

# COMPREHENSIVE ANNUAL FINANCIAL REPORT

for the Fiscal Year Ended June 30, 2017

A white horse is captured in a dynamic, running pose, moving from left to right across a lush green field. The horse's mane and tail are slightly blurred, suggesting motion. The background consists of dense, out-of-focus green trees and foliage, creating a natural, outdoor setting. The lighting is bright, indicating a sunny day.

*State of New Jersey  
Department of the Treasury  
Division of Pensions & Benefits*

*New Jersey's state animal is the horse. Equus caballus, so designated by Governor Brendan T. Byrne, signed into law in 1977, while attending the farm and horse show at Augusta, Sussex County, August 14, 1977.*

## OUR MISSION . . .

**To provide quality benefits and services that meet the needs of our clients and others we are committed to serve, through our efficient and responsive workforce.**

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### OUR VISION . . .

**WE** will achieve client satisfaction through equitable, effective, responsive service, and clear and accessible communications that meet the needs of our clients.

**WE** will encourage and support an accomplished workforce that is knowledgeable, flexible, technically proficient, and committed to excellence.

**WE** will be committed to working with executive and legislative agencies and governing boards to improve the design and implementation of the benefit programs.

**WE** will support technologies that simplify procedures and improve services, manage our resources in a responsible and creative manner, and hold contracted service providers to high standards.

**WE** will work with participating employers to enhance their role in the administration of benefits for their employees through integrated technology that allows them to access and process benefit information directly.

### OUR VALUES . . .

**WE** are customer-focused, recognizing each client individually.

**WE** acknowledge as our greatest asset our knowledgeable, hardworking, dedicated, and caring staff.

**WE** are financially responsible in the administration, oversight, and delivery of our benefit programs.

**WE** are committed to providing quality, timely, accurate, efficient, and cost-effective services.

**WE** are committed to creating and developing a quality work environment using state-of-the-art technologies, and processes that foster continuous

improvement of our organization through teamwork, motivation, and communication among staff.

### OUR GOALS . . .

#### **Customer Service —**

**TO** create and maintain a customer-focused work environment that anticipates and meets client needs.

#### **Staff —**

**TO** have a full complement of staff that is well trained, undergoes continual development, and is motivated to provide benefit services effectively and efficiently in a customer friendly manner.

#### **Technology —**

**TO** have an integrated, easily maintained and modified, information processing system that supports the efficient and effective delivery of services.

#### **Planning —**

**TO** have an effective planning system that facilitates improvement, anticipates change, and properly focuses resources on priorities.

#### **Benefits Processing —**

**TO** provide benefits to clients in a timely and efficient manner.

#### **Advocacy —**

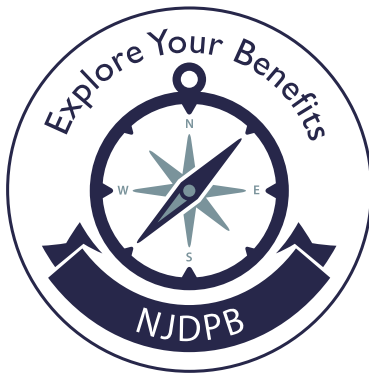
**TO** help structure a well-funded system of benefits that meets the needs of public employees and employers.

#### **Oversight and Compliance —**

**TO** administer programs with clear and consistent policies and procedures and provide oversight to safeguard fund assets and ensure benefit entitlement.

**NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS**

**62nd  
COMPREHENSIVE  
ANNUAL FINANCIAL REPORT  
FOR THE FISCAL YEAR ENDED JUNE 30, 2017**



**CHRIS CHRISTIE**

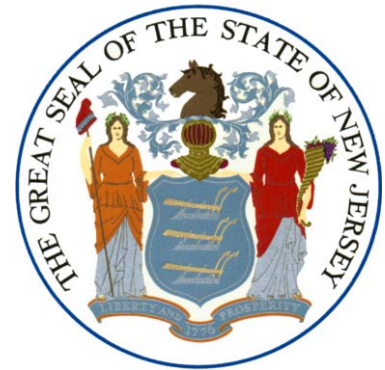
*Governor*

**FORD M. SCUDDER**

*State Treasurer*

**JOHN MEGARIOTIS**

*Acting Director*



**State of New Jersey • Department of the Treasury**

**Division of Pensions & Benefits**

**P.O. Box 295**

**Trenton, NJ 08625-0295**

**(609) 292-7524**



# PROGRAMS ADMINISTERED BY THE DIVISION OF PENSIONS & BENEFITS

PERS	Public Employees' Retirement System
TPAF	Teachers' Pension and Annuity Fund
PFRS	Police and Firemen's Retirement System
SPRS	State Police Retirement System
JRS	Judicial Retirement System
DCRP	Defined Contribution Retirement Program
ABP	Alternate Benefit Program
POPF	Police Officers' Pension Fund
CPFPF	Consolidated Police and Firemen's Pension Fund
NJSEDCP	New Jersey State Employees Deferred Compensation Plan
SACT	Supplemental Annuity Collective Trust
ACTS	Additional Contributions Tax-Sheltered Program
CPF	Central Pension Fund
PAF	Pension Adjustment Fund
UCTDSE	Unemployment Compensation and Temporary Disability for State Employees
SHBP	State Health Benefits Program
SEHBP	School Employees' Health Benefits Program
PDP	Prescription Drug Plans
EDP	Employee Dental Plans
Tax\$ave	New Jersey State Employees' Tax Savings Program: Premium Option Plan, Unreimbursed Medical Flexible Spending Account, and Dependent Care Flexible Spending Account
Commuter Tax\$ave	New Jersey State Employees' Commuter Tax Savings Program
LTC	Long Term Care Insurance Plan

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**INDEPENDENT AUDITOR** KPMG LLP – 51 John F. Kennedy Parkway, Short Hills, NJ 07078-2702

**ACTUARIAL REPORTS** Buck Global, LLC – 500 Plaza Drive, Secaucus, NJ 07096-1533  
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# INTRODUCTORY SECTION

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**Chris Christie**  
Governor



**Ford M. Scudder**  
State Treasurer



**John Megariotis**  
Acting Director,  
Division of Pensions  
and Benefits



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**State of New Jersey**  
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DIVISION OF PENSIONS & BENEFITS  
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[www.nj.gov/treasury/pensions](http://www.nj.gov/treasury/pensions)

## Letter of Transmittal

December 2017

To the Honorable

Chris Christie, Governor  
Ford M. Scudder, State Treasurer  
Members of the Legislature  
Members of the Boards of Trustees

On behalf of the Division of Pensions & Benefits, I am pleased to submit the 62nd Comprehensive Annual Financial Report (CAFR) of the New Jersey State-administered retirement systems and related benefit programs for the fiscal year ended June 30, 2017. The management of the Division of Pensions & Benefits (the Division) is responsible for the accuracy of the data and the completeness and fairness of the presentation. To the best of my knowledge and belief, the enclosed information is accurate in all material respects and is reported in a manner that fairly represents the financial position and results of the Division's operations.

### The Reporting Entity

The Division was established in 1955 as the Division of Pensions to provide all administration of the State pension funds except investments. The Division changed its name to the Division of Pensions & Benefits in 1992 to more accurately reflect its roles and responsibilities beyond the realm of pensions. Currently, the Division administers one of the largest non-federal public benefits programs in the nation, consisting of ten separate retirement systems, three supplemental retirement savings programs, three health benefits programs for employees, retirees, and family members, and several other employee benefits programs.

### Major Initiatives

The Division implemented a number of health benefit cost saving initiatives approved by the SHBP Plan Design Committee in plan year 2017.

- **Medicare Advantage:** Medicare-eligible SHBP members who were enrolled in a Horizon Blue Cross Blue Shield plan were enrolled in a Medicare Advantage plan effective January 1, 2017. This change is estimated to reduce projected Plan Year 2017 costs by \$13 million.
- **Physical Therapy Out-of-Network Reimbursement Change:** All SHBP PPO plans limited plan payments for out-of-network physical therapy services to a maximum of 75% of the average in-network rate for physical therapy services. This change was estimated to reduce projected Plan Year 2017 costs by \$28 million.
- **Mandatory Generic:** The SHBP required that for multi-source drugs (brand drugs with generic equivalents available), the SHBP pay for the cost of the generic equivalent only. Members who chose to fill the prescription for the brand name drug were responsible for the difference in cost. This change was estimated to reduce projected Plan Year 2017 costs by \$24 million.
- **National Preferred Formulary:** The SHBP implemented ESI's National Preferred Formulary, which directed prescriptions to more cost-effective, clinically-equivalent medications. This change was estimated to reduce projected Plan Year 2017 costs by \$30 million.
- **Increase Emergency Room Copays:** Emergency room copays were increased by \$25 for all current SHBP plans where the emergency room copays were lower than \$100. This change was estimated to reduce projected Plan Year 2017 costs by \$2 million.

The Division began a Web Redesign project to enhance the functionality of the current website. The goals of the project were to depopulate the homepage, update the current site to make it easier for plan participants to navigate the site and make benefit changes, use plain language, and package similar topics for easier access. The redesign project was planned in phases with the first phase creating a micro-site for the Health Benefits Open Enrollment. The new format is in HTML 5, which allows the content to be easily accessed by cell phone and tablet. The layout is modern, user-friendly and the information is clear and concise. Video technology for training and other informational purposes was created. The Health Benefits micro-site allows members to self-identify their group (SHBP and SEHBP) on the page. Groups split to Active Employees, Retirees, COBRA Members, Dependents, and Employer Information. Each sub-category has three menus: Review Your Choices, Calculate Your Cost, and Apply. A new health benefits enrollment application was also created with a contemporary layout and the Division's new branding design.

Phase two of the project has begun with the redesign focusing on pension information. The homepage and all of its content will mirror the orderly design of the Open Enrollment micro-site. The roll-out of the improved website is planned for January 2018.

The Division has completed an internal audit of all members and retirees with pension loans to ascertain whether the full payment of loans are in compliance with IRS regulations. The Division is currently in active negotiation with the IRS to resolve all loan issues and maintain the qualified status of the Plan.

Ongoing initiatives to identify and notify inactive/vested members of their eligibility to file for the return of pension contributions or retirement benefits continues. The Division is taking steps to require more detailed beneficiary information in order to more easily notify the beneficiary of benefits upon the member's death.

The Division will soon start an initiative to review inactive member accounts where the member had previously purchased additional service credit in the retirement system but have not made payments towards that purchase in over two years. Inactive members will be notified to pay off the balance in a lump-sum or have the remaining service credit prorated. If the member returns to active employment, they may request a new quote to purchase the remaining service credit.

### Financial Information

The Financial reports of the Fiduciary Funds of the Division have been prepared in conformity with generally accepted accounting principles as applied to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for governmental accounting and financial reporting. The specific accounting policies can be found in the Notes to the Financial Statements found in the Financial Section.

The Fiduciary Funds include 10 separate pension trust funds, one OPEB (Other Post-employment Benefit) plan, and three agency funds. A summary of the condition of the funds administered by the Division of Pensions & Benefits is located in the 'Management Discussion and Analysis' that begins on page 34 of the CAFR. Management is responsible for establishing and maintaining the accounting systems complete with internal controls so that the data presented is complete and fairly presents the financial position of the Division as of June 30, 2017. KPMG LLP independently audited the funds.

### Investments

The Division of Investment has the responsibility for investing the assets of the programs administered by the Division. This is done under the jurisdiction of the State Investment Council. Investments are guided by the 'prudent person rule.' During FY 2017 investment returns on pension funds were +13.07 percent. When combined with the returns for previous years, the annualized returns over the past three- and five-year periods were +5.25 percent and +8.75 percent, respectively.

### Funding

Fully funding the State's pension liabilities and offering sustainable public employee benefits are a major objective. With budgetary constraints and growing benefit liabilities, the Division recognizes that further reform is necessary. The Division has and will continue to devote its resources to support this important objective.

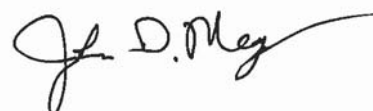
### Professional Services

The Division contracts with several professional organizations for advice and assistance in administering the programs for which it is responsible. The list of these organizations is found on page 96 of the CAFR. The Office of the Attorney General provides all legal services required by the Division of Pensions & Benefits, the retirement systems Boards of Trustees, and the Health Benefits Commissions and Committees.

### Acknowledgements

The preparation of the CAFR required the combined efforts of many employees from different operational units within the Division. The CAFR is intended to provide extensive and reliable information to facilitate informed decisions, determine compliance with legal requirements, and demonstrate responsible stewardship for the assets contributed by the systems' members, participating employers, and the taxpayers of the State. I would like to take this opportunity to express my gratitude to the Governor, the Legislature, the Treasurer, the Boards of Trustees, the individuals providing professional services, participating employer benefits administrators, and to the outstanding employees of the Division for all their efforts and support. Such concerted effort has resulted in making New Jersey's public benefits system one of the largest and best administered in the nation.

Respectfully submitted,



John Megariotis, Acting Director

## All in a Year's Work...

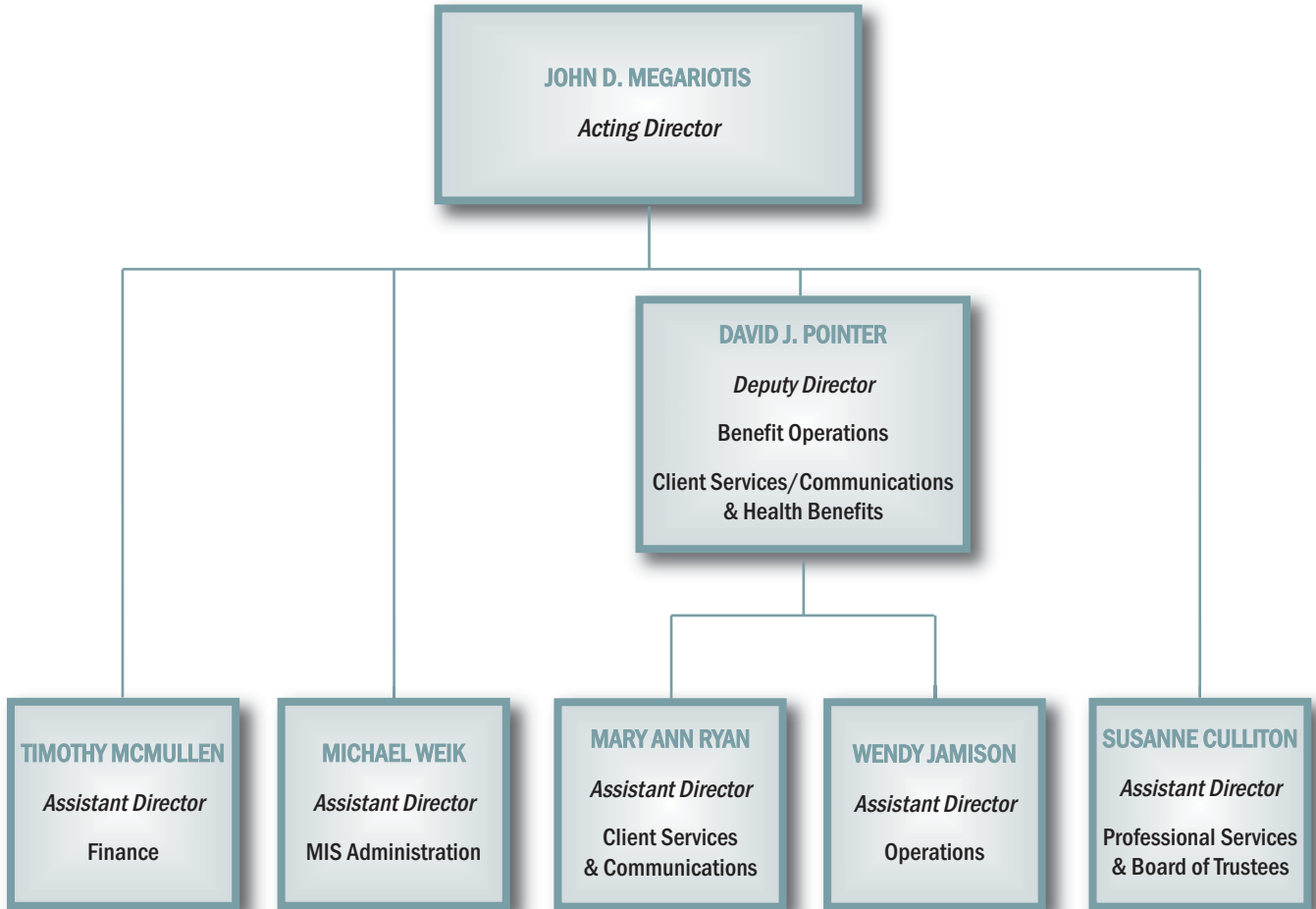
- There are **530,140 active members** in the defined benefit and defined contribution retirement systems.
- A total of **330,084 retirees and beneficiaries** received monthly pensions totaling in excess of **\$10.4 billion** annually.
- There are **1,778 participating employers** in the combined retirement systems.
- Over **10,542 beneficiary claims** were processed. Premiums in excess of **\$160 million** were paid to the insurance carrier on behalf of active and retired members.
- Over **908,488 inbound calls** were received by the Division. Over **450,000** callers selected a phone representative and over **458,472** were handled by the Interactive Voice Response system (IVR) during business hours.
- **14,733 personal interviews** were conducted by pension counselors.
- **467 seminars and webinars** were conducted for over **12,402 members**.
- **12,024 service purchase requests** were processed.
- **39,081 new enrollments or transfers** were processed in our retirement systems.
- There were **8,691 paid withdrawals** from the retirement systems.
- **16,659 members retired**.
- Over **93,931 pension loans** totaling **\$608,524,638** were processed.
- State and local membership in the State Health Benefits Program and School Employees' Health Benefits Program was **398,347 members** with **833,625 lives covered**.
- A total of over **\$5.1 billion in premiums** was collected from State and local State Health Benefits Program employers, School Employees' Health Benefits Program employers, and combined employees. **1,105 local employers** elected to participate in the SHBP or SEHBP this year.



# ORGANIZATION

## State of New Jersey • Department of the Treasury

### Division of Pensions & Benefits



## Director

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The Director is responsible for the coordination of the functions of the Division, the development of the Division budget, and communication with other branches of State government, local government, and the public. The Director serves as the Secretary to the Supplemental Annuity Collective Trust Council, the State Health Benefits Commission and School Employees' Health Benefits Commission, and the State House Commission in its capacity as the Board of Trustees for the Judicial Retirement System. The Director also is responsible for legal and legislative matters and Board of Trustees administration. In addition, the Treasurer has delegated the responsibility of maintaining the Federal-State Agreement for Social Security to the Director of the Division of Pensions & Benefits.

The Division of Pensions & Benefits falls under the jurisdiction of the New Jersey Department of the Treasury. The Director of the Division reports directly to the State Treasurer.

## Office of Health Benefits

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This office, overseen by a Deputy Director, consists of two elements: the Health Benefits Bureau and the Office of Policy and Planning. The Health Benefits Bureau processes all enrollments, changes, and terminations for active and retired members of the State Health Benefits Program (SHBP) and School Employees' Health Benefits Program (SEHBP). In addition, this bureau is responsible for the administration of benefits under the federal COBRA law, and enrollments, changes, and terminations for members of the Prescription Drug Plans and Employee and Retiree Dental Plans. The Office of Policy and Planning analyzes and makes recommendations concerning current and proposed health benefits programs to provide the highest quality programs at the least possible cost. It manages contract renewals and requests for proposals. Policy and Planning is responsible for health benefit program review and development. This office also provides administrative support to the State Health Benefits Commission and School Employees' Health Benefits Commission as well as the SHBP and SEHBP Plan Design Committees.

## Office of Financial Services

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The work of this office, overseen by an Assistant Director, is divided among three bureaus: Financial Reporting, Payment, and Collections; Budget and Compliance; and Defined Benefit and Contribution Plans Reporting.

The Office of Financial Services is charged with the custodianship of pension and health benefits assets. These assets are in excess of \$83.7 billion. The office is responsible for the accounting and budget functions necessary for the successful operations of the various pension funds, health benefits and agency funds, as well as the administration of the Pension Adjustment Program, the Supplemental Annuity Collective Trust, and Deferred Compensation Plan.

## Office of Client Services & Communications

---

This office, overseen by an Assistant Director, consists of two elements: the Office of Client Services and the Office of Communications. Each office disseminates all plan and program information to employees, retirees, and employers covered by the various New Jersey State-administered retirement systems and benefit programs.

The Office of Client Services consists of the Call Center and Counseling Unit, which provides counseling services by phone and personal interviews to employees, retirees, and employers regarding the various retirement systems and health benefits programs. The Office of Communications consists of the Print and Internet Unit, which is responsible for creating, editing, updating, and printing of written materials disseminated by the Division, including manuals, reports, forms, benefits statements, guide booklets and the Division's Internet site. The Education Unit conducts seminars/webinars, employer instructions and various presentations concerning pension, life insurance, and health benefits. The Email and Correspondence Unit responds to all written requests and emails and the Support Unit is responsible for providing receptionist services for the entire Division.

## Office of Operations

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This office, overseen by an Assistant Director, consists of two bureaus: the Enrollment, Purchase, Adjustment, Loan, and Withdrawal Bureau along with the Retirement Bureau, and Beneficiary Services.

The Office of Operations is responsible for the following: Retirement Processing Section (calculation and payment of retirement benefits), Disability Retirement Section (processing of Ordinary and Accidental Disability applications), Beneficiary Services Section (processing beneficiary designations, calculation and payment of active and retired death benefits), Quality Control Section (plan all activities related to the Judicial Retirement System, process Workers' Compensation offsets and Court Orders for Support and Qualified Domestic Relations Orders, audit and adjustments to retired member accounts), Enrollment Section (process new enrollment application into the Defined Benefits (DB) Plans including interfund and intrafund transfers); Purchase Section (quote and calculate the cost for members to purchase additional, eligible service credit in the DB plans), Adjustment Section (analyze data and prepare adjustments of active member accounts), Loans and Withdrawal Section (administer payments to members for pension loans and withdrawal from the DB Plans).

## Office of Management Information and Support Services

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The work of this office, overseen by an Assistant Director, is responsible for the development and maintenance of all processing and management information systems for the Division. This office also has responsibility for the training, usage, and maintenance of all automated office and telephone equipment.

This office consists of four sections: Image Processing and Records Management; Computer Scheduling and Production Control; Systems Development; and Support Services.

# ORGANIZATION

## Office of Professional Services

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The Office of Professional Services is located within the Director's Office and operates under the direction of an Assistant Director. It is responsible for providing a structured and consistent planning function for the Division, assists in analyzing proposed legislation, providing the regulatory function for the Division, managing the development of contracts with external service providers, conducting research in support of Division activities, reviewing all Court Orders including subpoenas and ensuring implementation, assuring compliance with the Open Public Records Act, and oversight of the Office of Board of Trustees Administration.

The Office of Board of Trustees Administration, provides administrative services for the various defined benefit plans' Boards and Commissions.

The Boards and Commissions have the general responsibility for the proper operation of their respective employee benefits program. The Boards adopt rules in compliance with statute and advice of the Attorney General. The Boards may grant hearings in disputes concerning issues of law or fact. Hearings are held by the Office of Administrative Law.

The Boards maintain a record of all proceedings and hold regular meetings and special meetings when necessary.

## Actuarial Advisors

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The actuaries establish actuarial tables for the operation of the retirement systems, determine the annual appropriation required of participating employers, and conduct annual examinations of the systems' actuarial position.

Contracts for actuarial services for the retirement systems are awarded at specified intervals through the regulations governing the procurement of goods and services for the State of New Jersey and its constituent departments and agencies

## Legal Advisor

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The State Attorney General is the legal advisor for all pension funds and other employee benefit programs.

## Medical Advisors

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All retirement systems are served by a medical board consisting of three physicians who review claims for disability as submitted by the Disability Review Section of the Retirement Bureau for the Division of Pensions & Benefits.

# ORGANIZATION — BOARDS OF TRUSTEES

(Reflects Board Members who served as of June 30, 2017)

## Public Employees' Retirement System

Thomas Bruno, *Chairperson*  
William O'Brien, *State Representative*  
Carey H. Brown, *State Representative*  
Tracy Smith, *County Representative*  
Brian Currie, *Municipal Representative*  
Ronald Winthers, *Gubernatorial Appointee*  
Benjamin Hurst, *Municipal Representative*  
Susanne Culliton, *Treasurer's Representative*  
Robert Kelly, *Deputy Attorney General*  
Jacqueline Bussanich, *Board Secretary*  
Sharon Barnes, *Assistant Board Secretary*

## Teachers' Pension and Annuity Fund

James Joyner, *Chairperson*  
Irene Savicky, *Retired Teacher*  
Edward McCarthy, *Gubernatorial Appointee*  
Howard Lipoff, *Teacher*  
Paul Orihe, *Elected by the Board*  
Jeff Ignatowitz, *Deputy Attorney General*  
Susanne Culliton, *Treasurer's Representative*  
Angellna Scales, *Board Secretary*  
William Tedder, *Assistant Board Secretary*

## Police and Firemen's Retirement System

Timothy Colacci, *Chairperson*  
Mike Kaniuk, *Police Representative*  
Marty Barrett, *Retiree*  
Keith Bennett, *Police Representative*  
Richard Loccke, *Governor's Appointment*  
Brady Middlesworth, *Fire Member*  
Frank Leake, *Governor's Appointment*  
Laurel Brennan, *Governor's Appointment*  
Danielle Schimmel, *Deputy Attorney General*  
Susanne Culliton, *Treasurer's Representative*  
Mary Ellen Rathbun, *Board Secretary*  
Lisa Pointer, *Assistant Board Secretary*

## State Police Retirement System

Patrick Callahan, *Chairperson*  
Paulette Knutowicz, *State Police Appointment*  
John Sayers, *Governor's Appointment*  
Robert Garrison, *Deputy Attorney General*  
Susanne Culliton, *Treasurer's Representative*  
Mary Ellen Rathbun, *Board Secretary*  
Lisa Pointer, *Assistant Board Secretary*

# ORGANIZATION — BOARDS OF TRUSTEES

## Supplemental Annuity Collective Trust

**John Megariotis**, *Chairperson, Representing Ford M. Scudder, Treasurer, State of New Jersey*  
**Leslie Notor**, *Representing David Ridolfino, Acting Director, Office of Management & Budget*  
**Brendan Peppard**, *Representing Richard Badolato, Commissioner, Department of Banking & Insurance*

## Deferred Compensation Board

**Steven Harris**, *Chairperson, Representing Ford M. Scudder, Treasurer, State of New Jersey*  
**Leslie Notor**, *Representing Charlene Holzbaaur, Director, Office of Management & Budget*  
**Brendan Peppard**, *Representing Richard Badolato, Commissioner, Department of Banking & Insurance*

## Defined Contribution Retirement Program Board

**Edward Wade**, *Chairperson, Representing Florence J. Sheppard, Acting Director, Division of Pensions & Benefits*  
**Sonia Rivera-Perez**, *Representing David Ridolfino, Acting Director, Office of Management & Budget*  
**Brendan Peppard**, *Representing Richard Badolato, Commissioner, Department of Banking & Insurance*  
**Corey Amon**, *Representing Christopher McDonough, Director, Division of Investment*

## State Health Benefits Commission

**Ford M. Scudder**, *State Treasurer, Chairperson*  
**Richard J. Badolato**, *Commissioner, Department of Banking & Insurance*  
**Robert M. Czech**, *Chairperson, Civil Service Commission*  
**Florence J. Sheppard**, *Secretary*  
**Debra Davis**, *State Employees' Representative of the AFL-CIO*  
**Dudley Burge**, *Local Employees' Representative of the AFL-CIO*

## School Employees' Health Benefits Commission

**(Vacant)**, *Chairperson*  
**Ford M. Scudder**, *Treasurer, State of New Jersey*  
**Richard J. Badolato**, *Commissioner, Department of Banking & Insurance*  
**Cynthia Jahn**, *Representing the N.J. School Boards Association*  
**Florence J. Sheppard**, *Secretary*  
**Kevin Kelleher**, *Representing the NJEA*  
**Carmen Gonzalez-Gannon**, *Representing the NJEA*  
**Wendell Steinhauer**, *Representing the NJEA*  
**Serena DiMaso**, *Governor's Appointee*  
**(Vacant)**, *Representing the AFL-CIO*



## Chapter 28, P.L. 2017

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**Effective Date:** May 16, 2017.

**Division's Section(s) Affected by this Law:** SHBP and SEHBP

**Description:** This law requires health insurance coverage for substance use disorders and regulates opioids and certain other prescription drugs in several ways. It requires health insurers, the State Health Benefits Program, and the School Employees' Health Benefits Program, to adhere to certain coverage requirements for treatment of substance use disorders. It also places certain restrictions on the prescription of opioids, and requires certain notifications when prescribing Schedule II controlled dangerous substances used to treat chronic or acute pain. The law also requires certain health care professionals to receive training on topics related to prescription opioid drugs and repeals certain sections of law that are obviated by this new law's provisions.

Sections 9, 10 and 11 of this law deal specifically with the SHBP and SEHBP.

# SCOPE OF OPERATIONS

## Public Employees' Retirement System (PERS)

---

This system was established by Chapter 84, P.L. 1954, after the repeal of the law creating the former State Employees' Retirement System. The retirement benefits of this system are coordinated, but not integrated, with Social Security. This system is maintained on an actuarial reserve basis. Under the terms of Chapter 71, P.L. 1966, most public employees in New Jersey not required to become members of another contributory retirement program are required to enroll.

Statutes can be found in the New Jersey Statutes Annotated, Title 43, Chapter 15A. Rules governing the operation and administration of the fund may be found in Title 17, Chapter 2, of the New Jersey Administrative Code.

## Teachers' Pension and Annuity Fund (TPAF)

---

This fund was reorganized by Chapter 37, P.L. 1955. The retirement benefits of this system are coordinated, but not integrated, with Social Security. This fund is maintained on an actuarial reserve basis. Membership is mandatory for substantially all teachers or members of the professional staff certified by the State Board of Examiners, and employees of the Department of Education who have titles that are unclassified, professional, and certified.

Statutes can be found in the New Jersey Statutes Annotated, Title 18A, Chapter 66. Rules governing the operation and administration of the system may be found in Title 17, Chapter 3, of the New Jersey Administrative Code.

## Police and Firemen's Retirement System (PFRS)

---

This system was established by Chapter 255, P.L. 1944. All police officers and firefighters, appointed after June 1944, in municipalities where local police and fire pension funds existed or where this system was adopted by referendum or resolution are required to become members of this system. Certain State and county employees also are covered. Employer obligations are paid by the local employers and the State. This system is maintained on an actuarial reserve basis.

Statutes can be found in the New Jersey Statutes Annotated, Title 43, Chapter 16A. Rules governing the operation and administration of the system may be found in Title 17, Chapter 4, of the New Jersey Administrative Code.

## State Police Retirement System (SPRS)

---

This system was created by Chapter 89, P.L. 1965, as a successor to the State Police Retirement and Benevolent Fund. All uniformed officers and troopers of the Division of State Police in the New Jersey Department of Law and Public Safety are required to enroll. This system is maintained on an actuarial reserve basis.

Statutes can be found in the New Jersey Statutes Annotated, Title 53, Chapter 5A. Rules governing the operation and administration of the system may be found in Title 17, Chapter 5, of the New Jersey Administrative Code.

## Judicial Retirement System (JRS)

---

This system was established by Chapter 140, P.L. 1973, after the repeal of the laws providing pension benefits to members of the State judiciary and their eligible survivors. All members of the State judiciary are required to enroll. The system is maintained on an actuarial reserve basis.

Statutes can be found in the New Jersey Statutes Annotated, Title 43, Chapter 6A. Rules governing the operation and administration of the system may be found in Title 17, Chapter 10, of the New Jersey Administrative Code.

## Defined Contribution Retirement Program (DCRP)

---

This program was established July 1, 2007, under the provisions of Chapter 92, P.L. 2007, and Chapter 103, P.L. 2007, and expanded under the provisions of Chapter 89, P.L. 2008, and Chapter 1, P.L. 2010. The program is a tax-qualified defined contribution money purchase pension plan under Internal Revenue Code (IRC) §401(a) et seq., and is a "governmental plan" within the meaning of IRC §414(d). Eligible members are provided with a tax-sheltered, defined contribution retirement benefit, along with life insurance and disability coverage. Individuals eligible for membership include State or local officials who are elected or appointed on or after July 1, 2007; employees enrolled in the PERS or TPAF on or after July 1, 2007, who earn salary in excess of established "maximum compensation" limits; employees enrolled in the PFRS or SPRS after May 21, 2010, who earn salary in excess of established "maximum compensation" limits; and employees otherwise eligible to enroll in the PERS or TPAF on or after November 2, 2008, who do not earn the minimum annual salary required for PERS or TPAF Tier 3 enrollment or do not work the minimum hours per week required for PERS or TPAF Tier 4 or Tier 5 enrollment.

Statutes can be found in the New Jersey Statutes Annotated, Title 43, Chapter 15C, Article 1 et seq.

## Alternative Benefit Program (ABP)

---

This program was established by several pieces of legislation between 1965 and 1968 for full-time faculty members of public institutions of higher education. It was later expanded to include certain administrative and professional titles.

Chapter 385, P.L. 1993, increased the number of investment carriers to seven. The investment carriers underwriting annuities are as follows: AXA Financial (Equitable); Mass Mutual Retirement Services; MetLife (formerly Travelers/CitiStreet); Prudential; Teachers Insurance and Annuity Association (TIAA); VALIC; and VOYA Financial Services. The ABP is a "defined contribution" plan as distinguished from "defined benefits" payable by the other State retirement systems. Immediate vesting after the first year of participation offers the mobility of pension credit

# SCOPE OF OPERATIONS

among the private and public institutions of higher education in the United States and Canada. Group life insurance and long-term disability insurance are underwritten by the Prudential Insurance Company of America, Inc. Statutes can be found in the New Jersey Statutes Annotated, Title 18A, Chapter 66. Rules governing the operation and administration of this program may be found in Title 17, Chapter 7, of the New Jersey Administrative Code.

## **Prison Officers' Pension Fund (POPF)**

This fund was established under Chapter 220, P.L. 1941. It was closed to new employees as of January 1960. New employees are enrolled in the Police and Firemen's Retirement System. This system is not maintained on an actuarial reserve basis.

Statutes can be found in the New Jersey Statutes Annotated, Title 43, Chapter 7.

## **Consolidated Police and Firemen's Pension Fund (CPFPF)**

This fund was established by Chapter 358, P.L. 1952, to place 212 local police and fire pension funds on an actuarial reserve basis. The membership consists of police and firefighters appointed prior to July 1, 1944. The liabilities of these local funds were shared: two-thirds by the participating municipalities and one-third by the State.

Statutes can be found in the New Jersey Statutes Annotated, Title 43, Chapter 16. Rules governing the operation and administration of this fund may be found in Title 17, Chapter 6, of the New Jersey Administrative Code.

## **New Jersey State Employees Deferred Compensation Plan (NJSEDCP)**

This plan was established by Chapter 39, P.L. 1978, and is available to any State employee who is a member of a State-administered retirement system. This plan is a voluntary investment program that provides retirement income separate from and in addition to the basic pension benefit.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 18A.

Prudential Retirement was selected as the NJSEDCP's third-party administrator on August 26, 2005. The Division of Pensions & Benefits maintains its administrative oversight functions.

## **Supplemental Annuity Collective Trust (SACT)**

This trust was established by Chapter 123, P.L. 1963. This program includes active members of several State-administered retirement systems. Members make voluntary additional contributions through their

pension funds to purchase variable retirement annuities in order to supplement the benefits provided by their basic system. Some employers agree to purchase tax-sheltered annuities for the same purpose for certain eligible employees.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 18A. Rules governing the operation and administration of the trust may be found in Title 17, Chapter 8 of the New Jersey Administrative Code.

## **Additional Contributions Tax-Sheltered Program (ACTS)**

This program was established in 1996. ACTS is a tax-sheltered, supplemental, retirement program pursuant to Internal Revenue Code (IRC) §403(b) offered to employees of institutions of higher education, the Commission of Higher Education, the Department of Education, and the Office of Student Assistance. The eligible employees are able to obtain tax-deferred annuities with a variety of investment carriers through a salary reduction agreement. The annuities are available from the same investment carriers who service the Alternate Benefit Program.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 18A, Section 113.

## **Central Pension Fund (CPF)**

This fund consists of the administration of a series of noncontributory pension acts. No reserves are established for the payment of retirement benefits. These benefits are administered by the Division in accordance with the governing statute and the rules and regulations of the State House Commission.

## **Pension Adjustment Fund (PAF)**

This fund was established pursuant to Chapter 143, P.L. 1958, and covers all eligible pensions of State-administered retirement systems. It was altered by Chapter 169, P.L. 1969, which provided a cost-of-living adjustment and by Chapter 139, P.L. 1971, which extended its provisions to eligible survivors.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 18A. Rules governing the operation and administration of the fund may be found in Title 17, Chapter 1, of the New Jersey Administrative Code

## **Unemployment Compensation and Temporary Disability Insurance for State Employees (UC/TDI)**

The Division of Pensions & Benefits coordinates work related to the payment of unemployment compensation and temporary disability insurance benefits for State employees eligible for coverage under federal law. It is responsible for contracting with a service agency to review all questionable claims for unemployment compensation.

# SCOPE OF OPERATIONS

## State Health Benefits Program (SHBP)

The program provides medical coverage to employees, retirees, and their dependents. Chapter 125, P.L. 1964, extended the program to include employees of local government. The program includes preferred provider organizations, HMO plans and High Deductible Health Plans offered through Aetna and Horizon BCBSNJ.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Article 17.25 et seq. Rules governing the operation and administration of the program can be found in Title 17, Chapter 9, of the New Jersey Administrative Code.

## School Employees' Health Benefits Program (SEHBP)

The program provides medical coverage to local education employees, retirees, and their dependents. Chapter 103, P.L. 2007, established the program which includes preferred provider organizations, HMO plans, and High Deductible Health Plans offered through Aetna and Horizon BCBSNJ.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Article 17.46 et seq. Rules governing the operation and administration of the program can be found in Title 17, Chapter 9, of the New Jersey Administrative Code.

## Prescription Drug Plans (PDP)

This plan was initiated by the State effective December 1, 1974. The passage of Chapter 41, P.L. 1976, extended coverage to all eligible State employees. The State Health Benefits Commission offered the plan to local employers on July 1, 1993. Employees and their eligible dependents are covered by the plan in the same manner as the State Health Benefits Program. The Division of Pensions & Benefits became responsible for plan administration in November 1976.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Section 17.29(H). Rules governing the operation and administration of the program can be found in Title 17, Chapter 9, of the New Jersey Administrative Code.

## Employee Dental Plans (EDP)

This program was initially established February 1, 1978, and further expanded in June 1984. Eligible State and certain local employees may enroll themselves and their eligible dependents by paying the premium calculated to meet half the cost of the plan. Plans offered include the Dental Expense Plan, which is a traditional indemnity plan, and a selection of Dental Plan Organizations. Retirees were permitted to enroll in the plans in 2005. Retirees are required to pay full cost of the plan.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Section 17.29(H). Rules governing the operation and administration of the program may be found in Title 17, Chapter 9, of the New Jersey Administrative Code.

## Tax\$ave

The State Employees Tax Savings Program (Tax\$ave) was initially established for State employees in July 1996 and authorized under Internal Revenue Code (IRC) §125. The benefit consists of three components: the Premium Option Plan that allows employees to use pre-tax dollars deducted from their pay for health or dental benefit premiums they may be required to pay for coverage; the Flexible Spending Account for Unreimbursed Medical Expenses that allows employees to use up to \$2,500 pre-tax dollars annually deducted from their pay for medical expenses not reimbursed by their medical or dental insurance; and the Dependent Care Spending Account that allows employees to use up to \$5,000 pre-tax dollars annually deducted from their pay for dependent care expenses required to permit the employee and spouse to work.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Article 15.1a. Rules governing Tax\$ave can be found in Title 17, Chapter 1, Subchapter 13, of the New Jersey Administrative Code.

## Commuter Tax\$ave

This program, authorized by Chapter 162, P.L. 2001, and available under Internal Revenue Code (IRC) §132(f), allows eligible State employees to use pre-tax dollars to pay for qualified commuter expenses. Under the program, eligible employees may execute salary reduction agreements to have up to \$255 per month (\$3,060 per year) deducted from salary to pay for mass transit commutation costs and \$255 per month (\$3,060 per year) to pay for parking at work or at park and ride sites. The program was implemented in February 2004.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Article 17.33. Rules governing Commuter Tax\$ave can be found in Title 17, Chapter 1, Subchapter 14, of the New Jersey Administrative Code.

## Long Term Care Insurance Plan

This plan is a participant-pay-all benefit available to State and certain local employees, retirees, and family members. The Prudential Insurance Company administers the insurance plan under contract with the State. The initial offering of the benefit was effective July 1, 2003, and benefits were offered to local employees effective February 1, 2006. The plan was closed to new enrollees as of June 30, 2013.

Statutes can be found in the New Jersey Statutes Annotated, Title 52, Chapter 14, Article 15.9a, and Chapter 18, Article 11.2, and Title 34, Chapter 11, Article 4.4b(10).

## MEMBERSHIP

### Active Membership

Retirement System	2016	2017
Public Employees' Retirement System	261,171*	258,874
Teachers' Pension and Annuity Fund	155,882*	156,973
Police and Firemen's Retirement System	42,036*	42,764
State Police Retirement System	2,746*	2,831
Judicial Retirement System	409	432
Alternate Benefit Program	25,029	24,750
Defined Contribution Retirement Program	37,349	43,516
Prison Officers' Pension Fund	0	0
Consolidated Police and Firemen's Pension Fund	0	0
Central Pension Fund	NA	NA
<b>Total</b>	<b>524,622</b>	<b>530,140</b>

\* Both the 2016 and 2017 figures represent the total number of Active and Inactive accounts.

The 2017 Inactive (noncontributing) accounts are as follows:

PERS Inactive – 52,461, TPAF Inactive – 15,520, PFRS Inactive – 2,530, SPRS Inactive – 208.

### Retired Membership & Beneficiaries

Retirement System	2016	2017
Public Employees' Retirement System	171,422	175,728
Teachers' Pension and Annuity Fund	101,263	103,523
Police and Firemen's Retirement System	45,423	46,428
State Police Retirement System	3,553	3,584
Judicial Retirement System	638	657
Alternate Benefit Program	NA	NA
Prison Officers' Pension Fund	88	76
Consolidated Police and Firemen's Pension Fund	89	75
Central Pension Fund	12	13
<b>Total</b>	<b>322,488*</b>	<b>330,084</b>

\* The number of retirees varies slightly from those reported in the Notes to the Financial Statements due to differences in the effective dates of said tabulations.

### Participation in Health Benefits Program

Health Program	2016	2017
State Health Benefits Program and School Employees' Health Benefits Program	397,818	398,347
Prescription Drug Plans	343,120	353,136
Dental Expense Program	193,593	199,254



# MEMBERSHIP

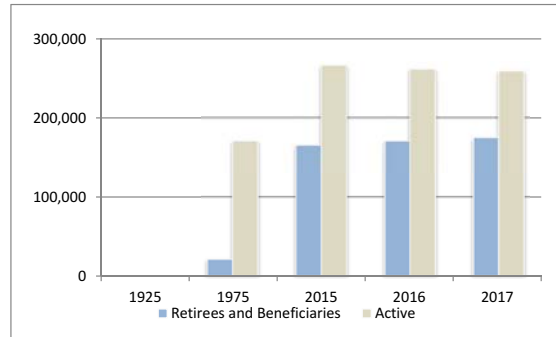
## Public Employees' Retirement System

As of June 30, 2017, the active membership of the system totaled 258,874. There were 175,728 retirees and beneficiaries receiving annual pensions totaling \$3,587,215,469.

Beneficiaries of deceased active and retired members received lump sum death benefits in the amount of \$80,002,130

The system's assets totaled \$29,228,065,272 at the close of fiscal year 2017.

*\* Includes cost-of-living adjustments paid under the provisions of the Pension Adjustment Act.*



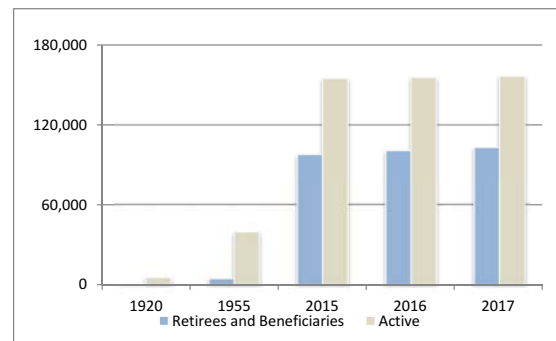
## Teachers' Pension and Annuity Fund

As of June 30, 2017, the active membership of the fund totaled 156,973. There were 103,523 retirees and beneficiaries receiving annual pensions totaling \$4,198,977,287.

Beneficiaries of deceased active and retired members received lump sum death benefits in the amount of \$39,099,480.

The fund's assets totaled \$23,796,696,935 at the close of fiscal year 2017.

*\* Includes cost-of-living adjustments paid under the provisions of the Pension Adjustment Act.*



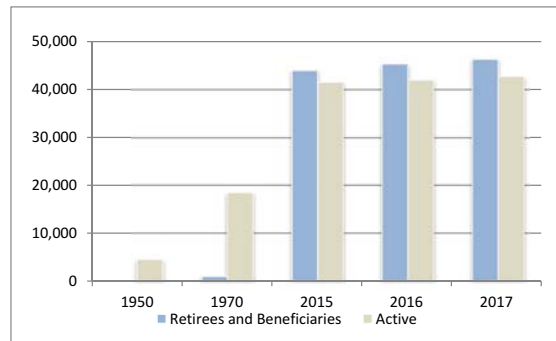
## Police and Firemen's Retirement System

As of June 30, 2017, the active membership of the system totaled 42,764. There were 46,428 retirees and beneficiaries receiving annual pensions totaling \$2,374,959,072.

Beneficiaries of deceased active and retired members received lump sum death benefits in the amount of \$38,969,665.

The system's assets totaled \$26,350,503,823 at the close of fiscal year 2017.

*\* Includes cost-of-living adjustments paid under the provisions of the Pension Adjustment Act.*



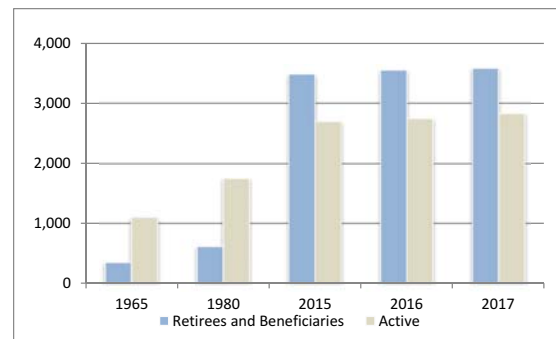
## State Police Retirement System

As of June 30, 2017, the active membership of the system totaled 2,831. There were 3,584 retirees and beneficiaries receiving annual pensions totaling \$215,243,454.

Beneficiaries of deceased active and retired members received lump sum death benefits in the amount of \$1,968,614.

The system's assets totaled \$1,801,633,643 at the close of fiscal year 2017.

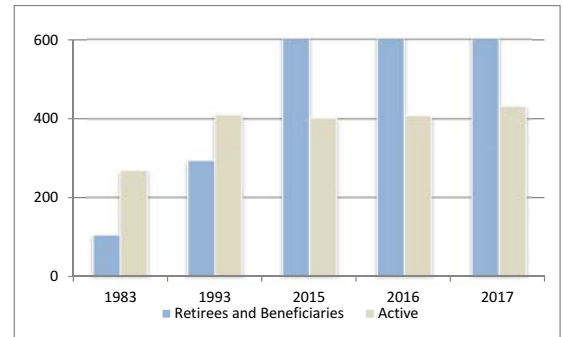
*\* Includes cost-of-living adjustments paid under the provisions of the Pension Adjustment Act.*



## Judicial Retirement System

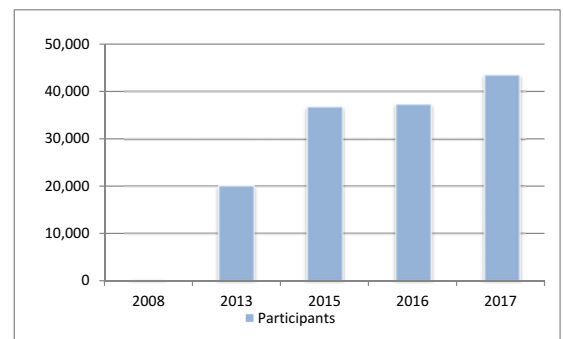
As of June 30, 2017, the active membership of the system totaled 432. There were 657 retirees and beneficiaries receiving annual pensions totaling \$55,642,073.

The system's assets totaled \$182,187,233 at the close of fiscal year 2017.



## Defined Contribution Retirement Plan

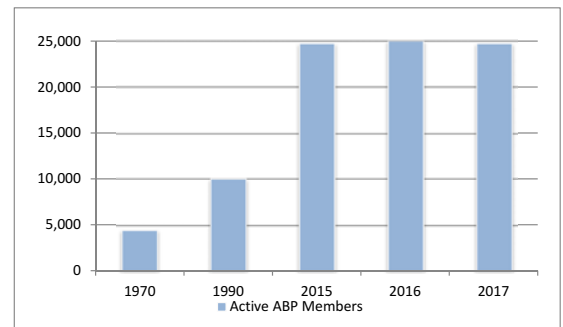
As of June 30, 2017, the active membership of the Defined Contribution Retirement Plan totaled 43,516.



## Alternate Benefit Program

As of June 30, 2017, the State paid \$175,272,131 on behalf of 24,750 participants to the carriers underwriting this program.

Beneficiaries of deceased active and retired members received \$22,690,826 in lump sum death benefits.



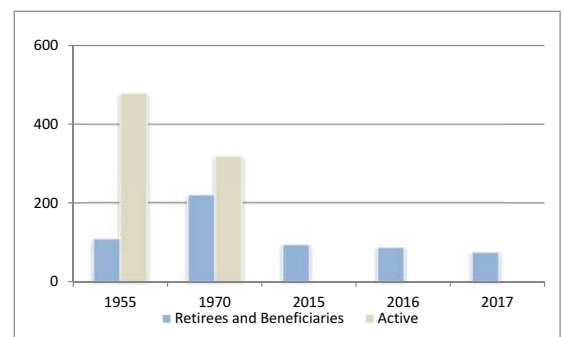
## Prison Officers' Pension Fund

The activity shown to the right is consistent with a closed pension fund.

The fund was closed to new membership in January 1960.

As of June 30, 2017, the active membership of the fund totaled zero. There were 76 retirees and beneficiaries receiving annual pensions totaling \$1,069,209.

The fund's assets totaled \$5,704,349 at the close of fiscal year 2017.



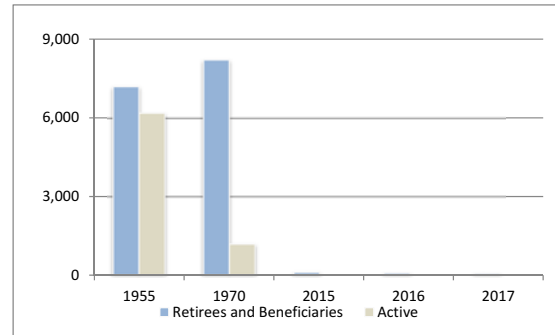
# MEMBERSHIP

## Consolidated Police and Firemen's Pension Fund

The activity shown to the right is consistent with a closed pension fund.

As of June 30, 2017, the active membership of the fund totaled zero. There were 75 retirees and beneficiaries receiving annual pensions totaling \$1,535,623.

The fund's assets totaled \$2,053,889 at the close of fiscal year 2017.

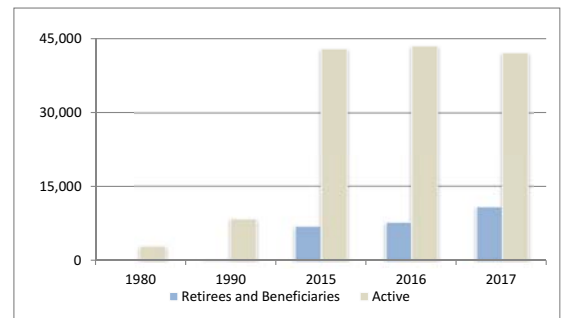


## N.J. State Employees Deferred Compensation Plan

Fiscal year 2017 continues to show a marked increase in active participation due to membership campaigns conducted by the Division of Pensions & Benefits.

As of June 30, 2017, the active membership of the New Jersey State Employees Deferred Compensation Plan totaled 42,145. There were 10,874 members receiving monthly installment payments.

The plan's net assets (participants' balances) were \$3,987,880,379 at the close of fiscal year 2017.

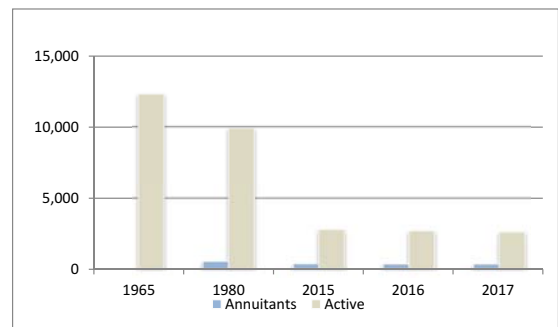


## Supplemental Annuity Collective Trust

As of June 30, 2017, the active membership of the trust totaled 2,640. The unit value was \$101.5283, an increase of \$12.1400 from the June 30, 2016, value of \$89.3883.

There were 385 annuitants.

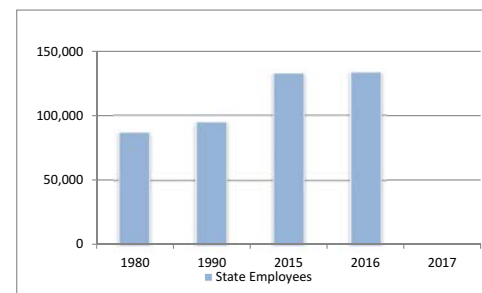
The trust's assets totaled \$226,563,686 at the close of fiscal year 2017.



## Unemployment Compensation and Temporary Disability Insurance

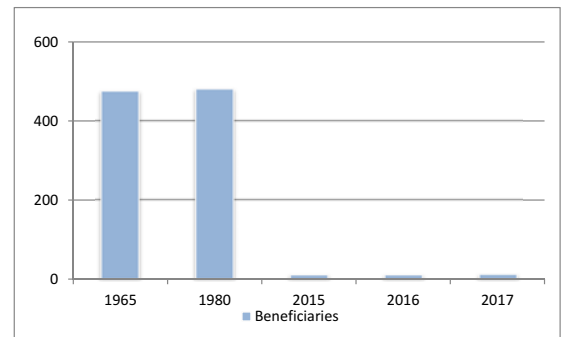
As of June 30, 2017, the Unemployment Compensation Program for State employees covered as many as 116,449 persons, and the Division remitted \$4,639,045 on behalf of the State. There were 5,057 requests for unemployment benefits filed, and \$14,248,462 was paid to the employees found eligible.

During the same time period, the Temporary Disability Insurance Program covered 131,648 employees, and the Division remitted \$36,621,121 on behalf of the State. Claims paid totaled \$28,491,910.



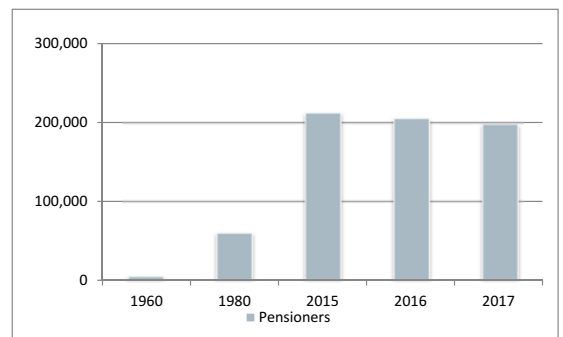
## Central Pension Fund

As of June 30, 2017, there were 13 beneficiaries receiving annual pensions totaling \$258,290.



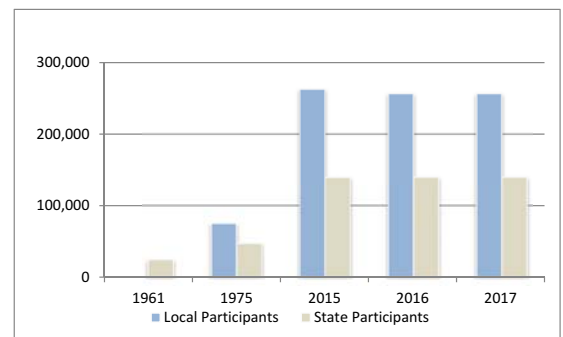
## Pension Adjustment Expense

There were 198,460 pensioners who were paid \$763,868,326 during fiscal year 2017.



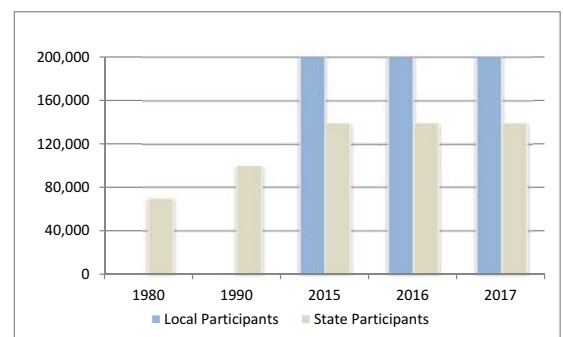
## State Health Benefits Program and School Employees' Health Benefits Program

As of June 30, 2017, there were 398,347 participants (active and retired) consisting of 141,679 State participants and 256,668 participants of 1,105 local participating employers.



## Prescription Drug Plans

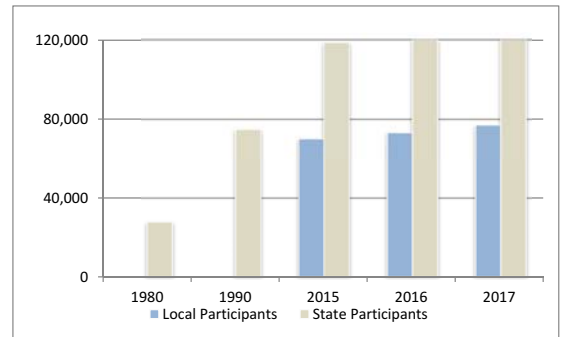
The Prescription Drug plan covered as many as 141,055 State participants and 212,081 local participants during the fiscal year 2017.



# MEMBERSHIP

## Dental Expense Program

The Dental Expense Program covered as many as 121,984 eligible State participants and 77,270 local participants during fiscal year 2017. The State of New Jersey as the employer expended \$31,923,772 for active participants while payment made by local (including education) employers was \$5,194,803.





# FINANCIAL SECTION

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KPMG LLP  
345 Park Avenue  
New York, NY 10154-0102

## Independent Auditors' Report

The Treasurer  
State of New Jersey:

We have audited the accompanying financial statements of the fiduciary activities of the State of New Jersey, Division of Pensions & Benefits (the Division), as of and for the year ended June 30, 2017, and the related notes to the financial statements, which collectively comprise the Division'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 U.S. generally accepted accounting principles; 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.

### Auditors' Responsibility

Our responsibility is to express an opinion 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from 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 auditors' 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 opinion.

### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the fiduciary activities of the State of New Jersey, Division of Pensions & Benefits, as of June 30, 2017, and the respective changes in financial position for the year then ended in accordance with U.S. generally accepted accounting principles.

### Emphasis of Matter

#### **Adoption of New Accounting Pronouncement**

As discussed in note 2(k) to the financial statements, in 2017, the Division adopted Governmental Accounting Standards Board (GASB) Statement No. 74, Financial Reporting for Postemployment Benefits Plans Other Than Pension Plans. Our opinion is not modified with respect to this matter.

#### **Reporting Entity**

As discussed in note 2(a) to the financial statements, the financial statements referred to above are intended to present the financial position and the changes in financial position of the fiduciary funds administered by the Division. As a result, these financial statements do not purport to, and do not, present fairly the financial position of the State of New Jersey as of June 30, 2017 and the changes in its financial position, or, where applicable, its cash flows thereof for the year then ended in conformity with U.S. generally accepted accounting principles. Our opinion is not modified with respect to this matter.

**Other Matters**

**Required Supplementary Information**

U.S. generally accepted accounting principles require that the management's discussion and analysis and the schedules included under Required Supplementary Information in the accompanying table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the GASB 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.

**Supplementary Information**

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Division's basic financial statements. The schedules included under Supplementary Information in the accompanying table of contents (the Schedules) are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Schedules 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 are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

*KPMG LLP*

Short Hills, New Jersey  
March 29, 2018

## Management's Discussion and Analysis (Unaudited) June 30, 2017

Our discussion and analysis of the financial performance of the fiduciary funds (the Funds) administered by the Division of Pensions & Benefits (the Division) provides an overview of the Funds' financial activities for the State fiscal year ended June 30, 2017. Please read it in conjunction with the basic financial statements and financial statement footnotes, which follow this discussion.

### Financial Highlights

#### **Fiduciary Funds – Pension Trust Funds and Other Postemployment Benefit (OPEB) Plan**

- Fiduciary net position increased by \$4.5 billion as a result of this year's operations from \$79.2 billion to \$83.7 billion.
- Additions for the year are \$15.9 billion, which are comprised of member, employer, nonemployer, and employer specific and other pension contributions of \$6.5 billion and net investment income of \$9.4 billion.
- Deductions for the year are \$11.5 billion, which are comprised of benefit and refund payments of \$11.4 billion and administrative expenses of \$45.5 million.

### Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the basic financial statements. The basic financial statements are comprised of two components: 1) fiduciary fund financial statements and 2) notes to the financial statements. This report also contains required and other supplementary information in addition to the basic financial statements.

### Fund Financial Statements

A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Division uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

#### **Fiduciary Funds**

Fiduciary funds are used to account for the assets that the Division holds on behalf of others as their agent. Agency funds are custodial in nature and do not involve measurement of results of operations.

The Division administers fourteen fiduciary funds: ten pension trust funds, one OPEB plan, and three agency funds. Based on Governmental Accounting Standards Board (GASB) Statement No 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans* (GASB 74), the Division reevaluated the OPEB plans included in previously issued financial statements and determined that certain plans are not administered through a trust and do not meet the equivalent arrangement criteria as defined in GASB 74 and, therefore, should not be reported as fiduciary activities. The beginning of the year net position was restated, accordingly.

The statement of fiduciary net position for the pension trust funds and other postemployment benefit plan and the agency funds presents the Division's assets and liabilities by major categories and may serve over time as a useful indicator of the Division's financial position. The difference between assets and liabilities represents the net position restricted for pension and other postemployment benefits.

The statement of changes in fiduciary net position for the pension trust funds and other postemployment benefit plan provides information on the change in the Division's net position during the current year. Additions are comprised of investment income and member, employer, nonemployer, and employer specific and other contributions. Deductions include retirement and health benefit payments, refunds of contributions, and administrative expenses.

### Notes to the Financial Statements

The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the basic financial statements and includes a description of the fiduciary funds.

### Other Information

In addition to the basic financial statements and accompanying notes, this report also presents certain required supplementary information, which includes the schedules of changes in net pension liability and related ratios, the schedules of employer contributions and schedule of investment returns for the pension trust funds as well as the schedule of changes in net OPEB liability and related ratios and the schedule of investment returns for the OPEB plan.

**Management's Discussion and Analysis (Unaudited) – June 30, 2017, continued**

**Financial Analysis**

**Summary of Fiduciary Net Position  
Pension Trust Funds and Other Postemployment Benefit Plan**

	2017	2016*	Increase/ (Decrease)
<b>Assets:</b>			
Cash and cash equivalents	\$ 883,450,234	8,506,182	874,944,052
Receivables	2,377,510,013	2,308,220,116	69,289,897
Investments	79,262,467,350	75,857,677,318	3,404,790,032
Securities lending collateral	958,403,742	1,298,508,410	(340,104,668)
Members' loans and mortgages	2,381,008,709	2,242,910,998	138,097,711
<b>Total assets</b>	<b>85,862,840,048</b>	<b>81,715,823,024</b>	<b>4,147,017,024</b>
<b>Liabilities:</b>			
Accounts payable and accrued expenses	252,706,110	230,377,370	22,328,740
Retirement benefits payable	883,776,543	866,831,486	16,945,057
Noncontributory group life insurance premiums payable	15,310,176	29,184,123	(13,873,947)
Administrative expense payable	13,229,786	15,674,896	(2,445,110)
Securities lending collateral and rebates payable	958,120,840	1,296,943,638	(338,822,798)
<b>Total liabilities</b>	<b>2,123,143,455</b>	<b>2,439,011,513</b>	<b>(315,868,058)</b>
<b>Net position</b>	<b>\$ 83,739,696,593</b>	<b>79,276,811,511</b>	<b>4,462,885,082</b>

\*2016 amounts were adjusted as a result of the adoption of GASB 74.

