$ 843,976,402** | **$ 290,401,547** |
| **Investments Measured at Net Asset Value (NAV)** | | | | |
| Money Market Mutual Funds | $ 109,460,241 | | | |
| Commingled Funds - Domestic Equity | 1,307,512,229 | | | |
| Commingled Funds - International Equity | 1,300,805,657 | | | |
| Hedge Funds | 540,853,644 | | | |
| Private Equity | 664,803,143 | | | |
| Real Estate | 593,000,787 | | | |
| Private Infrastructure | 150,024,907 | | | |
| Crisis Protection Class - Trend Following | 302,006,176 | | | |
| | **4,968,466,784** | | | |
| **Cash and Cash Equivalents** | | | | |
| US Cash | 4,558,508 | | | |
| Non US Cash | 6,830,392 | | | |
| | **11,388,900** | | | |
| **Net Investment Payable** | **(41,300,798)** | | | |
| **Total Pooled Investment Trust** | **$ 8,330,458,299** | | | |

## 5. Investments – Pooled Investment Trust (continued)

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Term loans classified in Level 3 are valued using consensus pricing.

Derivative instruments classified in Level 2 of the fair value hierarchy are valued using a market approach that considers benchmark interest rates and foreign exchange rates.

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the following table.

| | Fair Value | Unfunded Commitments | Redemption (if currently eligible) | Redemption Notice Period |
|---|---|---|---|---|
| Money Market Mutual Funds(1) | $ 109,460,241 | - | daily | none |
| Commingled Funds - Domestic Equity (2) | 1,307,512,229 | - | daily | none |
| Commingled Funds - International Equity (2) | 1,300,805,657 | - | bi-monthly | see note below |
| Hedge Funds (3) | 540,853,644 | - | see note below | see note below |
| Private Equity (4) | 664,803,143 | 552,784,000 | see note below | see note below |
| Real Estate (5) | 593,000,787 | 63,505,541 | see note below | see note below |
| Infrastructure Investments (6) | 150,024,907 | 98,109,000 | see note below | see note below |
| Crisis Protection Class - Trend Following (7) | 302,006,176 | - | see note below | see note below |
| | $ 4,968,466,784 | $ 714,398,541 | | |

(1) ***Money market mutual funds*** - these investments are used as temporary cash management investments for amounts pending investment or for amounts liquidated from investments pending distribution for pension benefits. The fair value of these money market funds reflects the net asset value reported by the fund administrator which is a stable $1 per unit. The underlying investments which are short-term cash equivalent type investments are generally carried at amortized cost which approximates fair value. There are no withdrawal limitations for the money market mutual funds.

(2) ***Commingled funds*** – consist of one domestic and three international equity index funds which are intended to replicate the performance of a specific index; e.g., Russell 3000. The fair values of the investments in this type have been determined using the NAV per share of the investments as reported by the commingled fund manager which reflects the exchange pricing of the equity holdings within each fund. The international equity commingled funds may only be redeemed at scheduled intervals twice per month. There are no withdrawal limitations for the domestic equity index fund.

(3) ***Hedge funds*** – this portfolio is comprised of 9 (7 active and 2 in liquidation) limited partnerships divided into two sub-categories: global equity and absolute return. Global equity funds are designed to benefit from the stock market with considerably less risk. They own stakes in companies they expect to outperform and also sell short stocks that they expect to underperform. Absolute return hedge funds employ strategies that seek to generate long-term returns and mitigate risk, regardless of broader market moves. The funds invest across asset classes, including government bonds, other fixed income securities, equity indexes, commodities, and currencies.

The fair values of the investments in this type have been determined using the NAV per share of the investments as reported by the general partner at June 30, 2018. Of the underlying holdings within the hedge funds approximately 69% were valued based on Tier 1 inputs (unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted investments).

## 5. Investments – Pooled Investment Trust (continued)

The system's investments in hedge funds are generally subject to "lock-up" provisions that limit (subject to certain exceptions) the ability to withdraw amounts previously invested for a period of one to three years after the initial investment. At June 30, 2018, investments totaling approximately $1.5 million are subject to these withdrawal limitation provisions. The remainder of hedge fund assets is available for redemption on a month-end, quarter-end, semi-annual or annual basis, and is subject to notice periods which vary by fund and range from 2 days to 75 days.

As part of an overall change in asset allocation during fiscal 2017, the State Investment Commission opted to reduce its investment in hedge funds. Approximately, $236 million was received during fiscal 2018 from the System's liquidation of certain hedge funds. At June 30, 2018, approximately $1.5 million is pending and expected to be received during fiscal 2019. Cash will be distributed as investments are sold.

(4) ***Private equity*** – these 86 limited partnership funds provide the portfolio exposure to private companies through equity and/or debt investments. Private equity fund managers invest in private companies with the goal of enhancing their value over the long-term.

The fair values of the investments in this type have been determined using the NAV per share of the investments as reported by the general partner at June 30, 2018.

Private equity – the investments cannot be redeemed. The nature of these investments provides for distributions through the liquidation of the underlying assets or net operating cash flows.

(5) ***Real Estate –*** these 16 limited partnerships investments are comprised of two different private real estate equity components, Core and Non-Core, which generally refer to the relative levels of risk in the underlying assets. Core investments include existing, substantially leased, income-producing properties located principally in economically diversified metropolitan areas. Non-Core investments represent those properties and/or investment strategies that require specialized acquisition and management expertise and skill to mitigate the business and leasing risks that may be associated with individual investments. Non-Core investments, which may be referred to as Value Added and Opportunistic investments, are expected to be held for shorter periods, have greater volatility compared to Core investments, and as such, are expected to provide yields higher than those associated with Core investments.

These funds acquire, manage and sell physical properties, including office, retail, apartment, and industrial buildings as well as more niche property types, such as student housing, self-storage and hotels. The primary goals of this asset class are to provide current income, risk-adjusted total returns, and diversification.

The fair values of the investments in this type have been determined using the NAV per share of the investments as reported by the general partner at June 30, 2018.

With the exception of five core open-end funds which allow for quarterly redemptions, the investments cannot be redeemed. The nature of these investments provides for distributions through the liquidation of the underlying assets or net operating cash flows.

## 5. Investments – Pooled Investment Trust (continued)

(6) ***Infrastructure*** – These four funds provide inflation-protection and current income to the portfolio through investments in facilities and services required for an economy to function including electricity production and distribution, pipelines, sewers and waste management, airports, roads, bridges, ports, railroads, telephone and cable networks, and hospitals. The fair values of the investments in this type have been determined using the NAV per share of the investments as reported by the general partner at June 30, 2018.

With the exception of one open-end core fund which allows for quarterly liquidity, the investments cannot be redeemed. The nature of these investments provides for distributions through the liquidation of the underlying assets or net operating cash flows.

(7) ***Crisis Protection Class – Trend Following*** **–** These three funds were created as limited liability companies with the Employees' Retirement System of the State of Rhode Island as the sole member. The investment managers' principal investment objectives for the companies include:

- providing diversified exposure to market trends across asset classes, geographies and time horizons to generate sizable profits during the periods when growth-risk exposed assets decline significantly;

- generating significant medium-term capital growth independent of overall movements in traditional stock and bond markets within a rigorous risk management framework; and

- outperforming the Credit Suisse Liquid Alternative Beta Managed Futures Index (CLABT18 Index) over a 5-year period.

The fair values of the investments in this type have been determined using the NAV per share of the investments as reported by the general partner at June 30, 2018. As the Employees' Retirement System of the State of Rhode Island is the sole member, the limited liability company could be liquidated at its option. The nature of these investments provides for distributions through the liquidation of the underlying assets or net operating cash flows.

### (c) Rate of Return

For the year ended June 30, 2018, the annual money-weighted returns on investments within each of the plans, net of investment expense, are shown in the following table. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

| | ERS | TSB | MERS | SPRBT | JRBT | RIJRFT | SPRFT |
|---|---|---|---|---|---|---|---|
| Money-weighted rate of return – year ended June 30, 2018 | 7.85% | 7.85% | 7.87% | 7.83% | 7.76% | 6.45% | 6.91% |

### (d) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Duration is a measure of a debt security's sensitivity to fair value changes arising from changes in the level of interest rates. It is the weighted average maturity of a bond's cash flows.

## 5. Investments – Pooled Investment Trust (continued)

The State Investment Commission has adopted a Defined Benefit Investment Policy Statement which includes specific asset allocation targets and asset class policies. While the policy statement includes guidelines governing interest rate risk for certain asset classes, fixed income managers are given specific guidelines regarding duration and investment maturity based on their specific investment objective. These guidelines reflect the manager's strategy and the System's overall asset allocation targets and related objectives.

The System manages its exposure to interest rate risk by comparing each fixed income manager portfolio's effective duration against a predetermined benchmark index based on that manager's mandate. The fixed income indices currently used by the System are:

- Barclays US Aggregate Index
- Barclays US Treasury Inflation Notes - 1-10 Year Index
- Liquid Credit Custom BM: 50% BofA US High Yield Index + 50% Credit Suisse Leveraged Loan Index
- Long Duration BM: Barclays Long Duration US Treasury Index

At June 30, 2018, no fixed income manager was outside of their policy guidelines.

The following table shows the System's fixed income investments by type, fair value and the effective duration at June 30, 2018:

| Investment Type | Fair Value (in thousands) | Effective Duration |
|---|---|---|
| US Government Securities | $ 897,273 | 8.91 |
| US Government Agency Securities | 274,246 | 5.06 |
| Non-US Government Securities | 4,162 | 0.11 |
| Collateralized Mortgage Obligations | 11,311 | 1.54 |
| Corporate Bonds | 496,935 | 4.35 |
| Term Loans | 286,239 | 0.25 |
| Total Fixed Income | $ 1,970,166 | **5.65** |

The System had investments at June 30, 2018 totaling $109 million in money market mutual funds including $251 thousand in the Ocean State Investment Pool Trust (OSIP), an investment pool established by the State General Treasurer.

OSIP has met the criteria outlined in GASB Statement No. 79 – *Certain External Investment Pools and Pool Participants* to permit election to report its investments at amortized cost which approximates fair value. OSIP transacts with its participants at a stable net asset value (NAV) per share. Investments reported at the NAV are not subject to the leveling categorization as described above. There are no participant withdrawal limitations. The OSIP is not rated and the weighted average maturity of investments held in the pool, by policy, is not to exceed 60 days. OSIP issues a publicly available financial report that can be obtained by writing to the Office of the General Treasurer, Finance Department, 50 Service Avenue - 2nd Floor, Warwick, RI 02886.

# 5. Investments – Pooled Investment Trust (continued)

The System's remaining money market mutual fund investments consisted of a short-term money market mutual fund that is not rated and held investments with a weighted average maturity of 73 days at June 30, 2018. The fund, by policy, holds only high-grade, highly liquid cash equivalent-type investments.

The System's investment in commercial paper totaling $39,954,074 at June 30, 2018 had maturities ranging from 6 to 202 days.

The System invests in various mortgage-backed securities, such as collateralized mortgage obligations (CMO), interest-only and principal-only strips. They are reported in U.S. Government Agency Securities and Collateralized Mortgage Obligations in the table above. CMO's are bonds that are collateralized by whole loan mortgages, mortgage pass-through securities or stripped mortgage-backed securities. Income is derived from payments and prepayments of principal and interest generated from collateral mortgages. Cash flows are distributed to different investment classes or tranches in accordance with the CMO's established payment order. Some CMO tranches have more stable cash flows relative to changes in interest rates while others are significantly sensitive to interest rate fluctuations.

The System may invest in interest-only and principal-only strips in part to hedge against a rise in interest rates. Interest-only strips are based on cash flows from interest payments on underlying mortgages. Therefore, they are sensitive to pre-payments by mortgagees, which may result from a decline in interest rates. Principal-only strips receive principal cash flows from the underlying mortgages. In periods of rising interest rates, homeowners tend to make fewer mortgage prepayments.

**(e) Credit Risk**

The State Investment Commission has adopted a Defined Benefit Investment Policy Statement which includes specific asset allocation targets and asset class policies. While the policy statement includes guidelines governing credit risk for certain asset classes, fixed income managers are given specific guidelines regarding credit quality based on their specific investment objective. These guidelines reflect the manager's strategy and the System's overall asset allocation targets and related objectives.

The System manages exposure to credit risk generally by instructing fixed income managers to adhere to an overall target weighted average credit quality for their portfolios and by establishing limits on the percentage of the portfolios that are invested in non-investment grade securities. The System's exposure to credit risk as of June 30, 2018 is as follows:

## 5. Investments – Pooled Investment Trust (continued)

| Rating | Collateralized Mortgage Obligations | US Government Agency Obligations | Corporate Bonds | Non-US Government Obligations | Term Loans |
|---|---|---|---|---|---|
| Aaa | $ 10,020,684 | $ 271,692,024 | $ 16,199,983 | $ | $ 20,778,978 |
| Aa | | | 38,668,143 | | 4,785,292 |
| A | | | 127,270,532 | | 5,307,876 |
| Baa | | 2,553,482 | 227,934,193 | | 11,206,037 |
| Ba | | | 46,261,820 | | 92,509,126 |
| B | | | 25,189,624 | | 109,846,298 |
| Caa | | | 7,248,494 | | 5,917,917 |
| Ca | | | | | |
| C | | | | | |
| D | | | | | |
| Not Rated | 1,289,987 | | 8,162,110 | 4,162,181 | 35,887,842 |
| Fair Value | $ 11,310,671 | $ 274,245,506 | $ 496,934,899 | $ 4,162,181 | $ 286,239,366 |

Investments in commercial paper totaling $39,954,074 at June 30, 2018 were all rated P1.

*Ratings provided by Moody's Investors Service*

### (f) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of investments in a single issuer. There is no single issuer exposure within the System's pooled investment trust that comprises 5% of the overall portfolio.

### (g) Custodial Credit Risk

For an investment, custodial credit risk is the risk that, in the event of the failure of a counterparty, the System will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. At June 30, 2018, all securities were registered in the name of the System (or in the nominee name of its custodial agent) and were held in the possession of the System's custodial bank, Bank of New York Mellon.

### (h) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. Portfolios are diversified to limit foreign currency and security risk. The System may enter into foreign currency exchange contracts to minimize the short-term impact of foreign currency fluctuations on foreign investments.

# 5. Investments – Pooled Investment Trust (continued)

The System's exposure to foreign currency risk at June 30, 2018, was as follows:

| Currency | Comingled Funds | Equities | Private Equity | Foreign Cash | Derivatives | Term Loans | Corporate Bonds | Total |
|---|---|---|---|---|---|---|---|---|
| Australian Dollar | $ 54,022,333 | $ 30,102,539 | | $ 457,069 | $ (3,214) | $ | $ | $ 84,578,727 |
| Brazilian Real | 25,120,122 | | | | | | | 25,120,122 |
| Canadian Dollar | 94,979,200 | 47,739,741 | 3,474,499 | 306,587 | (3,782) | | | 146,496,245 |
| Chilean Peso | 4,544,358 | | | | | | | 4,544,358 |
| Chinese Yuan | 185,228 | | | | | | | 185,228 |
| Colombian Peso | 2,181,220 | | | | | | | 2,181,220 |
| Czech Republic Koruna | 786,339 | | | | | | | 786,339 |
| Danish Krone | 11,944,899 | 3,935,040 | | 85,133 | | | | 15,965,072 |
| Egyptian Pound | 540,685 | | | | | | | 540,685 |
| Euro Currency | 251,053,363 | 130,558,254 | 44,452,933 | 2,777,876 | 32,531 | 748,356 | 220,028 | 429,843,341 |
| Great Britain Pound | 139,319,713 | 84,975,934 | | 1,014,314 | 4,545 | | | 225,314,506 |
| Hong Kong Dollar | 125,135,004 | 11,670,766 | | 361,131 | (13) | | | 137,166,888 |
| Hungarian Forint | 1,207,052 | | | | | | | 1,207,052 |
| Indian Rupee | 37,481,799 | | | | | | | 37,481,799 |
| Indonesia Rupiah | 8,141,234 | | | | | | | 8,141,234 |
| Israeli Shekel | 2,075,448 | | | 49,697 | | | | 2,125,145 |
| Japanese Yen | 186,560,638 | 116,475,121 | | 1,022,130 | 32,325 | | | 304,090,214 |
| Malaysian Ringgit | 10,177,614 | | | | | | | 10,177,614 |
| Mexican Peso | 12,566,819 | | | | | | | 12,566,819 |
| New Taiwan Dollar | 49,839,043 | | | | | | | 49,839,043 |
| New Zealand Dollar | 1,646,951 | 1,409,762 | | 56,803 | | | | 3,113,516 |
| Norwegian Krone | 5,700,195 | 11,131,647 | | 150,755 | | | | 16,982,597 |
| Pakistani Rupee | 290,256 | | | | | | | 290,256 |
| Peruvian Nouveau Sol | 6 | | | | | | | 6 |
| Philippine Peso | 3,968,292 | | | | | | | 3,968,292 |
| Polish Zloty | 4,711,713 | | | | | | | 4,711,713 |
| Qatari Real | 3,476,066 | | | | | | | 3,476,066 |
| Russian Ruble | 10,247,668 | | | | | | | 10,247,668 |
| Singapore Dollar | 10,549,748 | 11,703,621 | | 231,504 | | | | 22,484,873 |
| Swedish Krona | 19,764,653 | 13,079,851 | | 212,414 | 266 | | | 33,057,184 |
| Swiss Franc | 57,944,651 | 35,743,437 | | 104,979 | | | | 93,793,067 |
| South African Rand | 29,352,323 | | | | | | | 29,352,323 |
| South Korean Won | 62,890,174 | | | | | | | 62,890,174 |
| Thailand Baht | 9,272,487 | | | | | | | 9,272,487 |
| Turkish Lira | 2,942,785 | | | | | | | 2,942,785 |
| United Arab Emirates Dirham | 2,419,533 | | | | | | | 2,419,533 |
| Total | $ 1,243,039,613 | $ 498,525,713 | $ 47,927,432 | $ 6,830,392 | $ 62,658 | $ 748,356 | $ 220,028 | $ 1,797,354,192 |
| United States | 57,766,044 | | | | | | | |
| Grand Total | $ 1,300,805,657 | | | | | | | |

In addition to the foreign currency exposure highlighted in the foregoing table, certain hedge fund investments may have foreign currency exposure.

### (i) Derivatives and Other Similar Investments

Certain of the System's investment managers are allowed to invest in derivative type transactions consistent with the terms and limitations governing their investment objective and related contract specifications. Derivatives and other similar investments are financial contracts whose value depends on one or more underlying assets, reference rates, or financial indices.

The System's derivative investments include forward foreign currency transactions, futures contracts, options, rights, and warrants. The System enters into these transactions to enhance performance, rebalance the portfolio consistent with overall asset allocation targets, gain or reduce exposure to a specific market, or mitigate specific risks.

## 5. Investments – Pooled Investment Trust (continued)

**Forward foreign currency contract**s – The System enters into foreign currency exchange contracts to minimize the short-term impact of foreign currency fluctuations on foreign investments. A currency forward is a contractual agreement to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. If not offset by a corresponding position with the opposite currency exposure, these contracts involve risk in excess of the amount reflected in the System's Statements of Fiduciary Net Position. The face or contract amount in U.S. dollars reflects the total exposure the System has in currency contracts. The U.S. dollar value of forward foreign currency contracts is determined using forward currency exchange rates supplied by a quotation service. Losses may arise due to changes in the value of the foreign currency or if the counterparty does not perform under the contract.

**Futures contract**s – The System uses futures to manage its exposure to the domestic and international equity, money market, and bond markets and the fluctuations in interest rates and currency values. Futures are also used to obtain target market exposures in a cost-effective manner and to narrow the gap between the System's actual cash exposures and the target policy exposures. Using futures contracts in this fashion is designed to reduce (or hedge) the risk of the actual plan portfolio deviating from the policy portfolio more efficiently than by using cash securities. The program is only used to manage intended exposures and asset allocation rebalancing.

Buying futures tends to increase the System's exposure to the underlying instrument. Selling futures tends to decrease the System's exposure to the underlying instrument or hedge other System investments. Losses may arise due to movements in the underlying or reference markets.

**Credit Default Swaps** – A credit manager may use credit default swaps in the portfolio to either obtain exposure to the high yield market efficiently (i.e. by selling protection) at a similar or better price than what can be obtained in cash bonds, or to hedge the credit risk of the portfolio (i.e. buying protection).

Through commingled funds, the System also indirectly holds derivative type instruments, primarily equity index futures.

The System invests in mortgage-backed securities, which are included in the categories described as collateralized mortgage obligations and U.S. Government Agency Securities. These securities are based on the cash flows from interest and principal payments by the underlying mortgages. As a result, they are sensitive to prepayments by mortgagees, which are likely in declining interest rate environments, thereby reducing the value of these securities.

Additional information regarding interest rate risks for these investments is included in Note 5(d) *Interest Rate Risk*.

The System may sell a security in anticipation of a decline in the fair value of that security or to lessen the portfolio allocation of an asset class. Short sales may increase the risk of loss to the System when the price of a security underlying the short sale increases and the System is obligated to deliver the security in order to cover the position.

## 5. Investments – Pooled Investment Trust (continued)

The following summarize the System's exposure to specific derivative investments at June 30, 2018.

| **Investment Derivative Instruments** | **Change in fair value included in investment income** | **Fair Value at June 30, 2018** | **Notional Amount** |
|---|---|---|---|
| Fixed income futures - long | $ 665,930 | $ 560,874 | $ 48,047,547 |
| Fixed income futures -short | (77,867) | (77,867) | (11,361,719) |
| Equity index futures - long | (210,668) | (364,673) | 13,209,330 |
| Equity index futures - short | 127,910 | 339,985 | (14,776,119) |
| Credit default swaps | (460,406) | 231,252 | |
| **Total** | $ 44,899 | $ 689,571 | |
| Foreign currency forward contracts: | | | |
| Pending payable (liability) | | $ 139,523 | |
| Pending receivable (asset) | | (54,055) | |
| | | $ 85,468 | |

The System is exposed to counterparty risk on foreign currency contracts that are in asset positions. The aggregate fair value of derivative instruments in asset positions at June 30, 2018 was $85,468. This represents the maximum loss that would be recognized if all counterparties failed to perform as contracted. Risk is mitigated by using a continuous linked settlement process.

The System executes (through its investment managers) derivative instruments with various counterparties. The credit ratings of these counterparties were Baa2 (Moody's) or better, one counterparty was not rated by Moody's but is rated A+ by Standard and Poor's.

## 6. Other Investments – Defined Contribution Plan

The State Investment Commission selected various investment options for defined contribution plan participants with the overall objective of offering low-cost, strategic, and long-term oriented investment products. Plan participants can choose one or more of the various options and can change options at any time. Plan participants who do not elect a specific option default to a target date retirement fund consistent with their anticipated Social Security retirement eligibility date.

| Investment Type | Fair Value | % of Total | Duration (years) |
|---|---|---|---|
| **Annuities** | | | |
| TIAA Stable Value | $ 10,996,695 | 1.28% | |
| TIAA Real Estate - variable annuity | | 0.00% | |
| **Total** | **$ 10,996,695** | **1.28%** | |
| **Fixed Income Funds** | | | |
| Pimco Real Return Institutional Class | 5,495,982 | 0.64% | 7.07 |
| Vanguard Total Bond Market Index Admiral | 5,906,180 | 0.69% | 6.10 |
| **Total** | **$ 11,402,162** | **1.33%** | |
| **Target Retirement Funds** | | | |
| Vanguard Target Retirement 2015 Trust I | 40,105,064 | 4.69% | |
| Vanguard Target Retirement 2020 Trust I | 94,343,182 | 11.02% | |
| Vanguard Target Retirement 2025 Trust I | 115,103,002 | 13.45% | |
| Vanguard Target Retirement 2030 Trust I | 123,509,242 | 14.43% | |
| Vanguard Target Retirement 2035 Trust I | 133,929,914 | 15.65% | |
| Vanguard Target Retirement 2040 Trust I | 108,074,778 | 12.63% | |
| Vanguard Target Retirement 2045 Trust I | 81,326,678 | 9.50% | |
| Vanguard Target Retirement 2050 Trust I | 47,542,338 | 5.55% | |
| Vanguard Target Retirement 2055 Trust I | 18,336,625 | 2.14% | |
| Vanguard Target Retirement 2060 Trust I | 2,319,254 | 0.27% | |
| Vanguard Target Retirement 2065 Trust I | 79,693 | 0.01% | |
| Vanguard Target Retirement Income Trust I | 11,223,427 | 1.31% | |
| **Total** | **$ 775,893,197** | **90.64%** | |
| **Equity Mutual Funds** | | | |
| Vanguard Social Index Inv | 1,899,129 | 0.22% | |
| Schwab International Index Fund | 6,280,718 | 0.73% | |
| Vanguard Institutional Index Fund | 24,827,213 | 2.90% | |
| Vanguard Emerging Markets Stock Index Fund Admiral | 4,678,051 | 0.55% | |
| Vanguard Mid-Cap Index Institutional | 9,976,759 | 1.17% | |
| Vanguard Small Cap Index Institutional | 10,055,943 | 1.17% | |
| **Total** | **$ 57,717,813** | **6.74%** | |
| **Total** | **$ 856,009,867** | **100.00%** | |

The majority (99%) of investments held by participants in the defined contribution plan are target date retirement funds and equity index or fixed income mutual funds. The target retirement date funds provide for diversified portfolios of equities and bonds that become progressively more conservative as the fund's associated target retirement date approaches. Equity index mutual funds replicate the price and yield performance of a particular index.

## 6. Other Investments – Defined Contribution Plan (continued)

The target retirement date and equity and fixed income mutual funds are priced daily based on the traded prices of the underlying securities held within the funds. There are no withdrawal limitations for these mutual funds. These funds are classified as Level 1 investments (quoted prices in active markets for identical assets) within the fair value hierarchy. Annuities are reported at contract value, which approximates fair value. Annuities held by participants within the defined contribution plan are classified as Level 3 investments (significant unobservable inputs) within the fair value hierarchy.

For an investment, custodial credit risk is the risk that, in the event of the failure of the counterparty, the System will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. At June 30, 2018, all assets and securities were registered in the name of TIAA-CREF as the Defined Contribution Plan's record keeper for the benefit of plan members and were held in the possession of TIAA-CREF's custodian, J.P. Morgan Bank.

The majority of the defined contribution plan investment options are mutual funds that invest in diversified portfolios of securities including equity and fixed-income investments. For investment options that are solely fixed income, weighted-average maturity or duration have been disclosed as a measure of interest rate risk.

Fixed income mutual funds and variable annuity accounts are subject to interest rate, inflation and credit risks. Target-date retirement mutual funds share the risks associated with the types of securities held by each of the underlying funds in which they invest including equity and fixed income funds. Mutual funds may have exposure to foreign currency risk through investment in non-US denominated securities.

## 7. Contributions

Contribution requirements for plan members and employers are established pursuant to Rhode Island General Laws. With the exception of the RIJRFT plan, employers are required to contribute at an actuarially determined rate or a fixed dollar amount for the defined benefit plans. Employer contributions for the defined contribution plan are prescribed by statute. Plan member contributions for the defined benefit and defined contribution plans are fixed by statute. Member and employer contribution rates are subject to amendment by the General Assembly.

### (a). Funding Policy

The funding policies, as set forth in Rhode Island General Law, Section 36-10-2 and 45-21-42 provide for actuarially determined periodic contributions to the plans. The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial liability. The valuation is prepared on the projected benefit basis, under which the present value, at the assumed rate of return (currently 7.0 percent for all plans except the RIJRFT which utilizes a 4.0% assumed rate of return), of each participant's expected benefit payable at retirement or death is determined, based on age, service, gender and compensation.

The employer contributions required to support the benefits of the Plan are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution. The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. This method is commonly referred to as the Individual Entry Age Actuarial Cost Method.

## 7. Contributions (continued)

The unfunded actuarial accrued liability (UAAL) is amortized as a level percent of payroll over a closed period. For underfunded plans, the period is 25 years as measured from June 30, 2010, or 21 years as of the current valuation date for any existing UAAL. Beginning with the June 30, 2014 actuarial valuation, new experience gains and losses for underfunded plans are amortized over individual closed periods of 20 years using the process of "laddering".

Overfunded plans will have an amortization rate calculated using a single base amortized over an open period of 20 years.

**(b). Contribution rates**

Employer contribution rates for fiscal 2018 for all defined benefit plans were developed based on actuarial valuations performed as of June 30, 2015. Employee contribution rates are statutorily determined.

Rhode Island Judicial Retirement Fund Trust plan is not currently advance funded. Employees make contributions to the plan; however, there are no employer contributions. This plan is for a closed group of individuals and the amortization payment has been calculated based on level-dollar amortization over 17 years from June 30, 2013.

State of Rhode Island State Police Retirement Fund Trust is a closed group of individuals and the annual contributions of $16,387,092 into the Trust have been calculated based on a level-dollar amortization over 18 years from June 30, 2016.

The table below displays the defined benefit plan contribution rates for the year ended June 30, 2018:

| Plan | Employee | Employer |
|---|---|---|
| **ERS** | | |
| State Employees | 3.75%<br>Members with more than 20 yrs of service at July 1, 2012 – 11% | 24.87% |
| Teachers | | |
| *LEA funded* | 3.75%<br>Members with more than 20 yrs of service at July 1, 2012 – 11% | 13.24% |
| *State funded* | | 9.89% |
| **TSB** | 2% of the member's annual salary up to but not exceeding $11,500 | 2% of the member's annual salary up to but not exceeding $11,500 |
| **MERS** | | |
| General Employees | 1.00% (additional 1% with a cost-of-living adjustment) | 69 Municipalities, housing authorities, water and sewer districts contributed various actuarially determined rates. |
| Public Safety | 9.00% (additional 1% with a cost-of-living adjustment) | 48 Municipal police and fire departments contributed various actuarially determined rates. |
| **SPRBT** | 8.75% | 12.22% |
| **JRBT** | 12.00% (8.75% supreme court judges) | 21.13% |
| **RIJRFT** | 12.00% (8.75% supreme court judges) | $1,322,171 (Note 1) |
| **SPRFT** | N/A | $16,387,092 |

Note 1 – The State of Rhode Island is not currently funding this plan on an advance funding basis – full actuarially determined employer contributions have not been made to the plan.

# 7. Contributions (continued)

The table below displays the defined contribution plan contribution rates for the year ended June 30, 2018:

| Plan | Employee | Employer |
|---|---|---|
| **Defined Contribution Plan** | Eligible state employees, teachers, and MERS general employees participating in social security – 5% | 1% to 1.5% based on years of service |
| | Teachers and MERS general employees not covered by social security – 7% | 3% to 3.5% based on years of service |
| | MERS police and fire employees not covered by social security – 3% | 3% |

Effective July 1, 2015, members of the defined contribution plan who had 20 or more years of service as of July 1, 2012, remained as plan participants but no longer contributed to the plan (both employee and employer contributions).

### (c). Contributions from Nonemployer Contributing Entity

Within the ERS plan, the State of Rhode Island, as a nonemployer contributing entity, makes a contribution for teachers employed by local educational agencies. This is considered a special funding situation wherein the State, by statute, has assumed responsibility to fund approximately 40% of the annual required employer contribution for teachers.

### (d). Supplemental Contributions

The General Laws (Section 36-10-2(e) 1 and 2) also require, in addition to the contributions provided for by the funding policy, for each fiscal year in which the actuarially determined state contribution rate for state employees and teachers, including state contributions to the defined contribution plan, is lower than that for the prior fiscal year, the governor shall include an appropriation to that system equivalent to twenty percent (20%) of the rate reduction to be applied to the actuarial accrued liability. The amounts to be appropriated shall be included in the annual appropriation bill and shall be paid by the general treasurer into the retirement system. The retirement system's actuary shall not adjust the computation of the annual required contribution for the year in which supplemental contributions are received; such contributions once made may be treated as reducing the actuarial liability remaining for amortization in the next following actuarial valuation to be performed. For fiscal 2018, $598,086 was contributed to the System in accordance with this provision of the General Laws.

The Retirement Security Act provides for additional contributions to the System based on 5.5% of the value of contracts where the services performed by the contractor were previously performed by state employees. A supplemental contribution of $460,734 was paid to the System pursuant to Section 42-149-3.1 of the General Laws.

## 8. Net Pension Liability (Asset) of the Participating Employers

The components of the net pension liability of the employers participating in the various plans of the System at June 30, 2018 were as follows:

| Plan | Total pension liability | Plan fiduciary net position | Employers' net pension liability (asset) | Plan fiduciary net position as a % of the total pension liability |
|---|---|---|---|---|
| **ERS** | | | | |
| **State employees** | $ 4,741,437,331 | $ 2,490,633,173 | $ 2,250,804,158 | 52.5% |
| **Teachers** | 6,958,809,084 | 3,781,560,920 | 3,177,248,164 | 54.3% |
| **TSB** | 238,563,945 | 327,793,239 | (89,229,294) | 137.4% |
| **SPRBT** | 165,924,523 | 138,733,969 | 27,190,554 | 83.6% |
| **JRBT** | 79,156,493 | 73,443,894 | 5,712,599 | 92.8% |
| **RIJRFT** | 20,946,569 | 806,246 | 20,140,323 | 3.8% |
| **SPRFT** | 170,396,029 | 16,258,330 | 154,137,699 | 9.5% |
| **MERS** | | | | |
| **General employees** | 1,268,619,484 | 1,009,462,206 | 259,157,278 | 79.6% |
| **Police and fire** | 723,420,754 | 550,994,533 | 172,426,221 | 76.2% |

### a. Actuarial assumptions

The total pension liability for all defined benefit plans was determined by actuarial valuations performed as of June 30, 2017 and rolled forward to June 30, 2018, except the valuations for RIJRFT and SPRFT were performed biennially, therefore, the total pension liability for these two plans are based on valuations performed as of June 30, 2016.

The actuarial assumptions used in the calculation of the total pension liability at the June 30, 2018 measurement date were consistent with the 2017 Actuarial Experience Investigation Study for the six-year period ended June 30, 2016 as approved by the System's Board on May 15, 2017.

The following table summarizes the actuarial assumptions applied to all periods included in the measurement.

## 8. Net Pension Liability (Asset) of the Participating Employers (continued)

**Summary of Actuarial Assumptions**

**Used in the June 30, 2018 measurement date valuations to determine the Net Pension Liability**

| | **ERS** | | **MERS** | **SPRBT** | **JRBT** | **RIJRFT** | **TSB** | **SPRFT** |
|---|---|---|---|---|---|---|---|---|
| | ***State Employees*** | ***Teachers*** | | | | | | |
| **Valuation Date** | June 30, 2017 valuation rolled forward to the June 30, 2018 measurement date except for RIJRFT and SPRFT which were based on valuations performed as of June 30, 2016. | | | | | | | |
| **Actuarial Cost Method** | Entry Age Normal - the Individual Entry Age Actuarial Cost methodology is used. | | | | | | | |
| **Amortization Method** | Level Percent of Payroll – Closed | | | | | Level Dollar | Level Dollar | Level Dollar |
| **Actuarial Assumptions** | | | | | | | | |
| **Investment Rate of Return** | 7.0% | 7.0% | 7.00% | 7.0% | 7.0% | 3.62% | 7.00% | 7.00% |
| **Projected Salary Increases** | 3.25% to 6.25% | 3.0% to 13.0% | *General Employees*<br>3.25% to 7.50%<br>*Police & Fire Employees*<br>4.00% to 14.00% | 3.75% to 11.75% | 3.50% | 3.50% | 3.5% to 13.0% | |
| **Inflation** | 2.5% | | | | | | | |
| **Mortality** | Variants of the RP-2014 mortality tables - for the improvement scale, update to the ultimate rates of the MP-2016 projection scale. | | | | | | | |

***Cost of Living Adjustments –*** The Cost of Living Adjustment (COLA) has been suspended until the collective ERS, SPRBT, and JRBT plans reach a funded status of 80%. The COLA provision can be reviewed in a four-year interval. When the collective funding level of the plans exceeds 80%, eligible retirees may receive a COLA annually effective on their date of retirement plus one month.

The COLA calculation is represented by the following formula: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5.0% (5 yr return – 5.0%, with a max of 4%) and 50% calculated using a previous year's CPI-U (max of 3%) for a total maximum COLA of 3.5%. This COLA is calculated on the first $26,291, effective January 1, 2018, and indexed as of that date as well. The indexing formula is run annually regardless of funding level each year. The COLA will be delayed until the later of the Social Security Retirement Age or three years after retirement.

For the TSB plan, a 2.75% COLA is assumed. For all other plans, a COLA of 2.15% is assumed.

## 8. Net Pension Liability (Asset) of the Participating Employers (continued)

The long-term expected rate of return best-estimate on pension plan investments was determined by the actuary using a building-block method. The actuary started by calculating best-estimate future expected real rates of return (expected returns net of pension plan investment expense and inflation) for each major asset class, based on a collective summary of capital market expectations from 34 sources. The June 30, 2018 expected arithmetic returns over the long-term (20 years) by asset class are summarized in the following table:

| Asset Class | Target Asset Allocation | Long-Term Expected Arithmetic Real Rate of Return |
|---|---|---|
| ***GROWTH*** | | |
| **Global Equity** | | |
| US Equity | 20.80% | 6.43% |
| International Developed Equity | 14.40% | 6.72% |
| Emerging Markets Equity | 4.80% | 8.90% |
| **Sub-total** | **40.00%** | |
| **Private Growth** | | |
| Private Equity | 11.30% | 9.08% |
| Non-Core Real Estate | 2.20% | 5.03% |
| Opportunistic Private Credit | 1.50% | 9.08% |
| **Sub-total** | **15.00%** | |
| ***INCOME*** | | |
| High Yield Infrastructure | 1.00% | 3.81% |
| REITS | 1.00% | 5.03% |
| Liquid Credit | 2.80% | 3.81% |
| Private Credit | 3.20% | 3.81% |
| **Sub-total** | **8.00%** | |
| ***STABILITY*** | | |
| **Crisis Protection Class** | | |
| Treasury Duration | 4.00% | 0.61% |
| Systematic Trend | 4.00% | 4.00% |
| **Sub-total** | **8.00%** | |
| **Inflation Protection** | | |
| Core Real Estate | 3.60% | 5.03% |
| Private Infrastructure | 2.40% | 5.61% |
| TIPs | 1.00% | 1.75% |
| Natural Resources | 1.00% | 3.81% |
| **Sub-total** | **8.00%** | |
| **Volatility Protection** | | |
| IG Fixed Income | 11.50% | 2.14% |
| Absolute Return | 6.50% | 4.00% |
| Cash | 3.00% | 0.61% |
| **Sub-total** | **21.00%** | |
| **Total** | **100.00%** | |

These return assumptions are then weighted by the target asset allocation percentage, factoring in correlation effects, to develop the overall long-term expected rate of return best-estimate on an arithmetic basis.

## 8. Net Pension Liability (Asset) of the Participating Employers (continued)

### b. Discount rate

The discount rate used to measure the total pension liability of the plans was 7.0 percent for all but the RIJRFT plan. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from the employers will be made at statutorily required rates, actuarially determined. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

For the RIJRFT plan, the State has not opted to make actuarially determined employer contributions and based on those assumptions, the pension plan's fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members. Consequently, for the RIJRFT plan, the municipal bond index rate, based on fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" (3.62% at June 30, 2018) was applied to all periods of projected benefit payments to determine the total pension liability.

### c. Sensitivity of the net pension liability (asset) to changes in the discount rate

The following presents the net pension liability (asset) of the employers calculated using the discount rate of 7.0 percent (for all plans except the RIJRFT), as well as what the employers' net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate. The RIJRFT plan's fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members and consequently the municipal bond index rate of 3.62% at June 30, 2018 was used in the determination of the net pension liability for that plan with a similar +1/-1% sensitivity analysis.

| | 1.00% Decrease (6.0%) | Current Discount Rate (7.0%) | 1.00% Increase (8.00%) |
|---|---|---|---|
| **ERS - State employees** | $ 2,810,415,531 | $ 2,250,804,158 | $ 1,833,984,062 |
| **ERS - Teachers** | $ 3,997,522,369 | $ 3,177,248,164 | $ 2,566,288,980 |
| **TSB** | $ (61,920,545) | $ (89,229,294) | $ (109,561,010) |
| **SPRBT** | $ 46,103,903 | $ 27,190,554 | $ 13,109,005 |
| **JRBT** | $ 14,749,587 | $ 5,712,599 | $ (1,016,103) |
| **SPRFT** | $ 174,846,228 | $ 154,137,699 | $ 138,707,879 |
| **MERS - General Employees** | $ 406,746,055 | $ 259,157,278 | $ 149,247,035 |
| **MERS - Police and Fire** | $ 254,949,158 | $ 172,426,221 | $ 110,984,844 |

| | 1.00% Decrease (2.62%) | Municipal Bond Index Discount Rate (3.62%) | 1.00% Increase (4.62%) |
|---|---|---|---|
| **RIJRFT** | $ 22,475,424 | $ 20,140,323 | $ 18,402,826 |

## 9. Administrative Expenses

Pursuant to General Law section 36-8-10.1, administrative costs of the System are financed through investment earnings up to a maximum of 0.175% of the average total investments before lending activities as reported in the annual report of the Auditor General for the next preceding five (5) fiscal years. Such amounts are transferred to a restricted receipt account within the State's general fund. Any unencumbered funds on June 30 of any fiscal year are credited to the plans in the same proportion as their contributions to the restricted receipt account.

Administrative expenses allocated to the System include personnel costs for employees of the Office of the General Treasurer who, in whole or in part, are involved in administering the System. The personnel costs allocated to the System include the employer share of actuarially determined contributions to the defined benefit pension plan (Employees' Retirement System Plan for State Employees) and the defined benefit post-employment health care plan, a cost sharing multiple employer plan administered through the Rhode Island State Employees' and Electing Teachers OPEB System (OPEB System). Required contributions to the defined contribution pension plan are also included in the allocated personnel costs. The State does not include any proportionate share of the net pension liability or net OPEB liability for cost-sharing pension and OPEB plans in the fiduciary funds of the State. The long-term pension and OPEB liabilities are reflected in the governmental activities of the State's government-wide financial statements.

The employer cost for employees participating in the State Employees' System defined benefit pension plan was 24.87% of covered payroll for fiscal 2018. Employer contribution to the defined benefit pension plan, included as administrative costs for the years ended June 30, 2018, 2017 and 2016 were $900,172, $841,590, and $731,812, respectively, which represents 100% of the annual required contributions. The employer cost for employees participating in the System's defined contribution pension plan was 1% to 1.5% of covered payroll based on years of service for fiscal 2018. Effective July 1, 2015, members of the defined contribution plan who had 20 or more years of service as of July 1, 2012, remained as plan participants but no longer contributed to the plan (both employee and employer contributions). Employer contributions to the defined contribution pension plan, included as administrative costs for the years ended June 30, 2018, 2017 and 2016 were $32,798, $30,794, and $28,627, respectively, which represents 100% of the annual required contributions.

The employer cost for employees participating in the State Employees' OPEB plan was 5.98% of covered payroll for fiscal 2018. Employer contribution to the OPEB plan, included as administrative costs for the years ended June 30, 2018, 2017 and 2016 were $223,763, $204,768, and $186,988 respectively, which represents 100% of the annual required contributions.