Assets of the pension trust funds and OPEB plan consist of cash and cash equivalents, investments, contributions due from members and participating employers, accrued interest and dividends on investments, other receivables, securities lending collateral, and members' loans and mortgages. Between State fiscal years 2016 and 2017, total assets increased by \$4.1 billion or 5.1%. This is primarily attributable to an increase of \$3.4 billion in investments due to strong returns from public equities, real estate, and private equity as explained more thoroughly below and a \$0.9 billion increase in cash and cash equivalents attributable to accrued payroll.

Liabilities of the pension trust funds and OPEB plan consist of retirement benefits payable to retirees and beneficiaries, noncontributory group life insurance (NCGI) premiums payable to the Funds' insurance provider, securities lending collateral and rebates payable, administrative expense payable, and, classified under accounts payable and accrued expenses, outstanding medical claims payable to the medical providers under the OPEB plan. Also included within accounts payable and accrued expenses are liabilities of the pension trust funds for unclaimed member accounts and checks issued to members that have not been negotiated by the members, but remain due and payable. Total liabilities decreased by \$315.9 million or 13.0%. This decrease is mainly due to a decrease in securities lending collateral and rebates payable of \$338.8 million.

Net position restricted for pension and other postemployment benefits increased by \$4.5 billion or 5.6%.



## Management's Discussion and Analysis (Unaudited) – June 30, 2017, continued

### Agency Funds

		2017	2016	Increase
Assets	\$	92,091,661	80,470,543	11,621,118
Liabilities		92,091,661	80,470,543	11,621,118
Net position	\$	–	–	–

Assets of the agency funds consist of cash and cash equivalents, investments, contributions due from the State and local employers and other receivables. Between State fiscal years 2016 and 2017, total assets increased by \$11.6 million or 14.4%. This is attributable to the increased amount invested in the Cash Management Fund (CMF) of \$7.8 million and an increase of receivables of \$4.4 million, offset by a decrease of \$0.6 million in cash and cash equivalents.

Liabilities in the agency funds vary according to each plan. In the Alternate Benefit Program (ABP), they include reimbursements to state and county colleges, reimbursement to the State of New Jersey general fund of any unused appropriations, and NCGI benefits payable. In the Dental Expense Program (DEP), they include claims payable, and in the Pension Adjustment Fund (PAF), they include liabilities for payroll and amounts due to the State of New Jersey general fund and other pension trust funds. Between State fiscal years 2016 and 2017, total liabilities increased by \$11.6 million or 14.4%. This was comprised of a \$0.3 million decrease in payroll liabilities in PAF, an \$8.0 million increase in claim liabilities in DEP, and a \$3.9 million increase in employer reimbursements in ABP.

### Summary of Changes in Fiduciary Net Position Pension Trust Funds and Other Postemployment Benefit Plan

		2017	2016*	Increase/ (Decrease)
<b>Additions:</b>				
Member contributions	\$	2,322,645,150	2,239,969,343	82,675,807
Employer contributions		2,925,363,922	2,575,429,410	349,934,512
Nonemployer contributions		1,265,145,499	909,705,663	355,439,836
Employer specific and other contributions		33,826,150	15,215,219	18,610,931
Net investment income (loss)		9,393,632,217	(651,172,295)	10,044,804,512
<b>Total additions</b>		<b>15,940,612,938</b>	<b>5,089,147,340</b>	<b>10,851,465,598</b>
<b>Deductions:</b>				
Benefits		11,212,724,712	10,801,549,900	411,174,812
Refunds of contributions		219,513,451	202,432,865	17,080,586
Administrative expenses		45,489,693	52,568,646	(7,078,953)
<b>Total deductions</b>		<b>11,477,727,856</b>	<b>11,056,551,411</b>	<b>421,176,445</b>
<b>Change in net position</b>	\$	<b>4,462,885,082</b>	<b>(5,967,404,071)</b>	<b>10,430,289,153</b>

\*2016 amounts were adjusted as a result of the adoption of GASB 74.

Additions of the pension trust funds and OPEB plan consist of member, employer, nonemployer, employer specific and other contributions, and earnings from investment activities. There was an increase of \$10.9 billion or 213.2% in total additions attributable to an increase in net investment income of \$10.1 billion and a net increase of \$0.8 billion in member, employer, nonemployer, and employer specific and other contributions in State fiscal year 2017 as compared to State fiscal year 2016.

## Management's Discussion and Analysis (Unaudited) – June 30, 2017, continued

Member contributions increased by \$82.7 million mainly due to the annual rate increases for the Teachers' Pension and Annuity Fund (TPAF), Public Employees' Retirement System (PERS) and the Judicial Retirement System (JRS) as required in Chapter 78, P.L. 2011.

The State contributed \$1,861.6 million to the pension trust funds in State fiscal year 2017. It was composed of \$276.1 million of normal cost and \$1,585.5 million of accrued liability. The contributions were as follows: \$1,087.9 million to TPAF, \$507.2 million to PERS, \$195.2 million to the Police & Firemen's Retirement System (PFRS), \$19.7 million to JRS, \$51.0 million to the State Police Retirement System (SPRS), and \$575 thousand to the Consolidated Police and Firemen's Pension Fund (CPFPF).

State NCGI contributions for the State fiscal year totaling \$82.3 million were as follows: \$39.1 million for TPAF, \$32.4 million for PERS, \$8.2 million for PFRS, \$0.7 million for JRS, and \$1.9 million for SPRS. Between State fiscal years 2016 and 2017, the State's contribution toward noncontributory group life insurance increased by \$7.0 million due to higher claims activity. State noncontributory life insurance benefits are funded on a pay-as-you-go basis. The local contributions for PERS and PFRS are included in the annual billings to local employers.

The annual local employer pension appropriation billings increased per the actuarial valuation as of July 1, 2015. For PERS, the amount accrued in State fiscal year 2016 for normal contribution, accrued liability, and NCGI was \$888.3 million and was due on April 1, 2017. For State fiscal year 2017, the total amount accrued was \$926.4 million and is due April 1, 2018. For PFRS, the total amount accrued in State fiscal year 2016 for normal contributions, accrued liability, and NCGI was \$815.2 million and was due April 1, 2017. For State fiscal year 2017, the total amount accrued was \$885.1 million and is due April 1, 2018.

For the OPEB plan, employer contributions increased by \$37.4 million primarily attributable to rate increases effective January 1, 2017.

The pension trust funds and the OPEB plan earned net investment income of \$9.4 billion in fiscal year 2017 as compared to a net investment loss of \$651.2 million for fiscal year 2016.

During fiscal year 2017, a strengthening global economic environment and a pronounced rebound in corporate earnings led equity markets to strong returns and higher valuations. The U.S. equity market was also buoyed, in part, by expectations for lower corporate tax rates, deregulation, and increased infrastructure spending. Emerging market equities outperformed, benefitting from renewed optimism and resilience to weak commodity prices and heightened geopolitical events.

In contrast, the high quality fixed income market lagged, with U.S. Treasuries realizing negative returns as interest rates moved higher in conjunction with tighter monetary policy. Investment grade credit fared modestly better than Treasuries as spreads narrowed. Lower quality fixed income significantly outperformed, rebounding from a challenging prior year, as high yield bonds realized robust equity-like returns resulting from pronounced spread compression.

Notwithstanding low cap rates and pressure from rising global bond yields, real estate earned attractive returns, proving resilient versus higher interest rates. Continued favorable demand for high quality real estate and relatively low levels of construction kept supply in check as demand for income producing assets persisted in a moderate growth economy and a low interest rate environment. Private equity exhibited strong performance, buoyed by robust public equity returns.

In reference to Schedule of Investment Returns – Annual Money-Weighted Rate of Return, Net of Investment Expense (see Required Supplementary Information Schedule 3), the fiscal year 2017 rate was 13.01% compared to -1.15% in the prior year. It was based on GASB Statement No. 67, *Financial Reporting for Pension Plans – an Amendment of GASB Statement No. 25* (GASB 67).

Deductions of the pension trust funds and OPEB plan are mainly comprised of pension benefit payments to retirees and beneficiaries, refunds of contributions to former members, and administrative costs incurred by the Funds to operate the pension trust funds and the OPEB plan. Also included are claim charges for the self-insured health and prescription drug benefit programs. Between State fiscal years 2016 and 2017, benefit payments increased by \$411.2 million or 3.8% due to an increase in the number of retirees receiving retirement and other benefits.

The change in net position was mainly attributable to the increase in net investment income when comparing State fiscal year 2017 to State fiscal year 2016.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Management's Discussion and Analysis (Unaudited) — June 30, 2017, continued

### Investment Performance

The rates of return (i.e. investment performance, which includes income and changes in the fair value of investments) for JRS, Prison Officers' Pension Fund, SPRS, CPFPPF, TPAF, PFRS, and PERS, collectively, the Pension Funds, and various market indices are as follows:

	Year ended June 30	
	2017	2016
<b>Risk Mitigation</b>	<b>2.33</b>	<b>(1.20)</b>
<i>T-Bill + 300 BP</i>	3.54	3.24
Total Short Term and Cash <sup>1</sup>	1.08	1.05
<i>91 Day Treasury Bill (Daily)</i>	0.49	0.19
Governments	(2.69)	4.42
<i>Custom Government Benchmark</i>	(1.97)	5.42
<b>Total Liquidity</b>	<b>(0.95)</b>	<b>2.69</b>
<i>Liquidity Benchmark</i>	(0.37)	2.14
Investment Grade Credit	0.67	6.57
<i>Custom Investment Grade Credit Benchmark</i>	1.01	7.55
Public High Yield	12.24	2.08
<i>BBG Barc Corp HY (Daily)</i>	12.70	1.62
Global Diversified Credit	25.86	3.32
<i>BBG Barc Corp HY (Daily)</i>	12.70	1.62
Credit-Oriented Hedge Funds	10.13	(1.04)
<i>50 HFRI DR 50 HFRI CA (1 month lag)</i>	13.22	(5.83)
Debt Related Private Equity	9.95	2.00
<i>BarCap Corp HY (1 Qtr lag) + 300 bps</i>	19.92	(0.76)
Debt Related Real Estate	4.15	1.04
<i>Barclays CMBS 2.0 Baa + 100 (Quarter lag)</i>	6.14	(2.01)
<b>Total Income</b>	<b>7.28</b>	<b>3.67</b>
<i>Income Benchmark</i>	7.80	2.27
Real Return Private Real Assets and Commodities	6.86	(4.19)
<i>CA Energy Upst &amp; Royalties &amp; PE Lagged D</i>	22.73	(19.71)
Equity Related Real Estate	8.80	11.97
<i>Real Estate Index</i>	7.36	12.62
<b>Total Real Return</b>	<b>8.23</b>	<b>6.30</b>
<i>Real Return Benchmark</i>	11.12	1.89
US Equity	19.80	(1.58)
<i>S&amp;P 1500 Super Composite (Daily)</i>	18.09	3.64
Non-US Equity Developed Markets Equity	19.02	(9.59)
<i>Custom International Developed Markets Benchmark<sup>2</sup></i>	19.59	(9.96)

**Management’s Discussion and Analysis (Unaudited) – June 30, 2017, continued**

	Year ended June 30	
	2017	2016
Emerging Markets Equity	22.69	(10.81)
<i>Custom International Emerging Markets Benchmark<sup>2</sup></i>	24.07	(11.77)
Equity Oriented Hedge Funds	18.48	(13.06)
<i>50 HFRI EH 50 HFRI ED ACTIVIST (1 month lag)</i>	12.40	(5.24)
Buy outs-Venture Capital	12.99	6.73
<i>Custom Cambridge Blend</i>	14.10	2.90
<b>Total Global Growth</b>	<b>18.80</b>	<b>(3.62)</b>
<i>Global Growth Benchmark</i>	18.51	(1.62)
Opportunistic Investments	15.18	(0.92)
<b>Total Pension Funds</b>	<b>13.07</b>	<b>(0.93)</b>
<i>NJDOI Policy Index</i>	13.14	0.21

<sup>1</sup> The cash aggregate comprises the two common pension fund cash accounts, in addition to the seven plan cash accounts.

<sup>2</sup> Source: MSCI. The MSCI data is comprised of a custom index calculated by MSCI for, and as requested by the Division of Investment. These benchmarks exclude those securities deemed ineligible for investment under the State statutes governing investments in Iran, Sudan and companies that boycott Israel.

**Overall Financial Condition of the Funds**

Based on the GASB 67 and actuaries’ GASB 67 disclosures for State fiscal year 2017, for the defined benefit pension trust funds, the combined state and local ratios of plan fiduciary net position as a percentage of the total pension liability was 35.79% and the net pension liability as a percentage of covered payroll was 551.39%. For the prior year, the combined state and local ratios of plan fiduciary net position as a percentage of the total pension liability was 30.93% and the net pension liability as a percentage of covered payroll was 655.6%.

For the OPEB plan, total revenues incurred exceeded total expenses recognized by \$62.9 million, increasing the surplus at the beginning of the year from \$150.4 million to \$213.3 million at year-end.

The OPEB plan is subject to the new reporting and disclosure requirements under GASB 74, beginning with the fiscal year ending June 30, 2017. GASB 74 replaces the GASB Statement No. 43, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions* and requires that the plan disclose a net OPEB liability that will be recognized on the balance sheet of the employers participating in the plan. The new standard requires the entry age normal actuarial cost method be utilized to determine the total OPEB liability. It also requires that future OPEB benefit payments be discounted using a discount rate that reflects a 20-year tax-exempt municipal bond yield or index rate if assets are not available to cover such benefit payments. Based on the June 30, 2017 GASB 74 actuarial report, the net OPEB liability has been measured to be \$14.3 billion.

For the New Jersey State Employees Deferred Compensation Plan and the Supplemental Annuity Collective Trust, members are 100% vested in the present value of their contributions and the funds have sufficient assets to meet future benefit obligations.

**Contacting System Financial Management**

This financial report is designed to provide our members, beneficiaries, investors, and other interested parties with a general overview of the Funds’ finances and to show the Funds’ accountability for the money it receives. This report is available on the Division of Pensions & Benefits website at [www.state.nj.us/treasury/pensions](http://www.state.nj.us/treasury/pensions). If you have any questions about this report or need additional financial information, contact the Division of Pensions & Benefits, P.O. Box 295, Trenton, NJ 08625-0295.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Statement of Fiduciary Net Position – Fiduciary Funds June 30, 2017

	Pension Trust Funds and Other Postemployment Benefit Plan	Agency Funds
<b>Assets:</b>		
Cash and cash equivalents	\$ 883,450,234	2,204,271
<b>Receivables:</b>		
<b>Contributions:</b>		
Members	190,121,835	–
Employers	2,110,837,862	258,955
Accrued interest and dividends	5,146,689	–
Other	71,403,627	40,359,377
<b>Total receivables</b>	<b>2,377,510,013</b>	<b>40,618,332</b>
<b>Investments, at fair value:</b>		
Cash Management Fund	419,133,596	49,269,058
Common Pension Fund D	50,656,688,406	–
Common Pension Fund E	23,977,861,553	–
Domestic equities	759,462,694	–
Fixed income mutual funds	430,136,637	–
Equity mutual funds	3,019,184,464	–
<b>Total investments</b>	<b>79,262,467,350</b>	<b>49,269,058</b>
Securities lending collateral	958,403,742	–
Members' loans and mortgages	2,381,008,709	–
<b>Total assets</b>	<b>85,862,840,048</b>	<b>92,091,661</b>
<b>Liabilities:</b>		
Accounts payable and accrued expenses	252,706,110	89,709,090
Retirement benefits payable	883,776,543	–
Noncontributory group life insurance premiums payable	15,310,176	–
Administrative expense payable	13,229,786	–
Assets held for local contributing employers	–	2,023,233
Pension adjustment payroll payable	–	72,370
Due to State of New Jersey	–	126,440
Due to other funds	–	160,528
Securities lending collateral and rebates payable	958,120,840	–
<b>Total liabilities</b>	<b>2,123,143,455</b>	<b>92,091,661</b>
<b>Net position:</b>		
Restricted for pension and other postemployment benefits	\$ 83,739,696,593	–

See accompanying notes to financial statements.

**Combining Statement of Fiduciary Net Position — Fiduciary Funds — Pension Trust Funds and Other Postemployment Benefit Plan  
June 30, 2017**

	Defined Benefit Pension Plans								Defined Contribution Pension Plans		Other Postemployment Benefit Plan	Total
	Judicial Retirement System	Prison Officers' Pension Fund	State Police Retirement System	Consolidated Police and Firemen's Retirement System	Teachers' Pension and Annuity Fund	Police and Firemen's Retirement System	Public Employees' Retirement System	Central Pension Fund	New Jersey State Employees Deferred Compensation Plan	Supplemental Annuity Collective Trust	State Health Benefit Program Fund Local - Retired	
<b>Assets:</b>												
Cash and cash equivalents	\$ 5,000,117	284,097	18,969,604	177,544	353,178,098	196,682,671	307,314,387	36,858	14,231	1,566,373	226,254	883,450,234
<b>Receivables:</b>												
<b>Contributions:</b>												
Members	676,066	—	1,094,446	—	76,505,113	51,842,902	59,619,441	—	—	383,867	—	190,121,835
Employers	—	—	80,304	—	26,569,423	1,032,873,483	1,042,303,973	—	—	—	9,010,679	2,110,837,862
Accrued interest and dividends	486	17	2,024	26	41,228	4,201,002	35,826	5	641,034	225,041	—	5,146,689
Other	1,307,451	2,507	1,259,094	237,752	12,647,936	7,178,418	22,164,889	—	5,823,311	—	20,782,269	71,403,627
<b>Total receivables</b>	<b>1,984,003</b>	<b>2,524</b>	<b>2,435,868</b>	<b>237,778</b>	<b>115,763,700</b>	<b>1,096,095,805</b>	<b>1,124,124,129</b>	<b>5</b>	<b>6,464,345</b>	<b>608,908</b>	<b>29,792,948</b>	<b>2,377,510,013</b>
<b>Investments, at fair value:</b>												
Cash Management Fund	3,912,496	5,417,728	13,376,644	1,638,567	61,465,645	46,031,975	38,789,354	2,298	13,116,786	1,314,281	234,067,822	419,133,596
Common Pension Fund D	121,379,434	—	1,175,226,557	—	15,621,176,710	15,613,185,805	18,125,719,900	—	—	—	—	50,656,688,406
Common Pension Fund E	47,103,013	—	553,910,211	—	7,066,359,178	7,640,826,759	8,669,662,392	—	—	—	—	23,977,861,553
Domestic equities	—	—	—	—	—	—	—	—	536,388,570	223,074,124	—	759,462,694
Fixed income mutual funds	—	—	—	—	—	—	—	—	430,136,637	—	—	430,136,637
Equity mutual funds	—	—	—	—	—	—	—	—	3,019,184,464	—	—	3,019,184,464
<b>Total investments</b>	<b>172,394,943</b>	<b>5,417,728</b>	<b>1,742,513,412</b>	<b>1,638,567</b>	<b>22,749,001,533</b>	<b>23,300,044,539</b>	<b>26,834,171,646</b>	<b>2,298</b>	<b>3,998,826,457</b>	<b>224,388,405</b>	<b>234,067,822</b>	<b>79,262,467,350</b>
Securities lending collateral	2,296,449	—	22,234,804	—	295,546,248	295,395,064	342,931,177	—	—	—	—	958,403,742
Members' loans and mortgages	511,721	—	15,479,955	—	283,207,356	1,462,285,744	619,523,933	—	—	—	—	2,381,008,709
<b>Total assets</b>	<b>182,187,233</b>	<b>5,704,349</b>	<b>1,801,633,643</b>	<b>2,053,889</b>	<b>23,796,696,935</b>	<b>26,350,503,823</b>	<b>29,228,065,272</b>	<b>39,161</b>	<b>4,005,305,033</b>	<b>226,563,686</b>	<b>264,087,024</b>	<b>85,862,840,048</b>
<b>Liabilities:</b>												
Accounts payable and accrued expenses	—	1,011	—	—	81,688,581	5,988,986	96,699,759	13,107	17,424,654	195,584	50,694,428	252,706,110
Retirement benefits payable	4,515,169	81,006	17,722,568	147,911	355,065,159	196,739,631	309,203,462	26,054	—	275,583	—	883,776,543
Noncontributory group life insurance premiums payable	—	—	80,304	—	4,029,942	3,288,170	7,911,760	—	—	—	—	15,310,176
Administrative expense payable	50,960	1,464	105,195	1,482	4,292,415	1,460,768	7,180,823	—	—	—	136,679	13,229,786
Securities lending collateral and rebates payable	2,295,771	—	22,228,241	—	295,459,009	295,307,869	342,829,950	—	—	—	—	958,120,840
<b>Total liabilities</b>	<b>6,861,900</b>	<b>83,481</b>	<b>40,136,308</b>	<b>149,393</b>	<b>740,535,106</b>	<b>502,785,424</b>	<b>763,825,754</b>	<b>39,161</b>	<b>17,424,654</b>	<b>471,167</b>	<b>50,831,107</b>	<b>2,123,143,455</b>
<b>Net position:</b>												
Restricted for pension and other postemployment benefits	\$ 175,325,333	5,620,868	1,761,497,335	1,904,496	23,056,161,829	25,847,718,399	28,464,239,518	—	3,987,880,379	226,092,519	213,255,917	83,739,696,593

See accompanying notes to financial statements.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Statement of Changes in Fiduciary Net Position — Fiduciary Funds Year ended June 30, 2017

	<b>Pension Trust Funds and Other Postemployment Benefit Plan</b>
<b>Additions:</b>	
<b>Contributions:</b>	
Members	\$ 2,322,645,150
Employers	2,925,363,922
Nonemployer	1,265,145,499
Employer specific and other	33,826,150
<b>Total contributions</b>	<b>6,546,980,721</b>
<b>Investment income:</b>	
Net increase in fair value of investments	7,879,005,318
Interest	1,517,504,211
Dividends	15,758,948
	9,412,268,477
Less investment expense	18,636,260
<b>Net investment income</b>	<b>9,393,632,217</b>
<b>Total additions</b>	<b>15,940,612,938</b>
<b>Deductions:</b>	
Benefits	11,212,724,712
Refunds of contributions	219,513,451
Administrative and miscellaneous expenses	45,489,693
<b>Total deductions</b>	<b>11,477,727,856</b>
<b>Change in net position</b>	<b>4,462,885,082</b>
<b>Net position restricted for pension and other postemployment benefits:</b>	
Beginning of year, as restated (note 2(k))	79,276,811,511
<b>End of year</b>	<b>\$ 83,739,696,593</b>

See accompanying notes to financial statements.



**Combining Statement of Changes in Fiduciary Net Position – Fiduciary Funds – Pension Trust Funds and Other Postemployment Benefit Plan  
Year ended June 30, 2017**

	Defined Benefit Pension Plans								Defined Contribution Pension Plans		Other Postemployment Benefit Plan	Total
	Judicial Retirement System	Prison Officers' Pension Fund	State Police Retirement System	Consolidated Police and Firemen's Retirement System	Teachers' Pension and Annuity Fund	Police and Firemen's Retirement System	Public Employees' Retirement System	Central Pension Fund	New Jersey State Employees Deferred Compensation Plan	Supplemental Annuity Collective Trust	State Health Benefit Program Fund Local-Retired	
<b>Additions:</b>												
<b>Contributions:</b>												
Members	\$ 10,348,191	–	23,721,785	–	790,788,033	395,878,384	847,952,137	–	194,488,684	5,882,431	53,585,505	2,322,645,150
Employers	20,341,379	–	53,006,614	575,000	1,404,292	1,002,043,734	1,465,931,579	248,000	–	–	381,813,324	2,925,363,922
Nonemployer	–	–	–	–	1,125,614,188	86,467,000	–	–	–	–	53,064,311	1,265,145,499
Employer specific and other	1,121,097	552,131	3,925	964,280	1,696,090	13,107,651	16,358,762	22,214	–	–	–	33,826,150
<b>Total contributions</b>	<b>31,810,667</b>	<b>552,131</b>	<b>76,732,324</b>	<b>1,539,280</b>	<b>1,919,502,603</b>	<b>1,497,496,769</b>	<b>2,330,242,478</b>	<b>270,214</b>	<b>194,488,684</b>	<b>5,882,431</b>	<b>488,463,140</b>	<b>6,546,980,721</b>
<b>Investment income:</b>												
Net increase / (decrease) in fair value of investments	16,847,510	(1,719)	175,221,726	(486)	2,300,089,571	2,304,714,942	2,662,886,052	–	389,170,474	30,076,908	340	7,879,005,318
Interest	3,208,312	34,648	32,328,268	12,685	442,954,741	488,450,683	549,638,114	612	77,593	7,846	790,709	1,517,504,211
Dividends	–	–	–	–	–	–	–	–	10,417,725	5,341,223	–	15,758,948
	20,055,822	32,929	207,549,994	12,199	2,743,044,312	2,793,165,625	3,212,524,166	612	399,665,792	35,425,977	791,049	9,412,268,477
Less investment expense	24,670	2,082	148,404	2,100	6,055,521	2,060,765	10,130,329	–	212,389	–	–	18,636,260
<b>Net investment income</b>	<b>20,031,152</b>	<b>30,847</b>	<b>207,401,590</b>	<b>10,099</b>	<b>2,736,988,791</b>	<b>2,791,104,860</b>	<b>3,202,393,837</b>	<b>612</b>	<b>399,453,403</b>	<b>35,425,977</b>	<b>791,049</b>	<b>9,393,632,217</b>
<b>Total additions</b>	<b>51,841,819</b>	<b>582,978</b>	<b>284,133,914</b>	<b>1,549,379</b>	<b>4,656,491,394</b>	<b>4,288,601,629</b>	<b>5,532,636,315</b>	<b>270,826</b>	<b>593,942,087</b>	<b>41,308,408</b>	<b>489,254,189</b>	<b>15,940,612,938</b>
<b>Deductions:</b>												
Benefits	56,306,453	1,069,209	217,212,067	1,535,623	4,238,076,768	2,413,928,737	3,667,217,598	258,290	183,110,996	16,520,123	417,488,848	11,212,724,712
Refunds of contributions	59,265	–	91,879	–	68,191,977	7,556,700	143,601,094	12,536	–	–	–	219,513,451
Administrative and miscellaneous expenses	150,588	4,134	294,745	4,188	11,923,787	4,124,457	19,648,715	–	444,503	–	8,894,576	45,489,693
<b>Total deductions</b>	<b>56,516,306</b>	<b>1,073,343</b>	<b>217,598,691</b>	<b>1,539,811</b>	<b>4,318,192,532</b>	<b>2,425,609,894</b>	<b>3,830,467,407</b>	<b>270,826</b>	<b>183,555,499</b>	<b>16,520,123</b>	<b>426,383,424</b>	<b>11,477,727,856</b>
<b>Change in net position</b>	<b>(4,674,487)</b>	<b>(490,365)</b>	<b>66,535,223</b>	<b>9,568</b>	<b>338,298,862</b>	<b>1,862,991,735</b>	<b>1,702,168,908</b>	<b>–</b>	<b>410,386,588</b>	<b>24,788,285</b>	<b>62,870,765</b>	<b>4,462,885,082</b>
<b>Net position restricted for pension and other postemployment benefits:</b>												
Beginning of year, as restated (note 2(k))	179,999,820	6,111,233	1,694,962,112	1,894,928	22,717,862,967	23,984,726,664	26,762,070,610	–	3,577,493,791	201,304,234	150,385,152	79,276,811,511
<b>End of year</b>	<b>\$ 175,325,333</b>	<b>5,620,868</b>	<b>1,761,497,335</b>	<b>1,904,496</b>	<b>23,056,161,829</b>	<b>25,847,718,399</b>	<b>28,464,239,518</b>	<b>–</b>	<b>3,987,880,379</b>	<b>226,092,519</b>	<b>213,255,917</b>	<b>83,739,696,593</b>

See accompanying notes to financial statements.

**Notes to Financial Statements  
June 30, 2017**

**(1) Description of the Plans**

**(a) Organization**

The State of New Jersey, Division of Pensions and Benefits (the Division) was created and exists pursuant to N.J.S.A. 52:18A to oversee and administer the pension trust funds and other postemployment benefit (OPEB) plan sponsored by the State of New Jersey (the State). The following is a list of the benefit plans, which have been included in the basic financial statements of the Division, collectively referred to as the Plans:

Plan Name	Type of Plan
<b>Defined benefit pension plans:</b>	
Judicial Retirement System (JRS)	Single-employer
Prison Officers' Pension Fund (POPF)	Single-employer
State Police Retirement System (SPRS)	Single-employer
Consolidated Police and Firemen's Pension Fund (CPFPF)	Cost-sharing multiple-employer with special funding situation
Teachers' Pension and Annuity Fund (TPAF)	Cost-sharing multiple-employer with special funding situation
Police and Firemen's Retirement System (PFRS)	Cost-sharing multiple-employer with special funding situation
Public Employees' Retirement System (PERS)	Cost-sharing multiple-employer
Central Pension Fund (CPF)	Single-employer
<b>Defined contribution pension plans:</b>	
New Jersey State Employees Deferred Compensation Plan (NJSEDCP)	Single-employer
Supplemental Annuity Collective Trust (SACT)	Multiple-employer
<b>Defined benefit other postemployment benefit plans:</b>	
State Health Benefit Program Fund – Local	Cost-sharing multiple-employer with special funding situation

**The Division oversees the following agency funds:**

Agency Fund
Pension Adjustment Fund (PAF)
Alternate Benefit Program (ABP)
Dental Expense Program Fund (DEP)

**Notes to Financial Statements – June 30, 2017, continued**

**(b) Defined Benefit Pension Plans**

Each defined benefit pension plan’s designated purpose is to provide retirement, death, and disability benefits to its members. Below is a summary description of each defined benefit pension plan administered by the Division:

<b>Plan</b>	<b>Established as of</b>	<b>Legislation</b>	<b>Membership</b>
JRS	June 1, 1973	<u>N.J.S.A. 43:6A</u>	All members of the State Judiciary.
POPF*	January 1, 1941	<u>N.J.S.A. 43:7</u>	Various employees in the state penal institutions appointed prior to January 1, 1960.
SPRS	July 1, 1965	<u>N.J.S.A. 53:5A</u>	All uniformed officers and troopers of the Division of State Police.
CPFPF*	January 1, 1952	<u>N.J.S.A. 43:16</u>	County and municipal police and firemen appointed prior to July 1, 1944.
TPAF	January 1, 1955	<u>N.J.S.A. 18A:66</u>	Substantially all teachers or members of the professional staff certified by the State Board of Examiners and employees of the Department of Education, who have titles that are unclassified, professional and certified.
PFRS	July 1, 1944	<u>N.J.S.A. 43:16A</u>	Substantially all full-time county and municipal police or firemen and state firemen or officer employees with police powers appointed after June 30, 1944.
PERS	January 1, 1955	<u>N.J.S.A. 43:15A</u>	Substantially all full-time employees of the State of New Jersey or any county, municipality, school district or public agency, provided the employee is not required to be a member of another state-administered retirement system or other state pension fund or local jurisdiction’s pension fund.
CPF	Various	Various	The CPF is a “pay-as-you-go” benefit plan. The CPF’s designated purpose is to provide retirement allowances under the following series of noncontributory pension acts: Veterans Act Pensioners ( <u>N.J.S.A. 43:4-1 to 4-6</u> ); Health Pension Act ( <u>N.J.S.A. 43:5-1 to 5-4</u> ); Pension to Widows of Governors ( <u>N.J.S.A. 43:8-2</u> ); Disabled Veterans Pension; Surviving Spouse of Veterans ( <u>N.J.S.A. 38:18-1 to 18-2</u> and <u>N.J.S.A. 38:18A-1</u> ); and Special Act ( <u>N.J.S.A. 43:5A to 5A-1</u> ).

\* Represents a closed plan.

## Notes to Financial Statements – June 30, 2017, continued

The authority to amend the provisions of the above plans rests with new legislation passed by the State of New Jersey. Pension reforms enacted pursuant to Chapter 78, P.L. 2011, included provisions creating special Pension Plan Design Committees for JRS, SPRS, TPAF, PFRS, and PERS, once a Target Funded Ratio (TFR) is met. The Pension Plan Design Committees will have the discretionary authority to modify certain plan design features, including member contribution rate; formula for calculation of final compensation or final salary; fraction used to calculate a retirement allowance; age at which a member may be eligible and the benefits for service or early retirement; and benefits provided for disability retirement. The committees will also have the authority to reactivate the cost of living adjustment (COLA) on pensions. However, modifications can only be made to the extent that the resulting impact does not cause the funded ratio to drop below the TFR in any one year of a 30-year projection period.

### Plan Membership and Contributing Employers

Membership and contributing employers of the defined benefit pension plans consisted of the following at June 30, 2017:

	JRS	POPF	SPRS	CPFPF	TPAF*	PFRS	PERS	CPF
Inactive plan members or beneficiaries currently receiving benefits	605	90	3,566	95	101,246	43,011	170,124	13
Inactive plan members entitled to but not yet receiving benefits	4	—	—	—	222	47	650	—
Active plan members	410	—	2,725	—	140,563	40,789	254,685	—
<b>Total</b>	<b>1,019</b>	<b>90</b>	<b>6,291</b>	<b>95</b>	<b>242,031</b>	<b>83,847</b>	<b>425,459</b>	<b>13</b>
Contributing employers	1	1	1	41	24	586	1,705	1

\* In addition to the State, who is the sole payer of regular employer contributions to the fund, TPAF's contributing employers include boards of education, who elected to participate in the Early Retirement Incentive Program and continue to pay towards their incurred liability.

**Notes to Financial Statements – June 30, 2017, continued**

***Pension Plans' Boards and Composition***

The table below represents the composition and source of selection for the Plan's boards:

	SPRS	TPAF	PFRS	PERS
Appointments by:				
Governor	2	2	5	2
Treasurer	1	1	1	1
Superintendent of the State Police	2	—	—	—
Elected by Board or Members	—	4	5	6
<b>Total</b>	<b>5</b>	<b>7</b>	<b>11</b>	<b>9</b>

POPF, CPFPF, and CPF are managed by the Division. General responsibility for JRS is vested with the State House Commission.

***Contribution Requirements and Benefit Provisions***

***Significant Legislation***

Chapter 19, P.L. 2009, effective March 17, 2009, provided an option for local employers of PFRS and PERS to contribute 50% of the normal and accrued liability contribution amounts certified for payments due in State fiscal year 2009. Such an employer will be credited with the full payment and any such amounts will not be included in their unfunded liability. The actuaries will determine the unfunded liability of those retirement systems, by employer, for the reduced normal and accrued liability contributions provided under this law. This unfunded liability is paid by the employer in level annual payments over a period of 15 years beginning with fiscal year ended June 30, 2012, and will be adjusted by the rate of return on the actuarial value of assets.

Pursuant to the provisions of Chapter 78, P.L. 2011, COLA increases were suspended for all current and future retirees of all retirement systems.

The following are specific contribution requirements and benefit provisions related to each defined benefit plan:

***JRS***

The contribution policy is set by N.J.S.A. 43:6A and requires contributions by active members and the State of New Jersey. Members enrolled on January 1, 1996, or after, contribute on their entire base salary. Contributions by active members enrolled prior to January 1, 1996, are based on the difference between their current salary and the salary of the position on January 18, 1982. Pursuant to the provisions of Chapter 78, P.L. 2011, the active member contribution rate is being increased from 3% to 12%, phased in over seven years for members hired or reappointed after June 28, 2011. In October 2011, the member contribution rate for new members increased. The phase-in of the additional incremental member contribution rate takes place in July of each subsequent State fiscal year. The member contribution rate was 10.7% in State fiscal year 2017. The State's contribution is based on an actuarially determined amount, which includes the normal cost and unfunded accrued liability.

The vesting and benefit provisions are set by N.J.S.A. 43:6A. JRS provides retirement benefits as well as death and disability benefits. Retirement is mandatory at age 70. Service retirement benefits are available to members who have reached certain ages and various years of service. Benefits of 75% of final salary are available to members at age 70 with 10 years or more of judicial service; members between ages 65-69 with 15 years or more of judicial service or between ages 60-64 with 20 years or more of judicial service. Benefits of 50% of final salary are available to those with both judicial service and non-judicial service for which five or more consecutive years were judicial service. These benefits are available at age 65 or older with 15 years or more of aggregate service or age 60 or older with 20 years or more of aggregate service. Benefits of 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year in excess of 25 years are available at age 60 with five consecutive years of judicial service plus 15 years in the aggregate of public service or at age 60 while serving as a judge.

## Notes to Financial Statements – June 30, 2017, continued

Early retirement benefits of 2% of final salary for each year of service up to 25 years and 1% of final salary for each year over 25 years is available to members who retire before age 60, have 5 or more consecutive years of judicial service, and 25 years or more in aggregate public service. The amount of benefits is actuarially reduced for the number of months remaining until the member reaches age 60.

### **POPF**

There are no active members in POPF. Additionally, based on the recent actuarial valuation, there was no normal cost or accrued liability contribution required by the State for the fiscal year ended June 30, 2017. The vesting and benefit provisions were set by N.J.S.A. 43:7.

### **SPRS**

The contribution policy is set by N.J.S.A. 53:5A and requires contributions by active members and the State of New Jersey. Pursuant to the provisions of Chapter 78, P.L. 2011, the active member contribution rate was 9% in State fiscal year 2017. The State's contribution is based on an actuarially determined amount, which includes the normal cost and unfunded accrued liability.

The vesting and benefit provisions are set by N.J.S.A. 53:5A. SPRS provides retirement benefits as well as death and disability benefits. All benefits vest after ten years of service, and members are always fully vested in their contributions. Mandatory retirement is at age 55. Voluntary retirement is prior to age 55 with 20 years of credited service. The benefit is an annual retirement allowance equal to the greater of (a), (b), or (c), as follows: (a) 50% of final compensation; (b) for members retiring with 25 years or more of service, 65% of final compensation, plus 1% for each year of service in excess of 25 years, to a maximum of 70% of final compensation; or (c) for members as of August 29, 1985 who would not have 20 years of service by age 55, benefit as defined in (a) above. For members as of August 29, 1985, who would have 20 years of service, but would not have 25 years of service at age 55, benefit is as defined in (a) above plus 3% for each year of service.

### **CPFPF**

There are no active members in CPFPF. Additionally, based on the recent actuarial valuation, the State made a \$575,000 contribution towards the unfunded accrued liability during the fiscal year ended June 30, 2017. The vesting and benefit provisions were set by N.J.S.A. 43:16.

### **TPAF**

The contributing policy is set by N.J.S.A. 18A:66 and requires contributions by active members and contributing employers. Pursuant to the provisions of Chapter 78, P.L. 2011, the active member contribution rate increased from 5.5% of annual compensation to 6.5% plus an additional 1% phased in over 7 years beginning in July 2012. The member contribution rate was 7.20% in State fiscal year 2017. The phase-in of the additional incremental member contribution rate takes place in July of each subsequent State fiscal year. The State's contribution is based on an actuarially determined amount, which includes the normal cost and unfunded accrued liability.

The vesting and benefit provisions are set by N.J.S.A. 18A:66. TPAF provides retirement, death, and disability benefits. All benefits vest after ten years of service, except for medical benefits, which vest after 25 years of service or under the disability provisions of TPAF. Members are always fully vested for their own contributions and, after three years of service credit, become vested for 2% of related interest earned on the contributions. In the case of death before retirement, members' beneficiaries are entitled to full interest credited to the members' accounts.

**Notes to Financial Statements – June 30, 2017, continued**

The following represents the membership tiers for TPAF:

<b>Tier</b>	<b>Definition</b>
1	Members who were enrolled prior to July 1, 2007
2	Members who were eligible to enroll on or after July 1, 2007, and prior to November 2, 2008
3	Members who were eligible to enroll on or after November 2, 2008, and prior to May 22, 2010
4	Members who were eligible to enroll on or after May 22, 2010, and prior to June 28, 2011
5	Members who were eligible to enroll on or after June 28, 2011

Service retirement benefits of 1/55th of final average salary for each year of service credit is available to tiers 1 and 2 members upon reaching age 60 and to tier 3 members upon reaching age 62. Service retirement benefits of 1/60th of final average salary for each year of service credit is available to tier 4 members upon reaching age 62 and tier 5 members upon reaching age 65. Early retirement benefits are available to tiers 1 and 2 members before reaching age 60, tiers 3 and 4 with 25 years or more of service credit before age 62, and tier 5 before age 65 with 30 years or more of service credit. Benefits are reduced by a fraction of a percent for each month that a member retires prior to the retirement age for his/her respective tier. Deferred retirement is available to members who have at least 10 years of service credit and have not reached the service retirement age for the respective tier.

**PFRS**

The contribution policy is set by N.J.S.A. 43:16A and requires contributions by active members and contributing employers. Pursuant to the provisions of Chapter 78, P.L. 2011, the active member contribution rate was 10% in State fiscal year 2017. Employers' contributions are based on an actuarially determined amount, which includes the normal cost and unfunded accrued liability.

The vesting and benefit provisions are set by N.J.S.A. 43:16A. PFRS provides retirement as well as death and disability benefits. All benefits vest after ten years of service, except disability benefits, which vest after four years of service.

The following represents the membership tiers for PFRS:

<b>Tier</b>	<b>Definition</b>
1	Members who were enrolled prior to May 22, 2010
2	Members who were eligible to enroll on or after May 22, 2010, and prior to June 28, 2011
3	Members who were eligible to enroll on or after June 28, 2011

Service retirement benefits are available at age 55 and are generally determined to be 2% of final compensation for each year of creditable service up to 30 years plus 1% for each year of service in excess of 30 years. Members may seek special retirement after achieving 25 years of creditable service, in which benefits would equal 65% (tiers 1 and 2 members) and 60% (tier 3 members) of final compensation plus 1% for each year of creditable service over 25 years, but not to exceed 30 years. Members may elect deferred retirement benefits after achieving ten years of service, in which case benefits would begin at age 55 equal to 2% of final compensation for each year of service.



## Notes to Financial Statements – June 30, 2017, continued

### **PERS**

The contribution policy is set by N.J.S.A. 43:15A and requires contributions by active members and contributing employers. Pursuant to the provisions of Chapter 78, P.L. 2011, the active member contribution rate increased from 5.5% of annual compensation to 6.5% plus an additional 1% phased in over 7 years beginning in July 2012. The member contribution rate was 7.20% in State fiscal year 2017. The phase-in of the additional incremental member contribution rate takes place in July of each subsequent State fiscal year. The rate for members who are eligible for the Prosecutors Part of PERS (Chapter 366, P.L. 2001) was 10% in State fiscal year 2017. Employers' contributions are based on an actuarially determined amount, which includes the normal cost and unfunded accrued liability.

The vesting and benefit provisions are set by N.J.S.A. 43:15A. PERS provides retirement, death, and disability benefits. All benefits vest after ten years of service, except for medical benefits, which vest after 25 years of service or under the disability provisions of PERS.

The following represents the membership tiers for PERS:

<b>Tier</b>	<b>Definition</b>
1	Members who were enrolled prior to July 1, 2007
2	Members who were eligible to enroll on or after July 1, 2007, and prior to November 2, 2008
3	Members who were eligible to enroll on or after November 2, 2008, and prior to May 22, 2010
4	Members who were eligible to enroll on or after May 22, 2010, and prior to June 28, 2011
5	Members who were eligible to enroll on or after June 28, 2011

Service retirement benefits of 1/55th of final average salary for each year of service credit is available to tiers 1 and 2 members upon reaching age 60 and to tier 3 members upon reaching age 62. Service retirement benefits of 1/60th of final average salary for each year of service credit is available to tier 4 members upon reaching age 62 and tier 5 members upon reaching age 65. Early retirement benefits are available to tiers 1 and 2 members before reaching age 60, tiers 3 and 4 with 25 years or more of service credit before age 62, and tier 5 with 30 years or more of service credit before age 65. Benefits are reduced by a fraction of a percent for each month that a member retires prior to the age at which a member can receive full early retirement benefits in accordance with their respective tier. Tier 1 members can receive an unreduced benefit from age 55 to age 60 if they have at least 25 years of service. Deferred retirement is available to members who have at least 10 years of service credit and have not reached the service retirement age for the respective tier.

### **CPF**

The State of New Jersey makes an annual appropriation payment to CPF to pay current year benefits. The contribution requirements were established by the statutes mentioned in the previous table and are not actuarially determined.

Benefits are payable under various State of New Jersey legislation in an amount equal to one-half of the compensation received by the participant for his/her service.

**Notes to Financial Statements – June 30, 2017, continued**

**(c) Defined Contribution Pension Plans**

The Division administers the following defined contribution plans to certain members as further discussed below:

Plan	Established as of	Legislation	Membership
NJSEDCP	June 19, 1978	Chapter 39, P.L. 1978, amended by Chapter 449, P.L. 1985, effective January 14, 1986, and further amended by Chapter 116, P.L. 1997, effective June 6, 1997	Any state employee who is a member of a state-administered retirement system or an employee of an eligible state agency, authority, commission or instrumentality of state government provided the employee has at least 12 continuous months of employment, and any individual employed through a Governor's appointment.
SACT	1963	Chapter 123, P.L. 1963, amended by Chapter 90, P.L. 1965	Active members of several state-administered retirement systems to provide specific benefits to supplement the guaranteed benefits that are provided by their basic retirement system.

**Plan Membership**

At June 30, 2017, membership in the defined contribution pension plans consisted of the following based on the information within the Division's database:

Plan	Members
NJSEDCP	53,019
SACT	3,025

**Contribution Requirements and Benefit Provisions**

**NJSEDCP**

Participants may defer between 1% and 100% of their salary, less any Internal Revenue Code (IRC) Section 414(h) reductions, or \$18,000 annually. Under the limited "catch-up" provision, a participant may be eligible to defer up to a maximum of twice the annual maximum in the three years immediately preceding the retirement age at which no reduction in benefits would be applicable.

There are no employer or nonemployer entities that are required to contribute to the plan.

Assets in the plan are held in trust for the exclusive benefit of plan members and their beneficiaries in accordance with GASB Statement No. 32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*. Plan members are fully vested for the current valuation of their account from the date of enrollment in the plan. Benefits are payable upon separation from service with the State of New Jersey.

**SACT**

Participants contribute through payroll deductions and may contribute from 1% to 100% of their base salary. Contributions are voluntary and may be suspended at the beginning of any quarter. Contributions under the Tax-Sheltered Supplemental Annuity Plan are subject to Federal law limitations and qualify for tax sheltered treatment permitted under Section 403(b) of the IRC. Participants are always fully vested for the accumulated units in their accounts.

Upon retirement, a participant receives a life annuity benefit or may elect to receive a benefit paid as a single cash payment or various forms of monthly annuity payments with a beneficiary provision based on the value of the participant's account in the month of retirement. Upon the death of a participant, the designated beneficiary may elect to receive a lump sum equal to the account value or an annuity under any of the settlement options, which a retiree could elect under SACT. Upon termination of employment and withdrawal from the basic retirement systems, a participant must also withdraw his/her account under SACT as a lump-sum settlement.

## Notes to Financial Statements – June 30, 2017, continued

### (d) Other Postemployment Benefit Plan

The Division administers the State Health Benefits Program Fund – Local OPEB plan. The plan was established in 1961 under Title 52 Article 14- 17.25 et. seq. and offers medical and prescription coverage to qualified local government public retirees and their spouses. Local employers must adopt a resolution to participate. The OPEB plan is overseen by the State Health Benefits Commission (the Commission), which was established by N.J.S.A. 52:14-17.27. The Commission reviews any member appeals related to member eligibility, benefit or claim denial, and benefit payments for the medical and prescription drug claims. They also have contracting authority for vendors to administer the medical and prescription drug programs as well as the health benefit consultant and actuary. Further, they approve the premiums for the various plans on an annual basis. The Commission is comprised of one representative each from the Office of the Treasurer, Department of Banking and Insurance, Civil Service Commission, State Employee Union, and Local Employee Union.

#### Plan Membership and Contributing Employers

Membership and contributing employers of the defined benefit OPEB plan consisted of the following at June 30, 2017:

Inactive plan members or beneficiaries currently receiving benefits	37,967
Inactive plan members entitled to but not yet receiving benefits	—
Active plan members	<u>36,712</u>
Total	<u>74,679</u>
Contributing employers	<u>579</u>

#### Contribution Requirements and Benefit Provisions

The funding policy for the OPEB plan is pay-as-you-go; therefore, there is no prefunding of the liability. However, due to premium rates being set prior to each calendar year, there is a minimal amount of net position available to cover benefits in future years. Contributions to pay for the health benefit premiums of participating employees in the OPEB plan are collected from the State of New Jersey, participating local employers, and retired members. The State of New Jersey makes contributions to cover those employees eligible under Chapter 330, P.L. 1997, as disclosed below. Local employers remit employer contributions on a monthly basis. Retired member contributions are generally received on a monthly basis.

The employers participating in the OPEB plan made a contribution of \$381.8 million and the State of New Jersey, as the non-employer contributing entity, contributed \$53.1 million for fiscal year 2017.

Pursuant to Chapter 78, P.L. 2011, future retirees eligible for postretirement medical coverage who have less than 20 years of creditable service on June 28, 2011, will be required to pay a percentage of the cost of their health care coverage in retirement provided they retire with 25 or more years of pension service credit. The percentage of the premium for which the retiree will be responsible will be determined based on the retiree's annual retirement benefit and level of coverage.

Partially funded benefits are also available to local police officers and firefighters who retire with 25 years of service or on disability from an employer who does not provide coverage under the provisions of Chapter 330, P.L. 1997. Upon retirement, these individuals must enroll in the OPEB plan.

### (e) Agency Funds

The Division oversees PAF, ABP, and DEP as agency funds. For PAF, the Division utilizes the annual appropriation payment from the State to pay the cost of living adjustment (COLA) benefits to retirees and beneficiaries of POPF, CFPF, and CPF. For ABP, the Division collects from the State, the contributions related to the employer portion of the plan and remits it to the pension providers (insurance and mutual fund companies) on behalf of the participating employees at the State and county colleges. For DEP, the Division receives employer contributions from the State and local employers and from active and retired employees to pay premiums to the plan.

## Notes to Financial Statements – June 30, 2017, continued

### (2) Summary of Significant Accounting Policies

#### (a) Reporting Entity

The financial statements include all funds, which are administered by the Division over which operating controls are with the individual Plan's governing Boards and/or the State of New Jersey. The financial statements of the Plans and the agency funds are included in the financial statements of the State of New Jersey; however, the accompanying financial statements are intended to present solely the funds listed above, which are administered by the Division and not the State of New Jersey as a whole.

#### (b) Measurement Focus and Basis of Accounting

The accompanying financial statements were prepared in accordance with U.S. generally accepted accounting principles as applicable to governmental organizations. In doing so, the Division adheres to reporting requirements established by the Governmental Accounting Standards Board (GASB).

The accrual basis of accounting is used for measuring financial position and changes in net position of the pension trust funds and other postemployment benefit plan. Under this method, contributions are recorded in the accounting period in which they are legally due from the employer or plan member, and deductions are recorded at the time the liabilities are due and payable in accordance with the terms of each plan. The accounts of the Division are organized and operated on the basis of funds. All funds are accounted for using an economic resources measurement focus.

#### Fiduciary Funds

The Division reports the following types of funds:

**Pension trust funds and other postemployment benefit plan** – Account for monies received for, expenses incurred by and the net position available for plan benefits of the various public employee retirement systems and an OPEB plan. The pension trust funds include JRS, POPF, SPRS, CPFPPF, TPAF, PFRS, PERS, CPF, NJSEDCP, and SACT.

**Agency funds** – Agency funds are used to account for the assets that the Division holds on behalf of others as their agent. Agency funds are custodial in nature and do not involve measurement of results of operations.

#### (c) Receivables

Receivables consist primarily of member and employer contributions and other amounts that are legally required to be due to the Plans.

#### (d) Capital Assets

Capital assets utilized by the Division include equipment, which is owned and paid for by the State of New Jersey.

#### (e) Investments

The Division of Investment, Department of the Treasury, State of New Jersey (Division of Investment) manages and invests certain assets of seven of the defined benefit pension plans (JRS, POPF, SPRS, CPFPPF, TPAF, PFRS, and PERS) and two defined contribution pension plans (SACT and certain accounts in NJSEDCP). Accounts managed by the Division of Investment included in the Division of Pensions & Benefits report are: Common Pension Fund D and Common Pension Fund E (collectively known as the Common Pension Funds), and other investments owned directly by the seven defined benefit pension plans. Common Pension Fund D invests primarily in global equity and fixed income securities. Common Pension Fund E invests primarily in global diversified credit funds and alternative investments, which includes private equity, real estate, real asset, and absolute return strategy funds.

In addition, the Division of Investment manages the State of New Jersey Cash Management Fund (CMF), which is available on a voluntary basis for investment by State and certain non-State participants. CMF is considered to be an investment trust fund as defined in GASB Statement No. 31, *Certain Investments and External Investment Pools*. Units of ownership in CMF may be purchased or redeemed on any given business day (excluding State holidays) at the unit cost or value of \$1.00. Participant shares are valued on a fair value basis. For additional information about CMF, refer to the audited financial statements, which can be obtained at <http://www.nj.gov/treasury/doinvest/cm/FinancialStatementsFiscal2017.pdf>.

Prudential Retirement is the third-party administrator for the NJSEDCP. Prudential Retirement provides recordkeeping, administrative services and access to 22 investment options through a combination of their separate account product offerings and retail branded mutual funds. The four state-managed investments options (NJSEDCP Fixed Income Fund, NJSEDCP Equity Fund, NJSEDCP Small Capitalization Equity

## Notes to Financial Statements – June 30, 2017, continued

Fund, and NJSEDCP Cash Management Fund) were closed to new contributions on December 31, 2005. On August 1, 2014, the NJSEDCP Fixed Income Fund and the NJSEDCP Cash Management Fund were closed. On December 15, 2014, the NJSEDCP Equity Fund and the NJSEDCP Small Capitalization Fund were opened to new contributions. The Board of the NJSEDCP is the fiduciary for the investments of the Plan. The Division of Pensions & Benefits maintains its administrative oversight functions for the Plan.

Investment transactions are accounted for on a trade or investment date basis. Interest and dividend income is recorded on the accrual basis, with dividends accruing on the ex-dividend date. The net increase or decrease in the fair value of investments includes the net realized and unrealized gains or losses on investments.

### **(f) Members' Loans**

Members of JRS, SPRS, TPAF, PFRS, and PERS who have at least three years of service in these plans may borrow up to 50% of their accumulated member contributions. Repayment of loan balances is deducted from payroll checks and bears a commercially reasonable interest rate as set by the State Treasurer. For 2017, the interest rate was 6.25%. There was a \$15 processing fee per loan. Members who retire with an outstanding loan have the option of paying the loan in full prior to receiving any benefits or continuing their monthly loan payment schedule into retirement.

### **(g) Administrative Expenses**

Administrative expenses are paid by the plans to the State of New Jersey, Department of the Treasury and are included in the accompanying financial statements.

In certain funds (JRS, SPRS, TPAF, PFRS and PERS) miscellaneous expenses and reimbursements from the fund that comprise various adjustments to member and employer accounts are incorporated into the administrative expense amounts included in the accompanying financial statements.

### **(h) Income Tax Status**

Based on Internal Revenue Service (IRS) determination letters received in January 2012 for JRS, POPF, SPRS, TPAF, and PERS and in June 2012 for CPFPPF and PFRS, the seven pension funds comply with the qualification requirements of the Internal Revenue Code (IRC).

NJSEDCP and SACT are eligible plans as described in Section 457 and Section 401(a) of the IRC, respectively.

### **(i) Commitments**

Common Pension Fund E is obligated, under certain private equity, real estate, real asset, absolute return strategy, and global diversified credit fund agreements to make additional capital contributions up to contractual levels over the investment period specified for each investment. As of June 30, 2017, Common Pension Fund E had unfunded commitments totaling approximately \$10.1 billion.

### **(j) Use of Estimates**

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make significant estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

### **(k) Adoption of Accounting Pronouncements**

The Division adopted GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other than Pension Plans (GASB Statement No. 74). GASB Statement No. 74 established new accounting and financial reporting requirements for governments whose employees are provided with OPEB as well as certain nonemployer governments that have a legal obligation to provide financial support for OPEB provided to the employees of other entities. GASB Statement No. 74 includes OPEB plans that are administered through a trust or equivalent arrangement that meets certain criteria: a) contributions from employers and nonemployer contributing entities to the plan and earnings on those contributions are irrevocable; b) plan assets are dedicated to providing OPEB to plan members in accordance with the benefit terms; and c) plan assets are legally protected from creditors. While the adoption of GASB Statement No. 74 determined the requirements for financial accounting, reporting and disclosures, it does not impact the funding of the plans, which is determined by State statute.

**Notes to Financial Statements – June 30, 2017, continued**

In connection with the implementation of GASB Statement No. 74, the Division reevaluated the plans included in the statement of fiduciary activities and determined that certain plans are not administered through qualified trusts and do not meet equivalent arrangement criteria as defined above, therefore should not be reported in the fiduciary activities of the Division. As such, the adoption of GASB 74 resulted in the following adjustment:

Net position restricted for pension and other postemployment benefits: Beginning of year, as previously reported	\$ 79,228,529,236
Adjustment as result of the adoption of GASB Statement No. 74	48,282,275
Net position restricted for pension and other postemployment benefits: Beginning of year, as restated	<u>\$ 79,276,811,511</u>

**(3) Employers' Net Pension Liability – Defined Benefit Plans**

**Components of Net Pension Liability**

The components of the net pension liability of the participating employers for the defined benefit plans at June 30, 2017, are as follows:

	JRS	POPF	SPRS	CPFPPF	TPAF	PFRS	PERS
Total pension liability	\$ 937,395,995	6,477,263	5,124,274,114	7,396,613	90,726,371,000	47,410,721,738	77,388,263,903
Plan fiduciary net position	175,325,333	5,620,868	1,761,497,335	1,904,496	23,056,161,829	25,847,718,399	28,464,239,518
Net pension liability	\$ 762,070,662	856,395	3,362,776,779	5,492,117	67,670,209,171	21,563,003,339	48,924,024,385
Plan fiduciary net position as a percentage of the total pension liability	18.70%	86.78%	34.38%	25.75%	25.41%	54.52%	36.78%

The total pension liability was determined by actuarial valuations as of July 1, 2016, which was rolled forward to June 30, 2017, using the following actuarial assumptions, applied to all periods in the measurement:

	JRS	POPF	SPRS	CPFPPF	TPAF	PFRS	PERS
Inflation rate	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
Salary increases:							
Initial fiscal year applied through	2025	N/A	2025	N/A	*	2026	2026
Rate	2.00%	N/A	2.95%	N/A	*	2.10 - 8.98% based on age	1.65 to 4.15% based on age
Thereafter	3.00%	N/A	3.95%	N/A	*	3.10 - 9.98% based on age	2.65 - 5.15% based on age
Long-term expected rate of return	7.00%	1.00%	7.00%	1.00%	7.00%	7.00%	7.00%
Period of actuarial experience study upon which actuarial assumptions were based	July 1, 2011– June 30, 2014	N/A	July 1, 2011– June 30, 2014	N/A	July 1, 2012– June 30, 2015	July 1, 2010– June 30, 2013	July 1, 2011– June 30, 2014

N/A – This is a closed plan, therefore there are no active employees.

\* – Salary increases are various based on experience and the valuation year.

## Notes to Financial Statements – June 30, 2017, continued

The following table represents the mortality table and improvement assumptions used:

Plan	Pre-retirement mortality	Post-retirement mortality	Disability
JRS	RP-2000 Combined Healthy Male and RP-2000 Combined Healthy Female Mortality Tables (unadjusted for males and set forward 3 years for females) projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are projected beyond the base year using the plan actuary's modified MP-2014 projection scale.	RP-2000 Combined Healthy Mortality Tables (unadjusted for males and set forward 3 years for females) for service retirement and beneficiaries of former members projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are projected beyond the base year using the plan actuary's modified MP-2014 projection scale.	RP-2000 Disability Mortality Tables (set forward 2 years for males and females) are used to value disabled retirees.
POPF	Not applicable as there are no active members.	RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables and the tables will be further projected beyond the valuation date using the plan actuary's modified 2014 projection scale.	RP-2000 disabled retiree table is used for the period after disability retirement.
SPRS	RP-2000 Combined Healthy Male (set back 3 years) and RP-2000 Combined Healthy Female Mortality Tables projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are further projected using the plan actuary's modified MP-2014 projection scale.	RP-2000 Combined Healthy Male (set back 3 years) and RP-2000 Combined Healthy Female Mortality tables projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB. These base tables will be further projected beyond the valuation date using the plan actuary's modified MP-2014 projection scale.	RP-2000 Combined Healthy Males (set forward 5 years) and RP-2000 Combined Healthy Female Mortality (set forward 5 years) tables.
CPFPF	Not applicable as there are no active members.	RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables.	Special mortality tables are used for the period after disability retirement with no provisions made for mortality improvement after the valuation date.



**Notes to Financial Statements – June 30, 2017, continued**

Plan	Pre-retirement mortality	Post-retirement mortality	Disability
TPAF	Based on experience of TPAF members reflecting mortality improvement on a generational basis based on a 60-year average of Social Security data from 1953 to 2013.	Based on experience of TPAF members reflecting mortality improvement on a generational basis based on a 60-year average of Social Security data from 1953 to 2013.	Based on experience of TPAF members reflecting mortality improvement on a generational basis based on a 60-year average of Social Security data from 1953 to 2013.
PFRS	RP-2000 Employee Pre-Retirement mortality tables projected thirteen-years using Projection Scale BB and then projected on a generational basis using the plan actuary's modified 2014 projection scales.	RP-2000 Combined Healthy Mortality Tables projected one year using Projection Scale AA and three years using the plan actuary's modified 2014 Projection Scales is the base table for male service retirements and will be further projected on a generational basis using the plan actuary's modified 2014 Projection Scales. RP-2000 Combined Healthy Mortality Tables projected thirteen-years using Projection Scale BB and then three years projected using the plan actuary's modified 2014 Projection Scales is the base table for female service retirements and beneficiaries are further projected on a generational basis using the plan actuary's modified 2014 projection scales.	Special mortality tables are used for the period after disability retirement.
PERS	RP-2000 Employee Preretirement Mortality Table for male and female active participants. For State, mortality tables are set back 4 years for males and 4 years for females. For Employees of Local employers, mortality tables are set back 2 years for males and 7 years for females. In addition, the tables provide for future improvements in mortality from the base year of 2013 using a generational approach based on the plan actuary's modified MP-2014 projection scale.	RP-2000 Combined Healthy Male and Female Mortality Tables (set back 1 year for males and females) for service retirement and beneficiaries of former members and a one year static projection based on mortality improvement Scale AA. In addition, the tables for service retirement and beneficiaries of former members provide for future improvements in mortality from base year of 2013 using a generational approach based on the plan actuary's modified MP-2014 projection scale.	RP-2000 Disabled Mortality Tables (set back 3 years for males and set forward 1 year for females).

## Notes to Financial Statements – June 30, 2017, continued

### Long-Term Expected Rate of Return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plans investment expense, and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plans' target asset allocation as of June 30, 2017, are summarized in the following table:

Asset Class	JRS, SPRS, TPAF, PFRS, PERS	POPF & CPFPF
Absolute return/risk mitigation	5.51%	—
Cash equivalents	1.00%	1.00%
U.S. Treasuries	1.87%	—
Investment grade credit	3.78%	—
Public high yield	6.82%	—
Global diversified credit	7.10%	—
Credit oriented hedge funds	6.60%	—
Debt related private equity	10.63%	—
Debt related real estate	6.61%	—
Private real asset	11.83%	—
Equity related real estate	9.23%	—
US equity	8.19%	—
Non-U.S. developed markets equity	9.00%	—
Emerging markets equity	11.64%	—
Buyouts/venture capital	13.08%	—

### Discount Rate

The discount rate used to measure the total pension liabilities of the plans were as follows:

Plan	Discount Rate
JRS	3.83%
POPF	3.58%
SPRS	4.42%
CPFPF	3.58%
TPAF	4.25%
PFRS	6.14%
PERS	5.00%

**Notes to Financial Statements – June 30, 2017, continued**

The following table represents the crossover period, if applicable, for each defined benefit plan:

	JRS	POPF	SPRS	CPFPF	TPAF	PFRS	PERS
Period of projected benefit payments for which the following rates were applied:							
Long-term expected rate of return	Through June 30, 2023	Not applicable	Through June 30, 2037	Not applicable	Through June 30, 2036	Through June 30, 2057	Through June 30, 2040
Municipal Bond rate*	From July 1, 2023 and thereafter	All periods	From July 1, 2037 and thereafter	All periods	From July 1, 2036 and thereafter	From July 1, 2057 and thereafter	From July 1, 2040 and thereafter

\* The municipal bond return rate used is 3.58%. The source is the Bond Buyer Go 20-Bond Municipal Bond Index, which includes tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

**Sensitivity of Net Pension Liability**

The following presents the net pension liability of each plan calculated using the discount rates as disclosed above as well as what each plan's net pension liability 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:

Pension Plan (rates used)	At 1% decrease	At current discount rate	At 1% increase
JRS (2.83%, 3.83%, 4.83%)	\$ 861,952,973	762,070,662	677,006,861
POPF (2.58%, 3.58%, 4.58%)	1,190,286	856,395	555,217
SPRS (3.42%, 4.42%, 5.42%)	4,177,923,905	3,362,776,779	2,713,454,218
CPFPF (2.58%, 3.58%, 4.58%)	5,819,905	5,492,117	5,194,839
TPAF (3.25%, 4.25%, 5.25%)	80,394,331,171	67,670,209,171	57,188,022,171
PFRS (5.14%, 6.14%, 7.14%)	27,821,627,837	21,563,003,339	16,422,367,495
PERS (4.00%, 5.00%, 6.00%)	58,697,018,759	48,924,024,385	40,792,456,582

**(4) Employers' Net Pension Liability – Defined Benefit Plans - OPEB**

*Components of Net OPEB Liability – OPEB Plan*

The components of the net OPEB liability of the participating employers for the OPEB plan at June 30, 2017, are as follows:

Total OPEB liability	\$ 14,558,177,389
Plan fiduciary net position	213,255,917
Net OPEB liability	<u>\$ 14,344,921,472</u>
Plan fiduciary net position as a percentage of the total OPEB liability	1.46%

## Notes to Financial Statements – June 30, 2017, continued

The total OPEB liability was determined by an actuarial valuation as of July 1, 2016, which was rolled forward to June 30, 2017, using the following actuarial assumptions, applied to all periods in the measurement:

Inflation rate	2.50%
Salary Increases*	
Initial fiscal year applied through	2026
Rate	1.65% to 8.98%
Rate thereafter	2.65% to 9.98%
Mortality	RP-2006 Headcount-Weighted Healthy Employee Male/Female Mortality Table with fully generational mortality improvement projections from the central year using Scale MP-2017
Long-term rate of return	1.00%

\*Salary increases are based on the defined benefit plan that the individual is enrolled in and his or her age.

Actuarial assumptions used in the July 1, 2016, valuation were based on the results of the PFRS and PERS experience studies prepared for July 1, 2010, to June 30, 2013, and July 1, 2011, to June 30, 2014, respectively.

For pre-Medicare preferred provider organization (PPO) medical benefits, this amount initially is 5.9% and decreases to a 5.0% long-term trend rate after nine years. For self-insured post-65 PPO medical benefits, the trend rate is 4.5%. For health maintenance organization (HMO) medical benefits, the trend rate is initially 5.9% and decreases to a 5.0% long-term trend rate after nine years. For prescription drug benefits, the initial trend rate is 10.5% and decreases to a 5.0% long-term trend rate after eight years. The Medicare Advantage trend rate is 4.5% and will continue in all future years.

As the OPEB plan only invests in the State of New Jersey Cash Management Fund, the long-term expected rate of return on OPEB investments was based off the best-estimate ranges of future real rates of return (expected returns, net of OPEB plan investment expense and inflation) for cash equivalents, which is 1.00%.

The discount rate for the OPEB plan was 3.58%. This represents the municipal bond return rate as chosen by the Division. The source is the Bond Buyer Go 20-Bond Municipal Bond Index, which includes tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. As the long-term rate of return is less than the municipal bond rate, it is not considered in the calculation of the discount rate, rather the discount rate is set at the municipal bond rate.

### Sensitivity of Net OPEB Liability to changes in the discount rate:

At 1% decrease (2.58%)	At current discount rate (3.58%)	At 1% Increase (4.58%)
\$ 16,744,999,016	14,344,921,472	12,423,831,964

### Sensitivity of Net OPEB Liability to changes in the healthcare trend rate:

1% decrease	Healthcare Cost Trend Rate	1% Increase
\$ 12,114,100,439	114,344,921,472	17,205,229,327

**Notes to Financial Statements – June 30, 2017, continued**

**(5) The Plan’s investments (including investments held directly by the Common Pension Funds) as of June 30, 2017, are as follows:**

**Common Pension Fund D:**

Cash	\$	216,271,465
Cash Management Fund		2,879,077,106
Domestic equities		22,232,686,145
International equities		14,297,127,070
Domestic fixed income		7,794,075,582
International fixed income		3,106,982,254
Put options		1,222,000
Other <sup>(1)</sup>		129,246,784
		<u>50,656,688,406</u>

**Common Pension Fund E:**

Cash	80,757,442
Cash Management Fund	685,991,889
Absolute return strategy funds	5,912,041,737
Private equity funds	7,841,284,133
Real estate funds	3,561,208,587
Global diversified credit funds	3,427,816,091
Real assets	1,829,032,290
Opportunistic private equity investments	341,986,613
Other <sup>(1)</sup>	297,742,771
	<u>23,977,861,553</u>

**All Other Investments:**

Cash Management Fund	468,402,654
Domestic equities	759,462,694
Fixed income mutual funds	430,136,637
Equity mutual funds	3,019,184,464
	<u>4,677,186,449</u>
<b>Total</b>	<b>\$ 79,311,736,408</b>

<sup>(1)</sup> Includes assets (other than investments) and liabilities included in the net position of the Common Pension Funds.

New Jersey State statute provides for a State Investment Council (the Council) and a Director. Investment authority is vested in the Director of the Division of Investment and the role of the Council is to formulate investment policies. The Council issues regulations, which establish guidelines for permissible investments for the Common Pension Funds managed by the Division of Investment, which include global equity investments, non-convertible preferred stocks, covered call options, put options, futures contracts, obligations of the U.S. Treasury, government agencies, corporations, international governments and agencies, global diversified credit investments, swap transactions, state and municipal general obligations, public authority revenue obligations, collateralized notes and mortgages, commercial paper, certificates of deposit, repurchase agreements, money market funds, private equity funds, real estate funds, other real assets, absolute return strategy funds, and the CMF.

## Notes to Financial Statements – June 30, 2017, continued

The asset allocation policy as of June 30, 2017, for JRS, SPRS, TPAF, PFRS, and PERS, collectively known as the Pension Funds, is as follows:

<b>Asset Class</b>	<b>Target</b>
Absolute return/risk mitigation	5.00%
Total risk mitigation	5.00%
Cash equivalents	5.50%
U.S. Treasuries	3.00%
Total liquidity	8.50%
Investment grade credit	10.00%
Public high yield	2.50%
Global diversified credit	5.00%
Credit oriented hedge funds	1.00%
Debt related private equity	2.00%
Debt related real estate	1.00%
Total income	21.50%
Private real assets	2.50%
Equity related real estate	6.25%
Total real return	8.75%
U.S. equity	30.00%
Non-U.S. developed markets equity	11.50%
Emerging markets equity	6.50%
Buyouts/venture capital	8.25%
Total global growth	56.25%
<b>Total</b>	<b>100.00%</b>

*The asset allocation policy is reviewed on at least an annual fiscal year basis.*

### Rate of Return

The annual money-weighted rate of return for the Pension Funds, POPF, CPFPPF, and the OPEB plan were 13.01%, 0.53%, 0.53% and 0.58%, respectively. The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amounts of pension plan investments by the proportion of time they are available to earn a return during that period. External cash flows are determined on a monthly basis and are assumed to occur at the end of each month. External cash inflows are netted with external cash outflows, resulting in a net external cash flow in each month. The money-weighted rate of return is calculated net of investment expenses.

### Deposit and Investment Risk Disclosure

Custodial credit risk, as it relates to investments, is the risk that in the event of the failure of the custodian, the Plans will not be able to recover the value of investments or collateral securities that are in the possession of the third party. The Plans' investment securities are not exposed to custodial credit risk as they are held in segregated accounts in the name of the Plans with the custodians.

The Plans' investments are subject to various risks. Among these risks are credit risk, concentration of credit risk, interest rate risk, and foreign currency risk. Each one of these risks is discussed in more detail below.

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The credit risk of issuers and debt instruments is evaluated by nationally recognized statistical rating agencies, such as Moody's Investors Service, Inc. (Moody's), Standard & Poor's Corporation (S&P), and Fitch Ratings (Fitch). Concentration of credit risk is the risk of loss attributed to the magnitude of an investment in a single issuer. There are no restrictions in the amount that can be invested in U.S. Treasury and government agency obligations. Council regulations require minimum credit ratings for certain categories of fixed income obligations held directly by the various funds and limit the amount that can be invested in any one issuer or issue.

**Notes to Financial Statements – June 30, 2017, continued**

The credit ratings and limits for the Pension Funds as of June 30, 2017 are as follows:

Category	Minimum rating <sup>(1)</sup>			Limitation of issuer's outstanding debt/stock	Limitation of issue	Other limitations
	Moody's	S&P	Fitch			
Certificates of deposit						Split rating allowable.
Domestic	A3/P-1	A-/A-1	A-/F-1	–	–	Cannot exceed 10% of issuer's primary capital. Not more than 5% of pension fund assets can be invested in any one issuer and affiliated entities.
International	Aa3/P-1	AA-/A-1	AA-/F-1	–	–	
Collateralized notes and mortgages	Baa3	BBB-	BBB-	–	25%	Not more than 5% of fund assets can be invested in one issue. Not more than 5% of pension fund assets can be invested in any one issuer and affiliated entities.
Commercial paper	P-1	A-1	F-1	–	–	Split rating allowable.  Not more than 5% of pension fund assets can be invested in any one issuer and affiliated entities.
Global debt obligations	Baa3	BBB-	BBB-	10%	–	Not more than 5% of pension fund assets can be invested in any one issuer and affiliated entities
Global diversified credit investments:						Not more than 7% of pension fund assets can be invested in this category. Not more than 5% of pension fund assets can be invested in any one issuer and affiliated entities.
Direct bank loans	Baa3	BBB-	BBB-	10%	–	
Funds	Baa3	BBB-	BBB-	–	–	
International government and agency obligations	Baa3	BBB-	BBB-	25%	25%	Not more than 5% of pension fund assets can be invested in this category.



## Notes to Financial Statements – June 30, 2017, continued

Category	Minimum rating <sup>(1)</sup>			Limitation of issuer's outstanding debt/stock	Limitation of issue	Other limitations
	Moody's	S&P	Fitch			
Money market funds	–	–	–	–	–	Not more than 5% of pension fund assets can be invested in money market funds; limited to 5% of shares or units outstanding.
Mortgage backed						
Pass-through securities	A3	A-	A-	–	–	Not more than 10% of pension fund assets can be invested in mortgage backed securities.
Senior debt securities	–	–	–	–	25%	
Non-convertible preferred stocks	Baa3	BBB-	BBB-	10%	25%	Not more than 5% of pension fund assets can be invested in any one issuer and affiliated entities
Repurchase agreements:						
Bank or trust company	–	–	–	–	–	–
Broker	P-1	A-1	F-1	–	–	–
State, municipal, and public Authority obligations	A3	A-	A-	10%	10%	Not more than 2% of pension fund assets can be invested in debt of any one obligor.
Swap transactions	Baa2	BBB	BBB	–	–	Notional value of net exposure to any one counterparty shall not exceed 1% of pension fund assets. Notional value of all swap transactions shall not exceed 5% of pension fund assets but may be increased to 10% for a fixed period of time.

<sup>(1)</sup> Short-term ratings (e.g. P-1, A-1, F-1) are used for commercial paper and certificates of deposit.

Up to 8% of the fair value of the combined assets of the Pension Funds may be invested in global debt obligations, collateralized notes and mortgages, global diversified credit investments, non-convertible preferred stock, and mortgage-backed pass-through securities that do not meet the minimum credit rating requirements set forth above.

**Notes to Financial Statements – June 30, 2017, continued**

The total amount of a particular class of stock directly purchased of any one entity by the Common Pension Funds cannot exceed 10% of that class of stock outstanding. The total amount of shares or interests directly purchased or acquired of any one exchange traded fund or global, regional or country fund by the Common Pension Funds shall not exceed 10% of the total shares outstanding or interests of such fund.

The NJSEDCP Equity Fund and the NJSEDCP Small Capitalization Equity Fund are invested in equity securities that are denominated in U.S. dollars that trade on a securities exchange in the United States or the over-the-counter market. The NJSEDCP Equity Fund and the NJSEDCP Small Capitalization Equity Fund may hold up to 25% of their assets either in short-term fixed income securities, as permitted by the Council regulations, or in CMF. Not more than 10% of the fair value of the NJSEDCP Equity Fund or the NJSEDCP Small Capitalization Equity Fund can be invested in the equity of any one issuer and affiliated entities. The total amount of a particular class of stock directly purchased or acquired of any one entity cannot exceed 5% of that class of stock outstanding. The total amount of shares directly purchased or acquired of any one exchange traded fund shall not exceed 5% of the total shares outstanding of such fund.

The funds managed by Prudential Retirement investments for the NJSEDCP consist of a number of individual investment managers, which individually have investment guidelines that they comply with and follow. For Prudential Retirement, the NJSEDCP is a participant directed program offering a range of diversified investment alternatives. The options include bond investments, which are diversified by sector and number of securities held, mitigating undue concentration of both credit and foreign currency risks as well as interest rate risk.

SACT can only invest in equity securities denominated in U.S. dollars that are traded on a securities exchange in the United States or over-the-counter market. For SACT, not more than 10% of the fair value of the fund can be invested in the equity of any one issuer and affiliated entities. The total amount of shares directly purchased or acquired of any one exchange traded fund shall not exceed 5% of the total shares outstanding of such fund. The total amount of a particular class of stock directly purchased or acquired of any one entity shall not exceed 5% of that class of stock outstanding.

The following tables disclose aggregate fair value, by major credit quality rating category as of June 30, 2017, for the fixed income securities held directly by the Common Pension Funds. The first table includes fixed income securities rated by Moody's. The second table discloses Standard & Poor's ratings for fixed income securities not rated by Moody's (in thousands).

	Moody's rating									Totals
	Aaa	Aa	A	Baa	Ba	B	Caa	Ca	C	
Corporate obligations	\$686,957	572,701	2,106,255	377,770	282,651	642,516	243,826	3,526	21	4,916,223
Foreign government obligations	611,185	1,510,104	189,611	–	–	–	–	–	–	2,310,900
U.S. Treasury bonds	1,808,266	–	–	–	–	–	–	–	–	1,808,266
International corporate obligations	15,369	49,549	422,646	48,884	68,115	84,192	38,949	1,187	–	728,891
U.S. Treasury TIPS	346,336	–	–	–	–	–	–	–	–	346,336
Federal agency obligations	193,480	–	–	–	–	–	–	–	–	193,480
Mortgages (FHLMC/FNMA/GNMA)	18,870	–	–	–	–	–	–	–	–	18,870
Bank loans	–	–	–	–	1,619	1,328	841	521	–	4,309
SBA pass through certificates	3,869	–	–	–	–	–	–	–	–	3,869
Other	14,152	197,788	141,394	–	–	1,538	–	–	–	354,872
	\$3,698,484	2,330,142	2,859,906	426,654	352,385	729,574	283,616	5,234	21	10,686,016

## Notes to Financial Statements – June 30, 2017, continued

	Standard and Poor's rating							Totals
	AAA	A	BBB	BB	B	CCC	D	
Corporate obligations	\$ –	–	65,173	9,770	5,793	1,351	–	82,087
Foreign government obligations	–	39,318	–	951	–	–	–	40,269
Federal agency obligations	30,703	–	–	–	–	–	–	30,703
Municipal obligations	17,439	7,581	–	–	–	–	–	25,020
International corporate obligations	–	–	1,106	13,544	5,239	1,468	–	21,357
Asset backed securities	–	–	2,998	–	–	–	–	2,998
Bank loans	–	–	–	–	–	–	253	253
	\$ 48,142	46,899	69,277	24,265	11,032	2,819	253	202,687

The tables do not include certain domestic and international corporate obligations and certain fixed income mutual funds, which invest in an underlying portfolio of fixed income securities, totaling \$442,491,632, and do not have a Moody's or Standard & Poor's rating. The above tables also do not include investment in the Cash Management Fund totaling \$4,033,471,649, which is not rated.

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Commercial paper must mature within 270 days. Certificates of deposits are limited to a term of one year or less. Repurchase agreements must mature within 30 days. Council regulations permit the Common Pension Funds to enter into foreign exchange contracts for the purpose of hedging the international portfolio.

The following table summarizes the maturities (or, in the case of Remics and mortgage-backed securities, the expected average life) of the Common Pension Funds' fixed income portfolio as of June 30, 2017, (in thousands):

Fixed income investment type	Maturities in years				Total fair value
	Less than 1	1–5	6–10	More than 10	
Corporate obligations	\$309,096	1,683,544	2,617,481	395,253	5,005,374
Foreign government obligations	83,079	1,151,253	909,279	207,558	2,351,169
U.S. Treasury TIPS	–	62,635	234,019	49,682	346,336
U.S. Treasury bonds	–	576,272	1,092,441	139,553	1,808,266
Federal agency obligations	–	173,591	50,592	–	224,183
International corporate obligations	119,783	214,935	343,773	76,800	755,291
Mortgages (FHLMC/FNMA/GNMA)	–	–	3,772	15,098	18,870
SBA pass through certificates	1,054	2,815	–	–	3,869
Bank loans	286	2,847	1,677	–	4,810
Asset backed securities	–	–	–	2,998	2,998
Municipal obligations	–	45,565	–	274,519	320,084
	\$513,298	3,913,457	5,253,034	1,161,461	10,841,250

The fixed income exchange traded funds held by the Common Pension Funds and the fixed income mutual funds held by NJSEDCP as of June 30, 2017, were \$59,807,936 and \$430,136,637, respectively. These funds have a weighted average duration of 7.98 and 5.90 years, respectively.

**Notes to Financial Statements – June 30, 2017, continued**

The Common Pension Funds invest in global markets. Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. The Common Pension Funds had the following foreign currency exposure as of June 30, 2017 (expressed in U.S. dollars):

<b>Currency</b>		<b>Equities</b>	<b>Fixed Income</b>	<b>Alternative investments</b>	<b>Total fair value</b>
Australian dollar	\$	550,109,874	–	–	550,109,874
Brazilian real		333,024,346	–	–	333,024,346
Canadian dollar		741,468,072	78,052,302	–	819,520,374
Chilean peso		26,935,624	–	–	26,935,624
Columbian peso		–	1,272,219	–	1,272,219
Czech koruna		27,549,330	–	–	27,549,330
Danish krone		146,716,114	–	–	146,716,114
Egyptian pound		136	–	–	136
Euro		2,396,318,779	25,816,927	659,217,570	3,081,353,276
Hong Kong dollar		1,076,004,080	–	–	1,076,004,080
Hungarian forint		58,279,483	–	–	58,279,483
Indonesian rupiah		157,948,966	–	–	157,948,966
Japanese yen		1,893,582,650	–	–	1,893,582,650
Malaysian ringgit		90,821,879	–	–	90,821,879
Mexican peso		124,906,452	–	–	124,906,452
Moroccan dirham		2,733,921	–	–	2,733,921
New Israeli sheqel		5,939,202	–	–	5,939,202
New Taiwan dollar		12,486,506	–	–	12,486,506
New Zealand dollar		5,281,688	–	–	5,281,688
Norwegian krone		55,090,815	–	–	55,090,815
Pakistan rupee		34,138,642	–	–	34,138,642
Philippine peso		49,734,932	–	–	49,734,932
Polish zloty		81,827,125	–	–	81,827,125
Pound sterling (U.K.)		1,426,002,576	2,458,807	192,220,679	1,620,682,062
Qatari rial		12,690,427	–	–	12,690,427
Singapore dollar		96,946,469	–	–	96,946,469
South African rand		314,772,096	–	–	314,772,096
South Korean won		695,501,971	–	–	695,501,971
Swedish krona		237,290,586	–	–	237,290,586
Swiss franc		724,514,517	–	–	724,514,517
Thailand baht		106,292,342	–	–	106,292,342
Turkish lira		110,297,644	–	–	110,297,644
Uae dirham		25,252,601	–	–	25,252,601
	\$	<b>11,620,459,845</b>	<b>107,600,255</b>	<b>851,438,249</b>	<b>12,579,498,349</b>

**Notes to Financial Statements – June 30, 2017 continued**

The Pension Funds' interests in alternative investments may contain elements of credit, currency and market risk. Such risks include, but are not limited to, limited liquidity, absence of regulatory oversight, dependence upon key individuals, speculative investments (both derivatives and non-marketable investments), and nondisclosure of portfolio composition. Council regulations provide that not more than 38% of the fair value of the Pension Funds can be invested in alternative investments, with limits on the individual investment categories of real estate (9%), real assets (7%), private equity (12%) and absolute return strategy (15%).

Not more than 5% of the fair value invested through direct investments, separate accounts, fund-of-funds, commingled funds, co-investments and joint ventures in global diversified credit, private equity, real asset and absolute return strategy investments, plus outstanding commitments, may be committed to any one partnership or investment. These investments cannot comprise more than 20% of any one investment managers' total assets.

As of June 30, 2017, the net position of Common Pension Fund E includes receivables of \$302 million related to the secondary sale of real estate funds and redemption of hedge funds.

**(6) Securities Lending Collateral**

The State Investment Council policies permit the Common Pension Funds and several of the direct pension plan portfolios to participate in securities lending programs, whereby securities are loaned to brokers or other borrowers and, in return, the Pension Funds have rights to the collateral received. All of the publicly traded securities held in Common Pension Funds, and certain securities held directly by the pension plans, are eligible for the securities lending program. Collateral received may consist of cash, letters of credit, or U.S. Treasury obligations having a fair value equal to or exceeding 102% (U.S. dollar denominated) or 105% (non-U.S. dollar denominated) of the value of the loaned securities at the time the loan is made. Collateral is marked to market daily and adjusted as needed to maintain the required minimum level.

For loans of U.S. government securities or sovereign debt issued by non-U.S. governments, in the event that the fair value of the collateral falls below 100% of the fair value of the outstanding loaned securities to an individual borrower, or the fair value of the collateral of all loans of such securities falls below the collateral requirement, additional collateral shall be transferred by the borrower to the respective funds no later than the close of the next business day so that the fair value of such additional collateral together with collateral previously delivered meets the collateral requirements.

For loans of all other types of securities, in the event that the fair value of the collateral falls below the collateral requirement of either 102% or 105% (depending on whether the securities are denominated in U.S. dollars or a foreign currency, respectively) of the fair value of the outstanding loaned securities to an individual borrower, additional collateral shall be transferred in an amount that will increase the aggregate of the borrower's collateral to meet the collateral requirements. As of June 30, 2017, the Common Pension Funds had no aggregate credit risk exposure to borrowers because the collateral amount held by the Common Pension Funds exceeded the fair value of the securities on loan.

The contract with the Common Pension Funds' securities lending agent requires them to indemnify the Common Pension Funds if the brokers or other borrowers fail to return the securities and provide that collateral securities may be sold in the event of a borrower default. The Common Pension Funds are also indemnified for any loss of principal or interest on collateral invested in repurchase agreements. The Common Pension Funds cannot participate in any dividend reinvestment program or vote with respect to any securities that are on loan on the applicable record date. The securities loans can be terminated by notification by either the borrower or the Common Pension Funds. The term to maturity of the securities loans is generally matched with the term to maturity of the investment of the cash collateral.

The securities lending collateral is subject to various risks. Among these risks are custodial credit risk, credit risk, concentration of credit risk, and interest rate risk. Securities lending collateral is invested in repurchase agreements, the maturities of which cannot exceed 30 days. The collateral for repurchase agreements is limited to obligations of the U.S. Government or certain U.S. Government agencies, collateralized notes and mortgages and corporate obligations meeting certain minimum rating criteria. Total exposure to any individual issuer is limited consistent with internal policies for funds managed by the Division of Investment.

**Notes to Financial Statements – June 30, 2017, continued**

For securities exposed to credit risk in the collateral portfolio, the following table discloses aggregate fair value, by major credit quality rating category as of June 30, 2017 (in thousands):

		<b>Rating</b>	
	<b>Aaa/AAA</b>	<b>Not rated</b>	<b>Totals</b>
Repurchase agreements	\$ 807,505	–	807,505
State Street Institutional			
Liquid Reserves Fund	–	157,995	157,995
Cash overdraft	–	(7,159)	(7,159)
	\$ 807,505	150,836	958,341

Custodial credit risk for investments is the risk that in the failure of the counterparty to the transaction, the pension funds will not recover the value of the investments that are in the possession of an outside party. The repurchase agreement's underlying securities are held in the Pension Funds' name.

As of June 30, 2017, the Pension Funds had outstanding loaned investment securities with an aggregate fair value of \$930,184,975 and did not hold any noncash collateral. There were no borrowers or lending agent default losses, and no recoveries or prior period losses during the year.

**(7) Derivatives**

The pension funds (JRS, SPRS, TPAF, PFRS, and PERS) invest in derivative securities through the Common Pension Funds. A derivative security is an investment whose value is derived from other financial instruments such as commodity prices, bonds and stock prices, or a market index. The Common Pension Funds' derivative securities are considered investment derivative instruments. The fair value of all derivative securities is reported in the statement of fiduciary net position, and the change in fair value is recorded in the statement of changes in fiduciary net position as a net increase or decrease in fair value of investments.

Derivative transactions involve, to varying degrees, credit risk and market risk. Credit risk is the possibility that a loss may occur because a party to a transaction fails to perform according to terms. Market risk includes, but is not limited to, the possibility that a change in interest rate risk, foreign currency risk or the value of the underlying securities will cause the value of a financial instrument to decrease or become more costly to settle. The market or the value of underlying security, or securities, risk associated with derivatives, the prices of which are constantly fluctuating, is regulated by imposing limits as to the types, amounts and degree of risk that the Common Pension Funds may undertake as set forth in the Council Regulations.

The Common Pension Funds may use financial futures to replicate an underlying security or indices they wish to hold in the portfolio. In certain instances, it may be beneficial to own a futures contract rather than the underlying security. Additionally, the Common Pension Funds may use futures contracts to improve the yield or adjust the duration of the fixed income portfolio or may sell futures contracts to hedge the portfolio. A financial futures contract is an agreement between a buyer and a seller that is based on a referenced item, such as financial indices, or interest rates or a financial instrument, such as equity or fixed income securities, physical commodities or currencies. Futures contracts may call for physical delivery of specified quantity of the underlying asset at a specified price (futures or strike price) and date, or be settled in cash. Futures contracts must be traded on a securities exchange or over-the-counter market. The net change in the futures contracts value is settled daily in cash with the exchanges. The cash to fulfill these obligations is held in a margin account. As the fair value of the futures contract varies from the original contract price, a gain or loss is paid to or received from the clearinghouse and recognized in the statement of changes in fiduciary net position. The Common Pension Funds had no investments in futures at June 30, 2017.

Foreign currency forward contracts are used as a means to hedge against currency risks in the Common Pension Fund. Foreign currency forward contracts are agreements to buy or sell a specific amount of a foreign currency at a specified delivery or maturity date for an agreed upon price. Foreign currency forward contracts are marked to market on a daily basis with the change in fair value included in investment income in the statement of changes in fiduciary net position.

## Notes to Financial Statements – June 30, 2017, continued

The Common Pension Funds utilize covered call and put options in an effort to add value to or reduce the risk level in the portfolio. Options are agreements that give the owner of the option the right, but not obligation, to buy (in the case of a call option) or to sell (in the case of a put option) a specific amount of an asset for a specific price (called the strike price) on or before a specified expiration date. The Common Pension Funds enter into covered calls when it writes (or sells) call options on underlying stocks held by the Common Pension Funds or stock indices. The Common Pension Funds enter into covered put options when it purchases put options on underlying stocks held by the Common Pension Funds or stock indices. The Common Pension Fund enters into put spreads when it purchases put options while simultaneously writing put options on the same underlying securities or indices at a lower strike price. The purchaser of put options pays a premium at the outset of the agreement and stands to gain from an unfavorable change (i.e., a decrease) in the price of the instrument underlying the option. The writer of call options receives a premium at the outset of the agreement and may bear the risk of an unfavorable change (i.e., an increase) in the price of the instrument underlying the option.

As of June 30, 2017, the Common Pension Fund's derivative investments included foreign currency forward contracts and equity options:

	Notional value (local currency)	Receivable	Payable	Change in fair value
Foreign currency forward contracts:				
Buy:				
Euro	888,427	\$ 1,014,191	997,171	17,020
Pound sterling	423,186	549,978	542,357	7,621
Sell:				
Euro	397,667,415	\$ 429,418,949	455,560,356	(26,141,407)
Japanese yen	25,000,000,000	219,849,423	222,793,923	(2,944,500)
Pound sterling	102,519,845	127,308,414	133,485,348	(6,176,934)
<b>Total Forward contracts</b>		<b>\$ 778,140,955</b>	<b>813,379,155</b>	<b>(35,238,200)</b>

	Notional value	Fair value	Change in fair value
Options:			
Purchased Options:			
Put	\$ 96,936,400	1,222,000	(102,000)
Written Options:			
Put	96,936,400	(490,000)	122,000
Call	235,487,800	(682,000)	259,810
<b>Total Options</b>	<b>\$ 429,360,600</b>	<b>50,000</b>	<b>279,810</b>

Certain of the alternative investment funds and partnerships may use derivative instruments to hedge against market risk and to enhance investment returns. At any point during the year, the Common Pension Funds may have additional exposure to derivatives primarily through limited liability vehicles such as limited partnerships and commingled investment funds.

### (8) Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between independent market participants at the measurement date. Inputs refer broadly to the assumptions that market participants would use in pricing the asset or liability, including assumptions about risk. Inputs may be observable or unobservable. Observable inputs are inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs are inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. The three levels of the fair value hierarchy are as follows:



## **Notes to Financial Statements – June 30, 2017, continued**

Level 1 – Quoted prices are available in active markets for identical investments as of the reporting date.

Level 2 – Pricing inputs are other than quoted prices in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies.

Level 3 – Pricing inputs are unobservable for the investment and inputs into the determination of fair value require significant management judgment or estimation, including assumptions about risk.

Investments are reported at fair value as follows:

- Domestic and international equity securities and exchange traded funds are valued using closing sales prices reported on recognized securities exchanges on which the securities are principally traded; these securities are included as Level 1 in the chart below. For listed securities having no sales reported and for unlisted securities, such securities will be valued based upon the last reported bid price; these securities are included as Level 2 in the chart below.
- Fixed income and equity mutual funds are valued using the published daily closing prices reported by Prudential and are included as Level 1 in the chart below.
- Foreign and domestic government, agency and corporate obligations, municipal bonds, mortgages, bank loans and asset-backed securities are valued using an evaluated price, which is based on a compilation of primarily observable market information or broker quotes in a non-active market. These are included as Level 2 in the chart below.
- Foreign exchange contracts are valued using industry recognized market-based models to calculate the value that a holder or counterparty would receive within the bid-ask spread, in an orderly transaction under current market conditions. These securities are included as Level 2 in the chart below.
- Options are valued using closing sales prices reported on recognized securities exchanges on which the securities are principally traded. These securities are included as Level 1 in the chart below.
- Distributions from private equity vehicles are received as the underlying investments are liquidated. The Plan's ownership interest in partners' capital can never be redeemed, but could be sold subject to approval by the fund's management. As of June 30, 2017, a buyer (or buyers) for these investments have not yet been identified. The partnership interest may be sold at an amount different from the net asset value (NAV) per share (or its equivalent) of the plan's ownership interest in partners' capital.
- The valuation methods for investments measured at the NAV per share (or its equivalent) is presented in the table below.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Notes to Financial Statements – June 30, 2017, continued

The following table summarizes the fair value hierarchy of the investment portfolio as of June 30, 2017 (in thousands):

	<u>Total</u>	<u>Level 1</u>	<u>Level 2</u>
<b>Investments by fair value</b>			
Equity securities			
Domestic equities	\$ 22,641,596	22,638,722	2,874
International equities	13,457,534	13,437,346	20,188
Equity mutual funds	3,019,184	3,019,184	—
Exchange traded funds	<u>1,190,146</u>	<u>1,190,146</u>	<u>—</u>
Total equity securities	40,308,460	40,285,398	23,062
Debt securities			
Corporate obligations	5,005,374	—	5,005,374
Foreign government obligations	2,351,169	—	2,351,169
U. S. Treasury bonds	1,808,266	—	1,808,266
International corporate obligations	755,291	—	755,291
U. S. Treasury Tips	346,336	—	346,336
Municipals obligations	320,084	—	320,084
Federal agency obligations	224,183	—	224,183
Fixed income mutual funds	430,137	430,137	—
Exchanged traded funds	59,808	59,808	—
Mortgages (FHLMC/FNMA/GNMA)	18,870	—	18,870
Bank loans	4,810	—	4,810
SBA pass through certificates	3,869	—	3,869
Asset backed securities	<u>2,998</u>	<u>—</u>	<u>2,998</u>
Total debt securities	<u>11,331,195</u>	<u>489,945</u>	<u>10,841,250</u>
Total investments by fair value level	51,639,655	<u>40,775,343</u>	<u>10,864,312</u>

**Notes to Financial Statements – June 30, 2017, continued**

	Total	Level 1	Level 2
<b>Investments measured at the net asset value (NAV)</b>			
Buyout private equity funds	6,597,374		
Global diversified credit funds	3,427,816		
Real estate funds - equity	3,114,442		
Credit oriented hedge funds	2,345,956		
Real assets	1,829,032		
Multi-strategy hedge funds	1,482,271		
Opportunistic hedge funds	1,067,504		
Equity oriented hedge funds	1,016,311		
Debt related private equity funds	698,506		
Venture capital private equity funds	481,958		
Real estate funds - debt	446,767		
Opportunistic private equity investments	341,987		
Secondary private equity funds	63,446		
Total investments measured at NAV	22,913,370		
<b>Local Government Investment Pool</b>			
Cash Management Fund	4,033,471		
Total investments measured at fair value	\$ 78,586,496		
<b>Investments derivative instruments</b>			
Put options (assets)	\$ 1,222	1,222	–
Foreign currency forward contracts (assets)	778,141	–	778,141
Foreign currency forward contracts (liabilities)	(813,379)	–	(813,379)
Options written (liabilities)	(1,172)	(1,172)	–
Total investment derivative instruments	\$ (35,188)	50	(35,238)

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Notes to Financial Statements – June 30, 2017, continued

The following table represents the unfunded commitments, redemptions frequency and redemption notice period for investments measured at NAV as of June 30, 2017, (in thousands):

	Fair Value	Unfunded Commitments	Frequency (if currently Eligible)	Redemption Notice Period
Buyout private equity funds <sup>(1)</sup>	\$ 6,597,374	3,301,083	None	N/A
Global diversified credit funds <sup>(2)</sup>	3,427,816	1,778,204	Semi-annual	90 days
Real estate funds - equity <sup>(3)</sup>	3,114,442	1,854,250	Quarterly	90 days
Credit oriented hedge funds <sup>(4)</sup>	2,345,956	125,000	Monthly, quarterly, semi-annual, annually	45-60 days
Real assets <sup>(5)</sup>	1,829,032	1,056,091	Daily, monthly	1-30 days
Multi-strategy hedge funds <sup>(6)</sup>	1,482,271	58,741	Quarterly, semi-annual	None
Opportunistic hedge funds <sup>(7)</sup>	1,067,504	45,000	Monthly, quarterly	2-90 days
Equity oriented hedge funds <sup>(8)</sup>	1,016,311	187,458	Quarterly, semi-annual, annually	45-92 days
Debt related private equity funds <sup>(9)</sup>	698,506	866,259	None	N/A
Venture capital private equity funds <sup>(10)</sup>	481,958	87,954	None	N/A
Real estate funds - debt <sup>(11)</sup>	446,767	429,300	Quarterly	90 days
Opportunistic private equity funds <sup>(12)</sup>	341,987	298,315	None	N/A
Secondary private equity funds <sup>(13)</sup>	63,446	28,093	None	N/A
<b>Total investment measured at the NAV</b>	<b>\$ 22,913,370</b>	<b>10,115,748</b>		

- Buyout private equity funds include investments in 75 partnership vehicles, which invest primarily in the equity of established operating companies in order to restructure the target company's reserve capital, management and/or organizational structure or facilitate ongoing growth of the firm. Return on investment is typically realized through an initial public offering, sale or merger of the company, or a recapitalization. It is expected that the underlying assets will be liquidated over the next 1 to 12 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
- Global diversified credit funds include investments in 15 funds and separate account investments that make investment in mezzanine debt, credit structured products, commercial and residential mortgage-backed securities, commercial and residential whole loans, and other similar strategies. Investments in this type cannot be redeemed because the investments include restrictions. As of June 30, 2017, these remaining redemption restriction periods range from 30 to 84 months. It is expected that the underlying assets will be liquidated over the next 3 to 7 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.

**Notes to Financial Statements – June 30, 2017, continued**

3. Real estate funds - equity include investments in 46 funds or separate accounts that make investments in the equity of the underlying asset, where the investor acts as a shareholder in a specific property and receives a share of the rental income the property generates. Investments representing approximately 59% of real estate equity investments can never be redeemed. Distributions from each fund and separate account will be received as the underlying investments are liquidated. It is expected that the underlying assets will be liquidated over the next 1 to 12 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
4. Credit oriented hedge funds include investments in 13 hedge fund and separate account strategies that include both credit and distressed debt funds. Credit strategies typically invest both long and short in high yield and high-grade bonds, and structured products using fundamental credit analysis. These securities tend to be relatively liquid. Distressed debt strategies take advantage of corporate securities in default, under bankruptcy protection, in distress, or in liquidation. These securities are often illiquid. Investments representing approximately 60% of the value of the investments cannot be redeemed because the investment includes restrictions that do not allow for redemptions. As of June 30, 2017, these remaining redemption restriction periods range from 3 to 30 months. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
5. Real asset funds includes investments in 17 fund or separate account strategies, which invest in the equity or debt of infrastructure, energy, utilities, water, timber, agriculture, metals, mining, and commodity-related and commodity-linked investments. Real asset investments include investments in products, services and technology related to the above. Investments representing approximately 92% of the value of the investments can never be redeemed. Distributions from each fund and separate account will be received as the underlying investments are liquidated. It is expected that the underlying assets will be liquidated over the next 2 to 12 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
6. Multi-strategy hedge funds include investments in 9 hedge funds that pursue multiple strategies to diversify risks and reduce volatility. Investments representing approximately 56% of the value of the investments cannot be redeemed because the investment includes restrictions that do not allow for redemptions. As of June 30, 2017, the remaining redemption restriction periods range from 6 to 18 months. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments.
7. Opportunistic hedge funds include investments in 5 hedge funds that invest in speculative opportunities with high net market exposure across varied markets. Opportunistic funds include global macro funds, commodity trading advisor funds, and funds employing other similar strategies. Investments representing approximately 33% of the value of the investments in this type cannot be redeemed because the investments include restrictions. As of June 30, 2017, this remaining redemption restriction period is 18 months. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
8. Equity oriented hedge funds include investments in 9 hedge fund and separate account strategies that include both equity long/short and event driven funds. Equity long/short funds hold a combination of long and short positions primarily in publicly traded equities. Event driven funds invest in merger arbitrage, capital structure arbitrage, relative value, activist or other similar strategies. Investments representing approximately 29% of the value of the investments cannot be redeemed because the investment includes restrictions that do not allow for redemptions. As of June 30, 2017, these remaining redemption restriction periods range from 9 to 36 months. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
9. Debt related private equity funds include investments in 25 funds employing distressed, turnaround and mezzanine debt strategies. Distressed debt involves purchasing debt securities that are trading at a distressed level, in anticipation that those securities will have a higher market valuation and generate profit at a future date, or strategies, which take a position to potentially gain control of an asset. Turnaround investments focus on acquiring voting control in companies that are in distress, and aim to subsequently restore the company to profitability. Mezzanine debt strategies provide a middle level of financing in leveraged buyouts, which is below the senior debt layer and above the equity layer. A typical mezzanine investment includes a loan to the borrower, in addition to the borrower's issuance of equity in the form of warrants, common stock,

## **Notes to Financial Statements – June 30, 2017, continued**

preferred stock, or some other equity investment. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 1 to 12 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.

10. Venture capital private equity funds include investments in 8 partnership vehicles that make equity investments primarily in high growth companies during their early or expansion stages. These companies may or may not have revenues or a client base and in most cases will not be cash flow positive. Distributions from each vehicle will be received as the underlying investments are liquidated. It is expected that the underlying assets will be liquidated over the next 1 to 12 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
11. Real estate funds - debt include investments in 7 funds or separate accounts that make investments in the debt of the underlying asset, where the investor acts as a lender to the property owner and receives an interest rate on the loan. Investments representing approximately 61% of real estate debt investments can never be redeemed. Distributions from each fund and separate account will be received as the underlying investments are liquidated. It is expected that the underlying assets will be liquidated over the next 4 to 9 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
12. Opportunistic private equity funds include investments in 3 funds and separate accounts, which acquire minority equity interests in investment management companies. Investments representing approximately 80% of the value of the investments have a perpetual term and cannot be redeemed. Investments representing approximately 20% of the value of the investments can be redeemed after 8 years or December 2025. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.
13. Secondary private equity funds include investments in 4 funds that purchase secondary interests in private equity partnerships. The underlying investments represent ownership interests in private equity funds managed by buyout or venture capital firms after the capital has been deployed. Distributions from each fund will be received as the underlying investments are liquidated. It is expected that the underlying assets will be liquidated over the next 2 to 10 years. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the investment.

## **Notes to Financial Statements – June 30, 2017, continued**

### **(9) Local Employer's Contributions under Chapter 19, P.L. 2009**

As discussed in Note 1, in the fiscal year ended June 30, 2009, the State passed Chapter 19, P.L. 2009, to allow local employers of PFRS and PERS to contribute 50% of the normal and accrued liability contributions amounts, while deferring the remaining amount for a 15-year period with payments beginning in the fiscal year ended June 30, 2012. At June 30, 2017, the remaining receivable balances related to Chapter 19, P.L. 2009, were \$116.2 million and \$39.1 million for PFRS, and PERS, respectively.

### **(10) Reserves**

The Plans maintain the following legally required reserves as follows (amounts indicated in parenthesis represent net position restricted for the respective reserve as indicated):

**Members' Annuity Savings Reserve and Accumulative Interest Reserve – JRS (\$70,319,118); SPRS (\$212,674,110); TPAF (\$12,531,120,389); PFRS (\$3,752,205,896); PERS (\$14,571,683,577)**

The Members' Annuity Savings Reserve (New Jersey Statutes Annotated (N.J.S.A.): JRS 43:6A- 34.1 and 34.2; SPRS 53:5A-35; TPAF 18A:66-19 and 25; PFRS 43:16A-16; PERS 43:15A-25 and 33) is credited with all contributions made by active members of the Plans. Interest earned on member contributions is credited to the Accumulative Interest Reserve, which is applied to JRS, TPAF, and PERS. Member withdrawals are paid out of these Reserves.

**Contingent Reserve – JRS (\$-91,660,071); SPRS (\$862,021,018); TPAF (\$-27,927,869,120); PERS (\$-17,308,333,750)**

The Contingent Reserve (N.J.S.A.: JRS 43:6A-33; SPRS 53:5A-34; TPAF 18A:66-18; PERS 43:15A-24) is credited with the contributions of contributing employers. Interest earnings, after crediting the Accumulative Interest Reserve and Retirement Reserve, as required, are credited to this account. Additionally, payments for administrative and miscellaneous expenses are made from this Reserve.

**Retirement Reserve – JRS (\$196,666,286); SPRS (\$686,802,207); TPAF (\$38,452,910,560); PFRS (\$25,282,180,037); PERS (\$30,976,473,916)**

The Retirement Reserve (N.J.S.A.: JRS 43:6A-34; SPRS 53:5A-36; TPAF 18A:66-21; PFRS 43:16A-16; PERS 43:15A-27) is the account from which retirement benefits including COLA adjustments are paid. Upon retirement of a member, accumulated contributions together with accumulated interest are transferred to the Retirement Reserve from the Members' Annuity Savings Reserve and Accumulative Interest Reserve. Any additional reserves needed to fund the balance of the retirement benefit are transferred from the Contingent Reserve or Pension Accumulation Reserve. Annually, interest as determined by the State Treasurer (7.65% for State fiscal year 2017) is credited to the Retirement Reserve.

**Retirement Reserve – POPF (\$5,620,868)**

The Retirement Reserve (N.J.S.A.: POPF 43:7-13) is credited with State of New Jersey contributions and investment income. In addition, all benefits are paid from this account.

**Non-Contributory Group Insurance Premium Reserve – PFRS – Local (\$34,659,280); PERS – Local (\$64,452,031)**

The Non-Contributory Group Insurance Premium Reserve (N.J.S.A.: PFRS 43:16A-56; PERS 43:15A-91) represents the accumulation of employer group life insurance contributions in excess of premiums disbursed to the insurance carrier since the inception of the noncontributory death benefit program plus reserves held by the insurance carrier. Members are eligible by statute for the noncontributory group life insurance plan in the first year of membership. TPAF, PFRS–State, and PERS–State show a zero balance as these premium expenses are funded on a monthly basis.



## **Notes to Financial Statements – June 30, 2017, continued**

### ***Pension Accumulation Reserve – PFRS (\$-3,221,326,814)***

The Pension Accumulation Reserve (N.J.S.A.: PFRS 43:16A-16) is credited with the contributions of the State of New Jersey and other employers. Interest earnings, after crediting the Retirement Reserve, as required, are credited to this account. Additionally, payments for administrative and miscellaneous expenses are made from this Reserve.

### ***Pension Reserve – CPFPPF (\$1,904,496)***

The Pension Reserve (N.J.S.A.: CPFPPF 43:16-5) is credited with State of New Jersey contributions and investment income.

### ***Benefit Enhancement Reserve – PERS – Local (\$159,963,744)***

The Benefit Enhancement Reserve (N.J.S.A.: 43:15A-22) is a special reserve from which the required normal contributions to provide benefit increases under Chapter 353, P.L. 2001, and Chapter 13, P.L. 2001, will be charged. The reserve was established in 2002 and credited with excess assets equivalent to member contributions for State fiscal years 2000 and 2001 by transferring reserves in the Contingent Reserve to the Benefit Enhancement Reserve. Additional transfers will be made, as required, to maintain a reserve balance equal to the present value of expected additional normal contributions due to the increased benefits.

### ***SHBP Reserve Fund – Local-Retired (\$213,255,917)***

The net position of SHBP-Local (N.J.S.A.: SHBP 52:14-17.42) is available to pay claims of future periods. These reserves are maintained by the fund to stabilize rates and to meet unexpected increase in claims.

**Notes to Financial Statements – June 30, 2017, continued**

Various reserve balances as of June 30, 2017, are as follows:

		<b>Pension Reserves</b>	<b>Other Postemployment Benefit Plan Reserves</b>
<hr/>			
Members' Annuity Savings Reserve and Accumulated			
Interest Reserve	\$	31,138,003,090	—
Contingent Reserve		(44,465,841,923)	—
Retirement Reserve		95,600,653,874	—
Non-Contributory Group Insurance Premium Reserve		99,111,311	—
Pension Accumulation Reserve		(3,221,326,814)	—
Pension Reserve		1,904,496	—
SHBP Reserve		—	213,255,917
Benefit Enhancement Reserve		159,963,744	—
Variable Accumulation Reserve (N.J.S.A.: NJSEDCP (52:18A-164), SACT (52:18A-109))		4,173,393,482	—
Variable Benefits Reserve (N.J.S.A.: SACT 52:18A-109)		40,579,416	—
<hr/>			
Total	\$	83,526,440,676	213,255,917
<hr/>			

**(11) Contingencies**

The Division is a party to various legal actions arising in the ordinary course of its operations. While it is not feasible to predict the ultimate outcome of these actions, it is the opinion of management that the resolution of these matters will not have a material adverse effect on the Division's financial statements.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 1

### Required Supplementary Information

#### Schedule of Changes in Net Pension Liability and Related Ratios – Defined Benefit Pension Plans – Judicial Retirement System (Unaudited) June 30, 2017

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ 37,224,230	33,333,864	30,702,986	32,123,341
Interest on total pension liability	30,788,977	36,471,524	41,473,055	40,332,123
Effect of economic/demographic (gains) or losses	14,120,673	254,822	(1,733,197)	–
Effect of assumptions changes or inputs	(70,235,370)	85,677,552	(41,873,530)	26,907,821
Transfers from other systems	1,121,097	726,284	2,081,523	–
Benefit payments	(56,365,718)	(54,686,521)	(52,430,016)	(49,604,080)
Net change in total pension liability	(43,346,111)	101,777,525	(21,779,179)	49,759,205
Total pension liability-beginning	980,742,106	878,964,581	900,743,760	850,984,555
Total pension liability-ending (a)	\$ 97,395,995	980,742,106	878,964,581	900,743,760
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 20,341,379	14,794,774	17,031,026	15,874,857
Contributions-employee	10,348,191	9,271,869	6,310,124	5,096,577
Net investment (loss) income	20,031,152	(2,721,949)	8,475,641	34,448,036
Transfers from other systems	1,121,097	726,284	2,081,523	–
Benefit payments, including refunds of employee contributions	(56,365,718)	(54,686,521)	(52,430,016)	(49,604,080)
Administrative expense	(150,588)	(168,008)	(168,762)	(162,372)
Net change in Plan fiduciary net position	(4,674,487)	(32,783,551)	(18,700,464)	5,653,018
Plan fiduciary net position-beginning	179,999,820	212,783,371	231,483,835	225,830,817
Plan fiduciary net position-ending (b)	175,325,333	179,999,820	212,783,371	231,483,835
Plan's net pension liability-ending (a)-(b)	\$ 762,070,662	800,742,286	666,181,210	669,259,925
Plan fiduciary net position as a percentage of the total pension liability	18.70%	18.35%	24.21%	25.70%
Covered-employee payroll	\$ 68,062,584	67,097,166	66,028,491	67,810,110
Net pension liability as a percentage of covered-employee payroll	1119.66%	1193.41%	1008.93%	986.96%

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

#### Notes to Schedule:

Changes in benefit terms:

None

Changes in assumptions:

For 2017, the discount rate changed to 3.83% and the long-term expected rate of return changed to 7.00%. For 2016, the discount rate changed to 3.11% and the long-term expected rate of return changed to 7.65% from 7.9%. Further, salary increases were assumed to increase 2.00% through fiscal year 2025 and 3.00% for each fiscal year thereafter. For 2015, the discount rate changed to 4.12% and the demographic assumptions were revised to reflect those recommended on the basis of the July 1, 2011 - June 30, 2014 experience study. For 2014, the discount rate was 4.58%.

See accompanying independent auditors' report.

**Required Supplementary Information**

**Schedule of Changes in Net Pension Liability and Related Ratios — Defined Benefit Pension Plans — Prison Officers' Pension Fund (Unaudited)  
June 30, 2017**

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ —	—	—	—
Interest on total pension liability	198,788	251,254	331,362	401,659
Effect of economic/demographic (gains) or losses	82,047	96,657	(296,620)	—
Effect of assumptions changes or inputs	(240,233)	1,171,953	163,490	129,449
Transfers from other systems	—	—	—	—
Benefit payments	(1,069,209)	(1,240,307)	(1,377,505)	(1,583,408)
Net change in total pension liability	(1,028,607)	279,557	(1,179,273)	(1,052,300)
Total pension liability-beginning	7,505,870	7,226,313	8,405,586	9,457,886
Total pension liability-ending (a)	\$ 6,477,263	7,505,870	7,226,313	8,405,586
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 552,131	634,217	698,360	793,174
Net investment income	30,847	18,067	6,355	7,368
Benefit payments, including refunds of employee contributions	(1,069,209)	(1,240,307)	(1,377,505)	(1,583,408)
Administrative expense	(4,134)	(5,312)	(5,843)	(5,853)
Net change in Plan fiduciary net position	(490,365)	(593,335)	(678,633)	(788,719)
Plan fiduciary net position-beginning	6,111,233	6,704,568	7,383,201	8,171,920
Plan fiduciary net position-ending (b)	5,620,868	6,111,233	6,704,568	7,383,201
Plan's net pension liability-ending (a)-(b)	856,395	1,394,637	521,745	1,022,385
Plan fiduciary net position as a percentage of the total pension liability	86.78%	81.42%	92.78%	87.84%
Covered-employee payroll	N/A	N/A	N/A	N/A
Net pension liability as a percentage of covered-employee payroll	N/A	N/A	N/A	N/A

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

**Notes to Schedule:**

*Changes in benefit terms:*

None

*Changes in assumptions:*

For 2017, the discount rate changed to 3.58%. For 2016, the discount rate changed to 2.85%. Further, the mortality improvement assumption was revised to be projected on a generational basis from the base of year of 2000 to 2014 using Projection Scale BB as the base tables and further projected beyond the valuation date using the plan actuary's modified 2014 projection. Further the RP-2000 disabled retiree mortality table is used for the period after disability retirement for disability for disability retirements. For 2016, the discount rate changed to 2.85%. For 2015, the discount rate was 3.80%.

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 1

### Required Supplementary Information

#### Schedule of Changes in Net Pension Liability and Related Ratios — Defined Benefit Pension Plans — State Police Retirement System (Unaudited) June 30, 2017

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ 139,506,057	113,546,510	93,740,921	93,623,020
Interest on total pension liability	202,545,532	221,675,495	216,980,562	209,010,706
Effect of economic/demographic (gains) or losses	23,786,696	(17,580,385)	35,245,543	—
Effect of assumptions changes or inputs	(697,970,471)	747,941,075	435,691,094	92,686,900
Transfers from other systems	3,925	54,000	222,557	—
Benefit payments	(217,303,946)	(213,436,150)	(206,493,624)	(197,958,938)
Net change in total pension liability	(549,432,207)	852,200,545	575,387,053	197,361,688
Total pension liability-beginning	5,673,706,321	4,821,505,776	4,246,118,723	4,048,757,035
Total pension liability-ending (a)	\$ 5,124,274,114	5,673,706,321	4,821,505,776	4,246,118,723
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 53,006,614	37,435,541	38,527,297	36,436,923
Contributions-employee	23,721,785	22,818,295	22,315,431	24,034,496
Net investment (loss) income	207,401,590	(19,284,054)	75,532,779	287,098,217
Transfers from other systems	3,925	54,000	222,557	—
Benefit payments, including refunds of employee contributions	(217,303,946)	(213,436,150)	(206,493,624)	(197,958,938)
Administrative expense	(294,745)	(334,630)	(351,724)	(280,026)
Net change in Plan fiduciary net position	66,535,223	(172,746,998)	(70,247,284)	149,330,672
Plan fiduciary net position-beginning	1,694,962,112	1,867,709,110	1,937,956,394	1,788,625,722
Plan fiduciary net position-ending (b)	1,761,497,335	1,694,962,112	1,867,709,110	1,937,956,394
Plan's net pension liability-ending (a)-(b)	\$ 3,362,776,779	3,978,744,209	2,953,796,666	2,308,162,329
Plan fiduciary net position as a percentage of the total pension liability	34.38%	29.87%	38.74%	46.64%
Covered-employee payroll	\$ 277,771,135	275,477,457	262,496,289	262,063,829
Net pension liability as a percentage of covered-employee payroll	1210.63%	1444.31%	1125.27%	880.76%

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

#### Notes to Schedule:

##### Changes in benefit terms:

In 2017, Chapter 26, P.L. 2016, amended statutes to change the definition of child to include a child 18 years of age or older and enrolled in a secondary school, or under the age of 24 and enrolled in a degree program in an institution of higher education for at least 12 credits in each semester, provided that the member died in the line of duty while in active service. It also increases the accidental death benefit payable to children if there is no surviving spouse to 70% of final compensation.

##### Changes in assumptions:

For 2017, the discount rate changed to 4.42% and the long-term expected rate of return changed to 7.00%. For 2016, the discount rate changed to 3.55% and the long-term expected rate of return changed to 7.65% from 7.90%. Further, salary increases were assumed to increase 2.95% through fiscal year 2025 and 3.95% for each fiscal year thereafter. For 2015, the discount rate changed to 4.59% and the demographic assumptions were revised to reflect those recommended on the basis of the July 1, 2011 - June 30, 2014 experience study. In addition, the social security wage base was set at \$118,500 for 2015, increasing 4.00% per annum, compounded annually and the 401(a)(17) pay limit was set at \$265,000 for 2015, increasing 3.00% per annum, compounded annually. For 2014, the discount rate was 5.12%.

See accompanying independent auditors' report.

**Required Supplementary Information**

**Schedule of Changes in Net Pension Liability and Related Ratios — Defined  
Benefit Pension Plans — Consolidated Police and Firemen’s Pension Fund (Unaudited)  
June 30, 2017**

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ —	—	—	—
Interest on total pension liability	260,211	352,889	504,066	632,080
Effect of economic/demographic (gains) or losses	(984,588)	(71,313)	(993,528)	—
Effect of assumptions changes or inputs	(236,022)	1,273,909	193,719	163,528
Benefit payments	(1,535,623)	(1,881,252)	(2,445,627)	(2,942,035)
Net change in total pension liability	(2,496,022)	(325,767)	(2,741,370)	(2,146,427)
Total pension liability-beginning	9,892,635	10,218,402	12,959,772	15,106,199
Total pension liability-ending (a)	\$ 7,396,613	9,892,635	10,218,402	12,959,772
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 1,539,280	1,344,017	1,577,751	1,900,831
Net investment income	10,099	10,856	198	585
Benefit payments, including refunds of employee contributions	(1,535,623)	(1,881,252)	(2,445,627)	(2,942,035)
Administrative expense	(4,188)	(6,643)	(8,003)	(9,566)
Net change in Plan fiduciary net position	9,568	(533,022)	(875,681)	(1,050,185)
Plan fiduciary net position-beginning	1,894,928	2,427,950	3,303,631	4,353,816
Plan fiduciary net position-ending (b)	1,904,496	1,894,928	2,427,950	3,303,631
Plan’s net pension liability-ending (a)-(b)	\$ 5,492,117	7,997,707	7,790,452	9,656,141
Plan fiduciary net position as a percentage of the total pension liability	25.75%	19.15%	23.76%	25.49%
Covered-employee payroll	N/A	N/A	N/A	N/A
Net pension liability as a percentage of covered-employee payroll	N/A	N/A	N/A	N/A

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

**Notes to Schedule:**

*Changes in benefit terms:*

None

*Changes in assumptions:*

For 2017, the discount rate changed to 3.58%. For 2016 the discount rate changed to 2.85%. Further, the mortality improvement assumption was revised to be projected on a generational basis from the base of year of 2000, to 2014, using Projection Scale BB as the base tables and further projected beyond the valuation date using the plan actuary’s modified 2014, projection. Further the RP-2000 disabled retiree mortality table is used for the period after disability retirement for disability for disability retirements. For 2015, the discount rate changed to 3.80%. For 2014, the discount rate was 4.29%.

See accompanying independent auditors’ report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 1

### Required Supplementary Information

#### Schedule of Changes in Net Pension Liability and Related Ratios — Defined Benefit Pension Plans — Teachers' Pension and Annuity Fund (Unaudited) June 30, 2017

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ 3,028,689,581	2,344,321,810	2,022,411,197	1,870,901,832
Interest on total pension liability	3,304,988,177	3,694,844,118	3,797,032,970	3,794,362,523
Effect of economic/demographic (gains) or losses	236,377,556	(134,644,168)	365,228,279	(24,898,221)
Effect of assumptions changes or inputs	(13,285,524,000)	10,827,093,000	5,913,556,000	2,614,173,709
Transfers from other systems	1,338,431	1,564,002	4,117,141	—
Benefit payments	(4,306,268,745)	(4,169,070,762)	(4,015,003,587)	(3,837,859,513)
Net change in total pension liability	(11,020,399,000)	12,564,108,000	8,087,342,000	4,416,680,330
Total pension liability-beginning	101,746,770,000	89,182,662,000	81,095,320,000	76,678,639,670
Total pension liability-ending (a)	\$ 90,726,371,000	101,746,770,000	89,182,662,000	81,095,320,000
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 1,404,292	1,105,810	807,246	4,688,045
Contributions-nonemployer	1,125,614,188	798,963,467	539,796,289	423,012,101
Contributions-employee	790,788,033	761,711,695	740,296,265	716,183,306
Net investment (loss) income	2,736,988,791	(267,684,353)	1,066,062,926	4,100,273,453
Transfers from other systems	1,338,431	1,564,002	4,117,141	—
Other	357,659	243,660	358,899	—
Benefit payments, including refunds of employee contributions	(4,306,268,745)	(4,169,070,762)	(4,015,003,587)	(3,837,859,513)
Administrative expense	(11,923,787)	(13,768,112)	(13,890,080)	(12,170,971)
Net change in Plan fiduciary net position	338,298,862	(2,886,934,593)	(1,677,454,901)	(1,394,126,421)
Plan fiduciary net position-beginning	22,717,862,967	25,604,797,560	27,282,252,461	25,888,126,040
Plan fiduciary net position-ending (b)	23,056,161,829	22,717,862,967	25,604,797,560	27,282,252,461
Plan's net pension liability-ending (a)-(b)	\$ 67,670,209,171	79,028,907,033	63,577,864,440	53,813,067,539
Plan fiduciary net position as a percentage of the total pension liability	25.41%	22.33%	28.71%	33.64%
Covered-employee payroll	10,436,205,103	10,305,472,484	10,162,263,470	10,038,792,896
Net pension liability as a percentage of covered-employee payroll	648.42%	766.86%	625.63%	536.05%

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

#### Notes to Schedule:

Changes in benefit terms:

None

Changes in assumptions:

For 2017, the discount rate changed to 4.25% and the long-term expected rate of return changed to 7.00%. For 2016, the discount rate changed to 3.22% and the long-term expected rate of return changed to 7.65% from 7.90%. Further, the demographic assumptions were revised to reflect those recommended on the basis of July 1, 2012 - June 30, 2015 experience study. For 2015, the discount changed to 4.13%. For 2014, the discount rate was 4.68%.

See accompanying independent auditors' report.



**Required Supplementary Information**

**Schedule of Changes in Net Pension Liability and Related Ratios — Defined Benefit Pension Plans — Police and Firemen's Pension Fund (Unaudited)  
June 30, 2017**

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ 1,136,338,028	1,148,613,712	994,248,683	1,079,166,175
Interest on total pension liability	2,738,598,309	2,751,445,220	2,680,664,300	2,535,619,539
Effect of economic/demographic (gains) or losses	89,364,940	(34,916,637)	(215,122,438)	—
Effect of assumptions changes or inputs	(3,534,553,975)	343,078,737	3,755,474,472	649,814,155
Transfers from other systems	289,960	358,929	800,782	—
Benefit payments	(2,421,485,437)	(2,324,175,953)	(2,205,464,297)	(2,105,829,011)
Net change in total pension liability	(1,991,448,175)	1,884,404,008	5,010,601,502	2,158,770,858
Total pension liability-beginning	49,402,169,913	47,517,765,905	42,507,164,403	40,348,393,545
Total pension liability-ending (a)	\$ 47,410,721,738	49,402,169,913	47,517,765,905	42,507,164,403
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 1,002,043,734	900,033,567	883,776,917	858,047,628
Contributions-nonemployer	86,467,000	61,466,000	76,038,000	—
Contributions-employee	395,878,384	388,681,408	386,991,641	385,660,096
Net investment (loss) income	2,791,104,860	(150,693,159)	922,598,676	3,381,553,869
Transfers from other systems	289,960	358,929	800,782	—
Employer specific contributions - additional contribution	268,910	1,923,531	535,424	—
Employer specific contributions - delayed appropriation	892,514	763,176	865,936	—
Employer specific contributions - delayed enrollments	179,386	142,034	224,629	—
Employer specific contributions - retroactive	11,476,881	3,661,101	24,536,440	—
Benefit payments, including refunds of employee contributions	(2,421,485,437)	(2,324,175,953)	(2,205,464,297)	(2,105,829,011)
Administrative expense	(4,124,457)	(4,292,891)	(4,531,012)	(3,884,342)
Net change in Plan fiduciary net position	1,862,991,735	(1,122,132,257)	86,373,136	2,515,548,240
Plan fiduciary net position-beginning	23,984,726,664	25,106,858,921	25,020,485,785	22,504,937,545
Plan fiduciary net position-ending (b)	25,847,718,399	23,984,726,664	25,106,858,921	25,020,485,785
Plan's net pension liability-ending (a)-(b)	\$ 21,563,003,339	25,417,443,249	22,410,906,984	17,486,678,618
Plan fiduciary net position as a percentage of the total pension liability	54.52%	48.55%	52.84%	58.86%
Covered-employee payroll	\$ 3,726,807,562	3,695,509,355	3,682,677,356	3,678,910,266
Net pension liability as a percentage of covered-employee payroll	578.59%	687.79%	608.55%	475.32%

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

**Notes to Schedule:**

*Changes in benefit terms:* In 2017, Chapter 26, P.L. 2016, increased the accidental death benefit payable to children if there is no surviving spouse to 70% of final compensation.