The OPEB system issues a stand-alone, publicly available financial report that includes the financial statements and required supplementary information including descriptions of benefit provisions and information about the measurement of the net OPEB liability. A copy of the report can be obtained from the Office of Accounts and Control, One Capitol Hill, Providence, RI 02903.

Administrative expenses of the System, financed as previously described, include $1,590,067 of expenses related to oversight of the System's investment portfolio. Consistent with generally accepted accounting principles, these expenses have been included with investment expenses on the accompanying financial statements.

For fiscal year 2018, the administrative costs of the defined contribution plan were financed solely by participant fees. Fees paid to TIAA-CREF via participant fees for fiscal year ended June 30, 2018 were $1,324,863, excluding plan transfers. From these participant fees, $205,917 was transferred to the State of Rhode Island to fund the fiscal 2018 operating expenses of the Office of the General Treasurer related to the administration of the defined contribution plan.

## 10. Commitments

The State Investment Commission has committed to fund certain private equity, real estate, and infrastructure investment managers at a predetermined subscription amount. Outstanding unfunded investment commitments at June 30, 2018 totaled $714.4 million. These commitments will be funded through cash available within the pooled investment trust generated through investment income and/or liquidation of other investments.

The system's investments in hedge funds are generally subject to "lock-up" provisions that limit (subject to certain exceptions) the ability to withdraw amounts previously invested for a period of one to three years after the initial investment. Hedge fund assets are available for redemption either on a month end or quarter end basis, and are subject to notice periods which vary by fund and range from 2 days to 90 days. At June 30, 2018 $1.5 million was in liquidation.

The System is committed under a ten-year development and operating agreement to design, transition, and implement new line-of-business, general ledger accounting system, and payroll administration systems. The contract requires monthly payments through fiscal 2025. Total payments over the contract period are estimated at $22 million.

## 11. Related Parties

The State Investment Commission, which sets investment policy and oversees the investments of the System, created three limited liability companies to account for assets invested by managers within its Crisis Protection Class – Trend Following. The Employees' Retirement System of the State of Rhode Island is the sole equity member in each of the limited liability companies. The System's investment in the limited liability companies is reported at the net asset value of the limited liability company based on independently audited financial statements as of and for the year ended June 30.

## 12. Contingencies

**Legal Challenges to Pension Reform -** The 2009, 2010 and 2011 legislative pension reforms resulted in numerous lawsuits against the State brought by current and retired employees, as well as their unions. Of these lawsuits, only one remains pending as described below.

In September 2014, a case challenging RIRSA was commenced by the Rhode Island State Troopers Association and Rhode Island State Troopers Association ex rel. Kevin M. Grace and Ernest E. Adams in Superior Court. The State has answered the complaint in that action, which remains pending. In August 2018, the Plaintiffs filed a motion to amend their Complaint. A hearing on that motion has not been set. There is no trial date set. The State intends to vigorously defend this lawsuit.

## 13. Subsequent events

The System has evaluated subsequent events through December 20, 2018, the date the statements were available to be issued.

# EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND

## Required Supplementary Information

**Schedules of Changes in the Participating Employers' Net Pension Liability (Asset)**

**Schedules of Investment Returns**

**Schedules of Employer and Other Nonemployer Entity Contributions**

**Notes to Required Supplementary Information**

*EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

***REQUIRED SUPPLEMENTARY INFORMATION***

## *Schedules of Changes in the Participating Employers' Net Pension Liability*

### *Employees' Retirement System Plan*

| | 2018 | | 2017 | | 2016 | | 2015 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **State Employees** | **Teachers** | **State Employees** | **Teachers** | **State Employees** | **Teachers** | **State Employees** | **Teachers** | **State Employees** | **Teachers** |
| **Total Pension Liability** | | | | | | | | | | |
| Service Cost | $ 61,430,436 | $ 82,924,148 | $ 58,715,260 | $ 79,219,202 | $ 59,017,905 | $ 78,445,027 | $ 58,003,597 | $ 73,780,964 | $ 56,795,525 | $ 73,917,744 |
| Interest | 317,996,827 | 464,922,181 | 320,346,656 | 471,638,608 | 320,857,388 | 471,001,292 | 312,489,666 | 457,901,918 | 309,695,399 | 454,525,784 |
| Benefit Changes | - | - | - | - | | | 102,727,033 | 148,006,628 | | |
| Differences between expected and actual experience | 18,658,150 | 54,088,887 | (6,891,246) | (29,762,014) | (48,986,533) | $ (50,843,400) | (28,729,479) | (20,696,669) | | |
| Changes of assumptions | - | - | 235,517,482 | 318,950,799 | | | - | - | (23,761,746) | (98,423,775) |
| Benefit payments | (337,489,367) | (486,818,998) | (337,555,977) | (490,517,793) | (337,538,418) | (490,467,141) | (329,318,255) | (482,865,966) | (330,357,881) | (483,854,062) |
| **Net change in Total Pension Liability** | $ 60,596,046 | $ 115,116,218 | $ 270,132,175 | $ 349,528,802 | $ (6,649,658) | $ 8,135,778 | $ 115,172,562 | $ 176,126,875.0 | $ 12,371,297.0 | $ (53,834,309.0) |
| **Total pension liability - beginning** | 4,680,841,285 | 6,843,692,866 | 4,410,709,110 | 6,494,164,064 | 4,417,358,768 | 6,486,028,286 | 4,302,186,206 | 6,309,901,411 | 4,289,814,909 | 6,363,735,720 |
| **Total pension liability - ending** | $ 4,741,437,331 | $ 6,958,809,084 | $ 4,680,841,285 | $ 6,843,692,866 | $ 4,410,709,110 | $ 6,494,164,064 | $ 4,417,358,768 | $ 6,486,028,286 | $ 4,302,186,206 | $ 6,309,901,411 |
| **Plan Fiduciary Net Position** | | | | | | | | | | |
| Employer contributions | $ 174,374,155 | $ 239,092,095 | $ 176,093,310 | $ 233,828,518 | $ 159,534,421 | $ 225,569,556 | $ 155,901,921 | $ 217,902,736 | $ 151,660,705 | $ 197,869,704 |
| Employee contributions | 39,996,527 | 49,906,906 | 41,537,793 | 50,071,218 | 41,021,592 | 49,502,952 | 28,477,668 | 36,470,893 | 28,105,658 | 36,306,239 |
| Net investment income | 188,629,584 | 286,398,383 | 259,237,475 | 394,975,442 | (3,122,838) | (4,788,264) | 57,417,358 | 88,131,991 | 340,085,721 | 522,960,223 |
| Benefit payments | (337,489,367) | (486,818,998) | (337,555,977) | (490,517,793) | (337,538,418) | (490,467,141) | (329,318,255) | (482,865,966) | (330,357,881) | (483,854,062) |
| Transfers of member contributions | | | | | | | | | 303,014 | (290,471) |
| Administrative expenses | (2,544,260) | (3,862,978) | (2,533,747) | (3,860,429) | (2,259,017) | (3,463,764) | (2,394,922) | (3,676,564) | (2,234,676) | (3,436,330) |
| Transfers to affiliated systems | 1,456,519 | (424,248) | 680,142 | 390,872 | (252,093) | 252,093 | (107,668) | 145,179 | | |
| Other | 124,217 | 869,209 | 180,663 | 926,185 | 132,016 | 955,508 | 673,125 | 1,016,295 | 182,841 | 129,791 |
| **Net change in fiduciary net position** | $ 64,547,375 | $ 85,160,369 | $ 137,639,659 | $ 185,814,013 | $ (142,484,337) | $ (222,439,060) | $ (89,350,773) | $ (142,875,436) | $ 187,745,382 | $ 269,685,094 |
| **Plan Fiduciary net position - beginning** | $ 2,426,085,798 | $ 3,696,400,551 | $ 2,288,446,139 | $ 3,510,586,538 | $ 2,430,930,476 | $ 3,733,025,598 | $ 2,520,281,249 | $ 3,875,901,034 | $ 2,332,535,867 | $ 3,606,215,939 |
| **Plan Fiduciary net position - ending** | $ 2,490,633,173 | $ 3,781,560,920 | $ 2,426,085,798 | $ 3,696,400,551 | $ 2,288,446,139 | $ 3,510,586,538 | $ 2,430,930,476 | $ 3,733,025,598 | $ 2,520,281,249 | $ 3,875,901,033 |
| **Net Pension Liability** | $ 2,250,804,158 | $ 3,177,248,164 | $ 2,254,755,487 | $ 3,147,292,315 | $ 2,122,262,971 | $ 2,983,577,526 | $ 1,986,428,292 | $ 2,753,002,688 | $ 1,781,904,957 | $ 2,434,000,378 |
| **Plan Fiduciary Net Position as a percentage of the total pension liability** | 52.5% | 54.3% | 51.8% | 54.0% | 51.9% | 54.1% | 55.0% | 57.6% | 58.6% | 61.4% |
| **Covered payroll** | $ 691,006,031 | $ 1,031,394,874 | $ 683,530,388 | $ 1,010,449,004 | $ 671,420,995 | $ 980,562,840 | $ 669,787,489 | $ 966,985,115 | $ 653,573,357 | $ 951,322,312 |
| **Net pension liability as a percentage of covered employee payroll** | 325.7% | 308.1% | 329.9% | 311.5% | 316.1% | 304.3% | 296.6% | 284.7% | 272.6% | 255.9% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Changes in the Participating Employers' Net Pension Liability (Asset)*

### *Teachers' Survivors Benefits Plan*

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | |
| Service Cost | $ 1,729,578 | $ 2,154,632 | $ 2,151,235 | $ 2,134,663 | $ 2,193,930 |
| Interest | 15,761,211 | 15,439,481 | 14,803,900 | 12,500,416 | 11,958,890 |
| Benefit Changes | - | 19,564,182 | | - | - |
| Differences between expected and actual experience | 1,716,443 | (23,870,746) | | 24,212,282 | - |
| Changes of assumptions | - | 15,500,130 | | - | - |
| Benefit payments | (9,877,314) | (8,672,172) | (8,292,668) | (7,992,381) | (7,622,990) |
| **Net change in Total Pension Liability** | 9,329,918 | 20,115,507 | 8,662,467 | 30,854,980 | 6,529,830 |
| **Total pension liability - beginning** | 229,234,027 | 209,118,520 | 200,456,053 | 169,601,073 | 163,071,243 |
| **Total pension liability - ending** | $ 238,563,945 | $ 229,234,027 | $ 209,118,520 | $ 200,456,053 | $ 169,601,073 |
| | | | | | |
| **Plan Fiduciary Net Position** | | | | | |
| Employer contributions | $ 744,035 | $ 589,883 | $ 642,276 | $ 603,388 | $ 609,168 |
| Employee contributions | 744,035 | 589,883 | 642,276 | 603,388 | 609,168 |
| Net investment income | 24,552,338 | 33,277,060 | (51,004) | 6,951,465 | 39,657,338 |
| Benefit payments | (9,877,314) | (8,672,172) | (8,292,668) | (7,992,381) | (7,622,990) |
| Administrative expenses | (330,288) | (309,283) | (267,475) | (276,010) | (260,585) |
| Other | - | 5 | (1) | | |
| **Net change in fiduciary net position** | $ 15,832,806 | $ 25,475,376 | $ (7,326,596) | $ (110,150) | $ 32,992,099 |
| | | | | | |
| **Plan Fiduciary net position - beginning** | $ 311,960,433 | $ 286,485,057 | $ 293,811,653 | $ 293,921,803 | $ 260,929,704 |
| **Plan Fiduciary net position - ending** | $ 327,793,239 | $ 311,960,433 | $ 286,485,057 | $ 293,811,653 | $ 293,921,803 |
| | | | | | |
| **Net Pension Liability (Asset)** | $ (89,229,294) | $ (82,726,406) | $ (77,366,537) | $ (93,355,600) | $ (124,320,730) |
| | | | | | |
| **Plan Fiduciary Net Position as a percentage of the total pension liability (asset)** | 137.4% | 136.1% | 137.0% | 146.6% | 173.3% |
| **Covered payroll** | $ 557,928,457 | $ 538,657,952 | $ 581,414,779 | $ 561,753,409 | $ 563,134,080 |
| **Net pension liability (asset) as a percentage of covered employee payroll** | -16.0% | -15.4% | -13.3% | -16.6% | -22.1% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

*EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

*REQUIRED SUPPLEMENTARY INFORMATION*

## *Schedules of Changes in the Participating Employers' Net Pension Liability*

### *State Police Retirement Benefits Trust Plan*

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | |
| Service Cost | $ 4,999,127 | $ 4,497,800 | $ 4,316,597 | $ 4,198,214 | $ 5,121,964 |
| Interest | 10,763,319 | 9,392,637 | 9,057,956 | 8,540,146 | 7,767,937 |
| Benefit Changes | - | - | - | 1,169,580 | - |
| Differences between expected and actual experience | 1,911,865 | 10,693,999 | (4,139,122) | (3,522,114) | - |
| Changes of assumptions | - | 9,274,363 | | - | (364,277) |
| Benefit payments | (6,023,853) | (5,141,978) | (4,585,258) | (2,496,511) | (1,767,304) |
| **Net change in Total Pension Liability** | 11,650,458 | 28,716,821 | 4,650,173 | 7,889,315 | 10,758,320 |
| **Total pension liability - beginning** | 154,274,067 | 125,557,246 | 120,907,073 | 113,017,758 | 102,259,438 |
| **Total pension liability - ending** | $ 165,924,525 | $ 154,274,067 | $ 125,557,246 | $ 120,907,073 | $ 113,017,758 |
| **Plan Fiduciary Net Position** | | | | | |
| Employer contributions | $ 2,797,003 | $ 2,980,219 | $ 4,004,656 | $ 3,432,359 | $ 3,330,889 |
| Employee contributions | 1,994,057 | 2,059,884 | 2,034,676 | 1,731,585 | 2,033,664 |
| Net investment income | 10,298,412 | 13,694,012 | 58,578 | 2,655,869 | 14,124,238 |
| Benefit payments | (6,023,853) | (5,141,978) | (4,585,258) | (2,496,511) | (1,767,304) |
| Administrative expenses | (136,371) | (125,445) | (102,053) | (99,782) | (83,318) |
| Other | 16,057 | 5,390 | 390 | 3,694 | 5,421 |
| **Net change in fiduciary net position** | $ 8,945,305 | $ 13,472,082 | $ 1,410,989 | $ 5,227,214 | $ 17,643,590 |
| **Plan Fiduciary net position - beginning** | $ 129,788,664 | $ 116,316,582 | $ 114,905,593 | $ 109,678,379 | $ 92,034,791 |
| **Plan Fiduciary net position - ending** | $ 138,733,969 | $ 129,788,664 | $ 116,316,582 | $ 114,905,593 | $ 109,678,381 |
| **Net Pension Liability** | $ 27,190,556 | $ 24,485,403 | $ 9,240,664 | $ 6,001,480 | $ 3,339,377 |
| **Plan Fiduciary Net Position as a percentage of the total pension liability** | 83.6% | 84.1% | 92.6% | 95.0% | 97.0% |
| **Covered payroll** | $ 22,589,818 | $ 22,727,638 | $ 20,984,917 | $ 19,700,678 | $ 23,051,144 |
| **Net pension liability as a percentage of covered employee payroll** | 120.4% | 107.7% | 44.0% | 30.5% | 14.5% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Changes in the Participating Employers' Net Pension Liability*

### *Judicial Retirement Benefits Trust Plan*

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | |
| Service Cost | $ 3,214,534 | $ 3,000,728 | $ 2,858,682 | $ 3,024,124 | $ 3,001,985 |
| Interest | 5,302,975 | 5,031,124 | 4,743,701 | 4,540,604 | 4,133,613 |
| Benefit Changes | - | - | - | 252,965 | - |
| Differences between expected and actual experience | (2,032,334) | (1,788,628) | (1,205,744) | (2,857,295) | - |
| Changes of assumptions | - | 5,173,300 | | - | (671,723) |
| Benefit payments | (2,956,407) | (2,740,166) | (2,530,567) | (1,808,864) | (1,631,368) |
| **Net change in Total Pension Liability** | 3,528,768 | 8,676,358 | 3,866,072 | 3,151,534 | 4,832,507 |
| **Total pension liability - beginning** | 75,627,725 | 66,951,367 | 63,085,295 | 59,933,761 | 55,101,254 |
| **Total pension liability - ending** | $ 79,156,493 | $ 75,627,725 | $ 66,951,367 | $ 63,085,295 | $ 59,933,761 |
| **Plan Fiduciary Net Position** | | | | | |
| Employer contributions | 2,057,529 | 2,057,159 | $ 2,410,039 | $ 2,709,397 | $ 2,543,510 |
| Employee contributions | 1,142,163 | 1,117,518 | 1,052,902 | 1,120,609 | 1,092,790 |
| Net investment income | 5,376,764 | 7,107,208 | 28,787 | 1,367,527 | 7,220,592 |
| Benefit payments | (2,956,407) | (2,740,166) | (2,530,567) | (1,808,864) | (1,631,368) |
| Administrative expenses | (71,270) | (65,088) | (52,548) | (51,039) | (42,538) |
| Other | - | (1) | (1) | | |
| **Net change in fiduciary net position** | $ 5,548,779 | $ 7,476,630 | $ 908,612 | $ 3,337,630 | $ 9,182,986 |
| **Plan Fiduciary net position - beginning** | $ 67,895,115 | $ 60,418,485 | $ 59,509,873 | $ 56,172,243 | $ 46,989,257 |
| **Plan Fiduciary net position - ending** | $ 73,443,894 | $ 67,895,115 | $ 60,418,485 | $ 59,509,873 | $ 56,172,243 |
| **Net Pension Liability** | $ 5,712,599 | $ 7,732,610 | $ 6,532,882 | $ 3,575,422 | $ 3,761,518 |
| **Plan Fiduciary Net Position as a percentage of the total pension liability** | 92.8% | 89.8% | 90.2% | 94.3% | 93.7% |
| **Covered payroll** | $ 9,653,254 | $ 9,532,174 | $ 8,981,094 | $ 9,570,014 | $ 9,314,258 |
| **Net pension liability as a percentage of covered employee payroll** | 59.2% | 81.1% | 72.7% | 37.4% | 40.4% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Changes in the Participating Employers' Net Pension Liability*

### *Rhode Island Judicial Retirement Fund Trust Plan*

| | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | |
| Service Cost | $ 293,825 | $ 349,593 | $ 466,046 | $ 416,208 | $ 497,532 |
| Interest | 725,852 | 615,782 | 719,311 | 673,131 | 709,876 |
| Benefit Changes | - | - | - | - | - |
| Differences between expected and actual experience | - | (1,090,142) | | (642,370) | 1,617,560 |
| Changes of assumptions | (115,788) | (665,634) | 1,865,123 | 858,970 | (1,159,812) |
| Benefit payments | (399,016) | (399,015) | (231,176) | - | - |
| **Net change in Total Pension Liability** | 504,873 | (1,189,416) | 2,819,304 | 1,305,939 | 1,665,156 |
| **Total pension liability - beginning** | 20,441,696 | 21,631,112 | 18,811,808 | 17,505,869 | 15,840,713 |
| **Total pension liability - ending** | $ 20,946,569 | $ 20,441,696 | $ 21,631,112 | $ 18,811,808 | $ 17,505,869 |
| | | | | | |
| **Plan Fiduciary Net Position** | | | | | |
| Employer contributions | $ 399,012 | $ 332,340 | $ 140,141 | $ - | $ - |
| Employee contributions | 116,757 | 116,667 | 135,454 | 158,718 | 153,145 |
| Net investment income | 43,511 | 63,669 | 3,869 | 9,094 | 12,045 |
| Benefit payments | (399,016) | (399,015) | (231,176) | - | - |
| Administrative expenses | (646) | (558) | (361) | (239) | (77) |
| Other | | - | 1 | | |
| **Net change in fiduciary net position** | $ 159,618 | $ 113,103 | $ 47,928 | $ 167,573 | $ 165,113 |
| | | | | | |
| **Plan Fiduciary net position - beginning** | $ 646,628 | $ 533,525 | $ 485,597 | $ 318,024 | $ 152,910 |
| **Plan Fiduciary net position - ending** | $ 806,246 | $ 646,628 | $ 533,525 | $ 485,597 | $ 318,023 |
| | | | | | |
| **Net Pension Liability** | $ 20,140,323 | $ 19,795,068 | $ 21,097,587 | $ 18,326,211 | $ 17,187,846 |
| | | | | | |
| **Plan Fiduciary Net Position as a percentage of the total pension liability** | 3.8% | 3.2% | 2.5% | 2.6% | 1.8% |
| **Covered payroll** | $ 1,020,224 | $ 988,110 | $ 963,703 | $ 1,320,875 | $ 1,276,208 |
| **Net pension liability as a percentage of covered employee payroll** | 1974.1% | 2003.3% | 2189.2% | 1387.4% | 1346.8% |

*See notes to required supplementary information.*

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*EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

*REQUIRED SUPPLEMENTARY INFORMATION*

## *Schedules of Changes in the Participating Employers' Net Pension Liability*

### *Rhode Island State Police Retirement Fund Trust Plan*

| | 2018 | 2017 |
|---|---|---|
| **Total Pension Liability** | | |
| Service Cost | $ - | $ - |
| Interest | 11,712,422 | 12,588,781 |
| Benefit Changes | | - |
| Differences between expected and actual experience | | - |
| Changes of assumptions | | 4,213,754 |
| Benefit payments | (17,273,412) | (17,391,853) |
| **Net change in Total Pension Liability** | (5,560,990) | (589,318) |
| **Total pension liability - beginning** | 175,957,019 | 176,546,337 |
| **Total pension liability - ending** | $ 170,396,029 | $ 175,957,019 |
| **Plan Fiduciary Net Position** | | |
| Employer contributions | 16,387,092 | 31,566,076 |
| Employee contributions | - | - |
| Net investment income | 1,136,938 | 1,838,792 |
| Benefit payments | (17,273,412) | (17,391,853) |
| Administrative expenses | (5,304) | - |
| Other | 1 | - |
| **Net change in fiduciary net position** | $ 245,315 | $ 16,013,015 |
| **Plan Fiduciary net position - beginning** | 16,013,015 | - |
| **Plan Fiduciary net position - ending** | $ 16,258,330 | $ 16,013,015 |
| **Net Pension Liability** | $ 154,137,699 | $ 159,944,004 |
| **Plan Fiduciary Net Position as a percentage of the total pension liability** | 9.5% | 9.1% |
| **Covered payroll** | - | - |
| **Net pension liability as a percentage of covered employee payroll** | - | - |

*See notes to required supplementary information.*

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## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Changes in the Participating Employers' Net Pension Liability (Asset)*

### *Municipal Employees' Retirement System Plan*

| | 2018 | | 2017 | | 2016 | | 2015 | | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | General employees | Police & Fire | General employees | Police & Fire | General employees | Police & Fire | General employees | Police & Fire | General employees | Police & Fire |
| **Total Pension Liability** | | | | | | | | | | |
| Service Cost | $ 22,575,669 | $ 21,676,077 | $ 21,557,479 | $ 18,945,916 | $ 20,993,576 | $ 17,716,756 | $ 20,454,038 | $ 15,802,260 | $ 20,534,252 | $ 15,425,188 |
| Interest | 84,784,807 | 47,530,413 | 83,854,464 | 44,876,752 | 82,527,045 | 42,922,588 | 79,553,219 | 39,209,010 | 77,208,696 | 36,969,722 |
| Benefit Changes | - | | - | - | | | 18,678,454 | 20,243,581 | - | - |
| Differences between expected and actual experience | (2,694,614) | (557,654) | (1,116,817) | 6,573,580 | (14,594,497) | (9,510,635) | (10,829,976) | (2,598,079) | - | - |
| Changes of assumptions | - | | 60,394,231 | 35,347,395 | | | | | 893,569 | (4,665,819) |
| Benefit payments | (71,940,154) | (26,791,879) | (72,152,762) | (26,127,177) | (70,865,501) | (25,248,345) | (66,083,440) | (22,950,990) | (66,801,709) | (22,501,480) |
| **Net change in Total Pension Liability** | 32,725,708 | 41,856,957 | 92,536,595 | 79,616,466 | 18,060,623 | 25,880,364 | 41,772,295 | 49,705,782 | 31,834,808 | 25,227,611 |
| **Total pension liability - beginning** | 1,235,893,776 | 681,563,797 | 1,143,357,181 | 601,947,331 | 1,125,296,558 | 576,066,967 | 1,083,524,263 | 526,361,185 | 1,051,689,455 | 501,133,574 |
| **Total pension liability - ending** | $1,268,619,484 | $ 723,420,754 | $1,235,893,776 | $ 681,563,797 | $ 1,143,357,181 | $ 601,947,331 | $ 1,125,296,558 | $ 576,066,967 | $ 1,083,524,263 | $ 526,361,185 |
| **Plan Fiduciary Net Position** | | | | | | | | | | |
| Employer contributions | $ 30,183,815 | $ 16,819,840 | $ 31,686,825 | $ 16,855,985 | $ 30,300,536 | $ 16,296,479 | $ 28,763,340 | $ 15,588,547 | $ 26,704,092 | $ 11,193,028 |
| Employee contributions | 7,208,167 | 10,500,868 | 7,332,568 | 10,079,595 | 7,244,745 | 9,561,530 | 4,368,524 | 7,223,947 | 4,333,503 | 6,979,451 |
| Net investment income | 75,536,071 | 41,229,835 | 103,015,529 | 54,186,494 | 24,225 | (156,872) | 21,923,799 | 10,703,150 | 126,156,827 | 59,474,454 |
| Benefit payments | (71,940,154) | (26,791,879) | (72,152,762) | (26,127,177) | (70,865,501) | (25,248,345) | (66,083,440) | (22,950,990) | (66,801,709) | (22,501,480) |
| Transfers of member contributions | | | | | | | - | - | (85,962) | 73,422 |
| Administrative expenses | (1,005,573) | (561,290) | (973,249) | (511,933) | (1,178,758) | (427,823) | (878,056) | (425,478) | (789,990) | (372,429) |
| Transfers to affiliated systems | (559,793) | (472,477) | (272,164) | (798,852) | 312,940 | (312,936) | (48,286) | 10,774 | - | - |
| Other | (7,392) | 23,666 | 26,504 | 69,347 | 34,888 | 66,307 | 262,213 | 21,917 | 62,117 | 23,960 |
| **Net change in fiduciary net position** | $ 39,415,141 | $ 40,748,563 | $ 68,663,251 | $ 53,753,459 | $ (34,126,925) | $ (221,660) | $ (11,691,906) | $ 10,171,867 | $ 89,578,878 | $ 54,870,406 |
| **Plan Fiduciary net position - beginning** | 970,047,065 | 510,245,970 | 901,383,814 | 456,492,511 | $ 935,510,739 | $ 456,714,171 | $ 947,202,645 | $ 446,542,304 | $ 857,623,766 | $ 391,671,897 |
| **Plan Fiduciary net position - ending** | $1,009,462,206 | $ 550,994,533 | $ 970,047,065 | $ 510,245,970 | $ 901,383,814 | $ 456,492,511 | $ 935,510,739 | $ 456,714,171 | $ 947,202,644 | $ 446,542,303 |
| **Net Pension Liability (Asset)** | $ 259,157,278 | $ 172,426,221 | $ 265,846,711 | $ 171,317,827 | $ 241,973,367 | $ 145,454,820 | $ 189,785,819 | $ 119,352,796 | $ 136,321,619 | $ 79,818,882 |
| **Plan Fiduciary Net Position as a percentage of the total pension liability** | 79.6% | 76.2% | 78.5% | 74.9% | 78.8% | 75.8% | 83.1% | 79.3% | 87.4% | 84.8% |
| **Covered payroll** | $ 249,731,376 | $ 105,827,416 | $ 244,466,993 | $ 102,020,230 | $ 233,474,157 | $ 96,737,235 | $ 228,189,238 | $ 91,293,039 | $ 223,124,242 | $ 88,783,926 |
| **Net pension liability (asset) as a percentage of covered employee payroll** | 103.8% | 162.9% | 108.7% | 167.9% | 103.6% | 150.4% | 83.2% | 130.7% | 61.1% | 89.9% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *Schedules of Investment Returns*

***Annual Money-Weighted Rate of Return, Net of Investment Expense***

| | ERS | TSB | MERS | SPRBT | JRBT | RIJRFT | SPRFT |
|---|---|---|---|---|---|---|---|
| Fiscal Year Ended June 30, 2018 | 7.85% | 7.85% | 7.87% | 7.83% | 7.76% | 6.45% | 6.91% |
| Fiscal Year Ended June 30, 2017 | 12.34% | 11.66% | 12.17% | 11.87% | 11.87% | 11.46% | 9.79% |
| Fiscal Year Ended June 30, 2016 | -0.78% | -0.15% | -0.57% | -0.07% | -0.03% | -1.72% | - |
| Fiscal Year Ended June 30, 2015 | 2.06% | 2.25% | 2.22% | 2.28% | 2.27% | 2.28% | - |
| Fiscal Year Ended June 30, 2014 | 15.32% | 15.25% | 15.12% | 14.99% | 14.99% | 5.61% | - |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

*The SPRFT trust plan was created in fiscal 2017.*

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

***REQUIRED SUPPLEMENTARY INFORMATION***

***Schedules of Employer and Other Nonemployer Entity Contributions***

## *Employees' Retirement System Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| **State employees** | | | | | |
| 2018 | $ 174,374,155 | $ 174,374,155 | - | $ 691,006,031 | 25.23% |
| 2017 | 176,093,310 | 176,093,310 | - | 683,530,388 | 25.76% |
| 2016 | 159,534,421 | 159,534,421 | - | 671,420,995 | 23.76% |
| 2015 | 155,901,921 | 155,901,921 | - | 669,787,489 | 23.28% |
| 2014 | 151,077,142 | 151,077,142 | - | 653,573,357 | 23.12% |
| **Teachers** | | | | | |
| 2018 | $ 239,092,095 | $ 239,092,095 * | - | $ 1,031,394,874 | 23.18% |
| 2017 | 233,828,517 | 233,828,517 * | - | 1,010,449,004 | 23.14% |
| 2016 | 225,569,556 | 225,569,556 * | - | 980,562,840 | 23.00% |
| 2015 | 217,902,736 | 217,902,736 * | - | 966,985,115 | 22.53% |
| 2014 | 197,869,704 | 197,869,704 * | - | 951,322,312 | 20.80% |

*See notes to required supplementary information.*

** includes contributions by the State of Rhode Island as the nonemployer contributing entity.*

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## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Employer and Other Nonemployer Entity Contributions*

## *Teachers' Survivors Benefits Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2018 | - | $ 744,035 | $ (744,035) | $ 557,928,457 | 0.13% |
| 2017 | - | 589,883 | (589,883) | 538,657,952 | 0.11% |
| 2016 | - | 642,276 | (642,276) | 581,414,779 | 0.11% |
| 2015 | - | 603,388 | (603,388) | 561,753,409 | 0.11% |
| 2014 | - | 609,618 | (609,618) | 563,134,080 | 0.11% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Employer and Other Nonemployer Entity Contributions*

## *State Police Retirement Benefits Trust Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2018 | $ 2,797,003 | $ 2,797,003 | - | $ 22,589,818 | 12.38% |
| 2017 | 2,980,219 | 2,980,219 | - | 22,727,638 | 13.11% |
| 2016 | 4,004,656 | 4,004,656 | - | 20,984,917 | 19.08% |
| 2015 | 3,432,359 | 3,432,359 | - | 19,700,678 | 17.42% |
| 2014 | 3,330,889 | 3,330,889 | - | 23,051,144 | 14.45% |

*See notes to required supplementary information.*

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## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Employer and Other Nonemployer Entity Contributions*

## *Judicial Retirement Benefits Trust Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2018 | $ 2,057,529 | $ 2,057,529 | $ - | $ 9,653,254 | 21.31% |
| 2017 | 2,057,159 | 2,057,159 | - | 9,532,174 | 21.58% |
| 2016 | 2,410,039 | 2,410,039 | - | 8,981,094 | 26.83% |
| 2015 | 2,709,397 | 2,709,397 | - | 9,570,014 | 28.31% |
| 2014 | 2,543,510 | 2,543,510 | - | 9,314,258 | 27.31% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Employer and Other Nonemployer Entity Contributions*

## *Rhode Island Judicial Retirement Fund Trust Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2018 | $ 1,322,172 | $ 399,012 | $ 923,160 | $ 1,020,224 | 39.11% |
| 2017 | 1,240,501 | 332,340 | 908,161 | 988,161 | 33.63% |
| 2016 | 1,200,000 | 140,141 | 1,059,859 | 963,703 | 14.54% |
| 2015 | 1,623,061 | - | 1,623,061 | 1,320,875 | 0.00% |
| 2014 | 1,695,434 | - | 1,695,434 | 1,276,208 | 0.00% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Employer and Other Nonemployer Entity Contributions*

## *Rhode Island State Police Retirement Fund Trust Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2018 | $ 16,387,092 | $ 16,387,092 | $ - | n/a | n/a |
| 2017 | 16,387,092 | 16,566,076 | (178,984) | n/a | n/a |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

*The SPRFT trust plan was created in fiscal 2017.*

# *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

### *REQUIRED SUPPLEMENTARY INFORMATION*

### *Schedules of Employer and Other Nonemployer Entity Contributions*

## *Municipal Employees' Retirement System Plan*

| Plan | Actuarially Determined Contribution | Contributions in Relation to Actuarially Determined Contribution | Contribution Deficiency (Excess) | Covered Payroll | Contributions as a % of Covered Payroll |
|---|---|---|---|---|---|
| **General Employees** | | | | | |
| 2018 | $ 30,183,815 | $ 30,183,815 | - | $ 249,731,376 | 12.09% |
| 2017 | 31,686,825 | 31,686,825 | - | 244,466,993 | 12.96% |
| 2016 | 30,300,536 | 30,300,536 | - | 233,474,157 | 12.98% |
| 2015 | 28,763,340 | 28,763,340 | - | 228,189,238 | 12.61% |
| 2014 | 26,704,094 | 26,704,094 | - | 223,124,242 | 11.76% |
| **Police and Fire** | | | | | |
| 2018 | $ 16,819,840 | $ 16,819,840 | - | $ 105,827,416 | 15.89% |
| 2017 | 16,855,985 | 16,855,985 | - | 102,020,230 | 16.52% |
| 2016 | 16,296,479 | 16,296,479 | - | 96,737,235 | 16.85% |
| 2015 | 15,588,547 | 15,588,547 | - | 91,293,039 | 17.08% |
| 2014 | 11,193,028 | 11,193,028 | - | 88,783,926 | 12.89% |

*See notes to required supplementary information.*

*Schedule is intended to show information for 10 years - additional years will be displayed as they become available.*

The schedules are intended to present ten years of data. Additional years of data will be presented as they become available.

## 1. Actuarial methods and assumptions used to calculate the net pension liability (asset) of the participating employers

The actuarial methods and assumptions used to calculate the net pension liability (asset) of the participating employers are described in Note 8 to the financial statements.

The following information is presented about factors that significantly affect trends in the amounts reported between years.

***June 30, 2018 measurement date –***

There were no changes in actuarial methods or assumptions reflected in the calculation of the net pension liability (asset) of the plans as of the June 30, 2018 measurement date compared to the June 30, 2017 measurement date except for the changes in assumptions for the RIJRFT plan due to use of the municipal bond index rate of 3.62% instead of the plan's assumed investment rate of return of 4.0%.

***June 30, 2017 measurement date –***

As part of the 2017 Actuarial Experience Investigation Study for the six-year period ending June 30, 2016 as approved by the System Board on May 15, 2017, certain assumptions were modified and reflected in the determination of the net pension liability (asset) at the June 30, 2017 measurement date. The following summarizes the more significant changes in assumptions:

- Decreased the general inflation assumption from 2.75% to 2.50%;
- Decreased the nominal investment return assumption from 7.50% to 7.00%;
- Decreased the general wage growth assumption from 3.25% to 3.00%;
- Decreased salary increase assumptions; and
- Updated the post-retirement mortality tables to variants of the RP-2014 table. For the improvement scale, update to the ultimate rates of the MP-2016 projection scale.

Additionally, the municipal bond index rate, based on fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" (3.56% at June 30, 2017) was applied to all periods of projected benefit payments to determine the total pension liability instead of the plan's assumed investment rate of return of 4.0%.

***June 30, 2016 measurement date –***

There were no changes in actuarial methods or assumptions reflected in the calculation of the net pension liability (asset) of the plans as of the June 30, 2016 measurement date compared to the June 30, 2015 measurement date except for the changes in assumptions for the RIJRFT plan due to use of the municipal bond index rate of 2.85% instead of the plan's assumed investment rate of return of 4.0%.

## 1. Actuarial methods and assumptions used to calculate the net pension liability (asset) of the participating employers (continued)

***June 30, 2015 measurement date –***

There were no changes in actuarial methods or assumptions reflected in the calculation of the net pension liability (asset) of the plans as of the June 30, 2015 measurement date compared to the June 30, 2014 measurement date except for the changes in assumptions for the RIJRFT plan due to use of the municipal bond index rate of 3.8% instead of the plan's assumed investment rate of return of 4.0%.

Benefit changes are reflected in the calculation of the net pension liability at the June 30, 2015 measurement date. The following is a summary of those benefit changes that resulted from the settlement of the pension litigation and the subsequent enactment of those settlement provisions by the General Assembly.

- Employees with more than 20 years of service at July 1, 2012 will increase their employee contribution rates to 11% for state employees and municipal general employees will contribute 8.25% (9.25% for units with a COLA provision) and participate solely in the defined benefit plan going forward – service credit accruals will increase from 1% to 2% per year.

- Members are eligible to retire upon the attainment of: age 65 with 30 years of service, 64 with 31 years of service, 63 with 32 years of service, or 62 with 33 years of service. Members may retire earlier if their RIRSA date is earlier or are eligible under a transition rule.

- MERS public safety employees may retire at age 50 with 25 years of service, or any age with 27 years of service. MERS public safety employees will contribute 9.00% (10.00% for units with a COLA provision)

- Employees with more than 10 but less than 20 years of service at July 1, 2012 will receive an increased employer contribution to the defined contribution plan. Also, members who earn less than $35,000 per year will not be required to pay the administrative fees to the defined contribution plan.

- Members who retired from a COLA eligible plan before July 1, 2012 will received a one-time cost of living adjustment of 2% of the first $25,000 paid as soon as administratively possible.

- Retirees as of June 30, 2015 will receive two $500 stipends; the interim cost of living increases will occur at 4 year rather than 5 year intervals.

- The COLA formula was adjusted to: 50% of the COLA is calculated by taking the previous 5-year average investment return, less 5.5% (5yr Return - 5.5%, with a max of 4%) and 50% calculated using previous year's CPI-U (max of 3%) for a total max COLA of 3.5%. This COLA is calculated on the first $25,855, effective 01/01/16, and indexed as of that date as well. (The indexing formula is run annually regardless of funding level each year.)

- Minor adjustments were made to the actuarial reduction for employees choosing to retire early.

## 2. Actuarially determined contributions

Actuarially determined contributions are calculated as of June 30, three years prior to the fiscal year in which the contributions are reported. For example, the contribution rates for fiscal 2018 for the plans were based on valuations performed as of June 30, 2015.

Contributions for teachers within the ERS plan include $98,120,835, $96,542,150, $87,997,637, $84,943,801 and $76,700,915 of nonemployer entity contributions made by the State of Rhode Island for fiscal years 2018, 2017, 2016, 2015, and 2014, respectively.

Contributions for the TSB plan are required by statute as outlined in the General Laws of Rhode Island. Due to the funded status of the plan, there was no actuarially determined contribution required to the plan in years 2014 through 2018.

**Summary of Actuarial Methods and Assumptions Used to determine Fiscal 2018 contribution rates**

| | **ERS** | | **MERS** | **SPRBT** | **JRBT** | **RIJRFT** | **SPRFT** |
|---|---|---|---|---|---|---|---|
| | ***State Employees*** | ***Teachers*** | | | | | |
| **Valuation Date** | June 30, 2015 for all plans except for RIJRFT and SPRFT which were based on June 30, 2016 valuation. | | | | | | |
| **Actuarial Cost Method** | Entry Age Normal - the Individual Entry Age Actuarial Cost methodology is used. | | | | | | |
| **Amortization Method** | Level Percent of Payroll – Closed | | | | | Level Dollar | Level Dollar |
| **Equivalent Single Remaining Amortization Period** | 20 years | | | | | 16 years | 15 years |
| **Asset Valuation Method** | 5 Year Smoothed Market | | | | | | Market value |
| **Actuarial Assumptions** | | | | | | | |
| **Investment Rate of Return** | 7.5% | 7.5% | 7.5% | 7.5% | 7.5% | 4.0% | 7.5% |
| **Projected Salary Increases** | 3.5% to 6.5% | 3.5% to 13.5% | *General Employees* 3.50% to 7.50% *Police & Fire Employees* 4.0% to 14.0% | 3.75% to 8.0% | 3.50% | 3.50% | 3.75% to 13.5% |
| **Mortality** | • Male Employees, MERS General and MERS P&F: 115% of RP-2000 Combined Healthy for Males with White Collar adjustments, projected with Scale AA from 2000. • Female Employees, MERS General and MERS P&F: 95% of RP-2000 Combined Healthy for Females with White Collar adjustments, projected with Scale AA from 2000. | | | | | | |
| | | Male and female teachers: 97% and 92%, respectively of rates in a GRS table based on male and female teacher experience, projected with Scale AA from 2000. | | | | | |
| **Inflation** | 2.75% | | | | | | |

## 2. Actuarially determined contributions (continued)

The required contribution for the newly created (fiscal 2017) State Police Retirement Fund Trust (SPRFT), a plan covering a closed group of retired individuals, was calculated based on a level-dollar amortization over 18 years from June 30, 2016.

### Cost of Living Adjustments

For the MERS plan, a 2% COLA is assumed after January 1, 2014. For all plans other than TSB, a COLA of 2% is assumed only every five years until the plans achieve an 80% collective funded status in accordance with the law.

COLA provisions were modified with the enactment of the new RISA provisions in July 2015 – these provisions are effective in the actuarial valuations prepared for funding purposes beginning June 30, 2015.

For the TSB plan, an annual 2.75% COLA is assumed – the actual COLA in any year is based on the COLA provided for federal Social Security recipients.

### Supplemental contributions

Certain supplemental contributions required by the General Laws were made to the ERS plan as more fully explained in Note 7 (d) to the financial statements. The following table reconciles the ERS plan employer contributions in the Schedule of Changes in the Participating Employers' Net Pension Liability and amounts included in the financial statements for the ERS plan.

| | State Employees | Teachers | Total ERS Plan |
|---|---|---|---|
| Employer Contributions included in the Schedules of Changes in the Participating Employers' Net Pension Liability | $ 174,374,155 | $ 239,092,095 | $ 413,466,250 |
| Other contribution related additions included in financial reporting amounts | 32,626 | 857,130 | 889,756 |
| Employer contributions reported on ERS Plan Fiscal 2018 financial statements | $ 174,406,781 | $ 239,949,225 | $ 414,356,006 |

| | | |
|---|---|---|
| Per ERSRI fiscal 2018 financial statements | Employer Contributions | $ 315,176,351 |
| | State Contributions for Teachers | 98,120,835 |
| | Supplemental employer contributions | 1,058,820 |
| | Total Employer Contributions | $ 414,356,006 |

## 3. Covered payroll

Covered payroll, as included in required supplementary information schedules, includes projected annualized payroll amounts for employees beginning employment during the fiscal year. Consequently, the covered payroll amounts included in the required supplementary information schedules may differ from the actual fiscal year payroll base to which the actuarially determined contribution rate was applied. Additionally, the contribution amount as a percentage of covered payroll may differ from the Board approved contribution rate expressed as a percentage of payroll.

## 4. Schedules of Investment Returns

The annual money-weighted returns on investments within each of the plans, net of investment expense, are shown in the required supplementary information schedule. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

The schedules are intended to present ten years of data. Additional years of data will be presented as they become available.

# EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND

## Supplementary Information

**Schedule of Investment Expenses**

**Schedule of Administrative Expenses**

**Schedule of Consultant Expenses**

# *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

## *Schedule of Investment Expenses*

## *Fiscal Year Ended June 30,2018*

**INVESTMENT MANAGEMENT FEES BY STRATEGY AND ASSET CLASS**

| | | |
|---|---|---|
| **TOTAL GROWTH** | | |
| **Global Equity** | | |
| State Street Global Advisors - Russell 3000 Commingled Fund | $ 160,923 | |
| Shott Capital/Hamilton Lane | 14,472 | |
| State Street Global Advisors - QVM Tilt | 506,766 | |
| State Street Global Advisors - MSCI EAFE - Commingled Fund | 254,499 | |
| State Street Global Advisors - MSCI CAD - Commingled Fund | 31,983 | |
| State Street Global Advisors - MSCI Emerging Markets - Commingled Fund | 386,196 | |
| **Private Growth** | | |
| Private Equity | 20,896,883 | |
| Non-Core Real Estate | 10,454,667 | |
| Opportunistic Private Credit | 1,261,571 | $ 33,967,960 |
| **INCOME** | | |
| Harvest - High Yield Infrastructure | 1,090,353 | |
| PIMCO - Liquid Credit | 364,059 | |
| WAMCO - Liquid Credit | 445,272 | |
| Private Credit | 2,927,057 | 4,826,741 |
| **STABILITY** | | |
| **Crisis Protection Class** | | |
| WAMCO - Treasury Long Duration | 93,975 | |
| Mackay Shields - Treasury Long Duration | 99,556 | |
| Systematic Trend Following (CPC LLC) | 2,028,092 | |
| **Inflation Protection** | | |
| Core Real Estate | 3,908,217 | |
| Private Infrastructure | 6,471,177 | |
| Brown Brothers Harriman - TIPS | 268,413 | |
| **Volatitlity Protection** | | |
| Pyramis - Investment Grade Fixed Income | 624,987 | |
| Mackay Shields - Investment Grade Fixed Income | 601,844 | |
| Absolute Return Hedge Funds | 22,062,509 | |
| Payden & Rygel | 295,292 | 36,454,062 |
| **OTHER** | | |
| Russell Overlay | | 293,438 |
| ***Subtotal - Investment Management Fees by Strategy and Asset Class*** | | **75,542,201** |
| **PROFESSIONAL FEES** | | |
| Legal | 166,861 | |
| BNY Mellon - Custodial | 496,489 | |
| Cliffwater | 441,667 | |
| PCA | 186,667 | |
| NEPC | 122,681 | |
| Aberdeen | 231,009 | |
| PCA Infrastructure | 68,750 | |
| PCA Real Estate | 125,000 | |
| ***Subtotal - Professional Fees*** | | **1,839,124** |
| **OPERATING EXPENSES** | | |
| Investment Administration - Office of the General Treasurer | $ 1,590,067 | |
| Other Expenses | 79,744 | |
| ***Subtotal - Operating Expenses*** | | **1,669,811** |
| **TOTAL INVESTMENT EXPENSES** | | **$ 79,051,136** |

***EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND***

*Schedule of Administrative Expenses*

*Fiscal Year Ended June 30, 2018*

**DEFINED BENEFIT PLANS**

| | | |
|---|---|---|
| **Personnel Expenses** | | |
| Salaries and wages | $ | 2,765,355 |
| Benefits | | 1,611,802 |
| Total personnel expenses | | 4,377,157 |
| **Purchased Services - Consultant Expenses** | | |
| Disability determination | | 271,439 |
| Legal | | 381,055 |
| Actuary | | 329,389 |
| Information technology services | | 2,514,554 |
| Stenographic services | | 5,779 |
| Office equipment | | 29,349 |
| Other professional services | | 12,321 |
| Total purchased services | | 3,543,887 |
| **Operating Expenses** | | |
| Communications | | 158,094 |
| Office and supplies | | 181,898 |
| Printing and advertising | | 21,945 |
| Travel | | 19,815 |
| Occupancy | | 134,688 |
| Insurance | | 72,987 |
| Other | | 7,510 |
| Total operating expenses | | 596,937 |
| **Subtotal administrative expenses - defined benefit plans** | $ | 8,517,981 |

**DEFINED CONTRIBUTION PLANS**

| | | |
|---|---|---|
| Plan Administrative Expenses - TIAA-CREF | $ | 1,232,204 |
| **TOTAL ADMINISTRATIVE EXPENSES -- ALL PLANS** | $ | 9,750,185 |

## *EMPLOYEES' RETIREMENT SYSTEM OF RHODE ISLAND*

*Schedule of Consultant Expenses*
*Fiscal Year Ended June 30, 2018*

| | | |
|---|---|---|
| **Disability Determination Services** | | |
| Medical exam fees - various physicians | | $ 271,439 |
| **Legal** | | |
| Adler Pollock & Sheehan P.C. | $ 88,675 | |
| Hinckley, Allen, & Snyder LLP | 38,885 | |
| Schechtman Halperin Savage LLP | 232,370 | |
| Hearing officers - various | 21,125 | 381,055 |
| **Actuary** | | |
| Gabriel Roeder Smith & Co. | | 329,389 |
| **Information Technology Services** | | |
| ACOM Solutions, Inc. | 970 | |
| Carousel Industries | 25,768 | |
| Konica Minolta Business Solutions USA | 414 | |
| Morneau Shepell * | 2,319,545 | |
| Stonewall Solutions, Inc. | 152,640 | |
| Socrata, Inc. | 12,738 | |
| Symantec Corporation | 2,480 | 2,514,554 |
| **Stenographic Services** | | |
| Allied Court Reporters Inc. | | 5,779 |
| **Office Equipment** | | |
| ACOM Solutions, Inc. | 166 | |
| Apple, Inc. | 1,106 | |
| Carousel Industries | 1,565 | |
| Konica Minolta Business Solutions USA | 7,163 | |
| Park Place Technologies | 19,350 | 29,349 |
| **Other Professional Services** | | |
| Pension Benefit Information | 11,500 | |
| State of Rhode Island | 330 | |
| Translator services | 491 | 12,321 |
| **Total purchased services - consultant expenses** | | $ 3,543,887 |

* Amount for this vendor reflected as expense during fiscal year - see note 3 to the financial statements.

# Investment Section

NEPC, LLC

**WILL FORDE, CFA, CAIA**
CONSULTANT

**DOUG MOSELEY**
PARTNER

December 28, 2018

Dear ERSRI Fiduciaries:

NEPC, LLC ("NEPC") is pleased to introduce this overview of the Employees' Retirement System of Rhode Island ("ERSRI") investment program for the fiscal year ended June 30, 2018.

The overall objective of ERSRI is to meet all future pension obligations both in the near and long-term. These obligations include service, disability, death and vested retirement benefits, and other postemployment benefits to members and their beneficiaries.

To ensure a solid foundation for the future of the System, ERSRI implements an investment program designed to achieve an appropriate rate of return over the long term, while prudently managing the risk of the portfolio. Furthermore, the Rhode Island State Investment Committee ("SIC") established an Investment Policy Statement which details their investment objectives and policies in investing the funds of the System as mandated by RI General Law §35-10-6(b): "The commission shall adopt a statement of investment objectives and policies consistent with the Prudent Person Standard." In addition, the Investment Policy Statement includes asset allocation targets and acceptable ranges as well as asset class benchmarks for performance measurement. The System leverages the services of actuaries and consultants to provide guidance regarding actuarial matters, asset allocation, and invest policy development. The SIC manages the investment program pursuant to the investment policy, develops asset class guidelines, monitors and evaluates performance, and makes determinations regarding the retention of managers. Professional investment managers are selected by the SIC to manage portfolios in accordance with investment management agreements. The following pages report on the performance and attributes of the investment program for fiscal year 2018.

The U.S. economy continued its near historically long growth streak over the fiscal year. U.S. equities posted their ninth consecutive year of positive returns, and outperformed international equities with the S&P 500 index gaining 14.4% versus 6.8% for the MSCI EAFE Index. Foreign equity markets faced headwinds as they were impacted by anti-establishment political trends and fears over U.S. trade policy changes. Emerging market equities underperformed the U.S. but outperformed developed international equities, though volatility saw an uptick toward the end of the fiscal year as the markets reacted to U.S. Dollar strength and trade policy uncertainty. The U.S. Treasury yield curve continued to flatten over the fiscal year as the second Fed rate hike of 2018 pushed short-term interest rates higher. Higher interest rates resulted in a second year of negative returns for U.S. high quality fixed income, with the Bloomberg Barclays US Aggregate Bond Index declining by -0.4% over the period. However, it was a risk on environment for lower quality fixed income as US High Yield and Global Credit returned +2.6% and +1.4%, respectively.

For the fiscal year ended June 30, 2018, the ERSRI Fund ("The Fund") returned +8.03% on a net-of-fees basis, exceeding its assumed rate of return of 7.0% and ranking in the 36th percentile (1% being the highest, 100% being the lowest) relative to other investors in the InvestorForce Public Defined Benefit Net Universe ("universe"). The Fund's longer-term performance remains strong as the Fund returned +7.3% over the trailing 15-year period, ranking in the 19th percentile of the previously discussed universe.

Throughout fiscal year 2018, the SIC completed several important initiatives. Of note, ERSRI continued to execute on its "Back to Basics" asset allocation strategy focused on low-cost equity investments, complemented by other assets designed to protect ERSRI against volatility and inflation risks. As part of the new asset allocation strategy, the SIC completed the funding of its Crisis Protection Class ("CPC") in December 2017. Lastly, the SIC modified the construction of its plan benchmark in September to more closely resemble its strategic asset allocation. The SIC worked with NEPC and its other advisors to accomplish each of these initiatives.

NEPC provides ERSRI with quarterly economic and investment market updates and performance reviews, investment manager monitoring and selection advice, and related investment services for traditional and select non-traditional asset classes. Investment performance analysis and comparisons produced by NEPC have been calculated using standard performance evaluation methodologies and are consistent with industry standards. Performance results are calculated using a time-weighted return methodology and are reported on a net-of-fees basis.

Sincerely,

William Forde

# Summary of ERSRI Fiscal Year 2018

Fiscal year ending June 30, 2018 was a success for the ERSRI Fund. The Fund returned +8.03% (net of all investment fees) for the fiscal year, exceeding the Fund's 7.0% assumed rate of return. Furthermore, the Fund's +8.03% return also outperformed ERSRI's Strategic Benchmark by roughly 50 basis points, net of fees. The Fund's fiscal year return ranked in the 36th percentile of the InvestorForce Public Defined Benefit Net Universe. ERSRI's longer-term performance remains strong as the Fund has returned +7.3% over the trailing 15-year period, ranking in the 19th percentile of the previously discussed universe.

# Market Overview

## U.S. Equity Markets

The U.S. economy continued its near historically long growth streak as the Federal Reserve Bank maintained its path of methodically tightening monetary policy through increasing interest rates while the Tax Cuts and Jobs Act of 2017 provided fiscal stimulus and expectations of further economic growth. U.S. Equities posted their ninth consecutive year of positive returns. Across the spectrum all returns were positive- value, growth and core. Large cap indexes were all positive for the year ending in June, however smaller cap stocks posted greater returns with Russell 2000 Growth and Value returning 21.9% and 13.1%, respectively. Large cap growth substantially outperformed large cap value with the Russell 1000 Growth up 22.5% compared to 6.8% for the Russell 1000 Value as technology stocks remain the big winners. Growth stocks continued to widen the lead over value stocks in the 2018 fiscal year for both large and small cap stocks.

## Non-U.S. Equities

Volatile global markets became a mainstay in the year ending June 30, 2018 as concerns over anti-establishment political change, historically low and broadly negative real interest rates and fears over U.S. trade policy caused uncertainty to creep up in investor sentiment. Uncertainty related to these risks was reflected in market volatility. Despite this, international developed-markets equities were up +6.8% as measured by the MSCI EAFE benchmark, but underperformed domestic equities by a margin of 7.6%. Underperformance in international developed-markets was driven by political and economic growth uncertainty in Europe. Emerging market equities experienced a similar trajectory due to initial fears and negative sentiment associated with U.S.-China trade tensions. Emerging markets equities underperformed the U.S. but outperformed developed-international equities though volatility saw an uptick toward the end of the fiscal year as markets reacted to U.S. Dollar strength and trade policy uncertainty. The MSCI EM Index was down 6.7% in the 2018 calendar year to date but returned 8.2% on the fiscal year ending June 30, 2018.

## Fixed Income Markets

The U.S. Treasury yield curve continued to flatten over the fiscal year as the second Fed rate hike of 2018 pushed short-term interest rates higher. Higher interest rates resulted in a second year of negative returns for U.S. high quality fixed income, with the Bloomberg Barclays US Aggregate Bond Index declining by 0.4%. The Federal Reserve signaled two more possible increases in the 2018 calendar year, reflecting its optimistic outlook on the U.S. economy. Emerging market debt issues experienced negative results during the fiscal year as emerging currencies weakened and the JPM GBI-EM Global Diversified Index returned -2.3%.

## Real Estate and Alternative Investments

The real estate market continued to post positive returns in fiscal year 2018. The NCREIF NFI ODCE Index Non-Lagged (representing 36 open-end commingled funds pursuing a core investment strategy) generated a +7.5% net return.

Alternative investments posted positive returns for the fiscal year-end. Private equity investments led the way, outperforming all other major asset classes. The Fund's private equity benchmark, the ILPA All Funds one-quarter lagged index, returned +17.1% for the fiscal year. While the HFRI Fund of Fund Index also posted positive returns, it trailed private equity investments as the index returned +5.5% for the fiscal year. Lastly, The Fund's MLP benchmark, the Alerian MLP Index, was an outlier as it finished the fiscal year in the red, returning -4.6%.

| Index Summary (6/30/2018) | 1 Year | 3 Year | 5 Year | 10 Year |
|---|---|---|---|---|
| **Equity** | | | | |
| S&P 500 | 14.4% | 11.9% | 13.4% | 10.2% |
| Russell 1000 | 14.5% | 11.6% | 13.4% | 10.2% |
| Russell 1000 Growth | 22.5% | 15.0% | 16.4% | 11.8% |
| Russell 1000 Value | 6.8% | 8.2% | 10.3% | 8.5% |
| Russell 2000 | 17.6% | 11.0% | 12.5% | 10.6% |
| Russell 2000 Growth | 21.8% | 10.6% | 13.6% | 11.2% |
| Russell 2000 Value | 13.1% | 11.2% | 11.2% | 9.9% |
| Russell 2500 | 16.2% | 10.3% | 12.3% | 10.7% |
| Russell 3000 | 14.8% | 11.6% | 13.3% | 10.2% |
| MSCI ACWI | 10.7% | 8.2% | 9.4% | 5.8% |
| MSCI ACWI ex US | 7.3% | 5.1% | 6.0% | 2.5% |
| MSCI EAFE | 6.8% | 4.9% | 6.4% | 2.8% |
| MSCI EAFE SC | 12.4% | 10.1% | 11.3% | 6.8% |
| MSCI Europe | 5.3% | 4.2% | 6.2% | 2.4% |
| MSCI Japan | 10.5% | 6.2% | 7.4% | 3.5% |
| MSCI Emerging Markets | 8.2% | 5.6% | 5.0% | 2.3% |
| **Fixed Income** | | | | |
| BC Aggregate 1-3 Year | 0.2% | 0.7% | 0.9% | 1.7% |
| BC Aggregate | -0.4% | 1.7% | 2.3% | 3.7% |
| BC TIPS | 2.1% | 1.9% | 1.7% | 3.0% |
| BC High Yield | 2.6% | 5.5% | 5.5% | 8.2% |
| S&P LSTA Leveraged Loan | 4.4% | 4.2% | 4.0% | 5.2% |
| BC Global Agg | 1.4% | 2.6% | 1.5% | 2.6% |
| BC Muni High Yield | 7.1% | 6.7% | 5.6% | 6.0% |
| JPM EMBI Global Diversified | -1.6% | 4.6% | 5.1% | 6.7% |
| JPM GBI-EM Global Diversified | -2.3% | 2.0% | -1.4% | 2.6% |
| **Other** | | | | |
| Bloomberg Commodity Index | 7.3% | -4.5% | -6.4% | -9.0% |
| GSCI Commodity Index | 25.9% | 9.3% | -5.1% | -2.4% |
| Alerian MLP Index | -4.6% | -5.9% | -4.1% | 6.4% |
| NAREIT Composite Index | 4.9% | 9.4% | 8.9% | 8.3% |

**S&P 500 Sectors (sorted by best to worst 1-year performers)**

| Index Summary (6/30/2017-6/30/2018) | Benchmark Weight | Benchmark Return |
|---|---|---|
| Information Technology | 26.0% | 31.2% |
| Consumer Discretionary | 12.9% | 23.5% |
| Energy | 6.3% | 21.0% |
| Financials | 13.8% | 9.7% |
| Materials | 2.6% | 9.5% |
| Health Care | 14.1% | 7.1% |
| Industrials | 9.5% | 5.3% |
| Real Estate | 2.9% | 5.1% |
| Utilities | 3.0% | 3.4% |
| Telecommunication Services | 2.0% | 1.6% |
| Consumer Staples | 7.0% | -4.0% |

**Source InvestorForce*

# Fund Performance Review

The Fund's +8.03% net of fee time weighted return, exceeded its +7.53% benchmark return and well surpassed the +6.34% 60/40 benchmark return. The 60/40 benchmark is comprised of a 60% allocation to the MSCI All Country World index and a 40% allocation to the Barclays U.S. Aggregate Bond index.

The Fund's return was primarily driven by strong performance across its Equity and Private Growth allocations. The Fund has a 40% target to Public Global Equities. This allocation produced an +11.5% net of fee return over the fiscal year as the allocation benefitted from continued positive performance in the equity markets, particularly in the U.S. The Fund's Private Growth allocation which consists of private equity, opportunistic private credit, and non-core real estate also benefitted from a fairly stable U.S. economic backdrop and a risk on environment globally. The Fund has a 15% target to Private Growth assets which returned +19.8% net of fees for the fiscal year.

The other strategic allocations within the Fund were also additive as each posted positive returns for the fiscal year ending June 30, 2018. The Fund's Income allocation which is focused on producing relatively high and stable income to help mitigate any negative cash flow, returned +3.3% as a result of credit spreads tightening and its floating rate exposure. The Fund's CPC allocation, which focuses on protecting the Fund's assets amidst a significant and sustained market crisis, returned +1.4% outperforming its benchmark by +4.2%. ERSRI's Volatility Protection allocation also posted a positive return of +2.3%. Lastly, the Fund's Short-Term Tactical allocation returned 1.24% as a result of higher cash yields.

As previously noted, ERSRI generated a net of fee return of +8.03%. Asset class returns across the board have exceeded most investors' expectations in the fiscal year. As such, we maintain the belief that near-term market results are projected to be lower than long-term historical averages moving forward.

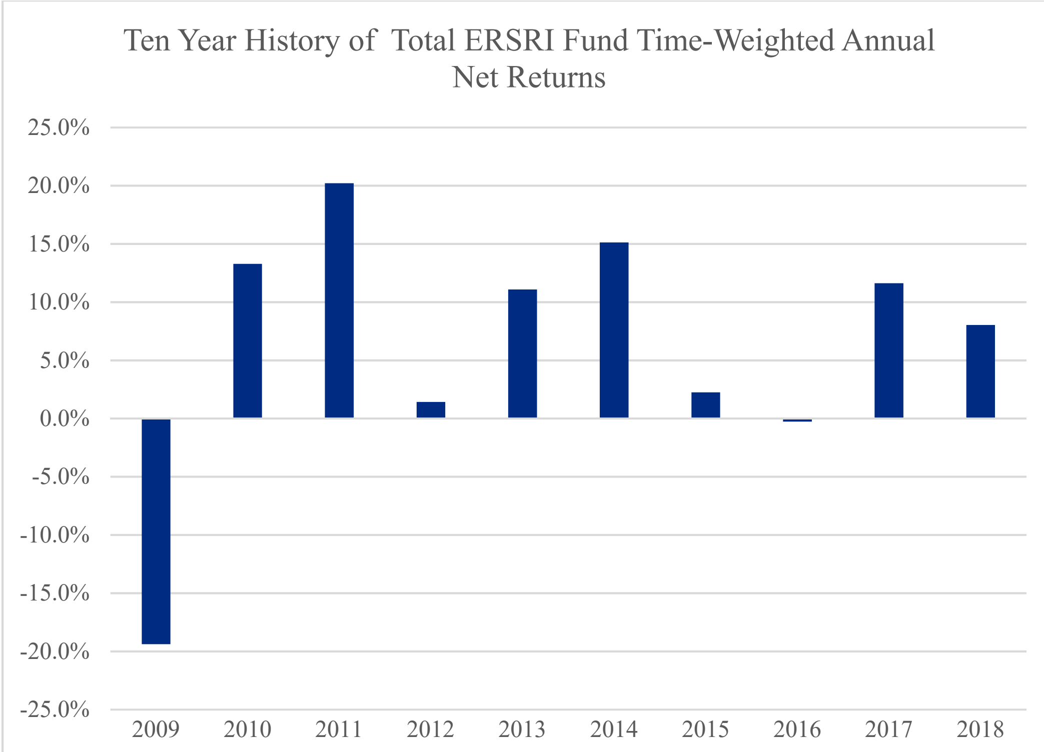
Furthermore, we believe that the asset allocation of the ERSRI portfolio will benefit from its diversification as volatility may increase and central bank policy continues to drive markets. Most importantly the long-term focus remains to reduce the volatility of the portfolio, achieve above-market returns, and position the portfolio to meet the objectives of the pension plan.

The net return by asset class for fiscal year ending June 30, 2018:

| Asset Classes | Fiscal Year Return (net) |
|---|---|
| Public Equity | 11.5% |
| Private Growth | 19.8% |
| Income | 3.3% |
| Crisis Protection Class | 1.4% |
| Inflation Protection | 6.9% |
| Volatility Protection | 2.4% |
| Short-Term Tactical | 1.2% |
| Total ERSRI Fund | 8.0% |

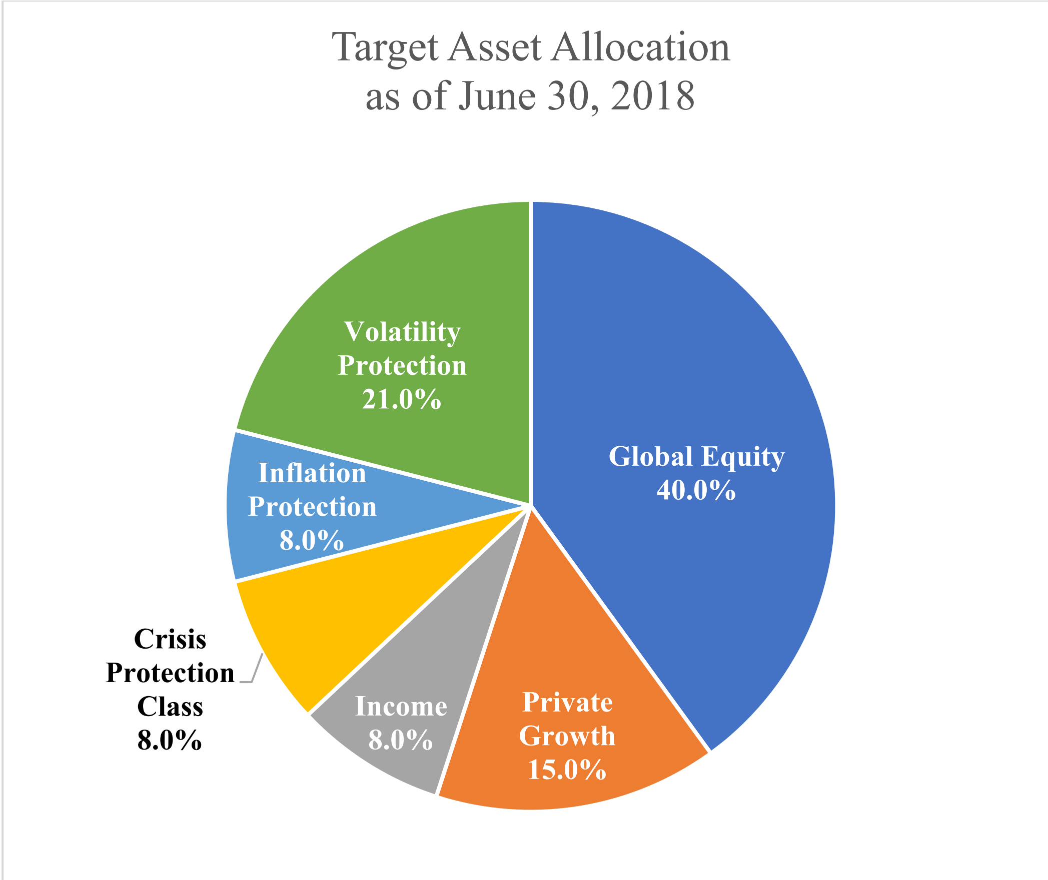
## ANNUALIZED TIME-WEIGHTED NET INVESTMENT RETURNS – ACTUAL VERSUS INDICES

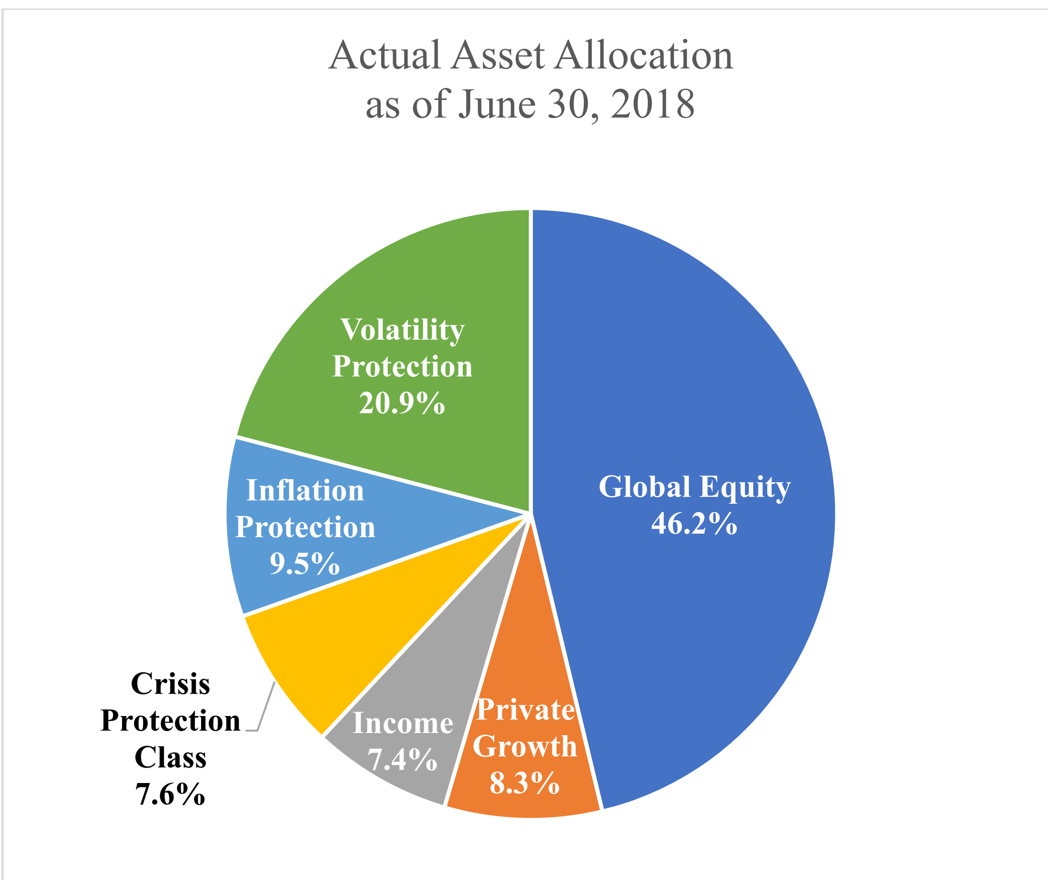
| | Current Fiscal Year 2018 | Annualized 3 Year | Annualized 5 Years | Annualized 10 Years |
|---|---|---|---|---|
| **TOTAL PLAN** | **8.03 %** | **6.34 %** | **7.20 %** | **5.76 %** |
| **Total Plan Benchmark** | **7.53** | **6.01** | **6.98** | **5.59** |
| US Public Equity | 14.75 | 11.65 | 13.33 | 10.09 |
| Russell 3000 Index | 14.78 | 11.58 | 13.29 | 10.23 |
| Non-US Public Equity | 7.46 | 5.28 | 6.18 | - |
| International Equity Custom BM | 7.28 | 5.07 | 5.99 | - |
| QVM Tilt (Global Equity) | 12.26 | - | - | - |
| MSCI World Net Dividend Index | 11.09 | - | - | - |
| Private Equity | 17.94 | 12.56 | 12.31 | 8.78 |
| ILPA All Fds BM 1Q Lag | 16.96 | 11.61 | 12.80 | 11.47 |
| Traditional Fixed Income | -0.26 | 1.86 | 2.41 | 3.87 |
| Bloomberg Barclays U.S. Aggregate Bond Index | -0.40 | 1.72 | 2.27 | 3.72 |
| Absolute Return Hedge Funds | 7.40 | - | - | - |
| HFRI Fund of Funds Composite Index | 5.19 | - | - | - |
| Liquid Credit | 4.39 | 3.77 | 3.54 | - |
| Liquid Credit Custom BM | 3.60 | 4.25 | 4.32 | - |
| Inflation-Linked Bonds | 1.54 | 1.42 | 1.30 | - |
| Total Inflation Linked Custom BM | 1.45 | 1.50 | 1.49 | - |
| HY Infrastructure | 0.14 | -5.17 | - | - |
| Alerian MLP Index | -4.58 | -5.93 | - | - |
| Priv Listed Infrastructure | 13.93 | 12.48 | - | - |
| CPI + 4% 1 Month Lag | 6.80 | 5.90 | - | - |
| Total Real Estate | 12.45 | 11.38 | 11.09 | 2.59 |
| NFI-ODCE Index 1Q Lag | 7.11 | 9.00 | 10.37 | 6.79 |
| ERSRI SMA Cash | 1.58 | - | - | - |
| ICE BofAML US Treasury Notes 0-1 Year (G0QA) | 1.31 | - | - | - |

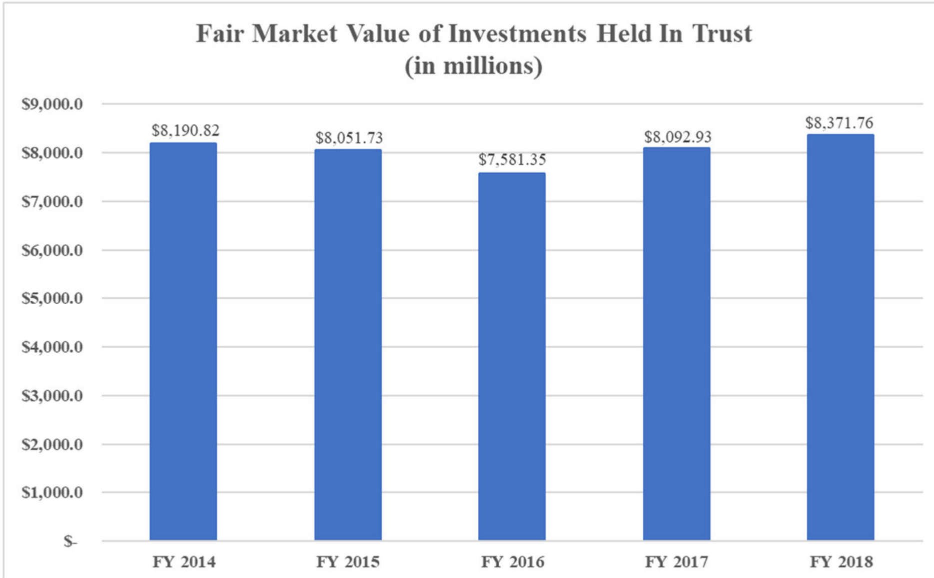



## ACTUAL ASSET ALLOCATION VERSUS TARGET ASSET ALLOCATION

| | As of June 30, 2018 | |
|---|---|---|
| | **Actual** | **Target** |
| **GROWTH** | | |
| Global Equity | 46.2 % | 40.0 % |
| Private Growth | 8.3 | 15.0 |
| **INCOME** | 7.4 | 8.0 |
| **STABILITY** | | |
| Crisis Protection Class | 7.6 | 8.0 |
| Inflation Protection | 9.5 | 8.0 |
| Volatility Protection | 20.9 | 21.0 |
| **TOTAL FUND** | 100.0 % | 100.0 % |


Target Asset Allocation
as of June 30, 2018
Volatility Protection 21.0%
Global Equity 40.0%
Inflation Protection 8.0%
Crisis Protection Class 8.0%
Income 8.0%
Private Growth 15.0%


Actual Asset Allocation
as of June 30, 2018
Volatility Protection 20.9%
Global Equity 46.2%
Inflation Protection 9.5%
Crisis Protection Class 7.6%
Income 7.4%
Private Growth 8.3%




| SUMMARY OF INVESTMENTS | | |
|---|---|---|
| | June 30, 2018 | |
| TYPE OF INVESTMENT | Fair Market Value (in millions) | Percent of Total Fair Market Value |
| DOMESTIC EQUITY | | |
| Domestic Equity Securities | 707.3 | 8.4% |
| Commingled Funds - Domestic Equity | 1,307.5 | 15.6% |
| **TOTAL DOMESTIC EQUITY** | **$ 2,014.8** | **24.1%** |
| INTERNATIONAL EQUITY | | |
| International Equity Securities | 498.5 | 6.0% |
| Commingled Funds - International Equity | 1,300.8 | 15.5% |
| **TOTAL INTERNATIONAL EQUITY** | **$ 1,799.3** | **21.5%** |
| FIXED INCOME | | |
| Non-US Government Securities | 4.2 | 0.0% |
| Collateralized Mortgage Obligations | 11.3 | 0.1% |
| Corporate Bonds | 496.9 | 5.9% |
| US Government Securities | 897.3 | 10.7% |
| US Government Agency Securities | 274.2 | 3.3% |
| **TOTAL FIXED INCOME** | **$ 1,683.9** | **20.1%** |
| REAL ASSETS | | |
| Real Estate | 593.0 | 7.1% |
| Infrastructure | 304.0 | 3.6% |
| **TOTAL REAL ASSETS** | **$ 897.0** | **10.7%** |
| CASH | | |
| Cash and Cash Equivalents | 72.6 | 0.9% |
| Money Market Mutual Funds | 109.5 | 1.3% |
| **TOTAL CASH** | **$ 182.1** | **2.2%** |
| OTHER INVESTMENTS | | |
| Term Loans | 286.2 | 3.4% |
| Private Equity | 664.8 | 7.9% |
| Hedge Funds | 540.9 | 6.5% |
| Crisis Protection Class -Trend Following - Limited Partnerships | 302.0 | 3.6% |
| Derivative Investments | 0.7 | 0.0% |
| **TOTAL INVESTMENTS** | **$ 8,371.8** | **100.0%** |

*This represents the fair market value of investments before the $41.3 million net payable for investments purchased.

## TEN LARGEST EQUITY HOLDINGS BY FAIR VALUE*

| | Shares | Top Equity Holdings | Market Value |
|---|---|---|---|
| 1 | 402,106 | Apple Inc | $ 74,433,782 |
| 2 | 653,504 | Microsoft Corp | 64,442,049 |
| 3 | 257,257 | Berkshire Hathaway Inc | 48,017,037 |
| 4 | 27,151 | Amazon.com Inc | 46,151,066 |
| 5 | 165,960 | Facebook Inc | 32,249,318 |
| 6 | 27,205 | Alphabet Inc | 30,351,686 |
| 7 | 276,623 | JPMorgan Chase & Co | 28,824,138 |
| 8 | 132,617 | Allianz SE | 27,565,415 |
| 9 | 196,679 | Johnson & Johnson | 23,864,973 |
| 10 | 312,822 | Royal Bank of Canada | 23,608,871 |

The majority of these shares are held in Commingled Equity Funds

## TEN LARGEST FIXED INCOME HOLDINGS BY FAIR VALUE*

| | Security | Rate/Maturity | Market Value |
|---|---|---|---|
| 1 | U.S. Treasury Note/Bond | 2.375% 04/30/2020 DD 04/30/18 | $ 62,159,214 |
| 2 | U.S. Treasury Note/Bond | 5.000% 05/15/2037 DD 05/15/07 | 41,735,422 |
| 3 | U.S. Treasury Note/Bond | 3.000% 05/15/2047 DD 05/15/17 | 40,949,632 |
| 4 | U.S. TIPS | 0.125% 07/15/2022 DD 07/15/12 | 37,471,351 |
| 5 | U.S. Treasury Note/Bond | 2.875% 04/30/2025 DD 04/30/18 | 34,027,529 |
| 6 | U.S. Treasury Note/Bond | 3.750% 11/15/2043 DD 11/15/13 | 33,693,095 |
| 7 | U.S. Treasury Note/Bond | 2.750% 04/30/2023 DD 04/30/18 | 33,828,119 |
| 8 | U.S. TIPS | 0.375% 07/15/2023 DD 07/15/13 | 32,394,566 |
| 9 | U.S. Treasury Note/Bond | 3.000% 02/15/2048 DD 02/15/18 | 32,313,209 |
| 10 | U.S. Treasury Note/Bond | 1.250% 10/31/2021 DD 10/31/16 | 31,384,562 |

*A complete listing of separate account portfolio holdings is available by contacting the ERSRI Investment offices. ERSRI also invests in various limited partnerships for which individual holdings data is not factored into this analysis

## SCHEDULE OF INVESTMENT MANAGEMENT AND SERVICE FEES

**FISCAL YEAR ENDED JUNE 30, 2018**

| | Fair Market Value of Assets Under Management [1] (in thousands) | Fees (in thousands) | Basis Points |
|---|---|---|---|
| **INVESTMENT MANAGEMENT FEES** | | | |
| Total Growth Composite | $ 4,550,684 | $ 33,968 | 75 |
| Total Income Composite | 618,273 | 4,827 | 78 |
| Total Stability Composite | 3,189,429 | 36,454 | 114 |
| Russell Overlay | 13,374 | 293 | 219 |
| **TOTAL INVESTMENT MANAGEMENT FEES** | **$ 8,371,759** | **$ 75,542** | **90** |
| **PROFESSIONAL FEES AND OPERATING EXPENSES** | | | |
| Custodial Fees | $ 8,371,759 | $ 496 | 1 |
| Professional Fees — External | 8,371,759 | 1,343 | 2 |
| Investment Administration Expenses — Internal | 8,371,759 | 1,590 | 2 |
| Other | 8,371,759 | 80 | 0 |
| **TOTAL PROFESSIONAL FEES AND OPERATING EXPENSES** | **$ 8,371,759** | **$ 3,509** | **4** |
| **TOTAL INVESTMENT EXPENSES** | **$ 8,371,759** | **$ 79,051** | **94** |

[1] This represents the fair market value of investments before the $41.3 million net payable for investments purchased.

ERSRI changed its method of reporting investment expenses in fiscal year 2018 from reporting certain investment income and related expenses on a net of fee basis to reporting all material investment expenses on a gross fee basis to enhance transparency of all investment related expenses. The change had no effect on the net position of the defined benefit plans participating in the pooled investment trust.