*Changes in assumptions:*

For 2017, the discount rate changed to 6.14% and the long-term expected rate of return changed to 7.00%. For 2016, the discount rate changed to 5.55% and the long-term expected rate of return changed to 7.65% from 7.90% and the mortality improvement scale incorporated the plan actuary's modified 2014, projection scale. Further, salary increases were assumed to increase between 2.10% and 8.98% (based on age) through fiscal year 2026, and 3.10% and 9.98% (based on age) for each fiscal year thereafter. For 2015, the discount rate changed to 5.79% and the demographic assumptions were revised in accordance with the results of the July 1, 2010 - June 30, 2013, experience study. For 2014, the discount rate was 6.32%.

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 1

### Required Supplementary Information

#### Schedule of Changes in Net Pension Liability and Related Ratios — Defined Benefit Pension Plans — Public Employees' Retirement System (Unaudited) June 30, 2017

	2017	2016	2015	2014
<b>Total pension liability:</b>				
Service cost	\$ 1,865,398,219	1,628,065,678	1,523,631,386	1,592,214,831
Interest on total pension liability	3,412,789,012	3,653,373,426	3,647,688,354	3,506,486,225
Effect of economic/demographic (gains) or losses	306,941,390	600,806,505	1,050,795,158	—
Effect of assumptions changes or inputs	(10,156,789,076)	8,792,817,065	4,091,557,460	1,222,437,554
Transfers from other systems	854,976	778,753	1,651,542	—
Benefit payments	(3,810,818,692)	(3,629,651,915)	(3,441,046,065)	(3,259,290,114)
Net change in total pension liability	(8,381,624,171)	11,046,189,512	6,874,277,835	3,061,848,496
Total pension liability-beginning	85,769,888,074	74,723,698,562	67,849,420,727	64,787,572,231
Total pension liability-ending (a)	\$ 77,388,263,903	85,769,888,074	74,723,698,562	67,849,420,727
<b>Plan fiduciary net pension:</b>				
Contributions-employer	\$ 1,465,931,579	1,273,425,342	1,085,237,214	917,689,000
Contributions-employee	847,952,137	821,305,787	805,232,235	797,818,225
Net investment (loss) income	3,202,393,837	(237,215,643)	1,117,827,113	4,102,964,869
Transfers from other systems	854,976	778,753	1,651,542	—
Employer specific contributions - additional contribution	25,676	257,850	111,824	—
Employer specific contributions - delayed appropriation	3,224,612	1,721,199	1,664,415	—
Employer specific contributions - delayed enrollments	1,030,774	532,612	594,843	—
Employer specific contributions - retroactive	11,230,521	687,225	6,504,878	—
Other	(7,797)	(51,586)	(31,006)	—
Benefit payments, including refunds of employee contributions	(3,810,818,692)	(3,629,651,915)	(3,441,046,065)	(3,259,290,114)
Administrative expense	(19,648,715)	(23,285,920)	(23,761,860)	(21,756,019)
Net change in Plan fiduciary net position	1,702,168,908	(1,791,496,296)	(446,014,867)	2,537,425,961
Plan fiduciary net position-beginning	26,762,070,610	28,553,566,906	28,999,581,773	26,462,155,812
Plan fiduciary net position-ending (b)	28,464,239,518	26,762,070,610	28,553,566,906	28,999,581,773
Plan's net pension liability-ending (a)-(b)	\$ 48,924,024,385	59,007,817,464	46,170,131,656	38,849,838,954
Plan fiduciary net position as a percentage of the total pension liability	36.78%	31.20%	38.21%	42.74%
Covered-employee payroll	\$ 11,296,345,312	11,320,198,747	11,441,433,226	11,448,531,265
Net pension liability as a percentage of covered-employee payroll	433.10%	521.26%	403.53%	339.34%

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

#### Notes to Schedule:

Changes in benefit terms:

None

Changes in assumptions:

For 2017, the discount rate changed to 5.00% and the long-term rate of return changed to 7.00%. For 2016, the discount rate changed to 3.98%, the long-term expected rate of return changed to 7.65% from 7.90%, demographic assumptions were revised in accordance with the results of the July 1, 2011 - June 30, 2014, experience study, and the mortality improvement scale incorporated the plan actuary's modified MP-2014 projection scale. Further, salary increases were assumed to increase between 1.65% and 4.15% (based on age) through fiscal year 2026, and 2.65% and 5.15% (based on age) for each fiscal year thereafter. For 2015, the discount rate changed to 4.90%. In addition, the social security wage base was set at \$118,500 for 2015, increasing 4.00% per annum, compounded annually, and the 401(a)(17) pay limit was set at \$265,000 for 2015, increasing 3.00% per annum, compounded annually. For 2014, the discount rate was 5.39%.

See accompanying independent auditors' report.

**Required Supplementary Information**

**Schedule of Employer Contributions –  
Defined Benefit Pension Plans (Unaudited)**

		<b>Actuarially determined contribution</b>	<b>Actual employer contribution</b>	<b>Contribution excess (deficiency)</b>	<b>Covered payroll</b>	<b>Contribution as a percentage of covered payroll</b>
<b>Judicial Retirement System</b>						
Year ended June 30:						
2017	\$	44,807,771	20,341,379	(24,466,392)	68,062,584	29.89%
2016		47,305,819	14,794,774	(32,511,045)	67,097,166	22.05
2015		45,136,504	17,031,026	(28,105,478)	66,028,491	25.79
2014		43,922,167	15,874,681	(28,047,486)	67,810,110	23.41
2013		45,415,467	12,308,227	(33,107,240)	67,497,660	18.24
2012		42,475,660	5,969,713	(36,505,947)	67,437,125	8.85
2011		38,450,553	651,718	(37,798,835)	71,746,413	0.91
2010		32,540,704	1,032,857	(31,507,847)	70,133,372	1.47
2009		29,809,782	1,696,843	(28,112,939)	67,159,516	2.53
2008		27,171,100	12,913,890	(14,257,210)	63,144,685	20.45
<b>Prison Officers' Pension Fund</b>						
Year ended June 30:						
2017	\$	—	—	—	N/A	N/A
2016		—	—	—	N/A	N/A
2015		—	—	—	N/A	N/A
2014		—	—	—	N/A	N/A
2013		—	—	—	N/A	N/A
2012		—	—	—	N/A	N/A
2011		—	—	—	N/A	N/A
2010		—	—	—	N/A	N/A
2009		—	—	—	N/A	N/A
2008		—	—	—	N/A	N/A

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

SCHEDULE 2 *continued*

## Required Supplementary Information

### Schedule of Employer Contributions — Defined Benefit Pension Plans (Unaudited)

		Actuarially determined contribution	Actual employer contribution	Contribution excess (deficiency)	Covered payroll	Contribution as a percentage of covered payroll
<b>State Police Retirement System</b>						
Year ended June 30:						
2017	\$	135,017,662	53,006,614	(82,011,048)	277,771,135	19.08%
2016		120,800,705	37,435,541	(83,365,164)	275,477,457	13.59
2015		110,904,703	38,527,297	(72,377,406)	262,496,289	14.68
2014		105,093,378	36,379,273	(68,714,105)	262,063,829	13.88
2013		99,876,582	27,777,047	(72,099,535)	283,219,927	9.81
2012		98,869,662	13,545,607	(85,324,055)	275,219,752	4.92
2011		114,120,061	2,201,604	(111,918,457)	289,980,657	0.76
2010		91,411,237	1,018,200	(90,393,037)	287,267,502	0.35
2009		86,385,254	5,574,860	(80,810,394)	281,087,566	1.98
2008		78,761,279	36,443,502	(42,317,777)	275,301,995	13.24

### Consolidated Police and Firemen's Pension Fund

Year ended June 30:						
2017	\$	884,680	575,000	(309,680)	N/A	N/A
2016		491,683	148,000	(343,683)	N/A	N/A
2015		—	—	—	N/A	N/A
2014		864,041	—	(864,041)	N/A	N/A
2013		1,095,632	896,883	(198,749)	N/A	N/A
2012		1,240,860	174,000	(1,066,860)	N/A	N/A
2011		528,714	—	(528,714)	N/A	N/A
2010		1,678,690	—	(1,678,690)	N/A	N/A
2009		1,824,798	1,256,000	(568,798)	N/A	N/A
2008		2,388,591	523,000	(1,865,591)	N/A	N/A

**Required Supplementary Information**

**Schedule of Employer Contributions –  
Defined Benefit Pension Plans (Unaudited)**

	<b>Actuarially determined contribution</b>	<b>Actual employer contribution</b>	<b>Contribution excess (deficiency)</b>	<b>Covered payroll</b>	<b>Contribution as a percentage of covered payroll</b>
<b>Teachers' Pension and Annuity Fund</b>					
Year ended June 30:					
2017	\$ 2,737,175,151	1,087,919,000	(1,649,256,151)	10,436,205,103	10.42%
2016	2,544,811,534	764,489,000	(1,780,322,534)	10,305,472,484	7.42
2015	2,306,611,715	504,320,000	(1,820,291,715)	10,162,263,470	4.96
2014	2,158,287,358	392,035,985	(1,766,251,373)	10,038,792,896	3.91
2013	2,331,811,395	647,059,335	(1,684,752,060)	9,779,212,916	6.62
2012	2,269,823,968	317,927,358	(1,951,896,610)	9,682,318,739	3.28
2011	2,123,175,951	30,655,332	(2,092,520,619)	10,025,401,658	–
2010	1,796,358,016	33,199,655	(1,763,158,361)	9,747,020,060	–
2009	1,601,478,508	95,863,972	(1,505,614,536)	9,419,083,203	1.02
2008	1,550,503,836	695,275,811	(855,228,025)	9,077,628,813	7.66

**Police and Firemen's Retirement System**

Year ended June 30:					
2017	\$ 1,335,659,737	1,046,327,392	(289,332,345)	3,726,807,562	28.08%
2016	1,311,849,713	986,654,840	(325,194,873)	3,695,509,355	26.70
2015	1,217,110,411	941,950,336	(275,160,075)	3,682,677,356	25.58
2014	1,150,719,106	880,431,697	(270,287,409)	3,678,910,266	23.93
2013	1,279,412,723	895,743,379	(383,669,344)	3,656,218,573	24.50
2012	1,238,132,402	826,461,015	(411,671,387)	3,649,416,297	22.65
2011	1,337,424,856	889,724,548	(447,700,308)	3,720,534,369	23.91
2010	1,161,763,447	758,722,185	(403,041,262)	3,673,674,523	20.65
2009	1,048,234,663	716,491,044	(331,743,619)	3,596,254,177	19.92
2008	960,856,263	780,799,395	(180,056,868)	3,459,839,699	22.57

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

SCHEDULE 2 *continued*

## Required Supplementary Information

### Schedule of Employer Contributions – Defined Benefit Pension Plans (Unaudited)

		<b>Actuarially determined contribution</b>	<b>Actual employer contribution</b>	<b>Contribution excess (deficiency)</b>	<b>Covered payroll</b>	<b>Contribution as a percentage of covered payroll</b>
<b>Public Employees' Retirement System</b>						
Year ended June 30:						
2017	\$	2,207,859,541	1,448,520,025	(759,339,516)	11,296,345,312	12.82%
2016		2,097,570,117	1,265,246,226	(832,323,891)	11,320,198,747	11.18
2015		1,935,315,246	1,067,584,583	(867,730,663)	11,441,433,226	9.33
2014		1,797,073,081	941,023,184	(856,049,897)	11,448,531,265	8.22
2013		1,911,359,009	1,087,389,140	(823,969,869)	11,433,091,635	9.51
2012		1,895,158,413	976,093,907	(919,064,506)	11,609,042,726	8.41
2011		1,824,391,081	832,016,186	(992,374,895)	11,981,354,783	6.94
2010		1,422,475,763	640,282,996	(782,192,767)	11,995,447,141	5.34
2009		1,285,791,399	627,989,949	(657,801,450)	11,815,800,825	5.31
2008		1,145,564,136	646,690,366	(498,873,770)	11,418,467,816	5.66

See accompanying independent auditors' report.

**Required Supplementary Information**

**Schedule of Employer Contributions – Defined Benefit Pension Plans –  
Last 10 Fiscal Years (Unaudited)**

**Notes to Schedule:**

**Method and assumptions used in calculations of employers' actuarially determined contributions:** The actuarially determined contributions are calculated as of July 1 preceding the fiscal year in which the contributions are reported. Unless otherwise noted above, the following actuarial methods and assumptions were used to determine contribution rates in the Schedule of Employer Contributions.

	<b>JRS</b>	<b>POPF</b>	<b>SPRS</b>	<b>CPFPF</b>	<b>TPAF</b>	<b>PFRS</b>	<b>PERS</b>
Actuarial cost method	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Amortization method	Level Dollar, open	Level Dollar, open	Level Dollar, open	Level Dollar, open	Level Dollar, open	Level Dollar, open	Level Dollar, open
Remaining amortization period	30 years	1 year	30 years	30 years	30 years	30 years	30 years
Asset valuation method	Five-year average of market values	Five-year average of market values	Five-year average of market values	Five-year average of market values	20% of the difference between the expected Actuarial Value and market value is recognized each year	Five-year average of market values	Five-year average of market values
Inflation	2.25%	2.25%	2.25%	2.25%	2.3 until June 30, 2026 / 3.6% thereafter	2.25%	2.25%
Projected salary increase 2017 and 2016							
Initial fiscal year applied through	2025	N/A <sup>^</sup>	2025	N/A <sup>^</sup>	N/A	2026	2026
Rate	2.00%	N/A <sup>^</sup>	2.95%	N/A <sup>^</sup>	Varies based on experience	2.10 - 8.98% based on age	1.65 - 4.15% based on age
Thereafter	3.00%	N/A <sup>^</sup>	3.95%	N/A <sup>^</sup>	Varies based on experience	3.10 - 9.98% based on age	2.65 - 5.15% based on age
2015 and 2014 Through fiscal year 2021	2.50%	N/A <sup>^</sup>	3.45%	N/A <sup>^</sup>	Varies based on experience	2.60 - 9.48% based on age	2.15 - 4.40% based on age
Thereafter	3.50%	N/A <sup>^</sup>	4.45%	N/A <sup>^</sup>	Varies based on experience	3.60 - 10.48% based on age	3.15 - 5.40% based on age
Projected COLAs	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*
Investment rate of return							
2017	7.50%	5.00%	7.50%	2.00%	7.50%	7.50%	7.50%
2016	7.65%	5.00%	7.65%	2.00%	7.65%	7.65%	7.65%
2015	7.90%	5.00%	7.90%	2.00%	7.90%	7.90%	7.90%
2014	7.90%	5.00%	7.90%	2.00%	7.90%	7.90%	7.90%

\*Pursuant to the provisions of Chapter 78, P.L. 2011, cost of living adjustment (COLA) increases were suspended for all current and future retirees of all retirement systems.

<sup>^</sup> This is a closed plan, therefore there are no active employees.

**Contributions:** Contributions reported on Schedule 1 include actual contributions by State and, where applicable, the local employer's contribution revenue recorded in fiscal year 2017, that is due in fiscal year 2018, and contributions to the Non-Contributory Group Insurance Premium Fund. Contributions reported on Schedule 2 represent actual contributions by the State and local employers (where applicable) made during the year, including contributions to the Non-Contributory Group Life Insurance Premium Fund.

See accompanying independent auditors' report.



# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 3

### Required Supplementary Information

#### Schedule of Investment Returns – Defined Benefit Pension Plans Annual Money-Weighted Rate of Return, Net of Investment Expense (Unaudited)

	JRS, SPRS, TPAF, PERS, and PFRS*	POPF	CPFPF
Year ended June 30:			
2017	13.01%	0.53%	0.53%
2016	-1.15%	0.28%	0.50%
2015	4.08%	0.09%	0.34%
2014	16.79%	0.09%	0.02%

\*The annual money-weighted rate of return, net of investment expense, which includes JRS, SPRS, TPAF, PFRS, and PERS, is calculated on the investments held within Common Pension Funds D and E as a whole rather than by individual plan since the portfolio is managed as one pool of investments.

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

See accompanying independent auditors' report.

**Required Supplementary Information**

**Schedule of Changes in Net OPEB Liability and Related Ratios (Unaudited)**

**June 30, 2017**

Total OPEB liability:

Service cost	\$	533,776,726
Interest on total OPEB liability		458,485,628
Effect of changes of benefit terms		—
Difference between expected and actual experience		—
Effect of changes of assumptions		(1,800,090,007)
Contributions - employee		53,585,505
Benefit payments		(425,836,854)
Net change in total OPEB liability		(1,180,079,002)
Total OPEB liability-beginning		15,738,256,391
Total OPEB liability-ending (a)	\$	<u>14,558,177,389</u>

Plan fiduciary net position:

Contributions-employer	\$	434,877,635
Contributions-employee		53,585,505
Net investment (loss) income		791,049
Benefit payments		(417,488,848)
Administrative expense		(8,894,576)
Net change in Plan fiduciary net position		62,870,765
Plan fiduciary net position-beginning		150,385,152
Plan fiduciary net position-ending (b)		213,255,917
Plan's net OPEB liability-ending (a)-(b)	\$	<u>14,344,921,472</u>

Plan fiduciary net position as a percentage of the total OPEB liability

1.46%

Covered-employee payroll

\$ 2,609,923,735

Net OPEB liability as a percentage of covered-employee payroll

549.63%

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

**Notes to Schedule:**

*Change in benefit terms*

None

*Changes in assumptions:*

*In 2017, the discount rate changed to 3.58% from 2.85%.*

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

SCHEDULE 5

## Required Supplementary Information

### **Schedule of Investment Returns – Other Postemployment Benefit Plan Annual Money-Weighted Rate of Return, Net of Investment Expense**

**Unaudited**

Year ended June 30:

---

2017

0.58%

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

*See accompanying independent auditor's report.*

Schedule of Administrative Expenses  
Year ended June 30, 2017

	JRS	POPF	SPRS	CPFFP	TPAF	PFRS	PERS	NUSEDCP	Total
Personnel services:									
Salaries and wages	\$ 82,714	1,424	82,653	1,435	4,221,544	958,754	6,868,339	260,674	12,477,537
Employee benefits	35,312	759	32,143	784	2,306,210	436,329	3,155,931	144,270	6,111,738
Total personnel services	118,026	2,183	114,796	2,219	6,527,754	1,395,083	10,024,270	404,944	18,589,275
Professional services:									
Actuarial services	6,241	436	36,766	430	401,401	511,185	461,397	—	1,417,856
Data processing	3,961	276	23,335	273	947,053	324,433	1,571,304	23,643	2,894,278
Information systems	9,155	593	50,360	630	1,683,685	666,913	3,602,669	—	6,014,005
Other professional <sup>(1)</sup>	240	17	1,636	17	59,213	22,705	97,616	115	181,559
Medical reviews (exams/hearings)	2,700	—	16,762	—	331,462	424,872	888,807	—	1,664,603
Elections	—	—	—	—	—	33,590	30,000	—	63,590
Internal audit and legal	3,447	241	20,303	237	824,005	282,281	1,367,150	—	2,497,664
Total professional services	25,744	1,563	149,162	1,587	4,246,819	2,265,979	8,018,943	23,758	14,733,555
Communication:									
Travel	14	1	84	1	6,302	4,808	10,430	—	21,640
Telephone	376	26	2,215	26	89,874	30,788	149,114	2,800	275,219
Postage	1,441	101	8,488	99	344,487	118,011	571,556	1,000	1,045,183
Motor pool	14	1	83	1	3,383	1,159	5,613	—	10,254
Printing and office	470	33	2,769	32	112,401	38,505	186,491	—	340,701
Total communication	2,315	162	13,639	159	556,447	193,271	923,204	3,800	1,692,997
Miscellaneous:									
Office space	3,127	218	18,418	215	747,512	256,077	1,240,237	—	2,265,804
Maintenance	30	2	178	2	7,209	2,469	11,960	—	21,850
Equipment	87	6	514	6	20,851	7,143	34,594	—	63,201
Other services and charges	1	—	5	—	247	85	411	12,001	12,750
Total miscellaneous	3,245	226	19,115	223	775,819	265,774	1,287,202	12,001	2,363,605
Total administrative expenses	\$ 149,330	4,134	296,712	4,188	12,106,839	4,120,107	20,253,619	444,503	37,379,432

<sup>(1)</sup> Portion of consulting

See a accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 7

### Schedule of Investment Expenses Year ended June 30, 2017

	JRS	POPF	SPRS	CPFPF	TPAF	PFRS	PERS	NJSEDCP	Total
Investment expense	\$ 24,670	2,082	148,404	2,100	6,055,521	2,060,765	10,130,329	212,389	18,636,260

See accompanying independent auditors' report.

## SCHEDULE 8

### Schedule of Expenses for Consultants Year ended June 30, 2017

	JRS	POPF	SPRS	CPFPF	TPAF	PFRS	PERS	Total	
Actuarial:									
Conduent	\$ 6,241	436	36,766	430	—	511,185	461,397	1,016,455	
Milliman	—	—	—	—	401,401	—	—	401,401	
Medical reviews (exams/hearings)	2,700	—	16,762	—	331,462	424,872	888,807	1,664,603	
Board elections:									
Global support	—	—	—	—	—	33,590	30,000	63,590	
<b>Total expenses for consultants</b>	<b>\$ 8,941</b>	<b>436</b>	<b>53,528</b>	<b>430</b>	<b>732,863</b>	<b>969,647</b>	<b>1,380,204</b>	<b>3,146,049</b>	

See accompanying independent auditors' report.

**Combining Schedule of Fiduciary Net Position Information –  
Fiduciary Funds – Select Pension Trust Funds  
June 30, 2017**

	Judicial Retirement System	Prison Officers' Pension Fund	State Police Retirement System	Consolidated Police and Firemen's Retirement System	Teachers' Pension and Annuity Fund	Police and Firemen's Retirement System	Public Employees' Retirement System	Total
<b>Assets:</b>								
Cash and cash equivalents	\$ 5,000,117	284,097	18,969,604	177,544	353,178,098	196,682,671	307,314,387	881,606,518
<b>Receivables:</b>								
<b>Contributions:</b>								
Members	676,066	–	1,094,446	–	76,505,113	51,842,902	59,619,441	189,737,968
Employers	–	–	80,304	–	26,569,423	1,032,873,483	1,042,303,973	2,101,827,183
Accrued interest and dividends	486	17	2,024	26	41,228	4,201,002	35,826	4,280,609
Other	1,307,451	2,507	1,259,094	237,752	12,647,936	7,178,418	22,164,889	44,798,047
<b>Total receivables</b>	<b>1,984,003</b>	<b>2,524</b>	<b>2,435,868</b>	<b>237,778</b>	<b>115,763,700</b>	<b>1,096,095,805</b>	<b>1,124,124,129</b>	<b>2,340,643,807</b>
<b>Investments, at fair value:</b>								
Cash Management Fund	3,912,496	5,417,728	13,376,644	1,638,567	61,465,645	46,031,975	38,789,354	170,632,409
Common Pension Fund D	121,379,434	–	1,175,226,557	–	15,621,176,710	15,613,185,805	18,125,719,900	50,656,688,406
Common Pension Fund E	47,103,013	–	553,910,211	–	7,066,359,178	7,640,826,759	8,669,662,392	23,977,861,553
<b>Total investments</b>	<b>172,394,943</b>	<b>5,417,728</b>	<b>1,742,513,412</b>	<b>1,638,567</b>	<b>22,749,001,533</b>	<b>23,300,044,539</b>	<b>26,834,171,646</b>	<b>74,805,182,368</b>
Securities lending collateral	2,296,449	–	22,234,804	–	295,546,248	295,395,064	342,931,177	958,403,742
Members' loans and mortgages	511,721	–	15,479,955	–	283,207,356	1,462,285,744	619,523,933	2,381,008,709
<b>Total assets</b>	<b>182,187,233</b>	<b>5,704,349</b>	<b>1,801,633,643</b>	<b>2,053,889</b>	<b>23,796,696,935</b>	<b>26,350,503,823</b>	<b>29,228,065,272</b>	<b>81,366,845,144</b>
<b>Liabilities:</b>								
Accounts payable and accrued expenses	–	1,011	–	–	81,688,581	5,988,986	96,699,759	184,378,337
Retirement benefits payable	4,515,169	81,006	17,722,568	147,911	355,065,159	196,739,631	309,203,462	883,474,906
Noncontributory group life insurance premiums payable	–	–	80,304	–	4,029,942	3,288,170	7,911,760	15,310,176
Administrative expense payable	50,960	1,464	105,195	1,482	4,292,415	1,460,768	7,180,823	13,093,107
Securities lending collateral and rebates payable	2,295,771	–	22,228,241	–	295,459,009	295,307,869	342,829,950	958,120,840
<b>Total liabilities</b>	<b>6,861,900</b>	<b>83,481</b>	<b>40,136,308</b>	<b>149,393</b>	<b>740,535,106</b>	<b>502,785,424</b>	<b>763,825,754</b>	<b>2,054,377,366</b>
<b>Net position restricted for pensions</b>	<b>\$ 175,325,333</b>	<b>5,620,868</b>	<b>1,761,497,335</b>	<b>1,904,496</b>	<b>23,056,161,829</b>	<b>25,847,718,399</b>	<b>28,464,239,518</b>	<b>79,312,467,778</b>

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 10

### Combining Schedule of Changes in Fiduciary Net Position Fiduciary Funds – Select Pension Trust Funds June 30, 2017

	Judicial Retirement System	Prison Officers' Pension Fund	State Police Retirement System	Consolidated Police and Firemen's Retirement System	Teachers' Pension and Annuity Fund	Police and Firemen's Retirement System	Public Employees' Retirement System	Total
<b>Additions:</b>								
Contributions:								
Members:								
State	\$ 10,348,191	–	23,721,785	–	790,788,033	51,759,235	331,469,748	1,208,086,992
Local	–	–	–	–	–	344,119,149	516,482,389	860,601,538
Employers:								
State	20,341,379	–	53,006,614	575,000	1,127,018,480	117,025,276	539,538,390	1,857,505,139
Local	–	–	–	–	–	885,018,458	926,393,189	1,811,411,647
Nonemployers	–	–	–	–	–	86,467,000	–	86,467,000
Employer specific and other	1,121,097	552,131	3,925	964,280	1,696,090	13,107,651	16,358,762	33,803,936
<b>Total contributions</b>	<b>31,810,667</b>	<b>552,131</b>	<b>76,732,324</b>	<b>1,539,280</b>	<b>1,919,502,603</b>	<b>1,497,496,769</b>	<b>2,330,242,478</b>	<b>5,857,876,252</b>
Investment income:								
Net increase/(decrease) in fair value of investments	16,847,510	(1,719)	175,221,726	(486)	2,300,089,571	2,304,714,942	2,662,886,052	7,459,757,596
Interest	3,208,312	34,648	32,328,268	12,685	442,954,741	488,450,683	549,638,114	1,516,627,451
	20,055,822	32,929	207,549,994	12,199	2,743,044,312	2,793,164,625	3,212,524,166	8,976,385,047
Less investment expense	24,670	2,082	148,404	2,100	6,055,521	2,060,765	10,130,329	18,423,871
<b>Net investment income</b>	<b>20,031,152</b>	<b>30,847</b>	<b>207,401,590</b>	<b>10,099</b>	<b>2,736,988,791</b>	<b>2,791,104,860</b>	<b>3,202,393,837</b>	<b>8,957,961,176</b>
<b>Total additions</b>	<b>51,841,819</b>	<b>582,978</b>	<b>284,133,914</b>	<b>1,549,379</b>	<b>4,656,491,394</b>	<b>4,288,601,629</b>	<b>5,532,636,315</b>	<b>14,815,837,428</b>
<b>Deductions:</b>								
Benefits:								
Benefit expense- retirement allowances	55,642,074	1,069,209	215,243,453	1,535,623	4,198,977,288	2,374,959,072	3,587,215,468	10,434,642,187
Non-contributory group insurance expense	664,379	–	1,968,614	–	39,099,480	38,969,665	80,002,130	160,704,268
Refunds of contributions	59,265	–	91,879	–	68,191,977	7,556,700	143,601,094	219,500,915
Administrative and miscellaneous expenses	150,588	4,134	294,745	4,188	11,923,787	4,124,457	19,648,715	36,150,614
<b>Total deductions</b>	<b>56,516,306</b>	<b>1,073,343</b>	<b>217,598,691</b>	<b>1,539,811</b>	<b>4,318,192,532</b>	<b>2,425,609,894</b>	<b>3,830,467,407</b>	<b>10,850,997,984</b>
<b>Change in net position</b>	<b>(4,674,487)</b>	<b>(490,365)</b>	<b>66,535,223</b>	<b>9,568</b>	<b>338,298,862</b>	<b>1,862,991,735</b>	<b>1,702,168,908</b>	<b>3,964,839,444</b>
Net position restricted for pensions:								
Beginning of year	179,999,820	6,111,233	1,694,962,112	1,894,928	22,717,862,967	23,984,726,664	26,762,070,610	75,347,628,334
End of year	\$ 175,325,333	5,620,868	1,761,497,335	1,904,496	23,056,161,829	25,847,718,399	28,464,239,518	79,312,467,778

See accompanying independent auditors' report.



**Combining Schedule of Balance Sheet Information –  
Fiduciary Funds – Agency Funds  
June 30, 2017**

	<b>Alternate Benefit Program Fund</b>	<b>Pension Adjustment Fund</b>	<b>Dental Expense Program Fund</b>	<b>Total Agency Funds</b>
<b>Assets:</b>				
Cash and cash equivalents	\$ 950,247	1,028,528	225,496	2,204,271
<b>Receivables:</b>				
State related employer contributions	–	258,955	–	258,955
Other	38,879,816	3,457	1,476,104	40,359,377
<b>Total receivables</b>	<b>38,879,816</b>	<b>262,412</b>	<b>1,476,104</b>	<b>40,618,332</b>
<b>Investments, at fair value:</b>				
Cash Management Fund	896,915	1,009,611	47,362,532	49,269,058
<b>Total investments</b>	<b>896,915</b>	<b>1,009,611</b>	<b>47,362,532</b>	<b>49,269,058</b>
<b>Total assets</b>	<b>\$ 40,726,978</b>	<b>2,300,551</b>	<b>49,064,132</b>	<b>92,091,661</b>
<b>Liabilities:</b>				
Accounts payable and accrued expenses	\$ 40,644,958	–	49,064,132	89,709,090
Assets held for local contributing employers	–	2,023,233	–	2,023,233
Pension adjustment payroll payable	–	72,370	–	72,370
Due to State of New Jersey	82,020	44,420	–	126,440
Due to other funds	–	160,528	–	160,528
<b>Total liabilities</b>	<b>\$ 40,726,978</b>	<b>2,300,551</b>	<b>49,064,132</b>	<b>92,091,661</b>

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 12

### Combining Schedule of Changes in Fiduciary Net Position Information — Fiduciary Funds — Agency Funds Year ended June 30, 2017

	Alternate Benefit Program Fund	Pension Adjustment Fund	Dental Expense Program Fund	Total Agency Funds
<b>Additions:</b>				
<b>Contributions:</b>				
Members	\$ 817,835	—	101,975,407	102,793,242
Employers	198,032,827	1,365,090	37,118,575	236,516,492
<b>Total contributions</b>	<b>198,850,662</b>	<b>1,365,090</b>	<b>139,093,982</b>	<b>339,309,734</b>
<b>Investment income:</b>				
Net decrease in fair value of investments	(205)	(151)	(11,589)	(11,945)
Interest	12,149	11,736	282,229	306,114
<b>Total investment income</b>	<b>11,944</b>	<b>11,585</b>	<b>270,640</b>	<b>294,169</b>
<b>Total additions</b>	<b>198,862,606</b>	<b>1,376,675</b>	<b>139,364,622</b>	<b>339,603,903</b>
<b>Deductions:</b>				
Benefits	198,797,510	1,559,942	136,383,871	336,741,323
Refunds of contributions	65,096	(183,267)	2,980,751	2,862,580
<b>Total deductions</b>	<b>198,862,606</b>	<b>1,376,675</b>	<b>139,364,622</b>	<b>339,603,903</b>
Changes in net position	—	—	—	—
Net position — beginning of year	—	—	—	—
Net position — end of year	\$ —	—	—	—

See accompanying independent auditors' report.

**Combining Schedule of Balance Sheet Information –  
Agency Fund – Dental Expense Program Fund  
June 30, 2017**

	<b>State</b>	<b>Local</b>	<b>Total Agency Fund – Dental Expense Program Fund</b>
<b>Assets:</b>			
Cash and cash equivalents	\$ 217,316	8,180	225,496
<b>Receivables:</b>			
Other	1,388,124	87,980	1,476,104
<b>Total receivables</b>	<b>1,388,124</b>	<b>87,980</b>	<b>1,476,104</b>
<b>Investments, at fair value:</b>			
Cash Management Fund	33,094,127	14,268,405	47,362,532
<b>Total investments</b>	<b>33,094,127</b>	<b>14,268,405</b>	<b>47,362,532</b>
<b>Total assets</b>	<b>\$ 34,699,567</b>	<b>14,364,565</b>	<b>49,064,132</b>
<b>Liabilities:</b>			
Accounts payable and accrued expenses	\$ 34,699,567	14,364,565	49,064,132
<b>Total liabilities</b>	<b>\$ 34,699,567</b>	<b>14,364,565</b>	<b>49,064,132</b>

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 14

### Combining Schedule of Changes in Fiduciary Net Position Information – Agency Fund – Dental Expense Program Fund Year ended June 30, 2017

	State	Local	Total Agency Fund – Dental Expense Program Fund
<b>Additions:</b>			
<b>Contributions:</b>			
Members	\$ 54,759,378	47,216,029	101,975,407
Employers	31,923,772	5,194,803	37,118,575
<b>Total contributions</b>	<b>86,683,150</b>	<b>52,410,832</b>	<b>139,093,982</b>
<b>Investment income:</b>			
Net decrease in fair value of investments	(11,009)	(580)	(11,589)
Interest	203,893	78,336	282,229
<b>Total investment income</b>	<b>192,884</b>	<b>77,756</b>	<b>270,640</b>
<b>Total additions</b>	<b>86,876,034</b>	<b>52,488,588</b>	<b>139,364,622</b>
<b>Deductions:</b>			
Benefits	83,774,750	52,609,121	136,383,871
Refunds of contributions	3,101,284	(120,533)	2,980,751
<b>Total deductions</b>	<b>86,876,034</b>	<b>52,488,588</b>	<b>139,364,622</b>
Changes in net position	–	–	–
Net position – beginning of year	–	–	–
Net position – end of year	\$ –	–	–

See accompanying independent auditors' report.

**Schedule of Changes in Assets and Liabilities Information –  
Agency Fund – Alternate Benefit Program Fund  
June 30, 2017**

	Balance June 30, 2016	Additions	Deductions	Balance June 30, 2017
<b>Assets:</b>				
Cash and cash equivalents	\$ 1,050,138	170,856,707	170,956,598	950,247
<b>Receivables:</b>				
Other	35,077,677	38,879,816	35,077,677	38,879,816
<b>Investments, at fair value:</b>				
Cash Management Fund	712,038	202,437,328	202,252,451	896,915
<b>Total assets</b>	<b>\$ 36,839,853</b>	<b>412,173,851</b>	<b>408,286,726</b>	<b>40,726,978</b>
<b>Liabilities:</b>				
Accounts payable and accrued expenses	\$ 36,833,743	41,261,781	37,450,566	40,644,958
Due to State of New Jersey	6,110	82,020	6,110	82,020
<b>Total liabilities</b>	<b>\$ 36,839,853</b>	<b>41,343,801</b>	<b>37,456,676</b>	<b>40,726,978</b>

See accompanying independent auditors' report.

# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

SCHEDULE 16

## Schedule of Changes in Assets and Liabilities Information — Agency Fund — Pension Adjustment Fund June 30, 2017

	Balance June 30, 2016	Additions	Deductions	Balance June 30, 2017
<b>Assets:</b>				
Cash and cash equivalents	\$ 1,737,674	856,998	1,566,144	1,028,528
<b>Receivables:</b>				
State related employer contributions	316,085	1,077,286	1,134,416	258,955
Other	683	14,879	12,105	3,457
<b>Investments, at fair value:</b>				
Cash Management Fund	525,341	2,155,239	1,670,969	1,009,611
<b>Total assets</b>	<b>\$ 2,579,783</b>	<b>4,104,402</b>	<b>4,383,634</b>	<b>2,300,551</b>
<b>Liabilities:</b>				
Assets held for local contributing employers	\$ 2,226,939	—	203,706	2,023,233
Pension adjustment payroll payable	140,204	1,562,740	1,630,574	72,370
Due to State of New Jersey	23,980	44,420	23,980	44,420
Due to other funds	188,660	985,532	1,013,664	160,528
<b>Total liabilities</b>	<b>\$ 2,579,783</b>	<b>2,592,692</b>	<b>2,871,924</b>	<b>2,300,551</b>

See accompanying independent auditors' report.

**Schedule of Changes in Assets and Liabilities Information –  
 Agency Fund – Dental Expense Program Fund – Total  
 June 30, 2017**

	Balance June 30, 2016	Additions	Deductions	Balance June 30, 2017
<b>Assets:</b>				
Cash and cash equivalents	\$ 35,083	44,965,819	44,775,406	225,496
<b>Receivables:</b>				
Other	839,880	144,745,254	144,109,030	1,476,104
<b>Investments, at fair value:</b>				
Cash Management Fund	40,175,944	221,464,831	214,278,243	47,362,532
<b>Total assets</b>	<b>\$ 41,050,907</b>	<b>411,175,904</b>	<b>403,162,679</b>	<b>49,064,132</b>
<b>Liabilities:</b>				
Accounts payable and accrued expenses	\$ 41,050,907	43,374,118	35,360,893	49,064,132
<b>Total liabilities</b>	<b>\$ 41,050,907</b>	<b>43,374,118</b>	<b>35,360,893</b>	<b>49,064,132</b>

See accompanying independent auditors' report.



# FINANCIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## SCHEDULE 18

### Schedule of Changes in Assets and Liabilities Information — Agency Fund — Dental Expense Program Fund — State June 30, 2017

	Balance June 30, 2016	Additions	Deductions	Balance June 30, 2017
<b>Assets:</b>				
Cash and cash equivalents	\$ 16,075	38,550,097	38,348,856	217,316
<b>Receivables:</b>				
Other	836,832	87,024,223	86,472,931	1,388,124
<b>Investments, at fair value:</b>				
Cash Management Fund	29,809,733	156,968,013	153,683,619	33,094,127
<b>Total assets</b>	<b>\$ 30,662,640</b>	<b>282,542,333</b>	<b>278,505,406</b>	<b>34,699,567</b>
<b>Liabilities:</b>				
Accounts payable and accrued expenses	\$ 30,662,640	34,908,610	30,871,683	34,699,567
<b>Total liabilities</b>	<b>\$ 30,662,640</b>	<b>34,908,610</b>	<b>30,871,683</b>	<b>34,699,567</b>

See accompanying independent auditors' report.

**Schedule of Changes in Assets and Liabilities Information –  
Agency Fund – Dental Expense Program Fund – Local  
June 30, 2017**

	<b>Balance June 30, 2016</b>	<b>Additions</b>	<b>Deductions</b>	<b>Balance June 30, 2017</b>
<b>Assets:</b>				
Cash and cash equivalents	\$ 19,008	6,415,722	6,426,550	8,180
<b>Receivables:</b>				
Other	3,048	57,721,031	57,636,099	87,980
<b>Investments, at fair value:</b>				
Cash Management Fund	10,366,211	64,496,818	60,594,624	14,268,405
<b>Total assets</b>	<b>\$ 10,388,267</b>	<b>128,633,571</b>	<b>124,657,273</b>	<b>14,364,565</b>
<b>Liabilities:</b>				
Accounts payable and accrued expenses	\$ 10,388,267	8,465,508	4,489,210	14,364,565
<b>Total liabilities</b>	<b>\$ 10,388,267</b>	<b>8,465,508</b>	<b>4,489,210</b>	<b>14,364,565</b>

See accompanying independent auditors' report.

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# INVESTMENT SECTION

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## State of New Jersey

CHRIS CHRISTIE  
*Governor*

DEPARTMENT OF THE TREASURY  
DIVISION OF INVESTMENT  
P. O. Box 290

FORD M. SCUDDER  
*State Treasurer*

KIM GUADAGNO  
*Lt. Governor*

TRENTON, NEW JERSEY 08625-0290  
TELEPHONE (609) 292-5106 /  
FACSIMILE (609) 984-4425

CHRIS McDONOUGH  
*Director*

June 30, 2017

The Division of Investment (“Division”), under the jurisdiction of the State Investment Council (the “Council”), is responsible for the investment management of the assets of seven public pension systems: the Consolidated Police and Firemen’s Pension Fund, the Judicial Retirement System, the Police and Firemen’s Retirement System, the Prison Officers’ Pension Fund, the Public Employees’ Retirement System, the State Police Retirement System, and the Teachers’ Pension and Annuity Fund (collectively referred to as the “Pension Fund”).

The Division was created in 1950 by the New Jersey Legislature (Chapter 270, P.L. 1950) to centralize all functions relating to the purchase, sale, or exchange of securities for the State’s diverse funds under experienced and professional management. The statute also established the Council to formulate investment procedures and policies to be followed by the Director. The statute vests investment authority in the Director, who is appointed by the State Treasurer from candidates nominated by the Council. New and amended regulations adopted by the Council after public comments are filed with the Office of Administrative Law and reported in the *New Jersey Register*.

The Council is comprised of 16 members, appointed to fixed terms. Nine members are appointed by the Governor for staggered five-year terms, and are drawn traditionally from the investment community. Eight of these nine hold appointments subject to the advice and consent of the Senate, and one appointee is selected by the Governor from nominees submitted jointly by the President of the Senate and Speaker of the Assembly. Two members are appointed by the Governor for five-year terms from nominees submitted by the New Jersey State AFL-CIO, with at least one appointed member being a member of a union representing police officers or firefighters. Two members are appointed by the Governor for three-year terms from nominees submitted by the New Jersey Education Association and the State Troopers Fraternal Organization. Three members are designated to the Council for three-year terms by the respective pension system’s board of trustees for the Public Employees’ Retirement System, the Police and Firemen’s Retirement System, and the Teachers’ Pension and Annuity Fund. State law requires that no Council member shall hold any office, position, or employment with any political party, and none can benefit from the transactions of the Division.

All investments by the Director must conform to the heightened “prudent person” standard set by the New Jersey Legislature (Chapter 26, P.L. 1997). This standard requires the Director “to manage and invest the portfolio solely in the interests of the beneficiaries of the portfolio and for the exclusive purpose of providing financial benefits to the beneficiaries of the portfolio.”

To the best of our knowledge, performance is calculated using the time-weighted return based on the modified Dietz method.

A handwritten signature in black ink, appearing to read "Chris McDonough".

Christopher McDonough  
Director, Division of Investment

## State Investment Council Policies Regarding the Investment of Pension Fund Assets (at June 30, 2017)

- Investment of pension assets is governed by the State Investment Council Regulations (N.J.A.C. 17:16) (the “Regulations”) as well as an annual asset allocation plan approved the State Investment Council.
- Global equity investments, excluding exchange traded funds that invest in fixed income assets, strategies or indices, shall not exceed 70 percent of the market value of the pension assets.
- Unlimited investment is permitted in securities issued by the U.S. Government and designated agencies.
- Investment in global debt obligations, non-convertible preferred stocks, global diversified credit investments and collateralized notes and mortgages are subject to minimum rating requirements of Baa3 by Moody’s, BBB- by Standard & Poor’s and BBB- by Fitch Ratings. Investment in mortgage backed passthrough securities are subject to a minimum rating requirement of A3 by Moody’s, A- by Standard & Poor’s and A- by Fitch Ratings. Up to eight percent of the pension assets may be invested in these securities not meeting the minimum rating requirements.
- Investments in international government and agency obligations are limited to direct debt obligations of a sovereign government or its political subdivisions, debt obligations of agencies of a sovereign government which are unconditionally guaranteed as to principal and interest by the sovereign government’s full faith and credit, and debt obligations of international agencies or financial institutions that are backed, but not necessarily guaranteed, by the collective credit of multiple sovereign governments.
- Investments in fixed income securities such as municipal bonds, commercial paper, repurchase agreements, and certificates of deposit are all permitted by specific Regulations which specify high credit standards and conservative investment limits.
- Subject to specified limitations, futures, swaps, covered call options and put options may be utilized in the management of the portfolios.
- The currency exposure on international investments may be hedged through currency transactions.
- The Regulations contain limits on (1) the percentage of the pension assets that can be invested in any one security, (2) the percentage of the outstanding amount of any one security that can be owned and (3) the percentage of pension assets invested in any one issuer and affiliated entities. These limits help to insure that the portfolio is adequately diversified and that competitive market pricing is obtained.
- Investments in alternative investments are limited to no more than 38% of the portfolio in the aggregate, with individual category limitations for private equity (12%), real estate (9%), real assets (7%) and hedge funds (15%).

### PROXY VOTING

- The Proxy Voting Policy summarizes guidelines for addressing key proxy issues. Business judgment is applied in determining the most advantageous position to the pension fund as a shareholder.
- The Division seeks to vote all proxies received, unless shares are out on loan. Under certain circumstances, the Division may restrict shares from being loaned, or recall loaned shares in order to preserve the right to vote on proxy issues.



Pension Fund Rate of Return — Periods Ending June 30, 2017

	1-Year	Annualized	
		3-Years	5-Years
<b>Risk Mitigation</b>	2.33%	1.62%	2.46%
<i>T-Bill + 300 BP</i>	3.54	3.29	3.21
Total Short Term and Cash <sup>1</sup>	1.08	0.96	1.19
<i>91 Day Treasury Bill (Daily)</i>	0.49	0.23	0.17
Governments	(2.69)	0.18	(0.51)
<i>Custom Gov Benchmark</i>	(1.97)	1.26	0.61
<b>Total Liquidity</b>	<b>(0.95)</b>	<b>0.48</b>	<b>0.15</b>
<i>Liquidity Benchmark</i>	(0.37)	0.66	0.30
Investment Grade Credit	0.67	3.13	3.27
<i>Custom Investment Grade Credit Benchmark</i>	1.01	3.12	3.03
Public High Yield	12.24	4.65	7.00
<i>BBG BARC Corp HY (Dly)</i>	12.70	4.48	6.89
Global Diversified Credit	16.46	8.02	12.10
<i>BBG BARC Corp HY (Dly)</i>	12.70	4.48	6.89
Credit-Oriented Hedge Funds	10.13	3.18	7.39
<i>50 HFRI DR 50 HFRI CA (1MLag)</i>	13.22	2.13	5.46
Debt Related Private Equity	9.95	7.41	11.47
<i>BarCap Corp HY (1Qtr lag) + 300 bps</i>	19.92	7.75	10.05
Debt Related Real Estate	4.15	4.44	NA
<i>Barclays CMBS 2.0Baa + 100 (Qtr lag)</i>	6.14	6.40	NA
<b>Total Income</b>	<b>7.28</b>	<b>4.58</b>	<b>5.83</b>
<i>Income Benchmark</i>	7.80	3.71	4.63
Real Return Private REal Assets and Commodities	6.86	(2.59)	NA
<i>CA Energy Upst &amp; Royalties &amp; PE Lagged D</i>	22.73	(3.18)	0.45
Equity Related REal Estate	8.80	11.86	12.99
<i>Real Estate Index</i>	7.36	10.77	11.15
<b>Total Real Return</b>	<b>8.23</b>	<b>6.51</b>	<b>8.14</b>
<i>Real Return Benchmark</i>	11.12	4.70	7.16
US Equity	19.80	8.22	14.29
<i>S&amp;P 1500 Super Composite (Daily)</i>	18.09	9.51	14.68
Non-US Equity Developed Markets Equity	19.02	1.15	8.49
<i>Custom International Developed Markets Benchmark <sup>2</sup></i>	19.59	0.87	8.31
Emerging Markets Equity	22.69	0.39	3.26
<i>Custom International Emerging Markets Benchmark <sup>2</sup></i>	24.07	1.48	4.33
Equity-Oriented Hedge Funds	18.48	3.43	7.53
<i>50 HFRI EH 50 HFRI ED ACTIVIST (1MLag)</i>	12.40	4.78	8.92
Buyouts-Venture Capital	12.99	12.69	15.60
<i>Custom Cambridge Blend</i>	14.10	9.14	11.82
<b>Total Global Growth</b>	<b>18.80</b>	<b>6.30</b>	<b>11.59</b>
<i>Global Growth Benchmark</i>	18.51	6.64	11.54
Opportunistic Investments	15.18	8.34	NA
<b>Total Pension Fund</b>	<b>13.07</b>	<b>5.25</b>	<b>8.75</b>
<i>NJDOI Policy Index</i>	13.14	5.29	8.45

<sup>1</sup> The cash aggregate comprises the two common pension fund cash accounts, in addition to the seven plan cash accounts.

<sup>2</sup> Source: MSCI. Each benchmark is a custom index calculated by MSCI for, and as requested by the Division, based on screening criteria defined by the Division. These benchmarks exclude those securities deemed ineligible for investment under the State statutes governing investments in Iran, Sudan and companies that boycott Israel. The MSCI data is for internal use only and may not be redistributed or used in connection with creating or offering any securities, financial products or indices. Neither MSCI nor any other third party involved in or related to compiling, computing or creating the MSCI data (the "MSCI Parties") makes any express or implied warranties or representations with respect to such data (or the results to be obtained by the use thereof), and the MSCI Parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to such data. Without limiting any of the foregoing, in no event shall any of the MSCI Parties have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

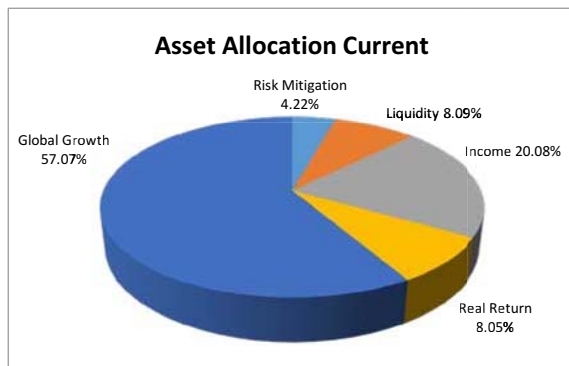
## Pension Fund Asset Allocation – June 30, 2017

	Actual Allocation %	Target %	Difference %	Allocation \$
Absolute Return/Risk Mitigation	4.22%	5.00%	(0.78%)	3,203.84
<b>Risk Mitigation</b>	<b>4.22%</b>	<b>5.00%</b>	<b>(0.78%)</b>	<b>3,203.84</b>
Cash Equivalents <sup>(1)</sup>	4.92%	5.50%	(0.58%)	3,735.93
Short Term Cash Equivalents	0.33%	0.00%	0.33%	248.34
TIPS	0.46%	0.00%	0.46%	346.66
US Treasuries	2.39%	3.00%	(0.61%)	1,813.42
<b>Total Liquidity</b>	<b>8.09%</b>	<b>8.50%</b>	<b>(0.41%)</b>	<b>6,144.35</b>
Investment Grade Credit	9.44%	10.00%	(0.56%)	7,170.98
Public High Yield	1.91%	2.50%	(0.59%)	1,453.56
Global Diversified Credit	4.81%	5.00%	(0.19%)	3,654.81
Credit Oriented Hedge Funds	2.41%	1.00%	1.41%	1,833.79
Debt Related Private Equity	0.91%	2.00%	(1.09%)	690.49
Debt Related Real Estate	0.59%	1.00%	(0.41%)	446.77
<b>Total Income</b>	<b>20.08%</b>	<b>21.50%</b>	<b>(1.42%)</b>	<b>15,250.40</b>
Commodities	0.18%	0.00%	0.18%	138.67
Private Real Assets	2.47%	2.50%	(0.03%)	1,879.53
Equity Related Real Estate	5.40%	6.25%	(0.85%)	4,099.21
<b>Total Real Return</b>	<b>8.05%</b>	<b>8.75%</b>	<b>(0.70%)</b>	<b>6,117.41</b>
US Equity	28.24%	30.00%	(1.76%)	21,454.35
Non-US Developed Markets Equity	11.65%	11.50%	0.15%	8,852.35
Emerging Markets Equity	6.39%	6.50%	(0.11%)	4,852.45
Equity Oriented Hedge Funds	1.37%	0.00%	1.37%	1,043.41
Buyouts/Venture Capital	9.41%	8.25%	1.16%	7,150.80
<b>Total Global Growth</b>	<b>57.07%</b>	<b>56.25%</b>	<b>0.82%</b>	<b>43,353.36</b>
Opportunistic Investments	0.46%	0.00%	0.46%	342.11
Police and Fire Mortgage Program <sup>2</sup>	1.52%	0.00%	0.21%	1,158.97
Other Cash and Receivables	0.52%	0.00%	0.52%	393.99
<b>Total Pension Fund</b>	<b>100.00%</b>	<b>100.00%</b>	<b>0.00%</b>	<b>75,964.43</b>

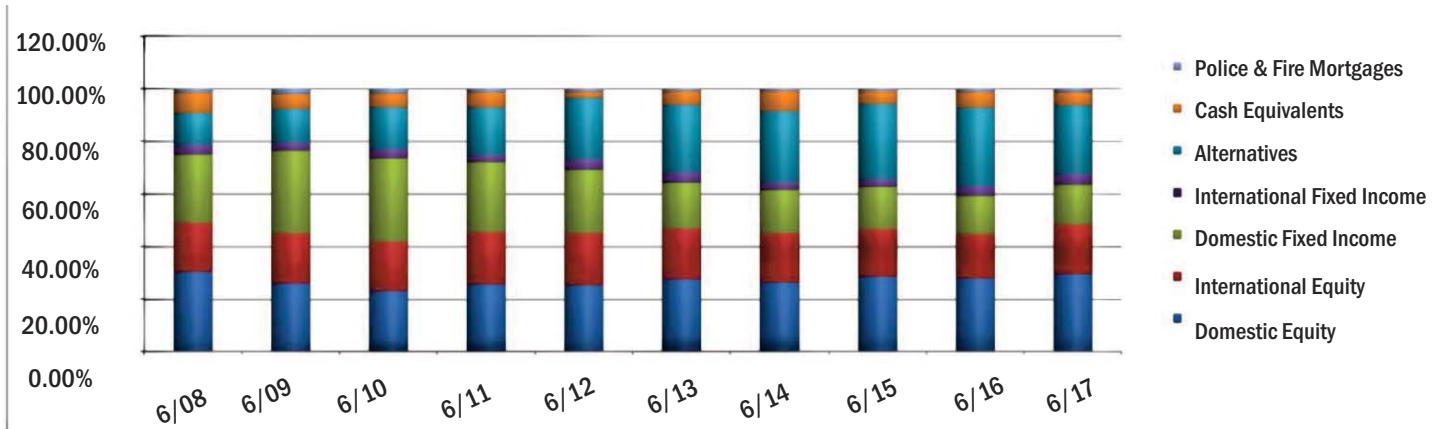
<sup>(1)</sup> The cash aggregate comprises the two common pension fund cash accounts, in addition to the seven plan cash accounts.

<sup>(2)</sup> For Financial Reporting the Police and Fire Mortgage Program is considered a receivable under GASB 72.

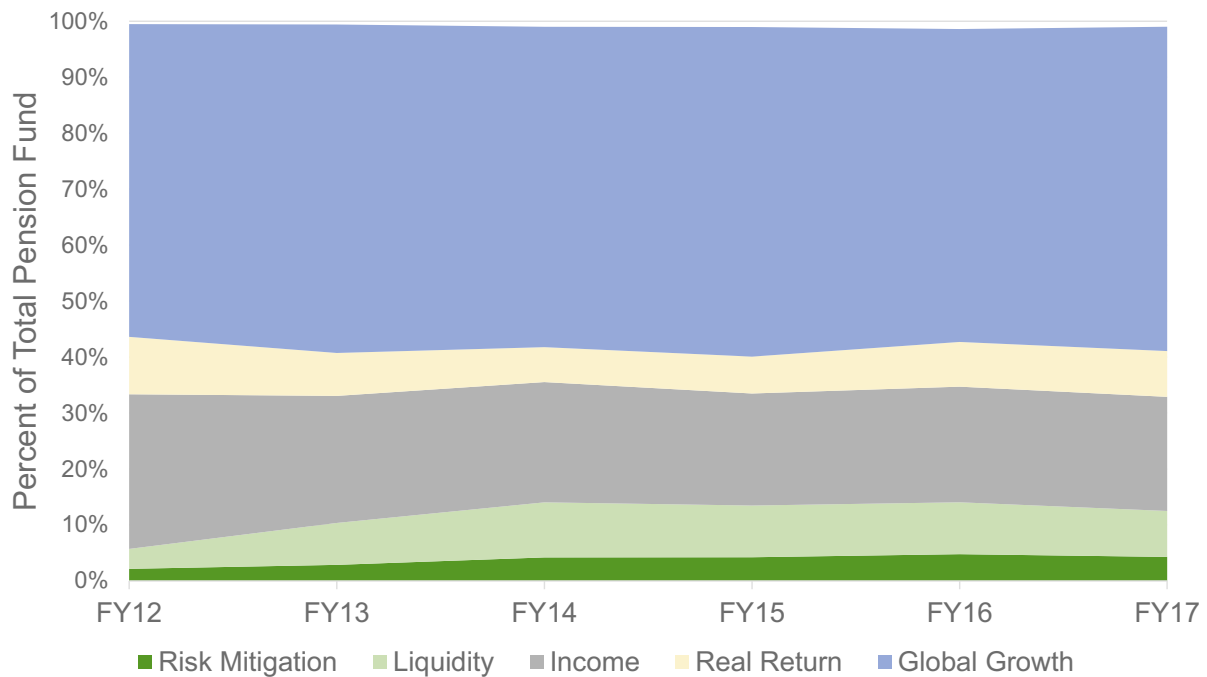
Totals may not equal sum of components due to rounding.



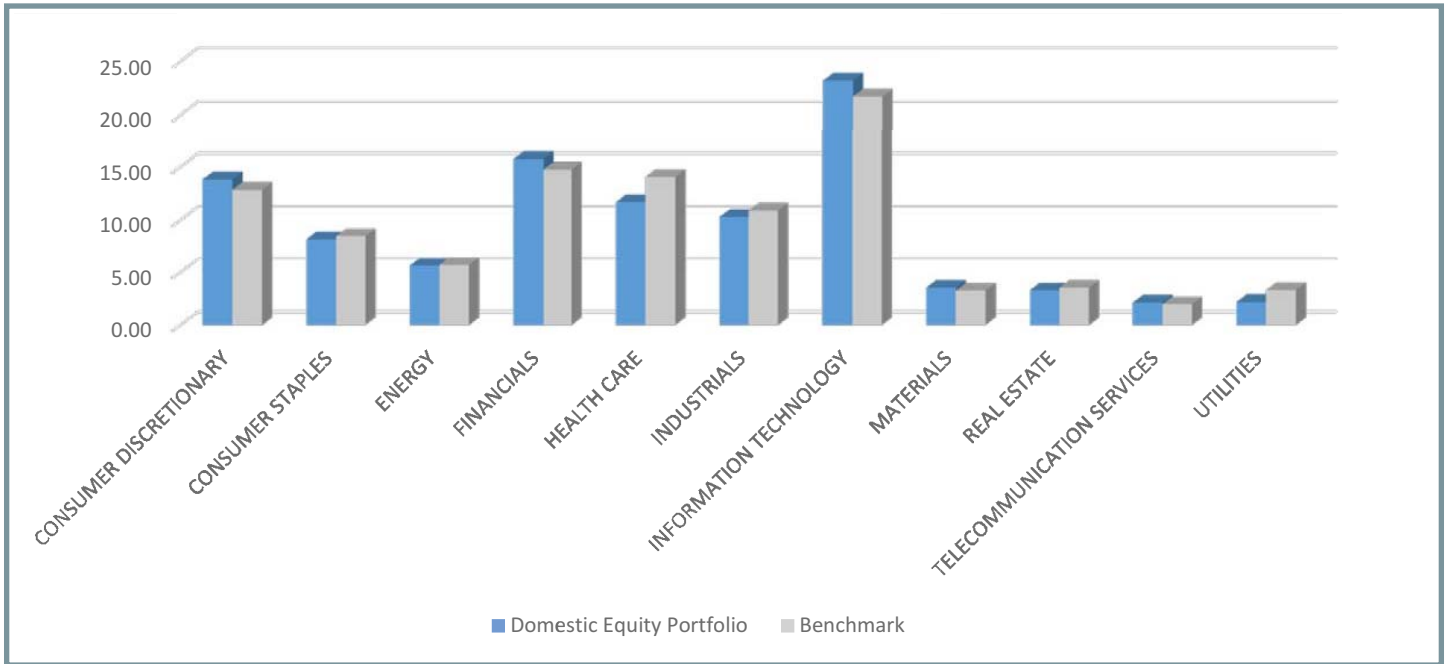
**Pension Fund Composite Asset Allocation History**



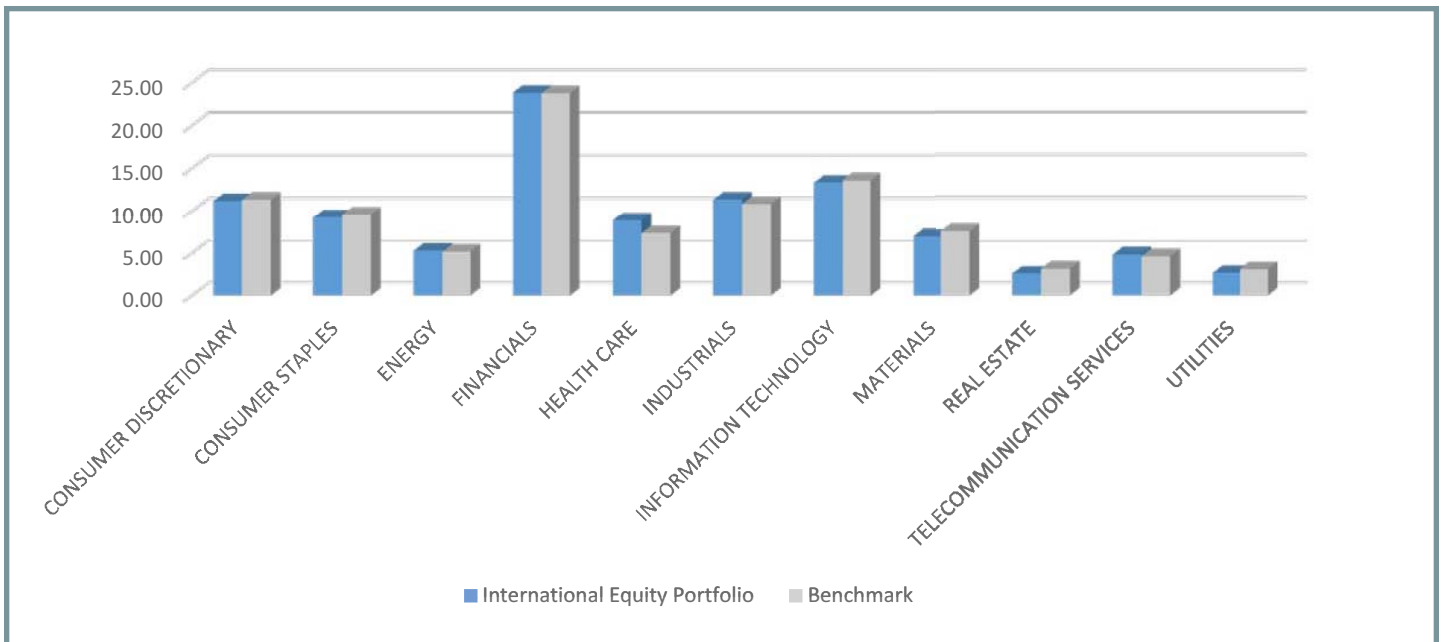
**Pension Fund Asset Allocation History**



## U.S. Equities Market – Portfolio Sector Weightings June 30, 2017



## International Equities Markets – Portfolio Sector Weightings June 30, 2017



**List of Largest Assets Held by the Pension Fund**

**Largest Domestic Stock Holdings (by Fair Value)**

**June 30, 2017**

<b>Shares</b>	<b>Stock</b>	<b>Fair Value (USD)</b>
5,202,000	Apple Inc.	749,192,040
9,179,600	Microsoft Corp.	632,749,828
690,000	Alphabet Inc.	627,023,700
3,430,000	Facebook Inc.	517,861,400
480,000	Amazon.com	464,640,000
4,422,000	JPMorgan Chase	404,170,800
3,035,000	Johnson & Johnson	401,500,150
4,540,000	Exxon Mobil	366,514,200
13,034,000	Bank of America	316,204,840
5,535,000	Wells Fargo	306,694,350

**Largest Domestic Bond Holdings (by Fair Value)**

**June 30, 2017**

<b>Par</b>	<b>Bonds</b>	<b>Coupon</b>	<b>Due</b>	<b>Fair Value (USD)</b>
400,000,000	US Treasury Notes	2.00%	5/31/2024	396,781,200
225,000,000	US Treasury Notes	1.50%	8/15/2026	210,489,300
200,000,000	US Treasury Notes	1.88%	5/31/2022	199,992,200
154,456,500	US Treasury TIPS	0.13%	7/15/2024	151,717,523
150,000,000	US Treasury Notes	2.13%	6/30/2022	151,628,850
150,000,000	US Treasury Notes	1.63%	5/15/2026	142,207,050
150,000,000	US Treasury Notes	2.50%	5/15/2046	139,552,800
135,000,000	INTEL Corp	2.35%	5/11/2022	135,315,090
125,000,000	US Treasury Notes	2.00%	11/15/2021	126,054,750
100,000,000	US Treasury Notes	2.00%	2/28/2021	101,117,200

**List of Largest Assets Held**

**Largest International Stock Holdings (by Fair Value)  
June 30, 2017**

<b>Shares</b>	<b>Stock</b>	<b>Fair Value (USD)</b>
4,450,000	ISHARES MSCI EAFE ETF	290,140,000
5,992,253	ISHARES MSCI TAIWAN	214,282,967
94,742	SAMSUNG ELECTRONICS CO LTD	196,828,855
5,664,997	ISHARES MSCI INDIA ETF	181,846,404
4,869,500	TENCENT HOLDINGS LTD	174,159,112
4,234,271	TAIWAN SEMICONDUCTOR SP ADR	148,030,114
1,642,888	NESTLE SA	143,161,911
517,588	ROCHE HOLDING AG	131,984,535
1,516,710	NOVARTIS AG	126,385,901
827,922	ALIBABA GROUP HOLDING	116,654,210

**Largest International Bond Holdings (by Fair Value)  
June 30, 2017**

<b>Par</b>	<b>Bonds</b>	<b>Coupon</b>	<b>Due</b>	<b>Fair Value (USD)</b>
89,000,000	AID ISRAEL	5.50%	4/26/2024	106,247,043
100,000,000	PROVINCE OF BRITISH COLUMBIA	2.65%	9/22/2021	102,590,600
69,000,000	HYDRO QUEBEC	8.50%	12/1/2029	101,285,376
100,000,000	PROVINCE OF ONTARIO	2.40%	2/8/2022	100,771,600
100,000,000	JAPAN BANK FOR INTERNATIONAL COOP	1.75%	7/31/2018	99,979,900
100,000,000	PROVINCE OF ONTARIO	2.25%	5/18/2022	99,943,800
100,000,000	PROVINCE OF QUEBEC	2.50%	4/20/2026	98,337,800
100,000,000	PROVINCE OF ONTARIO	2.50%	4/27/2026	98,272,000
100,000,000	SIEMENS FINANCIERINGSMAT	2.00%	9/15/2023	96,080,400
90,000,000	PROVINCE OF MANITOBA	2.13%	5/4/2022	89,604,540

**Fiscal Year 2017 Commissions on Global Securities<sup>(1)</sup>**

<b>Broker</b>	<b>Shares <sup>(2)</sup></b>	<b>Total Commissions <sup>(2)</sup></b>	<b>Commissions per Share</b>
Abel/Noser Corp.	1,500,000	\$ 75,000	\$ 0.050
B. Riley & Co., LLC	1,410,030	49,351	0.035
Barclays Capital Inc.	27,979,897	930,178	0.033
BMO Capital Markets Corp.	19,307,801	193,078	0.010
BTIG LLC	3,498,680	122,454	0.035
Buckingham Research Group Inc. (The)	3,480,000	121,800	0.035
C.L. King & Associates, Inc.	10,202,315	101,673	0.010
Canaccord Genuity Inc.	2,136,260	74,769	0.035
Capital Institutional Services, Inc.	28,900,560	1,445,028	0.050
Citigroup Global Markets, Inc.	27,904,131	555,554	0.020
CLSA Americas, LLC	2,977,550	104,214	0.035
Cowen and Company, LLC	10,998,960	384,964	0.035
Craig-Hallum Capital Group LLC	9,401,400	329,049	0.035
Credit Suisse Securities (USA) LLC	23,446,717	1,009,893	0.043
DBS Vickers Securities (USA) Inc.	3,890,000	19,214	0.005
Deutsche Bank Securities Inc.	9,516,693	332,994	0.035
Evercore Group L.L.C	4,370,500	152,968	0.035
FBN Securities, Inc.	32,094,417	208,541	0.006
Goldman, Sachs & Co. LLC	11,254,950	343,598	0.031
Gordon, Haskett Capital Corporation	11,562,210	578,111	0.050
Instinet, LLC	67,286,080	1,661,804	0.025
J.P. Morgan Securities LLC	94,628,228	1,012,934	0.011
Jefferies LLC	43,621,419	315,328	0.007
JMP Securities LLC	1,962,770	68,697	0.035
Kepler Capital Markets Inc.	18,774,915	68,732	0.004
Leerink Partners LLC	5,094,430	178,305	0.035
Macquarie Capital (USA) Inc.	235,985,457	219,078	0.001
Meridian Equity Partners, Inc.	23,587,011	233,672	0.010
Merrill Lynch, Pierce, Fenner & Smith, Inc.	11,830,827	414,079	0.035
Morgan Stanley & Co. LLC	24,206,305	429,380	0.018
O'Neil Securities Inc	16,453,182	164,032	0.010
Oppenheimer & Co. Inc.	60,000	2,100	0.035
RBC Capital Markets LLC	5,820,850	202,830	0.035
Sanford C. Bernstein & Co., LLC	30,836,977	282,783	0.009
Stifel, Nicolaus & Company, Inc.	6,497,213	227,402	0.035
SunTrust Robinson Humphrey, Inc.	2,550,950	89,283	0.035
Themis Trading LLC	26,078,161	245,484	0.009
UBS Securities LLC	18,876,318	579,989	0.031
WallachBeth Capital, LLC	7,346,900	61,537	0.008
Wells Fargo Securities LLC	7,528,628	263,502	0.035
Williams Capital Group, L.P.	19,045,159	190,402	0.010
	<b>913,904,851</b>	<b>\$ 14,043,783</b>	<b>\$ 0.015</b>
Trades executed through advisers with various brokers	<b>1,846,589,403</b>	<b>\$ 4,652,001</b>	<b>\$ 0.003</b>

<sup>(1)</sup> Includes commissions for all funds under Division of Investment Management.

<sup>(2)</sup> Excludes \$65,893 in commissions related to options on approximately 6.6 million shares and \$2,000 in commissions paid on futures.

**Schedule of Fees  
Year ending June 30, 2017**

(000's)	Pension Fund Net Assets under Management	Fees (a)	Basis Points
<b>Investment Advisers' fees:</b>			
Fixed Income advisers	\$ 1,218,351	\$ 5,282	
International small capp advisers	633,710	4,101	
Emerging Market advisers	4,782,224	18,809	
	<u>\$ 6,634,286</u>	<u>28,192</u>	<u>42.494</u>
Alternative investment, opportunistic and global diversified credit funds	<u>\$ 22,913,369</u>	<u>392,241</u>	<u>171.184</u>
<b>Other investment service fees:</b>			
Custodian		757	
Security Lending Fees		2,868	
Investment consultants		2,177	
		<u>5,802</u>	
<b>Total</b>	<u>\$ 75,964,433</u>	<u>\$ 426,235</u>	<u>56.110</u>

(a) Fees for alternative investment, opportunistic and global diversified credit funds includes includes the management fees.  
It does not include performance allocation.



# ACTUARIAL SECTION

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October 5, 2018

**BUCK GLOBAL, LLC**

The Board of Trustees

Public Employees' Retirement System

of New Jersey

**Re: Actuary's Certification Letter**

Members of the Board:

An actuarial valuation of the Public Employees' Retirement System of New Jersey ("PERS") is performed annually to measure the ongoing costs of the System (with required contributions determined separately for the State and Local employers) and the progress towards the funding goals of the System over time. In general, the financial goals of the PERS are a pattern of contributions, which is sufficient to cover the normal cost of the System plus the contribution towards the unfunded accrued liability. The information contained in this certification letter is based on the July 1, 2016 valuation of PERS.

In accordance with the New Jersey statutes, employers are required to make two contributions to the System, a normal contribution and an accrued liability contribution. The normal contribution for basic allowances is defined under the Projected Unit Credit funding method as the present value of the benefits accruing during the current year. Prior to the July 1, 2010 valuation, the unfunded accrued liability contribution for basic allowances and cost of living adjustments (COLAs) was determined as a level percentage of pay required to amortize the unfunded accrued liability over 30 years in annual payments increasing by 4% per year. The funding reform provisions of Chapter 78, P.L. 2011 changed the methodology used to amortize the unfunded accrued liability. Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation, the amortization period shall decrease by one year). Beginning with the July 1, 2029 actuarial valuation when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

The final Appropriation Act of fiscal year 2016 reduced the recommended State Pension contribution of \$1,182,038,756 to \$355,290,348. This amount excludes the Workers Compensation Judges Part contribution of \$678,348, which is payable by fund transfer from the Second Injury Fund and the Non-Contributory Group Insurance Premium of \$29,070,932. Accordingly, a fiscal year 2016 employer contribution of \$355,968,696 (\$355,290,348 plus Workers Compensation Judges Part transfers of \$678,348) was recognized for purposes of this valuation.

In addition, the valuation reflects the provisions of the Appropriations Act of 2017 for fiscal year 2017. The fiscal year 2017 actuarially determined State Pension contribution has been reduced from \$1,263,740,460 to \$505,496,184, discounted from the expected payable date of June 30, 2017 to the valuation date. This amount excludes the Worker Compensation Judges Part contribution of \$633,589, which is payable by fund transfer from the Second Injury Fund, and the estimated Non-Contributory Group Insurance Premium of \$34,803,000. Accordingly, a fiscal year 2017 employer contribution of \$506,129,773 (\$505,496,184 plus Workers Compensation Judges Part transfers of \$633,589) was recognized as a receivable contribution for purposes of this valuation. This amount may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

The State's actuarially determined contribution for the fiscal year beginning July 1, 2017 is \$1,324,313,829. This amount is comprised of an unfunded accrued liability payment of \$1,207,117,064 plus a normal contribution of \$117,196,765. This amount excludes the Worker Compensation Judges Part contribution of \$628,229, which is payable by fund transfer from the Second Injury Fund, and the estimated Non-Contributory Group Insurance Premium of \$34,413,000. This amount may be subject to change per the requirements of the State's fiscal year 2018 spending plan.

The valuation again reflects the provisions of Chapter 42, P.L. 2002, which allowed Local employers to issue refunding bonds to retire the unfunded accrued liability due to certain early retirement incentive programs.

The valuation reflects Chapter 19, P.L. 2009, which allowed the State Treasurer to reduce Local employers' normal and accrued liability contributions to 50% of the amount certified for the State fiscal year 2009. In addition, certain Local employers who were eligible under Chapter 19, P.L. 2009 to defer 50% of their fiscal year 2009 pension contribution but did not were permitted to defer 50% of their fiscal year 2010 pension contribution. This unfunded liability will be paid by the Local employers in level annual payments over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets. The legislation also provides that a Local employer may pay 100% of the actuarially determined contributions for State fiscal years 2009 and 2010. Such an employer will be credited with the full payments and any such amounts will not be included in their unfunded liability.

The underlying demographic data is maintained and provided by the New Jersey Division of Pensions and Benefits. You should ask Buck Global, LLC (Buck), formerly Conduent HR Consulting, LLC (Conduent), to review any statement you wish to make on the results contained in this report. Buck will

# ACTUARIAL INFORMATION

accept no liability for any such statement made without prior review by Buck. The data is analyzed by Buck for internal completeness and consistency and compared with the prior valuation data to again ensure consistency.

As required under Chapter 84, P.L. 1954, an actuarial investigation of the demographic experience of the members and beneficiaries of PERS is made once in every three-year period. The contributions for the fiscal year beginning July 1, 2016 were based on the actuarial assumptions that were determined from the July 1, 2011 to June 30, 2014 Experience Study and approved by the Board of Trustees at the October 14, 2015 Board meeting.

The Treasurer has recommended a change in the economic assumptions used for the valuation. The rate of investment return has been revised from 7.90% per annum to 7.65% per annum. The assumed future salary increases have been reduced by 0.5% at all ages for both the select and ultimate periods. In addition, the select period was extended from the fiscal year 2021 through the fiscal year 2025. As a result of the revised economic assumptions, the accrued liability increased \$199,010,114 for the State and \$251,983,145 for the Local Employers while the gross normal cost was reduced by \$8,730,793 for the State and by \$10,940,269 for the Local Employers. The net employer contribution decreased by \$18,779,500 for the State and by \$3,463,640 for the Local Employers. These assumptions will remain in effect for valuation purposes until such time the Board or Treasurer recommends revised assumptions.

The valuation cost method used is the projected unit credit method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. The asset valuation method used was a five-year average of market values with write-up. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis.

The valuation does not take into account any changes in U.S. equity prices and bond yields that have occurred after the valuation date. Taking these into account may significantly change the market and actuarial value of assets shown. The effect of these events on any funded ratios shown, and on Retirement System calculations, is not known. Retirement System funding and financial accounting rules generally prohibit reflection of changes in assets and underlying economic conditions that occur after the valuation date.

In our opinion, the attached schedules of valuation results fairly represent the status of the PERS and present an accurate view of historical data. The underlying assumptions and methods are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the System.

The following supporting schedules in the Actuarial Section were prepared by Buck:

- Summary of Actuarial Assumptions and Methods
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Schedule of Active Member Valuation Data
- Solvency Test
- Analysis of Past Financial Experience
- Reconciliation of Employer Contribution Rates
- Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

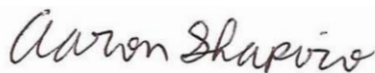
In addition, Buck prepared the "Schedule of Assets and Liabilities" and the "Schedule of Employer Contributions" in the Financial Section which can be found in the July 1, 2016 valuation report for PERS. The Schedule of Assets and Liabilities and the Schedule of Employer Contributions are provided for informational purposes only since the reporting requirements of Statements No. 67 and No. 68 which were effective as of the June 30, 2014 and June 30, 2015 reporting dates, respectively.

To the best of our knowledge, this information is complete and accurate. The valuation was performed by, and under the supervision of, independent qualified actuaries who are members of the American Academy of Actuaries with experience in performing valuations for public retirement systems.

The valuation was prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board and generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the Retirement System, and on actuarial assumptions that are individually and in the aggregate internally consistent and reasonable based on the actual experience of the Retirement System.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, FSA, EA, MAAA  
Principal, Consulting Actuary  
Buck Global, LLC

**Summary of Actuarial Assumptions and Methods**

Chapter 84, P.L. 1954 provides that once in every three-year period the actuary shall examine in detail the demographic experience of the members and beneficiaries of the PERS to assure that the tables used for determining expected liabilities are consistent with recent experience.

The demographic assumptions used for the July 1, 2016 actuarial valuation of the PERS were based on the results of the experience study, which covered the period from July 1, 2011 to June 30, 2014, which were approved by the Board of Trustees, and the revised economic assumptions, which were established for the July 1, 2015 valuation.

An outline of the actuarial assumptions and methods used for the July 1, 2016 valuation is as follows:

Valuation Interest Rate: 7.65% per annum, compounded annually.

Employee Contribution Interest Rate: 7.65% per annum.

COLA: No future COLA is assumed.

Compensation Limit Increase: 401(a)(17) Limit – 3.00% per annum, Social Security Wage Base – 4.00% per annum.

Separations from Service and Salary Increases: Representative values of the assumed annual rates of separation and annual rates of salary increases are as follows:

Age	Annual Rate of									
	Select Withdrawal						Ultimate Withdrawal <sup>1</sup>			
	1st Year		2nd Year		3rd Year		Prior to Eligibility For Benefit		After Eligibility For Benefit	
	State	Local	State	Local	State	Local	State	Local	State	Local
20	28.90%	40.19%	13.53%	15.12%	9.52%	12.19%	4.48%	6.31%	–	–
25	36.12	40.19	13.53	15.12	9.52	12.19	4.69	6.31	–	–
30	36.12	38.84	13.53	14.67	9.52	13.32	3.82	6.11	–	0.03%
35	26.14	33.51	10.83	11.74	7.99	10.77	2.86	3.99	0.05%	0.03
40	21.66	32.05	8.86	10.52	6.37	10.66	1.80	2.91	0.05	0.05
45	20.41	31.01	8.26	10.08	5.79	10.36	1.22	2.46	0.24	0.16
50	20.41	28.39	7.65	9.58	5.21	9.57	.90	1.94	1.10	0.64
55	20.41	27.96	7.65	9.40	5.21	9.08	.88	1.60	1.43	0.77
60	20.41	22.37	7.65	9.40	5.21	6.84	.88	1.52	0.90	0.77

<sup>1</sup> The rates of withdrawal prior to eligibility for a benefit assume a refund of contributions. The rates assumed for members withdrawing with a benefit are the sum of the rates of withdrawal after eligibility for a benefit and those prior to eligibility.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
PUBLIC EMPLOYEES' RETIREMENT SYSTEM

## Summary of Actuarial Assumptions and Methods, *continued*

Age	Annual Rate of									
	Ordinary Death <sup>2</sup>				Accidental Death		Ordinary Disability		Accidental Disability	
	State		Local		State	Local	State	Local	State	Local
	Male	Female	Male	Female						
20	0.03%	0.02%	0.03%	0.02%	0.001%	0.001%	0.005%	–	0.001%	0.001%
25	0.04	0.02	0.04	0.02	0.001	0.001	0.006	–	0.001	0.002
30	0.04	0.02	0.04	0.02	0.001	0.001	0.097	0.060%	0.004	0.004
35	0.05	0.03	0.06	0.02	0.001	0.001	0.216	0.189	0.011	0.005
40	0.08	0.05	0.10	0.04	0.001	0.001	0.304	0.269	0.020	0.012
45	0.11	0.08	0.13	0.06	0.001	0.001	0.410	0.363	0.023	0.017
50	0.16	0.12	0.19	0.09	0.001	0.001	0.462	0.434	0.035	0.021
55	0.23	0.18	0.26	0.14	0.001	0.001	0.559	0.587	0.047	0.026
60	0.33	0.28	0.40	0.21	0.001	0.001	0.987	0.759	0.041	0.030
65	0.54	0.43	0.65	0.33	0.001	0.001	1.190	0.932	0.061	0.027
69	0.76	0.58	0.86	0.47	0.001	0.001	1.417	1.110	0.062	0.027

<sup>2</sup> RP-2000 Employee Preretirement Mortality Table for male and female active participants. For State, mortality tables are set back 4 years for males and 4 years for females. For Employees of Local employers, mortality tables are set back 2 years for males and 7 years for females. In addition, the tables provide for future improvements in mortality from the base year of 2013 using a generational approach based on Buck Modified MP-2014. Rates shown above are unadjusted for Buck Modified MP-2014.

Age	Annual Rate of					
	Service Retirement		Salary Increases Effective as of July 1, 2016		Salary Increases Effective as of July 1, 2015	
	State	Local	FY2016 to FY2026	FY2027 and Thereafter	FY2015 to FY2021	FY2022 and Thereafter
20	–	–	4.15%	5.15%	4.65%	5.65%
25	–	–	3.90	4.90	4.40	5.40
30	–	–	3.65	4.65	4.15	5.15
35	–	–	3.40	4.40	3.90	4.90
40	–	–	3.15	4.15	3.65	4.65
45	–	–	2.90	3.90	3.40	4.40
50	–	–	2.65	3.65	3.15	4.15
55	17.50%	11.70%	2.40	3.40	2.90	3.90
60	9.00	7.80	2.15	3.15	2.65	3.65
65	16.20	16.54	1.65	2.65	2.15	3.15
69	15.00	11.55	1.65	2.65	2.15	3.15

**Summary of Actuarial Assumptions and Methods, continued**

**Prosecutors Part (Chapter 366, P.L. 2001)**

This legislation introduced special retirement eligibility for certain benefits. The valuation used the following annual rates of service retirement:

Age	Annual Rates of Retirement					
	Less than 20 Years		20 Years	21 to 24 Years	25 or More Years	
	State	Local			State	Local
40	0.00%	0.00%	2.50%	0.00%	23.10%	19.25%
45	0.00	0.00	2.50	0.00	23.10	19.25
50	0.00	0.00	3.75	0.00	23.10	19.25
55	2.59	3.06	5.00	0.00	26.22	21.85
60	2.63	3.06	5.00	0.00	34.17	28.48
65	2.63	3.06	37.50	0.00	100.00	100.00
69	2.63	3.06	37.50	0.00	100.00	100.00

**Deaths after Retirement**

The RP-2000 Combined Healthy Male and Female Mortality Tables (set back 1 year for males and females) for service retirement and beneficiaries of former members and a one year static projection based on mortality improvement scale AA. The RP-2000 Disabled Mortality Tables (set back 3 years for males and set forward 1 year for females) are used to value disabled retirees. In addition, the tables for service retirement and beneficiaries of former members provide for future improvements in mortality from the base year of 2013 using a generational approach based on the Buck Modified 2014 projection scale. Illustrative rates of mortality unadjusted for the Buck Modified 2014 projection scale are shown below:

Age	Service Retirements		Age	Disability Retirements	
	Men	Women		Men	Women
55	0.31%	0.24%	35	2.26%	0.75%
60	0.59	0.44	40	2.26	0.75
65	1.11	0.86	45	2.26	0.82
70	1.95	1.48	50	2.51	1.25
75	3.34	2.53	55	3.16	1.76
80	5.73	4.12	60	3.80	2.29
85	9.91	6.90	65	4.50	2.96

## Summary of Actuarial Assumptions and Methods, continued

### **Marriage**

Husbands are assumed to be three years older than wives. Among the active population, 100% of participants are assumed to be married.

### **Valuation Method**

Projected Unit Credit Method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains or losses are recognized in future accrued liability contributions. In accordance with Chapter 78, P.L. 2011, beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation, the amortization period shall decrease by one year). Beginning with the July 1, 2029 actuarial valuation when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

### **Receivable Contributions**

State contributions expected to be paid the June 30th following the valuation date are discounted by the valuation interest rate of 7.65% to the valuation date.

Local contributions expected to be paid the April 1st, following the valuation are discounted by the valuation interest rate of 7.65% to the valuation date.

### **Asset Valuation Method**

A five year average of market values with write-up was used. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis.



**Schedule of Retired Members and Beneficiaries  
 Added to and Removed from Rolls**

**State**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	3,515	\$109,122,538	2,203	\$40,303,068	55,386	\$1,474,917,885	4.93%	\$26,630
7/1/15	4,114	124,446,887	1,754	32,905,541	54,074	1,405,596,194	6.99	25,994
7/1/14	3,183	93,940,693	1,696	30,809,304	51,714	1,313,713,988	5.09	25,403
7/1/13	2,864	82,357,835	1,685	29,723,562	50,227	1,250,142,686	4.41	24,890
7/1/12	3,192	92,356,665	1,734	29,433,960	49,048	1,197,305,307	5.66	24,411
7/1/11	4,365	135,383,063	1,782	28,241,754	47,590	1,133,192,150	11.40	23,812

**Local Employers**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	7,856	\$159,065,854	5,681	\$72,685,490	114,738	\$1,975,865,848	4.63%	\$17,221
7/1/15	7,870	149,903,333	4,309	54,707,095	112,563	1,888,507,678	5.35	16,777
7/1/14	7,003	137,416,194	4,288	52,540,322	109,002	1,792,563,653	5.02	16,445
7/1/13	6,911	123,953,479	4,169	49,483,971	106,287	1,706,902,310	4.60	16,059
7/1/12	7,334	137,596,316	4,284	49,626,477	103,545	1,631,782,901	5.83	15,759
7/1/11	9,296	195,153,024	4,529	48,064,677	100,495	1,541,951,837	11.54	15,344

**Total System**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	11,371	\$268,188,392	7,884	\$112,961,558	170,124	\$3,450,783,733	4.76%	\$20,284
7/1/15	11,984	274,350,220	6,063	87,612,636	166,637	3,294,103,872	6.05	19,768
7/1/14	10,186	231,356,887	5,984	83,349,626	160,716	3,106,277,641	5.05	19,328
7/1/13	9,775	206,311,314	5,854	79,207,533	156,514	2,957,044,996	4.52	18,893
7/1/12	10,526	229,952,981	6,018	79,060,437	152,593	2,829,088,208	5.75	18,540
7/1/11	13,661	330,536,087	6,311	76,306,431	148,085	2,675,143,987	11.48	18,065

<sup>1</sup> These values include beneficiaries in receipt but exclude deferred vested terminations.

<sup>2</sup> The benefit amounts shown are the annualized benefits as of the valuation date and are not the actual benefits paid during the fiscal year.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
PUBLIC EMPLOYEES' RETIREMENT SYSTEM

## Schedule of Active Members Valuation Data

### State

Valuation Date	Number of Active Contributing Members	Annual Compensation	Average Compensation	% Increase in Average Compensation
7/1/16	68,502	\$4,369,066,658	\$63,780	0.02%
7/1/15	69,687	4,443,605,376	63,765	2.39
7/1/14	72,952	4,543,384,095	62,279	1.64
7/1/13	74,365	4,556,719,103	61,275	1.02
7/1/12	75,355	4,570,958,470	60,659	1.48
7/1/11	77,109	4,608,926,826	59,772	6.44

### Local Employers

Valuation Date	Number of Active Contributing Members	Annual Compensation	Average Compensation	% Increase in Average Compensation
7/1/16	149,077	\$6,927,278,654	\$46,468	2.76%
7/1/15	152,070	6,876,593,371	45,220	2.33
7/1/14	156,101	6,898,049,131	44,190	2.75
7/1/13	160,253	6,891,812,162	43,006	2.78
7/1/12	164,005	6,862,133,165	41,841	2.74
7/1/11	171,881	7,000,115,900	40,727	2.98

### Total System

Valuation Date	Number of Active Contributing Members	Annual Compensation	Average Compensation	% Increase in Average Compensation
7/1/16	217,579	\$11,296,345,312	\$51,918	1.70%
7/1/15	221,757	11,320,198,747	51,048	2.20
7/1/14	229,053	11,441,433,226	49,951	2.37
7/1/13	234,618	11,448,531,265	48,796	2.16
7/1/12	239,360	11,433,091,635	47,765	2.45
7/1/11	248,990	11,609,042,726	46,625	4.61

**Solvency Test**

**State**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$5,504,706,131	\$13,686,116,692	\$3,220,928,301	\$8,466,901,791	100.00%	21.64%	0.00%
7/1/15	5,302,732,138	12,797,013,628	3,535,761,532	8,868,254,006	100.00	27.86	0.00
7/1/14	5,169,631,309	11,857,858,226	3,815,201,383	9,128,235,998	100.00	33.38	0.00
7/1/13	4,885,643,785	11,293,634,256	3,814,679,391	9,614,698,050	100.00	41.87	0.00
7/1/12	4,562,712,648	10,849,987,028	3,970,884,963	9,774,698,097	100.00	48.04	0.00
7/1/11	4,295,868,689	10,055,639,293	3,939,321,039	10,062,648,618	100.00	57.35	0.00

**Local Employers**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$8,168,141,804	\$17,622,616,344	\$4,883,177,456	\$21,900,421,798	100.00%	77.92%	0.00%
7/1/15	7,829,248,004	16,502,540,582	5,100,106,614	21,495,828,937	100.00	82.82	0.00
7/1/14	7,477,372,802	15,523,266,419	5,254,437,999	20,766,663,796	100.00	85.61	0.00
7/1/13	7,060,416,742	14,775,793,049	5,169,572,726	19,978,598,632	100.00	87.43	0.00
7/1/12	6,614,992,298	14,150,003,241	5,244,042,802	19,376,646,934	100.00	90.19	0.00
7/1/11	6,244,282,760	13,077,334,135	5,357,478,680	18,997,383,783	100.00	97.52	0.00

**Total System**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$13,672,847,935	\$31,308,733,036	\$8,104,105,757	\$30,367,323,589	100.00%	53.32%	0.00%
7/1/15	13,131,980,142	29,299,554,210	8,635,868,146	30,364,082,943	100.00	58.81	0.00
7/1/14	12,647,004,111	27,381,124,645	9,069,639,382	29,894,899,794	100.00	62.99	0.00
7/1/13	11,946,060,527	26,069,427,305	8,984,252,117	29,593,296,682	100.00	67.69	0.00
7/1/12	11,177,704,946	24,999,990,269	9,214,927,765	29,151,345,031	100.00	71.89	0.00
7/1/11	10,540,151,449	23,132,973,428	9,296,799,719	29,060,032,401	100.00	80.06	0.00

<sup>1</sup> Actuarial Value including receivable amounts.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
PUBLIC EMPLOYEES' RETIREMENT SYSTEM

## Analysis of Past Financial Experience — Reconciliation of Employer Contribution Rates

### State

Valuation Year	July 1, 2016	July 1, 2015	July 1, 2014	July 1, 2013	July 1, 2012	July 1, 2011
Prior Year Contribution Rate	28.16% <sup>3</sup>	25.77% <sup>3</sup>	22.99% <sup>3</sup>	22.97% <sup>3</sup>	20.06% <sup>3</sup>	19.15% <sup>3</sup>
Adjustment for Full Member Contributions to Offset Normal Cost	N/A	N/A	N/A	(1.45)	N/A	N/A
Revised Prior Year Contribution Rate	N/A	N/A	N/A	21.52%	N/A	N/A
<b>Net Change Due to:</b>						
Current New Entrants	(0.05)	(0.04)	(0.04)	(0.03)	0.02	0.00
Excess Salary Increases	(0.29)	0.06	(0.10)	(0.23)	(0.14)	0.24
Assumption/Method Changes	0.29	0.05	0.04	0.00	0.80	(1.28)
COLA Increases and Phase-In	0.00	0.00	0.00	0.00	0.02	(0.13)
Active Experience	0.24	0.15	(0.01)	(0.19)	0.07	0.27
Other Experience	(0.37)	0.18	0.32	0.35	0.19	(0.16)
Investment Loss/(Gain)	0.54	0.32	0.17	0.47	0.67	0.48
Chapter 133 Benefit Improvements <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Net Effect of Chapter 133 <sup>1</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Chapter 366 Benefit Improvement	0.00	0.00	0.01	0.00	(0.01)	0.00
Net Effect of Chapter 366	0.01	0.03	0.02	0.00	0.01	0.01
Appropriation Act <sup>4</sup>	1.49	1.64	2.37	1.10	1.28	1.48
Chapter 21, P.L. 2008	N/A	N/A	N/A	N/A	N/A	N/A
Chapter 103, P.L. 2007	N/A	N/A	N/A	N/A	N/A	N/A
Chapter 78, P.L. 2011	N/A	N/A	N/A	N/A	N/A	N/A
Recommended Contribution Rate:						
• Prior to reflecting Chapter 1, P.L. 2010	30.02% <sup>3</sup>	28.16% <sup>3</sup>	25.77% <sup>3</sup>	22.99% <sup>3</sup>	22.97% <sup>3</sup>	20.06% <sup>3</sup>
• After reflecting Chapter 1, P.L. 2010	N/A	N/A	N/A	13.14% <sup>3</sup>	9.85% <sup>3</sup>	5.73% <sup>3</sup>

<sup>1</sup> The additional annual employer normal contribution for the increase in benefits is funded by assets accumulated in the Benefit Enhancement Fund.

<sup>2</sup> Includes the effect of additional cost due to Chapter 353, P.L. 2000.

<sup>3</sup> Excludes contribution rates payable to the Non-Contributing Group Insurance Premium Fund. The contribution rates are 0.79% for 2016, 0.78% for 2015, 0.76% for 2014, 0.75% for 2013, 0.73% for 2012, and 0.74% for 2011.

<sup>4</sup> Net change due to Appropriation Act for July 1, 2010 includes 0.03% change due to the Fiscal Year 2010 Appropriation Act and 1.00% change due to the Fiscal Year 2011 Appropriation Act. Net change for July 1, 2011, July 1, 2012, and July 1, 2013 are due to the provisions of Chapter 1, P.L. 2010.

**Analysis of Past Financial Experience —  
 Reconciliation of Employer Contribution Rates**

**Local**

<b>Valuation Year</b>	<b>July 1, 2016</b>	<b>July 1, 2015</b>	<b>July 1, 2014</b>	<b>July 1, 2013</b>	<b>July 1, 2012</b>	<b>July 1, 2011</b>
Prior Year Contribution Rate <sup>4</sup>	12.94% <sup>3</sup>	12.49% <sup>3</sup>	11.85% <sup>3</sup>	12.68% <sup>3</sup>	11.29% <sup>3</sup>	11.32% <sup>3</sup>
Adjustment for Full Member Contributions to Offset Normal Cost	N/A	N/A	N/A	(1.24)	N/A	N/A
Revised Prior Year Contribution Rate	N/A	N/A	N/A	11.44%	N/A	N/A
<b>Net Change Due to:</b>						
Current New Entrants	(0.05)	(0.04)	(0.03)	(0.02)	0.02	0.03
Excess Salary Increases	0.06	0.01	0.05	0.02	(0.02)	(0.12)
Assumption/Method Changes	0.18	0.18	0.06	0.00	0.38	(0.93)
COLA Increases and Phase-In	0.00	0.00	0.00	0.00	0.02	(0.11)
Active Experience	(0.05)	(0.05)	(0.02)	(0.36)	0.04	0.26
Other Experience	(0.41)	0.04	0.43	0.19	0.13	0.21
Investment Loss/(Gain)	0.66	0.30	0.16	0.59	0.83	0.77
Chapter 133 Benefit Improvements <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	(0.13)
Net Effect of Chapter 133 <sup>1</sup>	(0.58)	(0.62)	(0.64)	(0.67)	(0.68)	(0.69)
Chapter 366 Benefit Improvement	(0.01)	0.01	(0.01)	(0.01)	(0.01)	(0.01)
Net Effect of Chapter 366	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Chapter 108, P.L. 2003	0.00	0.00	0.00	0.00	0.00	0.00
Chapter 103, P.L. 2007	0.00	0.00	0.00	0.00	0.00	0.00
Chapter 78, P.L. 2011	N/A	N/A	N/A	N/A	N/A	N/A
<b>Recommended Contribution Rate<sup>5</sup></b>	<b>12.72%<sup>3</sup></b>	<b>12.30%<sup>3</sup></b>	<b>11.83%<sup>3</sup></b>	<b>11.16%<sup>3</sup></b>	<b>11.98%<sup>3</sup></b>	<b>10.58%<sup>3</sup></b>

<sup>1</sup> The additional annual employer normal contribution for the increase in benefits is funded by assets accumulated in the Benefit Enhancement Fund.

<sup>2</sup> Includes the effect of additional cost due to Chapter 353, P.L. 2000.

<sup>3</sup> Excludes contribution rates payable to the Non-Contributing Group Insurance Premium Fund. The contribution rates are 0.65% for 2016, 0.61% for 2015, 0.63% for 2014, 0.76% for 2013, 0.18% for 2012, and 0.63% for 2011.

<sup>4</sup> Prior to the reallocation of State paid Local obligations due to Chapter 133, P.L. 2001 and Chapter 366, P.L. 2001.

<sup>5</sup> After the reallocation of State paid Local obligations due to Chapter 133, P.L. 2001 and Chapter 366, P.L. 2001.

## Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

### 1. Definitions

#### Final Compensation (FC)

Average annual compensation for the three years of creditable service immediately preceding retirement or the highest three fiscal years of membership service. Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code. Chapter 103, P.L. 2007 provides that for Class D, Class E, Class F and Class G members, the amount of compensation used for employer and member contributions and benefits under the System cannot exceed the annual maximum wage contribution base for Social Security, pursuant to the Federal Insurance Contributions Act. Chapter 1, P.L. 2010 provides that for Class F and Class G members FC is the average annual compensation for the five years of creditable service immediately preceding retirement or the highest five fiscal years of membership service.

#### Accumulated Deductions

Sum of all required amounts deducted from the compensation of a member or contributed by him.

#### Class B Member

Any member who was hired prior to July 1, 2007.

#### Class D Member

Any member who was hired on or after July 1, 2007, but prior to November 2, 2008.

#### Class E Member

Any member who was hired after November 1, 2008, but prior to May 22, 2010.

#### Class F Member

Any member who was hired on or after May 22, 2010, but prior to June 28, 2011.

#### Class G Member

Any member who was hired on or after June 28, 2011.

### 2. Benefits<sup>1</sup>

#### Service Retirement

Eligible at age 60. Benefit equals a member annuity plus an employer pension, which together, equal 1/55th of FC for each year of service. Chapter 89, P.L. 2008 changed the eligibility age to age 62 for Class E members, Chapter 1, P.L. 2010 changed the eligibility age to age 62 for Class F members and changed the basic accrual rate from 1/55th to 1/60th of FC for each year of service for Class F and Class

G members and Chapter 78, P.L. 2011 changed the eligibility age to age 65 for Class G members.

#### Ordinary Disability Retirement

Eligible after 10 years of service. Benefit equals a member annuity plus an employer pension which, together, equal 1.64% of FC for each year of service; minimum benefit of 43.6% of FC. Class F and Class G members are not eligible for an Ordinary Disability Retirement benefit in accordance with Chapter 3, P.L. 2010.

#### Accidental Disability

Eligible upon total and permanent disability prior to age 65 as a result of a duty injury. Benefit equals a member annuity plus an employer pension which, together, equal 72.7% of contributory compensation at the date of injury. Class F and Class G members are not eligible for an Accidental Disability Retirement benefit in accordance with Chapter 3, P.L. 2010.

#### Lump Sum Withdrawal

Eligible upon service termination prior to age 60 (age 62 for Class E and Class F members and age 65 for Class G members) and prior to 10 years of service. Benefit equals refund of accumulated deductions plus, if the member has completed three years of service, interest allowed thereon.

#### Vested Retirement

Eligible after 10 years of service. Benefit equals the lump sum benefit described above or a deferred retirement benefit, commencing at age 60 (age 62 for Class E and Class F members and age 65 for Class G members), equal to the service retirement benefit based on service and FC at date of termination.

#### Early Retirement

Eligible after 25 years of service (30 years of service for Class G members). Benefit equals the lump sum benefit described above or the vested benefit reduced by 1/4 percent for each month the retirement date precedes age 55. Chapter 103, P.L. 2007 provides that for Class D members, the reduction shall be 1/12 percent for each month (up to 60 months) the retirement date precedes age 60 plus 1/4 percent for each month the retirement date precedes age 55. Chapter 89, P.L. 2008 and Chapter 1, P.L. 2010 provides that for Class E and Class F members, the reduction shall be 1/12 percent for each month (up to 84 months) the retirement date precedes age 62 plus 1/4 percent for each month the retirement date precedes age 55. Chapter 78, P.L. 2011 provides that for Class G members, the reduction shall be 1/4 percent for each month the retirement date precedes age 65.

<sup>1</sup> Special benefits for veterans, law enforcement officers, legislators, prosecutors, and workers' compensation judges are summarized at the end of this section.

## **Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes, *continued***

### **Ordinary Death (Insured)**

#### ***Before Retirement***

Eligible if active. Benefit equals accumulated deductions with interest plus an amount equal to 1-1/2 times contributory compensation at date of death.

#### ***After Retirement - Before Age 60***

Eligible if disabled or vested terminated. Benefit equals 1-1/2 times last contributory compensation if disabled, accumulated deductions only if vested terminated.

#### ***After Retirement - After Age 60 or Early Retirement***

Eligible after early retirement or after attainment of age 60 for other types of retirement (if not disabled, 10 years of service credit required on members enrolling after July 1, 1971). Benefit equals 3/16 of last contributory compensation.

### **Voluntary Death Benefit**

An additional, employee-paid, death benefit is also available through the purchase of group insurance with an outside carrier.

### **Accidental Death**

Eligible upon death resulting during performance of duty. Benefit varies as follows:

#### ***Widow(er)***

50% of contributory compensation paid as pension.

#### ***Child(ren)***

No spouse - 20% (1 child), 35% (2 children), 50% (3 or more children) of contributory compensation paid as pension to age 18 or life if disabled.

#### ***Surviving dependent parent***

No spouse or child - 25% (1 parent) or 40% (2 parents) of contributory compensation paid as pension.

#### ***No relation above***

Accumulated deductions paid to other beneficiary or estate.

In addition the employer-paid lump sum ordinary death benefit is paid.

### **Optional Benefits**

Various forms of payment of equivalent actuarial value are available to retirees.

### **Special Benefits**

#### **Veterans**

##### ***Service Retirement***

Eligible if member on January 2, 1955, attains age 60, completes 20 years of service. Benefit equals 54.5% of final contributory compensation (veteran members after January 2, 1955, must attain age 55 with 25 years of service or age 60 with 20 years of service).

##### ***Chapter 220 Benefit***

Eligible if age 55 and completes 35 years of service. Benefit equals 1/55th of the compensation for the 12-month period of membership that provides the largest possible benefit multiplied by the member's total years of service.

#### **Law Enforcement**

##### ***Service Retirement***

Eligible at age 55 after 20 years of service. Benefit equals a member annuity plus an employer pension which, together, equal 2% of final contributory compensation for each of the first 25 years of service plus 1% of such compensation for non-contributory service or service over 25 years plus 1-2/3% for non-law enforcement service.

##### ***Chapter 4, P.L. 2001 Special Retirement***

After completion of 25 years of service, an additional retirement benefit equal to 5% of final contributory pay is added to the above service related retirement benefit. There is a maximum total benefit of 70% of final contributory pay.

##### ***Ordinary Disability***

Eligible after five years of service. Benefit is the same as for regular members.

##### ***Death After Retirement***

Eligible upon death after an accidental disability retirement. Benefit is the same as for a regular member with a \$5,000 minimum.

#### **Legislators**

##### ***Service Retirement***

Eligible at age 60 and termination of all public service. Benefit is equal to a member annuity plus an employer pension which, together, equal 3% of final contributory compensation for each year of service to a maximum of 2/3 of final compensation.



## **Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes, *continued***

### ***Vested Retirement***

Eligible after eight years of legislative service. Benefit is a service retirement benefit deferred to age 60 or, alternatively, a lump sum equal to his accumulated deductions.

### ***Prosecutors Part (Chapter 366, P.L. 2001)***

#### ***Service Retirement***

Eligibility means age 55 or 20 years of credited service. Mandatory retirement at age 70. Benefit is an annual retirement allowance equal to a member annuity plus an employer pension, which together equals the greater of:

- i. 1/60th of FC for each year service; or
- ii. 2% of FC multiplied by years of service up to 30 plus 1% of FC multiplied by years of service over 30; or
- iii. 50% of final contributory compensation if the member has 20 or more years of service.

Chapter 366 also requires that, in addition to the 50% of final contributory compensation benefit, any member as of January 7, 2002, who will have 20 or more years of service and is required to retire upon attaining age 70, shall receive an additional benefit equal to 3% of final contributory compensation for each year of service over 20 years but not over 25 years.

### ***Special Retirement***

After completion of 25 years of service. The annual retirement benefit is equal to a member annuity plus an employer pension which together equal 65% of final contributory compensation plus 1% of final contributory compensation for each year of service over 25. There is a maximum benefit of 70% of final contributory compensation.

### ***Vested Termination***

Eligible upon termination of service prior to age 55 and after 10 years of Service (but less than 20 years). The benefit is a deferred retirement benefit, commencing at age 55, equal to a member annuity plus an employer pension which together provide a retirement allowance equal to 2% of final contributory compensation multiplied by service up to 30 plus 1% of final contributory compensation multiplied by years of service in excess of 30.

### ***Death Benefits***

#### ***Ordinary Death Benefit – Lump Sum***

After retirement but prior to age 55, the benefit is as follows:

- i. For death while a Disabled Retiree the benefit is equal to 1-1/2 times Compensation.

ii. For death while a Deferred Retiree the benefit is equal to his Accumulated Deductions.

iii. For death while a Retiree who has completed 20 years of Service, the benefit is equal to ½ times final contributory compensation.

After retirement and after age 55, the benefit payable is equal to ½ times final contributory compensation.

Chapter 1, P.L. 2010, closes the Prosecutors Part of the System to new members enrolled on or after May 22, 2010.

### ***Workers' Compensation Judges Part (Chapter 259, P.L. 2001)***

#### ***Service Retirement***

A. Mandatory retirement at age 70. Voluntary retirement prior to age 70 as follows:

- i. Age 70 and 10 years of service as a judge of compensation;
- ii. Age 65 and 15 years of service as a judge of compensation; or
- iii. Age 60 and 20 years of as of judge of compensation service.

Benefit is an annual retirement allowance equal to the greater of 75% of final salary or the regular service retirement benefit above.

B. Age 65 while serving as a judge of compensation, five consecutive years of service as a judge of compensation and 15 years in the aggregate of public service; or

Age 60 while serving as a judge, five consecutive years of service as a judge of compensation and 20 years in the aggregate of public service.

Benefit is an annual retirement allowance equal to the greater of 50% of final salary or the regular service retirement benefit above.

C. Age 60 while serving as a judge of compensation, five consecutive years of service as a judge of compensation and 15 years in the aggregate of public service. Benefit is an annual retirement allowance equal to the greater of 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year in excess of 25 years or the regular service retirement benefit above.



## **Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes, *continued***

- D. Age 60 while serving as a judge of compensation. Benefit is an annual retirement allowance equal to the greater of 2% of final salary for each year of service as a judge of compensation up to 25 years plus 1% for each year in excess of 25 years or the regular service retirement benefit above.

### **Early Retirement**

Prior to age 60 while serving as a judge of compensation, five consecutive years of service as a judge of compensation and 25 or more years in the aggregate of public service. Benefit is an annual retirement allowance equal to 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year of public service in excess of 25 years, actuarially reduced for commencement prior to age 60.

### **Vested Termination**

Termination of service prior to age 60, with 5 consecutive years of service as a judge of compensation and 10 years in the aggregate of public service. Benefit is a refund of accumulated deductions, or a deferred life annuity beginning at age 60 equal to 2% of final salary for each year of public service up to 25 years, plus 1% for service in excess of 25 years.

### **Death Benefits (Insured)**

#### **Before Retirement**

Death of an active member of the plan. Benefit is equal to

- i. Lump sum payment equal to 1-1/2 times final salary, plus
- ii. Spousal life annuity of 25% of final salary plus 10% (15%) to one (two or more) surviving children payable until spouse's death or remarriage. If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child (children). If there is no surviving spouse (or dependent children), 20% or 30% of final salary to one or two dependent parents.

#### **After Retirement**

Death of a retired member of the plan. Benefit is equal to a lump sum of 25% of final salary for a member retired under normal, early retirement or vested termination. If a member were receiving a disability benefit, a lump sum 1-1/2 times final salary if death occurred before the member attained age 60 and 1/4 times final salary if death occurred after age 60.

Chapter 92, P.L. 2007, closes the Workers' Compensation Judges Part of the System to new members enrolled after June 8, 2007.

## **3. Contributions**

### **By Members**

Members enrolling in the retirement system on or after July 1, 1994 will contribute 5% of compensation. Members enrolled prior to July 1, 1994 will contribute 5% of compensation to the retirement system effective July 1, 1995 unless they previously had contributed less than 6% in which case they will contribute 4% of compensation beginning July 1, 1995 and 5% of compensation beginning July 1, 1996. Chapter 103, P.L. 2007 increases the contribution rate to 5.5% of compensation effective, generally, July 1, 2007 for State employees and July 1, 2008 for Local employees. Chapter 78, P.L. 2011 increases the contribution rate from 5.5% to 6.5% of compensation with the increase effective October 2011. Further, beginning July 2012, the member contribution rate will increase by 1/7th of 1% each July until a 7.5% member contribution rate is reached in July 2018.

A 7.50% member contribution rate for members who are eligible to retire under the Prosecutors Part of the Retirement System as provided by Chapter 366, P.L. 2001, was used prior to July 1, 2008. Effective July 1, 2008 the member contribution rate was increased to 8.50%. Chapter 78, P.L. 2011, increases the contribution rate from 8.5% to 10.0% of compensation with the increase effective October 2011.

### **By Employers**

#### **Normal Contribution**

The State and Local employers pay annually a normal contribution to the retirement System. This contribution is determined each year on the basis of the annual valuation and represents the value of the benefits to be earned in the year following the valuation date. The normal contributions for active members' COLA are being phased in. Chapter 78, P.L. 2011, suspended future COLAs for current and future retirees and beneficiaries until reactivated as permitted by law.

In accordance with the provisions of Chapter 79, P.L. 1960, the monies appropriated for payment of the noncontributory life insurance coverage shall be held separate from the retirement System monies.

In accordance with the provisions of Chapter 133, P.L. 2001, the Benefit Enhancement Fund (BEF) was established to fund the additional annual employer normal contribution due to the law's increased benefits. (Chapter 353, P.L. 2001, extended this coverage to this law's additional annual employer normal contribution.) If the assets in the BEF are insufficient to cover the normal contribution for the increased benefits for a valuation period, the State will pay such amount for both the State and local employers.

## **Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes, *continued***

In accordance with the provisions of Chapter 259, P.L. 2001, the additional normal contributions for increased benefits to judges of compensation for a valuation period will be funded by transfers from the Second Injury Fund.

Chapter 19, P.L. 2009, provides that the State Treasurer will reduce for Local employers the normal contribution to 50% of the amount certified for fiscal year 2009. This unfunded liability will be paid by the Local employers in level annual payments over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets. The legislation also provides that a Local employer may pay 100% of the recommended contribution for fiscal year 2009. Local employers who were eligible but did not elect to take advantage of Chapter 19, P.L. 2009, were permitted to elect to defer 50% of the 2010 fiscal year required contribution with the first payment due in the fiscal year ending June 30, 2012.

### ***Accrued Liability Contributions***

The State and Local employers pay contributions to cover any unfunded accrued liability. An unfunded accrued liability was established for active life COLAs. The amortization periods for funding these liabilities were set initially at 40 years. Experience gains or losses for the 10 valuation years following the March 31, 1992 valuation will increase or decrease the unfunded accrued liability. Thereafter, actuarial gains or losses will increase or decrease the amortization period unless an increase will cause it to exceed 30 years. Chapter 78, P.L. 2011, suspended future COLAs for current and future retirees and beneficiaries until reactivated as permitted by law and changed the methodology used to amortize the unfunded accrued liability. Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation, the amortization period shall de-

crease by one year). Beginning with the July 1, 2029 actuarial valuation when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

Chapter 366, P.L. 2001, requires the State be liable for any increase in pension costs to a county that results from the enrollment of prosecutors in the Prosecutors Part. Any increase in the unfunded accrued liability in the Retirement System arising from the benefits established for the Prosecutors Part are to be amortized over a period of 30 years in the manner provided for other such liability in the Retirement System.

In accordance with the provisions of Chapter 259, P.L. 2001, the additional accrued liability contribution for increased benefits to judges of compensation for a valuation period will be funded by transfers from the Second Injury Fund.

Chapter 19, P.L. 2009, provides that the State Treasurer will reduce for Local employers the accrued liability contribution to 50% of the amount certified for fiscal year 2009. This unfunded liability will be paid by the Local employers in level annual payments over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets. The legislation also provides that a Local employer may pay 100% of the recommended contribution for fiscal year 2009. Local employers who were eligible but did not elect to defer 50% of the 2009 fiscal year contribution were permitted to elect to defer 50% of the 2010 fiscal year contribution with the first payment due in the fiscal year ending June 30, 2012.



February 3, 2017

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The Board of Trustees

Teachers' Pension and Annuity Fund  
of New Jersey

## **Re: Actuary's Certification Letter**

Members of the Board:

This report presents the results of the actuarial valuation of Teachers' Pension and Annuity Fund of New Jersey as of June 30, 2016. Section I contains highlights of the valuation including a general discussion and comments on the various schedules included in the report. The subsequent Sections contain schedules summarizing the underlying calculations, asset information, participant data, plan benefits and actuarial assumptions.

### Purpose

The main purposes of this report are:

- to provide the annual state contribution in accordance with N.J. Statutes to be made in the Fiscal Year ending June 30, 2018 which represents the contribution for the valuation year beginning July 1, 2016;
- to determine the Target Funded Ratio as of July 1, 2016 in accordance with N.J. Statutes to potentially provide for the formation of a special pension committee;
- to review the experience under the plan for the valuation year ending June 30, 2016.

Actuarial computations presented in this report are for purposes of determining the statutory contribution amounts and Target Funded Ratio for TPAF. Actuarial computations under GASB Statements No. 67 and No. 68 are provided in a separate report and are for purposes of assisting TPAF and participating employers in fulfilling their financial accounting requirements. The computations prepared for these two purposes may differ. The calculations in the enclosed report have been made on a basis consistent with our understanding of the N.J. statutes. Determinations for purposes other than these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the use and benefit of the Teachers' Pension and Annuity Fund ("System") for the State of New Jersey Division of Pension and Benefits. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception:

- The System may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

### Data Reliance

In preparing this report, we relied, without audit, on statutory provisions, member census data, plan provisions, asset statements and other information (both written and oral) provided by the State of New Jersey Division of Pensions and Benefits. We have not audited or verified the census data, asset statements or other information. To the extent any of these are inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

# ACTUARIAL INFORMATION

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

## Future Measurements

This valuation report is only an estimate of TPAF's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of TPAF benefits, only the timing of TPAF contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial methods; and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board and State Treasurer have the final decision regarding the appropriateness of the assumptions and actuarial cost methods.

## Certification

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods adopted by the Board or mandated by statute, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

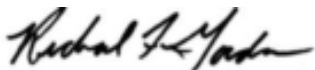
In compliance with New Jersey statute, this actuarial valuation is based on an investment return assumption of 7.65%, which is 25 basis points lower than the assumption of 7.90% used in the prior valuation. The investment return assumption is specified by the State Treasurer and is considered a prescribed assumption as defined by Actuarial Standard of Practice No. 27 (ASOP 27). Based on Milliman's capital market outlook model, this assumption is anticipated to be achieved approximately 1/3rd of the time, which is an increase from approximately 1/4th of the time, based on This work product was prepared solely for the State of NJ and may not be appropriate for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. projected annualized 30-year returns. We believe consideration should be given to reducing the investment return assumption further. If the investment return was lowered, the actuarial accrued liability and statutory contributions would increase and the funded ratio would decrease. Determining results at an alternative investment return assumption is outside the scope of our assignment.

This actuarial valuation is based on the asset valuation method in compliance with New Jersey Statute. This method recognizes 20% of the difference between the market value of assets and the actuarial value of assets. Per Actuarial Standards of Practice (ASOP) No. 44, a reasonable asset valuation method produces values within a sufficiently narrow range around market value or recognizes differences from market value in a sufficiently short period. As of June 30, 2016, the Actuarial Value of Assets is 114.5% of market value. Investment losses have occurred each year since the July 1, 2000 actuarial valuation on an actuarial value of asset basis. Combining an optimistic investment return assumption with a current actuarial value of assets that exceeds the market value of assets, along with an asset smoothing method which recognizes investment losses very slowly over time, will result in upward pressure on actuarially determined contribution requirements in future years.

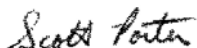
We are members of the American Academy of Actuaries and meet its Qualification Standard to render this actuarial opinion.

Respectfully submitted,

By:



Richard L. Gordon, F.S.A.  
Member American Academy of Actuaries



Scott F. Porter, F.S.A.  
Member American Academy of Actuaries

**Summary of Actuarial Assumptions and Methods**

**A. Actuarial Assumptions**

**Interest:** 7.65% per annum, compounded annually (as prescribed by the State Treasurer).

**Salary Scale:** Salary increases vary by years of employment and time period averaging 3.40% for periods prior to June 30, 2026 and averaging 4.21% thereafter. Average percentages based on 2015 Experience Study. Schedule of annual rates are shown below.

Years of Employment	Select Period Ending	
	June 30, 2026	Ultimate Period
0-8	3.80%	4.90%
9-12	4.55	5.45
13	4.30	5.30
14	4.15	4.95
15	3.95	4.55
16	3.40	4.00
17	3.15	3.65
18	2.85	3.45
19	2.70	3.20
20	2.50	3.10
21	2.25	2.75
22	2.00	2.60
23-25	1.90	2.45
26-30	1.70	2.30
31+	1.55	2.00

**Increases in Compensation Limits:** The IRC Section 401(a)(17) limit is assumed to increase 2.3% per annum through June 30, 2026 and 2.6% thereafter, compounded annually. The Social Security Taxable Wage Base is assumed to increase 3.3% per annum through June 30, 2026 and 3.6% thereafter. The actual base is used for the 2017 plan year.

# ACTUARIAL INFORMATION

## Summary of Actuarial Assumptions and Methods, continued

### A. Actuarial Assumptions (Continued)

**Termination:** Withdrawal rates vary by age, years of employment and gender. Illustrative rates are shown below:

Years of Employment	Less Than 10 Years of Employment		
	Male	Female	
		<40	40+
0	10.23%	9.66%	10.96%
1	7.64	6.80	7.57
2	6.89	6.58	6.85
3	5.12	5.39	5.16
4	3.46	4.76	3.18
5	2.77	4.49	2.75
6	2.09	4.30	2.07
7	1.85	3.98	1.78
8	1.50	3.80	1.38
9	1.25	3.23	1.39

**Summary of Actuarial Assumptions and Methods, continued**

**A. Actuarial Assumptions (Continued)**

Age	Annual Rates for Those With Deferred Annuity Benefits*					
	10-14 Years of Employment		15-19 Years of Employment		20-24 Years of Employment	
	Male	Female	Male	Female	Male	Female
30	0.67%	2.30%	0.47%	2.08%	0.27%	0.55%
35	0.63	1.88	0.42	1.40	0.27	0.55
40	0.60	1.17	0.38	0.70	0.26	0.43
45	0.63	0.74	0.36	0.46	0.25	0.27
50	0.77	0.22	0.50	0.48	0.31	0.28
55	1.10	1.20	0.83	0.80	0.54	0.53

\*Members must have attained 10 years of service or 60 years of age (62 years of age for Class E and F members, 65 years of age for Class G members) in order to receive an annuity benefit.

Age	Annual Rates for Those Receiving Return of Contributions					
	10-14 Years of Employment		15-19 Years of Employment		20-24 Years of Employment	
	Male	Female	Male	Female	Male	Female
30	0.45%	0.77%	0.31%	0.69%	0.18%	0.19%
35	0.42	0.62	0.28	0.47	0.18	0.19
40	0.39	0.39	0.25	0.24	0.18	0.14
45	0.42	0.25	0.25	0.15	0.16	0.09
50	0.33	0.24	0.22	0.16	0.13	0.09
55	0.28	0.21	0.21	0.14	0.13	0.09

# ACTUARIAL INFORMATION

## Summary of Actuarial Assumptions and Methods, *continued*

### A. Actuarial Assumptions (Continued)

**Retirement:** Rates of retirement vary by age, gender and eligibility for an unreduced pension and post-retirement medical benefits.

The rates listed below are for members hired prior to July 1, 2007 (Class A and B employees). Illustrative rates are shown below.

Age	Less Than Age 55 or Less Than 25 Years of Service		Attainment of Age 55 and 25 Years of Service			
			First Eligibility		After First Eligibility	
	Male	Female	Male	Female	Male	Female
<47	1.2%	1.2%	N/A	N/A	N/A	N/A
48	1.5	1.5	N/A	N/A	N/A	N/A
49	1.7	1.7	N/A	N/A	N/A	N/A
50	2.0	2.0	N/A	N/A	N/A	N/A
51	2.4	2.4	N/A	N/A	N/A	N/A
52	2.8	2.8	N/A	N/A	N/A	N/A
53	3.8	3.8	N/A	N/A	N/A	N/A
54	4.8	4.8	N/A	N/A	N/A	N/A
55	N/A	N/A	15.0%	17.0%	N/A	N/A
56	N/A	N/A	22.0	19.0	12.0%	13.0%
57	N/A	N/A	22.0	19.0	13.0	14.0
58	N/A	N/A	28.0	27.0	14.0	15.0
59	N/A	N/A	28.0	27.0	16.0	17.0
60	7.0	5.0	35.0	33.0	20.0	21.0
61	6.5	5.0	32.0	38.0	22.5	23.0
62	8.0	7.5	45.0	50.0	35.0	32.0
63	9.0	7.5	45.0	50.0	30.0	29.0
64	9.0	7.5	45.0	50.0	30.0	29.0
65	14.0	12.0	50.0	55.0	33.0	33.0
66-70	18.0	15.0	55.0	55.0	30.0	30.0
71+	19.0	16.0	55.0	55.0	27.0	30.0



**Summary of Actuarial Assumptions and Methods, continued**

**A. Actuarial Assumptions (Continued)**

The rates listed below are for members hired on or after July 1, 2007, and before November 2, 2008 (Class D employees). Illustrative rates are shown below.

Age	Less Than Age 60 or Less Than 25 Years of Service		Attainment of Age 60 and 25 Years of Service			
			First Eligibility		After First Eligibility	
	Male	Female	Male	Female	Male	Female
<47	0.6%	0.6%	N/A	N/A	N/A	N/A
48	0.8	0.8	N/A	N/A	N/A	N/A
49	0.9	0.9	N/A	N/A	N/A	N/A
50	1.0	1.0	N/A	N/A	N/A	N/A
51	1.2	1.2	N/A	N/A	N/A	N/A
52	1.4	1.4	N/A	N/A	N/A	N/A
53	1.9	1.9	N/A	N/A	N/A	N/A
54	2.4	2.4	N/A	N/A	N/A	N/A
55	11.5	11.5	N/A	N/A	N/A	N/A
56	12.0	12.0	N/A	N/A	N/A	N/A
57	12.5	12.5	N/A	N/A	N/A	N/A
58	13.5	13.5	N/A	N/A	N/A	N/A
59	14.0	14.0	N/A	N/A	N/A	N/A
60	7.0	5.0	32.0%	31.0%	N/A	N/A
61	6.5	5.0	32.0	38.0	22.5%	23.0%
62	8.0	7.5	45.0	50.0	35.0	32.0
63	9.0	7.5	45.0	50.0	30.0	29.0
64	9.0	7.5	45.0	50.0	30.0	29.0
65	14.0	12.0	50.0	55.0	33.0	33.0
66-70	18.0	15.0	55.0	55.0	30.0	30.0
71+	19.0	16.0	55.0	55.0	27.0	30.0

# ACTUARIAL INFORMATION

## Summary of Actuarial Assumptions and Methods, continued

### A. Actuarial Assumptions (Continued)

The rates listed below are for members hired after November 1, 2008, and before June 28, 2011 (Class E and Class F employees). Illustrative rates are shown below.

Age	Less Than Age 62 or Less Than 25 Years of Service		Attainment of Age 62 and 25 Years of Service			
			First Eligibility		After First Eligibility	
	Male	Female	Male	Female	Male	Female
<47	0.6%	0.6%	N/A	N/A	N/A	N/A
48	0.7	0.7	N/A	N/A	N/A	N/A
49	0.8	0.8	N/A	N/A	N/A	N/A
50	0.9	0.9	N/A	N/A	N/A	N/A
51	1.1	1.1	N/A	N/A	N/A	N/A
52	1.3	1.3	N/A	N/A	N/A	N/A
53	1.7	1.7	N/A	N/A	N/A	N/A
54	2.2	2.2	N/A	N/A	N/A	N/A
55	10.5	10.5	N/A	N/A	N/A	N/A
56	10.8	10.8	N/A	N/A	N/A	N/A
57	11.0	11.0	N/A	N/A	N/A	N/A
58	12.0	12.0	N/A	N/A	N/A	N/A
59	12.5	12.5	N/A	N/A	N/A	N/A
60	20.0	20.0	N/A	N/A	N/A	N/A
61	22.0	22.0	N/A	N/A	N/A	N/A
62	30.0	24.0	50.0%	46.0%	N/A	N/A
63	9.0	7.5	45.0	50.0	30.0%	29.0%
64	9.0	7.5	45.0	50.0	30.0	29.0
65	14.0	12.0	50.0	55.0	33.0	33.0
66-70	18.0	15.0	55.0	55.0	30.0	30.0
71+	19.0	16.0	55.0	55.0	27.0	30.0

**Summary of Actuarial Assumptions and Methods, continued**

**A. Actuarial Assumptions (Continued)**

The rates listed below are for members hired on or after June 28, 2011 (Class G employees). Illustrative rates are shown below.