# Employees' Retirement System of Rhode Island

## Schedule of Investment Expenses
## Fiscal Year Ended June 30, 2018

**INVESTMENT MANAGEMENT FEES BY STRATEGY AND ASSET CLASS**

| | | |
|---|---|---|
| **TOTAL GROWTH** | | |
| **Global Equity** | | |
| State Street Global Advisors - Russell 3000 Commingled Fund | $ 160,923 | |
| Shott Capital/Hamilton Lane | 14,472 | |
| State Street Global Advisors - QVM Tilt | 506,766 | |
| State Street Global Advisors - MSCI EAFE - Commingled Fund | 254,499 | |
| State Street Global Advisors - MSCI CAD - Commingled Fund | 31,983 | |
| State Street Global Advisors - MSCI Emerging Markets - Commingled Fund | 386,196 | |
| **Private Growth** | | |
| Private Equity | 20,896,883 | |
| Non-Core Real Estate | 10,454,667 | |
| Opportunistic Private Credit | 1,261,571 | $ 33,967,960 |
| **INCOME** | | |
| Harvest - High Yield Infrastructure | 1,090,353 | |
| PIMCO - Liquid Credit | 364,059 | |
| WAMCO - Liquid Credit | 445,272 | |
| Private Credit | 2,927,057 | 4,826,741 |
| **STABILITY** | | |
| **Crisis Protection Class** | | |
| WAMCO - Long Duration | 93,975 | |
| Mackay Shields - Long Duration | 99,556 | |
| Systematic Trend Following (CPC LLC) | 2,028,092 | |
| **Inflation Protection** | | |
| Core Real Estate | 3,908,217 | |
| Private Infrastructure | 6,471,177 | |
| Brown Brothers Harriman - TIPS | 268,413 | |
| **Volatitlity Protection** | | |
| Pyramis - Investment Grade Fixed Income | 624,987 | |
| Mackay Shields - Investment Grade Fixed Income | 601,844 | |
| Absolute Return Hedge Funds | 22,062,509 | |
| Payden & Rygel | 295,292 | 36,454,062 |
| **OTHER** | | |
| Russell Overlay | | 293,438 |
| ***Subtotal - Investment Management Fees by Strategy and Asset Class*** | | **75,542,201** |
| **PROFESSIONAL FEES** | | |
| Legal | 166,861 | |
| BNY Mellon - Custodial | 496,489 | |
| Cliffwater | 441,667 | |
| PCA | 186,667 | |
| NEPC | 122,681 | |
| Aberdeen | 231,009 | |
| PCA Infrastructure | 68,750 | |
| PCA Real Estate | 125,000 | |
| ***Subtotal - Professional Fees*** | | **1,839,124** |
| ***Subtotal - Investment Management & Professional Fees*** | | **$ 77,381,325** |
| **OPERATING EXPENSES** | | |
| Investment Administration - Office of the General Treasurer | $ 1,590,067 | |
| Other Expenses | 79,744 | |
| ***Subtotal - Operating Expenses*** | | **1,669,811** |
| **TOTAL INVESTMENT EXPENSES** | | **$ 79,051,136** |

**Employees' Retirement System of Rhode Island**
**Schedule of Consultants, Managers, Advisors, & Service Provider Fees**
**Fiscal Year Ended June 30, 2018**

## Total Growth

### Global Equities

| | | |
|---|---|---|
| Hamilton Lane | $ | 14,472 |
| State Street Global Advisors | | 1,340,367 |
| ***Subtotal - Global Equities*** | **$** | **1,354,839** |

### Private Growth

#### Non-Core Real Estate

| | | |
|---|---|---|
| Crow Retail Fund | $ | 264,016 |
| Exeter Industrial Value Fund III | | 4,566,851 |
| GEM Realty Fund V | | 1,690,960 |
| GEM Realty Fund VI | | 612,633 |
| IC Berkeley Partners III | | 1,023,338 |
| IC Berkeley Partners IV | | 609,594 |
| Lone Star Real Estate Fund IV | | 535,419 |
| Magna Hotel Fund III | | 27,941 |
| Tri Continental Capital VII | | 3,680 |
| Waterton Venture XII | | 1,120,235 |
| ***Subtotal - Non-Core Real Estate*** | **$** | **10,454,667** |

#### Opportunistic Private Credit

| | | |
|---|---|---|
| Avenue Special Situations Fund IV | $ | 3,443 |
| Avenue Special Situations Fund V | | 467 |
| Centerbridge Special Credit Partners II | | 185,460 |
| Davidson Kempner LDO Fund IV | | 428,633 |
| Oaktree European Principal Fund III | | 641,790 |
| WLR Recovery Fund IV | | 1,778 |
| ***Subtotal - Opportunistic Private Credit*** | **$** | **1,261,571** |

#### Private Equity

| | | |
|---|---|---|
| Advent International GPE VII | $ | 1,403,673 |
| Advent International GPE VIII | | 550,818 |
| Alta BioPharma Partners III | | - * |
| Alta Partners VIII | | - * |
| Altaris Health Partners IV | | 86,845 |
| Altaris Constellation Partners IV | | 8,125 |
| Aurora Equity Partners III | | 279 |
| Bain Capital Fund X | | 1,619,853 |
| Baring Asia Fund VI | | 919,920 |
| Birch Hill Equity Partners III | | 148,624 |
| Braemar Energy Ventures III | | - |
| Carlyle Asia Partners IV | | 876,938 |
| Castile Ventures III | | 27,908 |
| Centerbridge Capital Partners | | 210,732 |
| Centerbridge Capital Partners III | | 560,764 |
| Charterhouse Capital Partners VIII | | 976 |
| Coller International Partners V | | - * |
| Constellation Ventures III | | - * |
| CVC European Equity Partners III | | 87,765 |
| CVC European Equity Partners IV | | (3,610) |
| CVC European Equity Partners V | | 1,519,945 |
| CVC European Equity Partners VI | | 626,038 |
| EnCap Energy Capital Fund IX | | 453,556 |
| EnCap Energy Capital Fund X | | 438,599 |
| EnCap Energy Capital Fund XI | | 810,053 |
| Fenway Partners Capital Fund II | | (7,187) |
| Fenway Partners Capital Fund III | | 163,542 |
| First Reserve Fund X | | (1,181) |
| First Reserve Fund XI | | 4,002 |
| Focus Ventures III | | 130,547 |

### Private Growth

#### Private Equity (continued)

| | | |
|---|---|---|
| Granite Global Ventures II | | - * |
| Granite Global Ventures III | | - * |
| Green Equity Investors V | | (203,819) |
| Industry Ventures Partnership Holdings III | | 628,975 |
| Industry Ventures Partnership Holdings III-C | | 293,480 |
| Industry Ventures Partnership Holdings IV | | 198,093 |
| Kayne Anderson Energy Fund III | | 6,533 |
| Kayne Anderson Energy Fund IV | | 1,633 |
| Leapfrog Ventures II | | 13,419 |
| Leeds Weld Equity Partners IV | | 1,965 |
| Lighthouse Capital Partners VI | | 9,585 |
| MHR Institutional Partners III | | (1,036,056) |
| Nautic Partners V | | 51,994 |
| Nautic Partners VI | | (107,093) |
| Nautic Partners VII | | 397,398 |
| Nautic Partners VIII | | 1,141,125 |
| Nordic Capital Fund V | | (56,861) |
| Nordic Capital Fund VI | | (413,229) |
| Nordic Capital Fund VII | | (433,334) |
| Nordic Capital Fund VIII | | 790,014 |
| Paine & Partners Fund IV | | 518,663 |
| Paladin III | | 155,817 |
| Parthenon Investors II | | (21,501) |
| Point 406 Ventures | | - * |
| Point Judith Venture Fund II | | 322,252 |
| Providence Equity Partners IV | | 103 |
| Providence Equity Partners V | | 1,523 |
| Providence Equity Partners VI | | 43,210 |
| Providence Equity Partners VII | | 401,780 |
| Riverside Capital Appreciation Fund VI | | 282,202 |
| Riverside Micro-Cap Fund III | | 2,150,141 |
| RLH Investors IV | | 706,386 |
| Sorenson Capital Partners III | | 655,786 |
| Southvest Fund VII | | 622,752 |
| Tenex Capital Partners II | | 819,160 |
| Thomas, McNerney & Partners | | 2,991 |
| Thomas, McNerney & Partners II | | 28,537 |
| TPG Partners IV | | (124,029) |
| TPG Partners V | | 4,643 |
| TPG Partners VI | | 58,565 |
| Trilantic Capital Partners IV | | 36,612 |
| W Capital Partners | | 6,413 |
| W Capital Partners II | | 42,565 |
| Undisclosed Manager fees* | | 2,260,965 |
| ***Subtotal - Private Equity*** | ***$*** | ***20,896,883*** |
| ***Subtotal - Total Growth*** | ***$*** | ***33,967,960*** |

## Income

#### Private Credit

| | | |
|---|---|---|
| Capital Spring Investment Partners V | $ | 302,030 |
| Garrison Opportunity Fund IV | | 757,609 |
| Owl Rock Capital | | 118,348 |
| Summit Partners Credit Fund | | - * |
| Summit Partners Credit Fund II | | - * |
| Virgo Societas IV | | 1,297,662 |
| Undisclosed Manager fees* | | 451,408 |
| ***Sub-total Private Credit*** | **$** | **2,927,057** |
| Harvest Partners - High Yield Infrastructure | $ | 1,090,353 |
| Pacific Investment Management Company (PIMCO) | | 364,059 |
| Western Asset Management Company (WAMCO) | | 445,272 |
| ***Subtotal - Total Income*** | ***$*** | ***4,826,741*** |

## Stability

### Crisis Protection

| | | |
|---|---|---|
| WAMCO - Treasury Long Duration | $ | 93,975 |
| Mackay Shields - Treasury Long Duration | | 99,556 |
| Systematic Trend Following (CPC LLC) | | 2,028,092 |
| ***Subtotal - Crisis Protection*** | **$** | **2,221,623** |

### Inflation Protection

#### Core Real Estate

| | | |
|---|---|---|
| AEW Core Property Trust | $ | 557,997 |
| Heitman HART | | 761,097 |
| JP Morgan Strategic Property Fund | | 1,195,335 |
| Morgan Stanley Prime Property Fund | | 658,851 |
| Prudential Real Estate Investors (PRISA) | | 734,936 |
| ***Subtotal - Core Real Estate*** | **$** | **3,908,217** |

#### Private Infrastructure

| | | |
|---|---|---|
| IFM Global Infrastructure, LP | $ | 1,896,327 |
| ISQ Global Infrastructure Fund, LP | | 2,240,729 |
| ISQ Global Infrastructure Fund II, LP | | 1,066,670 |
| Stonepeak Infrastructure Fund II, LP | | 1,029,409 |
| Stonepeak Infrastructure Fund II - C | | 15,223 |
| Stonepeak Infrastructure Fund III, LP | | 222,819 |
| ***Subtotal - Private Infrastructure*** | **$** | **6,471,177** |
| Brown Brothers Harriman - TIPS | $ | 268,413 |
| ***Subtotal - Inflation Protection*** | **$** | **10,647,807** |

### Volatility Protection

#### Absolute Return Hedge Funds

| | | |
|---|---|---|
| Brevan Howard LP | $ | 454,254 |
| Capula Global Relative Value Fund Ltd. | | 2,247,895 |
| Davidson Kempner Institutional Partners LP | | 2,290,115 |
| DE Shaw Composite International Fund | | 6,590,051 |
| Elliott Associates LP | | 4,028,000 ^ |
| Graham Capital | | 1,182,528 |
| Samlyn LP | | 936,376 |
| Viking Global Equities LP | | 2,601,000 ^ |
| Winton Futures Fund Ltd. | | 670,322 |
| Undisclosed Manager fees* | | 1,061,969 |
| ***Subtotal - Absolute Return Hedge Funds*** | **$** | **22,062,509** |
| Pyramis - Investment Grade Fixed Income | $ | 624,987 |
| MacKay Shields - Investment Grade Fixed Income | $ | 601,844 |
| Payden & Rygel | $ | 295,292 |
| ***Subtotal - Volatility Protection*** | **$** | **23,584,632** |
| ***Subtotal - Stability*** | ***$*** | ***36,454,062*** |

## Other

| | | |
|---|---|---|
| Russell Investments | $ | 293,438 |

## Professional Fees

| | | |
|---|---|---|
| ***Legal*** | | |
| Adler Pollock & Sheehan P.C. | $ | 166,861 |
| ***Investment Custodian*** | | |
| BNY Mellon - Defined Benefit Plan | $ | 496,489 |
| ***Investment Advisor*** | | |
| Cliffwater LLC | $ | 441,667 |
| Pension Consulting Alliance | | 380,417 |
| NECP LLC | | 122,681 |
| Aberdeen Asset Management | | 231,009 |
| ***Subtotal - Investment Advisor*** | $ | 1,175,774 |
| ***Subtotal - Professional Fees*** | **$** | **1,839,124** |

**Total Investment Management & Professional Fees** **$ 77,381,325**

* Due to contractual obligations with the specific investment firm, ERSRI is prohibited from disclosing all fees charged during the fiscal year.

^ Due to contractual obligations with the specific hedge fund, ERSRI is prohibited from disclosing fund expenses. The amounts presented in this schedule represent management and performance fees incurred during the fiscal year.

***Note:*** Negative amounts listed for managers in Private Equity represents a reversal of accrued carried interest that was previously recorded against the NAV based on unrealized increases to the market value.

# Actuarial Section

GRS Retirement Consulting

P: 469.524.0000 | F: 469.524.0003 | www.grsconsulting.com

December 14, 2018

Retirement Board
50 Service Avenue, 2nd Floor
Warwick, RI 02886-1021

Members of the Board:

At the request of the Employees' Retirement System of Rhode Island (ERSRI), Gabriel Roeder Smith & Company (GRS) has performed the actuarial valuation for each of the retirement systems administered by ERSRI. The information in the Actuarial Section is based on our annual actuarial valuation reports, with the most recent valuations conducted as of June 30, 2017, and is intended to be used in conjunction with the full reports. The actuarial information in the Financial Section is based on our GASB Statement No. 67 actuarial valuation reports as of June 30, 2018, and is intended to be used in conjunction with the full reports. The valuation reports were approved by the Board.

This letter and the schedules listed below represent GRS' certification of the funded status as required for the financial report for the fiscal year ended June 30, 2018. GRS prepared the following schedules (information prior to 2016 was provided by ERSRI):

- Net Pension Liability of Employers
- Discount Rate Sensitivity
- Schedule of Changes in the Net Pension Liability
- Schedule of Net Pension Liability
- Schedule of Employer Contributions
- Schedule of Active Member Valuation Data
- Schedule of Retirees Added to and Removed from Rolls
- Analysis of Financial Experience
- Solvency Test
- Schedule of Funding Progress
- Retired Members by Benefit Type
- Average Benefit Payments

**Data**

The ERSRI staff supplied data for retired, active and inactive members as of June 30, 2017. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. The ERSRI staff also supplied asset data as of June 30, 2017.

5605 North MacArthur Boulevard | Suite 870 | Irving, Texas 75038-2631

**Actuarial Assumptions and Methods**

The assumptions used have been updated from the last actuarial valuation based on the 2017 Actuarial Experience Investigation Study for the six–year period ending June 30, 2016, approved by the Board on May 15, 2017. Please refer to the June 30, 2017 actuarial valuations for further discussion on the assumption changes. We believe the assumptions are internally consistent and are reasonable, based on the actual experience of ERSRI.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities and the calculated contribution rates.

The actuarial assumptions and methods used in this report comply with the parameters for disclosure that appear in Governmental Accounting Standards Board (GASB) Statement Number 67. We believe the assumptions are internally consistent and are reasonable, based on the actual experience of ERSRI.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities and the calculated contribution rates.

**Benefits**

The benefit provisions reflected in this valuation are those which were in effect on June 30, 2017, and there have been no changes to the benefit provisions since the preceding valuation.

**Funding Policy and Objectives**

The actuarial cost method and the amortization periods are set by statute. Normal cost rate (as a percent of pay) and actuarial accrued liabilities are computed using the Entry Age Normal actuarial cost method. The employer contribution rate is the sum of two pieces: the employer normal cost rate and the amortization rate. The employer normal cost rate is the difference between the normal cost rate and the member contribution rate. The amortization rate, also determined as a level percent of pay, is the amount required to amortize the unfunded actuarial accrued liability over a closed period. The amortization rate is adjusted for the two-year deferral in contribution rates.

**Certification**

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Rhode Island state law and, where applicable, the

Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The undersigned are independent actuaries. All are Members of the American Academy of Actuaries. They all meet the Qualification Standards of the American Academy of Actuaries and they are experienced in performing valuations for large public retirement systems.
Respectfully submitted,

Joseph P. Newton, FSA, MAAA, EA
Pension Market Leader and Actuary

Paul T. Wood, ASA, MAAA, FCA
Consultant

Bradley E. Stewart, ASA, MAAA, EA
Consultant

## General Information

As required in Rhode Island General Laws, the defined benefit plans within the Employees' Retirement System of Rhode Island (ERSRI) are required to have a certified actuary perform the actuarial valuation of each Plan.

The primary purpose of the actuarial valuation is to provide an amount that the employers should contribute to the Plans, which is referred to as the Annual Required Contribution (ARC). The ARC consists of two components. First, for each fiscal year, the actuary calculates an amount that will be necessary to pay the actuarial estimate of retirement benefits earned in that fiscal year (which is referred to as the "Normal Cost"). Second, in each actuarial valuation, the actuary calculates the funding status of each of the Plans (also known as a "Funded Ratio"), develops a schedule for restoring the funding status of the Plans to 100%, and then includes that fiscal year's portion of that schedule into the calculation of the ARC.

## Responsibilities of ERSRI Board

As required in Rhode Island General Laws the employer contribution rates for each Plan are certified annually by the ERSRI Board. These rates are determined actuarially, based on the Plans' provisions, actuarial assumptions, and statutorily approved methodologies in effect as of the valuation date. The Board's current policy is that the contribution rates determined by a given actuarial valuation become effective two years after the valuation date. For example, the rates determined in the June 30, 2017 valuation will be applicable for the fiscal year beginning July 1, 2019 and ending June 30, 2020.

The Retirement Board is required to approve, based on both the recommendations of the actuary and prescribed in Rhode Island General Law, the actuarial methods and assumptions used in the preparation of the actuarial funding valuations. These assumptions include, but are not limited to, mortality, service, economic (investment return, wage inflation, etc.), demographic, and other assumptions.

Actuarial Experience Investigation Studies are conducted every three years by the actuary for the Plans within ERSRI. The actuary will provide a discussion of recent experience, present potential recommendations for new actuarial assumptions and methods, and provide information about the actuarial impact of these recommendations on the liabilities and other key actuarial measures. The study will be conducted in accordance with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. The actuaries preparing the study will have to meet the Qualification Standards of the American Academy of Actuaries. The Board will consider the recommendations and impact of the results of these studies when approving the assumptions and methods to be used in the actuarial funding valuations of each Plan.

For the actuarial valuation for the fiscal year ending June 30, 2017, the methods and assumptions used in the preparation of the valuation were based on the recommendations in the experience study (for the six-year period ending June 30, 2016) that were approved by the Board on May 15, 2017.

The Retirement Board will conduct an actuarial audit every five to seven years, or if the Board hires a new actuary firm. The basic objectives of the audit are to determine if the valuation results provided by the existing actuary are accurate. Are the valuation results based upon reasonable actuarial assumptions and methods and are they in compliance with Actuarial Standards of Practice. Finally, is the actuarial information being provided to ERSRI comprehensive enough to assess the present and future financial status of the System.

## Actuarial Schedules and Reports

A copy of the June 30, 2017 actuarial valuation report for each Trust is available on our website at www.ersri.org.

## Employees' Retirement System (ERS)
## Summary of Plan & Benefit Provisions

1. **Effective Date and Authority:** The Employees' Retirement System of Rhode Island (ERSRI) became effective on July 1, 1936 for State Employees and on July 1, 1949 for Teachers. Benefits for State Employees are described in Rhode Island General Laws, Title 36, Chapter 36-10, and benefits for Teachers are described in Rhode Island General Laws, Title 16, Chapter 16-16.

2. **Plan Year:** A twelve-month period ending June 30th.

3. **Administration:** ERSRI is administered by the State of Rhode Island Retirement Board. However, the State Investment Commission is responsible for the investment of the trust assets, including the establishment of the asset allocation policy.

4. **Type of Plan:** ERSRI is a qualified governmental defined benefit retirement plan. Separate contribution rates are determined for state employees and for teachers. For Governmental Accounting Standards Board purposes, it is a cost-sharing multiple employer plan.

5. **Eligibility:** Most Rhode Island state employees and certified public school teachers participate in ERSRI. Certain employees of the Airport Corporation, the Economic Development Corporation, and the Narragansett Bay Commission participate in the plan as though they were state employees. State police officers, state judges, and teachers and administrators in the public colleges and universities are covered by their own separate systems, and are therefore excluded. Certain elected state officials are excluded unless they make an election to join ERSRI. Superintendents, principals, business agents and other administrators participate as teachers. Non-certified public school employees, such as teacher's aides, janitors, secretaries, and bus drivers, cannot participate in ERSRI, although they may be covered by the Municipal Employees Retirement System (MERS) or a separate plan maintained by the town or city. Eligible employees become members as of their date of employment.

6. **Employee Contributions:** Effective July 1, 2012, State Employees (excluding Correctional Officers) and Teachers contribute 3.75% of their salary per year. For State Employees and Teachers with 20 or more years of service as of June 30, 2012 the contribution rate beginning July 1, 2015 will be 11.0%. Correctional Officers contribute 8.75% of their salary per year. The state "picks up" the members' contributions for its employees under the provisions of Internal Revenue Code (IRC) Section 414(h). At their option, the city or town employing a Teacher may also pick up their members' contributions.

7. **Salary:** Salary includes the member's base earnings plus any payments under a regular longevity or incentive plan. Salary excludes overtime, unused sick and vacation leave, severance pay, and other extraordinary compensation. Certain amounts that are excluded from taxable wages, such as amounts sheltered under a Section 125 plan or amounts picked up by the employer under IRC Section 414(h), are not excluded from salary.

8. **Employer Contributions:** For Teachers, the state contributes 40% of the employer contribution rate and the city, town or other local employer contributes the remaining 60%. (This basic 40-60 split is further adjusted, since the State bears the cost of repaying certain amounts taken from the trust in the early 1990's.) Contributions determined in a given actuarial valuation go into effect two years after the actuarial valuation.

   In fiscal years beginning after June 30, 2005, if the State's contribution on behalf of State Employees decreases, the State shall appropriate an additional amount to the retirement trust. Such amount shall be equal to 20% of any decrease in expected contributions.

9. **Service:** Employees receive credit for service while a member. In addition, a member may purchase credit for certain periods, such as time spent teaching at a public school in another state, by making an additional contribution to purchase the additional service and those costs will be determined at full actuarial value, except for purchases of military service and redeposits of previously refunded contributions. Special rules and limits govern the purchase of additional service and the contribution required.

10. **Final Average Compensation (FAC):** For members eligible to retire as of September 30, 2009, their Final Average Compensation (FAC) will be based on the highest three consecutive annual salaries. For members not eligible to retire as of September 30, 2009, their FAC will be based on the highest five consecutive years of salary. Monthly benefits are based on one-twelfth of this amount.

11. **Retirement:**

    a. Eligibility: As of July 1, 2012, retirement eligibility dates will be as follows.

       i. Members with less than five years of contributory service as of June 30, 2012 and members hired on or after that date are eligible for retirement on or after their Social Security normal retirement age.

       ii. Members who had at least five years of contributory service as of June 30, 2012 will be eligible for retirement at an individually determined age. This age is the result of interpolating between the member's Article 7 Retirement Date, described in Section 11(b) below, and the retirement age applicable to members hired after June 30, 2012 in (i) above. The interpolation is based on service as of June 30, 2012 divided by projected service at the member's Article 7 Retirement Date. The minimum retirement age is 59.

       iii. Members with 10 or more years of contributory service on June 30, 2012 may choose to retire at their Article 7 Retirement Date if they continue to work and contribute until that date. If option is elected, the retirement benefit will be calculated using the benefits you have accrued as of June 30, 2012, i.e., the member will accumulate no additional defined benefits after this date, but the benefit will be paid without any actuarial reduction.

iv. Effective July 1, 2015, members will be eligible to retire with full benefits at the earlier of their current RIRSA date described in sections (i) – (iii) above or upon the attainment of age 65 with 30 years of service, age 64 with 31 years of service, age 63 with 32 years of service, or age 62 with 33 years of service.

v. A member who is within five years of reaching their retirement eligibility date, described in this section, and has 20 or more years of service, may elect to retire at any time with a reduced benefit. The reduction is 9% for year 1, 8% for year 2, and 7% for each year thereafter.

vi. Nurses (RNs) employed by MHRH are eligible to retire when they are at least 55 years old and have a minimum of 25 years of contributing service.

vii. Correctional officers are eligible to retire when they are at least 55 years old and have a minimum of 25 years of contributing service. If a member has 25 years of service as of June 30, 2012, they may retain their Article 7 Retirement Date. Correctional officers who do not work for 25 years will not receive their pension benefit until they reach their Social Security normal retirement age.

b. Article 7 Retirement Date (member's retirement date as of September 30, 2009):

i. Grandfathered Schedule A members—members with at least 10 years of contributory service at June 30, 2005 and eligible for retirement at September 30, 2009—are eligible to retire on or after age 60 if they have credit for 10 years of service, or at any age if they have credit for 28 years of service.

ii. Correctional officers who have reached age 50 and have credit for 20 years of service as of September 30, 2009 are eligible to retire and are grandfathered.

iii. Nurses (RNs) employed by MHRH who have reached age 50 with 25 years of service by September 30, 2009 are eligible to retire and are grandfathered.

iv. Schedule B members—members with less than 10 years of contributory service as of June 30, 2005 and members hired on or after that date—are eligible for retirement on or after age 65 if they have credit for 10 years of service, or on or after age 62 if they have credit for 29 years of service. In addition, a member who attains age 62 with at least 20 years of service credit may retire with an actuarially reduced retirement benefit. The reduction is based on the difference between 65 and the member's age at retirement.

v. Correctional officers who are hired after September 30, 2009 become eligible to retire when they have reach age 55 and have credit for 25 years of service.

vi. Nurses (RNs) employed by MHRH who are hired after September 30, 2009 become eligible when they have reach age 55 and have credit for 25 years of service.

vii. Schedule A members who are not grandfathered, i.e., members who had at least 10 years of creditable service at June 30, 2005 but who were not eligible to retire on September 30, 2009, will be eligible for retirement at an individually determined age. This age is the result of interpolating between the retirement age under the rules applicable to grandfathered employees in (i) above and the retirement age applicable to members hired after September 30, 2009 in (iv) above. The interpolation is based on service as of September 30, 2009 divided by projected service at the retirement age under (i) above.

viii. Correctional officers hired on or before September 30, 2009 who are not eligible for retirement at that date will have an individually determined retirement age. This age is the result of interpolating between the retirement age for grandfathered employees in (ii) above and the retirement age applicable to members hired after September 30, 2009 in (v) above.

ix. Similarly, MHRH nurses (RNs) hired on or before September 30, 2009 who are not eligible to retire at that date will have an individually determined retirement age. This age is the result of interpolating between the retirement age for grandfathered employees in (iii) above and the retirement age applicable to members hired after September 30, 2009 in (vi) above.

c. Monthly Benefit: Upon retirement, members are eligible to commence a benefit determined as the sum of:

i. Benefit accrual of 1.0% per year for all service after June 30, 2015 unless the member had 20 or more years of service as of June 30, 2012 in which case the benefit accrual is 2.0% per year for service after June 30, 2015, and

ii. Benefit accrual of 1.0% per year for all service from July 1, 2012 through June 30, 2015, and

iii. Benefit accruals earned as of June 30, 2012, described in Section (d), below.

For purposes of calculating benefit accruals for service after June 30, 2012, the FAC is determined through retirement. Additionally, Correctional Officers who have completed 25 years of service on or before June 30, 2012 will continue to receive the benefit accrual rate under previous law for years 31 through 35 of service.

d. Benefit accruals earned as of June 30, 2012: The retirement benefit is a percentage of the member's monthly FAC. This percentage is a function of the member's service as described below. For purposes of determining the benefit accruals earned as of June 30, 2012, the service and FAC are frozen as of June 30, 2012.

i. For grandfathered Schedule A members (members with at least 10 years of contributory service at June 30, 2005 and eligible for retirement at September 30, 2009), benefits are based under this schedule (Schedule A):

| For Service In: | Years | Benefit Percentage Earned |
|---|---|---|
| The first 10 years of service | 1 – 10 | 1.7% per year |
| The next 10 years of service | 11 – 20 | 1.9% per year |
| The next 14 years of service | 21 – 34 | 3.0% per year |
| The next 1 year of service | 35 | 2.0% per year |

The maximum benefit is 80% of FAC.

ii. For Schedule B members (members with less than 10 years of contributory service as of June 30, 2005) and for all future hires, benefits are based on the following schedule (Schedule B):

| For Service In: | Years | Benefit Percentage Earned |
|---|---|---|
| The first 10 years of service | 1 – 10 | 1.6% per year |
| The next 10 years of service | 11 – 20 | 1.8% per year |
| The next 5 years of service | 21 – 25 | 2.0% per year |
| The next 5 years of service | 26 – 30 | 2.25% per year |
| The next 7 years of service | 31 – 37 | 2.50% per year |
| The next 1 year of service | 38 | 2.25% per year |

The maximum benefit is 80% of FAC.

iii. For Schedule A members who are not grandfathered, i.e., members who had at least 10 years of creditable service at June 30, 2005 but who were not eligible to retire on September 30, 2009, benefits are based on Schedule A (under (i) above) for service through September 30, 2009 and on Schedule B (under (ii) above) for service after September 30, 2009. The maximum benefit is 80% of FAC.

iv. MHRH nurses receive a benefit determined under the appropriate formula above.

v. Correctional Officers receive a benefit computed under a different formula:

| For Service In: | Years | Benefit Percentage Earned |
|---|---|---|
| The first 30 years of service | 1 – 30 | 2.0% per year |
| The next 1 year of service | 31 | 6.0% per year |
| The next 1 year of service | 32 | 5.0% per year |
| The next 1 year of service | 33 | 4.0% per year |
| The next 1 year of service | 34 | 3.0% per year |
| The next 14 years of service | 35 | 2.0% per year |

Members with less than 25 years of service as of June 30, 2012 receive a flat 2.0% per year of service for years 1-30, 3.0 per year of service for years 31-35, and 2.0% per year of service in excess of 35. The maximum benefit for correctional officers is the greater of the benefit accrual as of June 30, 2012 or 75% of FAC.

e. Payment Form: Benefits are paid as a monthly life annuity. Optional forms of payment are available; see Item 16 below.

f. Death benefit: After retirement, death benefits are based on the form of annuity elected. If no option is elected, i.e., if payments are made as a life annuity, there is a minimum death benefit equal to the sum of the member's contributions without interest, less the sum of the monthly benefit payments made before the member's death. In addition, a lump-sum death benefit is payable upon the death of any retired member, regardless of option elected. This lump sum is equal to a percentage of the lump-sum death benefit that was available to the member at the time of retirement. The percentage is 100% in the first year of retirement, 75% in the second year, 50% in the third year, and 25% in the fourth and subsequent years of retirement. However, in no event will the lump sum death benefit be less than $4,000.

**12. <u>Disability Retirement</u>:**

a. Eligibility: A member is eligible provided he/she has credit for at least five years of service or if the disability is work-related. Members are not eligible for an ordinary disability benefit if they are eligible for unreduced retirement.

b. Ordinary Disability Benefit: The benefit payable under the retirement formula, using FAC and service at the time of disability, but not less than 10 years of service.

c. Accidental Disability Benefit:

   i. For applications filed before or on September 30, 2009: An annual annuity equal to two-thirds (66 2/3%) of salary at the time of disability.

   ii. For applications filed after September 30, 2009: An accidental disability will be available at two-thirds (66 2/3%) of salary for members who are permanently and totally disabled from engaging in any occupation as determined by the retirement board. If the member is eligible for an accidental disability benefit but deemed able to work in other jobs, the benefit is limited to fifty percent (50%) of salary.

   iii. Benefits will be subject to an annual review by ERSRI.

d. Payment Form: The disability benefit commences immediately upon the member's retirement. Benefits cease upon recovery or reemployment. Disability benefits are payable as a monthly life annuity with a guarantee that, at the member's death, the sum of the member's contributions plus interest as of the date of retirement will be paid in a lump-sum to the member's beneficiary. All alternative forms of payment except for the Social Security Option are permitted in the case of disability retirement.

**13. <u>Deferred Termination Benefit</u>:**

a. Eligibility: A member with at least five years of service is vested. A vested member who does not withdraw his/her contributions from the fund is eligible for a deferred termination benefit.

b. Monthly Benefit: The monthly benefit is based on the retirement formula described above. Both FAC and service are determined at the time the member leaves active employment. Benefits may commence when the member has met the requirements for a retirement benefit.

c. Payment Form: The same as for Retirement above.

d. Death Benefit before retirement: A member who dies after leaving active service but before retiring is entitled to receive a benefit as described below in item 15.

e. Death Benefit after Retirement: The same as for Retirement above.

14. **Withdrawal (Refund) Benefit:**

a. Eligibility: All members leaving covered employment with less than five years of service are eligible. Optionally, vested members (those with five or more years of service) may withdraw their accumulated contributions in lieu of the deferred benefits otherwise due.

b. Benefit: The member who withdraws receives a lump-sum payment equal to the sum of his/her employee contributions. No interest is credited on these contributions.

15. **Death Benefit of Active or Inactive Members:**

a. Eligibility: Death must have occurred while an active or an inactive, non-retired member.

b. Basic Benefit: Upon the death of a nonvested member, or upon the death of an inactive, vested member, or upon the death of an active, unmarried member, a refund of the member's contributions (without interest) is paid. Upon the death of a vested, married, active member, the spouse may elect (i) the refund benefit described above, or (ii) a life annuity paid to the spouse or beneficiary. The amount of the annuity is equal to the amount which would have been paid had the member retired at the time of his death and elected the Joint and 100% Survivor option. If the member was not eligible for retirement, the annuity benefit is reduced 9% per year from the date at which the member would have been eligible had he or she remained in service.

c. Lump-sum Benefit: $800 per year of service, with a maximum benefit of $16,000 and a minimum of $4,000. This benefit is only available to active members.

d. Accidental Duty-related Death Benefit: If a member dies as the result of an accident while in the course of his or her duties, in lieu of the above benefits the member's spouse may elect to receive (i) a refund of all contributions made (including interest), and (ii) an annual life annuity equal to 50% of the member's salary at the time of death. The annuity benefit stops when the spouse remarries or dies, although it may be continued to any children under age 18 or to any dependent parents.

16. **Optional Forms of Payment:** In addition to a life annuity, ERSRI offers members these optional forms of payment on an actuarially equivalent basis:

a. Option 1 (Joint and 100% Survivor) - A life annuity payable while either the participant or his beneficiary is alive.

b. Option 2 (Joint and 50% Survivor) - A life annuity payable to the member while both the member and beneficiary are alive, reducing to 50% of this amount if the member predeceases the beneficiary.

c. Social Security Option – An annuity paid at one amount prior to age 62, and at a reduced amount after age 62, designed to provide a level total income when combined with the member's age 62 Social Security benefit. Benefits cease upon the member’s death. This option is only available for members with at least 10 years of contributory service as of June 30, 2005.

Actuarial equivalence is based on tables adopted by the Employees’ Retirement Board.

**17. <u>Post-retirement Benefit Increase</u>:**

a. For members with at least 10 years of contributory service as of June 30, 2005 who are retired or eligible to retire as of September 30, 2009, and for all members receiving a disability retirement benefit on that date: a 3.00% compound increase in their retirement benefit each year, beginning in January of the year in which the member reaches the third anniversary of retirement. This increase is not a function of actual increases in the cost of living.

b. For other members who were retired or were eligible to retire as of June 30, 2010: a compound increase in their retirement benefit each year equal to the increase in the CPI, effective on each anniversary date beginning on the third anniversary of retirement. This increase is limited to 3.00%.

c. For other members who were not retired or eligible to retire as of June 30, 2010: a compound increase in their first $35,000 of annual retirement benefit each year equal to the increase in the CPI, effective on each anniversary date beginning on the later of the member’s third anniversary of retirement and the month following their 65th birthday. This increase is limited to 3.00%. Additionally, the $35,000 annual COLA limit is applicable for benefits paid in 2010 and would be indexed annually to increase in the same manner as COLAs for Schedule B members (CPI increase for the year, not greater than 3.00%).

d. For members who retire after June 30, 2012: members will be eligible to receive cost of living increases at the later of the member’s third anniversary of retirement and the month following their SSNRA.

e. Effective July 1, 2012, the following provisions will apply to all members:

   i. The COLA will be suspended for all state employees, teachers, BHDDH nurses, correctional officers, judges and state police until the aggregate funding level of their plans exceeds 80%; however, an interim COLA will be granted in four-year intervals while the COLA is suspended. The first interim COLA may begin January 1, 2017.

ii. Effective July 1, 2015, the COLA is determined based on 50% of the plan's five-year average investment rate of return less 5.0% limited to a range of 0.0% to 4.0%, plus 50% of the lesser of 3.0% or last year's CPI-U increase for a total maximum increase of 3.00%. Previously, it was the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%

iii. The COLA will be limited to the first $25,000 of the member's annual pension benefit. For retirees and beneficiaries who retired on or before July 1, 2015, years in which a COLA is payable based on the every fourth year provision described in (i) above will be limited to the first $30,000. These limits will be indexed annually to increase in the same manner as COLAs, with the known values of $25,000 for 2013, $25,000 for 2014, $25,168 for 2015, $25,855 for 2016, and $26,098 for 2017.

f. In addition to the scheduled increases described in section (e) above, there will be a one-time 2% COLA paid in FY2016 on the first $25,000 of pension benefit for all retirees and beneficiaries who retired on or before June 30, 2012. There will also be two one-time stipends of $500 payable in FY2016 and FY2017 to retirees and beneficiaries who retired on or before June 30, 2015.

## Teachers' Survivors Benefits Plan (TSB)
## Summary of Plan & Benefit Provisions

1. **Plan:** The Teachers' Survivors Benefit Plan (TSB) is a qualified governmental plan designed to provide death benefits in the form of a monthly annuity to survivors of covered employees and retirees. For Governmental Accounting Standards purposes, it is a cost-sharing multiple employer plan.

2. **Authority:** Benefits under the TSB are established by the Rhode Island General Laws, Sections 16-16-25 through 16-16-38

3. **Administration:** The TSB is administered by the Retirement Board for the Employees' Retirement System of Rhode Island (ERSRI). However, the State investment commission is responsible for the investment of the trust assets, including the establishment of the asset allocation policy.

4. **Trust Fund:** All contributions are credited to the Teachers' Survivors Benefits Fund, and all benefit payments and refunds are paid from this fund. The fund is commingled with ERSRI for investment purposes.

5. **Plan Year:** A twelve-month period ending June 30.

6. **Coverage and Eligibility:** The TSB covers Rhode Island teachers who are (i) covered by the Employees' Retirement System of Rhode Island (ERSRI) but (ii) are not covered under Social Security. State employees, school support personnel, and teachers whose employment is covered by Social Security may not participate. Participation is mandatory for eligible teachers, and all teachers covered by the plan must make contributions. Survivors are eligible for benefits if the member has made contributions for at least six months prior to death or retirement. A covered teacher remains covered after retirement unless the teacher withdraws his or her contributions.

7. **Districts Covered:** The following school districts are not covered under Social Security, so all of their teachers participate in this plan:

| | |
|---|---|
| Barrington | Johnston |
| Bristol/Warren Regional | Lincoln |
| Burrillville | Little Compton |
| Central Falls Collaborative | Middletown |
| Coventry | Newport |
| Cranston | North Smithfield |
| Cumberland | Northern RI Collaborative |
| East Greenwich | Portsmouth |
| East Providence | Scituate |
| Foster | Smithfield |
| Foster-Glocester | Tiverton |
| Glocester | Westerly |

In addition, there are a number of active teachers who teach for districts that are now covered by Social Security, but at one time were not covered. When the district elected to be covered by Social Security, some teachers opted to remain outside that system. These teachers continue to participate in the TSB.

8. **Contributions:** An annual contribution of 2% of salary, up to $230 per year, is required. This contribution is divided equally between members and their employers. I.e., members contribute 1.00% of salary, up to $115 per year.

9. **Salary:** For TSB, the salary used for contribution purposes and to determine the amount of the survivor benefit is the same salary used for ERSRI.

10. **Benefit Schedule:** Benefits are paid as a monthly annuity to survivors upon the death of a covered active teacher or a covered retiree. To determine the benefit payable in any situation, the basic monthly spouse's benefit must first be determined. The basic monthly spouse's benefit is a function of the member's highest annual salary, as shown in the following schedule:

| Highest Annual Salary | Basic Monthly Spouse's Benefit |
|---|---|
| $17,000 or less | $ 825.00 |
| $17,001 - $25,000 | $ 962.50 |
| $25,001 - $33,000 | $ 1,100.00 |
| $33,001 - $40,000 | $ 1,237.50 |
| More than $40,000 | $ 1,375.00 |

If the member is retired at the time of death, the salary used is the highest annual salary that the member earned while teaching.

11. **Spouse's benefit:** If a covered, married, active or retired member dies, the spouse is entitled to receive the basic monthly spouse's benefit. If there are other survivors entitled to benefits, as described below, this benefit may be increased. The benefit paid to the spouse may not begin prior to age 60, unless family benefits are payable. Benefits to the spouse cease if the spouse remarries.

12. **Family Benefit:** If at the time of the member's death, the member is married and there are one or more eligible children, then a monthly benefit is payable to the spouse, even if younger than age 60. An eligible child is one under age 18, or under age 23 if a full-time student, or any age, if disabled prior to age 18. The family benefit is a multiple of the basic monthly spouse's benefit. If there is only one eligible child, then the multiple is 150%. If there are two or more eligible children, the multiple is 175%. The benefit continues as long as the spouse is alive and there is at least one eligible child. If the spouse remarries, benefits cease, although children's benefits will be due if there are still eligible children. If family benefits cease because there are no children who remain eligible, spouse's benefits will be paid when the spouse reaches age 60, if he or she has not remarried.

13. **Children's Benefits:** If a covered member dies, and there is no eligible spouse but there are one or more eligible children, then a child's benefit is payable. The amount payable by the plan is a multiple of the basic monthly spouse's benefit: 75% if there is only one eligible child, 150% if there are two eligible children, and 175% if there are three or more eligible children. Benefits cease when there are no children eligible.

14. **Dependent Parent's Benefits:** If a member dies with no surviving spouse and no eligible children, but the member has a dependent parent, a benefit equal to the basic monthly spouse's benefit is paid to the dependent parent for life. For this purpose, a dependent parent is one who:

    a. Is at least 60 years of age,
    b. Was dependent on the member for at least half his or her support,
    c. Has not remarried since the member's death, and
    d. Is not entitled to Social Security benefit from his or her own earnings equal to or greater the TSB benefit

15. **Summary of benefits:** The following table summarizes the benefit multiples that apply in the different family situations:

| Recipients | Multiple of Basic Spouse's Benefit |
|---|---|
| Spouse alone | 100% |
| Spouse and 1 Child | 150% |
| Spouse and 2 or More Children | 175% |
| One Child Alone | 75% |
| Two Children Alone | 150% |
| Three or More Children Alone | 175% |
| Dependent Parent | 100% |

16. **Refunds:** If, prior to retirement, a member terminates service in ERSRI or ceases to be covered under TSB for any other reason, a refund equal to the sum of the member's TSB contributions will be paid to him or her. No interest is credited on these contributions.

    If a covered, active teacher dies without an eligible spouse, eligible child or dependent parent, the accumulated member contribution balance, with interest credited at 5.00%, is refunded to the member's beneficiary or estate.

    At the time a member retires, the member must choose whether or not to remain covered under the TSB during retirement. If the member chooses not to remain covered, then a refund of the member's contributions, accumulated with interest at 5.00%, is paid to the member. If the member chooses to remain covered, no action is necessary. Retired members who do not elect a refund at the time of retirement may not later elect a refund.

If a covered retired teacher dies without an eligible spouse, eligible child or dependent parent, no benefit is payable, and the member's contribution account remains in the fund.

17. **Post-retirement Benefit Increases:** Spouses over age 60 receive a cost-of-living adjustment (COLA), each year, in January. The COLA is expressed as a percentage increase in the benefit, equal to the percentage cost-of-living increase provided to Social Security recipients. This increase is a function of increases in the Consumer Price Index. No COLA is paid on children's or family benefits.

## Municipal Employees' Retirement System (MERS)
## Summary of Plan & Benefit Provisions

1. **<u>Authority</u>:** The Municipal Employees' Retirement System (MERS) covers employees of certain participating Rhode Island municipalities and other local governmental units, such as housing authorities, water districts, etc. Benefits are described in Rhode Island General Laws, Title 45, Chapters 19, 19.1, 21, 21.1, 21.2, and 21.3.

2. **<u>Plan Year</u>:** A twelve-month period ending June 30th.

3. **<u>Administration</u>:** MERS is administered by the State of Rhode Island Retirement Board. However, the State Investment Commission is responsible for the investment of the trust assets, including the establishment of the asset allocation policy.

4. **<u>Type of Plan</u>:** MERS is a qualified governmental defined benefit retirement plan. Separate contribution rates are determined for each participating governmental unit. For Governmental Accounting Standards Board purposes, it is an agent multiple-employer plan.

5. **<u>Eligibility</u>:** General employees, police officers and firefighters employed by electing municipalities participate in MERS. Teachers and administrators are covered by the separate Employees' Retirement System of Rhode Island, but other school employees may be covered by MERS. Eligible employees become members at their date of employment. Anyone employed by a municipality at the time the municipality joins MERS may elect not to be covered. Elected officials may opt to be covered by MERS. Employees covered under another plan maintained by the municipality may not become members of MERS. Police officers and/or firefighters may be designated as such by the municipality, in which case the special contribution and benefit provisions described below will apply to them, or they may be designated as general employees with no special benefits. Members designated as police officers and/or firefighters are treated as belonging to a unit separate from the general employees, with separate contribution rates applicable.