Age	Less Than Age 65 or Less Than 30 Years of Service		Attainment of Age 65 and 30 Years of Service			
			First Eligibility		After First Eligibility	
	Male	Female	Male	Female	Male	Female
<47	0.3%	0.3%	N/A	N/A	N/A	N/A
48	0.4	0.4	N/A	N/A	N/A	N/A
49	0.4	0.4	N/A	N/A	N/A	N/A
50	0.5	0.5	N/A	N/A	N/A	N/A
51	0.6	0.6	N/A	N/A	N/A	N/A
52	0.7	0.7	N/A	N/A	N/A	N/A
53	0.9	0.9	N/A	N/A	N/A	N/A
54	1.1	1.1	N/A	N/A	N/A	N/A
55	5.0	5.0	N/A	N/A	N/A	N/A
56	6.0	6.0	N/A	N/A	N/A	N/A
57	7.0	7.0	N/A	N/A	N/A	N/A
58	8.0	8.0	N/A	N/A	N/A	N/A
59	9.0	9.0	N/A	N/A	N/A	N/A
60	15.0	15.0	N/A	N/A	N/A	N/A
61	16.0	16.0	N/A	N/A	N/A	N/A
62	36.0	32.0	N/A	N/A	N/A	N/A
63	28.0	28.0	N/A	N/A	N/A	N/A
64	28.0	28.0	N/A	N/A	N/A	N/A
65	40.0	40.0	50.0%	55.0%	N/A	N/A
66-70	18.0	15.0	55.0	55.0	30.0%	30.0%
71+	19.0	16.0	55.0	55.0	27.0	30.0

## Summary of Actuarial Assumptions and Methods, *continued*

### A. Actuarial Assumptions (Continued)

**Disability:** Incidence of ordinary disabilities among active members apply upon the attainment of 10 years of service until the attainment of first eligibility for retirement. For members eligible for early retirement, the greater of the early retirement and disability benefit is valued. The rates vary by age, gender and type of disability. Illustrative rates are shown below:

Age	Ordinary		Accidental	
	Male	Female	Male	Female
25	0.0301%	0.0379%	0.0060%	0.0060%
30	0.0473	0.0550	0.0060	0.0060
35	0.0609	0.0674	0.0060	0.0060
40	0.0701	0.0893	0.0060	0.0060
45	0.1023	0.1317	0.0060	0.0060
50	0.1421	0.1759	0.0060	0.0060
55	0.4686	0.3506	0.0060	0.0060

For Class F and G members assumed to receive a disability benefit under Chapter 3, P.L. 2010, it is assumed that these members will begin receiving their retirement benefit at age 70. The valuation excludes benefits paid from any disability income policy prior to retirement since these benefits are not paid from TPAF.

**Pre-retirement Mortality:** RP-2006 employee mortality table with white collar adjustments setback 5 years for females and 3 years for males. Mortality improvements are projected using a 60-year average of rates of improvement using Social Security data from 1953 to 2013. Illustrative rates for the base year are shown below. No accidental deaths are assumed.

Age	Ordinary		Mortality Improvement	
	Male	Female	Male	Female
25	0.0412%	0.0171%	0.82%	0.82%
30	0.0341	0.0157	0.76	0.76
35	0.0348	0.0176	0.91	0.91
40	0.0428	0.0253	1.18	1.18
45	0.0624	0.0398	1.18	1.18
50	0.1043	0.0640	1.19	1.19
55	0.1649	0.0971	1.17	1.17
60	0.2488	0.1464	1.24	1.24
65	0.4482	0.2358	1.25	1.25
70	0.8588	0.3783	1.22	1.22

**Summary of Actuarial Assumptions and Methods, continued**

**A. Actuarial Assumptions (Continued)**

**Post-retirement Mortality:** Rates of mortality vary by age, gender and type of retirement. For service retirees and beneficiaries, rates are based on RP-2006 white collar mortality table for males and females, with adjustments. For disabled annuitants, rates are equal to 90% of the mortality rates of the RP-2006 disability annuitant table for males and females. For non-disabled annuitants, mortality improvements are projected using a 60-year average of rates of improvement using Social Security data from 1953 to 2013. Illustrative rates are shown below:

Age	Service Retirements and Beneficiaries		Mortality Improvement		Disability Retirement	
	Male	Female	Male	Female	Male	Female
45	0.0787%	0.0512%	1.18%	1.18%	1.9031%	0.9402%
50	0.3018	0.1735	1.19	1.19	2.1547	1.1194
55	0.3867	0.2253	1.17	1.17	2.2379	1.3512
60	0.5135	0.3563	1.24	1.24	2.5300	1.7513
65	0.8079	0.6354	1.25	1.25	3.2681	2.2769
70	1.3954	1.0254	1.22	1.22	4.3931	3.0828
75	2.4953	1.7459	1.16	1.16	6.0309	4.4208
80	4.5899	3.1836	1.10	1.10	8.4835	6.5331
85	8.6900	6.0945	0.79	0.79	12.3392	9.7648

## Summary of Actuarial Assumptions and Methods, continued

### A. Actuarial Assumptions (Continued)

**Non-contributory Active Members:** Unit Credit cost method.

**Beneficiaries:** 100% of active members are assumed to have a beneficiary for receipt of the lump sum death benefit or employee contribution refund upon death.

**Form of Payment:** Modified Cash Refund Annuity.

**Member Annuity:** Valuation mortality and interest are assumed to be the basis for determining the member annuity in future years.

#### **Special Data Adjustments:**

- Determination of employee type is based on Class Code as provided by the Division.
- For non-contributory members where no salary was provided, no date of birth was provided, or ASF was negative a liability equal to the ASF was held.
- For terminated non-contributory members, the liability is based on an estimated benefit using last known salary.
- For beneficiaries where no gender code or date of birth was provided, reasonable assumptions were made based on records provided in prior years or the deceased retiree's records. For retirees with a joint annuitant option code that was missing a spouse's date of birth, husbands are assumed to be 3 years older than wives. All such records were included in the valuation.
- Retiree members where no benefit and monthly allowance was provided, or no cause, class, or option was provided, were excluded from the valuation.

### B. Actuarial Valuation Method

The Projected Unit Credit Method was used as required by Chapter 62, P.L. 1994 as modified by Chapters 115, P.L. 1997 and 133, P.L. 2001 for active contributory members. The minimum actuarial accrued liability was equal to the greater of formula benefit under the Projected Unit Credit Cost method, value of the estimated member annuity as of the valuation date and the contributions with interest as of the valuation date provided by the Division. The normal cost was determined using the same methodology but reflecting an additional year of service and contributions less the final amount determined for the actuarial accrued liability.

### C. Asset Valuation Method

The actuarial value is equal to the prior year's actuarial value increased with interest and cash flows plus 20% of the difference between it and the market value of assets. Cash flows are based on an accrual accounting approach. This method is prescribed by statute.

### D. Changes in Actuarial Assumptions

This valuation reflects adoption of the 2015 Experience Study and a reduction in the investment return assumption from 7.9% to 7.65%.

**Schedule of Retired Members and Beneficiaries  
 Added to and Removed from Rolls**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Average Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
6/30/07	5,136	N/A	1,753	N/A	71,997	2,427,632,794	4.65	33,719
6/30/08	5,188	N/A	1,772	N/A	75,413	2,627,478,324	3.33	34,841
6/30/09	4,684	N/A	1,883	N/A	78,214	2,842,667,672	4.32	36,345
6/30/10	4,147	N/A	2,124	N/A	80,237	2,957,518,144	1.42	36,860
6/30/11	7,744	N/A	2,069	N/A	85,912	3,285,419,699	3.75	38,242
6/30/12	5,496	N/A	2,100	N/A	89,308	3,462,975,740	1.40	38,776
6/30/13	4,614	N/A	2,193	N/A	91,729	3,591,007,462	0.96	39,148
6/30/14	5,284	N/A	2,191	N/A	94,822	3,750,680,254	1.04	39,555
6/30/15	5,789	N/A	2,381	N/A	98,230	3,916,956,144	0.81	39,875
6/30/16	5,460	N/A	2,444	N/A	101,246	4,067,574,984	0.75	40,175

**Schedule of Active Member Valuation Data**

Valuation Date	Number of Active Members (a)	Annual Compensation (b)	Average Compensation (b/a)	% Increase in Average Compensation
6/30/07	155,096	9,676,260,309	62,389	2.94
6/30/08	156,087	10,040,685,465	64,327	3.11
6/30/09	157,109	10,353,262,361	65,899	2.44
6/30/10	157,023	10,659,241,596	67,883	3.01
6/30/11	151,115	10,416,454,800	68,931	1.54
6/30/12	150,200	10,488,890,840	69,833	1.31
6/30/13	151,318	10,710,424,746	70,781	1.36
6/30/14	141,874 <sup>1</sup>	10,325,972,743	72,783	2.83
6/30/15	142,454 <sup>1</sup>	10,453,176,648	73,379	0.82
6/30/16	142,845 <sup>1</sup>	10,588,493,706	74,126	1.02

<sup>1</sup> Excludes non-contributory members no longer provided on active data.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
TEACHERS' PENSION AND ANNUITY FUND

## Solvency Test

Valuation Date	Accrued Liabilities <sup>(1)</sup> For			Net Assets <sup>(2)</sup> Available for Benefits	% of Accrued Liabilities Covered by Net Assets		
	(1) Active Member Contributions	(2) Retirees & Deferred Vested	(3) Active Members (Employer Financed)		(1)	(2)	(3)
6/30/07	7,489,958,068	25,983,694,501	14,653,800,841	36,594,817,062	100.00	100.00	21.00
6/30/08	7,914,403,491	28,072,978,525	14,670,896,258	36,541,083,946	100.00	100.00	4.00
6/30/09	8,450,026,966	30,276,614,675	14,691,686,935	34,708,001,341	100.00	87.00	0.00
6/30/10	9,077,370,573	27,435,656,099	11,904,905,673	33,136,475,630	100.00	88.00	0.00
6/30/11	8,987,300,905	30,765,265,431	10,470,122,414	32,156,229,300	100.00	75.00	0.00
6/30/12	9,432,073,781	32,411,855,950	9,350,180,856	31,079,212,983	100.00	67.00	0.00
6/30/13	10,079,938,128	33,312,970,535	8,973,746,392	30,469,857,304	100.00	61.00	0.00
6/30/14	10,624,778,098	34,587,834,921	8,537,363,622	29,044,777,902	100.00	53.00	0.00
6/30/15	11,129,745,608	36,128,130,029	8,101,501,434	28,301,404,184	100.00	48.00	0.00
6/30/16	11,709,150,079	38,027,977,392	8,128,843,692	27,169,758,348	100.00	41.00	0.00

(1) Determined under the projected unit credit actuarial cost method and other actuarial assumptions as described in each respective actuarial valuation for determining Statutory Contribution.

(2) The above table is based on Valuation Assets. As of June 30, 2016, the solvency percentages would be 1) 100%, 2) 32% and 3) 0%, respectively, if based on the market value of assets of \$23,732.6 million.



**Analysis of Financial Experience Gains and Losses  
 in Unfunded Accrued Liabilities Resulting from  
 Differences between Assumed Experience and Actual Experience**

Type of Activity	For Valuation Period Ending (Amounts in Millions)		
	June 30, 2016	June 30, 2015	June 30, 2014
<b>Economic Factors:</b>			
Investment Return	\$(859.3)	\$(495.2)	\$(350.4)
Salary Increases	22.7	50.0	33.8
Expenses	(14.3)	(14.3)	(12.5)
<b>Demographic Factors:</b>			
Active Members	(69.2)	(22.8)	(41.9)
New Entrants	(55.5)	(48.1)	(44.1)
Non-Contributing Members	(39.6)	(32.7)	(8.2)
Retirees and Beneficiaries	23.2	5.0	(18.4)
Year of Mortality Improvement*	(55.3)	(54.1)	(36.1)
Other **	0.0	(295.9)	0.0
<b>Total:</b>	<b>(1,047.3)</b>	<b>(908.1)</b>	<b>(477.8)</b>

\* For 2014, reflects impact on only retirees. For 2015 and 2016, reflects impact on both actives and retirees.

\*\* Includes changes in method to determine gain/loss and valuation system to determine liabilities

## Summary of Principal Plan Provisions as of June 30, 2016

This summary of plan provisions is intended only to describe the essential features of the plan. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself.

### 1. Type of Plan

The Plan is a contributory, defined benefit plan. Effective October 1, 2011, contributions by Members are 6.5% and increase by 1/7 of 1% each July thereafter until an ultimate rate of 7.5% is attained on July 1, 2018. As of July 1, 2016, the contribution rate is 7.20%. For members hired on or after July 1, 2007, compensation for contributions is capped at the Social Security Taxable Wage Base (\$118,500 for 2016). For compensation in excess of the Social Security Taxable Wage Base, contributions on the excess compensation are made to the Defined Contribution Retirement Program.

### 2. Effective Date

The Plan was established in 1919. It was reorganized and integrated with Social Security in 1955. Social Security integration was eliminated in 1966, i.e., reductions in retirement benefits based on Social Security benefits were eliminated.

### 3. Eligibility for Membership

Employees, appointed to positions requiring certification as members of a regular teaching or professional staff of a public school system in New Jersey, are required to enroll as a condition of employment. Employees of the Department of Education holding unclassified, professional and certificated titles are eligible for membership. Temporary or substitute employees are not eligible. The eligible employee must be scheduled to work at least 32 hours per week effective May 22, 2010, per Chapter 1, P.L. 2010.

### 4. Definitions

- a. **Fiscal Year:** A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30.
- b. **Credited Service:** A year of Credited Service for each year an employee is a Member of the Retirement System plus service, if any, covered by a prior service liability. Class F members must be scheduled to work at least 32 hours per week, Class E members must have an annual salary of \$7,500 (indexed for inflation) and other members must have an annual salary of \$500.
- c. **Final Compensation:** This is the average annual compensation upon which contributions by a member are based on the period consecutive years of Creditable Service immediately preceding retirement or the period of highest fiscal years of Membership Service. The period equals three for members hired prior to May 22, 2010 and five for Class F and later members.

- d. **Final Year Compensation:** This is the compensation upon which contributions by a Member to the Annuity Savings Fund are based in the last year of Membership Service.

- e. **Aggregate Member Contributions:** This is the sum of all amounts deducted from the compensation of a Member or contributed by him or on his behalf without interest.

- f. **Class A Member:** Any member who contributes towards retirement allowance based on 1/64th benefit rate per year of creditable service.

- g. **Class B Member:** Any member hired prior to July 1, 2007, who contributes towards a retirement allowance based on 1/55th benefit rate per year of creditable service.

- h. **Class D Member:** Any member hired on or after July 1, 2007, and before November 2, 2008, who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/55th benefit rate per year of creditable service payable at age 60.

- i. **Class E Member:** Any member hired after November 1, 2008, and before May 22, 2010, who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/55th benefit rate per year of creditable service payable at age 62.

- j. **Class F Member:** Any member hired after May 21, 2010, and before June 28, 2011, who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/60th benefit rate per year of creditable service payable at age 62.

- k. **Class G Member:** Any member hired on or after June 28, 2011, who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/60th benefit rate per year of creditable service payable at age 65.

### 5. Cost-of-Living Adjustment

The Pension Adjustment Program provides a cost-of-living adjustment (COLA) to retirees and their survivors who receive a monthly retirement allowance from the TPAF. The first adjustment is received in the 25th month after the member's retirement. Subsequent cost-of-living adjustments are computed annually and are first reflected in February. The rate of increase is equal to 60 percent of the percentage change between the average CPI for the 12 month period ending December 31 in the year of retirement and the August 31 preceding the February adjustment. Pension adjustments to be paid on or after July 1, 2011, have been eliminated for all members unless the Target Funded Ratio is met as of the valuation date and for each of the next 30 years on a projected basis.

## Summary of Principal Plan Provisions as of June 30, 2015, Continued

### 6. Retirement Benefits

#### a. Service Retirement

**Service Retirement Eligibility:** Eligibility means age 60 (Class A, B, and D), age 62 (Class E and F) or age 65 (Class G) with no minimum service requirement.

**Service Retirement Benefit:** An employee's annual service retirement allowance is equal to a member annuity plus an employer pension which together equals 1/64th of Final Compensation for each year of service for Class A members, 1/55th of Final Compensation for each year of service for Class B, D, and E members and 1/60th of Final Compensation for each year of service for Class F and G members. The member annuity is based on the member contributions credited at the valuation interest rate.

Note: See Section 12 for special benefits for veteran members.

#### b. Early Retirement

**Early Retirement Eligibility:** Class A, B, D, E, and F members may retire after completion of 25 years of Creditable Service and Class G members may retire after completion of 30 years of Creditable Service.

**Early Retirement Benefit:** The benefit may be either:

- (i) the lump-sum withdrawal benefit described in 7.a. below; or
- (ii) the Service Retirement Benefit reduced by 1/4 of one percent for each month the retirement date precedes age 55 for Class B members; or
- (iii) the Service Retirement Benefit reduced by 1/12 of one percent for each month the retirement date precedes age 60 but over age 55 and by 1/4 of one percent for each month the retirement date precedes age 55, for Class D members.
- (iv) the Service Retirement Benefit reduced by 1/12 of one percent for each month the retirement date precedes age 62 but over age 55 and by 1/4 of one percent for each month the retirement date precedes age 55, for Class E and F members.
- (v) the Service Retirement Benefit reduced by 1/4 of one percent for each month the retirement date precedes age 65, for Class G members.

#### c. Deferred Retirement

**Eligibility:** A member is eligible upon termination of service prior to age 60 (Class A, B, D), age 62 (Class E and Class F), or age 65 (Class G) and after 10 years of Creditable Service.

**Deferred Retirement Benefit:** The benefit may be either:

- (i) the lump-sum withdrawal benefit described in 7.a. above; or
- (ii) a deferred retirement benefit, commencing at age 60 (Class A, B, D), age 62 (Class E and Class F), or age 65 (Class G), equal to a member annuity plus an employer pension which together provide a retirement allowance equal to the service retirement benefit based on Final Compensation and Creditable Service at date of termination. Member annuity based on member contributions credited at the valuation interest rate.

### 7. Termination Benefits

#### Lump Sum Withdrawal

**Eligibility:** A member is eligible upon termination of service.

**Lump Sum Withdrawal Benefit:** The benefit equals a refund of Aggregate Member Contributions plus, if the member has completed three years of service, interest accumulated at 2.0% per annum allowed thereon.

### 8. Death Benefits

#### a. Ordinary Death (Insured) Benefit - Lump Sum (Non-Contributory)

**Pre-retirement Death Benefit Eligibility:** Any current active member is eligible.

**Pre-retirement Death Benefit:** The benefit is a lump-sum benefit equal to the Aggregate Contributions with interest allowed thereon plus an amount equal to 1-1/2 times Compensation at date of death.

**Post-retirement Death Benefit Prior to Age 60 (Class A, B, D), Age 62 (Class E and Class F), or Age 65 (Class G) Eligibility:** Eligible if disabled or retired early.

**Post-retirement Death Benefit Prior to Age 60 (Class A, B, D), Age 62 (Class E and Class F), or Age 65 (Class G) Benefit:** The benefit is as follows:

- (i) For death while a Disabled Retiree the benefit is equal to 1-1/2 times Compensation.
- (ii) For death while an Early Retiree, the benefit is equal to 3/16 times Compensation.
- (iii) For death while vested terminated, the benefit is equal to his Aggregate Contributions with interest allowed thereon.

## Summary of Principal Plan Provisions as of June 30, 2015, Continued

**Post-retirement Death Benefit After Age 60 (Class A, B, D), Age 62 (Class E and F), or Age 65 (Class G) Eligibility:** Eligible after attainment of service retirement, deferred and disabled retirements (if not disabled, 10 years of Creditable Service required for members enrolling on or after July 1, 1971).

**Post-retirement Death Benefit After Age 60 (Class A, B, D), Age 62 (Class E and F) or Age 65 (Class G) Benefit:** The benefit payable is equal to 3/16 times Compensation.

- b. Contributory Death Benefit:** An additional, employee-paid, death benefit is also available through group insurance purchased by the Board of Trustees. Contributions for this

benefit are required by Members during the first year of enrollment. Participation may be terminated after the first year. The benefit prior to retirement is 2 times compensation. The benefit after retirement is 1/4 times final year compensation (coverage at retirement, and 10 years of participation for Members enrolling on or after July 1, 1970, is required).

- c. Pre-retirement Accidental Death Benefit:**

**Eligibility:** A death resulting from injuries received from an accident during performance of duty and not a result of willful negligence is eligible.

**Pre-retirement Lump-Sum Benefit:** The benefit is a lump sum equal to 1-1/2 times Compensation.

**Pre-retirement Accidental Death Benefit:** The benefit payable is as follows:

- (i) The annuity benefit to a widow or widower is equal to 50% of Compensation, payable for life or until remarriage.
- (ii) The annuity benefit, when there is no spouse, or the spouse is remarried, is equal to 20% of Compensation for one child, 35% for two children, 50% for three or more children. The benefit is payable while the children are under age 18 and it is payable for life if they are disabled.
- (iii) The annuity benefit, when there is no spouse or children, is equal to 25% of Compensation for one dependent parent and 40% for two dependent parents.
- (iv) The benefit, when there is no relation as stated above, is equal to the Aggregate Contributions with interest allowed thereon and is payable to a beneficiary or to the Member's estate. This is also the minimum benefit payable under (i), (ii) and (iii) above.

### 9. Disability Benefits

- a. Ordinary Disability Retirement**

**Eligibility:** A member is eligible for Ordinary Disability Retirement if he (she) has 10 years of Creditable Service and is totally and permanently incapacitated from the performance of usual or available duties.

**Ordinary Disability Retirement Benefit for Class A, B, D, and E members:** The total retirement allowance is equal to the greater of:

- (i) 1.64% of Final Compensation times the number of years of Creditable Service; or
- (ii) 43.6% of Final Compensation.

Note: See Section 12 for special benefits for veteran members.

**Ordinary and Accidental Disability Retirement Benefit for Class F and G members:** A disability benefit equal to 60% of salary reduced by the initial Social Security benefit is paid until the earlier of age 70 or commencement of a retirement benefit from a disability income policy outside of TPAF. The policy also makes employee contributions during the period of disability.

- b. Accidental Disability Retirement for Class A, B, D, and E members**

**Eligibility:** A member is eligible upon total and permanent incapacitation as a direct result of a traumatic event occurring during and as a result of the performance of regular or assigned duties.

**Accident Disability Retirement Benefit:** The benefit payable is equal to a Member annuity plus an employer pension which together equals 72.7% of the Compensation at date of injury.

**10. Additional Old-Plan Benefit:** An additional pension is payable to any retiree who was a member of the old Teachers' Retirement Fund. This pension is the actuarial equivalent of his contributions to the old Teachers' Retirement Fund without interest.

**11. Special Minimum Benefit:** A member who retired prior to 1955 with 20 or more years of service may receive a minimum pension of \$500 a month inclusive of any amounts payable under any pension adjustments.

## Summary of Principal Plan Provisions as of June 30, 2015, Continued

### 12. Special Benefits for Veterans:

- a. **Service Retirement:** Eligible if member attains age 60 and completes 20 years of service or attains age 55 and completes 25 years of service. Benefit equals 54.5% of highest 12-month contributory compensation.
- b. **Chapter 97 Benefit:** Eligible if age 55 and completes 35 years of service. Benefit equals 1/55th of final year compensation for each year of service.

### 13. Benefit and Compensation Limits

The provisions of IRC Section 415 and IRC Section 401(a)(17), which limit benefits paid and limit compensation used in determining benefits, has been reflected in this report. The IRC Section 415 limit is \$210,000 and the 401(a)(17) compensation cap is \$265,000 for 2016 and is applied on a calendar year basis.

### 14. Forms of Payment

- a. **Maximum Option** – Single life annuity.
- b. **Option 1** – Single life annuity with return of reserve option.
- c. **Option 2** – 100% joint and survivor annuity.
- d. **Option 3** – 50% joint and survivor annuity.
- e. **Option 4** – Other percentage joint and survivor annuity.
- f. **Option A** – 100% pop-up joint and survivor annuity.
- g. **Option B** – 75% pop-up joint and survivor annuity.
- h. **Option C** – 50% pop-up joint and survivor annuity.
- i. **Option D** – 25% pop-up joint and survivor annuity.

### 15. Contributions

- a. **Member Contributions:** Each member becoming a member on or after January 1, 1956, and prior to July 1, 2007, contributes at the rate of contribution applicable to Class B members. Any members hired after June 30, 2007, and prior to November 2, 2008, are Class D members. Members hired after November 1, 2008, and prior to May 22, 2010, are Class E members. Members hired after May 21, 2010, and prior to June 29, 2011, are Class F members. Members hired after June 28, 2011, are Class G members.
  - (i) **Class D, E, F, or G Membership:** Class D, E, F, or G members contribute at their applicable contribution rate up to the Social Security Taxable Wage Base.
  - (ii) **Class B Membership:** Any member on December 31, 1955, may elect to be classified as a Class B member and contribute at the rate of contribution applicable to Class B

members at his age at membership. Any such member may elect to increase his accumulated deductions by the amount required by the Board to receive credit as a Class B member for all or part of his service prior to such election.

- (iii) **Class A Membership:** Any member who is not a veteran and does not elect to be classified as a Class B member continues to contribute at the rate of contribution applicable to his age at membership which was payable prior to the establishment of the integrated system, except that if he became a member subsequent to June 30, 1946, he will pay after January 1, 1955, at the rate of contribution in effect on June 30, 1946, applicable to his age at membership.

Prior to July 1, 1979, different contribution rates were established for men and women. Effective on that date members contribute at rates intermediate between the rates previously applicable to male and female members, computed to provide the same present value of future employee contributions at each entry age on the basis of the membership as constituted on the effective date.

### b. Local Employer Contributions

- (i) **Early Retirement Incentive Contributions:** The State and Local employers which elected to participate in the early retirement incentive programs authorized by Chapters 137, 229 and 231, P.L. 1991, Chapters 48, 138 and 163, P.L. 1993, Chapter 23, P.L. 2001, and Chapters 128 and 129, P.L. 2003, pay contributions to cover the additional liability for these programs over amortization periods chosen by the employer (15 years for Chapters 128 and 129) or the amortization period for the Unfunded Accrued Liability of the system (Chapter 23, P.L. 2002, and Chapter 21, P.L. 2008). The remaining present values are re-amortized upon changes to the interest rate assumption. Effective with the revised June 30, 2011 actuarial valuation, for any local employer with an increasing payment amortization schedule, the increase factor is 3.25%
- (ii) **Chapter 113 Contributions:** Certain School Districts have elected to exempt a select group of employees from the compensation limit under IRC Section 401(a)(17) incorporated under Chapter 113. These school districts will pay the full cost of this exemption at a member's date of retirement.

### 16. Changes in Plan Provisions Since Prior Valuation

None.



October 5, 2018

**BUCK GLOBAL, LLC**

The Board of Trustees

Police and Firemen's Retirement System  
of New Jersey

## **Re: Actuary's Certification Letter**

Members of the Board:

An actuarial valuation of the Police and Firemen's Retirement System (PFRS or System) is performed annually to measure the ongoing costs of the System (with required contributions determined separately for the State and Local employers) and the progress towards the funding goals of the System over time. In general, the financial goal of the Police and Firemen's Retirement System is a pattern of contributions, which is sufficient to cover the normal cost of the System plus the contribution towards the unfunded accrued liability. The information contained in this certification letter is based on the July 1, 2016 valuation of PFRS.

In accordance with the New Jersey statutes, employers are required to make two contributions to the System, a normal contribution and an accrued liability contribution. The normal contribution for basic allowances and cost of living adjustments (COLA's) is defined under the Projected Unit Credit funding method as the present value of the benefits accruing during the current year. Prior to the July 1, 2010 valuation, the unfunded accrued liability contribution for basic allowances and COLA's was determined as a level percentage of pay required to amortize the unfunded accrued liability over 30 years in annual payments increasing by 4% per year. The funding reform provisions of Chapter 78, P.L. 2011 changed the methodology used to amortize the unfunded accrued liability. Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2018 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation, the amortization period will decrease by one year.) Beginning with the July 1, 2028 actuarial valuation when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for that valuation year using a 20 year amortization period.

Chapter 78, P.L. 2011 also increased member contributions from 8.50% to 10.00% of salary. Effective with the July 1, 2012 actuarial valuation, the determination of the State and Local employers' normal cost contributions has been revised to reflect the use of all member contributions as an offset to the gross normal cost. This was the methodology used to determine the State's normal cost contribution prior to the enactment of Chapter 78, P.L. 2011 and is consistent with the methodology typically used by contributory public-sector retirement systems to calculate the employer's normal cost contribution.

The valuation reflects the Appropriation Act of 2016 for fiscal year 2016, which allowed the State Treasurer to reduce the State normal cost and accrued liability contributions for fiscal year 2016 of \$461,081,051 to \$138,324,000. This amount excludes the Non-Contributory Group Insurance Premium of \$7,930,178.

In addition, the valuation reflects the potential impact of the Appropriations Act of fiscal year 2017. The fiscal year 2017 actuarially determined State Pension contribution has been reduced from \$483,877,347 to \$193,550,939, discounted from the expected payable date of June 30, 2017 to the valuation date. This amount excludes the estimated Non-Contributory Group Insurance Premium of \$8,844,000. Accordingly, a

fiscal year 2017 employer contribution of \$193,550,939 was recognized as a receivable contribution for purposes of this valuation. This amount may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

The actuarially determined State contribution for the fiscal year beginning July 1, 2017 is \$502,917,964. This amount is comprised of an unfunded accrued liability payment of \$382,592,169 plus a normal contribution of \$120,325,795. This amount excludes the estimated Non-Contributory Group Insurance Premium of \$8,893,000. This amount may be subject to change per the requirements of the State's fiscal year 2018 spending plan.

The valuation reflects Chapter 19, P.L. 2009, which allowed the State Treasurer to reduce Local employers' normal and accrued liability contributions to 50% of the amount certified for the State fiscal year 2009. In addition, certain Local employers who were eligible under Chapter 19, P.L. 2009 to defer 50% of their State fiscal year 2009 pension contribution but did not were permitted to defer 50% of their State fiscal year 2010 pension contribution. This unfunded liability will be paid by the Local employers in level annual payments over a period of 15 years with the first payment due in the fiscal year ending June 30, 2012. The unfunded liability will be adjusted by the rate of return on the actuarial value of assets. The legislation also provides that a Local employer may pay 100% of the actuarially determined contributions for State fiscal years 2009 and 2010. Such an employer will be credited with the full payments and any such amounts will not be included in their unfunded liability.

The underlying demographic data is maintained and provided by the New Jersey Division of Pensions and Benefits. The data is analyzed by Buck Global, LLC (Buck), formerly Conduent HR Consulting LLC (Conduent), for internal completeness and consistency and compared with the prior valuation data to again ensure consistency.

As required under Chapter 255, P.L. 1944, an actuarial investigation of the demographic experience of the members and beneficiaries of the Police and Firemen's Retirement System is made once in every three-year period. The July 1, 2016 valuation was based on the actuarial assumptions that were determined from the July 1, 2010 - June 30, 2013 Experience Study (which was approved by the Board of Trustees at the February 9, 2015 Board meeting).

The Treasurer has recommended a change in the economic assumptions used for the valuation. The rate of investment return has been revised from 7.90% per annum to 7.65% per annum. The assumed future salary increases have been reduced by 0.5% at all ages for both the select and ultimate periods. In addition, the select period was extended from the fiscal year 2021 through fiscal year 2025. These assumptions will remain in effect for valuation purposes until such time as the Board or the Treasurer recommends revised economic assumptions.

Future actuarial measurements may differ significantly from current measurements due to System experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the Board or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. Buck should be asked to review any statement to be made on the basis of the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

In my opinion, the attached schedules of valuation results fairly represent the status of the Police and Firemen's Retirement System and present an accurate view of historical data. The underlying assumptions and methods used are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the System.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
POLICE AND FIREMEN'S RETIREMENT SYSTEM

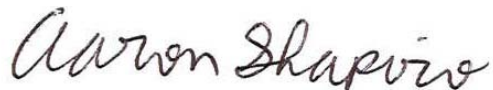
The following supporting schedules in the Actuarial Section were prepared by Buck:

- Summary of Actuarial Assumptions and Methods
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Schedule of Active Member Valuation Data
- Solvency Test
- Analysis of Past Financial Experience - Reconciliation of Employer Contribution Rates
- Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

In addition, Buck prepared the "Schedule of Assets and Liabilities" and the "Schedule of Employer Contributions" in the Financial Section which can be found in the July 1, 2016 valuation report for PFRS. The Schedule of Assets and Liabilities and the Schedule of Employer Contributions are provided for informational purposes only since the reporting requirements of Statements No. 67 and No. 68 became effective as of the June 30, 2014 and June 30, 2015 reporting dates, respectively.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, FSA, EA, MAAA  
Principal, Consulting Actuary  
Buck Global, LLC



**Summary of Actuarial Assumptions and Methods**

Section 13, Subsection (13) of Chapter 255, P.L. 1944 as amended by Chapter 157, P.L. 1972 of the New Jersey Statutes provides that once in every three-year period the actuary shall examine in detail the demographic experience of the members and beneficiaries of the Police and Firemen's Retirement System to assure that the tables used for determining expected liabilities are consistent with recent experience.

The July 1, 2016 actuarial valuation of the Police and Firemen's Retirement System reflects the recognition of the actuarial assumptions determined from the July 1, 2010 - June 30, 2013 Experience Study which was approved by the Board of Trustees at the February 9, 2015 Board meeting and the revised economic assumptions established in the July 1, 2016 valuation.

An outline of the actuarial assumptions and methods used for the July 1, 2016 valuation is as follows:

**Valuation Interest Rate:** 7.65% per annum, compounded annually.

**COLA:** No future COLA is assumed.

**Compensation Limit Increase:** 401(a)(17) Limit - 3.00% per annum, Social Security Wage Base - 4.00% per annum

**Separations from Service and Salary Increases:** Representative values of the assumed annual rates of separation and annual rates of salary increases are as follows:

Age	Annual Rate of					
	Select Withdrawal					Ultimate Withdrawal
	Up to the 1st Year	2nd Year	3rd Year	4th Year	5 to 9 Years	After 9 Years
25	6.90%	2.03%	1.18%	0.60%	0.35%	0.00%
30	9.30	2.75	1.76	1.31	0.60	0.24
35	9.80	3.17	1.76	1.57	0.77	0.24
40	13.70	2.25	1.85	1.74	0.67	0.27
45	3.50	2.25	1.85	2.32	1.35	0.28
50	0.00	2.25	1.85	2.00	1.60	0.30
55	0.00	0.00	0.00	0.00	0.00	0.00

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
POLICE AND FIREMEN'S RETIREMENT SYSTEM

## Summary of Actuarial Assumptions and Methods, *continued*

Age	Annual Rates of				
	Death			Disability	
	Ordinary		Accidental	Ordinary	Accidental
	Male <sup>1</sup>	Female <sup>1</sup>			
25	.035%	.019%	.006%	.045%	.029%
30	.041	.025	.006	.147	.278
35	.072	.045	.008	.265	.393
40	.100	.065	.008	.362	.423
45	.138	.103	.009	.394	.396
50	.195	.156	.009	.449	.179
55	.282	.233	.014	.554	.161
60	.435	.335	.013	1.024	.161
64	.593	.445	.008	1.680	.161
65 and over	0.000	0.000	0.000	0.000	0.000

<sup>1</sup> RP2000 Employee Pre-Retirement mortality tables projected thirteen-years using Projection Scale BB and then projected on a generational basis using the Buck Modified 2014 Projection Scales. The above tables are representative for the 2016 valuation.

Age	Service Retirements				Salary Increases	
	Length of Service				FY2016 to FY2026	FY2027 and thereafter
	Less Than 21 Years <sup>1</sup>	21 to 24 Years	25 Years	26 or More Years		
25	—	—	—	—	8.98%	9.98%
30	—	—	—	—	5.97	6.97
35	—	—	—	—	4.17	5.17
40	4.00%	0.60%	45.57%	15.40%	3.33	4.33
45	4.00	0.60	54.83	15.40	2.90	3.90
50	4.30	0.60	57.62	18.48	2.75	3.75
55	6.00	0.00	64.94	24.47	2.60	3.60
60	3.20	0.00	77.49	27.34	2.35	3.35
64	37.50	0.00	85.24	51.03	2.10	3.10
65 and over	100.00	100.00	100.00	100.00	—	—

<sup>1</sup> Retirement assumption prior to age 55 is for any member as of January 18, 2000, upon completion of 20 years of service.

**Summary of Actuarial Assumptions and Methods, continued**

**Deaths After Retirement**

RP-2000 Combined Healthy Mortality Tables projected one year using Projection Scale AA and three years using the Buck Modified 2014 Projection Scales is the base table as of the 2016 measurement date for male service retirements and will be further projected on a generational basis using the Buck Modified 2014 Projection Scales. RP-2000 Combined Healthy Mortality Tables projected thirteen-years using Projection Scale BB and then three years projected using the Buck Modified 2014 Projection Scales is the base table as of the 2016 measurement date for female service retirements and beneficiaries and will be further projected on a generational basis using the Buck Modified 2014 Projection Scales. Special mortality tables are used for the period after disability retirement. The following representative values of the assumed annual rates of mortality are effective 2016.

Age	Service Retirements		Beneficiaries		Age	Disability Retirements
	Men	Women	Men	Women		
55	0.344%	0.250%	0.337%	0.250%	35	0.598%
60	0.649	0.431	0.602	0.431	40	0.634
65	1.221	0.794	1.059	0.794	45	0.803
70	2.098	1.362	1.750	1.362	50	1.058
75	3.551	2.290	2.959	2.290	55	1.210
80	6.055	3.741	5.026	3.741	60	1.426
85	10.464	6.306	8.658	6.306	65	1.949

**Marriage**

Husbands are assumed to be 3 years older than wives. Among the active population, 90% of participants are assumed married. No children are assumed.

**Valuation Method**

Projected Unit Credit Method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. In accordance with Chapter 78, P.L. 2011, beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2018 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent valuation, the amortization period shall decrease by one year.) Beginning with the July 1, 2028 actuarial valuation, when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

**Receivable Contributions**

State contributions expected to be paid the June 30th following the valuation date are discounted by the valuation interest rate of 7.65% to the valuation date.

Local contributions expected to be paid the April 1st following the valuation are discounted by the valuation interest rate of 7.65% to the valuation date.

## Summary of Actuarial Assumptions and Methods, *continued*

### **Asset Valuation Method**

A five year average of market values with write-up was used. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five-year period.

### **Changes in Actuarial Assumptions and Methods**

The following are changes to the actuarial assumptions and methods from those used in the prior valuation:

1. The rate of investment return has been revised from 7.90% per annum to 7.65% per annum. The assumed future salary increases have been reduced by 0.5% at all ages for both the select and ultimate periods. In addition, the select period was extended from the fiscal year 2021 through fiscal year 2025.

**Schedule of Retired Members and Beneficiaries  
Added to and Removed from Rolls**

**State**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	407	\$17,916,150	188 <sup>3</sup>	\$5,868,202 <sup>3</sup>	6,807	\$293,751,067	4.19%	\$43,154
7/1/15	597	27,506,231	136	4,428,009	6,588	281,941,189	8.85	42,796
7/1/14	411	18,319,747	125	3,624,098	6,127	259,008,914	6.03	42,273
7/1/13	562	25,376,310	144	3,961,938	5,841	244,287,186	9.51	41,823
7/1/12	483	21,936,867	83	2,596,132	5,423	223,064,017	9.57	41,133
7/1/11	578	26,839,762	117	3,116,709	5,023	203,579,687	14.28	40,530

**Local Employers**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	2,131 <sup>3</sup>	\$127,903,000 <sup>3</sup>	977	\$33,478,631	38,818	\$2,022,136,965	4.89%	\$52,093
7/1/15	2,223	137,472,290	1,008	34,566,655	37,664	1,927,850,322	5.64	51,185
7/1/14	2,157	125,562,304	1,061	37,217,915	36,449	1,824,960,208	5.17	50,069
7/1/13	2,126	123,863,237	1,062	34,299,782	35,353	1,735,172,993	5.50	49,081
7/1/12	2,131	119,315,514	855	29,526,388	34,289	1,644,739,476	5.88	47,967
7/1/11	2,613	157,395,175	954	29,687,515	33,013	1,553,435,879	9.94	47,055

**Total System**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	2,538 <sup>3</sup>	\$145,819,150 <sup>3</sup>	1,165 <sup>3</sup>	\$39,346,833 <sup>3</sup>	45,625	\$2,315,888,032	4.80%	\$50,759
7/1/15	2,820	164,978,521	1,144	38,994,664	44,252	2,209,791,511	6.04	49,937
7/1/14	2,568	143,882,051	1,186	40,842,013	42,576	2,083,969,122	5.28	48,947
7/1/13	2,688	149,239,547	1,206	38,261,720	41,194	1,979,460,179	5.98	48,052
7/1/12	2,614	141,252,381	938	32,122,520	39,712	1,867,803,493	6.31	47,034
7/1/11	3,191	184,234,937	1,071	32,804,224	38,036	1,757,015,566	10.42	46,193

<sup>1</sup> These values include Domestic Relations beneficiaries in receipt but exclude deferred vested terminations.

<sup>2</sup> The benefit amounts shown are the annualized benefits as of the valuation date and are not the actual benefits paid during the fiscal year.

<sup>3</sup> Location 91999 was reclassified as a Local employer beginning with the 2016 valuation; 30 retirees receiving \$1,361,259 and 6 beneficiaries receiving \$168,613 were added to the Local rolls and removed from the State rolls in 2016.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
POLICE AND FIREMEN'S RETIREMENT SYSTEM

## Schedule of Active Members Valuation Data<sup>1</sup>

### State

Valuation Date	Number of Active Members	Annual Limited Compensation	Average Compensation	% Increase in Average Compensation
7/1/16	6,911	\$507,802,380	\$73,477	(2.38)%
7/1/15	6,883	518,087,705	75,271	(0.14)
7/1/14	7,025	529,501,284	75,374	0.54
7/1/13	7,098	532,147,062	74,971	(0.65)
7/1/12	7,187	542,344,707	75,462	(0.31)
7/1/11	7,237	547,809,629	75,696	4.07

### Local Employers

Valuation Date	Number of Active Members	Annual Limited Compensation	Average Compensation	% Increase in Average Compensation
7/1/16	33,878	\$3,320,721,980	\$98,020	0.27%
7/1/15	33,476	3,272,560,644	97,758	(0.38)
7/1/14	33,081	3,246,344,549	98,133	0.99
7/1/13	33,274	3,233,135,473	97,167	1.52
7/1/12	33,632	3,218,932,891	95,710	3.85
7/1/11	34,762	3,203,676,618	92,160	3.96

### Total System

Valuation Date	Number of Active Members	Annual Limited Compensation	Average Compensation	% Increase in Average Compensation
7/1/16	40,789	\$3,828,524,360	\$93,861	(0.07)%
7/1/15	40,359	3,790,648,349	93,923	(0.24)
7/1/14	40,106	3,775,845,833	94,147	0.95
7/1/13	40,372	3,765,282,535	93,265	1.22
7/1/12	40,819	3,761,277,598	92,145	3.16
7/1/11	41,999	3,751,486,247	89,323	3.96

<sup>1</sup> Includes all contributing and non-contributing active members.

**Solvency Test**

**State**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$463,313,193	\$3,266,044,658	\$947,284,189	\$1,928,447,404	100.00%	44.86%	0.00%
7/1/15	453,476,665	3,068,942,554	994,018,946	2,004,579,109	100.00%	50.54	0.00%
7/1/14	461,707,703	2,836,126,945	1,067,775,016	2,062,185,965	100.00	56.43	0.00
7/1/13	446,509,394	2,645,278,934	1,096,734,709	2,127,491,585	100.00	63.55	0.00
7/1/12	444,953,351	2,418,803,841	1,163,197,690	2,137,727,566	100.00	69.98	0.00
7/1/11	434,353,581	2,240,031,414	1,252,140,684	2,173,255,647	100.00	77.63	0.00

**Local Employer**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$3,131,241,592	\$21,445,939,675	\$8,216,257,943	\$24,420,145,823	100.00%	99.27%	0.00%
7/1/15	3,028,571,346	19,956,349,181	8,221,044,776	23,935,037,150	100.00	100.00	11.56
7/1/14	2,953,537,557	18,953,799,304	8,331,950,046	23,066,498,788	100.00	100.00	13.91
7/1/13	2,842,256,925	17,710,792,805	8,258,648,542	22,170,221,173	100.00	100.00	19.58
7/1/12	2,726,801,462	16,780,025,399	8,198,341,576	21,549,327,079	100.00	100.00	24.91
7/1/11	2,611,348,759	16,074,784,440	8,292,498,989	21,051,681,692	100.00	100.00	28.53

**Total System**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$3,594,554,785	\$24,711,984,333	\$9,163,542,132	\$26,348,593,227	100.00%	92.08%	0.00%
7/1/15	3,482,048,011	23,025,291,735	9,215,063,722	25,939,616,259	100.00	97.53	0.00
7/1/14	3,415,245,260	21,789,926,249	9,399,725,062	25,128,684,753	100.00	99.65	0.00
7/1/13	3,288,766,319	20,356,071,739	9,355,383,251	24,297,712,758	100.00	100.00	6.98
7/1/12	3,171,754,813	19,198,829,240	9,361,539,266	23,687,054,645	100.00	100.00	14.06
7/1/11	3,045,702,340	18,314,815,854	9,544,639,673	23,224,937,339	100.00	100.00	19.53

<sup>1</sup> Actuarial Value including receivable amounts.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
POLICE AND FIREMEN'S RETIREMENT SYSTEM

## Analysis of Past Financial Experience - Reconciliation of Employer Contribution Rates

### State

Valuation Year	July 1, 2016	July 1, 2015	July 1, 2014	July 1, 2013	July 1, 2012	July 1, 2011
Prior Year Contribution Rate	97.89% <sup>6</sup>	90.94% <sup>6</sup>	81.12% <sup>6</sup>	76.94% <sup>6</sup>	74.83% <sup>6</sup>	70.70% <sup>6</sup>
Adjustment for Full Member Contributions to Offset Normal Cost	N/A	N/A	N/A	(1.61)	N/A	N/A
Revised Prior Year Contribution Rate	97.89%	90.94%	81.12%	75.33%	74.83%	70.70%
<b>Net Change Due to:</b>						
Current New Entrants	0.55	0.09	0.27	0.27	0.31	0.22
Excess Salary Increases	(1.16)	0.00	(0.12)	0.07	(0.36)	(0.43)
Assumption/Method Changes	(1.42)	(0.55)	0.50	0.00	(1.51) <sup>5</sup>	(2.44) <sup>4</sup>
COLA Increases	0.00	0.00	0.00	0.02	0.04	(0.25)
Active and Other Experience	1.04	0.53	(0.49)	(0.71)	(1.43)	(0.01)
Retiree Experience	(0.04)	0.05	0.08	0.03	0.06	0.01
Investment Loss/(Gain)	1.28	0.77	0.48	1.00	1.32	0.99
Net Effect of Chapter 8 <sup>1</sup>	0.57	0.31	2.98	1.27	(1.13)	0.48
Appropriation Act <sup>2</sup>	4.88	5.75	6.12	3.84	4.81	5.56
Recommended Contribution Rate:						
• Prior to reflecting Chapter 1, P.L. 2010	103.59% <sup>6</sup>	97.89% <sup>6</sup>	90.94% <sup>6</sup>	81.12% <sup>6</sup>	76.94% <sup>6</sup>	74.83% <sup>6</sup>
• After reflecting Chapter 1, P.L. 2010	N/A	N/A	N/A	46.35% <sup>6</sup>	32.98% <sup>6</sup>	21.38% <sup>6</sup>



**Analysis of Past Financial Experience —  
 Reconciliation of Employer Contribution Rates**

**Local Employers**

<b>Valuation Year</b>	<b>July 1, 2016</b>	<b>July 1, 2015</b>	<b>July 1, 2014</b>	<b>July 1, 2013</b>	<b>July 1, 2012</b>	<b>July 1, 2011</b>
Prior Year Contribution Rate	24.36% <sup>6</sup>	24.46% <sup>6</sup>	23.14% <sup>6</sup>	23.90% <sup>6</sup>	24.01% <sup>6</sup>	23.08% <sup>6</sup>
Adjustment for Full Member Contributions to Offset Normal Cost	N/A	N/A	N/A	(1.60)	N/A	N/A
Revised Prior Year Contribution Rate	24.36%	24.46%	23.14%	22.30%	24.01%	23.08%
<b>Net Change Due to:</b>						
Current New Entrants	0.33	0.06	0.16	0.14	0.08	0.07
Excess Salary Increases	(0.04)	0.00	(0.15)	0.08	(0.40)	(0.47)
Assumption/Method Changes	0.18	(0.56)	1.18	0.00	(0.90) <sup>5</sup>	(0.05) <sup>4</sup>
COLA Increases	0.00	0.00	0.00	0.02	0.04	(0.30)
Active and Other Experience	2.50	2.31	2.48	1.50	1.18	2.47
Retiree Experience	(0.08)	0.05	0.09	0.04	0.07	0.01
Investment Loss/(Gain)	1.32	0.40	(0.05)	1.00	1.59	1.20
Net Effect of Chapter 8 <sup>1</sup>	(2.37)	(2.36)	(2.39)	(1.94)	(1.77)	(2.00)
Recommended Contribution Rate <sup>3</sup>	26.20% <sup>6</sup>	24.36% <sup>6</sup>	24.46% <sup>6</sup>	23.14% <sup>6</sup>	23.90% <sup>6</sup>	24.01% <sup>6</sup>

<sup>1</sup> Net effect of the change in the calculation of the July 1, 1998 actuarial value of System assets and elimination of the Local Employers' accrued liability contribution for the period ending June 30, 1997.

<sup>2</sup> Net change due to Appropriation Act for July 1, 2015 includes 5.75% change due to the Fiscal Year 2016 Appropriation Act. Net change due to Appropriation Act for July 1, 2014 includes 0.96% change due to the Fiscal Year 2014 Appropriation Act and 5.16% change due to the Fiscal Year 2015 Appropriation Act. Net change for July 1, 2011, July 1, 2012 and July 1, 2013 are due to the provisions of Chapter 1, P.L. 2010. Net change due to Appropriation Act for July 1, 2010 includes 0.17% change due to the Fiscal Year 2010 Appropriation Act, 0.15% change due to the Fiscal Year 2011 Appropriation Act and 3.67% for the Fiscal Year 2012 Appropriation Act.

<sup>3</sup> Includes rates attributable to Chapter 204 requirement which are billed to specific locations.

<sup>4</sup> Net effect of the Board approved revised demographic assumptions based on the June 30, 2011 experience investigations and the Treasurer approved economic assumptions.

<sup>5</sup> Net effect of the Board approved revised demographic assumptions based on the Treasurer approved revised economic assumptions.

<sup>6</sup> Excludes contribution rates payable to the Non-Contributory Group Insurance Premium Fund. For State, the contribution rates are 1.83% for 2016, 1.79% for 2015, 2.05% for 2014, 1.51% for 2013, 1.41% for 2012, and 1.64% for 2011. For Local, the contribution rates are 1.11% for 2016, 1.11% for 2015, 1.14% for 2014, 1.09% for 2013, .86% for 2012, and 1.00% for 2011.

<sup>7</sup> Due to the State's decision to reduce the lag period between the valuation year and the contribution from three years to two years.

## Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

### Eligibility for Membership

Enrollment is restricted to eligible policemen and firemen who are permanent and full-time and who pass the physical and mental fitness requirements. The maximum enrollment age is 35.

### 1. Definitions

#### Plan Year

The 12-month period beginning on July 1 and ending on June 30.

#### Credited Service

A year of service is credited for each year an employee is a Member of the Retirement System plus service, if any, covered by a prior service liability.

#### Average Final Compensation (AFC)

The average annual compensation for the three consecutive years of Service immediately preceding retirement or the highest three consecutive fiscal years of Membership Service.

#### Compensation

Base salary upon which contributions by a Member to the Annuity Savings Fund were based in the last year of Service. For Accidental Death, benefits are computed at the annual rate of salary. In accordance with Chapter 1, P.L. 2010, for members hired on or after May 22, 2010 Compensation cannot exceed the annual maximum wage contribution base for Social Security pursuant to the Federal Insurance Contribution Act.

#### Final Compensation (FC)

Annual compensation received by the member in the last 12 months of Credited Service preceding his retirement. In accordance with Chapter 1, P.L. 2010, for members hired on or after May 22, 2010, FC means the average annual compensation for the three fiscal years of membership providing the largest benefit.

#### Accumulated Deductions

The sum of all amounts deducted from the compensation of a Member or contributed by him or on his behalf without interest.

### 2. Benefits

#### Service Retirement

Eligibility means age 55 or 20 years of credited service for an employee who was a member of the Retirement System as of January 18, 2000 and age 55 for an employee who became a member of the Retirement System after January 18, 2000; mandatory at age 65 (except that a member hired prior to January 1, 1987 may remain a member of the Retirement System until the member attains the earlier of

age 68 or 25 years of creditable service). Benefit is an annual retirement allowance equal to a member annuity plus an employer pension which together equals the greater of:

- (i) 1/60th of FC for each year of Credited Service; or
- (ii) 2% of FC multiplied by years of Credited Service up to 30 plus 1% of FC multiplied by years of Service over 30. (Prior to January 18, 2000, this benefit was based on AFC rather than FC. However, Policy Memorandum 4-2000, which interpreted the provisions of Chapter 428, P.L. 1999, authorized the change in the salary basis).
- (iii) 50% of FC if the member has 20 or more years of Credited Service.

Chapter 428 also requires that, in addition to the 50% of FC benefit, any member as of January 18, 2000 who will have 20 or more years of Credited Service and is required to retire upon attaining age 65 (except that a member hired prior to January 1, 1987 may remain a member of the System until the member attains the earlier of age 68 or 25 years of creditable service), shall receive an additional benefit equal to 3% of FC for each year of Credited Service over 20 years but not over 25 years.

#### Special Retirement

After completion of 25 years of Credited Service. The annual retirement benefit is equal to a member annuity plus an employer pension which together equal 65% of FC plus 1% of FC for each year of Credited Service over 25. Effective for members hired after June 28, 2011, the annual retirement benefit is equal to a member annuity plus an employer pension which together equal 60% of FC plus 1% of FC for each year of Credited Service over 25. There is a maximum benefit of 70% of FC (65% of FC for members hired after June 28, 2011) except for those members with 30 or more years of Credited Service on June 30, 1979.

#### Vested Termination

- (A) Eligible upon termination of service prior to age 55 and prior to 10 years of Credited Service. The benefit equals a refund of Accumulated Deductions less any outstanding loans.
- (B) Eligible upon termination of service prior to age 55 and after 10 years of Credited Service (but less than 20 years if a member on or prior to January 18, 2000 or less than 25 years of service if a member after January 18, 2000). The benefit is a deferred retirement benefit, commencing at age 55, equal to a member annuity plus an employer pension which together provide a retirement allowance equal to 2% of FC multiplied by years of Credited Service up to 30 plus 1% of FC multiplied by years of Credited Service over 30.

## **Brief Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes (continued)**

### **Death Benefits**

#### **Ordinary Death Benefit - Lump Sum**

- (1) If a member dies prior to retirement, the benefit payable is as follows:

A lump sum amount equal to 3-1/2 times FC payable to the member's beneficiary.

- (2) After retirement but prior to age 55, the benefit is as follows:
- (i) For death while a Disabled Retiree the benefit is equal to 3-1/2 times Compensation.
  - (ii) For death while a Deferred Retiree the benefit is equal to his Accumulated Deductions.
  - (iii) For death while a Retiree who has completed 20 years of Credited Service, the benefit is equal to 1/2 times FC.
- (3) After retirement and after age 55, the benefit payable is equal to 1/2 times Compensation. (Note: If a Member is not disabled, 10 years of Credited Service is required for Members enrolling after July 1, 1971.)

#### **Ordinary Death Benefit - Survivor Annuity**

- (1) If a member dies prior to retirement, the benefit payable to a widow (widower) is equal to 50% of FC (20% of FC payable to one child, 35% of FC payable to two children or 50% of FC payable to three or more children if there is no surviving widow or widower or if the widow or widower dies or remarries or 25% of FC payable to one parent or 40% of FC payable to two parents if no surviving widow, widower or child. If no widow, widower, child or parent, the benefit payable to a beneficiary is the aggregate Accumulated Contributions at the time of death).
- (2) For any member who retired after December 18, 1967, the benefit payable to a widow (widower) is equal to 50% of FC plus 15% of FC for one child and 25% of FC for two or more children.
- If no spouse, or spouse remarries, the benefit is equal to 20% of FC for one child, 35% for two children, and 50% for three or more children.
- There is also a minimum benefit payable to widows (widowers) of \$4,500 a year.
- (3) For any member who retired with an Accidental Disability Benefit, the benefit payable is equal to \$4,500 a year to the widow (widower). If there is no widow (widower) the benefit payable is \$600 a year for 1 child, \$960 a year for 2 children, and \$1,500 a year for 3 or more children. The benefit for children is payable until age 18.

### **Accidental Death Benefit**

A death while active resulting from injuries received from an accident during performance of duty is eligible for a lump sum equal to the Accumulated Deductions plus 3-1/2 times Compensation plus an annuity benefit payable is as follows:

- (i) The benefit to a widow or widower is equal to 70% of Compensation.
- (ii) The benefit, when there is no spouse, or spouse is remarried, is equal to 20% of Compensation for one child, 35% for two children, 50% for three or more children. The benefit is payable while the children are under age 18, or until age 24 if they are full-time students, or it is payable for life if they are disabled.
- (iii) The benefit, when there is no spouse or children, is equal to 25% of Compensation for one parent and 40% for two parents.
- (iv) The benefit, when there is no relation as stated above, is equal to the Accumulated Deductions and is payable to a beneficiary or to the Member's estate. This is also the minimum benefit payable under (i), (ii) and (iii).

### **Disability Benefits**

#### **Ordinary Disability Retirement**

A Member is eligible for Ordinary Disability Retirement if he (she) has four years of Service and is totally and permanently incapacitated from the performance of usual or available duties. The benefit is equal to the greater of:

- (i) 1-1/2% of FC times the number of years of Credited Service; or
- (ii) 40% of FC.

In addition, a member who has at least 20 years but less than 25 years of Credited Service and who is required to retire upon application by the employer on and after January 18, 2000, shall receive a benefit equal to a member annuity plus an employer pension which together provide a total retirement allowance equal to 50% of FC plus 3% of FC multiplied by the number of years of Credited Service over 20 but not over 25.

### **Accidental Disability Retirement**

A Member is eligible upon total and permanent incapacitation from the performance of usual or available duties as a result of injury during the performance of regular duties. The benefit payable is equal to a Member annuity plus an employer pension which together equals 2/3 of the Compensation at date of injury.

### **Special Disability Retirement**

A member is eligible for Special Disability Retirement if he (she) has five years of Credited Service, is under age 55, and has received a heart transplant. The benefit payable is equal to a Member annuity plus an employer pension which together equals 50% of FC.

### **3. Member Contributions**

Each member contributes 10.0% of Compensation.

September 28, 2018

**BUCK GLOBAL, LLC**

The Board of Trustees

State Police Retirement System  
of New Jersey

**Re: Actuary's Certification Letter**

Members of the Board:

An actuarial valuation of the State Police Retirement System (SPRS or System) is performed annually to measure the ongoing costs of the System and the progress towards the funding goals of the System over time. In general, the financial goals of the State Police Retirement System are a pattern of contributions, which is sufficient to cover the normal cost of the System plus the contribution towards the unfunded accrued liability. The information contained in this certification letter is based on the July 1, 2016 valuation of SPRS.

In accordance with the New Jersey statutes, employers are required to make two contributions to the System, a normal contribution and an accrued liability contribution. The normal contribution is defined under the Projected Unit Credit funding method as the present value of the benefits accruing during the current year. Prior to the July 1, 2010 valuation, the unfunded accrued liability contribution for basic allowances and cost of living adjustments was determined as a level percentage of pay required to amortize the unfunded accrued liability over 30 years in annual payments increasing by 4.0% per year. The funding reform provisions of Chapter 78, P.L. 2011 changed the methodology used to amortize the unfunded accrued liability. Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation, the amortization period shall decrease by one year). Beginning with the July 1, 2029 actuarial valuation when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

Chapter 78, P.L. 2011 also increased member contributions from 7.5% to 9.00% of salary, beginning October 2011. Effective with the July 1, 2012 actuarial valuation, the determination of the State's normal cost contributions has been revised to reflect the use of all member contributions as an offset to the gross normal cost. This was the methodology used to determine the State's normal cost contribution prior to the enactment of Chapter 78, P.L. 2011 and is consistent with the methodology typically used by contributory public-sector retirement systems to calculate the employer's normal cost contribution.

The valuation reflects the actual fiscal year 2016 State pension contribution of \$35,580,000. In addition, the valuation also reflects the anticipated fiscal year 2017 State pension contribution of \$53,287,065. This amount may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

The actuarially determined contribution for the fiscal year beginning July 1, 2017 is \$144,208,823. This amount is comprised of an unfunded accrued liability payment of \$109,815,843 plus a normal contribution of \$34,392,980. This amount may be subject to change per the requirements of the State's fiscal year 2018 spending plan.

The State of New Jersey's Division of Pensions and Benefits reported the individual data for members of the State Police Retirement System of New Jersey as of the valuation date for use in the preparation of this report. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Division of Pensions and Benefits. The accuracy of the results presented in this report is dependent on the accuracy of the data.

As required under Section 32 of Chapter 89, P.L. 1965, experience studies are performed once in every three year period. The valuation was prepared using demographic assumptions recommended on the basis of the July 1, 2011 – June 30, 2014 Experience Study and approved by the Board of Trustees at the January 26, 2016 Board meeting. These assumptions will remain in effect for valuation purposes until such time as the Board adopts revised demographic assumptions.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
STATE POLICE RETIREMENT SYSTEM

The Treasurer has recommended a change in the economic assumptions used for the valuation. The rate of investment return has been revised from 7.90% per annum to 7.65% per annum. The assumed future salary increases of 3.45% per annum through fiscal year 2021 and 4.45% per annum for fiscal years 2022 and thereafter have been revised to be 2.95% per annum through fiscal year 2025 and 3.95% per annum for fiscal years 2026 and thereafter. These assumptions will remain in effect for valuation purposes until such time the Board or the Treasurer recommends revised assumptions.

The valuation cost method used is the Projected Unit Credit method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. The asset valuation method used was a five-year average of market values with write-up. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five-year period.

Future actuarial measurements may differ significantly from current measurements due to System experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in System provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the Board or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Buck Global, LLC (Buck), formerly Conduent HR Consulting LLC (Conduent), to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

The actuarial assumptions and methods used by the State Police Retirement System for financial reporting meet the requirements set forth in Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. Information necessary to comply with the reporting requirements of GASB Statement Nos. 67 and No. 68 were provided in separate Actuarial Reports, which are available on the Division of Pensions and Benefits web site. Please refer to the separate Actuarial Reports for supplementary information documentation and support for the actuarial analysis and information presented herein.

In my opinion, the attached schedules of valuation results fairly represent the status of the State Police Retirement System and present an accurate view of historical data. The underlying assumptions and methods used are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the System.

The following supporting schedules in the Actuarial Section were prepared by Buck:

- Summary of Actuarial Assumptions and Methods
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Schedule of Active Member Valuation Data
- Solvency Test
- Analysis of Past Financial Experience Reconciliation of Employer Contribution Rates
- Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

In addition, Buck prepared the "Schedule of Assets and Liabilities" and the "Schedule of Employer Contributions" in the Financial Section which can be found in the July 1, 2016 valuation report for SPRS. The Schedule of Assets and Liabilities and the Schedule of Employer Contributions are provided for informational purposes only since the reporting requirements of Statements No. 67 and No. 68 became effective as of the June 30, 2014 and June 30, 2015 reporting dates, respectively.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, FSA, EA, MAAA  
Principal, Consulting Actuary  
Buck Global, LLC



**Summary of Actuarial Assumptions and Methods**

Section 32 of Chapter 89, P.L. 1965 of the New Jersey Statutes provides that once in every three-year period the actuary shall examine in detail the demographic experience of the members and beneficiaries of the State Police Retirement System to assure that the tables used for determining expected liabilities are consistent with recent experience.