6. **<u>Employee Contributions</u>:** Effective July 1, 2012, General employees contribute 1.00% of their salary per year, and police officers and firefighters contribute 7.00%. General MERS active members with 20 years of service as of June 30, 2012 will contribute 8.25% beginning July 1, 2015. Also, beginning July 1, 2015, MERS Police and Fire active members will contribute 9.00%. In addition, if the municipality has elected one of the optional cost-of-living provisions, an additional member contribution of 1.00% of salary is required. The municipality, at its election, may choose to "pick up" the members' contributions for its employees under the provisions of Internal Revenue Code (IRC) Section 414(h).

7. **<u>Salary</u>:** Salary includes the member's base earnings plus any payments under a regular longevity or incentive plan. Salary excludes overtime, unused sick and vacation leave, severance pay, and other extraordinary compensation. Certain amounts that are excluded from

taxable wages, such as amounts sheltered under a Section 125 plan or amounts picked up by the employer under IRC Section 414(h), are not excluded from salary.

8. **Employer Contributions:** Each participating unit's contribution rate is determined actuarially. Contributions determined in a given actuarial valuation go into effect two years after the actuarial valuation.

9. **Service:** Employees receive credit for service while a member. In addition, a member may purchase credit for certain periods by making an additional contribution to purchase the additional service. Special rules and limits govern the purchase of additional service and the contribution required.

10. **Final Average Compensation (FAC):** Prior to July 1, 2012 and for general employee members eligible to retire as of June 30, 2012, the average was based on the member's highest three consecutive annual salaries. Effective July 1, 2012, the average was based on the member's highest five consecutive annual salaries. Once a member retires or is terminated, the applicable FAC will be the greater of the member's highest three year FAC as of July 1, 2012 or the five year FAC as of the retirement/termination date. Monthly benefits are based on one-twelfth of this amount.

11. **Retirement:**

    a. General Employees: Eligibility

        i. Members with less than five years of contributory service as of June 30, 2012 and members hired on or after that date are eligible for retirement on or after their Social Security normal retirement age.

        ii. Members who had at least five years of contributory service as of June 30, 2012 will be eligible for retirement at an individually determined age. This age is the result of interpolating between the member's prior Retirement Date, described in Section (e) below, and the retirement age applicable to members hired after June 30, 2012 in (a) above. The interpolation is based on service as of June 30, 2012 divided by projected service at the member's prior Retirement Date. The minimum retirement age is 59.

        iii. Members with 10 or more years of contributory service on June 30, 2012 may choose to retire at their prior Retirement Date if they continue to work and contribute until that date. If option is elected, the retirement benefit will be calculated using the benefits accrued as of June 30, 2012, i.e., the member will accumulate no additional defined benefits after this date, but the benefit will be paid without any actuarial reduction.

iv. Effective July 1, 2015, members will be eligible to retire with full benefits at the earlier of their current RIRSA date described in sections (a) – (c) above or upon the attainment of age 65 with 30 years of service, age 64 with 31 years of service, age 63 with 32 years of service, or age 62 with 33 years of service.

v. A member who is within five years of reaching their retirement eligibility date, as described in this section, and has 20 or more years of service, may elect to retire at any time with an actuarially reduced benefit.

vi. Prior to July 1, 2012, members were eligible for retirement on or after age 58 if they had credit for 10 or more years of service, or at any age if they had credit for at least 30 years of service. Members eligible to retire before July 1, 2012 were not impacted by the changes to retirement eligibility above.

b. General Employees: Monthly Benefit

2.00% of the member's monthly FAC for each year of service prior to July 1, 2012 and 1.00% of the member's monthly FAC for each year of service from July 1, 2012 through June 30, 2105. 1.0% per year for all service after June 30, 2015 unless the member had 20 or more years of service as of June 30, 2012 in which case the benefit accrual is 2.0% per year for service after June 30, 2015. The benefit cannot exceed 75% of the member's monthly FAC

c. Police and Fire Employees: Eligibility

i. Members are eligible to retire when they are at least 50 years old and have a minimum of 25 years of contributing service or if they have 27 years of contributing service at any age. Members with less than 25 years of contributing service are eligible for retirement on or after their Social Security normal retirement age.

ii. Members who, as of June 30, 2012, had at least 10 years of contributing service, had attained age 45, and had a prior Retirement Date (described in Section (e)) before age 52 may retire at age 52.

iii. Active members on June 30, 2012 may choose to retire at their prior Retirement Date if they continue to work and contribute until that date. If option is elected, the retirement benefit will be calculated using the benefits accrued as of June 30, 2012, i.e., the member will accumulate no additional defined benefits after this date, but the benefit will be paid without any actuarial reduction.

iv. A member who is within five years of reaching their retirement eligibility date, as described in this section, and has 20 or more years of service, may elect to retire at any time with an actuarially reduced benefit.

v. Prior to July 1, 2012, members designated as police officers or firefighters were eligible for retirement at or after age 55 with credit for at least 10 years of service or at any age with credit for 25 or more years of service. Members were also eligible to retire and receive a reduced benefit if they are at least age 50 and have at least 20 years of service. If the municipality elected to adopt the 20-year retirement provisions for police officers and/or firefighters, then such a member was eligible to retire at any age with 20 or more years of service. Members eligible to retire before July 1, 2012 were not impacted by the changes to retirement eligibility above.

d. Police and Fire Employees: Monthly Benefit

i. 2.00% of the member's monthly FAC for each year of service, up to 37.5 years (75% of FAC maximum)

ii. If the optional 20-year retirement provisions were adopted by the municipality prior to July 1, 2012: 2.50% of the member's monthly FAC for each year of service prior to July 1, 2012 and 2.00% of the member's monthly FAC for each year of service after July 1, 2012. The benefit cannot exceed 75% of the member's monthly FAC.

iii. Active members (including future hires), members who retire after July 1, 2015 and after attaining age 57 with 30 years of service will have a benefit equal to the greater of their current benefit described in (a) and (b) above and one calculated based on a 2.25% multiplier for all years of service.

e. Payment Form: Benefits are paid as a monthly life annuity. Optional forms of payment are available; see item 16. Below.

f. Death Benefit

i. After retirement, death benefits are based on the form of annuity elected. If no option is elected, i.e., if payments are made as a life annuity, there is a minimum death benefit equal to the sum of the member's contributions without interest, less the sum of the monthly benefit payments made before the member's death. In addition, a lump-sum death benefit is payable upon the death of any retired member, regardless of option elected. This lump sum is equal to a percentage of the lump-sum death benefit that was available to the member at the time of retirement. The percentage is 100% in the first year of retirement, 75% in the second year, 50% in the third year, and 25% in the fourth and subsequent years of retirement. However, in no event will the lump sum death benefit be less than $4,000.

ii. Special Police/Fire Death Benefit: A member that does not elect an optional form of payment at retirement will be eligible the active member death benefit, which is an annuity of 30% of the member's salary that will be paid to the member's spouse upon death, for life or until remarriage. Children's benefits may also be payable.

**12. Disability Retirement:**

a. Eligibility: A member is eligible for a disability retirement provided he/she has credit for at least five years of service or if the disability is work-related. Members are not eligible for an ordinary disability benefit if they are eligible for unreduced retirement.

b. Ordinary Disability Benefit: The benefit payable under the retirement formula, using FAC and service at the time of disability, but not less than 10 years of service.

c. Occupational Disability Benefit: An annual annuity equal to two-thirds of salary at the time of disability.

d. Payment Form: The disability benefit commences immediately upon the member's retirement. Benefits cease upon recovery or reemployment. Disability benefits are payable as a monthly life annuity with a guarantee that, at the member's death, the sum of the member's contributions plus interest as of the date of retirement will be paid in a lump-sum to the member's beneficiary. All alternative forms of payment except for the Social Security Option are permitted in the case of disability retirement.

**13. Deferred Termination Benefit:**

a. Eligibility: A member with at least ten years of service is vested. Effective July 1, 2012, a member with at least 5 years of service is vested. A vested member who does not withdraw his/her contributions from the fund is eligible for a deferred termination benefit.

b. Monthly Benefit: The monthly benefit is based on the retirement formula described above. Both FAC and service are determined at the time the member leaves active employment. Benefits may commence at Social Security normal retirement age provided that the member has met the requirements for a retirement benefit.

c. Payment Form: The same as for Retirement above.

d. Death Benefit before retirement: A member who dies after leaving active service but before retiring is entitled to receive a benefit as described below in Item 15.

e. Death Benefit after Retirement: The same as for Retirement above.

14. **Withdrawal (Refund) Benefit:**

a. Eligibility: All members leaving covered employment with less than ten years (5 years, effective July 1, 2012) of service are eligible. Optionally, vested members (described in Item 13, above) may withdraw their accumulated contributions in lieu of the deferred benefits otherwise due.

b. Benefit: The member who withdraws receives a lump-sum payment equal to the sum of his/her employee contributions. No interest is credited on these contributions.

15. **Death Benefit of Active or Inactive Members:**

a. Eligibility: Death must have occurred while an active member or while an inactive, non-retired member. The basic benefit plus the lump-sum benefit are paid on behalf of an active, general employee, and the special police/fire benefit and the lump-sum benefit are paid on behalf of an active police officer or firefighter. If the death was due to accidental, duty-related causes, the accidental death benefit is paid regardless of whether the employee is a general employee, a police officer, or a firefighter. Inactive members receive a refund of their accumulated contributions without interest.

b. Basic Benefit: Upon the death of a non-vested member, or upon the death of a vested, inactive member, or upon the death of an active, unmarried member, a refund of the member's contributions (without interest) is paid. Upon the death of a vested, married, active member, the spouse may elect (i) the refund benefit described above, or (ii) a life annuity paid to the spouse or beneficiary. The amount of the annuity is equal to the amount which would have been paid had the member retired at the time of his death and elected the Joint and 100% Survivor option. If the member was not eligible for retirement, the annuity benefit is reduced 9% per year from the date at which the member would have been eligible had he or she remained in service.

c. Lump-sum Benefit: $800 per year of service, with a maximum benefit of $16,000 and a minimum of $4,000. This benefit is only available to active members.

d. Special Police/Fire Death Benefit: In lieu of the basic benefit above, if a police officer or firefighter dies while an active member, an annuity of 30% of the member’s salary will be paid to the member’s spouse, for life or until remarriage. Children’s benefits may also be payable.

e. Accidental Duty-related Death Benefit: If a member dies as the result of an accident while in the course of his or her duties, in lieu of the above benefits the member’s spouse may elect to receive (i) a refund of all contributions made (including interest), and (ii) an annual life annuity equal to 50% of the member’s salary at the time of death. The annuity benefit stops when the spouse remarries or dies, although it may be continued to any children under age 18 or to any dependent parents.

16. **Optional Forms of Payment:** In addition to a life annuity, MERS offers members these optional forms of payment on an actuarially equivalent basis:

  a. Option 1 (Joint and 100% Survivor) - A life annuity payable while either the participant or his beneficiary is alive.

  b. Option 2 (Joint and 50% Survivor) - A life annuity payable to the member while both the member and beneficiary are alive, reducing to 50% of this amount if the member predeceases the beneficiary.

  c. Social Security Option – An annuity paid at one amount prior to age 62, and at a reduced amount after age 62, designed to provide a level total income when combined with the member's age 62 Social Security benefit. Benefits cease upon the member's death.

  Actuarial equivalence is based on tables adopted by the Employees' Retirement Board.

17. **Post-retirement Benefit Increase:** For members who retire after June 30, 2012: members will be eligible to receive cost of living increases at the later of the member's third anniversary of retirement and the month following their SSNRA (age 55 for members designated as police officers and/or firefighters). When a municipality elects coverage, it may elect either COLA C (covering only current and future active members and excluding members already retired) or COLA B (covering current retired members as well as current and future active members).

  a. The COLA will be suspended for any unit whose funding level is less than 80%; however, an interim COLA may be granted in four-year intervals while the COLA is suspended. The first interim COLA may begin January 1, 2018.

  b. Effective July 1, 2015, the COLA is determined based on 50% of the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%, plus 50% of the lesser of 3.0% or last year's CPI-U increase for a total maximum increase of 3.50%. Previously, it was the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%.

  c. The COLA will be limited to the first $25,000 of the member's annual pension benefit. For retirees and beneficiaries who retired on or before July 1, 2015, years in which a COLA is payable based on the every fourth year provision described in (i) above will be limited to the first $30,000. These limits will be indexed annually to increase in the same manner as COLAs, with the known values of $25,000 for 2013, $25,000 for 2014, $25,168 for 2015, $25,855 for 2016, and $26,098 for 2017.

**18. Special Provisions Applying to Specific Units:** Prior to July 1, 2012, some units had specific provisions that apply only to that unit. The transition rules outlined in Item 11, above, apply to these units in a similar manner.

The following summarizes those provisions:

a. Rhode Island General Law §45-21.2-22.1 contains special provisions that apply to employees of Burrillville Police, but only if adopted by the Town of Burrillville. The Town adopted these provisions effective July 1, 2006. Under these special provisions, the retirement benefit for a member with 20 or more years of service is improved. The new formula is 60.00% x Final Average Compensation (FAC), plus 1.50% x FAC x Years of Service in Excess of 20, with a maximum benefit equal to 75% of FAC. In addition to this benefit change, the member contribution rate increased from 9.00% to 10.20%.

b. Rhode Island General Law § 45-21.2-6.1, § 45-21.2-5(5), and § 45-21.2-14(d) contain special provisions that apply to members of the South Kingstown police department. Under these special provisions, the member receives a retirement allowance which is a life annuity terminable at the death of the annuitant, and is an amount equal to the sum of two and one-half percent (2.5%) of final compensation multiplied by the years of service accrued after July 1, 1993 and two percent (2%) of final compensation multiplied by the years of service accrued prior to July 1, 1993. The annual retirement allowance in no event shall exceed seventy-five percent (75%) of final compensation. The member contribution rate is 8.00%, plus 1.00% for the adoption of the optional COLA, for a total of 9.00%.

c. Rhode Island General Law § 45-21.2-5 (9) contains special provisions that apply to members of the Hopkinton police department. Under these special provisions, the final compensation for benefit computation is based on the members' highest year of earnings. In addition, the members shall receive a three percent (3%) escalation of their pension payment compounded each year on January 1st following the year of retirement and continuing on an annual basis on that date. The member contribution rate is 9.00%. Compensation for benefit purposes includes base, longevity, and holiday pay.

d. Rhode Island General Law § 45-21.2-5 (7) and § 45-21.2-14 contain special provisions that apply to members of the Cranston fire department hired after July 1, 1995 or with less than 5 years of service at that date. Under these special provisions, the final compensation for benefit computation is based on the members' highest year of earnings. In addition, the members shall receive a three percent (3%) escalation of their pension payment compounded each year on January 1st following the year of retirement and continuing on an annual basis on that date. The member contribution rate is 10.00%. Compensation for benefit purposes includes base, longevity, and holiday pay.

e. Rhode Island General Law §§ 45-21.2-5 (8) and § 45-21.2-14 contain special provisions that apply to members of the Cranston police department hired after July 1, 1995 or with less than 5 years of service at that date. Under these special provisions, the final compensation for benefit computation is based on the members' highest year of earnings. In addition, the members shall receive a three percent (3%) escalation of their pension payment compounded each year on January 1st following the year of retirement and continuing on an annual basis on that date. The member contribution rate is 10.00%. Compensation for benefit purposes includes base, longevity, and holiday pay.

f. Rhode Island General Law §§ 45-21.2-6.3 contains special provisions that apply to employees of Richmond Police. The Town adopted these provisions on April 3, 2008, effective July 1, 2008. Under these special provisions, members are eligible to retire after attaining 22 years of service. The retirement benefit for a member with 22 or more years of service was improved to 50.00% x Final Average Compensation (FAC), plus 2.2727% x FAC x Years of Service in Excess of 22, with a maximum benefit equal to 75% of FAC.

## State Police Retirement Benefits Trust (SPRBT)
## Summary of Plan & Benefit Provisions

1. **Effective Date and Authority:** The State Police Retirement Benefits Trust (SPRBT) became effective on July 1, 1989 for State police officers originally hired on or after July 1, 1987. Benefits are described in Rhode Island General Laws, Title 42, Chapter 28.

2. **Plan Year:** A twelve-month period ending June 30th.

3. **Administration:** The State Police Retirement Benefits Trust is administered by the State of Rhode Island Retirement Board. However, the State Treasurer is responsible for the investment of the trust assets, including the establishment of the asset allocation policy. Assets are commingled for investment purposes with those of the Employees' Retirement System of Rhode Island and various other plans and programs.

4. **Type of Plan:** The State Police Retirement Benefits Trust is a qualified governmental defined benefit retirement plan. For Governmental Accounting Standards Board purposes, it is a single-employer plan.

5. **Eligibility:** All State police officers, and the Superintendent of State Police, hired on or after July 1, 1987, participate in this plan. Benefits for State police officers hired before July 1, 1987 are being paid by the State from the general assets of the State, on a pay-as-you-go basis. Eligible employees become members at their date of employment.

6. **Salary for Contribution Purposes:** Salary includes the member's base earnings plus any payments under a regular longevity or incentive plan. Salary excludes, unused sick and vacation leave, severance pay, and other extraordinary compensation. Members may contribute on up to 400 hours of overtime during their final averaging period to be included in the determination of their benefit. Certain amounts that are excluded from taxable wages, such as amounts sheltered under a Section 125 plan or amounts picked up by the employer under IRC Section 414(h), are not excluded from salary.

7. **Employee Contributions:** State police officers contribute 8.75% of their salary per year. The State "picks up" the members' contributions for its employees under the provisions of Internal Revenue Code (IRC) Section 414(h).

8. **Employer Contributions:** The State contributes an actuarially determined percentage of the member's annual salary. Contributions determined in a given actuarial valuation go into effect two years after the actuarial valuation.

9. **<u>Service</u>:** Employees receive credit for service while a member. In addition, a member may purchase credit for certain periods by making an additional contribution to purchase the additional service. Special rules and limits govern the purchase of additional service and the contribution required.

10. **<u>Final Salary (Salary for Benefit Purposes)</u>:** Final Salary includes base pay, longevity increases, up to 400 hours of overtime pay, holiday pay and the member's clothing allowance. For members who work more than 25 years, their Final Salary shall not be more than the Final Salary in the 25th year.

11. **<u>Final Average Compensation (FAC)</u>:** For members eligible to retire after June 30, 2012, their FAC will be based on the average of the highest five consecutive years of compensation, which includes base pay, longevity, up to 400 hours of overtime pay and holiday pay.

12. **<u>Retirement</u>:**

    a. Eligibility:
        i. Members other than Superintendent of State Police can retire on or after the attainment of a 50% benefit multiplier.

        ii. The Superintendent of State Police may retire on or after age 60 if he has credit for 10 years of service.

    b. Monthly Benefit:
        i. For members hired before June 30, 2007:
            1. For members eligible to retire as of June 30, 2012, their benefit multiplier will be two and one half percent (2.5%) for a member's first twenty (20) total years, plus three percent (3%) for years after 20. Their monthly benefit will be Final Salary times the benefit multiplier divided by 12.

            2. For members who become eligible to retire after July 1, 2012, their benefit multiplier will be two and one half percent (2.5%) for a member's years of service prior to July 1, 2012, plus two percent (2%) for years thereafter. Their monthly benefit will be FAC times the benefit multiplier divided by 12.

        ii. For members hired after June 30, 2007: Their benefit multiplier is two percent (2.0%) for all years of service. Their monthly benefit will be FAC times the benefit multiplier divided by 12.

        iii. The Superintendent of State Police receives a minimum benefit of 50% of FAC. The member also earns an additional 3% of FAC for each year of service in excess of 25.

iv. In no event shall a member's original retirement allowance exceed sixty-five percent (65%) of FAC.

v. Benefits accrued as of June 30, 2012 are protected.

c. Payment Form: Benefits are paid as a monthly life annuity. There are no optional forms of payment available.

d. Death benefit: After the death of a retired member, if the member was married, a benefit will be paid to the spouse equal to 2.00% of the member’s Final Salary for each year of service. There is a minimum benefit of 25% of Final Salary. Benefits are increased one-third for each dependent child. The maximum benefit is 50% of Final Salary. Benefits may not begin before the spouse is age 40, and benefits stop upon the spouse’s death or remarriage. Effective July 1, 2012, death benefits will be based on FAC, and not Final Salary.

**13. <u>Disability Retirement</u>:**

a. Eligibility: A member is eligible if the disability is work-related. (Non work-related disabilities result in a refund.)

b. Occupational Disability Benefit: 75% of Final Salary.

c. Payment Form: The disability benefit commences immediately upon the member's retirement. Benefits cease upon recovery or reemployment. Disability benefits are payable as a monthly life annuity. The same provisions that apply upon the death of a retired member apply upon the death of a disabled member.

**14. <u>Refunds</u>:**

a. Eligibility: All members leaving covered employment prior to eligibility for other benefits

b. Benefit: A lump-sum payment equal to the sum of his/her employee contributions. No interest is credited on these contributions.

**15. <u>Death Benefit of Active Members</u>:**

a. Eligibility: Death must have occurred from a service-related cause, or the member must have 10 or more years of service.

b. Ordinary Benefit: After the death of an active member, if the member was married, a benefit will be paid to the spouse equal to 2.00% of the member’s Final Salary for each year of service. There is a minimum benefit of 25% of Final Salary. Benefits are increased one-third for each dependent child. The maximum benefit is 50% of Final Salary. Benefits may not begin before the spouse is age 40 without a dependent child, and benefits stop upon the spouse's death or remarriage. Effective July 1, 2012, death benefits will be based on FAC, and not Final Salary.

c. Duty-related Death Benefit: 75% of Final Salary, paid to the spouse or other dependent relative. Benefits cease when the spouse or other relatives die or are no longer dependent.

**16. <u>Post-retirement Benefit Increase</u>:**

a. The first COLA will be granted at the later of age 55 and the member's third anniversary of retirement for retirees as of June 30, 2012 and the later of SSNRA and the member's third anniversary of retirement for all other current and future retirees.

b. Effective July 1, 2012, the following provisions will apply to all members:

   i. The COLA will be suspended for all state employees, teachers, BHDDH nurses, correctional officers, judges and state police until the aggregate funding level of their plans exceeds 80%; however, an interim COLA will be granted in four-year intervals while the COLA is suspended. The first interim COLA may begin January 1, 2017.

   ii. Effective July 1, 2015, the COLA is determined based on 50% of the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%, plus 50% of the lesser of 3.0% or last year's CPI-U increase for a total maximum increase of 3.50%. Previously, it was the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%.

   iii. The COLA will be limited to the first $25,000 of the member's annual pension benefit. For retirees and beneficiaries who retired on or before July 1, 2015, years in which a COLA is payable based on the every fourth year provision described in (i) above will be limited to the first $30,000. These limits will be indexed annually to increase in the same manner as COLAs, with the known values of $25,000 for 2013, $25,000 for 2014, $25,168 for 2015, $25,855 for 2016, $26,098 for 2017, and $26,291 for 2018.

c. In addition to the increases described in section (b) above, there will be a one-time 2% COLA paid in FY2016 on the first $25,000 of pension benefit for all retirees and beneficiaries who retired on or before June 30, 2012. There will also be two one-time stipends of $500 payable in FY2016 and FY2017 to retirees and beneficiaries who retired on or before June 30, 2015.

# Judicial Retirement Benefits Trust (JRBT)
# Summary of Plan & Benefit Provisions

1. **Effective Date and Authority:** The Judicial Retirement Benefits Trust (JRBT) became effective on January 1, 1990 for judges hired on or after that date. Benefits are described in Rhode Island General Laws, Title 8, Chapters 3, 8, and 16, Title 28, Chapter 30, and Title 31, Chapter 43.

2. **Plan Year:** A twelve-month period ending June 30th.

3. **Administration:** The Judicial Retirement Benefits Trust is administered by the State of Rhode Island Retirement Board. However, the State Investment Commission is responsible for the investment of the trust assets, including the establishment of the asset allocation policy. Assets are commingled for investment purposes with those of the Employees' Retirement System of Rhode Island and various other plans and programs.

4. **Type of Plan:** The Judicial Retirement Benefits Trust is a qualified governmental defined benefit retirement plan. For Governmental Accounting Standards Board purposes, it is a single-employer plan.

5. **Eligibility:** All judges or justices of the Supreme Court, a superior court, a district court, a family court, an administrative adjudication court or a workers' compensation court participate in this plan if they were hired on or after January 1, 1990. (These are referred to collectively as state judges.) Benefits for state judges hired before January 1, 1990 are being paid by the state from the general assets of the state, on a pay-as-you-go basis. Eligible state judges become members at their date of employment.

6. **Salary:** Contributions are based on the judge's salary. Benefits are based on the judge's salary at the time of retirement.

7. **Employee Contributions:** State judges contribute 8.75% of their salary per year. Effective July 1, 2012, State judges (excluding justices of supreme, superior, family, and district courts) will contribute 12.00% of their salary per year. Active justices of supreme, superior, and family courts as of June 30, 2011 contribute the rate in effect as of June 30, 2012. The State "picks up" the members' contributions for its employees under the provisions of Internal Revenue Code (IRC) Section 414(h).

8. **Employer Contributions:** The State contributes an actuarially determined percentage of the member's annual salary. Contributions determined in a given actuarial valuation go into effect two years after the actuarial valuation.

9. **Final Average Compensation (FAC):**

   a. For judges who became members on or before July 2, 1997, one-twelfth of the judge's annual salary at the time of retirement.

b. For judges who became members after July 2, 1997 but before July 1, 2009, one-twelfth of the average of the judge's highest three consecutive annual salaries.

c. For judges who became members on or after July 1, 2009, one-twelfth of the average of the judge's highest five consecutive annual salaries.

d. Benefits for death while an active member are based on the member's salary at the time of death, regardless of when the judge became a member.

**10. <u>Full Retirement</u>:**

a. Eligibility: All judges are eligible for unreduced retirement at or after age 65 if the judge has served for 20 years, or at or after age 70 after 15 years of service.

b. Monthly Benefit:

   i. Judges who were appointed prior to January 1, 2009 receive 100% of FAC at retirement.

   ii. Judges who were appointed on or after January 1, 2009 but prior to July 1, 2009 receive 90% of FAC at retirement, and take an additional 10% reduction to 80% of FAC at retirement if they wish to elect the spouse's death benefit.

   iii. Judges who were appointed on or after July 1, 2009 receive 80% of FAC at retirement, or 70% of FAC at retirement if they wish to elect the spouse's death benefit.

c. Payment Form: Benefits are paid as a monthly life annuity. Members appointed prior to January 1, 2009 automatically receive the spouse's death benefit described below. Members appointed on or after January 1, 2009 must elect to a reduced benefit as described above if they wish to receive the spouse's death benefit. There are no other forms of payment available.

d. Death Benefit: After the death of a retired member, if the member was married, 50% of the retiree's benefit is paid to the surviving spouse for life (or until remarriage) if spouse's death benefit is elected. (No election or benefit reduction is required for members appointed prior to January 1, 2009.)

**11. <u>Reduced Retirement</u>:**

a. Eligibility: A judge is eligible for a reduced retirement benefit at age 65 if the judge has served for 10 years, or at any age after 20 years of service.

b. Reduced Retirement Benefit:

   i. For judges who were appointed prior to January 1, 2009: 75% of FAC at retirement.

ii. For judges who were appointed on or after January 1, 2009 but prior to July 1, 2009: receive 70% of FAC at retirement or take an additional 10% reduction to 60% of FAC at retirement if they wish to elect the spouse's death benefit.

iii. For judges who were appointed on or after July 1, 2009: receive 65% of FAC at retirement, or 55% of FAC at retirement if they wish to elect the spouse's death benefit.

c. Payment Form: Same as for Full Retirement.

d. Death Benefit: Same as for Full Retirement.

**12. Refunds:**

a. Eligibility: All judges leaving covered employment for a reason other than death or retirement.

b. Benefit: A lump-sum payment equal to the sum of his/her employee contributions. No interest is credited on these contributions.

**13. Death Benefit of Active Members:** After the death of an active member, if the member was married, a benefit will be paid to the spouse until his/her death or remarriage. The benefit is equal to 25% of the judge's salary at death if the member had less than seven years of service. If the judge had at least seven but less than 15 years of service, the benefit is equal to 1/3 of the judge's salary at death. If the judge had at least 15 years of service or if the judge was eligible for retirement, the spouse receives 50% of the judge's salary at death. Benefits are payable until the spouse's death or remarriage. Benefits may be paid to any minor children after the death of the spouse. If an active member dies without having a spouse or minor children, a refund is paid to the member's beneficiary.

**14. Post-retirement Benefit Increase:**

a. For members who retired or will be eligible for retirement as of June 12, 2010: members receive an increase equal to 3.00% of the original benefit each year, beginning in January of the year in which the member reaches the third anniversary of retirement. The increase applies to both retirement and death benefits. This increase is not tied in any way to actual increases in the cost of living. (Judges of the administrative adjudication and workers compensation courts receive a compound 3.00% increase, rather than a simple 3.00% increase.)

b. For members who are or were formally justices of supreme, superior, family, and district courts and were not retired or were not eligible to retire as of June 12, 2010: The member will receive the first COLA upon the later of their third anniversary of retirement or when the member reaches age 65. The annual increase in the member's benefit will be equal to the lesser of their original benefit and the COLA limit in effect in the year the member retires, multiplied by the percentage increase in CPI up to a maximum of 3.0% per year. The COLA will be provided on a simple basis. The applicable annual COLA limit will be $35,000 in 2010, and increase annually by the percentage increase in the Consumer Price Index (CPI) up to a maximum of 3.0% per year. No COLA would be paid on any part of the annual benefit in excess of this limit. The annual increase in the COLA limit will be determined on a compound basis.

c. For members who are or were formally judges of the administrative adjudication court, traffic tribunal, and workers' compensation court and were not retired or were not eligible to retire as of June 12, 2010: The member will receive the first COLA upon the later of their third anniversary of retirement or when the member reaches age 65. The annual increase in the member's benefit will be equal to the lesser of the current benefit and the current COLA limit, multiplied by the percentage increase in CPI up to a maximum of 3.0% per year. The COLA will be provided on a compound basis. The applicable annual COLA limit will initially be $35,000, and increase annually by the percentage increase in the Consumer Price Index (CPI) up to a maximum of 3.0% per year. No COLA would be paid on any part of the annual benefit in excess of this limit. The annual increase in the COLA limit will be determined on a compound basis.

d. For members who retire after June 30, 2012: members will be eligible to receive cost of living increases at the later of the member's third anniversary of retirement and the month following their SSNRA.

e. Effective July 1, 2012, the following provisions will apply to all members:

    i. The COLA will be suspended for all state employees, teachers, BHDDH nurses, correctional officers, judges and state police until the aggregate funding level of their plans exceeds 80%; however, an interim COLA will be granted in four-year intervals while the COLA is suspended. The first interim COLA may begin January 1, 2017.

    ii. Effective July 1, 2015, the COLA is determined based on 50% of the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%, plus 50% of the lesser of 3.0% or last year's CPI-U increase for a total maximum increase of 3.50%. Previously, it was the plan's five-year average investment rate of return less 5.5% limited to a range of 0.0% to 4.0%.

    iii. The COLA will be limited to the first $25,000 of the member's annual pension benefit. For retirees and beneficiaries who retired on or before July 1, 2015, years in which a COLA is payable based on the every fourth year provision described in (i) above will be limited to the first $30,000. These limits will be indexed annually to increase in the same manner as COLAs, with the known values of $25,000 for 2013, $25,000 for 2014, $25,168 for 2015, $25,855 for 2016, and $26,098 for 2017.

f. In addition to the scheduled increases described in section (e) above, there will be a one-time 2% COLA paid in FY2016 on the first $25,000 of pension benefit for all retirees and beneficiaries who retired on or before June 30, 2012. There will also be two one-time stipends of $500 payable in FY2016 and FY2017 to retirees and beneficiaries who retired on or before June 30, 2015.

## Rhode Island Judicial Retirement Fund Trust (RIJRFT)
## Summary of Plan & Benefit Provisions

The benefit provisions reflected in the actuarial valuation in effect on June 30, 2017 are the same as those summarized in the JRBT Summary of Benefit Provisions listed in the Actuarial Section of this report. The benefit provisions are also the same as those summarized in the Board adopted June 30, 2017 actuarial valuation of the JRBT.

## State Police Retirement Fund Trust (SPRFT)
## Summary of Plan & Benefit Provisions

The benefit provisions reflected in the actuarial valuation in effect on June 30, 2017 are the same as those summarized in the SPRBT Summary of Benefit Provisions listed in the Actuarial Section of this report. The benefit provisions are also the same as those summarized in the Board adopted June 30, 2017 actuarial valuation of the SPRBT.

## Employees' Retirement System (ERS)
## Summary of Actuarial Methods and Assumptions

### I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

### II. Actuarial Cost Method

The actuarial valuation uses the Entry Age actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial accrued liability (UAAL).

A. First, the actuarial present value of future benefits is determined by discounting the projected benefits for each member back to the valuation date using the assumed investment return rate as the discount rate. For active members, the projected benefits are based on the member's age, service, gender and compensation, and based on the actuarial assumptions. The calculations take into account the probability of the member's death, disability, or termination of employment prior to becoming eligible for a retirement benefit, as well as the possibility of the member will remain in service and receive a service retirement benefit. Future salary increases are anticipated. The present value of the expected benefits payable to all active members is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits. Liabilities for future members are not included.

B. The employer contributions required to support the benefits are determined as a level percentage of salary and consist of a normal contribution and an amortization contribution.

C. The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. The salary-weighted average of these rates is the normal cost rate. This calculation reflects the plan provisions that apply to each individual member.

D. The employer normal cost rate is equal to (i) the normal cost rate, minus (ii) the member contribution rate.

E. The actuarial accrued liability is equal to the present value of all benefits less the present value of future normal costs. The present value of the supplemental member contributions for members with 20 years of service as of June 30, 2012 is also subtracted. The unfunded actuarial accrued liability (UAAL) is then determined as (i) the actuarial accrued liability, minus (ii) the actuarial value of assets.

F. The amortization contribution rate is the level percentage of payroll required to reduce the UAAL to zero over the remaining amortization period. The employer contribution rate determined by this valuation will not be effective until two years after the valuation date. The determination of the contribution rate reflects this deferral. The amortization payment for the applicable fiscal year is first determined based on the individual amortization bases. The covered payroll is projected forward for two years, and we then determine the amortization rate by dividing the amortization payment by the projected payroll. Contributions are assumed to be made monthly throughout the year.

The UAAL was initially being amortized over the remainder of a closed 30-year period from June 30, 1999. In conjunction with The Rhode Island Retirement Security Act of 2011, the amortization period was reset to 25 years as of June 30, 2010 for the UAAL that existed at that time. In addition, in conjunction with the Article 21 legislation, the amortization period for the local portion of the UAAL of the Teacher's Plan existing as of June 30, 2014 was reset to 25 years from June 30, 2014. New gains and losses each year will be amortized over individual 20-year periods. At any time that the System is in an overfunded status, the amortization schedule will be a rolling 20-year amortization of any surplus.

## III. <u>Actuarial Value of Assets</u>

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

## IV. <u>Actuarial Assumptions</u>

A. Economic Assumptions

1. <u>Investment return</u>: 7.00% per year, compounded annually, composed of an assumed 2.50% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of all investment and administrative expenses.

2. <u>Overall wage inflation</u>: For State Employees, 3.25% per year composed of an assumed 2.50% inflation assumption rate and a 0.75% general productivity component. For Teachers, 3.00% per year composed of an assumed 2.50% inflation assumption rate and a 0.25% general productivity component. This assumption represents wage inflation for the economy as a whole and is used a starting point for determining other wage related assumptions and is used as the rate of growth for new entrant salaries in any open group projections.

3. Salary increase rate: The sum of (i) a 3.50% wage inflation assumption (composed of a 2.75% price inflation assumption and a 0.75% additional general increase) for State Employees or the sum of (i) a 3.00% wage inflation assumption (composed of a 2.50% price inflation assumption and a 0.50% additional general increase) for Teachers, and (ii) a service-related component as shown below:

| Salary Increase Rates | | | | |
|---|---|---|---|---|
| | State Employees | | Teachers | |
| Service | Service-Related Component | Total Increase | Service-Related Component | Total Increase |
| (1) | (2) | (3) | (4) | (5) |
| 1 | 1.00% | 4.25% | 10.00% | 13.00% |
| 2 | 2.00% | 5.25% | 9.00% | 12.00% |
| 3 | 3.00% | 6.25% | 6.25% | 9.25% |
| 4 | 2.75% | 6.00% | 5.50% | 8.50% |
| 5 | 2.75% | 6.00% | 5.00% | 8.00% |
| 6 | 2.50% | 5.75% | 5.00% | 8.00% |
| 7 | 1.25% | 4.50% | 4.50% | 7.50% |
| 8 | 1.00% | 4.25% | 4.25% | 7.25% |
| 9 | 1.00% | 4.25% | 4.00% | 7.00% |
| 10 | 1.00% | 4.25% | 4.00% | 7.00% |
| 11 | 1.00% | 4.25% | 0.00% | 3.00% |
| 12 | 2.00% | 5.25% | 0.00% | 3.00% |
| 13 | 1.25% | 4.50% | 0.00% | 3.00% |
| 14 | 1.00% | 4.25% | 0.00% | 3.00% |
| 15 | 1.00% | 4.25% | 0.00% | 3.00% |
| 16 | 1.00% | 4.25% | 0.00% | 3.00% |
| 17 | 0.50% | 3.75% | 0.00% | 3.00% |
| 18 | 0.50% | 3.75% | 0.00% | 3.00% |
| 19 | 0.50% | 3.75% | 0.00% | 3.00% |
| 20 | 0.50% | 3.75% | 0.00% | 3.00% |
| 21 | 0.50% | 3.75% | 0.00% | 3.00% |
| 22-24 | 0.25% | 3.50% | 0.00% | 3.00% |
| 25 or more | 0.00% | 3.25% | 0.00% | 3.00% |

Salary increases are assumed to occur once a year, on July 1. Therefore, the pay used for the period year following the valuation date is equal to the reported pay for the prior year, increased by the salary increase assumption. For employees with less than one year of service, the reported rate of pay is used rather than the fiscal year salary paid.

4. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 3.00% for State Employees and 2.50% for Teachers per year. This increase rate is solely due to the effect of wage inflation on salaries and the demographics of the current population, with no allowance for future membership growth.

5. Post-retirement benefit increase: Post-retirement benefit increases are assumed to be 2.1%, per annum, while the plan has a funding level that exceeds 80%; however, an interim COLA will be granted in four-year intervals while the COLA is suspended. The first such COLA will be applicable in Calendar Year 2017. As of June 30, 2017, it is assumed that the COLAs will be suspended for 10 years due to the current funding level of the plans. The actual amount of the COLA is determined based on 50% of the plan's five-year average investment rate of return minus 5.00% which will range from zero to 4.0%, and 50% of the lesser of 3% or last year's CPI-U increase for a total maximum increase of 3.00%.

B. Demographic Assumptions

1. Post-termination mortality rates (non-disabled)
    a. Male state employees: RP-2014 Combined Healthy for Males with Blue Collar adjustments, projected with Scale Ultimate MP16.

    b. Female state employees: RP-2014 Combined Healthy for Females, projected with Scale Ultimate MP16.

    c. Male teachers: RP-2014 Combined Healthy for Males with White Collar adjustments, projected with Scale Ultimate MP16.

    d. Female teachers: RP-2014 Combined Healthy for Females with White Collar adjustments, projected with Scale Ultimate MP16.

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection

| Life Expectancy for an Age 65 Retiree in Years | | | | | |
|---|---|---|---|---|---|
| Group | Year of Retirement | | | | |
| | 2010 | 2015 | 2020 | 2025 | 2030 |
| State Employee - Male | 21.0 | 21.4 | 21.8 | 22.3 | 22.7 |
| State Employee - Female | 24.1 | 24.5 | 24.9 | 25.3 | 25.8 |
| Teacher – Male | 23.4 | 23.8 | 24.2 | 24.6 | 25.0 |
| Teacher – Female | 25.1 | 25.5 | 25.9 | 26.2 | 26.6 |

2. Post-retirement mortality (disabled lives): One set of rates is used for both state employees and teachers

    a. Males: RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

    b. Females: RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

    Sample rates are shown below:

| Number of Deaths per 100 | | |
|---|---|---|
| Age | Males | Females |
| 25 | 0.20 | 0.09 |
| 30 | 0.49 | 0.23 |
| 35 | 0.86 | 0.42 |
| 40 | 1.27 | 0.66 |
| 45 | 1.68 | 0.92 |
| 50 | 2.04 | 1.19 |
| 55 | 2.34 | 1.45 |
| 60 | 2.66 | 1.70 |
| 65 | 3.17 | 2.09 |
| 70 | 4.03 | 2.82 |
| 75 | 5.43 | 4.10 |

3. Pre-retirement mortality: Use the RP-2014 employee table for males and females. Teacher rates are 75% of the base table. Sample rates are shown below:

| Number of Deaths per 100 | | | | |
|---|---|---|---|---|
| | State Employees | | Teachers | |
| Age | Males | Females | Males | Females |
| 25 | 0.05 | 0.02 | 0.04 | 0.01 |
| 30 | 0.05 | 0.02 | 0.03 | 0.02 |
| 35 | 0.05 | 0.03 | 0.04 | 0.02 |
| 40 | 0.06 | 0.04 | 0.05 | 0.03 |
| 45 | 0.10 | 0.07 | 0.07 | 0.05 |
| 50 | 0.17 | 0.12 | 0.13 | 0.08 |
| 55 | 0.28 | 0.17 | 0.21 | 0.13 |
| 60 | 0.47 | 0.24 | 0.35 | 0.18 |
| 65 | 0.83 | 0.37 | 0.62 | 0.28 |
| 70 | 1.39 | 0.63 | 1.04 | 0.47 |

4. Disability rates: Sample rates are shown below. Ordinary disability rates are not applied to members eligible for retirement. One half the accidental disabilities are assumed to be totally and permanently disabled from any occupation.

| | Number of Disabilities per 1,000 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Age | State Ordinary Males | State Accidental Males | State Ordinary Females | State Accidental Females | Teachers Ordinary Males | Teachers Accidental Males | Teachers Ordinary Females | Teachers Accidental Females |
| 25 | 0.32 | 0.14 | 0.36 | 0.11 | 0.27 | 0.03 | 0.18 | 0.03 |
| 30 | 0.39 | 0.17 | 0.44 | 0.13 | 0.33 | 0.03 | 0.22 | 0.03 |
| 35 | 0.53 | 0.23 | 0.60 | 0.18 | 0.45 | 0.05 | 0.30 | 0.05 |
| 40 | 0.77 | 0.33 | 0.88 | 0.26 | 0.66 | 0.07 | 0.44 | 0.07 |
| 45 | 1.26 | 0.54 | 1.44 | 0.43 | 1.08 | 0.11 | 0.72 | 0.11 |
| 50 | 2.14 | 0.92 | 2.44 | 0.73 | 1.83 | 0.18 | 1.22 | 0.18 |
| 55 | 3.54 | 1.52 | 4.04 | 1.21 | 3.03 | 0.30 | 2.02 | 0.30 |
| 60 | 4.94 | 2.12 | 5.64 | 1.69 | 4.23 | 0.42 | 2.82 | 0.42 |
| 65 | 8.09 | 3.47 | 9.24 | 2.77 | 6.93 | 0.69 | 4.62 | 0.69 |

5. Termination rates: (for causes other than death, disability, or retirement) are a function of the member's gender and service. Termination rates are not applied to members eligible for retirement. Rates are shown below:

| Service | State Employees | Teachers |
|---|---|---|
| 1 | 0.160000 | 0.150000 |
| 2 | 0.101160 | 0.100000 |
| 3 | 0.080768 | 0.075000 |
| 4 | 0.068839 | 0.064811 |
| 5 | 0.060375 | 0.048163 |
| 6 | 0.053810 | 0.038256 |
| 7 | 0.048446 | 0.031695 |
| 8 | 0.043911 | 0.027033 |
| 9 | 0.039983 | 0.023553 |
| 10 | 0.036518 | 0.020857 |
| 11 | 0.033418 | 0.018708 |
| 12 | 0.030614 | 0.016956 |
| 13 | 0.028054 | 0.015500 |
| 14 | 0.025699 | 0.014271 |
| 15 | 0.023519 | 0.013220 |
| 16 | 0.021489 | 0.012312 |
| 17 | 0.019590 | 0.011518 |
| 18 | 0.017807 | 0.010820 |
| 19 | 0.016125 | 0.010200 |
| 20 | 0.014535 | 0.009646 |
| 21 | 0.013026 | 0.009149 |
| 22 | 0.011590 | 0.008700 |
| 23 | 0.010222 | 0.008292 |
| 24 | 0.008914 | 0.007920 |
| 25 | 0.007662 | 0.007580 |

6. Retirement rates (unreduced):
   For State Employees (except Correctional Officers) and MERS General: a flat 20% per year retirement probability for members eligible for unreduced retirement. A 35% retirement probability at first eligibility will be only applied if they have reached age 65 or with at least 25 years of service.

   For Teachers: a flat 25% per year retirement probability for members under the age of 67 eligible for unreduced retirement, a flat 35% per year retirement probability for members at age 67 or older eligible for unreduced retirement. A 40% retirement probability at first eligibility will be only applied if they have reached age 65 or with at least 25 years of service.

   For Correctional Officers: A set of unisex rates, indexed by service, as shown below. Because of the enactment of Article 7 in 2009 and the RIRSA in 2011, the retirement assumption was modified for members whose retirement ages were delayed. Members who would have been assumed to retire prior to under the rules in effect before the enactment of the provision changes are assumed to retire when first eligible for an unreduced benefit. This demand is recognized by adding a 5% probability for every year the member has been deferred.

| Corrections | |
|---|---|
| Service | Ret. Rate |
| 20-24 | 2.0% |
| 25-27 | 3.0% |
| 28 | 4.0% |
| 29 | 5.0% |
| 30 | 6.0% |
| 31 | 7.0% |
| 32 | 8.0% |
| 33 | 9.0% |
| 34 | 10.0% |
| 35 | 30.0% |
| 36-39 | 25.0% |
| 40 | 100.0% |

   For members with 10 or more years of contributory service on June 30, 2012 and that reach their Article 7 Retirement Date within three years of June 30, 2012, 5% are assumed to retire upon first attainment of their Article 7 Retirement Date and receive their benefits accrued as of June 30, 2012.

7. Reduced retirement for Schedule B members (state employees and teachers, males and females): Rates based on the years from Normal Retirement Age, as shown below:

| Years from Normal Retirement Age | Ret. Rate |
|---|---|
| 5 | 2% |
| 4 | 2% |
| 3 | 2% |
| 2 | 3% |
| 1 | 4% |

C. Other Assumptions

1. Valuation payroll (used for determining the amortization contribution rate): Prior aggregate fiscal year payroll projected forward one year using the overall payroll growth rate.

2. Percent married: 85% of employees are assumed to be married.

3. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

4. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity. The spousal annuity death benefit for vested married participants is valued using a static optional form conversion factor of 0.84 and 0.78 for males and females respectively.

5. For active death benefits, the liability is initially calculated based on the ordinary death benefit provisions, and then a 7.5% load is applied to account for duty related benefits.

6. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

7. Recovery from disability: None assumed.

8. Remarriage: It is assumed that no surviving spouse will remarry and there will be no children's benefit.

9. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

10. Investment and administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

11. Inactive members: Liabilities for inactive members are approximated as a multiple of their member contribution account balances. For non-vested inactive members, the multiple is 1.0. For vested inactive members, the multiple is 8.0 for members with 25 or more years of service, 3.0 for vested inactive members age 45 or older with less than 25 years of service, and 1.0 for other vested inactive members younger than age 45.

12. Decrement timing: For all non-teachers employees (State Employees, MERS General, and MERS P&F), decrements are assumed to occur at the middle of the year. For Teachers the retirement and termination decrements are assumed to occur at the beginning of the year, while death and disability are assumed to occur at the middle of the year.

13. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

14. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

15. Incidence of contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

16. Benefit Service: All members are assumed to accrue one year of eligibility service each year.

17. All calculations were performed without regard to the compensation limit in IRC Section 401(a)(17) and the benefit limit under IRC Section 415.

## V. Participant Data

Participant data was supplied on electronic files. There are separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active members included name, an identification number, gender, a code indicating whether the member was active or inactive, a code indicating employee type (State Employee or Teacher), date of birth, service, salary, date of last contribution, accumulated member contributions without interest, accrued benefit multiplier as of June 30, 2014, Final Average Compensation as of June 30, 2012, Article 7 Retirement Date, and the Rhode Island Retirement Security Act Retirement Date. For retired members and beneficiaries, the data included name, an identification number, gender, date of birth, date of retirement, amount of benefit, the amount of adjustment after age 62 for anyone electing the Social Security option, a code indicating the option elected and the type of retiree (service retiree, disabled retiree, beneficiary), and if applicable, the joint pensioner's date of birth and gender.

Salary supplied for the current year was based on the earnings for the fiscal year preceding the valuation date. However, for members with less than one year of service, the current rate of salary was used. This salary was adjusted by the salary increase rate for one year.

In defining who was an active member, members with a date of last contribution in the final quarter of the fiscal year were considered active. Otherwise, the member was defined as inactive.

To correct for incomplete and inconsistent data, we first attempted to pulled data from prior valuation files and then made general assumptions to fill in the rest. These modifications had no material impact on the results presented.

## Teachers' Survivors Benefits Plan (TSB)
## Summary of Actuarial Methods and Assumptions

### I. Basic Actuarial Assumptions

Except for special assumptions that are specific to the Teachers' Survivors Benefit Plan, described below, the actuarial assumptions used in the valuation are the same as the ones used for Teachers in the June 30, 2017 actuarial valuation of the Employees' Retirement System of Rhode Island (ERSRI). For example, the valuation uses the same 7.00% investment return rate, the same salary increase rates, the same mortality, disability, and retirement rates used in that valuation.

### II. Special TSB Assumptions

A. Family makeup: The following schedule shows the assumptions about the makeup of the member's family at the time of death:

| Family Makeup | Probability (By Attained Age) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 | 65 |
| Spouse Only | 5% | 14% | 14% | 10% | 11% | 15% | 32% | 75% | 70% |
| Spouse and 1 Child | 5% | 12% | 20% | 17% | 22% | 23% | 18% | 0% | 0% |
| Spouse and 2 or More Children | 4% | 13% | 36% | 46% | 41% | 35% | 24% | 0% | 0% |
| One Child Alone | 5% | 6% | 3% | 7% | 8% | 10% | 6% | 0% | 0% |
| Two Children Alone | 3% | 7% | 4% | 7% | 6% | 3% | 1% | 0% | 0% |
| Three or More Children Alone | 1% | 4% | 4% | 5% | 4% | 1% | 1% | 0% | 0% |
| Dependent Parent Alone | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| No Dependents | 77% | 44% | 19% | 8% | 8% | 13% | 18% | 25% | 30% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

B. Ages: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses. Parents are assumed to be 30 years older than the member, and children are assumed to be 30 years younger than the member. All children are assumed to remain in school until age 23.

C. Remarriage: It was assumed that no spouses would remarry after the member's death.

D. Refunds at retirement: Please refer to the Family Makeup grid above for the assumed percentage of members will elect a refund at retirement. (it is the proportion of the membership assumed to be without an eligible dependent.)

E. Deferred beneficiaries: No specific data was available for deferred beneficiaries—those spouses of deceased members who are not yet age 60 and who are not receiving family benefits. They will be entitled to receive a spouse's benefit upon reaching age 60. To estimate this liability, we assumed that these members would receive an immediate refund of their TSB contributions.

F. Inactive members with contributions on deposit: It was assumed that 100% of members who are inactive, nonretired, and non-vested would receive an immediate refund of their TSB contributions.

G. Cost-of-living adjustment (COLA): COLAs are assumed to be 2.50% per year, since that is the ERSRI inflation assumption.

## III. Actuarial Methods

A. Valuation date: The TSB plan is valued as of June 30, the last day of the plan's fiscal year. Valuations in the future will be done biennially, in every odd year.

B. Actuarial cost method: The Entry Age Normal actuarial cost method is used to determine the normal cost and actuarial accrued liability. The normal cost is the level dollar amount (not the level percentage of pay used for ERSRI) required to fund a member's benefit from entry age to ultimate retirement. The level-dollar version of the Entry Age Normal method was used for consistency with the current contribution requirement of $115.00/year for almost all members.

C. Actuarial asset method: The market value of fund assets is used as the actuarial value, rather than using a smoothed value.

## IV. Participant Data

Participant data was supplied on electronic files. There were separate files for (i) covered active and inactive, nonretired members, (ii) retirees who had left their contributions on deposit, and (iii) survivors receiving benefits. For active and inactive/nonretired members, we used the same participant data that we used for the valuation of ERSRI, but excluded members not covered under the TSB. For covered retirees, we received a file showing each member's date of birth, sex, TSB contribution account balance (without interest), and final average salary. For beneficiaries receiving benefits, we received a file that included for each deceased member the spouse's (or child's) date of birth, sex, the amount of the monthly benefit, and a code indicating the kind of benefit being paid (e.g., spouse's benefit, family benefit with two or more children, child's benefit, etc.).

# Municipal Employees' Retirement System (MERS)
# Summary of Actuarial Methods and Assumptions

## I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

## II. Actuarial Cost Method

The actuarial valuation uses the Entry Age actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial accrued liability (UAAL).

The employer normal cost rate is the total normal cost rate, less the member contribution rate. The total normal cost rate is the level percentage-of-pay contribution which would theoretically pay for all benefits if it had been made each year from the inception of the plan and if there had never been any changes of benefits, any changes of assumptions or methods, or any experience gains or losses. The normal costs are determined on an individual basis.

The actuarial accrued liability is the difference between the actuarial present value of all future benefits and the actuarial present value of future normal costs. It is the amount to which the normal costs would have accumulated under the assumptions described in the preceding paragraph. The unfunded actuarial accrued liability (UAAL) is the difference between the actuarial accrued liability and the actuarial value of assets.

The amortization contribution rate is the level percentage of payroll required to reduce the UAAL to zero over the remaining amortization period. The employer contribution rate determined by this valuation will not be effective until two years after the valuation date. The determination of the contribution rate reflects this deferral. The amortization payment for the applicable fiscal year is first determined based on the individual amortization bases. The covered payroll is projected forward for two years, and we then determine the amortization rate by dividing the amortization payment by the projected payroll. Contributions are assumed to be made monthly throughout the year.

For underfunded units, the amortization period is 25 years as measured from June 30, 2010, or 19 years as of the current valuation date for the existing UAAL. In conjunction with the Article 21 legislation, employers were given the option to reset the amortization period for the UAAL existing as of June 30, 2014 to 25 years from June 30, 2014. All new gains and losses each year will be amortized over individual 20-year periods. At any time that a unit is in an overfunded status, the amortization schedule will be a rolling 20-year amortization of any surplus.

## III. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. The actuarial value is calculated in the aggregate for all units combined, and then it is allocated to each unit in proportion to that unit's market value.

## IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.00% per year, compounded annually, composed of an assumed 2.50% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of all investment and administrative expenses.

2. Salary increase rate: For general employees, the sum of (i) a 3.25% wage inflation assumption (composed of a 2.50% price inflation assumption and a 0.75% additional general increase), and (ii) a service-related component as shown below:

| General Employees | | |
|---|---|---|
| Years of Service | Service-Related Component | Total Increase |
| 1 | 4.00% | 7.25% |
| 2 | 3.00 | 6.25 |
| 3 | 2.75 | 6.00 |
| 4 | 2.50 | 5.75 |
| 5 | 2.25 | 5.50 |
| 6 | 2.00 | 5.25 |
| 7 | 1.25 | 4.50 |
| 8 | 0.75 | 4.00 |
| 9-10 | 0.50 | 3.75 |
| 11-15 | 0.25 | 3.50 |
| 16 or more | 0.00 | 3.25 |

For police/fire employees, the sum of (i) a 4.00% wage inflation assumption (composed of a 2.50% price inflation assumption and a 1.50% additional general increase), and (ii) a service-related component as shown below:

| Police/Fire Employees | | |
|---|---|---|
| Years of Service | Service-Related Component | Total Increase |
| 1 | 10.00% | 14.00% |
| 2 | 9.00 | 13.00 |
| 3 | 7.00 | 11.00 |
| 4 | 4.00 | 8.00 |
| 5 | 2.50 | 6.50 |
| 6 | 3.00 | 7.00 |
| 7 | 0.50 | 4.50 |
| 8 | 0.50 | 4.50 |
| 9 or more | 0.00 | 4.00 |

Salary increases are assumed to occur once a year, on July 1. Therefore, the pay used for the period year following the valuation date is equal to the reported pay for the prior year, increased by the salary increase assumption. For employees with less than one year of service, the reported rate of pay is used rather than the fiscal year salary paid.

3. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 3.00% for MERS General Employees and MERS P&F per year. This increase rate is solely due to the effect of wage inflation on salaries, with no allowance for future membership growth.

4. Post-retirement benefit increase: Post-retirement benefit increases are assumed to be 2.10%, per annum for all units. The actual COLA will be determined based on the plan's four-year average investment rate of return minus 5.25% and will range from zero to 4.0%. It is known that the COLA for calendar years 2017 and 2018 will be 0.74% and 1.51% respectively, and this has been reflected in the valuation.

B. Demographic Assumptions

1. Post-retirement mortality rates:
   a. Male employees: RP-2014 Combined Healthy for Males with Blue Collar adjustments, projected with Scale Ultimate MP16.

   b. Female employees: RP-2014 Combined Healthy for Females, projected with Scale Ultimate MP16.

   c. Disabled males – RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

   d. Disabled females – RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

2. Pre-retirement mortality (combined ordinary and duty):
   a. Male employees: RP-2014 Employee table for Males.

   b. Female employees: RP-2014 Employee table for Females.

   Sample rates are shown below:

| Number of Deaths per 100 | | |
|---|---|---|
| Age | Males | Females |
| 25 | 0.05 | 0.02 |
| 30 | 0.05 | 0.02 |
| 35 | 0.05 | 0.03 |
| 40 | 0.06 | 0.04 |
| 45 | 0.10 | 0.07 |
| 50 | 0.17 | 0.11 |
| 55 | 0.28 | 0.17 |
| 60 | 0.47 | 0.24 |
| 65 | 0.83 | 0.37 |
| 70 | 1.39 | 0.63 |

3. Disability rates: Sample rates per 1,000 active members are shown below. Ordinary disability rates are not applied to members eligible for unreduced retirement.

| Age | Number of Disabilities per 1,000 | | | | | |
|---|---|---|---|---|---|---|
| | General Employees, Ordinary, Males | General Employees, Accidental, Males | General Employees, Ordinary, Females | General Employees, Accidental, Females | Police & Fire, Ordinary, Males and Females | Police & Fire, Accidental, Males and Females |
| 25 | 0.45 | 0.14 | 0.23 | 0.05 | 0.26 | 1.70 |
| 30 | 0.55 | 0.17 | 0.28 | 0.06 | 0.33 | 2.20 |
| 35 | 0.75 | 0.23 | 0.38 | 0.08 | 0.44 | 2.90 |
| 40 | 1.10 | 0.33 | 0.55 | 0.11 | 0.66 | 4.40 |
| 45 | 1.80 | 0.54 | 0.90 | 0.18 | 1.08 | 7.20 |
| 50 | 3.05 | 0.92 | 1.53 | 0.31 | 1.82 | 12.10 |
| 55 | 5.05 | 1.52 | 2.53 | 0.51 | 1.82 | 12.10 |
| 60 | 7.05 | 2.12 | 3.53 | 0.71 | 1.82 | 12.10 |
| 65 | 11.55 | 3.47 | 5.78 | 1.16 | 1.82 | 12.10 |

4. Termination rates: (for causes other than death, disability, or retirement) are a function of the member's service. Termination rates are not applied to members eligible for retirement. Rates are shown below:

| Service | General Employees, Males & Females | Police & Fire, Males & Females |
|---|---|---|
| 1 | 0.175000 | 0.100000 |
| 2 | 0.118774 | 0.047300 |
| 3 | 0.101396 | 0.036903 |
| 4 | 0.086148 | 0.030821 |
| 5 | 0.072887 | 0.026506 |
| 6 | 0.061471 | 0.023158 |
| 7 | 0.051757 | 0.020424 |
| 8 | 0.043604 | 0.018111 |
| 9 | 0.036868 | 0.016108 |
| 10 | 0.031408 | 0.014342 |
| 11 | 0.027082 | 0.012761 |
| 12 | 0.023746 | 0.011332 |
| 13 | 0.021259 | 0.010026 |
| 14 | 0.019479 | 0.008826 |
| 15 | 0.018263 | 0.007714 |
| 16 | 0.017470 | 0.006679 |
| 17 | 0.016956 | 0.005711 |
| 18 | 0.016579 | 0.004802 |
| 19 | 0.016198 | 0.003944 |
| 20 | 0.015669 | 0.000000 |
| 21 | 0.014851 | 0.000000 |
| 22 | 0.013602 | 0.000000 |
| 23 | 0.011778 | 0.000000 |
| 24 | 0.009239 | 0.000000 |
| 25 | 0.005841 | 0.000000 |

5. Retirement rates (unreduced):

For MERS General Employees: a flat 20% per year retirement probability for members eligible for unreduced retirement. A 35% retirement probability at first eligibility will be only applied if they have reached age 65 or with at least 25 years of service.

For MERS P&F: Unisex, service based rates are used for police and fire. Rates depend on whether the unit had elected the optional 20-year retirement provisions. All members are assumed to retire upon reaching age 65 with at least ten years of service. Because of the enactment of the RIRSA in 2011, the retirement assumption was modified for members not eligible for retirement by July 1, 2012. Members who would have been assumed to retire at an earlier age under the rules in effect before the enactment of the provision changes are assumed to retire when first eligible for an unreduced benefit. This demand is recognized by adding a 5% probability for every year the member has been deferred.

| Police and Fire | | |
|---|---|---|
| Service | Units with the Optional 20-year retirement election | Units without the Optional 20-year retirement election |
| 20 | 12.0% | |
| 21 | 10.0% | |
| 22 | 10.0% | |
| 23 | 10.0% | |
| 24 | 12.0% | |
| 25 | 14.0% | 50.0% |
| 26 | 16.0% | 16.0% |
| 27 | 18.0% | 18.0% |
| 28 | 20.0% | 20.0% |
| 29 | 20.0% | 20.0% |
| 30+ | 35.0% | 35.0% |

100% of members eligible to retire as of June 30, 2012 are assumed to retire once they reach 35 years of service. All members not eligible to retire as of June 30, 2012 are assumed retire at SSNRA, if eligible.

For members with 10 or more years of contributory service on June 30, 2012 and that reach their original retirement date within three years of June 30, 2012, 5% are assumed to retire upon first attainment of their original retirement date and receive their benefits accrued as of June 30, 2012.

6. Reduced retirement rates: No early retirements are assumed for police and fire. Rates for general employees are based on the years from Retirement Eligibility for unreduced benefits, as shown below:

| Years from Normal Retirement Age | Ret. Rate |
|---|---|
| 5 | 2% |
| 4 | 2% |
| 3 | 2% |
| 2 | 3% |
| 1 | 4% |

C. Other Assumptions

1. Valuation payroll (used for determining the amortization contribution rate): Prior aggregate fiscal year payroll projected forward one year using the overall payroll growth rate.

2. Percent married: 80% of employees are assumed to be married.

3. For the special post-retirement police and fire survivor benefit, we have assumed 80% of members will have a spouse at the time of retirement and 10% of those members would choose option 1 or option 2.

4. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

5. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity. The spousal annuity death benefit for vested married participants is valued using optional form conversion factors based on a unisex mortality table.

6. For active death benefits, the liability is initially calculated based on the ordinary death benefit provisions, and then a 7.5% load is applied to account for duty related benefits.

7. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

8. Recovery from disability: None assumed.

9. Remarriage: It is assumed that no surviving spouse will remarry and there will be no children's benefit.

10. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

11. Investment and administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

12. Inactive members: Liabilities for inactive members are approximated as a multiple of their member contribution account balances. For nonvested inactive members, the multiple is 1.0. For vested inactive members, the multiple is 8.0 for members with 25 or more years of service, 3.0 for vested inactive members age 45 or older with less than 25 years of service, and 1.0 for other vested inactive members younger than age 45.

13. Decrement timing: For all members, decrements are assumed to occur at the middle of the year.

14. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

15. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

16. Incidence of contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll

shown in this report, and the actual payroll payable at the time contributions are made.

17. Benefit Service: All members are assumed to accrue one year of eligibility service each year.

18. All calculations were performed without regard to the compensation limit in IRC Section 401(a)(17) and the benefit limit under IRC Section 415.

## V. Participant Data

Participant data was supplied on electronic files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active members included name, identification number, sex, a code indicating whether the member was active or inactive, date of birth, service, salary, unit indicator, date of last contribution, accumulated member contributions without interest, accrued benefit multiplier as of Valuation Date, Final Average Compensation as of June 30, 2012, and the Rhode Island Retirement Security Act Retirement Date. For retired members and beneficiaries, the data included date of birth, sex, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and a form of payment code.

Salary supplied for the current year was based on the earnings for the year preceding the valuation date. This salary was adjusted by the salary increase rate for one year. However, for members with less than one year of service, the current rate of salary was used. This salary was adjusted by the salary increase rate for one year.

In defining who was an active member, members with a date of last contribution in the final quarter of the fiscal year were considered active. Otherwise, the member was defined as inactive.

Beneficiary data for police and fire employees was completed, based on the Age Difference stated above, if the information was not originally supplied on the electronic files.

To correct for incomplete and inconsistent data, we first attempted to pull data from prior valuation files and then made general assumptions to complete the rest. These had no material impact on the results presented.

For members who transferred during the prior fiscal year adjustments were made for certain data records as needed. The active record for a member who transferred into a MERS unit was compared to the prior active record to test for reasonability of service and account balances relative to the prior year's active record and adjusted if needed. The inactive record for any member who transferred out of a MERS unit was deleted when calculating the inactive liability.

## State Police Retirement Benefits Trust (SPRBT)
## Summary of Actuarial Methods and Assumptions

**I. Valuation Date**

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

**II. Actuarial Cost Method**

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial accrued liability (UAAL).

A. First, the actuarial present value of future benefits is determined by discounting the projected benefits for each member back to the valuation date using the assumed investment return rate as the discount rate. For active members, the projected benefits are based on the member's age, service, sex and compensation, and based on the actuarial assumptions. The calculations take into account the probability of the member's death, disability, or termination of employment prior to becoming eligible for a retirement benefit, as well as the possibility of the member will remain in service and receive a service retirement benefit. Future salary increases are anticipated. The present value of the expected benefits payable to all active members is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits. Liabilities for future members are not included.

B. The employer contributions required to support the benefits are determined as a level percentage of salary, and consist of a normal contribution and an amortization contribution.

C. The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. The salary-weighted average of these rates is the normal cost rate. This calculation reflects the plan provisions that apply to each individual member.

D. The employer normal cost rate is equal to (i) the normal cost rate, minus (ii) the member contribution rate.

E. The actuarial accrued liability is equal to the present value of all benefits less the present value of future normal costs. The unfunded actuarial accrued liability

(UAAL) is then determined as (i) the actuarial accrued liability, minus (ii) the actuarial value of assets.

F. The amortization contribution rate is the level percentage of payroll required to reduce the UAAL to zero over the remaining amortization period. The employer contribution rate determined by this valuation will not be effective until two years after the valuation date. The determination of the contribution rate reflects this deferral. The amortization payment for the applicable fiscal year is first determined based on the individual amortization bases. The covered payroll is projected forward for two years, and we then determine the amortization rate by dividing the amortization payment by the projected payroll. Contributions are assumed to be made monthly throughout the year.

1. The UAAL was initially being amortized over the remainder of a closed 30-year period from June 30, 1999. In conjunction with The Rhode Island Retirement Security Act of 2011, the amortization period was reset to 25 years as of June 30, 2010 for the UAAL that existed at that time. New gains and losses each year will be amortized over individual 20 year periods. At any time that the System is in an overfunded status, the amortization schedule will be a rolling 20 year amortization of any surplus.

## III. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

## IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.00% per year, compounded annually, composed of an assumed 2.50% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of all investment and administrative expenses.

2. Salary increase rate: The sum of (i) a 3.75% wage inflation assumption (composed of a 2.50% price inflation assumption and a 1.25% additional general increase), and (ii) a service-related component as shown below:

| Years of Service | Service-Related Component | Total Increase |
|---|---|---|
| 0 | 4.25% | 8.00% |
| 1 | 4.00 | 7.75 |
| 2 | 4.00 | 7.75 |
| 3 | 8.00 | 11.75 |
| 4 | 5.00 | 8.75 |
| 5 | 3.25 | 7.00 |
| 6 | 1.25 | 5.00 |
| 7 | 1.25 | 5.00 |
| 8 | 1.00 | 4.75 |
| 9 | 1.00 | 4.75 |
| 10-14 | 0.75 | 4.50 |
| 15-19 | 0.50 | 4.25 |
| 20-24 | 0.25 | 4.00 |
| 25&up | 0.00 | 3.75 |

Salary increases are assumed to occur once a year, on July 1. Therefore, the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, increased by the salary increase assumption.

3. Payroll growth rate: In the amortization of the unfunded frozen liability, payroll is assumed to increase 3.00% per year. This assumption includes no allowance for future membership growth.

4. Post-retirement benefit increase: Post-retirement benefit increases are assumed to be 2.1%, per annum, while the plan has a funding level that exceeds 80%; however, an interim COLA will be granted in four-year intervals while the COLA is suspended. The first such COLA will be applicable in Calendar Year 2017. As of June 30, 2017, it is assumed that the COLAs will be suspended for 10 years due to the current funding level of the plans. The actual amount of the COLA is determined based on 50% of the plan's five-year average investment rate of return minus 5.0% which will range from zero to 4.0%, and 50% of the lesser of 3% or last year's CPI-U increase for a total maximum increase of 3.50%.

B. Demographic Assumptions

1. Post-termination mortality rates:
    a. Healthy males – RP-2014 Combined Healthy for Males with Blue Collar adjustments, projected with Scale Ultimate MP16.

    b. Healthy females - RP-2014 Combined Healthy for Females, projected with Scale Ultimate MP16.

    c. Disabled males – RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

    d. Disabled females – RP-2014 Disabled Retiree Table for females, projected with Scale Ultimate MP16.

2. Pre-retirement mortality: RP-2014 employee table for males and females.

3. Disability rates: Rates are applied, with 75% of disabilities considered work related, and no recoveries assumed once disabled:

| Age | Rate |
|---|---|
| 20 | 0.12% |
| 25 | 0.17 |
| 30 | 0.22 |
| 35 | 0.29 |
| 40 | 0.44 |
| 45 | 0.72 |
| 50 | 1.21 |

Disabilities that are not work-related are assumed to result in a refund. The disability rates for non work-related causes stop once the member is eligible for retirement.

4. Termination rates: None

5. Retirement rates: State police are assumed to retire in accordance with the probabilities as shown below. For Employees hired before July 1, 2007 and whose first eligibility to retire is after June 30, 2012, the normal retirement rate in their first year of eligibility is increased by 5% for each year of service greater than 20 at which they first become eligible to retire due to the change in the accrual rate for service credit earned after June 30, 2012. Any member of the State police, other than the superintendent of State police may retire at any time subsequent to the date the member's retirement allowance equals or exceeds 50% of average compensation, provided that a member shall retire upon the first to occur of (i) the date the member's retirement allowance equals 65%; or (ii) the later of the attainment of age 62 or completion of 5 years of service. However, any current member as of June 30, 2012 who has not accrued 50% upon attaining the age of 62 shall retire upon accruing 50%. 100% are assumed to retire at the attainment of a 65% benefit multiplier if still active.

| State Police Employed Before July 1, 2007 | |
|---|---|
| Service | Ret. Rate |
| 20 | 25.0% |
| 21 | 15.0% |
| 22 | 10.0% |
| 23 | 20.0% |
| 24+ | 30.0% |

| State Police Employed on or After July 1, 2007 | |
|---|---|
| Service | Ret. Rate |
| 25 | 35.0% |
| 26 | 25.0% |
| 27 | 20.0% |
| 28 | 30.0% |
| 29+ | 40.0% |

C. Other Assumptions

1. Percent married: 85% of employees are assumed to be married.

2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

3. Remarriage: It is assumed that no surviving spouse will remarry and there will be no children's benefit.

4. Investment and administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

5. Overtime: Members eligible for overtime are assumed to work and contribute on 400 hours of overtime during their final averaging period.

## V. Participant Data

Participant data was supplied in electronic files for active and retired members. The data for active members included birth date, sex, service, salary and employee contribution account balance. For retired members and beneficiaries, the data included date of birth, sex, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and a form of payment code.

# Judicial Retirement Benefits Trust (JRBT)
# Summary of Actuarial Methods and Assumptions

## I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

## II. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial accrued liability (UAAL).

A. First, the actuarial present value of future benefits is determined by discounting the projected benefits for each member back to the valuation date using the assumed investment return rate as the discount rate. For active members, the projected benefits are based on the member's age, service, sex and compensation, and based on the actuarial assumptions. The calculations take into account the probability of the member's death, disability, or termination of employment prior to becoming eligible for a retirement benefit, as well as the possibility of the member will remain in service and receive a service retirement benefit. Future salary increases are anticipated. The present value of the expected benefits payable to all active members is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits. Liabilities for future members are not included.

B. The employer contributions required to support the benefits are determined as a level percentage of salary, and consist of a normal contribution and an amortization contribution.

C. The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. The salary-weighted average of these rates is the normal cost rate. This calculation reflects the plan provisions that apply to each individual member.

D. The employer normal cost rate is equal to (i) the normal cost rate, minus (ii) the member contribution rate.

E. The actuarial accrued liability is equal to the present value of all benefits less the present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is then determined as (i) the actuarial accrued liability, minus (ii) the actuarial value of assets.

F. The amortization contribution rate is the level percentage of payroll required to reduce the UAAL to zero over the remaining amortization period. The employer contribution rate determined by this valuation will not be effective until two years after the valuation date. The determination of the contribution rate reflects this deferral. The amortization payment for the applicable fiscal year is first determined based on the individual amortization bases. The covered payroll is projected forward for two years, and we then determine the amortization rate by dividing the amortization payment by the projected payroll. Contributions are assumed to be made monthly throughout the year.

1. The UAAL was initially being amortized over the remainder of a closed 30-year period from June 30, 1999. In conjunction with The Rhode Island Retirement Security Act of 2011, the amortization period was reset to 25 years as of June 30, 2010 for the UAAL that existed at that time. New gains and losses each year will be amortized over individual 20 year periods. At any time that the System is in an overfunded status, the amortization schedule will be a rolling 20-year amortization of any surplus.

## III. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

## IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 7.00% per year, compounded annually, composed of an assumed 2.50% inflation rate and a 4.50% net real rate of return. This rate represents the assumed return, net of all investment and administrative expenses.

2. Salary increase rate: Salaries are assumed to increase at the rate of 3.00% per year. Salary increases are assumed to occur once a year, on July 1. Therefore, the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, increased by the salary increase assumption.

3. Payroll growth rate: In the amortization of the unfunded frozen liability, payroll is assumed to increase 3.00% per year. This assumption includes no allowance for future membership growth.

4. Post-retirement Benefit Increase: Post-retirement benefit increases are assumed to be 2.1%, per annum, while the plan has a funding level that exceeds 80%; however, an interim COLA will be granted in four-year intervals while the COLA is suspended. The first such COLA will be applicable in Calendar Year 2017. As of June 30, 2016, it is assumed that the COLAs will be suspended for 10 years due to the current funding level of the plans. The actual amount of the COLA is determined based on 50% of the plan's five-year average investment rate of return minus 5.0% which will range from zero to 4.0%, and 50% of the lesser of 3% or last year's CPI-U increase for a total maximum increase of 3.50%.

B. Demographic Assumptions

1. Post-termination mortality rates (non-disabled lives):
   a. Males: RP-2014 Combined Healthy for Males with Blue Collar adjustments, projected with Scale Ultimate MP16.

   b. Females: RP-2014 Combined Healthy for Females, projected with Scale Ultimate MP16.

2. Post-termination mortality rates (disabled lives):
   a. Males: RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

   b. Females: RP-2014 Disabled Retiree Table for males, projected with Scale Ultimate MP16.

3. Pre-termination mortality rates: RP-2014 employee table for males and females.

4. Disability rates: None

5. Termination rates: None

6. Retirement rates: 33% of members are assumed to retire when first eligible for a reduced retirement benefit (age 65 with 10 years of service, or any age with 20 years of service). All other members are assumed to retire when eligible for an unreduced retirement benefit (age 65 with 20 years of service, or age 70 with 15 years of service). Judges who have not reached eligibility for a retirement benefit by age 75 are assumed to terminate at age 75 and receive either a reduced retirement benefit, if eligible, or a refund.

C. Other Assumptions

1. Percent married: 85% of employees are assumed to be married.

2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

3. Remarriage: It is assumed that no surviving spouse will remarry and there will be no children's benefit.

4. All married members appointed after January 1, 2009 will elect the optional spouse's coverage at retirement.

5. Investment and administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

## V. Participant Data

Participant data was supplied in electronic files for active members and retirees. The data for active members included birth date, sex, service, salary and employee contribution account balance. For retired members and beneficiaries, the data included date of birth, sex, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and a form of payment code.

## Rhode Island Judicial Retirement Fund Trust (RIJRFT)
## Summary of Actuarial Methods and Assumptions

The assumptions used in the valuation of the RIJRFT, with the exception of the 3.56% discount rate, are the same as those summarized in the JRBT Summary of Actuarial Methods and Assumptions listed in the Actuarial Section of this report. The assumptions are also the same as those summarized in the Board adopted June 30, 2017 actuarial valuation of the JRBT.

## State Police Retirement Fund Trust (SPRFT)
## Summary of Actuarial Methods and Assumptions

The assumptions used in the valuation of the SPRFT, including the 7.00% discount rate, are the same as those summarized in the SPRBT Summary of Actuarial Methods and Assumptions listed in the Actuarial Section of this report. The assumptions are the same as those summarized in the Board adopted June 30, 2017 actuarial valuation of the SPRBT.

## Employees' Retirement System of Rhode Island
## Solvency Test

| Year End June 30, | Aggregate Accrued Liabilities for: Active Member Contributions (1) | Retirees and Beneficiaries (2) | Active Members (Employer Financed Portion) (3) | Net Assets Available for Benefits | Portion of Accrued Liabilities Covered by Net Assets Available for Benefits (1) | (2) | (3) |
|---|---|---|---|---|---|---|---|
| **ERS - State Employees** | | | | | | | |
| 2017 | $ 547,320,112 | $ 3,209,626,083 | $ 941,332,613 | $ 2,485,576,642 | 100% | 60% | 0% |
| 2016 | 546,139,313 | 2,972,758,380 | 885,400,955 | 2,468,446,998 | 100% | 65% | 0% |
| **ERS - Teachers** | | | | | | | |
| 2017 | $ 877,443,418 | $ 4,999,290,131 | $ 1,017,509,679 | $ 3,778,302,063 | 100% | 58% | 0% |
| 2016 | 869,811,233 | 4,734,334,535 | 862,332,702 | 3,772,348,051 | 100% | 61% | 0% |
| **Teachers' Survivors Benefits Plan** | | | | | | | |
| 2017 | $ 9,068,290 | $ 187,447,735 | $ 34,322,154 | $ 311,960,433 | 100% | 100% | 336% |
| 2016 | 8,836,898 | 157,052,544 | 21,023,733 | 286,485,057 | 100% | 100% | 574% |
| **Municipal Employees' Retirement System - General Employees** | | | | | | | |
| 2017 | $ 124,901,116 | $ 768,391,585 | $ 339,993,188 | $ 986,459,230 | 100% | 100% | 27% |
| 2016 | 127,744,740 | 697,200,387 | 317,373,150 | 964,595,506 | 100% | 100% | 44% |
| **Municipal Employees' Retirement System - Police/Fire Employees** | | | | | | | |
| 2017 | $ 87,989,399 | $ 345,463,983 | $ 247,593,371 | $ 518,878,790 | 100% | 100% | 35% |
| 2016 | 81,825,506 | 309,878,907 | 216,362,006 | 488,505,138 | 100% | 100% | 45% |
| **State Police Retirement Benefits Trust** | | | | | | | |
| 2017 | $ 14,999,688 | $ 80,543,721 | $ 60,517,447 | $ 131,320,263 | 100% | 100% | 59% |
| 2016 | 14,978,441 | 59,616,701 | 60,910,010 | 123,788,498 | 100% | 100% | 81% |
| **Judicial Retirement Benefits Trust** | | | | | | | |
| 2017 | $ 9,637,212 | $ 25,688,803 | $ 38,402,332 | $ 68,784,251 | 100% | 100% | 87% |
| 2016 | 8,519,694 | 24,405,717 | 32,362,116 | 64,401,616 | 100% | 100% | 97% |
| **Rhode Island Judicial Retirement Fund Trust*** | | | | | | | |
| 2017 | $ 349,593 | $ 3,796,504 | $ 16,295,598 | $ 646,628 | 100% | 8% | 0% |
| 2016 | 334,265 | 3,914,017 | 16,322,895 | 582,245 | 100% | 6% | 0% |
| * *3.56% Discount rate used for fiscal year ending June 30, 2017.* | | | | | | | |
| **State Police Retirement Fund Trust** | | | | | | | |
| 2017 | $ - | $ 175,957,019 | $ - | $ 16,013,015 | 0% | 9% | 0% |

***Note:*** Schedule is intended to display information for 10 years. Additional years will be displayed as they become available.

***Source:*** The most recent actuarial valuation for ERSRI is as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

## Employees' Retirement System of Rhode Island
## Schedule of Funding Progress

| Year End June 30, | Actuarial Accrued Liabilities | Actuarial Value of Assets | Assets as a % of Accrued Liabilities | Unfunded Actuarial Accrued Liabilities (UAAL) | Covered Employee Payroll | UAAL as a % of Covered Employee Payroll |
|---|---|---|---|---|---|---|
| **ERS - State Employees** | | | | | | |
| 2017 | $ 4,698,278,808 | $ 2,485,576,642 | 52.9% | $ 2,212,702,166 | $ 704,036,300 | 314.3% |
| 2016 | 4,404,298,648 | 2,468,446,998 | 56.0% | 1,935,851,650 | 693,242,177 | 279.2% |
| 2015 | 4,371,789,900 | 2,476,485,327 | 56.6% | 1,895,304,573 | 691,555,582 | 274.1% |
| 2014 | 4,369,081,872 | 2,449,125,421 | 56.1% | 1,919,956,451 | 675,204,750 | 284.4% |
| 2013 | 4,266,053,163 | 2,411,057,214 | 56.5% | 1,854,995,949 | 664,118,904 | 279.3% |
| 2012 | 4,297,261,311 | 2,421,191,542 | 56.3% | 1,876,069,769 | 669,477,539 | 280.2% |
| 2011 | 4,255,362,463 | 2,443,690,798 | 57.4% | 1,811,671,665 | 633,146,197 | 286.1% |
| 2010 | 4,234,409,675 | 2,532,090,798 | 59.8% | 1,702,318,877 | 630,246,973 | 270.1% |
| 2009 | 4,482,244,291 | 2,646,081,020 | 59.0% | 1,836,163,271 | 605,872,460 | 303.1% |
| 2008 | 4,331,504,516 | 2,700,368,568 | 62.3% | 1,631,135,948 | 587,500,000 | 277.6% |
| **ERS - Teachers** | | | | | | |
| 2017 | $ 6,894,243,228 | $ 3,778,302,063 | 54.8% | $ 3,115,941,165 | $ 1,035,710,229 | 300.9% |
| 2016 | 6,466,478,470 | 3,772,348,051 | 58.3% | 2,694,130,419 | 1,009,979,725 | 266.8% |
| 2015 | 6,438,732,100 | 3,783,601,053 | 58.8% | 2,655,131,047 | 995,994,669 | 266.6% |
| 2014 | 6,424,596,267 | 3,742,152,714 | 58.2% | 2,682,443,553 | 982,565,406 | 273.0% |
| 2013 | 6,265,311,945 | 3,697,787,537 | 59.0% | 2,567,524,408 | 963,525,547 | 266.5% |
| 2012 | 6,373,081,344 | 3,746,299,871 | 58.8% | 2,626,781,473 | 971,904,991 | 270.3% |
| 2011 | 6,325,941,951 | 3,776,407,834 | 59.7% | 2,549,534,117 | 1,002,656,294 | 254.3% |
| 2010 | 6,266,400,444 | 3,873,118,262 | 61.8% | 2,393,282,182 | 989,236,951 | 241.9% |
| 2009 | 6,900,963,108 | 4,008,931,337 | 58.1% | 2,892,031,771 | 987,463,633 | 292.9% |
| 2008 | 6,632,016,708 | 4,044,954,378 | 61.0% | 2,587,062,330 | 985,898,174 | 262.4% |
| **Teachers' Survivors Benefits Plan^** | | | | | | |
| 2017 | $ 230,838,179 | $ 311,960,433 | 135.1% | $ (81,122,254) | $ 544,320,446 | -14.9% |
| 2016 | 186,913,175 | 286,485,057 | 153.3% | (99,571,882) | 522,968,886 | -19.0% |
| 2014 | 192,124,126 | 293,921,803 | 153.0% | (101,797,677) | 542,756,917 | -19.0% |
| 2013 | 175,233,723 | 261,365,155 | 149.0% | (86,131,432) | 544,090,898 | -16.0% |
| 2011 | 133,569,376 | 242,885,805 | 182.0% | (109,316,429) | 537,264,193 | -20.0% |
| 2009 | 129,110,000 | 186,737,083 | 145.0% | (57,627,083) | 509,416,780 | -11.0% |
| 2007 | 116,599,601 | 259,851,904 | 223.0% | (143,252,303) | 466,208,437 | -31.0% |
| **Municipal Employees' Retirement System - General Employees**** | | | | | | |
| 2017 | $ 1,233,285,889 | $ 986,459,230 | 80.0% | $ 246,826,659 | $ 242,305,025 | 101.9% |
| 2016 | 1,142,318,277 | 964,595,506 | 84.4% | 177,722,771 | 232,291,647 | 76.5% |
| 2015 | 1,111,720,282 | 945,727,947 | 85.1% | 165,992,335 | 230,499,170 | 72.0% |
| 2014 | 1,071,641,207 | 911,399,108 | 85.0% | 160,242,099 | 223,736,632 | 71.6% |
| 2013 | 1,051,689,455 | 875,652,368 | 83.3% | 176,037,087 | 223,380,413 | 78.8% |
| 2012 | 1,023,568,790 | 859,515,584 | 84.0% | 164,053,206 | 223,065,778 | 73.5% |
| 2011 | 1,005,419,698 | 846,426,631 | 84.2% | 158,993,067 | 226,932,538 | 70.1% |
| 2010 | 1,138,019,716 | 851,172,779 | 74.8% | 286,846,937 | 229,149,276 | 125.2% |
| 2009 | 974,562,323 | 863,942,093 | 88.6% | 110,620,230 | 230,999,416 | 47.9% |
| 2008 | 915,012,135 | 856,409,161 | 93.6% | 58,602,974 | 232,008,474 | 25.3% |

## Employees' Retirement System of Rhode Island
## Schedule of Funding Progress

| Year End June 30, | Actuarial Accrued Liabilities | Actuarial Value of Assets | Assets as a % of Accrued Liabilities | Unfunded Actuarial Accrued Liabilities (UAAL) | Covered Employee Payroll | UAAL as a % of Covered Employee Payroll |
|---|---|---|---|---|---|---|
| **Municipal Employees' Retirement System - Police/Fire Employees**** | | | | | | |
| 2017 | $ 681,046,753 | $ 518,878,790 | 76.2% | $ 162,167,963 | $ 102,020,460 | 159.0% |
| 2016 | 608,066,419 | 488,505,138 | 80.3% | 119,561,281 | 96,834,672 | 123.5% |
| 2015 | 567,219,865 | 461,702,185 | 81.4% | 105,517,680 | 93,380,954 | 113.0% |
| 2014 | 522,149,230 | 429,663,343 | 82.3% | 92,485,887 | 89,936,969 | 102.8% |
| 2013 | 501,133,572 | 399,905,455 | 79.8% | 101,228,117 | 87,428,024 | 115.8% |
| 2012 | 476,905,589 | 378,659,964 | 79.4% | 98,245,625 | 83,164,238 | 118.1% |
| 2011 | 423,459,603 | 358,388,192 | 84.6% | 65,071,411 | 78,461,560 | 82.9% |
| 2010 | 488,601,649 | 345,212,363 | 70.7% | 143,389,286 | 76,664,402 | 187.0% |
| 2009 | 381,090,367 | 332,424,901 | 87.2% | 48,665,466 | 75,588,025 | 64.4% |
| 2008 | 351,274,694 | 318,158,043 | 90.6% | 33,116,651 | 72,943,546 | 45.4% |

** *Each employer unit participating in MERS is financially responsible for its own plan. Therefore, the aggregate numbers shown on the above schedules reflect only the aggregate condition of MERS and do not indicate the status of any particular employer unit.*

| Year End June 30, | Actuarial Accrued Liabilities | Actuarial Value of Assets | Assets as a % of Accrued Liabilities | Unfunded Actuarial Accrued Liabilities (UAAL) | Covered Employee Payroll | UAAL as a % of Covered Employee Payroll |
|---|---|---|---|---|---|---|
| **State Police Retirement Benefits Trust** | | | | | | |
| 2017 | $ 156,060,856 | $ 131,320,263 | 84.1% | $ 24,740,593 | $ 22,612,234 | 109.4% |
| 2016 | 135,505,152 | 123,788,498 | 91.4% | 11,716,654 | 22,555,315 | 51.9% |
| 2015 | 117,056,727 | 115,585,013 | 98.7% | 1,471,714 | 19,940,052 | 7.4% |
| 2014 | 108,363,537 | 104,781,384 | 96.7% | 3,582,153 | 20,814,621 | 17.2% |
| 2013 | 102,259,438 | 92,916,758 | 90.9% | 9,342,680 | 19,904,363 | 46.9% |
| 2012 | 94,031,687 | 84,293,968 | 89.6% | 9,737,719 | 23,669,619 | 41.1% |
| 2011 | 74,185,705 | 73,151,768 | 98.6% | 1,033,937 | 19,711,694 | 5.2% |
| 2010 | 73,048,680 | 65,760,284 | 90.0% | 7,288,396 | 19,715,070 | 37.0% |
| 2009 | 75,480,005 | 60,232,045 | 79.8% | 15,247,960 | 17,096,202 | 89.2% |
| 2008 | 69,029,513 | 54,927,390 | 79.6% | 14,102,123 | 16,698,764 | 84.5% |
| **Judicial Retirement Benefits Trust** | | | | | | |
| 2017 | $ 73,728,347 | $ 68,784,251 | 93.3% | $ 4,944,096 | $ 9,569,304 | 51.7% |
| 2016 | 65,287,527 | 64,401,616 | 98.6% | 885,911 | 9,034,080 | 9.8% |
| 2015 | 61,963,672 | 60,004,470 | 96.8% | 1,959,202 | 9,285,354 | 21.1% |
| 2014 | 57,504,663 | 53,830,516 | 93.6% | 3,674,147 | 9,309,572 | 39.5% |
| 2013 | 54,429,531 | 47,640,773 | 87.5% | 6,788,758 | 8,975,536 | 75.6% |
| 2012 | 52,085,154 | 43,428,646 | 83.4% | 8,656,508 | 8,822,823 | 98.1% |
| 2011 | 46,594,407 | 40,105,919 | 86.1% | 6,488,488 | 8,474,716 | 76.6% |
| 2010 | 46,641,701 | 38,074,287 | 81.6% | 8,567,414 | 7,461,120 | 114.8% |
| 2009 | 41,738,040 | 36,839,221 | 88.3% | 4,898,819 | 6,843,454 | 71.6% |
| 2008 | 38,115,602 | 34,670,394 | 91.0% | 3,445,208 | 6,601,889 | 52.2% |
| **Rhode Island Judicial Retirement Fund Trust^*** | | | | | | |
| 2017 | $ 20,441,696 | $ 646,628 | 3.2% | $ 19,795,068 | $ 988,110 | 2003.3% |
| 2016 | 20,571,178 | 582,245 | 2.8% | 19,988,933 | 957,007 | 2088.7% |
| 2013 | 12,077,841 | 152,910 | 1.3% | 11,924,931 | 1,255,256 | 950.0% |
| 2012 | 16,387,206 | - | 0.0% | 16,387,206 | 1,230,644 | 1331.6% |

* *3.56% Discount rate used for fiscal year ending June 30, 2017.*

| Year End June 30, | Actuarial Accrued Liabilities | Actuarial Value of Assets | Assets as a % of Accrued Liabilities | Unfunded Actuarial Accrued Liabilities (UAAL) | Covered Employee Payroll | UAAL as a % of Covered Employee Payroll |
|---|---|---|---|---|---|---|
| **State Police Retirement Fund Trust^** | | | | | | |
| 2017 | $ 175,957,019 | $ 16,013,015 | 9.1% | $ 159,944,004 | $ - | N/A |
| 2016 | 176,546,337 | - | 0.0% | 176,546,337 | - | N/A |

^ Actuarial valuations are required, at a minimum, to be performed biennially. Additional years will be displayed as they become available.

***Note:*** The most recent actuarial valuation for ERSRI is as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

## Employees' Retirement System of Rhode Island
## Schedule of Employees Added to and Removed from Rolls

| | Added To Rolls | | | Removed From Rolls | | | Rolls - End of Year | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year End June 30, | Number | Annual Allowance | Average Annual Allowance | Number | Annual Allowance | Average Annual Allowance | Number | Annual Allowance | Average Annual Allowance | % Increase (Decrease) in Average Annual Allowance |
| **ERS - State Employees** | | | | | | | | | | |
| 2017 | 455 | $ 12,172,340 | $ 26,752 | 435 | $ 9,602,683 | $ 22,075 | 11,078 | $ 330,795,204 | $ 29,861 | 0.60% |
| 2016 | 613 | $ 15,388,026 | $ 25,103 | 596 | $ 12,112,805 | $ 20,323 | 11,058 | $ 328,225,547 | $ 29,682 | 0.85% |
| 2015 | | | | | | | 11,041 | $ 324,950,326 | $ 29,431 | N/A |
| **ERS- Teachers** | | | | | | | | | | |
| 2017 | 362 | $ 11,066,132 | $ 30,569 | 238 | $ 9,045,857 | $ 38,008 | 11,211 | $ 483,749,402 | $ 43,150 | -0.69% |
| 2016 | 514 | $ 15,986,350 | $ 31,102 | 329 | $ 10,981,290 | $ 33,378 | 11,087 | $ 481,729,127 | $ 43,450 | -0.64% |
| 2015 | | | | | | | 10,902 | $ 476,724,067 | $ 43,728 | |
| **Teachers' Survivors Benefits Plan** | | | | | | | | | | |
| 2017* | 56 | $ 2,245,448 | $ 40,097 | - | $ - | $ - | 573 | $ 10,504,912 | $ 18,333 | 14.76% |
| 2016 | 101 | $ 498,715 | $ 4,938 | 121 | $ 1,948,382 | $ 16,102 | 517 | $ 8,259,464 | $ 15,976 | -5.82% |
| 2014 | | | | | | | 537 | $ 9,709,131 | $ 18,080 | |
| **Municipal Employees' Retirement System - General Employees** | | | | | | | | | | |
| 2017 | 283 | $ 4,347,813 | $ 15,363 | 208 | $ 2,416,800 | $ 11,619 | 4,636 | $ 69,752,147 | $ 15,046 | 1.18% |
| 2016 | 303 | $ 4,738,481 | $ 15,639 | 182 | $ 2,033,016 | $ 11,170 | 4,561 | $ 67,821,134 | $ 14,870 | 1.39% |
| 2015 | | | | | | | 4,440 | $ 65,115,669 | $ 14,666 | |
| **Municipal Employees' Retirement System Plan - Police/Fire Employees** | | | | | | | | | | |
| 2017 | 36 | $ 1,308,081 | $ 36,336 | 8 | $ 138,119 | $ 17,265 | 801 | $ 25,879,849 | $ 32,309 | 1.07% |
| 2016 | 109 | $ 2,563,207 | $ 23,516 | 64 | $ 754,694 | $ 11,792 | 773 | $ 24,709,887 | $ 31,966 | 1.62% |
| 2015 | | | | | | | 728 | $ 22,901,374 | $ 31,458 | |

* *Amount added to rolls includes cost of living adjustments and other benefit changes.*

## Employees' Retirement System of Rhode Island
## Schedule of Employees Added to and Removed from Rolls

| Year End June 30, | Added To Rolls: Number | Added To Rolls: Annual Allowance | Added To Rolls: Average Annual Allowance | Removed From Rolls: Number | Removed From Rolls: Annual Allowance | Removed From Rolls: Average Annual Allowance | Rolls - End of Year: Number | Rolls - End of Year: Annual Allowance | Rolls - End of Year: Average Annual Allowance | % Increase (Decrease) in Average Annual Allowance |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Police Retirement Benefits Trust** | | | | | | | | | | |
| 2017 | 15 | $ 1,305,421 | $ 87,028 | - | $ - | $ - | 71 | $ 5,922,113 | $ 83,410 | 1.18% |
| 2016 | 17 | $ 1,562,823 | $ 91,931 | - | $ - | $ - | 56 | $ 4,616,692 | $ 82,441 | 5.28% |
| 2015 | | | | | | | 39 | $ 3,053,869 | $ 78,304 | N/A |
| **Judicial Retirement Benefits Trust** | | | | | | | | | | |
| 2017 | - | $ 1,390 | $ - | - | $ - | $ - | 20 | $ 2,735,478 | $ 136,774 | 0.05% |
| 2016 | 5 | $ 702,976 | $ 140,595 | 1 | $ 59,888 | $ 59,888 | 20 | $ 2,734,088 | $ 136,704 | 4.60% |
| 2015 | | | | | | | 16 | $ 2,091,000 | $ 130,688 | |
| **Rhode Island Judicial Retirement Fund Trust** | | | | | | | | | | |
| 2017 | - | $ - | $ - | - | $ - | $ - | 2 | $ 399,016 | $ 199,508 | 0.00% |
| 2016 | 2 | $ 399,016 | $ 199,508 | - | $ - | $ - | 2 | $ 399,016 | $ 199,508 | N/A |
| 2015 | | | | | | | - | $ - | $ - | |
| **State Police Retirement Fund Trust** | | | | | | | | | | |
| 2017** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2016 | - | $ - | $ - | 5 | $ 334,183 | $ 66,837 | 269 | $ 17,312,641 | $ 64,359 | -0.07% |
| 2015 | | | | | | | 274 | $ 17,646,824 | $ 64,404 | N/A |

** *Plan is required, at a minimum, to only have biennial valuations. The 2017 results are based on fiscal year 2016 valuation rolled forward one year and updated census data as of June 30, 2017 is not available.*

***Note:*** Schedule is intended to display information for 10 years. Additional years will be displayed as they become available.

***Source:*** The most recent actuarial valuation for ERSRI is as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

**Employees' Retirement System of Rhode Island**
**Analysis of Financial Experience**

| Basis | ERS - State Employees | ERS - Teachers | Teachers' Survivors Benefits Plan | Municipal Employees' Retirement System - General Employees | Municipal Employees' Retirement System - Police/Fire Employees | State Police Retirement Benefits Trust | Judicial Retirement Benefits Trust | Rhode Island Judicial Retirement Fund Trust | State Police Retirement Fund Trust |
|---|---|---|---|---|---|---|---|---|---|
| 1. UAAL as of June 30, 2016 | $ 1,936 | $ 2,694 | $ (100) | $ 178 | $ 120 | $ 12 | $ 1 | $ 20 | $ 177 |
| 2. Impact of changes, gains and losses | | | | | | | | | |
| a. Interest at 7.00% for one year* | 133 | 182 | (7) | 12 | 8 | 1 | - | 1 | 13 |
| b. Expected amortization payments | (142) | (189) | 1 | (14) | (9) | - | - | - | (32) |
| c. Investment experience (gain)/loss | 32 | 46 | (12) | 11 | 4 | 1 | - | (3) | (1) |
| d. Actual COLA (1.51%) | (1) | (2) | - | (1) | (2) | - | - | - | - |
| e. Salary (gain)/loss | (12) | (2) | - | (1) | 1 | 3 | (1) | - | - |
| f. Non-economic liability experience (gain)/loss | (8) | 9 | 1 | 2 | 5 | (1) | - | 3 | - |
| g. Changes in assumptions/methods | 275 | 378 | 16 | 60 | 35 | 9 | 5 | (1) | 4 |
| h. Changes in plan provisions | - | - | 20 | - | - | - | - | - | - |
| i. Total | $ 277 | $ 422 | $ 19 | $ 69 | $ 42 | $ 13 | $ 4 | $ (0) | $ (17) |
| 3. UAAL as of June 30, 2017 | $ 2,213 | $ 3,116 | $ (81) | $ 247 | $ 162 | $ 25 | $ 5 | $ 20 | $ 160 |

** 3.56% Discount rate used for RIJRFT.*

***Note:*** All dollar amounts are shown in millions.

***Source:*** Data in this schedule was obtained from the most recent actuarial valuation for the fiscal year ending June 30, 2017.

## Employees' Retirement System of Rhode Island
## Schedule of Active Member Valuation Data

| Year End June 30, | Count of Active Members | Annualized Salary | Average Annual Salary | % Increase (Decrease) in Average Annual Salary | Count of Employers |
|---|---|---|---|---|---|
| **ERS - State Employees** | | | | | |
| 2017 | 11,152 | $ 686,271,036 | $ 61,538 | 1.7% | N/A |
| 2016 | 11,083 | 670,317,639 | 60,482 | 1.5% | - |
| 2015 | 11,194 | 667,333,687 | 59,615 | 3.1% | - |
| 2014 | 11,301 | 653,343,732 | 57,813 | 0.3% | - |
| 2013 | 11,280 | 649,998,544 | 57,624 | 4.9% | - |
| 2012 | 11,166 | 643,909,132 | 57,667 | 4.9% | - |
| 2011 | 11,233 | 617,247,186 | 54,949 | 1.9% | - |
| 2010 | 11,122 | 599,879,497 | 53,936 | 3.5% | - |
| 2009 | 11,023 | 574,569,170 | 52,125 | 1.0% | - |
| 2008 | 11,970 | 617,622,521 | 51,598 | 3.6% | - |
| **ERS - Teachers** | | | | | |
| 2017 | 13,310 | $ 1,000,795,004 | $ 75,191 | 2.6% | N/A |
| 2016 | 13,206 | 967,531,930 | 73,265 | 0.4% | - |
| 2015 | 13,272 | 968,080,817 | 72,942 | 1.7% | - |
| 2014 | 13,266 | 951,892,247 | 71,754 | 1.1% | - |
| 2013 | 13,193 | 936,234,816 | 70,965 | -1.7% | - |
| 2012 | 13,212 | 961,958,877 | 72,809 | 0.9% | - |
| 2011 | 13,381 | 965,764,287 | 72,174 | 4.2% | - |
| 2010 | 13,530 | 936,748,851 | 69,235 | 1.8% | - |
| 2009 | 13,689 | 930,993,404 | 68,010 | 2.6% | - |
| 2008 | 13,999 | 928,250,193 | 66,308 | 4.0% | - |
| **Teachers' Survivors Benefits Plan*** | | | | | |
| 2017 | 7,121 | $ 544,320,446 | $ 76,439 | 2.7% | N/A |
| 2016 | 7,028 | 522,968,886 | 74,412 | -1.1% | - |
| 2014 | 7,139 | 542,756,917 | 76,027 | 0.1% | - |
| 2013 | 7,227 | 544,090,898 | 75,286 | 0.5% | - |
| 2011 | 7,215 | 537,264,193 | 74,465 | 2.4% | - |
| 2009 | 7,173 | 509,416,780 | 71,019 | 3.4% | - |
| 2007 | 7,013 | 466,208,437 | 66,478 | 7.7% | - |

**Plan is required, at a minimum, to only have biennial valuations. Additional years will be displayed as they become available.*

## Employees' Retirement System of Rhode Island
## Schedule of Active Member Valuation Data

| Year End June 30, | Count of Active Members | Annualized Salary | Average Annual Salary | % Increase (Decrease) in Average Annual Salary | Count of Employers |
|---|---|---|---|---|---|
| **Municipal Employees' Retirement System - General Employees** | | | | | |
| 2017 | 5,980 | $ 242,305,025 | $ 40,519 | 2.6% | 69 |
| 2016 | 5,882 | 232,291,647 | 39,492 | 0.6% | 69 |
| 2015 | 5,869 | 230,499,170 | 39,274 | 2.0% | 68 |
| 2014 | 5,813 | 223,736,632 | 38,489 | 1.7% | 68 |
| 2013 | 5,901 | 223,380,413 | 37,855 | 2.0% | 68 |
| 2012 | 6,012 | 223,065,778 | 37,103 | 1.2% | 68 |
| 2011 | 6,192 | 226,932,538 | 36,649 | 2.1% | 68 |
| 2010 | 6,383 | 229,149,276 | 35,900 | 1.9% | 66 |
| 2009 | 6,554 | 230,999,416 | 35,246 | 3.3% | 66 |
| 2008 | 6,797 | 231,839,725 | 34,109 | 4.2% | 67 |
| **Municipal Employees' Retirement System - Police/Fire Employees** | | | | | |
| 2017 | 1,521 | $ 102,020,460 | $ 67,075 | 3.3% | 48 |
| 2016 | 1,491 | 96,834,672 | 64,946 | 2.7% | 47 |
| 2015 | 1,476 | 93,380,954 | 63,266 | 2.0% | 45 |
| 2014 | 1,450 | 89,936,969 | 62,025 | 3.2% | 45 |
| 2013 | 1,455 | 87,428,024 | 60,088 | 1.9% | 45 |
| 2012 | 1,410 | 83,164,238 | 58,982 | 4.0% | 45 |
| 2011 | 1,384 | 78,461,560 | 56,692 | 1.8% | 43 |
| 2010 | 1,376 | 76,664,402 | 55,715 | 3.0% | 43 |
| 2009 | 1,398 | 75,588,025 | 54,069 | 2.5% | 43 |
| 2008 | 1,383 | 72,943,546 | 52,743 | 2.6% | 43 |
| **State Police Retirement Benefits Trust** | | | | | |
| 2017 | 232 | $ 22,612,234 | $ 97,467 | 6.3% | N/A |
| 2016 | 246 | 22,555,315 | 91,688 | 9.0% | - |
| 2015 | 237 | 19,940,052 | 84,135 | 1.1% | - |
| 2014 | 250 | 20,814,621 | 83,258 | -7.1% | - |
| 2013 | 222 | 19,904,363 | 89,659 | -12.5% | - |
| 2012 | 231 | 23,669,619 | 102,466 | 7.1% | - |
| 2011 | 206 | 19,711,694 | 95,688 | 2.4% | - |
| 2010 | 211 | 19,715,070 | 93,436 | -3.8% | - |
| 2009 | 176 | 17,096,202 | 97,138 | 3.0% | - |
| 2008 | 177 | 16,698,764 | 94,343 | 6.6% | - |

# Employees' Retirement System of Rhode Island
# Schedule of Active Member Valuation Data

| Year End June 30, | Count of Active Members | | Annualized Salary | | Average Annual Salary | % Increase (Decrease) in Average Annual Salary | Count of Employers |
|---|---|---|---|---|---|---|---|
| **Judicial Retirement Benefits Trust** | | | | | | | |
| 2017 | 55 | $ | 9,569,304 | $ | 173,987 | 0.1% | N/A |
| 2016 | 52 | | 9,034,080 | | 173,732 | 1.0% | - |
| 2015 | 54 | | 9,285,354 | | 171,951 | 3.4% | - |
| 2014 | 56 | | 9,309,572 | | 166,242 | 0.0% | - |
| 2013 | 54 | | 8,975,536 | | 166,214 | -0.2% | - |
| 2012 | 53 | | 8,822,823 | | 166,468 | 6.1% | - |
| 2011 | 54 | | 8,474,716 | | 156,939 | 3.1% | - |
| 2010 | 49 | | 7,461,120 | | 152,268 | 0.1% | - |
| 2009 | 45 | | 6,843,454 | | 152,077 | -0.9% | - |
| 2008 | 43 | | 6,601,889 | | 153,532 | 4.7% | - |
| **Rhode Island Judicial Retirement Fund Trust**** | | | | | | | |
| 2017 | 5 | $ | 988,110 | $ | 197,622 | 3.3% | N/A |
| 2016 | 5 | | 957,007 | | 191,401 | 1.3% | - |
| 2015 | 7 | | 1,322,650 | | 188,950 | 3.6% | - |
| 2014 | 7 | | 1,276,208 | | 182,315 | 0.2% | - |
| 2013 | 7 | | 1,274,247 | | 182,035 | - | - |

***Plan was established July 1, 2012 additional years will be displayed as they become available.*

**State Police Retirement Fund Trust**

This is a closed plan and does not have any active members.

***Source:*** The most recent actuarial valuation for ERSRI is as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

# Statistical Section

# Statistical Section Overview

**Summary of Statistical Section**
The objective of the Statistical Section is to provide historical perspective, additional context, and detail to complement and assist those using the information in the financial statements, notes to the financial statements, and required supplementary information to better understand and assess ERSRI's economic condition.

ERSRI is responsible for administering seven defined plans and one defined contribution plan. The major features and benefit provisions of each plan are provided in Note 2 to the Basic Financial Statements contained in this report.

Statistical Section information is presented in the following categories:

**Financial Trend Information**
These schedules present financial trend information to assist the reader in understanding how ERSRI's financial position has changed over time:

- Schedule of Changes in Fiduciary Net Position
- Schedule of Employer Contribution Rates

**Operational Information**
These schedules are intended to provide the reader more contextual information regarding the operations of ERSRI when using the financial statement data:

- Schedule of Benefits and Refunds by Type
- Schedule of Retired Members by Type of Benefit
- Schedule of Average Benefit Payments

**Demographic Information**
This schedule is intended to provide the reader an enhanced understanding of the ERSRI's environment:

- Schedule of Top Ten Contributing Employers by Member Count

***Sources***: Unless otherwise noted, the information in the tables are derived from the annual financial reports for the relevant year.

# Employees' Retirement System of Rhode Island
## Schedule of Changes in Fiduciary Net Position
## Last Ten Fiscal Years

| ERS | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions | 89,903,432 | 91,609,012 | 90,524,544 | 64,948,561 | 64,411,897 | 63,259,241 | 149,017,700 | 146,937,507 | 143,873,895 | 145,026,026 |
| Employer contributions | 315,176,351 | 313,845,677 | 297,637,568 | 289,837,778 | 272,245,931 | 246,166,720 | 281,923,941 | 241,143,752 | 234,304,637 | 242,701,535 |
| State contribution for teachers | 98,120,835 | 96,542,150 | 87,997,637 | 84,943,801 | 76,700,915 | 70,703,201 | 80,385,930 | 70,286,262 | 68,542,956 | 73,600,069 |
| Supplemental employer contributions | 1,058,820 | 445,280 | 408,209 | 414,450 | 583,563 | 15,690,364 | - | - | - | - |
| Interest on service credits purchased | 81,455 | 152,432 | 109,084 | 241,501 | 233,769 | 616,647 | 612,783 | 911,405 | 805,416 | 2,084,965 |
| Service credit transfers | 14,456,756 | 1,810,490 | | 37,511 | 12,543 | - | - | - | 1,899 | 52,996 |
| Net Investment income (Loss) | 475,027,968 | 654,212,917 | (7,911,102) | 145,549,349 | 863,045,946 | 607,847,067 | 90,726,999 | 1,004,339,787 | 671,653,124 | (1,261,526,588) |
| Miscellaneous revenue | 22,217 | 43,138 | 39,003 | 56,546 | 78,863 | - | - | - | 230,208 | 249,490 |
| Total Additions | 993,847,834 | 1,158,661,096 | 468,804,943 | 586,029,497 | 1,277,313,427 | 1,004,283,240 | 602,667,353 | 1,463,618,713 | 1,119,412,135 | (797,811,507) |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | 816,851,265 | 819,929,757 | 818,820,664 | 800,245,103 | 801,448,787 | 804,829,970 | 789,838,446 | 761,258,156 | 739,526,963 | 700,546,456 |
| Death benefits | 2,778,667 | 2,432,232 | 2,878,655 | 3,320,919 | 2,700,200 | 2,822,400 | 2,824,800 | 2,606,747 | 2,391,600 | 2,271,400 |
| Refund of contributions | 4,678,432 | 5,711,781 | 6,306,239 | 8,618,199 | 10,062,956 | 9,419,071 | 9,796,997 | 8,890,203 | 7,550,207 | 8,287,514 |
| Administrative and Other | 6,407,239 | 6,394,177 | 5,722,782 | 6,071,486 | 5,671,006 | 5,184,623 | 7,040,136 | 6,840,973 | 6,459,769 | 7,063,457 |
| Service credit transfers | 13,424,486 | 739,477 | | | | 593,421 | | | | 19,391 |
| Total Deductions | 844,140,089 | 835,207,424 | 833,728,340 | 818,255,707 | 819,882,949 | 822,849,485 | 809,500,379 | 779,596,079 | 755,928,539 | 718,188,218 |
| **Net change** | 149,707,745 | 323,453,672 | (364,923,397) | (232,226,210) | 457,430,478 | 181,433,755 | (206,833,026) | 684,022,634 | 363,483,596 | (1,515,999,725) |
| Fiduciary net position, beginning of year | 6,122,486,349 | 5,799,032,677 | 6,163,956,074 | 6,396,182,285 | 5,938,751,807 | 5,757,318,052 | 5,964,151,078 | 5,280,128,444 | 4,916,644,848 | 6,432,644,573 |
| **Net position restricted for benefits** | 6,272,194,094 | 6,122,486,349 | 5,799,032,677 | 6,163,956,075 | 6,396,182,285 | 5,938,751,807 | 5,757,318,052 | 5,964,151,078 | 5,280,128,444 | 4,916,644,848 |

| TSB | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions | 744,035 | 589,883 | 642,276 | 603,388 | 609,168 | 628,553 | 664,900 | 617,434 | 637,451 | 637,887 |
| Employer contributions | 744,035 | 589,883 | 642,276 | 603,388 | 609,168 | 628,553 | 664,900 | 617,434 | 637,451 | 637,887 |
| Net Investment income (Loss) | 24,552,340 | 33,277,060 | (51,004) | 6,951,465 | 39,657,338 | 26,705,768 | 3,792,013 | 40,926,777 | 26,432,082 | (47,913,061) |
| Miscellaneous revenue | - | 4 | - | - | - | | - | - | 18 | 85 |
| Total Additions | 26,040,410 | 34,456,830 | 1,233,548 | 8,158,241 | 40,875,674 | 27,962,874 | 5,121,813 | 42,161,645 | 27,707,002 | (46,637,202) |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | 9,602,181 | 8,405,649 | 8,097,067 | 7,750,955 | 7,421,004 | 7,127,856 | 6,708,490 | 6,528,540 | 6,118,256 | 5,977,315 |
| Death benefits | - | - | - | - | - | - | - | - | - | - |
| Refund of contributions | 275,135 | 266,523 | 195,601 | 241,427 | 201,986 | 341,232 | 369,108 | 235,943 | 276,270 | 653,263 |
| Administrative and Other | 330,288 | 309,283 | 267,475 | 276,010 | 260,585 | 227,789 | 294,245 | 278,769 | 254,216 | 268,272 |
| Total Deductions | 10,207,604 | 8,981,455 | 8,560,143 | 8,268,392 | 7,883,575 | 7,696,877 | 7,371,843 | 7,043,252 | 6,648,742 | 6,898,850 |
| **Net change** | 15,832,806 | 25,475,375 | (7,326,595) | (110,151) | 32,992,099 | 20,265,997 | (2,250,030) | 35,118,393 | 21,058,260 | (53,536,052) |
| Fiduciary net position, beginning of year | 311,960,433 | 286,485,058 | 293,811,653 | 293,921,803 | 260,929,704 | 240,663,707 | 242,913,737 | 207,795,344 | 186,737,084 | 240,273,136 |
| **Net position restricted for benefits** | 327,793,239 | 311,960,433 | 286,485,058 | 293,811,652 | 293,921,803 | 260,929,704 | 240,663,707 | 242,913,737 | 207,795,344 | 186,737,084 |

TABLE 1

## Employees' Retirement System of Rhode Island
## Schedule of Changes in Fiduciary Net Position
## Last Ten Fiscal Years

| MERS | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions | $ 17,709,035 | $ 17,412,163 | $ 16,806,273 | $ 11,592,465 | $ 11,312,953 | $ 11,233,301 | $ 23,546,848 | $ 23,169,991 | $ 24,960,269 | $ 23,204,957 |
| Employer contributions | 47,003,638 | 48,542,830 | 46,597,024 | 44,576,294 | 37,897,122 | 35,553,402 | 35,998,489 | 29,469,064 | 31,269,020 | 33,514,681 |
| Interest on service credits purchased | 16,143 | 44,273 | 36,443 | 44,515 | 69,544 | 379,124 | 325,305 | 238,743 | 249,480 | 311,047 |
| Service credit transfers | 3,114,275 | 5,549,444 | | - | - | 593,421 | - | - | - | 19,391 |
| Net Investment income (Loss) | 116,765,906 | 157,202,022 | (471,319) | 32,626,946 | 185,631,284 | 125,322,718 | 19,022,046 | 193,948,795 | 122,500,322 | (219,914,553) |
| Miscellaneous revenue | 147 | 51,557 | 64,748 | 15,218 | 16,532 | - | - | - | 22,886 | 23,576 |
| Total Additions | $ 184,609,144 | $ 228,802,289 | $ 63,033,169 | $ 88,855,438 | $ 234,927,435 | $ 173,081,966 | $ 78,892,688 | $ 246,826,593 | $ 179,001,977 | $ (162,840,901) |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | $ 96,822,308 | $ 96,075,721 | $ 93,966,785 | $ 86,995,021 | $ 86,388,373 | $ 84,724,492 | $ 79,388,347 | $ 73,312,669 | $ 66,920,843 | $ 60,308,085 |
| Death benefits | 702,000 | 778,333 | 603,208 | 678,865 | 763,200 | 695,200 | 585,600 | 729,400 | 706,200 | 592,000 |
| Refund of contributions | 1,207,726 | 1,425,882 | 1,543,855 | 1,360,545 | 2,151,611 | 2,180,177 | 2,770,982 | 2,109,439 | 1,951,464 | 1,901,603 |
| Service credit transfer payments | 4,146,545 | 6,620,457 | | 37,511 | 12,543 | | | | 1,899 | |
| Administrative and Other | 1,566,863 | 1,485,182 | 1,267,911 | 1,303,530 | 1,162,418 | 1,005,124 | 1,283,433 | 1,201,862 | 1,108,245 | 1,230,710 |
| Total Deductions | $ 104,445,442 | $ 106,385,575 | $ 97,381,759 | $ 90,375,472 | $ 90,478,145 | $ 88,604,993 | $ 84,028,362 | $ 77,353,370 | $ 70,688,651 | $ 64,032,398 |
| **Net change** | 80,163,702 | 122,416,714 | (34,348,590) | (1,520,034) | 144,449,290 | 84,476,973 | (5,135,674) | 169,473,223 | 108,313,326 | (226,873,299) |
| Fiduciary net position, beginning of year | 1,480,293,037 | 1,357,876,323 | 1,392,224,913 | 1,393,744,947 | 1,249,295,657 | 1,164,818,684 | 1,169,954,358 | 1,000,481,135 | 892,167,809 | 1,119,041,108 |
| **Net position restricted for benefits** | $ 1,560,456,739 | $ 1,480,293,037 | $ 1,357,876,323 | $ 1,392,224,913 | $ 1,393,744,947 | $ 1,249,295,657 | $ 1,164,818,684 | $ 1,169,954,358 | $ 1,000,481,135 | $ 892,167,809 |

| SPRBT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions | $ 2,007,867 | $ 2,061,465 | $ 2,034,676 | $ 1,731,585 | $ 2,033,664 | $ 1,706,227 | $ 1,699,879 | $ 1,361,092 | $ 1,218,394 | $ 1,122,991 |
| Employer contributions | 2,797,003 | 2,980,219 | 4,004,656 | 3,432,359 | 3,330,889 | 2,103,209 | 5,333,298 | 3,786,553 | 3,590,615 | 3,340,746 |
| Interest on service credits purchased | 2,002 | 3,635 | 391 | 3,368 | 4,660 | 5,889 | 36,452 | 13,384 | 267 | - |
| Net Investment income (Loss) | 10,298,412 | 13,694,012 | 58,549 | 2,655,869 | 14,124,238 | 8,844,873 | 1,393,461 | 11,237,050 | 6,201,903 | (10,272,571) |
| Miscellaneous revenue | 245 | 174 | 29 | 325 | 759 | - | - | - | - | - |
| Total Additions | $ 15,105,529 | $ 18,739,505 | $ 6,098,301 | $ 7,823,506 | $ 19,494,210 | $ 12,660,198 | $ 8,463,090 | $ 16,398,079 | $ 11,011,179 | $ (5,808,834) |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | $ 5,933,726 | $ 5,078,677 | $ 4,585,258 | $ 2,496,511 | $ 1,659,383 | $ 1,038,157 | $ 405,708 | $ 322,250 | $ 251,754 | $ 247,254 |
| Refund of contributions | 90,127 | 63,301 | - | - | 107,921 | - | - | 7,726 | - | 36,241 |
| Administrative and Other | 136,371 | 125,445 | 102,055 | 99,782 | 83,318 | 60,143 | 63,519 | 53,799 | 42,192 | 44,086 |
| Total Deductions | $ 6,160,224 | $ 5,267,423 | $ 4,687,313 | $ 2,596,293 | $ 1,850,622 | $ 1,098,300 | $ 469,227 | $ 383,775 | $ 293,946 | $ 327,581 |
| **Net change** | 8,945,305 | 13,472,082 | 1,410,988 | 5,227,213 | 17,643,588 | 11,561,898 | 7,993,863 | 16,014,304 | 10,717,233 | (6,136,415) |
| Fiduciary net position, beginning of year | 129,788,664 | 116,316,582 | 114,905,593 | 109,678,380 | 92,034,792 | 80,472,894 | 72,479,031 | 56,464,727 | 45,747,494 | 51,883,909 |
| **Net position restricted for benefits** | $ 138,733,969 | $ 129,788,664 | $ 116,316,581 | $ 114,905,593 | $ 109,678,380 | $ 92,034,792 | $ 80,472,894 | $ 72,479,031 | $ 56,464,727 | $ 45,747,494 |

# Employees' Retirement System of Rhode Island
## Schedule of Changes in Fiduciary Net Position
## Last Ten Fiscal Years

| JRBT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions | $ 1,142,163 | $ 1,117,518 | $ 1,052,902 | $ 1,120,609 | $ 1,092,790 | $ 1,042,291 | $ 808,534 | $ 711,151 | $ 638,181 | $ 617,315 |
| Employer contributions | 2,057,529 | 2,057,159 | 2,410,039 | 2,709,397 | 2,543,510 | 1,752,049 | 1,718,379 | 1,298,278 | 1,180,817 | 1,700,174 |
| Net Investment income (Loss) | 5,376,763 | 7,107,208 | 28,787 | 1,367,527 | 7,220,591 | 4,528,408 | 690,844 | 6,366,574 | 3,795,252 | (6,506,645) |
| Miscellaneous revenue | - | - | - | - | - | - | - | - | - | |
| Total Additions | $ 8,576,455 | $ 10,281,885 | $ 3,491,728 | $ 5,197,533 | $ 10,856,891 | $ 7,322,748 | $ 3,217,757 | $ 8,376,003 | $ 5,614,250 | $ (4,189,156) |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | $ 2,833,077 | $ 2,740,166 | $ 2,530,567 | $ 1,800,863 | $ 1,631,368 | $ 1,503,666 | $ 1,383,169 | $ 1,205,765 | $ 1,035,576 | $ 836,322 |
| Death benefits | - | - | - | 8,000 | - | - | - | - | 12,000 | - |
| Refund of contributions | 123,329 | - | - | - | - | - | - | - | - | - |
| Administrative and Other | 71,270 | 65,088 | 52,550 | 51,039 | 42,538 | 32,823 | 36,534 | 32,763 | 28,290 | 28,443 |
| Total Deductions | $ 3,027,676 | $ 2,805,254 | $ 2,583,117 | $ 1,859,902 | $ 1,673,906 | $ 1,536,489 | $ 1,419,703 | $ 1,238,528 | $ 1,075,866 | $ 864,765 |
| **Net change** | 5,548,779 | 7,476,631 | 908,611 | 3,337,631 | 9,182,985 | 5,786,259 | 1,798,054 | 7,137,475 | 4,538,384 | (5,053,921) |
| Fiduciary net position, beginning of year | 67,895,115 | 60,418,484 | 59,509,873 | 56,172,242 | 46,989,257 | 41,202,998 | 39,404,944 | 32,267,469 | 27,729,085 | 32,783,006 |
| **Net position restricted for benefits** | $ 73,443,894 | $ 67,895,115 | $ 60,418,484 | $ 59,509,873 | $ 56,172,242 | $ 46,989,257 | $ 41,202,998 | $ 39,404,944 | $ 32,267,469 | $ 27,729,085 |

| RIJRFT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions | $ 116,757 | $ 116,667 | $ 135,454 | $ 158,718 | $ 153,145 | $ 152,910 | $ - | $ - | $ - | $ - |
| Employer contributions | 399,012 | 332,340 | 140,141 | - | - | - | - | - | - | - |
| Net Investment income (Loss) | 43,510 | 63,669 | 3,869 | 9,094 | 12,045 | - | - | - | - | - |
| Miscellaneous revenue | - | - | - | - | - | - | - | - | - | - |
| Total Additions | $ 559,279 | $ 512,676 | $ 279,464 | $ 167,812 | $ 165,190 | $ 152,910 | $ - | $ - | $ - | $ - |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | $ 399,015 | $ 399,015 | $ 231,175 | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Administrative and Other | 646 | 558 | 361 | 237 | 77 | - | - | - | - | - |
| Total Deductions | $ 399,661 | $ 399,573 | $ 231,536 | $ 237 | $ 77 | $ - | $ - | $ - | $ - | $ - |
| **Net change** | 159,618 | 113,103 | 47,928 | 167,575 | 165,113 | 152,910 | - | - | - | - |
| Fiduciary net position, beginning of year | 646,628 | 533,525 | 485,597 | 318,023 | 152,910 | - | - | - | - | - |
| **Net position restricted for benefits** | $ 806,246 | $ 646,628 | $ 533,525 | $ 485,598 | $ 318,023 | $ 152,910 | $ - | $ - | $ - | $ - |

# Employees' Retirement System of Rhode Island
## Schedule of Changes in Fiduciary Net Position
## Last Ten Fiscal Years

| SPRFT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Employer contributions | $ 16,387,092 | $ 16,566,076 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Supplemental employer contributions | - | 15,000,000 | - | - | - | - | - | - | - | - |
| Net Investment income (Loss) | 1,136,938 | 1,838,792 | - | - | - | - | - | - | - | - |
| Miscellaneous revenue | - | - | - | - | - | - | - | - | - | - |
| Total Additions | $ 17,524,030 | $ 33,404,868 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Deductions:** | | | | | | | | | | |
| Retirement benefits | $ 17,273,412 | $ 17,391,853 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Administrative and Other | 5,304 | - | - | - | - | - | - | - | - | - |
| Total Deductions | $ 17,278,716 | $ 17,391,853 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Net change** | 245,314 | 16,013,015 | - | - | - | - | - | - | - | - |
| Fiduciary net position, beginning of year | 16,013,015 | - | - | - | - | - | - | - | - | - |
| **Net position restricted for benefits** | $ 16,258,329 | $ 16,013,015 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |

| Defined Contribution Plan | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Additions:** | | | | | | | | | | |
| Member contributions* | $ 92,018,737 | $ 89,202,835 | $ 83,417,174 | $ 101,335,771 | $ 98,970,355 | $ 92,972,909 | $ - | $ - | $ - | $ - |
| Employer contributions | 27,828,956 | 27,229,405 | 26,117,372 | 28,222,896 | 27,755,911 | 26,070,631 | - | - | - | - |
| Net Investment income (Loss) | 61,431,415 | 74,924,355 | 4,314,212 | 10,458,458 | 32,157,857 | 4,663,091 | - | - | - | - |
| Miscellaneous revenue | 11,500 | 7,500 | 6,550 | 911 | | - | - | - | - | - |
| Total Additions | $ 181,290,608 | $ 191,364,095 | $ 113,855,308 | $ 140,018,036 | $ 158,884,123 | $ 123,706,631 | $ - | $ - | $ - | $ - |
| **Deductions:** | | | | | | | | | | |
| Distributions | $ 16,181,976 | $ 12,298,997 | $ 9,224,425 | $ 5,331,383 | $ 2,643,923 | $ 338,109 | $ - | $ - | $ - | $ - |
| Administrative and other | 1,232,204 | 1,177,819 | 1,160,872 | 1,298,471 | 1,257,208 | 963,548 | - | - | - | - |
| Total Deductions | $ 17,414,180 | $ 13,476,816 | $ 10,385,297 | $ 6,629,854 | $ 3,901,131 | $ 1,301,657 | $ - | $ - | $ - | $ - |
| **Net change** | 163,876,428 | 177,887,279 | 103,470,011 | 133,388,182 | 154,982,992 | 122,404,974 | - | - | - | - |
| Fiduciary net position, beginning of year | 692,133,439 | 514,246,160 | 410,776,149 | 277,387,966 | 122,404,974 | - | - | - | - | - |
| **Net position restricted for benefits** | $ 856,009,867 | $ 692,133,439 | $ 514,246,160 | $ 410,776,148 | $ 277,387,966 | $ 122,404,974 | $ - | $ - | $ - | $ - |

* Effective July 1, 2015 members with at least 20 years of service as of June 30, 2012 were no longer required to participate in the Defined Contribution Plan. These members participate solely in the Defined Benefit Plan. This was the result of the mediated settlement from the pension reform challenge.

TABLE 2

# Employees' Retirement System of Rhode Island
# Schedule of Employer Contribution Rates

| Valuation Date as of June 30, | Fiscal Year Ending June 30, | Employer Contribution Rate |
|---|---|---|
| **ERS - State Employees** | | |
| 2017 | 2020 | 26.39% |
| 2016 | 2019 | 25.75% |
| 2015 | 2018 | 24.87% |
| 2014 | 2017 | 25.34% [4] |
| 2013 | 2016 | 23.64% |
| 2012 | 2015 | 23.33% |
| 2011 | 2014 | 23.05% |
| 2010 | 2013 | 21.18% [3] |
| 2009 | 2012 | 22.98% |
| 2008 | 2011 | 20.78% |
| 2007 | 2010 | 20.78% [2] |
| 2006 | 2009 | 21.64% [1] |
| **ERS - Teachers** | | |
| 2017 | 2020 | 24.61% |
| 2016 | 2019 | 23.51% |
| 2015 | 2018 | 23.13% |
| 2014 | 2017 | 23.13% [4] |
| 2013 | 2016 | 23.14% |
| 2012 | 2015 | 22.60% |
| 2011 | 2014 | 20.68% |
| 2010 | 2013 | 19.29% [3] |
| 2009 | 2012 | 22.32% |
| 2008 | 2011 | 19.01% |
| 2007 | 2010 | 19.01% [2] |
| 2006 | 2009 | 20.07% [1] |

[1] *Restated after adopting the amendment of Article 7.*

[2] *Restated after adopting the amendment of Article 16.*

[3] *Restated after reflecting the Rhode Island Retirement Security Act of 2011.*

[4] *Restated after adopting the amendment of Article 21.*

TABLE 2

## Employees' Retirement System of Rhode Island
## Schedule of Employer Contribution Rates

| Valuation Date as of June 30, | Fiscal Year Ending June 30, | Contribution Rate |
|---|---|---|
| **Municipal Employees' Retirement System - General Employees*** | | |
| 2017 | 2020 | 12.43% |
| 2016 | 2019 | 12.23% |
| 2015 | 2018 | 11.91% |
| 2014 | 2017 | 12.06% |
| 2013 | 2016 | 12.74% |
| 2012 | 2015 | 12.63% |
| 2011 | 2014 | 11.85% |
| 2010 | 2013 | 18.35% |
| 2009 | 2012 | 9.59% |
| 2008 | 2011 | 7.52% |
| 2007 | 2010 | 8.50% |
| 2006 | 2009 | 9.27% |
| **Municipal Employees' Retirement System - Police/Fire Employees*** | | |
| 2017 | 2020 | 19.31% |
| 2016 | 2019 | 17.20% |
| 2015 | 2018 | 15.90% |
| 2014 | 2017 | 16.15% |
| 2013 | 2016 | 16.89% |
| 2012 | 2015 | 17.26% |
| 2011 | 2014 | 13.27% |
| 2010 | 2013 | 31.91% |
| 2009 | 2012 | 17.24% |
| 2008 | 2011 | 15.42% |
| 2007 | 2010 | 14.85% |
| 2006 | 2009 | 15.61% |

* Each employer unit participating in MERS is financially responsible for its own plan. Therefore, the aggregate numbers shown on the above schedules reflect only the aggregate condition of MERS and does not indicate the status of any particular employer unit.

TABLE 2

# Employees' Retirement System of Rhode Island
# Schedule of Employer Contribution Rates

### State Police Retirement Benefits Trust

| Valuation Date as of June 30, | Fiscal Year Ending June 30, | Employer Contribution Rate |
|---|---|---|
| 2017 | 2020 | 18.48% |
| 2016 | 2019 | 14.74% |
| 2015 | 2018 | 12.22% |
| 2014 | 2017 | 12.66% [3] |
| 2013 | 2016 | 17.22% |
| 2012 | 2015 | 17.24% |
| 2011 | 2014 | 14.45% |
| 2010 | 2013 | 11.07% [2] |
| 2009 | 2012 | 25.39% |
| 2008 | 2011 | 24.58% |
| 2007 | 2010 | 26.03% [1] |
| 2006 | 2009 | 26.03% [1] |

[1] *Revised pursuant to Article 22 (2008).*
[2] *Restated after reflecting the Rhode Island Retirement Security Act of 2011.*
[3] *Restated to reflect impact of Article 21.*

### Judicial Retirement Benefits Trust

| Valuation Date as of June 30, | Fiscal Year Ending June 30, | Employer Contribution Rate |
|---|---|---|
| 2017 | 2020 | 21.30% |
| 2016 | 2019 | 20.28% |
| 2015 | 2018 | 21.13% |
| 2014 | 2017 | 21.58% [4] |
| 2013 | 2016 | 26.80% |
| 2012 | 2015 | 28.32% |
| 2011 | 2014 | 27.28% |
| 2010 | 2013 | 19.69% [3] |
| 2009 | 2012 | 18.69% |
| 2008 | 2011 | 16.19% [2] |
| 2007 | 2010 | 16.19% [2] |
| 2006 | 2009 | 24.06% [1] |

[1] *Reflects changes in benefit provisions enacted by Article 35.*
[2] *Restated to reflect changes in benefit provisions enacted by Article 16.*
[3] *Restated after reflecting the Rhode Island Retirement Security Act of 2011.*
[4] *Restated after reflecting the impact of Article 21.*

# Employees' Retirement System of Rhode Island
# Schedule of Employer Contribution Rates

### Teachers' Survivors Benefits Plan

The calculation for the contributions for TSB are prescribed in Rhode Island General Law §16-16-35. The annual salary limit used in the calculation of the 2% contribution rate due to the Teachers Survivors' Benefit Plan is $11,500; one-half (1/2) of the cost shall be contributed by the member by deductions from his or her salary, and the other half (1/2) shall be contributed and paid by the respective city, town, or school district by which the member is employed.

### Rhode Island Judicial Retirement Fund Trust

RIJRFT is a closed plan and the actuarial determined contribution is calculated as a level dollar amount.

### State Police Retirement Fund Trust

SPRFT is a closed plan and the actuarial determined contribution is calculated as a level dollar amount.

***Note:*** The most recent actuarial valuation for ERSRI is as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

TABLE 3

**Employees' Retirement System of Rhode Island**
**Schedule of Benefits and Refunds by Type**
**Last Ten Fiscal Years**

| **ERS** | **2018** | **2017** | **2016** | **2015** | **2014** | **2013** | **2012** | **2011** | **2010** | **2009** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Service Retirement | $ 753,958,832 | $ 756,807,010 | $ 757,469,257 | $ 755,331,153 | $ 768,819,629 | $ 772,592,699 | $ 758,007,433 | $ 730,240,340 | $ 709,939,114 | $ 672,621,823 |
| Survivor Retirement | 34,500,460 | 34,563,403 | 36,200,420 | 21,694,578 | 6,768,753 | 6,635,029 | 6,375,087 | 6,159,078 | 5,824,848 | 5,508,938 |
| Disability Retirement | 27,502,977 | 27,648,067 | 24,211,576 | 22,262,866 | 24,860,878 | 24,574,363 | 24,398,424 | 23,770,292 | 22,657,523 | 21,316,903 |
| Supplemental Retirement | 888,996 | 911,277 | 939,411 | 956,506 | 999,527 | 1,027,913 | 1,061,420 | 1,089,321 | 1,105,478 | 1,098,799 |
| Death benefits | 2,778,667 | 2,432,232 | 2,878,655 | 3,320,919 | 2,700,200 | 2,822,400 | 2,824,800 | 2,606,747 | 2,391,600 | 2,271,400 |
| Refund of contributions | 4,678,432 | 5,711,781 | 6,306,239 | 8,618,199 | 10,062,956 | 9,417,426 | 9,796,997 | 8,890,203 | 7,550,207 | 8,287,514 |
| Total | $ 824,308,364 | $ 828,073,769 | $ 828,005,558 | $ 812,184,221 | $ 814,211,943 | $ 817,069,830 | $ 802,464,161 | $ 772,755,981 | $ 749,468,770 | $ 711,105,377 |

| **TSB** | **2018** | **2017** | **2016** | **2015** | **2014** | **2013** | **2012** | **2011** | **2010** | **2009** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Survivor Retirement | $ 9,602,181 | $ 8,405,649 | $ 8,097,067 | $ 7,750,955 | $ 7,421,004 | $ 7,127,822 | $ 6,704,572 | $ 6,527,665 | $ 6,118,256 | $ 5,977,308 |
| Refund of contributions | 275,135 | 266,523 | 195,601 | 241,427 | 201,986 | 342,877 | 369,108 | 235,943 | 276,270 | 653,263 |
| Total | $ 9,877,316 | $ 8,672,172 | $ 8,292,668 | $ 7,992,382 | $ 7,622,990 | $ 7,470,699 | $ 7,073,680 | $ 6,763,608 | $ 6,394,526 | $ 6,630,571 |

| **MERS** | **2018** | **2017** | **2016** | **2015** | **2014** | **2013** | **2012** | **2011** | **2010** | **2009** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Service Retirement | $ 81,864,846 | $ 81,297,434 | $ 80,167,328 | $ 76,240,655 | $ 77,579,600 | $ 76,142,106 | $ 70,963,734 | $ 65,199,269 | $ 59,493,126 | $ 53,411,131 |
| Survivor Retirement | 4,931,551 | 4,986,860 | 5,281,693 | 3,029,126 | 739,423 | 684,165 | 666,693 | 649,604 | 621,853 | 568,980 |
| Disability Retirement | 10,025,911 | 9,791,427 | 8,517,764 | 7,725,240 | 8,069,350 | 7,898,221 | 7,757,920 | 7,463,796 | 6,805,864 | 6,327,974 |
| Death benefits | 702,000 | 778,333 | 603,208 | 678,865 | 763,200 | 695,200 | 585,600 | 729,400 | 706,200 | 592,000 |
| Refund of contributions | 1,207,726 | 1,425,882 | 1,543,855 | 1,360,545 | 2,151,611 | 2,180,177 | 2,770,982 | 2,109,439 | 1,951,464 | 1,901,603 |
| Total | $ 98,732,034 | $ 98,279,937 | $ 96,113,847 | $ 89,034,430 | $ 89,303,185 | $ 87,599,869 | $ 82,744,929 | $ 76,151,508 | $ 69,578,507 | $ 62,801,688 |

| **SPRBT** | **2018** | **2017** | **2016** | **2015** | **2014** | **2013** | **2012** | **2011** | **2010** | **2009** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Service Retirement | $ 5,449,859 | $ 4,673,084 | $ 4,179,857 | $ 2,122,230 | $ 1,363,462 | $ 821,056 | $ 224,733 | $ 145,775 | $ 79,029 | $ 77,529 |
| Survivor Retirement | 113,428 | 114,234 | 114,196 | 112,696 | 112,696 | 33,876 | - | - | - | - |
| Disability Retirement | 370,439 | 291,359 | 291,205 | 261,585 | 183,225 | 183,225 | 180,975 | 176,475 | 172,725 | 169,725 |
| Refund of contributions | 90,127 | 63,301 | - | - | 107,921 | - | - | 7,726 | - | 36,241 |
| Total | $ 6,023,853 | $ 5,141,979 | $ 4,585,258 | $ 2,496,511 | $ 1,767,304 | $ 1,038,157 | $ 405,708 | $ 329,976 | $ 251,754 | $ 283,495 |

## Employees' Retirement System of Rhode Island
## Schedule of Benefits and Refunds by Type
## Last Ten Fiscal Years

| JRBT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Service Retirement | $ 2,461,524 | $ 2,388,732 | $ 2,222,569 | $ 1,649,394 | $ 1,594,682 | $ 1,466,980 | $ 1,328,974 | $ 1,117,296 | $ 949,604 | $ 752,609 |
| Survivor Retirement | 371,553 | 351,434 | 307,998 | 151,469 | 36,686 | 36,686 | 54,195 | 88,469 | 85,972 | 83,713 |
| Death benefits | - | - | - | 8,000 | - | - | - | - | 12,000 | - |
| Refund of contributions | 123,329 | - | - | - | - | - | - | - | - | - |
| Total | $ 2,956,406 | $ 2,740,166 | $ 2,530,567 | $ 1,808,863 | $ 1,631,368 | $ 1,503,666 | $ 1,383,169 | $ 1,205,765 | $ 1,047,576 | $ 836,322 |

| RIJRFT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Service Retirement | $ 399,015 | $ 399,015 | $ 231,175 | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Total | $ 399,015 | $ 399,015 | $ 231,175 | $ - | $ - | $ - | $ - | $ - | $ - | $ - |

| SPRFT | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Deductions:** | | | | | | | | | | |
| Service Retirement | $ 13,973,618 | $ 14,245,610 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Survivor Retirement | 2,273,423 | 2,092,513 | - | - | - | - | - | - | - | - |
| Disability Retirement | 1,026,371 | 1,053,730 | - | - | - | - | - | - | - | - |
| Total | $ 17,273,412 | $ 17,391,853 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |

# Employees' Retirement System of Rhode Island
# Schedule of Retired Members by Type of Pension Benefit

## ERS - State Employees

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | 499 | 57 | 23 | - | 579 |
| $500-$1,000 | 1,238 | 131 | 93 | - | 1,462 |
| $1,000-$1,500 | 1,188 | 156 | 137 | 1 | 1,482 |
| $1,500-$2,000 | 1,151 | 155 | 137 | 9 | 1,452 |
| $2,000-$2,500 | 1,036 | 131 | 141 | 70 | 1,378 |
| $2,500-$3,000 | 845 | 85 | 117 | 113 | 1,160 |
| $3,000-$3,500 | 592 | 86 | 103 | 166 | 947 |
| $3,500-$4,000 | 473 | 67 | 122 | 128 | 790 |
| $4,000-$4,500 | 331 | 59 | 92 | 92 | 574 |
| $4,500-$5,000 | 221 | 30 | 54 | 62 | 367 |
| $5,000-$5,500 | 201 | 22 | 37 | 46 | 306 |
| $5,500-$6,000 | 124 | 18 | 41 | 26 | 209 |
| $6,000-$6,500 | 87 | 16 | 26 | 7 | 136 |
| $6,500-$7,000 | 51 | 8 | 20 | 6 | 85 |
| $7,000-$7,500 | 37 | 4 | 16 | 3 | 60 |
| Over $7,500 | 56 | 11 | 20 | 4 | 91 |
| **Total** | **8,130** | **1,036** | **1,179** | **733** | **11,078** |

## ERS - Teachers

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | 65 | 10 | 1 | - | 76 |
| $500-$1,000 | 233 | 40 | 23 | - | 296 |
| $1,000-$1,500 | 398 | 69 | 42 | - | 509 |
| $1,500-$2,000 | 470 | 83 | 53 | 1 | 607 |
| $2,000-$2,500 | 515 | 67 | 81 | 5 | 668 |
| $2,500-$3,000 | 868 | 63 | 101 | 8 | 1,040 |
| $3,000-$3,500 | 1,405 | 87 | 149 | 12 | 1,653 |
| $3,500-$4,000 | 1,574 | 106 | 198 | 61 | 1,939 |
| $4,000-$4,500 | 1,361 | 71 | 253 | 60 | 1,745 |
| $4,500-$5,000 | 1,140 | 29 | 130 | 90 | 1,389 |
| $5,000-$5,500 | 603 | 14 | 58 | 61 | 736 |
| $5,500-$6,000 | 217 | 5 | 37 | 18 | 277 |
| $6,000-$6,500 | 92 | 5 | 18 | 12 | 127 |
| $6,500-$7,000 | 53 | 2 | 2 | 2 | 59 |
| $7,000-$7,500 | 31 | - | 3 | 3 | 37 |
| Over $7,500 | 42 | 2 | 6 | 3 | 53 |
| **Total** | **9,067** | **653** | **1,155** | **336** | **11,211** |

# Employees' Retirement System of Rhode Island
# Schedule of Retired Members by Type of Pension Benefit

## Teachers' Survivors Benefits Plan

| Life Insurance Benefit | Life Insurance | N/A | N/A | N/A | Total |
|---|---|---|---|---|---|
| Under $10,000 | 2 | - | - | - | 2 |
| $10,000-$11,000 | 1 | - | - | - | 1 |
| $11,000-$12,000 | 12 | - | - | - | 12 |
| $12,000-$13,000 | 23 | - | - | - | 23 |
| $13,000-$14,000 | 18 | - | - | - | 18 |
| $14,000-$15,000 | 37 | - | - | - | 37 |
| $15,000-$16,000 | 50 | - | - | - | 50 |
| $16,000-$17,000 | 166 | - | - | - | 166 |
| $17,000-$18,000 | 124 | - | - | - | 124 |
| $18,000-$19,000 | 10 | - | - | - | 10 |
| $19,000-$20,000 | 62 | - | - | - | 62 |
| Over $20,000 | 68 | - | - | - | 68 |
| **Total** | **573** | **-** | **-** | **-** | **573** |

## Municipal Employees' Retirement System - General Employees

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | 750 | 87 | 60 | - | 897 |
| $500-$1,000 | 1,068 | 221 | 143 | - | 1,432 |
| $1,000-$1,500 | 654 | 145 | 95 | - | 894 |
| $1,500-$2,000 | 400 | 99 | 84 | 1 | 584 |
| $2,000-$2,500 | 265 | 40 | 65 | 5 | 375 |
| $2,500-$3,000 | 148 | 31 | 24 | 11 | 214 |
| $3,000-$3,500 | 54 | 8 | 10 | 22 | 94 |
| $3,500-$4,000 | 43 | 3 | 6 | 15 | 67 |
| $4,000-$4,500 | 20 | - | 5 | 6 | 31 |
| $4,500-$5,000 | 17 | 4 | 2 | 3 | 26 |
| $5,000-$5,500 | 7 | 1 | 1 | - | 9 |
| $5,500-$6,000 | 2 | - | 1 | 1 | 4 |
| $6,000-$6,500 | 4 | - | 1 | - | 5 |
| $6,500-$7,000 | - | - | - | - | - |
| $7,000-$7,500 | 1 | - | - | - | 1 |
| Over $7,500 | 2 | 1 | - | - | 3 |
| **Total** | **3,435** | **640** | **497** | **64** | **4,636** |

# Employees' Retirement System of Rhode Island
# Schedule of Retired Members by Type of Pension Benefit

## Municipal Employees' Retirement System - Police/Fire Employees

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | 27 | 1 | 1 | - | 29 |
| $500-$1,000 | 63 | 1 | 1 | - | 65 |
| $1,000-$1,500 | 51 | 4 | 5 | - | 60 |
| $1,500-$2,000 | 53 | 2 | 9 | - | 64 |
| $2,000-$2,500 | 74 | 8 | 12 | - | 94 |
| $2,500-$3,000 | 102 | 13 | 22 | - | 137 |
| $3,000-$3,500 | 136 | 10 | 18 | - | 164 |
| $3,500-$4,000 | 82 | 2 | 4 | - | 88 |
| $4,000-$4,500 | 55 | 4 | 3 | - | 62 |
| $4,500-$5,000 | 16 | 0 | 1 | - | 17 |
| $5,000-$5,500 | 9 | 2 | - | - | 11 |
| $5,500-$6,000 | 8 | - | 1 | - | 9 |
| $6,000-$6,500 | 1 | - | - | - | 1 |
| $6,500-$7,000 | - | - | - | - | 0 |
| $7,000-$7,500 | - | - | - | - | 0 |
| Over $7,500 | - | - | - | - | 0 |
| **Total** | **677** | **47** | **77** | **-** | **801** |

## State Police Retirement Benefits Trust

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | - | - | - | - | - |
| $500-$1,000 | - | - | - | - | - |
| $1,000-$1,500 | 1 | - | - | - | 1 |
| $1,500-$2,000 | - | - | - | - | - |
| $2,000-$2,500 | - | - | - | - | - |
| $2,500-$3,000 | 1 | - | - | - | 1 |
| $3,000-$3,500 | - | - | - | - | - |
| $3,500-$4,000 | 4 | - | - | - | 4 |
| $4,000-$4,500 | 3 | - | - | - | 3 |
| $4,500-$5,000 | - | - | - | - | - |
| $5,000-$5,500 | 1 | - | - | - | 1 |
| $5,500-$6,000 | 9 | - | - | - | 9 |
| $6,000-$6,500 | 4 | - | - | - | 4 |
| $6,500-$7,000 | 5 | - | - | - | 5 |
| $7,000-$7,500 | 8 | - | - | - | 8 |
| Over $7,500 | 35 | - | - | - | 35 |
| **Total** | **71** | **-** | **-** | **-** | **71** |

# Employees' Retirement System of Rhode Island
# Schedule of Retired Members by Type of Pension Benefit

## Judicial Retirement Benefits Trust

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | - | - | - | - | - |
| $500-$1,000 | - | - | - | - | - |
| $1,000-$1,500 | - | - | - | - | - |
| $1,500-$2,000 | - | - | - | - | - |
| $2,000-$2,500 | - | - | - | - | - |
| $2,500-$3,000 | - | - | - | - | - |
| $3,000-$3,500 | 1 | - | - | - | 1 |
| $3,500-$4,000 | - | - | - | - | - |
| $4,000-$4,500 | - | - | - | - | - |
| $4,500-$5,000 | - | - | - | - | - |
| $5,000-$5,500 | 2 | - | - | - | 2 |
| $5,500-$6,000 | - | - | - | - | - |
| $6,000-$6,500 | - | - | - | - | - |
| $6,500-$7,000 | - | - | - | - | - |
| $7,000-$7,500 | - | - | - | - | - |
| Over $7,500 | 17 | - | - | - | 17 |
| **Total** | **20** | **-** | **-** | **-** | **20** |

## Rhode Island Judicial Retirement Fund Trust

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | - | - | - | - | - |
| $500-$1,000 | - | - | - | - | - |
| $1,000-$1,500 | - | - | - | - | - |
| $1,500-$2,000 | - | - | - | - | - |
| $2,000-$2,500 | - | - | - | - | - |
| $2,500-$3,000 | - | - | - | - | - |
| $3,000-$3,500 | - | - | - | - | - |
| $3,500-$4,000 | - | - | - | - | - |
| $4,000-$4,500 | - | - | - | - | - |
| $4,500-$5,000 | - | - | - | - | - |
| $5,000-$5,500 | - | - | - | - | - |
| $5,500-$6,000 | - | - | - | - | - |
| $6,000-$6,500 | - | - | - | - | - |
| $6,500-$7,000 | - | - | - | - | - |
| $7,000-$7,500 | - | - | - | - | - |
| Over $7,500 | 2 | | | | 2 |
| **Total** | **2** | **-** | **-** | **-** | **2** |

# Employees' Retirement System of Rhode Island
# Schedule of Retired Members by Type of Pension Benefit

## State Police Retirement Fund Trust

| Monthly Amount | Service Retirement Allowance | Option One: Joint and Survivor Full | Option Two: Joint and Survivor Half | Service Retirement Allowance Plus | Total |
|---|---|---|---|---|---|
| Under $500 | 1 | - | - | - | 1 |
| $500-$1,000 | 0 | - | - | - | 0 |
| $1,000-$1,500 | 3 | - | - | - | 3 |
| $1,500-$2,000 | 2 | - | - | - | 2 |
| $2,000-$2,500 | 5 | - | - | - | 5 |
| $2,500-$3,000 | 9 | - | - | - | 9 |
| $3,000-$3,500 | 5 | - | - | - | 5 |
| $3,500-$4,000 | 24 | - | - | - | 24 |
| $4,000-$4,500 | 30 | - | - | - | 30 |
| $4,500-$5,000 | 26 | - | - | - | 26 |
| $5,000-$5,500 | 29 | - | - | - | 29 |
| $5,500-$6,000 | 35 | - | - | - | 35 |
| $6,000-$6,500 | 40 | - | - | - | 40 |
| $6,500-$7,000 | 30 | - | - | - | 30 |
| $7,000-$7,500 | 13 | - | - | - | 13 |
| Over $7,500 | 17 | - | - | - | 17 |
| **Total** | **269** | **-** | **-** | **-** | **269** |

**Service Retirement Allowance -** is a life annuity that is calculated based on the member's years of service credit and average salary as a participating employee.

**Option 1: Joint and Survivor Full -** is an annuity that is actuarially reduced based on the age difference of the member and the designated beneficiary. The retirement benefit that the member and the beneficiary (upon death of the member) will receive will be equal for the respective lives of each recipient.

**Option 2: Joint and Survivor Half -** is an annuity that is actuarially reduced based on the age difference of the member and the designated beneficiary. The retirement benefit for the member is reduced based on the actuarial reduction calculation. However, this benefit will be higher than the Joint and Survivor Full option. Upon the death of the member, the designated beneficiary will receive 50% of the member's benefit for the remainder of their life.

**Service Retirement Allowance Plus -** is a life annuity that is calculated based on the member's years of service credit and average salary as a participating employee. In addition, a supplemental amount will be added to the pension benefit. The supplementary amount is determined based on the member's age at retirement and a percentage of an estimate of the average Social Security payment that a member might receive at the age of 62 (calculated on a national average figure). During the month the member turns 62, the pension benefit amount will be reduced by the full national average amount of Social Security payment that a person might receive at the age of 62 (calculated on a national average figure). Also, the pension benefit will be reduced by the full estimated amount and not by the supplemental amount that the member had been receiving. Estimate of Social Security benefits used by ERSRI to calculate pension benefits are general estimates and are not guaranteed by ERSRI or the Social Security Administration (SSA). This option is not related to a member's participation in Social Security or any programs of the SSA.

***Note:*** This schedule was prepared based on the source data that was certified in the most recent actuarial valuations as of June 30, 2017.

TABLE 5

# Employees' Retirement System of Rhode Island
# Schedule of Average Benefit Payments - Retirement

## ERS - State Employees

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 24,171 | $ 12,650 | $ 11,832 | $ 17,481 | $ 24,822 | $ 35,679 | $ 47,637 | $ 29,861 |
| | **Average monthly benefit** | $ 2,014 | $ 1,054 | $ 986 | $ 1,457 | $ 2,068 | $ 2,973 | $ 3,970 | $ 2,488 |
| | **Average monthly FAC** | $ 2,515 | $ 3,177 | $ 3,644 | $ 3,904 | $ 4,422 | $ 4,682 | $ 5,233 | $ 3,826 |
| | **Number of retired members** | 4,149 | 151 | 600 | 768 | 1,095 | 2,062 | 2,253 | 11,078 |
| 2016 | **Average annual benefit** | $ 23,953 | $ 13,571 | $ 12,305 | $ 18,111 | $ 25,461 | $ 36,417 | $ 48,071 | $ 29,682 |
| | **Average monthly benefit** | $ 1,996 | $ 1,131 | $ 1,025 | $ 1,509 | $ 2,122 | $ 3,035 | $ 4,006 | $ 2,474 |
| | **Average monthly FAC** | $ 2,706 | $ 3,333 | $ 3,600 | $ 3,894 | $ 4,432 | $ 4,669 | $ 5,190 | $ 3,902 |
| | **Number of retired members** | 4,444 | 144 | 577 | 788 | 1,073 | 1,947 | 2,085 | 11,058 |

## ERS - Teachers

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 42,307 | $ 34,952 | $ 17,827 | $ 26,980 | $ 45,153 | $ 54,382 | $ 58,761 | $ 43,150 |
| | **Average monthly benefit** | $ 3,526 | $ 2,913 | $ 1,486 | $ 2,248 | $ 3,763 | $ 4,532 | $ 4,897 | $ 3,596 |
| | **Average monthly FAC** | $ 3,866 | $ 4,789 | $ 5,412 | $ 5,838 | $ 5,821 | $ 6,145 | $ 6,574 | $ 5,062 |
| | **Number of retired members** | 4,517 | 424 | 519 | 856 | 2,420 | 2,106 | 369 | 11,211 |
| 2016 | **Average annual benefit** | $ 42,077 | $ 35,242 | $ 20,462 | $ 31,820 | $ 46,571 | $ 55,576 | $ 60,025 | $ 43,450 |
| | **Average monthly benefit** | $ 3,506 | $ 2,937 | $ 1,705 | $ 2,652 | $ 3,881 | $ 4,631 | $ 5,002 | $ 3,621 |
| | **Average monthly FAC** | $ 3,948 | $ 4,794 | $ 5,402 | $ 5,900 | $ 5,821 | $ 6,131 | $ 6,481 | $ 5,068 |
| | **Number of retired members** | 4,678 | 450 | 556 | 964 | 2,333 | 1,816 | 290 | 11,087 |

TABLE 5

# Employees' Retirement System of Rhode Island
# Schedule of Average Benefit Payments - Retirement

## Teachers' Survivors Benefits Plan

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 18,333 | $ - | $ - | $ - | $ - | $ - | $ - | $ 18,333 |
| | **Number of retired members** | 573 | - | - | - | - | - | - | 573 |
| 2016 | **Average annual benefit** | $ 15,976 | $ - | $ - | $ - | $ - | $ - | $ - | $ 15,976 |
| | **Number of retired members** | 517 | - | - | - | - | - | - | 517 |

## Municipal Employees' Retirement System - General Employees

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 21,762 | $ 8,071 | $ 8,445 | $ 12,129 | $ 17,339 | $ 14,476 | $ 31,638 | $ 15,046 |
| | **Average monthly benefit** | $ 1,813 | $ 673 | $ 704 | $ 1,011 | $ 1,445 | $ 1,206 | $ 2,636 | $ 1,254 |
| | **Average monthly FAC** | $ 2,308 | $ 2,556 | $ 2,644 | $ 2,799 | $ 3,062 | $ 2,188 | $ 3,816 | $ 2,638 |
| | **Number of retired members** | 14 | 152 | 768 | 641 | 619 | 1,983 | 459 | 4,636 |
| 2016 | **Average annual benefit** | $ 20,745 | $ 10,285 | $ 7,313 | $ 10,701 | $ 15,363 | $ 16,877 | $ 29,953 | $ 14,870 |
| | **Average monthly benefit** | $ 1,729 | $ 857 | $ 609 | $ 892 | $ 1,280 | $ 1,406 | $ 2,496 | $ 1,239 |
| | **Average monthly FAC** | $ 2,140 | $ 2,508 | $ 2,257 | $ 2,387 | $ 2,659 | $ 2,813 | $ 3,496 | $ 2,652 |
| | **Number of retired members** | 16 | 134 | 1,075 | 855 | 857 | 972 | 652 | 4,561 |

TABLE 5

# Employees' Retirement System of Rhode Island
# Schedule of Average Benefit Payments - Retirement

## Municipal Employees' Retirement System - Police/Fire Employees

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 35,752 | $ 34,796 | $ 35,663 | $ 31,627 | $ 32,398 | $ 29,852 | $ 45,583 | $ 32,309 |
| | **Average monthly benefit** | $ 2,979 | $ 2,900 | $ 2,972 | $ 2,636 | $ 2,700 | $ 2,488 | $ 3,799 | $ 2,692 |
| | **Average monthly FAC** | $ 3,836 | $ 4,577 | $ 4,802 | $ 4,766 | $ 4,919 | $ 3,786 | $ 5,216 | $ 4,378 |
| | **Number of retired members** | 7 | 19 | 54 | 64 | 237 | 369 | 51 | 801 |
| 2016 | **Average annual benefit** | $ 32,136 | $ 30,494 | $ 29,062 | $ 28,096 | $ 30,775 | $ 31,353 | $ 44,006 | $ 31,966 |
| | **Average monthly benefit** | $ 2,678 | $ 2,541 | $ 2,422 | $ 2,341 | $ 2,565 | $ 2,613 | $ 3,667 | $ 2,664 |
| | **Average monthly FAC** | $ 4,010 | $ 3,754 | $ 4,096 | $ 4,394 | $ 4,606 | $ 4,421 | $ 4,885 | $ 4,481 |
| | **Number of retired members** | 8 | 33 | 56 | 58 | 278 | 263 | 77 | 773 |

## State Police Retirement Benefits Trust

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ - | $ 43,489 | $ 70,878 | $ 45,006 | $ 79,780 | $ 87,820 | $ - | $ 83,410 |
| | **Average monthly benefit** | $ - | $ 3,624 | $ 5,907 | $ 3,751 | $ 6,648 | $ 7,318 | $ - | $ 6,951 |
| | **Average monthly FAC** | $ - | $ 4,084 | $ 7,461 | $ 7,198 | $ 11,065 | $ 11,609 | $ - | $ 11,183 |
| | **Number of retired members** | - | 1 | 1 | 1 | 26 | 42 | - | 71 |
| 2016 | **Average annual benefit** | $ - | $ 43,257 | $ 74,916 | $ 44,774 | $ 78,525 | $ 96,122 | $ - | $ 82,441 |
| | **Average monthly benefit** | $ - | $ 3,605 | $ 6,243 | $ 3,731 | $ 6,544 | $ 8,010 | $ - | $ 6,870 |
| | **Average monthly FAC** | $ - | $ 4,084 | $ 8,527 | $ 12,348 | $ 11,321 | $ 12,323 | $ - | $ 11,367 |
| | **Number of retired members** | - | 1 | 3 | 1 | 34 | 17 | - | 56 |

TABLE 5

# Employees' Retirement System of Rhode Island
# Schedule of Average Benefit Payments - Retirement

## Judicial Retirement Benefits Trust

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 130,515 | $ 64,348 | $ 112,185 | $ 149,212 | $ 160,817 | $ 186,050 | $ - | $ 136,774 |
| | **Average monthly benefit** | $ 10,876 | $ 5,362 | $ 9,349 | $ 12,434 | $ 13,401 | $ 15,504 | $ - | $ 11,398 |
| | **Average monthly FAC** | $ 11,147 | $ 13,058 | $ 12,143 | $ 14,086 | $ 11,585 | $ 20,672 | $ - | $ 12,880 |
| | **Number of retired members** | 2 | 2 | 4 | 5 | 6 | 1 | - | 20 |
| 2016 | **Average annual benefit** | $ 60,388 | $ 64,116 | $ 112,069 | $ 149,120 | $ 166,507 | $ 186,050 | $ - | $ 136,704 |
| | **Average monthly benefit** | $ 5,032 | $ 5,343 | $ 9,339 | $ 12,427 | $ 13,876 | $ 15,504 | $ - | $ 11,392 |
| | **Average monthly FAC** | $ - | $ 11,874 | $ 11,788 | $ 14,249 | $ 15,300 | $ 20,672 | $ - | $ 14,286 |
| | **Number of retired members** | 1 | 2 | 4 | 5 | 7 | 1 | - | 20 |

## Rhode Island Judicial Retirement Fund Trust

| | | 0-5 Yrs. | 5-10 Yrs. | 10-15 Yrs. | 15-20 Yrs. | 20-25 Yrs. | 25-30 Yrs. | >30 Yrs. | Total |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | **Average annual benefit** | $ 199,508 | $ - | $ - | $ - | $ - | $ - | $ - | $ 199,508 |
| | **Average monthly benefit** | $ 16,626 | $ - | $ - | $ - | $ - | $ - | $ - | $ 16,626 |
| | **Average monthly FAC** | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | **Number of retired members** | 2 | - | - | - | - | - | - | 2 |
| 2016 | **Average annual benefit** | $ 199,508 | $ - | $ - | $ - | $ - | $ - | $ - | $ 199,508 |
| | **Average monthly benefit** | $ 16,626 | $ - | $ - | $ - | $ - | $ - | $ - | $ 16,626 |
| | **Average monthly FAC** | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| | **Number of retired members** | 2 | - | - | - | - | - | - | 2 |

TABLE 5

# Employees' Retirement System of Rhode Island
## Schedule of Average Benefit Payments - Retirement

| | State Police Retirement Fund Trust | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **0-5 Yrs.** | **5-10 Yrs.** | **10-15 Yrs.** | **15-20 Yrs.** | **20-25 Yrs.** | **25-30 Yrs.** | **>30 Yrs.** | **Total** |
| **Average annual benefit** | - | - | - | - | - | - | - | **N/A** |
| **Average monthly benefit** | - | - | - | - | - | - | - | **N/A** |
| **Average monthly FAC** | - | - | - | - | - | - | - | **N/A** |
| **Number of retired members** | - | - | - | - | - | - | - | **N/A** |

***Note:*** Schedule is intended to display information for 10 years. Additional years will be displayed as they become available.

***Source:*** The most recent actuarial valuation for ERSRI is as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

***FAC:*** Final Average Compenstation

## Employees' Retirement System of Rhode Island
## Schedule of Top Ten Employers With Most Covered Employees
## Current Fiscal Period and Fiscal Period Ended Nine Years Prior

| 2017 | | | 2008 | | |
|---|---|---|---|---|---|
| ERS - Teachers | Number of Covered Employees | Percentage of Total Covered Employees | ERS - Teachers | Number of Covered Employees | Percentage of Total Covered Employees |
| Providence School Department | 2,134 | 16.03% | Providence School Department | 2,227 | 15.91% |
| Cranston School Department | 1,054 | 7.92% | Warwick School Department | 1,131 | 8.08% |
| Warwick School Department | 910 | 6.84% | Cranston School Department | 1,035 | 7.39% |
| Pawtucket School Department | 786 | 5.91% | Pawtucket School Department | 797 | 5.69% |
| Woonsocket School Department | 520 | 3.91% | Woonsocket School Department | 569 | 4.06% |
| East Providence School Department | 519 | 3.90% | East Providence School Department | 530 | 3.79% |
| Coventry School Department | 463 | 3.48% | Coventry School Department | 498 | 3.56% |
| Cumberland School Department | 424 | 3.19% | Cumberland School Department | 412 | 2.94% |
| North Kingstown School Department | 388 | 2.92% | North Kingstown School Department | 399 | 2.85% |
| West Warwick School Department | 349 | 2.62% | South Kingstown School Department | 397 | 2.84% |
| Remaining employers | 5,763 | 43.30% | Remaining employers | 6,004 | 42.89% |
| | 13,310 | 100.00% | | 13,999 | 100.00% |

| TSB | Number of Covered Employees | Percentage of Total Covered Employees | TSB** | Number of Covered Employees | Percentage of Total Covered Employees |
|---|---|---|---|---|---|
| Cranston School Department | 1,051 | 14.76% | Cranston School Department | 955 | 13.24% |
| East Providence School Department | 519 | 7.29% | Coventry School Department | 492 | 6.82% |
| Coventry School Department | 462 | 6.49% | East Providence School Department | 463 | 6.42% |
| Cumberland School Department | 424 | 5.95% | Cumberland School Department | 424 | 5.88% |
| Johnston School Department | 328 | 4.61% | Lincoln School Department | 397 | 5.50% |
| Westerly School Department | 306 | 4.30% | Central Falls Collaborative | 343 | 4.75% |
| Lincoln School Department | 299 | 4.20% | Johnston School Department | 330 | 4.57% |
| Barrington School Department | 294 | 4.13% | Westerly School Department | 329 | 4.56% |
| Bristol Warren Regional School District | 288 | 4.04% | Bristol Warren Regional School District | 293 | 4.06% |
| Central Falls Collaborative | 258 | 3.62% | Barrington School Department | 290 | 4.02% |
| Remaining employers | 2,892 | 40.61% | Remaining employers | 2,898 | 40.17% |
| | 7,121 | 100.00% | | 7,214 | 100.00% |

## Employees' Retirement System of Rhode Island
## Schedule of Top Ten Employers With Most Covered Employees
## Current Fiscal Period and Fiscal Period Ended Nine Years Prior

| 2017 | | | 2008 | | |
|---|---|---|---|---|---|
| **MERS - General Employees** | **Number of Covered Employees** | **Percentage of Total Covered Employees** | **MERS - General Employees** | **Number of Covered Employees** | **Percentage of Total Covered Employees** |
| City of Cranston | 658 | 11.00% | City of Cranston | 861 | 12.67% |
| City of Pawtucket | 488 | 8.16% | City of Pawtucket | 636 | 9.36% |
| City of East Providence | 436 | 7.29% | City of East Providence | 475 | 6.99% |
| City of Woonsocket | 377 | 6.30% | City of Woonsocket | 399 | 5.87% |
| Town of North Kingstown | 313 | 5.23% | Town North Kingstown | 370 | 5.44% |
| Town of South Kingstown | 303 | 5.07% | Town of South Kingstown | 366 | 5.38% |
| City of Newport | 279 | 4.67% | City of Newport | 290 | 4.27% |
| Town of Cumberland | 236 | 3.95% | Town of Johnston | 282 | 4.15% |
| Town of Johnston | 228 | 3.81% | Town of Cumberland | 256 | 3.77% |
| Town of North Providence | 217 | 3.63% | Town of North Providence | 250 | 3.68% |
| Remaining employers | 2,445 | 40.89% | Remaining employers | 2,612 | 38.43% |
| | 5,980 | 100.00% | | 6,797 | 100.00% |

| MERS - Police/Fire Employees | Number of Covered Employees | Percentage of Total Covered Employees | MERS - Police/Fire Employees | Number of Covered Employees | Percentage of Total Covered Employees |
|---|---|---|---|---|---|
| Cranston Fire Department | 168 | 11.05% | Cranston Fire Department | 126 | 9.11% |
| Cranston Police Department | 144 | 9.47% | Cranston Police Department | 118 | 8.53% |
| Woonsocket Fire Department | 109 | 7.17% | Woonsocket Fire Department | 113 | 8.17% |
| Woonsocket Police Department | 86 | 5.65% | North Providence Fire Department | 104 | 7.52% |
| North Providence Fire Department | 81 | 5.33% | Woonsocket Police Department | 93 | 6.72% |
| Johnston Fire Department | 70 | 4.60% | North Kingstown Fire Department | 80 | 5.78% |
| North Kingstown Fire Department | 65 | 4.27% | South Kingstown Police Department | 55 | 3.98% |
| Middletown Police & Fire Departments | 61 | 4.01% | North Kingstown Police Department | 50 | 3.62% |
| South Kingstown Police Department | 50 | 3.29% | East Greenwich Fire Department | 40 | 2.89% |
| North Kingstown Police Department | 45 | 2.96% | Smithfield Police Department | 40 | 2.89% |
| Remaining employers | 642 | 42.21% | Remaining employers | 564 | 40.78% |
| | 1,521 | 100.00% | | 1,383 | 100.00% |

***Note:*** Data provided in this schedule is based upon the most recent actuarial valuations prepared as of June 30, 2017. Data in this schedule prior to fiscal year ending June 30, 2017 was derived from actuarial valuations prepared by GRS and certified by the ERSRI Board in prior fiscal years.

** TSB valuations were prepared biennially prior to fiscal year ending June 30, 2013. An actuarial valuation was not prepared for fiscal year ending June 30, 2008. Data for this schedule was obtained from ERSRI's pension administration system.