The demographic assumptions used for the July 1, 2016 actuarial valuation of the State Police Retirement System were based on the results of the experience study, which covered the period from July 1, 2011 to June 30, 2014, which were approved by the Board of Trustees, and the revised economic assumptions established in the July 1, 2016 valuation.

An outline of the actuarial assumptions and methods used for the July 1, 2016 valuation is as follows

**Valuation Interest Rate:** 7.65% per annum, compounded annually.

**COLA:** No future COLA is assumed.

**Salary Increases:** Salaries are assumed to increase by 2.95% per year through fiscal year ending 2025 and 3.95% per year for fiscal years ending 2026 and thereafter.

**401(a)(17) Pay Limit:** \$265,000 for 2016 increasing 3.00% per annum, compounded annually.

**Social Security Wage Base:** \$118,500 for 2016 increasing 4.00% per annum, compounded annually.

**Termination:** Withdrawal rates vary by length of service. Illustrative rates are shown below:

Age	Lives per Thousand	
	Less Than 5 Years of Service	Five to Nineteen Years of Service
25	3.8%	0.0%
30	3.8	2.0
35	8.3	1.4
40	0.0	0.8
45	0.0	1.0
50	0.0	0.0

## Summary of Actuarial Assumptions and Methods, *continued*

### Separations From Service

Representative mortality, disability and retirement rates are as follows:

Annual Rates of <sup>1</sup>					
Age	Ordinary Death <sup>2</sup>		Accidental Death	Ordinary Disability	Accidental Disability
	Male	Female			
25	0.4%	0.2%	0.3%	0.4%	0.2%
30	0.4	0.3	0.5	0.6	0.5
35	0.5	0.5	0.5	1.5	1.9
40	0.9	0.7	0.5	1.7	2.1
45	1.2	1.1	0.7	2.2	2.1
50	1.7	1.6	0.9	3.8	2.3

<sup>1</sup> Per one thousand lives.

<sup>2</sup> RP-2000 Combined Healthy Male (set back 3 years) and RP-2000 Combined Healthy Female Mortality Tables projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB as the base table. The base tables will be further projected using the Buck Modified MP-2014 Projection Scale. Rates shown above are unadjusted for the Buck Modified MP-2014 Projection Scale.

### Marriage

Husbands are assumed to be 3 years older than wives. Among the active population, 83.3% of participants are assumed married. No children are assumed. Neither the percentage married nor number of children assumption is individually explicit but they are considered as a single combined assumption.

### Valuation Method

Projected Unit Credit Method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. In accordance with Chapter 78, P.L. 2011, beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent valuation, the amortization period shall decrease by one year). Beginning with the July 1, 2029 actuarial valuation, when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

### Receivable Contributions

State contributions expected to be paid the June 30th following the valuation date are discounted by the valuation interest rate of 7.65% to the valuation date.

### Asset Valuation Method

A five-year average of market values with write-up. (This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five-year period.)



**Summary of Actuarial Assumptions and Methods, continued**

**Deaths After Retirement**

For healthy inactive members and beneficiaries of deceased members the RP-2000 Combined Healthy Male (set back 3 years) and RP-2000 Combined Healthy Female Mortality tables projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB. These base tables will be further projected beyond the valuation date using the Buck Modified MP-2014 mortality improvement scale. For disabled members the RP-2000 Combined Healthy Male (set forward 5 years) and RP-2000 Combined Healthy Female Mortality (set forward 5 years) tables are used. Illustrative rates of mortality unadjusted for the Buck Modified MP-2014 Projection Scale are shown below:

Age	Lives per Thousand			
	Retired Members and Beneficiaries of Deceased Members		Disabled Members	
	Males	Females	Males	Females
55	2.6%	2.5%	6.7%	5.1%
60	4.3	4.4	12.7	9.7
65	7.5	8.3	22.2	16.7
70	13.2	14.3	37.8	28.1
75	22.4	24.0	64.4	45.9
80	38.5	39.2	110.8	77.4
85	66.1	66.2	183.4	131.7
90	117.8	114.0	267.5	194.5

**Rates of Retirement**

Rates of retirement vary by length of service and age (if more than 24 years of service) with 100% of those remaining at age 55 retiring at age 55. The rates are shown below:

Service	Lives per 100
20%	2.0%
21	0.5
22	0.0
23	0.0
24	0.0
25	50.0
<b>Greater than 25:</b>	
(a) through age 42	5.0
(b) ages 43-47	28.0
(c) ages 48-53	33.0
(d) age 54	61.0

## Summary of Actuarial Assumptions and Methods, *continued*

### Changes in Actuarial Assumptions and Methods

The following are changes to the actuarial assumptions and methods from those used in the prior valuation:

1. The rate of investment return has been reduced from 7.90% per annum to 7.65% per annum. The assumed future salary increases of 3.45% per annum through fiscal year 2021 and 4.45% per annum for fiscal years 2022 and thereafter have been reduced by 0.5% at all ages for both the select and ultimate periods. In addition the select period was extended through fiscal year 2025. The impact of the assumption changes is an increase in the accrued liability of \$45,696,315.

**Schedule of Retired Members and Beneficiaries  
Added to and Removed from Rolls**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	137	\$ 8,351,556	82	\$ 3,165,408	3,566	\$ 213,292,784	1.02%	\$59,812
7/1/15	160	10,330,374	58	2,732,284	3,511	208,106,636	3.79	59,273
7/1/14	201	14,131,655	45	1,563,031	3,409	200,508,546	6.69	58,817
7/1/13	291	20,641,305	68	2,192,736	3,253	187,939,922	10.88	57,774
7/1/12	256	17,483,694	44	1,557,365	3,030	169,491,353	10.81	55,938
7/1/11	232	14,848,311	66	2,030,490	2,818	152,950,538	10.14	54,276

<sup>1</sup> These values include beneficiaries in receipt but exclude deferred vested terminations.

<sup>2</sup> The benefit amounts shown prior to the 7/1/2013 valuation date are the annualized benefits as of the valuation date and are not the actual benefits paid during the fiscal year.

**Schedule of Active Members Valuation Data**

Valuation Date	Number of Active Members	Annual Compensation	Average Compensation	% Increase/(Decrease) in Average Compensation
7/1/16	2,725	\$ 277,771,135	\$ 101,934	-0.01%
7/1/15	2,676	275,477,457	102,944	-1.09
7/1/14	2,522	262,496,289	104,083	-1.46
7/1/13	2,481	262,063,829	105,628	1.48
7/1/12	2,721	283,219,927	104,086	7.56
7/1/11	2,844	275,219,752	96,772	1.12

**Solvency Test**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>3</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$ 190,955,019	\$ 2,401,980,284	\$ 616,450,730	\$ 1,931,131,875	100.00%	72.45%	0.00%
7/1/15	181,536,046	2,289,865,821	618,818,617	1,969,239,472	100.00	78.07	0.00
7/1/14	173,529,948	2,173,442,158	616,210,014	1,981,376,495	100.00	83.18	0.00
7/1/13	171,462,709	2,034,551,263	664,576,728	1,990,797,312	100.00	89.42	0.00
7/1/12	180,407,372	1,822,707,659	764,653,782	1,995,388,133	100.00	99.58	0.00
7/1/11	182,626,003	1,634,856,377	764,468,466	2,015,624,130	100.00	100.00	25.92

<sup>3</sup> Actuarial value including receivable amounts.

## Analysis of Past Financial Experience — Reconciliation of Employer Contribution Rates

Valuation Year	July 1, 2016	July 1, 2015	July 1, 2014	July 1, 2013	July 1, 2012	July 1, 2011
Prior Year Contribution Rate <sup>1</sup>	48.36%	45.18%	41.56%	37.78%	32.53%	30.92%
Adjustment for Full Member Contributions to Offset Normal Cost	N/A	N/A	N/A	(1.34)%	N/A	N/A
Revised Prior Year Contribution Rate <sup>1</sup>	48.36%	45.18%	41.56%	36.44%	32.53%	30.92%
<b>Net Change Due to:</b>						
Current New Entrants	0.10	0.71	0.36	0.00	0.11	0.00
Excess Salary Increases	(0.46)	(0.26)	(0.78)	(0.35)	1.58	(0.64)
Assumption/Method Changes	(0.01)	1.86	0.79	0.00	0.20	(1.75)
COLA Increases	0.00	0.00	0.00	0.00	0.00	(0.39)
Retiree Mortality	(0.44)	(0.38)	0.16	0.88	0.37	0.05
Active and Other Experience	0.54	(1.57)	0.38	1.28	(0.88)	0.19
Revised State Contribution <sup>2</sup>	0.00	(0.19)	N/A	N/A	N/A	N/A
Investment Loss/(Gain)	1.48	0.55	0.12	1.33	1.87	1.61
Appropriation Act <sup>3</sup>	2.35	2.46	2.59	1.98	2.00	2.54
Recommended Contribution Rate:						
• Prior to reflecting Chapter 1, P.L. 2010 <sup>1</sup>	51.92%	48.36%	45.18%	41.56%	37.78%	32.53%
• After reflecting Chapter 1, P.L. 2010 <sup>1</sup>	N/A	N/A	N/A	23.75%	16.18%	9.30%

<sup>1</sup> Excludes contribution rates of 0.61% for 2016, 0.65% for 2015, 0.84% for 2014, 0.76% for 2013, 0.67% for 2012 and 0.73% for 2011 for premiums payable to the Non-Contributory Group Insurance Premium Fund.

<sup>2</sup> The anticipated fiscal year 2015 contribution of \$31,491,069 has been increased to \$37,358,000 to reflect the actual State contribution made during fiscal year 2015.

<sup>3</sup> Changes in 2011, 2012, and 2013 are due to the provisions of Chapter 1, P.L. 2010.

## Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

### Eligibility for Membership

All members of the former State Police and Benevolent Fund: full-time commissioned officers, non-commissioned officers, or troopers of the Division of State Police. Membership is a condition of employment.

### 1. Definitions

#### Plan Year

The 12-month period beginning on July 1 and ending on June 30.

#### Service

Service rendered while a member as described above.

#### Credited Service

A year is credited for each year of service as an officer or trooper in the State Police. Service with other State Retirement Systems is included in the calculation of the retirement benefit at the rate of 1% of final compensation for each year of service credit.

#### Compensation

Based on contractual salary, including maintenance allowance, received by the member in the last 12 months of credited service preceding retirement, termination or death. Compensation does not include individual salary adjustments granted primarily in anticipation of the retirement or for temporary or extracurricular duties beyond the ordinary work day. (Effective June 30, 1996, Chapter 113, P.L. 1997, provided that the amount of compensation used for employer and member contributions and benefits under the System cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code; Chapter 1, P.L. 2010, provides that for members hired on or after May 22, 2010, the amount of compensation used for employer and member contributions and benefits under the System cannot exceed the annual maximum wage contribution base for Social Security, pursuant to the Federal Insurance Contributions Act.)

#### Final Compensation

Average compensation received by member in last 12 months of credited service preceding retirement or death. Such term includes the value of the member's maintenance allowance for the same period. (Chapter 1, P.L. 2010, provides that for members hired on or after May 22, 2010, Final Compensation means the average annual salary for service for which contributions are made during any three fiscal years of membership providing the largest possible benefit to the member or the member's beneficiary. Such term shall include the value of the member's maintenance allowance.)

### Aggregate Contributions

The sum of all amounts deducted from the compensation of a member or contributed by him or on his behalf. For contribution purposes, compensation does not include overtime, bonuses, maintenance, or any adjustments before retirement.

### Adjusted Final Compensation

The amount of compensation or compensation as adjusted, as the case may be, increased by the same percentage increase which is applied in any adjustments of the compensation schedule of active members after the member's death and before the date on which the deceased member of the retirement system would have accrued 25 years of service under an assumption of continuous service, at which time that amount will become fixed. Adjustments to compensation or adjusted compensation shall take effect at the same time as any adjustments in the compensation schedule of active members.

### 2. Benefits

#### Service Retirement

Mandatory retirement at age 55. Voluntary retirement prior to age 55 with 20 years of credited service. Benefit is an annual retirement allowance equal to the greater of (a), (b), or (c), as follows:

- (a) 50% of final compensation;
- (b) For members retiring with 25 or more years of service, 65% of final compensation, plus 1% for each year of service in excess of 25 years, to a maximum of 70% of final compensation.
- (c) For members as of August 29, 1985, who would not have 20 years of service by age 55, benefit as defined in (a) above. For members as of August 29, 1985, who would have 20 years of service but would not have 25 years of service at age 55, benefit as defined in (a) above plus 3% for each year of service in excess of 20 years.

#### Vested Termination

Termination of service prior to age 55. Benefit for 10 to 20 years of service - Refund of aggregate contributions, or a deferred life annuity beginning at age 55 equal to 2% of final compensation for each year of service up to 20 years.

#### Ordinary Death

##### *Before Retirement*

Death of an active member of the plan. Benefit is equal to:

- (a) Lump sum payment equal to 3-1/2 times final compensation, plus

## Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes, *continued*

- (b) Spousal life annuity of 50% of final compensation payable until spouse's death or remarriage. If there is no surviving spouse, or upon death or remarriage, a total of 20%, 35%, or 50% of final compensation payable to one, two, or three dependent children. If there is no surviving spouse (or dependent children), an amount equal to 25% or 40% of final compensation to one or two dependent parents.

### Minimum ordinary death benefit

#### Aggregate contributions

#### *After Retirement*

Death of a retired member of the plan. The benefit is equal to:

- (a) Lump sum of 50% of final compensation, plus
- (b) Spousal life annuity of 50% of final compensation payable until spouse's death or remarriage. If there is no surviving spouse, or upon death or remarriage, a total of 20%, 35%, or 50% of final compensation payable to one, two or three dependent children, respectively.

### Accidental Death

Death of an active member of the plan resulting during performance of duties. Benefit is equal to:

- (a) Lump sum payment equal to 3-1/2 times final compensation, plus
- (b) Spousal life annuity of 70% of adjusted final compensation payable until spouse's death. If there is no surviving spouse, or upon death of the surviving spouse, a total of 20%, 35%, or 50% of adjusted final compensation payable to one, two or three dependent children. If there is no surviving spouse or dependent children, 25% or 40% of adjusted final compensation to one or two dependent parents.

### Ordinary Disability Retirement

Mentally or physically incapacitated for the performance of his usual duty and of any other available duty in the Division of State Police and such incapacity is likely to be permanent.

- (a) The benefit for members with less than four years of service is a refund of the member's aggregate contributions.
- (b) For members with at least four years of service, the benefit is an immediate life annuity equal to 40% of final compensation plus 1-1/2% of final compensation for years of creditable service in excess of 26-2/3.
- (c) For members who are forced to retire with 20 but less than 25 years of service, the benefit is 50% of the member's final compensation plus 3% of final compensation for each year of service in excess of 20 years, to a maximum of 65% of final compensation.

For death following disability retirement, a lump sum equal to 3-1/2 times final compensation if death occurs prior to age 55 or 1/2 of final compensation after age 55.

### Accidental Disability Retirement

Totally and permanently disabled as a direct result of a traumatic event occurring during and as a result of his regular or assigned duties. Benefit is an immediate life annuity equal to 2/3 of final compensation. Upon death after disability retirement, lump sum benefit of 3-1/2 times final compensation if death occurs before age 55 and 1/2 times final compensation if death occurs after age 55.

### Loan Provision

Eligible if an active member of the State Police Retirement System with at least three years of contributory service. If eligible, a member may borrow an amount, which is greater than \$50, but not more than 50% of aggregate contributions. The loan accrues at a rate set by the State Treasurer, which is based on a commercially reasonable rate as required by the Internal Revenue Service. An administrative fee may be charged by for the loan.

### Member Contributions

Each member contributes 9.0% of Compensation.

September 28, 2018

**BUCK GLOBAL, LLC**

State House Commission

Judicial Retirement System  
of New Jersey

**Re: Actuary's Certification Letter**

Members of the Commission:

An actuarial valuation of the Judicial Retirement System ("JRS") is performed annually to measure the ongoing costs of the System and the progress towards the funding goals of the System over time. In general, the financial goals of the Judicial Retirement System are a pattern of contributions, which is sufficient to cover the normal cost of the System plus the contribution towards the unfunded accrued liability. The information contained in this certification letter is based on the July 1, 2016 valuation of JRS.

In accordance with the New Jersey statutes, employers are required to make two contributions to the System, a normal contribution and an accrued liability contribution. The normal contribution is defined under the Projected Unit Credit funding method as the present value of the benefits accruing during the current year. Prior to the July 1, 2010 valuation, the unfunded accrued liability contribution for basic allowances and cost of living adjustments was determined as a level percentage of pay required to amortize the unfunded accrued liability over 30 years in annual payments increasing by 4.0% per year. The funding reform provisions of Chapter 78, P.L. 2011 changed the methodology used to amortize the unfunded accrued liability. Beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation, the amortization period shall decrease by one year). Beginning with the July 1, 2029 actuarial valuation when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

Chapter 78, P.L. 2011 also increased member contributions by 9% of salary phased-in over a period of seven years, beginning October 2011. The increase in member contributions will be fully phased-in by July 2017. Effective with the July 1, 2012 actuarial valuation, the determination of the State's normal cost contributions has been revised to reflect the use of all member contributions as an offset to the gross normal cost. This was the methodology used to determine the State's normal cost contribution prior to the enactment of Chapter 78, P.L. 2011 and is consistent with the methodology typically used by contributory public-sector retirement systems to calculate the employer's normal cost contribution.

The valuation reflects actual fiscal year 2016 State contributions of \$13,951,000. In addition, the fiscal year 2017 has an actuarially determined pension contribution of 17,662,708. This amount may be subject to change per the requirements of the State's fiscal year 2017 spending plan.

The actuarially determined contribution for the fiscal year beginning July 1, 2017 is \$ 46,531,943. This amount is comprised of an unfunded accrued liability payment of \$ 34,665,070 plus a normal contribution of \$11,866,873. This amount may be subject to change per the requirements of the State's fiscal year 2018 spending plan.

The State of New Jersey's Division of Pensions and Benefits reported the individual data for members of the Judicial Retirement System of New Jersey as of the valuation date for use in the preparation of this report. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Division of Pensions and Benefits. The accuracy of the results presented in this report is dependent on the accuracy of the data.

As required under Chapter 140, P.L. 1973, experience studies are performed once in every three year period. The valuation was prepared on the basis of the demographic assumptions that were determined from the July 1, 2011 – June 30, 2014 Experience Study and approved by the State House Commission. These assumptions will remain in effect for valuation purposes until such time as the State House Commission adopts revised demographic assumptions.



# ACTUARIAL INFORMATION

The valuation reflects economic assumptions, which include a rate of investment return of 7.65% per annum and the assumed future salary increases of 2.00% per annum through fiscal year ending 2025 and 3.00% per annum for fiscal years ending 2026 and thereafter. These assumptions will remain in effect for valuation purposes until such time the State House Commission or the Treasurer recommends revised assumptions.

The valuation cost method used is the projected unit credit method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. The asset valuation method used was a five-year average of market values with write-up. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the State House Commission or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Buck Global, LLC (Buck), formerly Conduent HR Consulting LLC (Conduent), to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

The actuarial assumptions and methods used by the Judicial Retirement System for financial reporting meet the requirements set forth in Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. Information necessary to comply with the reporting requirements of GASB Statement Nos. 67 and No. 68 were provided in separate Actuarial Reports, which are available on the Division of Pensions and Benefits web site. Please refer to the separate Actuarial Reports for supplementary information documentation and support for the actuarial analysis and information presented herein.

In my opinion, the attached schedules of valuation results fairly represent the status of the Judicial Retirement System and present an accurate view of historical data. The underlying assumptions and methods used are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the System.

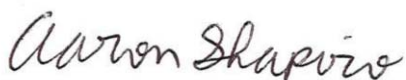
The following supporting schedules in the Actuarial Section were prepared by Buck Business Services:

- Summary of Actuarial Assumptions and Methods
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Schedule of Active Member Valuation Data
- Solvency Test
- Analysis of Past Financial Experience Reconciliation of Employer Contribution Rates
- Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

In addition, Buck prepared the "Schedule of Assets and Liabilities" and the "Schedule of Employer Contributions" in the Financial Section which can be found in the July 1, 2016 valuation report for JRS. The Schedule of Assets and Liabilities and the Schedule of Employer Contributions are provided for informational purposes only since the reporting requirements of Statements No. 67 and No. 68 became effective as of the June 30, 2014 and June 30, 2015 reporting dates, respectively.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, FSA, EA, MAAA  
Principal, Consulting Actuary  
Buck Global, LLC



**Summary of Actuarial Assumptions and Methods**

Section 31 of Chapter 140, P.L. 1973 of the New Jersey Statutes provides that once in every three-year period the actuary shall examine in detail the demographic experience of the members and beneficiaries of the Judicial Retirement System to assure that the tables used for determining expected liabilities are consistent with recent experience.

The demographic assumptions used for the July 1, 2016 actuarial valuation of the Judicial Retirement System were based on the results of the experience study, which covered the period from July 1, 2011 to June 30, 2014, which were approved by the State House Commission. The valuation interest rate and salary scale assumption were changed effective with the July 1, 2016 valuation as indicated below.

An outline of the actuarial assumptions and methods used for the July 1, 2016 valuation is as follows:

**Valuation Interest Rate:** 7.65% per annum, compounded annually.

**COLA:** No future COLA is assumed.

**Salary Increases:** Salaries are assumed to increase by 2.00% per year through fiscal year ending 2025 and 3.00% per year for fiscal years ending 2026 and thereafter.

**401(a)(17) Pay Limit:** \$265,000 for 2016 increasing 3.00% per annum, compounded annually.

**Separations from Service:** Representative mortality and disability rates are as follows:

Age	Lives per Thousand		
	Death <sup>1</sup>		
	Male	Female	Disability
30	0.43%	0.38%	0.22%
35	0.74	0.58	0.26
40	1.04	0.90	0.33
45	1.45	1.38	0.64
50	2.06	2.12	1.14
55	3.49	3.68	1.97
60	6.16	6.71	3.26
65	10.89	11.49	4.73

<sup>1</sup> RP-2000 Combined Healthy Male and RP-2000 Combined Healthy Female Mortality Tables (unadjusted for males and set forward 3 years for females) projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are projected beyond the base year using the Buck Modified MP-2014 Projection scale. The above rates are unadjusted for the Buck Modified MP-2014 Projection Scale.

# ACTUARIAL INFORMATION

## Summary of Actuarial Assumptions and Methods, *continued*

### Deaths after Retirement

RP-2000 Combined Healthy Mortality Tables (unadjusted for males and set forward 3 years for females) for service retirement and beneficiaries of former members projected on a generational basis from the base year of 2000 to 2013 using Projection Scale BB for the base tables. The base tables are projected beyond the base year using the Buck Modified MP-2014 Projection scale. The RP-2000 Disability Mortality Tables (set forward 2 years for males and females) are used to value disabled retirees. Representative values of the annual rates of mortality unadjusted for the Buck Modified MP-2014 Projection Scale are as follows:

Age	Lives per Thousand			
	Retired Members and Beneficiaries of Deceased Members		Disabled Members	
	Males	Females	Males	Females
55	3.49%	3.68%	38.03%	18.65%
60	6.16	6.71	44.98	24.08
65	10.89	11.49	54.45	31.32
70	18.25	19.63	69.41	42.85
75	31.09	32.13	92.15	59.54
80	52.89	53.43	121.88	82.30
85	91.00	91.72	155.23	114.51
90	158.84	147.61	216.61	159.92

### Retirement

Age	Age 60 with 20 Years Judicial Service or Age 65 with 15 Years Judicial Service	After Age 59 with less than 12 Years Judicial Service	After Age 59 with 12 or more Years Judicial Service (but have not attained 60/20 JS or 65/15 JS)	Prior to Age 60 with 5 Years Judicial Service and 25 Years Public Service
50	0.00000	0.00000	0.00000	0.00000
51	0.00000	0.00000	0.00000	0.00000
52	0.00000	0.00000	0.00000	0.00000
53	0.00000	0.00000	0.00000	0.00000
54	0.00000	0.00000	0.00000	0.00000
55	0.00000	0.00000	0.00000	0.00000
56	0.00000	0.00000	0.00000	0.00000
57	0.00000	0.00000	0.00000	0.00000
58	0.00000	0.00000	0.00000	0.00000
59	0.00000	0.00000	0.00000	0.00000
60	0.30000	0.02500	0.00000	0.00000
61	0.20000	0.02500	0.00000	0.00000
62	0.20000	0.02500	0.00000	0.00000
63	0.30000	0.02500	0.00000	0.00000
64	0.30000	0.02500	0.00000	0.00000
65	0.37500	0.02500	0.10000	0.00000
66	0.24000	0.02500	0.00000	0.00000
67	0.24000	0.02500	0.00000	0.00000
68	0.24000	0.02500	0.00000	0.00000
69	0.24000	0.02500	0.00000	0.00000

## Summary of Actuarial Assumptions and Methods, continued

### **Marriage**

Husbands are assumed to be 3 years older than wives. Among the active population, 90% of participants are assumed married. No children are assumed. Neither the percentage married nor the number of children assumption is individually explicit but are considered reasonable as a single combined assumption.

### **Valuation Method**

Projected Unit Credit Method. This method essentially funds the System's benefits accrued to the valuation date. Experience gains and losses are recognized in future accrued liability contributions. In accordance with Chapter 78, P.L. 2011, beginning with the July 1, 2010 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over an open 30 year period. Beginning with the July 1, 2019 actuarial valuation, the accrued liability contribution shall be computed so that if the contribution is paid annually in level dollars, it will amortize the unfunded accrued liability over a closed 30 year period (i.e., for each subsequent actuarial valuation the amortization period shall decrease by one year.) Beginning with the July 1, 2029 actuarial valuation, when the remaining amortization period reaches 20 years, any increase or decrease in the unfunded accrued liability as a result of actuarial losses or gains for subsequent valuation years shall serve to increase or decrease, respectively, the amortization period for the unfunded accrued liability, unless an increase in the amortization period will cause it to exceed 20 years. If an increase in the amortization period as a result of actuarial losses for a valuation year would exceed 20 years, the accrued liability contribution shall be computed for the valuation year using a 20 year amortization period.

### **Receivable Contributions**

State contributions expected to be paid the June 30th following the valuation date are discounted by the valuation interest rate of 7.65% to the valuation date

### **Asset Valuation Method**

A five year average of market values with write-up was used. (This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five-year period).

### **Changes in Actuarial Assumptions and Methods**

The following are changes to the actuarial assumptions and methods from those used in the prior valuation:

1. The rate of investment return has been reduced from 7.90% per annum to 7.65% per annum. The assumed future salary increases of 2.50% per annum through fiscal year 2021 and 3.50% per annum for fiscal years 2022 and thereafter have been reduced by 0.5% at all ages for both the select and ultimate periods. In addition the select period was extended through fiscal year 2025. The impact of the assumption changes indicates an increase in the accrued liability of \$7,095,990 due to these assumption changes.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
JUDICIAL RETIREMENT SYSTEM

## Schedule of Retired Members and Beneficiaries Added to and Removed from Rolls

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number <sup>1</sup>	Annual Allowance <sup>2</sup>		
7/1/16	41	\$3,599,047	22	\$1,471,553	605	\$55,093,264	4.02%	\$91,063
7/1/15	43	4,254,340	18	1,234,963	586	52,965,770	6.05	90,385
7/1/14	34	3,165,378	22	1,456,153	561	49,946,393	3.54	89,031
7/1/13	48	4,091,470	34	2,021,915	549	48,237,168	4.48	87,864
7/1/12	34	3,723,186	21	1,423,636	535	46,167,613	5.24	86,295
7/1/11	41	3,699,618	24	1,442,965	522	43,868,063	6.35	84,038

<sup>1</sup> These values include beneficiaries in receipt but exclude deferred vested terminations.

<sup>2</sup> The benefit amounts shown are the annualized benefits as of the valuation date and are not the actual benefits paid during the fiscal year.

## Schedule of Active Members Valuation Data

Valuation Date	Number of Active Members	Annual Compensation	Average Compensation	% Increase (Decrease) in Average Compensation
7/1/16	410	\$68,062,584	\$166,006	-0.05%
7/1/15	404	67,097,166	166,082	-0.14
7/1/14	397	66,028,491	166,319	0.32
7/1/13	409	67,810,110	165,795	-0.13
7/1/12	407	67,497,660	165,842	-0.16
7/1/11	406	67,437,125	166,101	0.01

## Solvency Test

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>3</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$31,564,870	\$460,298,517	\$169,512,295	\$226,310,119	100.00%	42.31%	0.00%
7/1/15	26,322,768	430,541,499	145,499,933	243,864,022	100.00	50.53	0.00
7/1/14	23,058,086	444,577,573	165,044,278	258,101,497	100.00	52.87	0.00
7/1/13	20,588,967	435,970,958	163,816,367	276,966,331	100.00	58.81	0.00
7/1/12	19,799,227	417,423,315	167,958,092	290,191,842	100.00	64.78	0.00
7/1/11	18,353,365	394,760,527	172,586,895	310,724,782	100.00	74.06	0.00

<sup>3</sup> Actuarial value including receivable amounts.

**Analysis of Past Financial Experience —  
 Reconciliation of Employer Contribution Rates**

<b>Valuation Year</b>	<b>July 1, 2016</b>	<b>July 1, 2015</b>	<b>July 1, 2014</b>	<b>July 1, 2013</b>	<b>July 1, 2012</b>	<b>July 1, 2011</b>
Prior Year Contribution Rate <sup>1</sup>	65.81%	70.43%	65.38%	66.20%	60.43%	53.45%
Adjustment for Full Member Contributions to Offset Normal Cost	N/A		N/A	(2.42)%	N/A	N/A
Revised Prior Year Contribution Rate <sup>1</sup>	65.81%	70.43%	65.38%	63.78%	60.43%	53.45%
<b>Net Change Due to:</b>						
Current New Entrants	1.31	1.97	0.68	1.93	1.73	0.20
Excess Salary Increases	(0.64)	(0.62)	(0.34)	(0.91)	(0.97)	(1.37)
Assumption/Method Changes	(0.63)	(8.54)	1.03	0.00	0.61	(3.87)
COLA Increases	N/A	N/A	N/A	N/A	N/A	(0.19)
Retiree Mortality	0.97	(0.14)	0.36	0.19	0.12	0.04
Active and Other Experience	(2.83)	(1.84)	(1.16)	(3.86)	(1.05)	6.37
Revised State Contribution <sup>2</sup>	(0.00)	(0.31)	N/A	N/A	N/A	N/A
Investment Loss/(Gain)	0.96	0.59	0.45	1.06	1.52	1.37
Appropriation Act <sup>3</sup>	3.42	4.27	4.03	3.19	3.81	4.43
Chapter 78, P.L. 2011	N/A	N/A	N/A	N/A	N/A	N/A
<b>Recommended Contribution Rate:</b>						
• Prior to reflecting Chapter 1, P.L. 2010 <sup>1</sup>	68.37%	65.81%	70.43%	65.38%	66.20%	60.43%
• After reflecting Chapter 1, P.L. 2010 <sup>1</sup>	N/A	N/A	N/A	37.36%	28.37%	17.27%

<sup>1</sup> Excludes contribution rates of 1.02% for 2016, 0.97% for 2015, 1.22% for 2014, 1.18% for 2013, 1.29% for 2012, and 1.34% for 2011 for premiums payable to the Non-Contributory Group Insurance Premium Fund.

<sup>2</sup> The anticipated fiscal year 2015 contribution of \$14,117,622 has been increased to \$16,506,000 to reflect the actual State contribution made during fiscal year 2015.

<sup>3</sup> Changes in 2011, 2012 and 2013 are due to the provisions of Chapter 1, P.L. 2010.

## Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

### Eligibility for Membership

Chief Justice and associate justices of the Supreme Court, judges of the Superior Court and tax courts of the State of New Jersey.

### 1. Definitions

#### Plan Year

The 12-month period beginning on July 1 and ending on June 30.

#### Service

A year is credited for each year of service as a public employee in the State of New Jersey. Any service, for which member did not receive annual salary of at least \$500, shall be excluded.

#### Final Salary

Annual salary received by the member at the time of retirement or other termination of service. (Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code.)

#### Accumulated Deductions

The sum of all amounts deducted from the compensation of a member or contributed by him or on his behalf.

#### Retirement Allowance

Pension derived from contributions of the State plus the annuity derived from employee contributions.

### 2. Benefits

#### Service Retirement

- (A) Mandatory retirement at age 70. Voluntary retirement prior to age 70 as follows:
- (a) Age 70 and 10 years of judicial service;
  - (b) Age 65 and 15 years of judicial service; or
  - (c) Age 60 and 20 years of judicial service.

Benefit is an annual retirement allowance equal to 75% of final salary.

- (B) Age 65 while serving as a judge, five consecutive years of judicial service and 15 years in the aggregate of public service; or

Age 60 while serving as a judge, five consecutive years of judicial service and 20 years in the aggregate of public service.

Benefit is an annual retirement allowance equal to 50% of final salary.

- (C) Age 60 while serving as a judge, five consecutive years of judicial service and 15 years in the aggregate of public service. Benefit is an annual retirement allowance equal to 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year in excess of 25 years.

- (D) Age 60 while serving as a judge. Benefit is an annual retirement allowance equal to 2% of final salary for each year of judicial service up to 25 years plus 1% for each year in excess of 25 years.

#### Early Retirement

Prior to age 60 while serving as a judge, five consecutive years of judicial service and 25 or more years in the aggregate of public service. Benefit is an annual retirement allowance equal to 2% of final salary for each year of public service up to 25 years plus 1% of final salary for each year of public service in excess of 25 years, actuarially reduced for commencement prior to age 60.

#### Vested Termination

Termination of service prior to age 60, with five consecutive years of judicial service and 10 years in the aggregate of public service. Benefit is a refund of accumulated deductions, or a deferred life annuity beginning at age 60 equal to 2% of final salary for each year of public service up to 25 years, plus 1% for service in excess of 25 years.

#### Death Benefits

##### Before Retirement

Death of an active member of the plan. Benefit is equal to:

- (a) Lump sum payment equal to 1-1/2 times final salary, plus
- (b) Spousal life annuity of 25% of final salary payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child (children). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child (children). If there is no surviving spouse (or dependent children), 20% or 30% of final salary to one or two dependent parents.

## **Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes, *continued***

### *After Retirement*

Death of a retired member of the plan. Benefit is equal to:

- (a) Lump sum of 25% of final salary for a member retired under normal or early retirement. If a member were receiving a disability benefit, a lump sum 1-1/2 times final salary if death occurred before the member attained age 60 and ¼ times final salary if death occurred after age 60, plus
- (b) Spousal life annuity of 25% of final salary payable until spouse's remarriage plus 10% (15%) to one (two or more) dependent child (children). If there is no surviving spouse, or upon death or remarriage, a total of 15% (20%, 30%) of final salary payable to one (two, three or more) dependent child (children).

### **Disability Retirement**

Physically or otherwise incapacitated for a full and efficient service to State in his judicial capacity and such incapacity is likely to be permanent. Benefit is an annual retirement allowance of 75% of final salary.

### **Member Contributions**

Any member enrolled prior to January 1, 1996, contributes 3% of the difference between current salary and salary for that position on January 18, 1982. Members enrolled on and after January 1, 1996, contribute 3% of their full salary.

Chapter 78, P.L. 2011, increased Member Contributions by 9% of salary phased-in over a period of seven years beginning October 2011. (The additional 9% of salary will be fully phased-in by July 2017.)

(a) For members enrolled prior to January 1, 1996:

- i. Member Contributions of 9% (phased-in over a period of seven years beginning October 2011) of the salary for that position on January 18, 1982.
- ii. Member Contributions increase from 3% to 12% (phased-in over a period of seven years beginning October 2011) of the difference between current salary and salary for that position on January 18, 1982.

(b) For members enrolled on or after January 1, 1996, Member Contributions increase from 3% to 12% of full salary phased-in over a period of seven years beginning October 2011.

September 28, 2018

**BUCK GLOBAL, LLC**

The Board of Trustees

Consolidated Police and Firemen's Pension Fund  
of New Jersey

## **Re: Actuary's Certification Letter**

Members of the Board:

An actuarial valuation of the Consolidated Police and Firemen's Pension Fund ("CPFPPF") is performed annually to measure the ongoing costs of the Fund and the progress towards the funding goals of the Fund over time. Since the Pension Fund is closed to new entrants and there are no active participants, the financial goals of the Consolidated Police and Firemen's Pension Fund are to ensure that the combination of future State appropriations and current Trust assets, both projected forward with expected investment earnings, are sufficient to provide for all future benefit payments. The information contained in this certification letter is based on the July 1, 2016 valuation of CPFPPF.

The unfunded accrued liability for basic allowances was initially determined as of June 30, 1990 and was to be amortized over a nine-year period. However, the provisions of Chapter 115, P.L. 1997 of the Pension Security Legislation permitted the State to pay off the unfunded accrued liabilities from the proceeds of pension obligation bonds.

The actuarially determined contribution for the fiscal year beginning July 1, 2017 was based on the method described above using an interest rate of 2.00% per annum. In accordance with actuarial standards of practice, the mortality assumption for service retirements and beneficiaries was updated to the RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables and the tables will be further projected beyond the valuation date using the Buck Modified MP-2014 projection scale. The asset valuation method used was a five-year average of market values with write-up. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income.

The State of New Jersey's Division of Pensions and Benefits reported the individual data for members of the Consolidated Police and Firemen's Pension Fund of New Jersey as of the valuation date to the actuaries. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Division of Pensions and Benefits. The accuracy of the results presented in this report is dependent on the accuracy of the data.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the Commission or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Buck Global, LLC (Buck), formerly Conduent HR Consulting LLC (Conduent), to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

The actuarial assumptions and methods used by the Consolidated Police and Firemen's Pension Fund for financial reporting meet the requirements set forth in Governmental Accounting Standards Board (GASB) Statement No. 67. Information necessary to comply with the reporting requirements of GASB Statement No. 67 was provided in a separate Actuarial Report, which is available on the Division of Pensions and Benefits web site. Please refer to that separate Actuarial Report for supplementary information documentation and support for the actuarial analysis and information presented herein.

In my opinion, the attached schedules of valuation results fairly represent the status of the Consolidated Police and Firemen's Pension Fund and present an accurate view of historical data. The underlying assumptions and methods used are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the Fund.



The following supporting schedules in the Actuarial Section were prepared by Buck:

- Summary of Actuarial Assumptions and Methods
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Schedule of Active Member Valuation Data
- Solvency Test
- Analysis of Past Financial Experience Reconciliation of Unfunded Accrued Liability/(Surplus)
- Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

In addition, Buck prepared the "Schedule of Assets and Liabilities" and the "Schedule of Employer Contributions" in the Financial Section which can be found in the July 1, 2016 valuation report for CPFPF. The Schedule of Assets and Liabilities and the Schedule of Employer Contributions are provided for informational purposes only since the reporting requirements of Statement No. 67 became effective as of the June 30, 2014 reporting date.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, F.S.A., E.A., M.A.A.A.  
Principal, Consulting Actuary  
Buck Global, LLC

## Summary of Actuarial Assumptions and Methods

An outline of the actuarial assumptions and methods used for the July 1, 2016 valuation is as follows:

**Valuation Interest Rate:** 2.00% per annum, compounded annually for development of costs.

**Deaths after Retirement:** RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables and the tables will be further projected beyond the valuation date using the Buck Modified MP-2014 projection scale. Representative values of the assumed annual rates of mortality unadjusted for the Buck Modified MP-2014 projection scale are as follows:

Age	Service Pensioners and Beneficiaries	
	Men	Women
60	0.612%	0.439%
65	1.076	0.820
70	1.797	1.414
75	3.062	2.374
80	5.209	3.875
85	8.964	6.540
90	15.710	11.279

### Marriage

Males are assumed to be four years older than females, no assumption was made as to children.

For those participants with listed beneficiaries, the beneficiary allowance was assumed to be the greater of twice the amount contained in the record or the minimum benefit of \$4,500/yr. (The information contained in the record has not been updated for the change from 25% to 50% payment to the survivor.)

For those participants without listed beneficiaries, 65% were assumed to be married and the beneficiary amount was assumed to be the minimum benefit payable (\$4,500/yr.).

### Actuarial Method

The unfunded accrued liability was measured as of June 30, 1990 and the accrued liability contribution rate was then determined such that the unfunded accrued liability was to be amortized over a period of 9 years with contributions expected to remain constant.

In determining the unfunded accrued liability and the contribution rate, the actuarial value of assets as of June 30, 1990 was based upon 100% of the market value of system assets. For subsequent actuarial valuations, the actuarial value of assets is adjusted to reflect actual contributions and benefit payments, an assumed rate of return on the previous year's assets and current year's cash flow at an annual rate of 2.00% with an adjustment to reflect 20% of the difference between the resulting value and the actual market value of System assets.

In developing the unfunded accrued liability contribution rate as of June 30, 1991 and subsequent years, the contribution rate is adjusted to amortize any gains or losses over the remainder of the 9-year period. (Without additional guidance, we have assumed that the unfunded accrued liability determined as of June 30, 2016 will be amortized over 1 year.)

**Schedule of Retirement Members and Beneficiaries  
 Added to and Removed from Rolls**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase (Decrease) in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance <sup>1</sup>		
7/1/16	0	\$0	29	\$164,935	95	\$657,938	(20.04)%	\$6,925
7/1/15	0	0	25	210,952	124	822,873	(20.41)	6,636
7/1/14	0	0	36	268,424	149	1,033,825	(20.61)	6,938
7/1/13	0	0	56	414,903	185	1,302,249	(24.16)	7,039
7/1/12	3	46,595	72	478,997	241	1,717,152	(20.12)	7,125
7/1/11	1	6,861	87	572,894	310	2,149,554	(20.84)	6,934

<sup>1</sup> The benefit amounts shown are the annualized benefit as of the valuation date and are not the actual benefits paid during the fiscal year.

**Schedule of Active Member Valuation Data**

There have been no active participants in the Fund since July 1, 1992.

**Solvency Test**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$0	\$3,336,743	\$0	\$3,017,928	N/A	90.45%	N/A
7/1/15	0	4,208,241	0	3,340,908	N/A	79.39	N/A
7/1/14	0	4,848,499	0	4,366,457	N/A	90.06	N/A
7/1/13	0	6,102,292	0	6,445,847	N/A	100.00	N/A
7/1/12	0	8,026,421	0	7,179,322	N/A	89.45	N/A
7/1/11	0	9,179,981	0	8,300,684	N/A	90.42	N/A

<sup>1</sup> Actuarial value including receivable amount.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND

## Analysis of Past Financial Experience — Reconciliation of Unfunded Accrued Liability/(Surplus)

Valuation Year	July 1, 2016	July 1, 2015	July 1, 2014	July 1, 2013	July 1, 2012	July 1, 2011
Prior Year Unfunded/(Surplus)	\$867,333	\$482,042	\$(343,555)	\$847,099	\$879,297	\$1,192,676
<b>Net Change Due to:</b>						
Interest on Prior Year Unfunded/(Surplus)	\$17,347	\$9,641	\$(6,871)	\$16,942	17,586	\$23,854
Investment Loss/(Gain)	194,017	228,240	265,707	306,998	355,895	408,804
Retiree Experience	(264,949)	(201,179)	(314,561)	(650,553)	(515,459)	(572,247)
State Appropriations	(494,933)	0	0	(864,041)	(896,883)	(173,790)
Appropriation Act	N/A	N/A	881,322	N/A	N/A	N/A
Assumption, Benefit or Method Changes	N/A	348,589	N/A	N/A	1,006,663	N/A
Actual Unfunded/(Surplus)	\$318,815	\$867,333	\$482,042	\$(343,555)	\$847,099	\$879,297

## Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

### Eligibility for Membership

Member of a municipal police department, municipal paid or part-paid fire department or county police department, or a paid or part-paid fire department of a fire district located in a township who has contributed to this pension fund; and who is not covered by the Police and Firemen's Retirement System which became effective on July 1, 1944.

*Active Member:* Any member who is a policeman, fireman, detective, line-man, driver of police van, fire alarm operator, or inspector of combustibles and who is subject to call for active service as such.

*Employee Member:* Any member who is not subject to active service or duty.

### 1. Definitions

#### Plan Year

The 12-month period beginning on July 1 and ending on June 30.

#### Service

Service rendered while a member as described above.

#### Compensation

Base salary; not including individual salary adjustments which are granted primarily in anticipation of retirement or additional remuneration for performing temporary duties beyond the regular work day. (Effective June 30, 1996 Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code.)

#### Final Compensation

Compensation received during the last 12 months of service preceding retirement or termination of service.

#### Average Salary

Salary averaged over the last three years prior to retirement or other termination of service.

### 2. Benefits

#### Service Retirement

Mandatory retirement at age 65 with 25 years of service (a municipality may retain the Chief of Police until age 70). Voluntary retirement after 25 years of service for an active member and after age 60

with 25 years of service for an employee member. Benefit is life annuity equal to 60% of final compensation, plus 1% of final compensation for years of service in excess of 25.

#### Death Benefit while on duty

Immediate life annuity equal to 70% of average salary payable to the spouse. If there is no spouse or if the spouse dies or remarries, 20% of final compensation will be payable to one surviving child and 35% (50%) of final compensation will be payable, to two (three) surviving children. If there is no surviving spouse or child, 25% (40%) of final compensation will be payable to one (two) surviving dependent parent(s). The minimum spousal annuity is \$4,500 per annum.

#### Death Benefit while not on duty after retirement

Life annuity equal to 50% of the member's average salary payable to the spouse, plus 15% (25%) to one (two or more) surviving child (children). If there is no surviving spouse or if the surviving spouse dies or remarries, 20% (35%, 50%) of the member's average salary to one (two, three or more) surviving child (children). In the event that there is no surviving spouse or child, 25% (40%) of the member's average salary will be payable to one (two) dependent parent(s). The minimum spousal annuity is \$4,500 per annum.

#### Ordinary Disability Retirement

Totally and permanently incapacitated from service for any cause other than as a direct result of a traumatic event occurring during the performance of duty. Benefit is an immediate life annuity equal to 1/2 of average salary.

#### Accidental Disability Retirement

Totally and permanently incapacitated as a direct result of a traumatic event occurring while performing regular or assigned duties. Benefit is an immediate life annuity equal to 2/3 of average salary.

### 3. Contributions

Each member contributes 7% of his salary to the pension fund.

September 28, 2018

**BUCK GLOBAL, LLC**

The Board of Trustees

Prison Officers' Pension Fund  
of New Jersey

## **Re: Actuary's Certification Letter**

Office of the Division:

An actuarial valuation of the Prison Officers' Pension Fund ("POPF") is performed annually to measure the ongoing costs of the Fund and the progress towards the funding goals of the Fund over time. Since the pension fund is closed to new entrants and there are no active participants, the financial goals of the Prison Officers' Pension Fund are to ensure that the combination of future State appropriations and current Trust assets, both projected forward with expected investment earnings, are sufficient to provide for all future benefit payments. The information contained in this certification letter is based on the July 1, 2016 valuation of POPF.

The unfunded accrued liability for basic allowances was initially determined as of July 1, 1989 and was to be amortized over the 14-year period beginning July 1, 1989 and ending on July 1, 2002. However, the provisions of Chapter 115, P.L. 1997 of the Pension Security Legislation permitted the State to pay off the unfunded accrued liability from the proceeds of pension obligation bonds. The net effect of this legislation and plan experience was that no contributions were required for the fiscal year beginning July 1, 2017. (There were no required unfunded accrued liability payments due to the fact that a net surplus existed as of July 1, 2016.)

The underlying demographic data is maintained and provided by the New Jersey Division of Pensions and Benefits. The data is analyzed by Buck for internal completeness and consistency and compared with the prior valuation data to again ensure consistency.

The actuarially determined contribution for the fiscal year beginning July 1, 2017 was based on the method described above using an interest rate of 5.00%. In accordance with actuarial standards of practice, the mortality assumption for service retirements and beneficiaries reflects the RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables and the tables will be further projected beyond the valuation date using the Buck Modified MP-2014 projection scale. Assets are valued at book value, which is equivalent to market value.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Buck Global, LLC (Buck), formerly Conduent HR Consulting LLC (Conduent), to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

The actuarial assumptions and methods used by the Prison Officers' Pension Fund for financial reporting meet the requirements set forth in Governmental Accounting Standards Board (GASB) Statement No. 67. Information necessary to comply with the reporting requirements of GASB Statement No. 67 was provided in a separate Actuarial Report, which is available on the Division of Pensions and Benefits web site. Please refer to the separate Actuarial Report for supplementary information documentation and support for the actuarial analysis and information presented herein.

In my opinion, the attached schedules of valuation results fairly represent the status of the Prison Officers' Pension Fund and present an accurate view of historical data. The underlying assumptions and methods used are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the Fund.

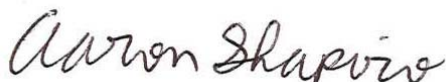
The following supporting schedules in the Actuarial Section were prepared by Buck Business Services:

- Summary of Actuarial Assumptions and Methods
- Schedule of Retired Members and Beneficiaries Added To and Removed From Rolls
- Schedule of Active Member Valuation Data
- Solvency Test
- Analysis of Past Financial Experience Reconciliation of Unfunded Accrued Liability/(Surplus)
- Summary of the Benefit and Contribution Provisions as Interpreted for Valuation Purposes

In addition, Buck prepared the "Schedule of Assets and Liabilities" and the "Schedule of Employer Contributions" in the Financial Section which can be found in the July 1, 2016 valuation report for POPF. The Schedule of Assets and Liabilities and the Schedule of Employer Contributions are provided for informational purposes only since the reporting requirements of Statement No. 67 became effective as of the June 30, 2014 reporting date.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, F.S.A., E.A., M.A.A.A.  
Principal, Consulting Actuary  
Buck Global, LLC

## Summary of Actuarial Assumptions and Methods

An outline of the actuarial assumptions and methods used for the July 1, 2016 valuation is as follows:

**Valuation Interest Rate:** 5.00% per annum, compounded annually.

**Deaths After Retirement:** RP-2000 Combined Healthy Mortality Tables projected on a generational basis from the base year of 2000 to 2014 using Projection Scale BB as the base tables and the tables will be further projected beyond the valuation date using the Buck Modified MP-2014 projection scale. RP-2000 disabled retiree mortality table is used for the period after disability retirement for disability retirements. Representative values of the assumed annual rates of mortality unadjusted for the Buck Modified MP-2014 projection scale are as follows:

Age	Service Pensioners and Beneficiaries		Disability Pensioners	
	Men	Women	Men	Women
60	0.612%	0.439%	4.204%	2.184%
65	1.076	0.820	5.017	2.803
70	1.797	1.414	6.258	3.764
75	3.062	2.374	8.207	5.223
80	5.209	3.875	10.937	7.231
85	8.964	6.540	14.160	10.020
90	15.710	11.279	18.341	14.005

**Marriage:** Husbands are assumed to be three years older than wives.

**Valuation Method:** The unfunded accrued liability (the difference between the present value of benefits and the valuation assets) was determined as of July 1, 1988 and was amortized over the 14-year period beginning July 1, 1989, and ending on July 1, 2002. Each year the amortization payments were adjusted to reflect any experience gains or losses that occurred during the previous plan year. All gains and losses were amortized over the remaining original amortization period. (Without any guidance, we have assumed that any unfunded accrued liability that develops after the July 1, 2001 valuation will be amortized over 1 year.)

**Asset Valuation Method:** Assets are valued at book value, which is equivalent to market value.



**Schedule of Retired Members and Beneficiaries  
 Added to and Removed from Rolls**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase (Decrease) in Annual Allowance	Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance <sup>1</sup>		
7/1/16	1	\$10,055	9	\$82,458	90	\$579,478	(11.11)%	\$6,439
7/1/15	2	11,794	14	152,980	98	651,881	(17.80)	6,652
7/1/14	1	7,671	12	71,652	110	793,067	(7.47)	7,210
7/1/13	1	2,856	15	82,854	121	857,048	(8.54)	7,083
7/1/12	3	20,252	10	76,496	135	937,046	(5.66)	6,941
7/1/11	2	11,391	9	66,709	142	993,290	(5.28)	6,995

<sup>1</sup> The benefit amounts shown are the annualized benefit as of the valuation date and are not the actual benefits paid during the fiscal year.

**Schedule of Active Member Valuation Data**

There have been no active participants in the Fund since July 1, 1994.

**Solvency Test**

Valuation Date	Accrued Liabilities For			Net Assets Available for Benefits <sup>1</sup>	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
7/1/16	\$0	\$3,461,099	\$0	\$6,11,233	N/A	100.00%	N/A
7/1/15	0	3,889,524	0	6,704,568	N/A	100.00	N/A
7/1/14	0	4,301,307	0	7,383,201	N/A	100.00	N/A
7/1/13	0	4,748,938	0	8,171,920	N/A	100.00	N/A
7/1/12	0	5,395,505	0	9,044,236	N/A	100.00	N/A
7/1/11	0	5,096,792	0	9,997,650	N/A	100.00	N/A

<sup>1</sup> Market value including receivable amount.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
PRISON OFFICERS' PENSION FUND

## Analysis of Past Financial Experience — Reconciliation of Unfunded Accrued Liability/(Surplus)

Valuation Year	July 1, 2016	July 1, 2015	July 1, 2014	July 1, 2013	July 1, 2012	July 1, 2011
Prior Year Unfunded/(Surplus)	\$(2,815,044)	\$(3,081,894)	\$(3,422,982)	\$(3,648,731)	\$(4,900,858)	\$(5,383,343)
<b>Net Change Due to:</b>						
Interest on Prior Year Unfunded/(Surplus)	(140,752)	(154,095)	(171,149)	(182,437)	(245,043)	(269,167)
Investment Loss/(Gain)	302,063	345,889	381,569	421,375	473,239	492,481
Retiree Experience	3,599	(275,405)	130,668	(13,189)	210,511	259,171
Assumption/Method Changes	N/A	350,461	N/A	N/A	813,420	N/A
Actual Unfunded/(Surplus)	\$(2,650,134)	\$(2,815,044)	\$(3,081,894)	\$(3,422,982)	\$(3,648,731)	\$(4,900,858)

## Summary of the Benefit and Contribution Provision as Interpreted for Valuation Purposes

### Eligibility for Membership

Employees of State penal institutions, employed prior to January 1, 1960 who did not transfer to the Police & Firemen's Retirement System in accordance with Chapter 205 of Public Law 1989. The System no longer accepts new members.

### 1. Definitions

#### Plan Year

The 12-month period beginning on July 1 and ending on June 30.

#### Service

A year is credited for each year an employee is a member of the retirement system.

#### Average Final Compensation (AFC)

Average annual compensation (or base salary) for 3 years of Service immediately preceding retirement. (Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code.)

#### Accumulated Deductions

The sum (without interest) of all required amounts deducted from the compensation of a member or contributed by him or on his behalf.

### 2. Benefits

#### Service Retirements

25 years of service, or age 55 and 20 years of service. The benefit is a life annuity equal to the greater of (A), (B), and (C) below:

- (A) 2% of AFC up to 30 years of service plus 1% for each year in excess of 30 and prior to age 65;
- (B) 50% of final pay; and
- (C) For member with 25 years of service, 2% of AFC up to 30 years of service plus 1% for each year in excess of 30.

### Vested Retirements

Eligible upon termination of employment. Benefits are summarized as follows:

Termination with 10 or more years of service: Benefit is a deferred life annuity equal to 2% of AFC for service up to 30 years plus 1% for service over 30 years.

Termination with less than 10 years of service: Refund of accumulated deductions.

### Ordinary Disability Retirement

Permanent and total disability for causes other than as a direct result of a traumatic event occurring during the performance of regular or assigned duties. Benefit is an immediate life annuity equal to 1/2 of AFC.

### Accidental Disability Retirement

Permanent and total disability as a direct result of a traumatic event occurring while performing regular or assigned duties. Benefit is an immediate life annuity equal to 2/3 of AFC.

### Death Benefits

Death of member of system. Spouse must be married to member prior to retirement, or at least five years before member's death. Benefit is an annuity equal to 25% of member's AFC plus an additional 15% (25%) for one (two or more) surviving dependent child (children). If there is no spouse or if the spouse dies or remarries, 20% (35%, 50%) of AFC to one (two, three or more) surviving child (children). If there is no surviving spouse or children, 25% (40%) of AFC to one (two) dependent parent(s). The provision for a survivor annuity payable to dependent parents does not apply in the death of a retired member of the system.

Minimum benefits: Minimum spousal annuity is \$1,600 per annum. If no other benefit is payable prior to retirement, the member's beneficiary shall receive the accumulated deductibles.

### 3. Employee Contributions

Each member contributes 6% of compensation.

September 28, 2018

**BUCK GLOBAL, LLC**

Council

Supplemental Annuity Collective Trust  
of New Jersey

## **Re: Actuary's Certification Letter**

Members of the Council:

An actuarial valuation of the Supplemental Annuity Collective Trust ("SACT") is performed at least once in every three-year period to measure the ongoing costs of the Trust and the progress towards the funding goals of the Trust over time. The financial goals of the Supplemental Annuity Collective Trust are to ensure that current Trust assets are sufficient to provide for all future annuity payments. The information contained in this certification letter is based on the July 1, 2015 valuation of SACT.

The Supplemental Annuity Collective Trust of New Jersey was established under the provisions of Chapter 123, P.L. 1963, which was approved July 1, 1963. The act permits active members of the following retirement systems administered by the State of New Jersey to make voluntary additional contributions through their retirement systems to purchase either a variable or fixed annuity to supplement the benefits provided by their systems.

Public Employees' Retirement System

Teachers' Pension and Annuity Fund

The Police and Firemen's Retirement System

Consolidated Police and Firemen's Pension Fund

Prison Officers' Pension Fund

State Police Retirement System

Judicial Retirement System

As of the July 1, 2015 valuation, only the variable annuity program was in operation. It was inaugurated July 1, 1964. Chapter 123, P.L. 1963 was amended June 6, 1965 by Chapter 90, P.L. 1965, to permit eligible employees to enter into an agreement with their employers to reduce their salaries and purchase annuities on their behalf which will qualify for the tax sheltered treatment permitted under Section 403(b) of the Internal Revenue Code of 1954, as amended. The rules were revised in 1982 to permit contributions in the form of qualified voluntary employee contributions. These contributions are treated as IRA contributions for tax purposes.

The underlying demographic data is maintained and provided by the New Jersey Division of Pensions and Benefits. The data is analyzed by Buck for internal completeness and consistency and compared with the prior valuation data to again ensure consistency.

The Trust status as of the fiscal year beginning July 1, 2015 was based on the actuarial assumptions and methods summarized on the following page. The mortality assumptions used for male and female service retirements and dependents of active and retired members were changed based on the results of an investigation of mortality experience covering the period July 1, 2012 to June 30, 2015. Based on the results of the study, the mortality assumptions for female service retirements, disability retirements and female beneficiaries of active and retired members were revised to better reflect actual plan experience. In addition, we have provided for future improvements in mortality for service retirements and beneficiaries of active and retired members using a generational approach. There were no other changes in actuarial assumptions and methods since the previous valuation.

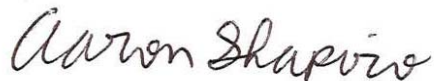
Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Use of this report for any other purpose or by anyone other than the Council or staff of the State of New Jersey's Division of Pensions and Benefits may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. You should ask Buck Global, LLC (Buck), formerly Conduent HR Consulting LLC (Conduent), to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statement made without prior review by Buck.

In our opinion, the attached schedules of valuation results fairly represent the status of the Supplemental Annuity Collective Trust and present an accurate view of historical data. The underlying assumptions and methods used for the valuation are consistent with the statutory specifications and represent a best estimate of the aggregate future experience of the Trust.

This report was prepared under my supervision. I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Academy's qualification Standards to issue this Statement of Actuarial Opinion. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,



Aaron Shapiro, F.S.A., E.A., M.A.A.A.  
Principal, Consulting Actuary  
Buck Global, LLC

## Summary of Actuarial Assumptions and Methods

An outline of the actuarial assumptions and methods used for the July 1, 2015 valuation is as follows:

In valuing the liabilities of the Variable Benefit Account, an interest rate of 4% per year was used.

In addition, the valuation used the RP-2000 Combined Healthy Male and Female Mortality Tables projected to 2014 using Scale BB for service retirement and dependent beneficiaries projected on a generational basis from the base year of 2014 using the Buck modified 2014 projection scale. The RP-2000 Disability Mortality Tables are used to value disabled retirees. Illustrative rates of mortality unadjusted for the Buck Modified 2014 projection scale used for valuation purposes are as follows:

Age	Rate Per 1,000			
	Service Retirement		Disability	
	Male	Female	Male	Female
40	1.04	0.68	22.57	7.45
45	1.45	1.08	22.57	7.45
50	2.05	1.61	28.98	11.53
55	3.48	2.53	35.44	16.54
60	6.12	4.39	42.04	21.84
65	10.76	8.20	50.17	28.03
70	17.97	14.14	62.58	37.63
75	30.62	23.74	82.07	52.23
80	52.09	38.75	109.37	72.31
85	89.64	65.40	141.60	100.20
90	157.10	112.79	183.41	140.05
95	245.88	178.79	267.49	194.51

Based on the results of an investigation of the mortality experience covering the period from July 1, 2012 to June 30, 2015, the mortality tables used for female service retirements and beneficiaries of active and retired members and male and female disability retirements were changed. In addition, for service retirements and beneficiaries of active and retired members, provision is made for future improvements in mortality by using a generational approach using the Buck Modified 2014 projection scale.

**Schedule of Retired Members and Beneficiaries  
 Added to and Removed from Rolls**

Valuation Date	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase (Decrease) in Annual Variable Equity Units	Average Number of Annual Variable Equity Units
	Number	Number of Annual Variable Equity Units	Number	Number of Annual Variable Equity Units	Number	Number of Annual Variable Equity Units*		
6/30/15	41	3,786.0852	94	9,951.7512	401	34,876.9704	(15.02)%	\$86.9750
6/30/12	25	2,353.8420	97	9,841.6716	454	41,042.6364	(15.43)	90.4023
6/30/09	36	3,512.0064	113	11,157.3420	526	48,530.4660	(13.61)	92.2632
6/30/06	35	2,435.0580	100	9,824.2776	603	56,175.8016	(11.62)	93.1605
6/30/03	47	6,040.8276	118	10,755.7560	668	63,565.0212	(6.91)	95.1572
6/30/00	57	5,584.7820	122	10,275.5556	739	68,279.9496	(6.43)	92.3951

\*The monthly number of variable equity units shown are the benefits on the valuation date and are not the actual benefits paid during the succeeding three fiscal years.

**Schedule of Active Member Valuation Data\*\***

Valuation Date	Number of Active Members	Equity Shares	Average Units Per Person	Percentage Increase in Average Equity Units
6/30/15	2,402	1,673,916.6458	696.8845	2.92%
6/30/12	2,729	1,847,879.8189	677.1271	14.52
6/30/09	3,317	1,961,173.8340	591.2493	11.41
6/30/06	3,576	1,897,693.2350	530.6748	9.09
6/30/03	3,910	1,902,053.0982	486.4586	(9.34)
6/30/00	4,023	2,158,681.7328	536.5851	(21.74)

\*\*These values exclude suspended members.

# ACTUARIAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS  
SUPPLEMENTAL ANNUITY COLLECTIVE TRUST

## Solvency Test

Valuation Date	Present Value of Benefits For			(4) Fund Balances	Percentage of Accrued Liabilities Covered by Net Assets Available		
	(1) Aggregate Member Contributions	(2) Current Retirees & Beneficiaries	(3) Active & Inactive Members		(1)	(2)	(3)
6/30/15	\$66,300,552	\$26,859,498	\$103,650,135	\$206,729,868	100.00%	100.00%	100.00%
6/30/12	69,131,827	22,239,231	54,761,622	149,840,256	100.00	100.00	100.00
6/30/09	69,792,459	18,294,318	28,783,838	120,414,735	100.00	100.00	100.00
6/30/06	61,417,327	30,688,847	70,384,314	159,612,705	100.00	100.00	95.91
6/30/03	52,666,675	26,582,925	48,099,954	127,186,109	100.00	100.00	99.66
6/30/00	45,026,249	46,341,126	124,548,634	216,985,359	100.00	100.00	100.00

## Analysis of Past Financial Experience – Reconciliation of Unfunded Accrued Liability/(Surplus)

Valuation Year	July 1, 2015	July 1, 2012	July 1, 2009	July 1, 2006	July 1, 2003	July 1, 2000
Prior Valuation Deficit/(Surplus)	\$(3,707,577)	\$(3,544,120)	\$2,877,783	\$163,445	\$(1,069,350)	\$(758,284)
<b>Net Change Due to:</b>						
Retiree Experience	(4,347,567)	(947,053)	(6,421,903)	1,128,887	1,232,795	1,919,537
Assumption/Method Changes	(1,864,539)	783,596	N/A	1,585,451	N/A	(2,230,603)
Current Valuation Deficit/(Surplus)	\$(9,919,683)	\$(3,707,577)	\$(3,544,120)	\$2,877,783	\$163,445	\$(1,069,350)



## Summary of the Benefit and Contribution Provision as Interpreted for Valuation Purposes

A summary of the benefit and contribution provisions of the Trust in effect on the valuation date is presented in the following digest. Participants' accounts are expressed in terms of equity units. The value of an equity unit was initially set at \$10. The dollar value of the unit is computed at the end of each month. It varies as a result of mortality experience and gains and losses and dividend earnings on the Variable Division's investments.

### Eligibility for Membership

Member of a State-administered retirement system may become a participant upon filing an application for enrollment.

### Participant Accounts

Although contributions are permitted in either fixed or variable accounts, only the variable system is currently in place.

- (a) Three optional participant accounts:
  - (1) Variable annuity account.
  - (2) Tax sheltered annuity account under Section 403(b) of the Internal Revenue Code.
  - (3) Qualified voluntary employee contribution account (QVEC) – eliminated January 1, 1987.
- (b) Value of Account: The total number of equity units in force in the variable account at the end of each month shall be determined as follows:
  - (1) The number of equity units in force at the start of the month; plus
  - (2) The number of equity units credited as of the first of the month for participant's contributions received during the preceding quarter, if any; less
  - (3) The number of equity units paid out in the current month on account of terminations for death or withdrawal during the preceding month; less
  - (4) The number of equity units transferred as of the first of the month for retirement during the preceding month; plus
  - (5) One third of one percent of the balance so obtained.

### Benefits

#### Retirement

Upon retirement a participant is paid a life annuity which is the fixed number of variable equity units per month computed as the actuarial equivalent of the number of equity units in his account at the close of the month of retirement, multiplied by the value of each unit as of the end of the quarter preceding the month of payment

.At retirement the participant may elect in lieu of the variable life annuity either (1) a single cash payment, or (2) an equivalent reduced annuity with the provision that:

- (a) In case of death prior to 5 years from the effective date of the annuity, the annuity will be continued to his designated beneficiary for the remainder of the 5-year period, or
- (b) In case of death prior to 10 years from the effective date of the annuity, the annuity will be continued to his designated beneficiary for the remainder of the 10-year period, or
- (c) At the death of the participant, his variable annuity will be continued throughout the life of such other person as the participant shall have designated at the time of retirement, or
- (d) At the death of the participant, one-half of his variable annuity will be continued throughout the life of such other person as the participant shall have designated at the time of retirement.

In the event the value of the participant's account at retirement results in an annuity with initial monthly payments of less than \$10, the benefit shall be paid in a single cash payment.

### Death Before Retirement

If a participant dies before retirement, a lump sum payment equal to the value of his account on the last day of the month of his death is paid to his designated beneficiary or to his estate. If the beneficiary is a natural person, he may elect, in lieu of a lump sum payment, an annuity under any of the methods of settlement available to a retirant.

### Withdrawal

Withdrawal is permitted only if membership in the basic State administered retirement system is terminated. However, the Council may terminate an inactive account if the value of the account is less than \$100. The amount paid on withdrawal is the value of the participant's account as of the end of the month of termination.

### Contributions

#### Participants

Each participant contributes through payroll deductions integral dollar amounts not in excess of 10% of his salary. He may also make lump sum contributions by direct payments in integral dollar amounts of not less than \$50, provided that total contributions for any one year may not exceed 10% of his annual salary.

#### Employers

Employers may contribute, on behalf of eligible employees who agree to a salary reduction equivalent to the amount of the contribution, even dollar amounts which shall be from 1% to 10% of base salary.

The amounts by which the employee's salary is reduced must be within the exclusion allowance provided under Section 403(b) of the Internal Revenue Code.

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# STATISTICAL SECTION

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**Schedule of Retired Members by Type of Benefit**  
(Based on the most recent actuarial valuation prepared as of 6/30/16)

Group	PERS (State)	PERS (Local)	TPAF	PFRS	SPRS	JRS	CPPFF	POPF	Total
<b>Service Retirements</b>									
Number	46,174	95,775	91,721	29,974	2,875	438	2	15	266,974
Annual Allowance	\$1,301,280,973	\$1,695,115,634	\$3,810,269,332	\$1,863,063,332	\$185,519,766	\$45,779,171	\$43,144	\$207,173	\$8,901,278,525
Average Annual Allowance	\$28,182	\$17,699	\$41,542	\$62,156	\$64,529	\$104,519	\$21,572	\$13,812	\$33,341
<b>Ordinary Disability Retirements</b>									
Number	4,535	7,999	3,174	2,922	136	7	—	2	18,775
Annual Allowance	\$88,912,481	\$133,590,161	\$87,520,684	\$84,030,608	\$4,777,404	\$818,564	—	\$15,356	\$399,665,258
Average Annual Allowance	\$19,606	\$16,701	\$27,574	\$28,758	\$35,128	\$116,938	—	\$7,678	\$21,287
<b>Accidental Disability Retirements</b>									
Number	508	805	256	2,821	151	—	—	2	4,543
Annual Allowance	\$14,866,698	\$22,392,235	\$11,161,760	\$140,891,485	\$8,296,419	—	—	\$19,649	\$197,628,246
Average Annual Allowance	\$29,265	\$27,816	\$43,601	\$49,944	\$54,943	—	—	\$9,825	\$43,502
<b>Active Members' Death Benefits</b>									
Number	16	56	3	655	55	18	12	9	824
Annual Allowance	\$287,865	\$1,092,313	\$85,469	\$24,787,634	\$2,468,754	\$702,412	\$55,072	\$33,164	\$29,512,683
Average Annual Allowance	\$17,992	\$19,506	\$28,490	\$37,844	\$44,886	\$39,023	\$4,589	\$3,685	\$35,816
<b>Retired Members' Death Benefits</b>									
Number	4,153	10,103	6,092	9,253	349	142	81	62	30,235
Annual Allowance	\$69,569,868	\$123,675,505	\$158,537,739	\$203,114,973	\$12,230,441	\$7,793,117	\$559,722	\$304,136	\$575,785,501
Average Annual Allowance	\$16,752	\$12,241	\$26,024	\$21,951	\$35,044	\$54,881	\$6,910	\$4,905	\$19,044
<b>Deferred Terminated Vested</b>									
Number	174	476	222	47	—	4	—	—	923
Annual Allowance	\$2,398,872	\$4,840,932	\$3,478,572	\$971,076	—	\$183,500	—	—	\$11,872,952
Average Annual Allowance	\$13,787	\$10,170	\$15,669	\$20,661	—	\$45,875	—	—	\$12,863

Note: See "Schedule of Retired Members and Beneficiaries Added to and Removed from Rolls" in the Actuarial Section for Average Annual Allowance for the last five fiscal years.

# STATISTICAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Schedule of Revenues by Source

(based on Comprehensive Annual Financial Reports for relevant years)

	Fiscal Year	Member Contributions <sup>(1)</sup>	Employer Contributions <sup>(2)</sup>	Pension Adjustment Contributions <sup>(3)</sup>	Other <sup>(4)</sup>	Percentage of Annual Covered Compensation <sup>(5)</sup>	Investment Income <sup>(6)</sup>	Total
PUBLIC EMPLOYEES' RETIREMENT SYSTEM	2008	705,903,439	812,356,103	—	—	7.11	(391,708,689)	1,126,550,853
	2009	741,911,166	774,672,945	—	—	6.56	(3,787,350,299)	(2,270,766,188)
	2010	743,486,792	919,999,429	—	—	7.67	2,696,305,650	4,359,791,871
	2011	728,602,461	925,626,097	—	—	7.73	3,813,641,343	5,467,869,901
	2012	793,993,077	997,437,885	—	—	8.59	628,573,598	2,420,004,560
	2013	790,456,229	1,141,876,707	—	\$55,543,296	9.99	2,687,826,583	4,675,702,815
	2014	797,818,225	917,689,000	—	55,641,713	8.02	4,103,472,982	5,874,621,920
	2015	805,232,235	1,085,237,214	—	10,496,496	9.49	1,117,827,113	3,018,793,058
	2016	821,305,787	1,273,425,342	—	3,926,053	11.25	(237,215,643)	1,861,441,539
	2017	847,952,137	1,465,931,579	—	16,358,762	12.98	3,202,393,837	5,532,636,315
TEACHERS' PENSION AND ANNUITY FUND	2008	585,800,133	701,584,600	—	—	7.73	(766,377,094)	521,007,639
	2009	616,222,799	102,472,305	—	—	1.09	(5,071,848,719)	(4,353,153,615)
	2010	615,862,621	42,850,384	—	—	0.44	3,277,424,465	3,936,137,470
	2011	593,587,972	36,117,717	—	—	0.36	4,364,388,191	4,994,093,880
	2012	685,608,357	323,100,685	—	—	3.34	640,982,289	1,649,691,331
	2013	686,872,383	653,704,602	—	39,651,455	6.68	2,865,390,916	4,245,619,356
	2014	716,183,306	427,700,146	—	40,469,573	4.26	4,100,453,466	5,284,806,491
	2015	740,296,265	540,603,535	—	4,476,040	5.32	1,066,062,926	2,351,438,766
	2016	761,711,695	800,069,277	—	1,807,662	7.76	(267,684,353)	1,295,904,281
	2017	790,788,033	1,127,018,480	—	1,696,090	10.80	2,736,988,791	4,656,491,394
POLICE AND FIREMEN'S RETIREMENT SYSTEM	2008	310,259,367	886,871,720	—	—	25.63	(339,212,149)	857,918,938
	2009	326,491,066	913,302,011	—	—	25.40	(2,735,834,439)	(1,496,041,362)
	2010	330,951,798	1,001,223,223	—	—	27.25	2,008,239,281	3,340,414,302
	2011	327,357,244	(216,914,092)	—	—	(5.83)	3,071,480,855	3,181,924,007
	2012	374,688,168	842,084,854	—	—	23.07	371,496,172	1,588,269,194
	2013	387,775,184	898,531,390	—	—	24.58	2,191,780,555	3,478,087,129
	2014	385,660,096	858,047,628	—	—	23.32	3,381,553,869	4,625,261,593
	2015	386,991,641	959,814,917	—	26,963,211	26.06	922,598,676	2,296,368,44
	2016	388,681,408	961,499,567	—	6,848,771	26.02	(150,693,159)	1,206,336,587
	2017	395,878,384	1,088,510,734	—	13,107,651	29.21	2,791,104,860	4,288,601,629
STATE POLICE RETIREMENT SYSTEM	2008	18,306,246	36,506,782	—	—	13.26	(34,109,753)	20,703,275
	2009	18,652,049	5,644,059	—	—	2.01	(298,475,097)	(274,178,989)
	2010	18,825,131	1,235,580	—	—	0.43	214,479,134	234,539,845
	2011	18,164,837	2,208,340	—	—	0.76	280,447,557	300,820,734
	2012	23,233,207	13,578,328	—	—	4.93	48,915,745	85,727,280
	2013	21,875,233	27,781,894	—	—	9.81	191,873,254	241,530,381
	2014	24,034,496	36,436,923	—	—	13.90	287,098,217	347,569,636
	2015	22,315,431	38,527,297	—	222,557	14.68	75,532,779	136,598,064
	2016	22,818,295	37,435,541	—	54,000	13.59	(19,284,054)	41,023,782
	2017	23,721,785	53,006,614	—	3,925	19.08	207,401,590	284,133,914

**Schedule of Revenues by Source**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Member Contributions <sup>(1)</sup>	Employer Contributions <sup>(2)</sup>	Pension Adjustment Contributions <sup>(3)</sup>	Other <sup>(4)</sup>	Percentage of Annual Covered Compensation <sup>(5)</sup>	Investment Income <sup>(6)</sup>	Total	
JUDICIAL RETIREMENT SYSTEM	2008	1,825,726	12,913,986	—	—	20.45	(1,268,945)	13,470,767
	2009	3,032,945	1,696,891	—	—	2.53	(56,230,261)	(51,500,425)
	2010	3,054,881	2,308,854	—	—	3.29	37,131,556	42,495,291
	2011	2,575,318	1,693,412	—	—	2.36	42,358,462	46,627,192
	2012	2,476,205	6,061,953	—	—	8.99	4,954,214	13,492,372
	2013	3,402,807	12,308,419	—	—	18.24	25,932,027	41,643,253
	2014	5,096,577	15,874,857	—	—	23.41	34,448,036	55,419,470
	2015	6,310,124	17,031,026	—	2,081,523	25.79	8,475,641	33,898,314
	2016	9,271,869	14,794,774	—	726,284	22.05	(2,721,949)	22,070,978
	2017	10,348,191	20,341,379	—	1,121,097	29.89	20,031,152	51,841,819
CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND	2008	—	550,881	6,515,308	—	—	438,349	7,504,538
	2009	—	1,276,151	5,641,890	—	—	142,184	7,060,225
	2010	—	13,236	4,830,461	—	—	35,223	4,878,920
	2011	—	8,199	4,033,257	—	—	17,256	4,058,712
	2012	—	193,183	3,234,585	—	—	210	3,427,978
	2013	—	911,150	2,477,987	—	—	217	3,389,354
	2014	—	—	1,889,091	11,740	—	585	1,889,676
	2015	—	—	1,568,185	9,566	—	198	1,577,949
	2016	—	148,000	1,196,017	—	—	10,856	1,354,873
	2017	—	575,000	964,280	—	—	10,099	1,549,379
PRISON OFFICERS' PENSION FUND	2008	—	—	1,104,335	—	—	546,188	1,650,523
	2009	—	—	1,088,687	—	—	197,755	1,286,442
	2010	—	—	1,046,590	—	—	53,572	1,100,162
	2011	—	—	1,064,245	—	—	32,429	1,096,674
	2012	—	—	994,367	—	—	9,945	1,004,312
	2013	—	—	889,542	—	—	9,070	898,612
	2014	—	—	793,175	—	—	7,368	800,543
	2015	—	—	698,360	—	—	6,355	704,715
	2016	—	—	634,217	—	—	18,067	652,284
	2017	—	—	552,131	—	—	30,847	582,978
CENTRAL PENSION FUND	2008	—	403,163	24,690	—	—	8,973	436,826
	2009	—	376,688	21,861	—	—	3,642	402,191
	2010	—	179,863	22,018	—	—	484	202,365
	2011	—	199,451	21,677	—	—	211	221,339
	2012	—	168,000	22,155	—	—	119	190,274
	2013	—	168,000	22,214	—	—	98	190,312
	2014	—	204,750	22,214	—	—	89	227,053
	2015	—	231,150	22,214	—	—	97	253,461
	2016	—	280,500	22,214	—	—	176	302,890
	2017	—	248,000	22,214	—	—	612	270,826

# STATISTICAL INFORMATION

STATE OF NEW JERSEY  
DIVISION OF PENSIONS & BENEFITS

## Schedule of Revenues by Source

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Member Contributions <sup>(1)</sup>	Employer Contributions <sup>(2)</sup>	Pension Adjustment Contributions <sup>(3)</sup>	Other <sup>(4)</sup>	Covered Compensation <sup>(5)</sup>	Percentage Of Annual Investment Income <sup>(6)</sup>	Total
SUPPLEMENTAL ANNUITY	2008	8,271,028	—	—	—	(17,688,152)	(9,417,124)
COLLECTIVE TRUST	2009	7,866,241	—	—	—	(33,470,754)	(25,604,513)
	2010	7,119,188	—	—	—	16,061,568	23,180,756
	2011	5,882,012	—	—	—	34,723,580	40,605,592
	2012	6,346,823	—	—	—	5,941,424	12,288,247
	2013	6,635,320	—	—	—	30,989,256	37,624,576
	2014	5,907,412	—	—	—	42,222,601	48,130,013
	2015	6,003,908	—	—	—	16,456,041	22,459,949
	2016	5,814,213	—	—	—	5,329,922	11,144,135
	2017	5,882,431	—	—	—	35,425,977	41,308,408
DEFERRED COMPENSATION PLAN	2008	185,234,570	—	—	—	(170,242,308)	14,992,262
	2009	172,895,622	—	—	—	(334,762,381)	(161,866,759)
	2010	171,382,135	—	—	—	169,072,944	340,455,079
	2011	185,334,980	—	—	—	383,783,797	569,118,777
	2012	178,243,724	—	—	—	19,834,685	198,078,409
	2013	177,296,365	—	—	—	302,069,484	479,365,849
	2014	181,051,805	—	—	—	424,147,776	605,199,581
	2015	186,999,797	—	—	—	133,142,031	320,141,828
	2016	180,268,889	—	—	—	20,757,799	201,026,688
	2017	194,488,684	—	—	—	399,453,403	593,942,087
DEFINED CONTRIBUTION RETIREMENT PROGRAM <sup>(9)</sup>	2008	—	—	—	—	—	—
	2009	—	—	—	—	—	—
	2010	—	—	—	—	—	—
	2011	—	\$289,483	—	—	110	289,593
	2012	—	487,559	—	—	765	488,324
	2013	—	1,482,976	—	—	1,761	1,484,737
	2014	—	1,409,544	—	—	2,250	1,411,794
	2015	—	2,046,770	—	—	3,497	2,050,267
	2016	—	—	—	—	—	—
	2017	—	—	—	—	—	—
ALTERNATE BENEFIT LONG-TERM DISABILITY FUND <sup>(9)</sup>	2008	—	2,000,000	—	—	128,401	2,128,401
	2009	—	2,685,591	—	—	42,876	2,728,467
	2010	—	2,766,031	—	—	12,970	2,779,001
	2011	—	2,885,119	—	—	8,175	2,893,294
	2012	—	3,323,165	—	—	4,132	3,327,297
	2013	—	3,037,116	—	—	2,875	3,039,991
	2014	—	1,382,696	—	—	1,622	1,384,318
	2015	—	1,550,000	—	—	1,631	1,551,631
	2016	—	—	—	—	—	—
	2017	—	—	—	—	—	—



**Schedule of Revenues by Source**

(based on Comprehensive Annual Financial Reports for relevant years)

	Fiscal Year	Member Contributions <sup>(1)</sup>	Employer Contributions <sup>(2)</sup>	Pension Adjustment Contributions <sup>(3)</sup>	Other <sup>(4)</sup>	Percentage Of Annual Covered Compensation <sup>(5)</sup>	Investment Income <sup>(6)</sup>	Total
STATE	2008	199,319,910	3,479,317,116	—	—	—	43,386,656	3,722,023,682
HEALTH	2009	198,176,549	3,474,413,647	—	—	—	16,370,148	3,688,960,344
BENEFIT	2010	217,154,537	4,144,906,282	—	—	—	4,269,124	4,366,329,943
PROGRAM	2011	233,187,835	4,607,439,545	—	—	—	2,777,355	4,843,404,735
FUNDS <sup>(8)</sup>	2012	244,680,394	4,721,637,111	—	—	—	1,361,300	4,967,678,805
	2013	304,860,078	5,162,767,727	—	—	—	1,378,523	5,469,006,328
	2014	399,307,467	5,479,344,541	—	—	—	1,223,707	5,879,875,715
	2015	497,483,666	5,871,536,760	—	—	—	1,175,123	6,370,195,549
	2016	50,097,187	397,482,073	—	—	—	310,043	447,889,303
	2017	53,585,505	434,877,635	—	—	—	791,049	489,254,189
PENSION	2008	2,014,920,419	5,932,504,351	7,644,333	—	—	(1,676,098,523)	6,278,970,580
TRUST AND	2009	2,085,248,437	5,276,540,288	6,752,438	—	—	(12,301,215,345)	(4,932,674,182)
STATE	2010	2,107,837,083	6,115,482,882	5,899,069	—	—	8,423,085,971	16,652,305,005
HEALTH	2011	2,094,692,659	5,359,553,271	5,119,179	—	—	11,993,659,321	19,453,024,430
BENEFIT	2012	2,309,269,955	6,908,072,723	4,251,107	—	—	1,722,074,598	10,943,668,383
PROGRAM	2013	2,379,173,599	7,902,569,981	3,389,743	95,194,751	—	8,297,254,619	18,677,582,693
FUNDS	2014	2,515,059,384	7,738,101,825	2,704,480	96,123,026	—	12,374,632,568	22,726,609,543 <sup>(7)</sup>
TOTAL	2015	2,651,633,067	8,516,578,669	2,288,759	44,249,393	—	3,341,282,108	14,556,031,996
	2016	2,239,969,343	4,485,135,074	1,852,448	13,362,770	—	(651,172,295)	5,089,147,340
	2017	2,322,645,150	4,190,509,421	1,538,625	32,287,525	—	9,393,632,217	15,940,612,938 <sup>(8)</sup>

<sup>(1)</sup> Indicates contributions from active members.

<sup>(2)</sup> Includes contributions both from State and local employers.

<sup>(3)</sup> Indicates State contribution to POPF, CPFPF, and CPF as pension adjustment.

<sup>(4)</sup> Previously, indicated Contributory Group Insurance (CGI) member contributions; however, now, indicates other employer contribution items, such as Delayed Enrollments/ Approprations, Retro billing, CPFPF Admin. fees, etc. Starting FY 2015, based on GASB No. 67, we are taking out CGI items from our financial statements.

<sup>(5)</sup> Indicates percentage of Employer Contributions over Annual Covered Compensation.

<sup>(6)</sup> Indicates net appreciation/depreciation of fair value, dividends, and interest.

<sup>(7)</sup> GASB No. 67 became implemented in fiscal year 2014. Fiscal years before 2014 other than the restated 2013 were presented otherwise.

<sup>(8)</sup> GASB No. 74 became implemented in fiscal year 2017, which is presenting State Health Benefit Program - Local - Retired only. Fiscal years before 2017 other than the restated 2016 were presented otherwise.

<sup>(9)</sup> Both DCRP and ABPLTD moved from NJ DP&B to NJ OMB (State) in fiscal year 2017. The 2016 was restated accordingly.

**Schedule of Expenses by Type**  
(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Retirement Benefits <sup>(1)</sup>	Cost-of-Living Adjustments <sup>(2)</sup>	Death Benefits <sup>(3)</sup>	Withdrawal <sup>(4)</sup>	Other Refunds <sup>(5)</sup>	Admin and Misc <sup>(6)</sup>	Transfer to Other Retirement Systems <sup>(7)</sup>	Total
<b>PUBLIC EMPLOYEES' RETIREMENT SYSTEM</b>								
2008	1,782,422,238	241,149,747	125,809,087	78,543,399	-	21,669,271	15,047,572	2,264,641,314
2009	1,936,521,198	270,085,565	100,487,729	77,747,624	-	20,195,796	18,340,013	2,423,377,925
2010	2,058,292,073	286,355,823	110,078,829	82,566,955	-	17,212,705	15,384,771	2,569,891,156
2011	2,273,677,650	283,610,268	115,035,218	66,423,856	-	55,475,327	11,926,661	2,806,148,980
2012	2,510,170,979	281,708,154	108,660,771	97,076,504	-	21,841,723	11,541,759	3,030,999,890
2013	2,646,551,098	269,362,021	138,033,827	102,381,327	-	22,814,654	15,603,908	3,194,746,835
2014	2,806,343,114	256,307,998	127,100,559	111,909,794	-	21,756,019	13,778,475	3,337,195,959
2015	2,986,839,116	242,890,285	73,430,329	116,431,242	-	23,761,859	21,455,094	3,464,807,925
2016	3,186,588,835	229,541,844	77,192,795	117,027,599	-	23,285,920	19,300,842	3,652,937,835
2017	3,370,538,479	216,676,990	80,002,130	125,005,841	-	19,648,715	18,595,252	3,830,467,407
<b>TEACHERS' PENSION AND ANNUITY FUND</b>								
2008	2,295,924,794	311,308,960	70,448,959	36,510,781	-	13,787,441	4,205,762	2,732,186,697
2009	2,453,071,751	352,668,308	63,825,481	37,139,492	-	12,746,751	4,057,851	2,923,509,634
2010	2,573,053,407	378,442,120	76,697,906	39,543,649	-	12,323,809	2,401,574	3,082,462,465
2011	2,897,547,945	381,128,401	64,782,346	39,769,526	-	12,321,344	4,842,890	3,400,392,452
2012	3,089,099,919	381,473,106	68,044,466	38,031,439	-	11,523,396	2,880,016	3,591,052,342
2013	3,230,673,226	370,347,130	73,132,997	42,299,299	-	12,482,060	4,926,204	3,733,860,916
2014	3,397,559,391	357,451,129	74,929,067	43,101,723	-	12,170,972	5,467,788	3,890,680,070
2015	3,576,672,146	344,252,116	36,283,535	51,161,238	-	13,890,080	6,634,552	4,028,893,667
2016	3,744,665,145	330,897,322	35,580,277	51,526,638	-	13,768,112	6,401,380	4,182,838,874
2017	3,881,732,050	317,245,237	39,099,480	60,938,382	-	11,923,787	7,253,596	4,318,192,532
<b>POLICE AND FIREMEN'S RETIREMENT SYSTEM</b>								
2008	1,129,947,758	192,527,105	30,634,136	6,899,520	-	6,281,677	394,592	1,366,684,788
2009	1,216,141,979	215,793,951	31,484,481	5,768,703	-	6,526,511	531,253	1,476,246,878
2010	1,310,546,315	230,715,014	32,249,526	5,238,615	-	6,080,087	376,544	1,585,206,101
2011	1,454,083,372	232,362,028	35,107,319	7,467,889	-	4,115,476	237,855	1,733,373,939
2012	1,593,941,123	234,401,519	34,058,970	7,197,736	-	3,919,438	353,727	1,873,872,513
2013	1,706,252,607	229,131,950	34,084,179	6,735,054	-	3,881,457	148,902	1,980,234,149
2014	1,831,032,076	223,111,212	42,612,105	8,652,971	-	3,884,342	420,647	2,109,713,353
2015	1,945,006,485	216,641,361	35,424,340	7,789,561	-	4,531,012	602,550	2,209,995,309
2016	2,067,836,471	209,926,511	38,372,031	7,712,880	-	4,292,891	328,060	2,328,468,844
2017	2,171,405,313	203,553,759	38,969,665	7,340,359	-	4,124,457	216,341	2,425,609,894

**Schedule of Expenses by Type**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Retirement Benefits <sup>(1)</sup>	Cost-of-Living Adjustments <sup>(2)</sup>	Death Benefits <sup>(3)</sup>	Withdrawal <sup>(4)</sup>	Other Refunds <sup>(5)</sup>	Admin and Misc <sup>(6)</sup>	Transfer to Other Retirement Systems <sup>(7)</sup>	Total
STATE	99,990,185	19,922,390	1,525,502	196,139	—	531,982	—	122,166,198
POLICE	107,778,693	21,999,191	2,196,860	158,163	—	585,686	—	132,718,593
RETIREMENT	114,055,702	23,448,600	1,018,200	194,956	—	527,871	—	139,245,329
SYSTEM	122,990,229	23,741,072	2,201,604	153,756	—	300,802	—	149,387,463
	138,282,207	24,047,555	735,607	143,316	—	298,961	4	163,507,650
	156,528,482	23,695,185	2,195,047	38,884	—	294,886	—	182,752,484
	173,264,302	23,198,162	1,148,273	348,201	—	280,026	—	198,238,964
	182,540,341	22,700,036	1,169,297	83,950	—	351,724	—	206,845,348
	189,392,434	22,058,752	1,855,541	129,423	—	334,630	—	213,770,780
	193,774,056	21,469,398	1,968,614	91,878	—	294,745	—	217,598,691
JUDICIAL	30,653,458	3,992,612	956,890	\$9,642	—	212,923	—	35,825,525
RETIREMENT	32,742,280	4,382,884	539,843	—	—	202,022	—	37,867,029
SYSTEM	35,634,276	4,565,378	1,032,857	174,362	—	192,762	—	41,599,635
	38,075,562	4,470,753	651,718	91,258	—	157,525	—	43,446,816
	41,022,857	4,441,976	490,713	45,641	—	159,888	—	46,161,075
	42,972,345	4,047,296	665,227	—	—	163,233	—	47,848,101
	45,079,634	3,930,547	540,681	53,218	—	162,372	—	49,766,452
	48,077,475	3,827,515	525,026	—	—	168,762	—	52,598,778
	50,226,767	3,615,980	843,774	—	—	168,008	—	54,854,529
	52,257,756	3,384,317	664,379	59,266	—	150,588	—	56,516,306
CONSOLIDATED	3,883,291	6,515,308	—	—	—	20,152	—	10,418,751
POLICE AND	3,202,401	5,641,890	—	—	—	13,234	—	8,857,525
FIREMEN'S	2,664,607	4,830,461	—	—	—	8,200	—	7,503,268
PENSION	2,275,329	4,033,256	—	—	—	19,182	—	6,327,767
FUND	1,812,059	3,234,585	—	—	—	14,153	—	5,060,797
	1,404,672	2,477,987	—	—	—	11,739	—	3,894,398
	1,052,944	1,889,091	—	—	—	9,566	—	2,951,601
	877,442	1,568,185	—	—	—	8,003	—	2,453,630
	685,235	1,196,017	—	—	—	6,643	—	1,887,895
	571,343	964,280	—	—	—	4,188	—	1,539,811

**Schedule of Expenses by Type**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Retirement Benefits <sup>(1)</sup>	Cost-of-Living Adjustments <sup>(2)</sup>	Death Benefits <sup>(3)</sup>	Withdrawal <sup>(4)</sup>	Other Refunds <sup>(5)</sup>	Admin and Misc <sup>(6)</sup>	Transfer to Other Retirement Systems <sup>(7)</sup>	Total
PRISON OFFICERS' PENSION FUND	2008	1,145,705	1,104,335	-	-	9,403	-	2,259,443
	2009	1,092,935	1,088,687	-	-	8,341	-	2,189,963
	2010	1,016,533	1,046,590	-	-	5,591	-	2,068,714
	2011	1,045,770	1,064,245	-	-	7,377	-	2,117,392
	2012	956,437	994,367	-	-	6,922	-	1,957,726
	2013	874,422	889,542	-	-	6,965	-	1,770,929
	2014	790,234	793,174	-	-	5,853	-	1,589,261
	2015	679,145	698,360	-	-	5,843	-	1,383,348
	2016	606,090	634,217	-	-	5,312	-	1,245,619
	2017	517,078	552,131	-	-	4,134	-	1,073,343
CENTRAL PENSION FUND	2008	390,342	24,690	-	21,794	-	-	436,826
	2009	365,368	21,862	-	14,961	-	-	402,191
	2010	177,276	22,018	-	3,071	-	-	202,365
	2011	166,990	21,677	-	32,673	-	-	221,340
	2012	167,326	22,155	-	793	-	-	190,274
	2013	167,326	22,214	-	772	-	-	190,312
	2014	189,826	22,214	-	15,013	-	-	227,053
	2015	211,076	22,214	-	20,171	-	-	253,461
	2016	274,633	22,214	-	6,043	-	-	302,890
	2017	236,076	22,214	-	12,536	-	-	270,826
SUPPLEMENTAL ANNUITY COLLECTIVE TRUST	2008	12,918,042	-	-	-	-	-	12,918,042
	2009	10,330,455	-	-	-	-	-	10,330,455
	2010	9,955,917	-	-	-	-	-	9,955,917
	2011	18,312,488	-	-	-	-	-	18,312,488
	2012	17,890,338	-	-	-	-	-	17,890,338
	2013	12,238,930	-	-	-	-	-	12,238,930
	2014	17,638,584	-	-	-	-	-	17,638,584
	2015	20,710,344	-	-	-	-	-	20,710,344
	2016	20,342,949	-	-	-	-	-	20,342,949
	2017	16,520,123	-	-	-	-	-	16,520,123

**Schedule of Expenses by Type**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Retirement Benefits <sup>(1)</sup>	Cost-of-Living Adjustments <sup>(2)</sup>	Death Benefits <sup>(3)</sup>	Withdrawal <sup>(4)</sup>	Other Refunds <sup>(5)</sup>	Admin and Misc <sup>(6)</sup>	Transfer to Other Retirement Systems <sup>(7)</sup>	Total
DEFERRED	65,013,841	-	-	-	-	455,696	-	65,469,537
COMPENSATION PLAN	75,870,854	-	-	-	-	511,311	-	76,382,165
	70,838,765	-	-	-	-	456,124	-	71,294,889
	110,598,362	-	-	-	-	460,327	-	111,058,689
	118,211,742	-	-	-	-	465,127	-	118,676,869
	124,062,368	-	-	-	-	454,350	-	124,516,718
	149,393,111	-	-	-	-	482,277	-	149,875,388
	175,989,352	-	-	-	-	464,130	-	176,453,482
	163,247,570	-	-	-	-	190,880	-	163,438,450
	183,110,996	-	-	-	-	444,503	-	183,555,499
DEFINED CONTRIBUTION RETIREMENT PROGRAM <sup>(d)</sup>	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	\$85,280	-	-	-	-	-	-	\$85,280
	1,207,760	-	-	-	-	-	-	1,207,760
	359,385	-	-	-	-	-	-	359,385
	844,050	-	-	-	-	-	-	844,050
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
ALTERNATE BENEFIT LONG-TERM DISABILITY FUND <sup>(d)</sup>	2,554,019	-	-	-	-	-	-	2,554,019
	2,685,591	-	-	-	-	-	-	2,685,591
	2,766,031	-	-	-	-	-	-	2,766,031
	2,885,114	-	-	-	-	-	-	2,885,114
	3,323,165	-	-	-	-	-	-	3,323,165
	2,949,360	-	-	-	-	-	-	2,949,360
	1,400,000	-	-	-	-	-	-	1,400,000
	1,550,000	-	-	-	-	-	-	1,550,000
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-

**Schedule of Expenses by Type**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Retirement Benefits <sup>(1)</sup>	Cost-of-Living Adjustments <sup>(2)</sup>	Death Benefits <sup>(3)</sup>	Withdrawal <sup>(4)</sup>	Other Refunds <sup>(5)</sup>	Admin and Misc <sup>(6)</sup>	Transfer to Other Retirement Systems <sup>(7)</sup>	Total
STATE HEALTH	3,563,196,052	-	-	-	-	8,867,578	-	3,572,063,630
BENEFIT	3,895,577,809	-	-	-	-	10,036,535	-	3,905,614,344
PROGRAM	4,382,156,209	-	-	-	-	13,697,892	-	4,395,854,101
FUNDS <sup>(9)</sup>	4,750,880,105	-	-	-	-	9,030,035	-	4,759,910,140
2012	5,266,242,035	-	-	-	-	8,268,671	-	5,274,510,706
2013	5,395,752,981	-	-	-	-	9,361,600	-	5,405,114,581
2014	5,918,951,153	-	-	-	-	9,359,616	-	5,928,310,769
2015	6,290,847,391	-	-	-	-	9,142,428	-	6,299,989,819
2016	425,946,495	-	-	-	-	10,516,251	-	436,462,746
2017	417,488,848	-	-	-	-	8,894,576	-	426,383,424
PENSION	8,988,039,725	776,545,147	229,374,574	122,159,481	21,794	51,836,123	19,647,926	10,187,624,770
TRUST	9,735,381,314	871,682,338	198,534,394	120,813,982	14,961	50,826,187	22,929,117	11,000,182,293
AND STATE	10,561,157,111	929,426,004	221,077,318	127,718,537	3,071	50,505,041	18,162,889	11,908,049,971
HEALTH	11,672,538,916	930,431,700	217,778,205	113,906,285	32,673	81,887,395	17,007,406	13,033,582,580
BENEFIT	12,781,205,467	930,323,417	211,990,527	142,494,636	793	46,498,279	14,775,506	14,127,288,625
PROGRAM	13,321,635,577	899,973,325	248,111,277	151,454,564	772	49,470,944	20,679,014	14,691,325,473
FUNDS	14,343,053,754	866,703,527	246,330,685	164,065,907	15,013	48,111,043	19,666,910	15,687,946,839 <sup>(8)</sup>
TOTAL	15,230,844,363	832,600,072	146,832,527	175,465,991	20,171	52,323,841	28,692,196	16,466,779,161
2016	9,849,812,624	797,892,857	153,844,418	176,396,540	6,043	52,568,647	26,030,282	11,056,551,411
2017	10,288,152,118	763,868,326	160,704,268	193,435,726	12,536	45,489,693	26,065,189	11,477,727,856 <sup>(9)</sup>

<sup>(1)</sup> Indicates benefits from retirement (regular, early, or disability) other than death.

<sup>(2)</sup> Indicates supplement benefit as cost of living adjustment (pension adjustment) benefit.

<sup>(3)</sup> Previously, indicated both Contributory Group Insurance (CGI) and Noncontributory (NCGI) benefits; however, now, indicates only NCGI.

Starting FY 2015, based on GASB No. 67, we are taking out CGI items from our financial statements.

<sup>(4)</sup> Indicates members' withdrawal of their contributions; that is, a type of refund.

<sup>(5)</sup> Indicates refund to State with excess of revenues and expenses.

<sup>(6)</sup> Indicates administration expenses of pension plans/ systems plus petty misc adjustment items.

<sup>(7)</sup> Indicates transfers of member/ employer contributions to other pension plans/ systems.

<sup>(8)</sup> GASB No. 67 became implemented in fiscal year 2014. Fiscal years before 2014 other than the restated 2013 were presented otherwise.

<sup>(9)</sup> GASB No. 74 became implemented in fiscal year 2017, which is presenting State Health Benefit Program - Local - Retired only. Fiscal years before 2017 other than the restated 2016 were presented otherwise.

<sup>(10)</sup> Both DCRP and ABPLTD moved from NJ DP&B to NJ OMB (State) in fiscal year 2017. The 2016 was restated accordingly.

## Schedule of Changes in Net Position

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Additions <sup>(1)</sup>	Deductions <sup>(2)</sup>	Total Change in Net Position	Net Position	
				Beginning of Year	End of Year
PUBLIC EMPLOYEES' RETIREMENT SYSTEM					
2008	1,126,550,853	2,264,641,314	(1,138,090,461)	28,375,046,264	27,236,955,803
2009	(2,270,766,187)	2,423,377,925	(4,694,144,112)	27,236,955,803	22,542,811,691
2010	4,359,791,871	2,569,891,156	1,789,900,715	22,542,811,691	24,332,712,406
2011	5,467,869,901	2,806,148,979	2,661,720,922	24,332,712,406	26,994,433,328
2012	2,420,004,560	3,030,999,890	(610,995,330)	26,994,433,328	26,383,437,998
2013	4,675,702,815 <sup>(4)</sup>	3,194,746,835 <sup>(4)</sup>	1,480,955,980	24,981,199,832 <sup>(4)</sup>	26,462,155,812
2014	5,874,621,920	3,337,195,959	2,537,425,961	26,462,155,812	28,999,581,773
2015	3,018,793,058	3,464,807,925	(446,014,867)	28,999,581,773	28,553,566,906
2016	1,861,441,539	3,652,937,835	(1,791,496,296)	28,553,566,906	26,762,070,610
2017	5,532,636,315	3,830,467,407	1,702,168,908	26,762,070,610	28,464,239,518
TEACHERS' PENSION AND ANNUITY FUND					
2008	521,007,639	2,732,186,697	(2,211,179,058)	34,526,663,135	32,315,484,077
2009	(4,353,153,615)	2,923,509,634	(7,276,663,249)	32,315,484,077	25,038,820,828
2010	3,936,137,470	3,082,462,465	853,675,005	25,038,820,828	25,892,495,833
2011	4,994,093,881	3,400,392,453	1,593,701,428	25,892,495,833	27,486,197,261
2012	1,649,691,331	3,591,052,342	(1,941,361,011)	27,486,197,261	25,544,836,250
2013	4,245,619,356 <sup>(4)</sup>	3,733,860,915 <sup>(4)</sup>	511,758,441	25,376,367,599 <sup>(4)</sup>	25,888,126,040
2014	5,284,806,491	3,890,680,070	1,394,126,421	25,888,126,040	27,282,252,461
2015	2,351,438,766	4,028,893,667	(1,677,454,901)	27,282,252,461	25,604,797,560
2016	1,295,904,281	4,182,838,874	(2,886,934,593)	25,604,797,560	22,717,862,967
2017	4,656,491,394	4,318,192,532	338,298,862	22,717,862,967	23,056,161,829
POLICE AND FIREMEN'S RETIREMENT					
2008	857,918,938	1,366,684,788	(508,765,850)	21,569,983,705	21,061,217,855
2009	(1,496,041,362)	1,476,246,878	(2,972,288,240)	21,061,217,855	18,088,929,615
2010	3,340,414,302	1,585,206,101	1,755,208,201	18,088,929,615	19,844,137,816
2011	3,181,924,007	1,733,373,939	1,448,550,068	19,844,137,816	21,292,687,884
2012	1,588,269,194	1,873,872,513	(285,603,319)	21,292,687,884	21,007,084,565
2013	3,478,087,129	1,980,234,149	1,497,852,980	21,007,084,565	22,504,937,545
2014	4,625,261,593	2,109,713,353	2,515,548,240	22,504,937,545	25,020,485,785
2015	2,296,368,445	2,209,995,309	86,373,136	25,020,485,785	25,106,858,921
2016	1,206,336,587	2,328,468,844	(1,122,132,257)	25,106,858,921	23,984,726,664
2017	4,288,601,629	2,425,609,894	1,862,991,735	23,984,726,664	25,847,718,399

**Schedule of Changes in Net Position**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Additions <sup>(1)</sup>	Deductions <sup>(2)</sup>	Total Change in Net Position	Net Position	
				Beginning of Year	End of Year
STATE	20,703,275	122,166,199	(101,462,924)	2,069,260,914	1,967,797,990
POLICE	(274,178,989)	132,718,593	(406,897,582)	1,967,797,990	1,560,900,408
RETIREMENT	234,539,845	139,245,329	95,294,516	1,560,900,408	1,656,194,924
SYSTEM	300,820,734	149,387,463	151,433,271	1,656,194,924	1,807,628,195
2012	85,727,280	163,507,650	(77,780,370)	1,807,628,195	1,729,847,825
2013	241,530,381	182,752,484	58,777,897	1,729,847,825	1,788,625,722
2014	347,569,636	198,238,964	149,330,672	1,788,625,722	1,937,956,394
2015	136,598,064	206,845,348	(70,247,284)	1,937,956,394	1,867,709,110
2016	41,023,782	213,770,780	(172,746,998)	1,867,709,110	1,694,962,112
2017	284,133,914	217,598,691	66,535,223	1,694,962,112	1,761,497,335
JUDICIAL	13,470,767	35,825,525	(22,354,758)	372,350,548	349,995,790
RETIREMENT	(51,500,425)	37,867,029	(89,367,454)	349,995,790	260,628,336
SYSTEM	42,495,291	41,599,635	895,656	260,628,336	261,523,992
2011	46,627,192	43,446,816	3,180,376	261,523,992	264,704,368
2012	13,492,372	46,161,075	(32,668,703)	264,704,368	232,035,665
2013	41,643,253	47,848,101	(6,204,848)	232,035,665	225,830,817
2014	55,419,470	49,766,452	5,653,018	225,830,817	231,483,835
2015	33,898,314	52,598,778	(18,700,464)	231,483,835	212,783,371
2016	22,070,978	54,854,529	(32,783,551)	212,783,371	179,999,820
2017	51,841,819	56,516,306	(4,674,487)	179,999,820	175,325,333
CONSOLIDATED	7,504,538	10,418,750	(2,914,212)	16,096,595	13,182,383
POLICE	7,060,225	8,857,525	(1,797,300)	13,182,383	11,385,083
AND	4,878,920	7,503,268	(2,624,348)	11,385,083	8,760,735
FIREMEN'S	4,058,712	6,327,768	(2,269,056)	8,760,735	6,491,679
RETIREMENT	3,427,978	5,060,797	(1,632,819)	6,491,679	4,858,860
SYSTEM	3,389,354	3,894,398	(505,044)	4,858,860	4,353,816
2014	1,901,416	2,951,601	(1,050,185)	4,353,816	3,303,631
2015	1,577,949	2,453,630	(875,681)	3,303,631	2,427,950
2016	1,354,873	1,887,895	(533,022)	2,427,950	1,894,928
2017	1,549,379	1,539,811	9,568	1,894,928	1,904,496



## Schedule of Changes in Net Position

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Additions <sup>(1)</sup>	Deductions <sup>(2)</sup>	Total Change in Net Position	Net Position	
				Beginning of Year	End of Year
PRISON OFFICERS' PENSION FUND	1,650,523	2,259,443	(608,920)	13,499,361	12,890,441
	1,286,442	2,189,963	(903,521)	12,890,441	11,986,920
	1,100,162	2,068,714	(968,552)	11,986,920	11,018,368
	1,096,674	2,117,392	(1,020,718)	11,018,368	9,997,650
	1,004,312	1,957,726	(953,414)	9,997,650	9,044,236
	898,612	1,770,929	(872,317)	9,044,236	8,171,919
	800,543	1,589,261	(788,718)	8,171,919	7,383,201
	704,715	1,383,348	(678,633)	7,383,201	6,704,568
	652,284	1,245,619	(593,335)	6,704,568	6,111,233
	582,978	1,073,343	(490,365)	6,111,233	5,620,868
CENTRAL PENSION FUND	436,826	436,826	-	-	-
	402,191	402,191	-	-	-
	202,365	202,365	-	-	-
	221,340	221,340	-	-	-
	190,274	190,274	-	-	-
	190,312	190,312	-	-	-
	227,053	227,053	-	-	-
	253,461	253,461	-	-	-
	302,890	302,890	-	-	-
	270,826	270,826	-	-	-
SUPPLEMENTAL ANNUITY COLLECTIVE TRUST	(9,417,124)	12,918,042	(22,335,166)	181,230,650	158,895,484
	(25,604,513)	10,330,455	(35,934,968)	158,895,484	122,960,516
	23,180,756	9,955,917	13,224,839	122,960,516	136,185,355
	40,605,592	18,312,488	22,293,104	136,185,355	158,478,459
	12,288,247	17,890,338	(5,602,091)	158,478,459	152,876,368
	37,624,576	12,238,930	25,385,646	152,876,368	178,262,014
	48,130,013	17,638,584	30,491,429	178,262,014	208,753,443
	22,459,949	20,710,344	1,749,605	208,753,443	210,503,048
	11,144,135	20,342,949	(9,198,814)	210,503,048	201,304,234
	41,308,408	16,520,123	24,788,285	201,304,234	226,092,519

**Schedule of Changes in Net Position**

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Additions <sup>(1)</sup>	Deductions <sup>(2)</sup>	Total Change in Net Position	Net Position	
				Beginning of Year	End of Year
DEFERRED COMPENSATION PLAN					
2008	14,992,262	65,469,537	(50,477,275)	2,068,148,264	2,017,670,989
2009	(161,866,759)	76,382,165	(238,248,924)	2,017,670,989	1,779,422,065
2010	340,455,079	71,294,889	269,160,190	1,779,422,065	2,048,582,255
2011	569,118,777	111,058,689	458,060,088	2,048,582,255	2,506,642,343
2012	198,078,409	118,676,869	79,401,540	2,506,642,343	2,586,043,883
2013	479,365,849	124,516,718	354,849,131	2,586,043,883	2,940,893,014
2014	605,199,581	149,875,388	455,324,193	2,940,893,014	3,396,217,207
2015	320,141,828	176,453,482	143,688,346	3,396,217,207	3,539,905,553
2016	201,026,688	163,438,450	37,588,238	3,539,905,553	3,577,493,791
2017	593,942,087	183,555,499	410,386,588	3,577,493,791	3,987,880,379
DEFINED CONTRIBUTION RETIREMENT PROGRAM <sup>(5)</sup>					
2008	-	-	-	-	-
2009	-	-	-	-	-
2010	-	-	-	-	-
2011	\$289,593	-	\$289,593	-	289,593
2012	488,324	\$85,280	403,044	\$289,593	692,637
2013	1,484,737	1,207,760	276,977	692,637	969,614
2014	1,411,794	359,385	1,052,409	969,614	2,022,023
2015	2,050,267	844,050	1,206,217	2,022,023	3,228,240
2016	-	-	-	-	-
2017	-	-	-	-	-
ALTERNATE BENEFIT LONG-TERM DISABILITY FUND <sup>(5)</sup>					
2008	2,128,401	2,554,019	(425,618)	1,913,525	1,487,907
2009	2,728,467	2,685,591	42,876	1,487,907	1,530,783
2010	2,779,001	2,766,031	12,970	1,530,783	1,543,753
2011	2,893,294	2,885,114	8,180	1,543,753	1,551,933
2012	3,327,297	3,323,165	4,132	1,551,933	1,556,065
2013	3,039,991	2,949,360	90,631	1,556,065	1,646,696
2014	1,384,318	1,400,000	(15,682)	1,646,696	1,631,014
2015	1,551,631	1,550,000	1,631	1,631,014	1,632,645
2016	-	-	-	-	-
2017	-	-	-	-	-

## Schedule of Changes in Net Position

(based on Comprehensive Annual Financial Reports for relevant years)

Fiscal Year	Additions <sup>(1)</sup>	Deductions <sup>(2)</sup>	Total Change in Net Position	Net Position	
				Beginning of Year	End of Year
STATE HEALTH	3,722,023,682	3,572,063,630	149,960,052	551,231,100	701,191,152
BENEFIT PROGRAM FUNDS <sup>(4)</sup>	3,688,960,344	3,905,614,344	(216,654,000)	701,191,152	484,537,152
	4,366,329,943	4,395,854,101	(29,524,158)	484,537,152	455,012,994
	4,843,404,735	4,759,910,140	83,494,595	455,012,994	538,507,589
	4,967,678,805	5,274,510,706	(306,831,901)	538,507,589	231,675,688
	5,469,006,328	5,405,114,581	63,891,747	231,675,688	295,567,435
	5,879,875,715	5,928,310,769	(48,435,054)	295,567,435	247,132,381
	6,370,195,549	6,299,989,819	70,205,730	247,132,381	317,338,111
	447,889,303	436,462,746	11,426,557	138,958,595	150,385,152
	489,254,189	426,383,424	62,870,765	150,385,152	213,255,917
PENSION TRUST AND STATE HEALTH BENEFIT PROGRAM FUNDS TOTAL	6,278,970,580	10,187,624,770	(3,908,654,190)	89,745,424,061	85,836,769,871
	(4,932,674,181)	11,000,182,293	(15,932,856,474)	85,836,769,871	69,903,913,397
	16,652,305,005	11,908,049,971	4,744,255,034	69,903,913,397	74,648,168,431
	19,453,024,432	13,033,582,581	6,419,441,851	74,648,168,431	81,067,610,282
	10,943,668,383	14,127,288,625	(3,183,620,242)	81,067,610,282	77,883,990,040
	18,677,582,693	14,691,325,472	3,986,257,221	76,313,283,223	80,299,540,444
	22,726,609,543	15,687,946,839	7,038,662,704	80,299,540,444	87,338,203,148 <sup>(3)</sup>
	14,556,031,996	16,466,779,161	(1,910,747,165)	87,338,203,148	85,427,455,983
	5,089,147,340	11,056,551,411	(5,967,404,071)	85,244,215,582	79,276,811,511
	15,940,612,938	11,477,727,856	4,462,885,082	79,276,811,511	83,739,696,593 <sup>(4)</sup>

<sup>(1)</sup> See Schedule of Revenues by Source.

<sup>(2)</sup> See Schedule of Expenses by Type.

<sup>(3)</sup> GASB No. 67 became implemented in fiscal year 2014 Fiscal years before 2014 other than the restated 2013 were presented otherwise.

<sup>(4)</sup> GASB No. 74 became implemented in fiscal year 2017, which is presenting State Health Benefits Program - Local - Retired only. Fiscal years before 2017 other than the restated 2016 were presented otherwise.

<sup>(5)</sup> Both DCRP and ABPLTD moved from NJ DP&B to NJ OMB (state) in fiscal year 2017. The 2016 was restated accordingly

## Participating County and Municipal Employers

Atlantic County *	Barnegat Township	Clark Township *	Far Hills Borough *
Bergen County	Barrington Borough	Clayton Borough *	Farmingdale Borough *
Burlington County/Payroll Dept	Bass River Twp Municipal Bldg	Clementon Borough *	Fieldsboro Borough
Camden Co Board of Chosen Freeholders	Bay Head Borough *	Cliffside Park Borough *	Flemington Borough *
Cape May County	Bayonne City *	Clifton City	Florence Township *
Cumberland County	Beach Haven Borough *	Clinton Town *	Florham Park Borough
Essex County	Beachwood Borough	Clinton Township *	Folsom Borough *
Gloucester County	Bedminster Township *	Closter Borough *	Fort Lee Borough
Hudson County *	Belleville Township	Collingswood Borough *	Frankford Township *
Hunterdon County	Bellmawr Borough	Colts Neck Township	Franklin Borough *
Mercer County *	Belmar Borough *	Commercial Township *	Franklin Lakes Borough *
Middlesex County	Belvidere Town *	Corbin City *	Franklin Township (Gloucester)
Monmouth County/Hall of Records	Bergenfield Borough *	Cranbury Township *	Franklin Township (Hunterdon)
Morris County	Berkeley Heights Township	Cranford Township	Franklin Township (Somerset)
Ocean County *	Berkeley Twp Municipal Bldg *	Cresskill Borough *	Franklin Township (Warren)
Passaic County	Berlin Borough *	Deal Borough *	Fredon Township
Salem County *	Berlin Township *	Deerfield Township *	Freehold Borough *
Somerset County Finance Office	Bernards Township *	Delanco Township *	Freehold Township
Sussex County	Bernardsville Boro *	Delaware Township *	Frelinghuysen Twp *
Union County	Bethlehem Township *	Delran Township	Frenchtown Borough *
Warren Co Bd of Chosen Freeholders	Beverly City Municipal Bldg *	Demarest Borough *	Galloway Township
Atlantic County Welfare Board *	Blairstown Township *	Dennis Township *	Garfield City
Bergen Co Board of Social Services	Bloomfield Township	Denville Township *	Garwood Borough *
Burlington Co Bd of Soc Services *	Bloomingdale Borough *	Deptford Township *	Gibbsboro Borough
Camden Co Bd of Social Services *	Bloomsbury Borough *	Dover Town	Glassboro Borough
Cape May Co Board Social Services	Bogota Borough	Downe Township	Glen Gardner Borough *
Cumberland Co Bd Social Services *	Boonton Town *	Dumont Borough *	Glen Ridge Borough *
Gloucester Co Bd of Social Services	Boonton Township *	Dunellen Borough *	Glen Rock Borough *
Hunterdon Co Board Social Services	Bordentown City *	Eagleswood Township *	Gloucester City
Mercer Co Board of Social Service *	Bordentown Twp	East Amwell Township *	Gloucester Township
Middlesex Co Bd of Social Services	Bound Brook Borough *	East Brunswick Township	Green Brook Township *
Monmouth Co Div of Social Services	Bradley Beach Borough *	East Greenwich Township	Green Township *
Ocean Co Board of Social Services *	Branchburg Township	East Hanover Township	Greenwich Township (Cumberland)
Passaic Co Board of Social Services	Branchville Borough *	East Newark Borough	Greenwich Township (Gloucester)
Salem Co Board of Social Services *	Brick Township	East Orange City	Greenwich Township (Warren) *
Somerset Co Bd of Social Services *	Bridgeton City	East Rutherford Borough *	Guttenberg Town
Union Co Board of Social Services	Bridgewater Twp	East Windsor Township	Hackensack City
NJ Assoc of Counties *	Brielle Borough	Eastampton Township *	Hackettstown Town *
NJ School Boards Association *	Brigantine City	Eatontown Borough	Haddon Heights Borough *
NJ State League of Municipalities *	Brooklawn Borough	Edgewater Borough	Haddon Township
Comm Workers of America # 1034	Buena Borough *	Edgewater Park Township *	Haddonfield Borough
Comm Workers of America #1037	Buena Vista Township *	Edison Township	Hainesport Township *
Comm Workers of America # 1033	Burlington City *	Egg Harbor City	Haledon Borough *
Aberdeen Township	Burlington Township	Egg Harbor Township *	Hamburg Borough *
Absecon City *	Butler Borough	Elizabeth City *	Hamilton Township (Atlantic) *
Alexandria Township *	Byram Township	Elk Township *	Hamilton Township (Mercer)
Allamuchy Township *	Caldwell Borough	Elmer Borough	Hammonton Town *
Allendale Borough	Califon Borough *	Elmwood Park Borough *	Hampton Borough *
Allenhurst Borough *	Camden City	Elsinboro Township	Hampton Township *
Allentown Borough	Cape May City *	Emerson Borough	Hanover Township
Alloway Township	Cape May Point Borough *	Englewood City *	Harding Township
Alpha Borough *	Carlstadt Borough	Englewood Cliffs Borough *	Hardwick Township *
Alpine Borough	Cameys Point Township	Englishtown Borough	Hardyston Township
Andover Borough	Carteret Borough	Essex Fells Borough *	Harmony Township *
Andover Township *	Cedar Grove Township *	Estell Manor City *	Harrington Park Borough *
Asbury Park City	Chatham Borough	Evesham Township	Harrison Town (Hudson)
Atlantic City	Chatham Township	Ewing Township *	Harrison Township (Gloucester) *
Atlantic Highlands *	Cherry Hill Township	Fair Haven Borough *	Harvey Cedars Borough *
Audubon Borough *	Chesilhurst Borough	Fair Lawn Borough	Hasbrouck Heights Borough *
Audubon Park Borough *	Chester Borough *	Fairfield Township (Cumberland)	Haworth Borough *
Avalon Borough	Chester Township *	Fairfield Township (Essex)	Hawthorne Borough
Avon By The Sea	Chesterfield Township *	Fairview Borough *	Hazlet Township
Barnegat Light Borough *	Cinnaminson Township	Fanwood Borough	Helmetta Borough *

\* In addition to participating in the retirement system, also participates in the State Health Benefits Program/School Employees' Health Benefits Program

**Participating County and Municipal Employers, *continued***

High Bridge Borough	Longport Borough *	National Park Borough	Plainfield City *
Highland Park Borough *	Lopatcong Township	Neptune City Borough	Plainsboro Township
Highlands Borough	Lower Alloways Creek Township	Neptune Township	Pleasantville City *
Hightstown Borough	Lower Township	Netcong Borough *	Plumsted Township
Hillsborough Township *	Lumberton Township *	New Brunswick City	Pohatcong Township
Hillsdale Borough	Lyndhurst Township	New Hanover Township *	Point Pleasant Beach Borough
Hillside Township	Madison Borough	New Milford Borough	Point Pleasant Borough
Hi-Nella Borough	Magnolia Borough	New Providence Borough	Pompton Lakes Borough *
Hoboken City	Mahwah Township	Newark City	Port Republic City *
Ho-Ho-Kus Borough *	Manalapan Township *	Newfield Borough *	Princeton Borough *
Holland Township *	Manasquan Borough	Newton Town *	Princeton Township
Holmdel Township	Manchester Township	North Arlington Borough	Prospect Park Borough *
Hopatcong Borough	Mannington Township *	North Bergen Township	Quinton Township
Hope Township *	Mansfield Township (Burlington)	North Brunswick Township *	Rahway City
Hopewell Borough *	Mansfield Township (Warren)	North Caldwell Borough *	Ramsey Borough
Hopewell Township (Cumberland)	Mantoloking Borough *	North Haledon Borough *	Randolph Township
Hopewell Township (Mercer)	Mantua Township *	North Hanover Township *	Raritan Borough *
Howell Township	Manville Borough *	N. Hunterdon Municipal Court *	Raritan Township
Independence Twp/ Mun. Bldg *	Maple Shade Township	North Plainfield Borough *	Readington Township *
Interlaken Borough	Maplewood Township *	North Wildwood City	Red Bank Borough
Irvington Twp Dept Of Rev & Finance	Margate City	Northfield City *	Ridgefield Borough *
Island Heights Borough *	Marlboro Township *	Northvale Borough *	Ridgefield Park Village
Jackson Township *	Matawan Borough	Norwood Borough *	Ridgewood Village *
Jamesburg Borough *	Maurice River Township *	Nutley Township *	Ringwood Borough
Jefferson Township *	Maywood Borough	Oakland Borough	River Edge Borough *
Jersey City	Medford Lakes Borough *	Oaklyn Borough	River Vale Township *
Keansburg Borough	Medford Township *	Ocean City	Riverdale Borough *
Kearny Town *	Mendham Borough *	Ocean Gate Borough *	Riverside Township
Kenilworth Borough *	Mendham Township *	Ocean Township (Monmouth) *	Riverton Borough *
Keyport Borough	Merchantville Borough	Ocean Township (Ocean)	Robbinsville Township
Kingwood Township *	Metuchen Borough	Oceanport Borough	Rochelle Park Township *
Kinnelon Borough	Middle Township *	Ogdensburg Borough	Rockaway Borough *
Knowlton Township *	Middlesex Borough *	Old Bridge Township	Rockaway Township *
Lacey Township *	Middletown Township	Old Tappan Borough	Rockleigh Borough *
Lafayette Township *	Midland Park Borough *	Oldmans Township	Rocky Hill Borough
Lake Como Borough *	Milford Borough *	Oradell Borough *	Roosevelt Borough *
Lakehurst Borough *	Millburn Township *	Orange City	Roseland Borough *
Lakewood Township	Millstone Borough	Oxford Township *	Roselle Borough
Lambertville City *	Millstone Township *	Palisades Park Borough	Roselle Park Borough
Laurel Springs Borough *	Milltown Borough *	Palmyra Borough *	Roxbury Township
Lavallette Borough *	Millville City	Paramus Borough *	Rumson Borough *
Lawnside Borough	Mine Hill Township *	Park Ridge Borough	Runnemede Borough
Lawrence Township (Cumberland) *	Monmouth Beach Borough *	Parsippany Troy Hills Township	Rutherford Borough
Lawrence Township (Mercer) *	Monroe Township (Gloucester)	Passaic City *	Saddle Brook Township
Lebanon Borough *	Monroe Township (Middlesex)	Paterson City	Saddle River Borough
Lebanon Township *	Montague Township *	Paulsboro Borough	Salem City *
Leonia Borough *	Montclair Township *	Peapack Gladstone Borough *	Sandyston Township *
Liberty Township *	Montgomery Township *	Pemberton Borough *	Sayreville Borough
Lincoln Park Borough	Montvale Borough	Pemberton Township	Scotch Plains Township
Linden City *	Montville Township *	Pennington Borough *	Sea Bright Boro *
Lindenwold Borough *	Moanachie Borough	Penns Grove Borough	Sea Girt Borough *
Linwood City	Moorestown Township	Pennsauken Township	Sea Isle City
Little Egg Harbor Township	Morris Plains Borough *	Pennsville Township	Seaside Heights Borough *
Little Falls Twp *	Morris Township *	Pequannock Township	Seaside Park Borough *
Little Ferry Borough *	Morristown Town	Perth Amboy City	Secaucus Town
Little Silver Borough	Mount Arlington Borough *	Phillipsburg Town	Shamong Township *
Livingston Township *	Mount Ephraim Borough	Pilesgrove Township *	Shiloh Borough
Loch Arbour Village	Mount Holly Township *	Pine Beach Borough *	Ship Bottom Borough
Lodi Borough	Mount Laurel Township *	Pine Hill Borough	Shrewsbury Borough
Logan Township	Mount Olive Township	Pine Valley Borough *	Shrewsbury Township
Long Beach Township *	Mountain Lakes Borough *	Piscataway Township	Somerdale Borough *
Long Branch City	Mountainside Borough *	Pitman Borough	Somers Point City
Long Hill Township *	Mullica Township *	Pittsgrove Township *	Somerville Borough *

\* In addition to participating in the retirement system, also participates in the State Health Benefits Program/School Employees' Health Benefits Program

## Participating County and Municipal Employers, *continued*

South Amboy City	Washington Twp (Burlington)
South Bergen JT Const. Code Office	Washington Twp (Gloucester)
South Bound Brook Borough *	Washington Twp (Morris)
South Brunswick Township *	Washington Twp (Warren)
South Hackensack Township	Watchung Borough *
South Harrison Township	Waterford Township *
South Orange Village *	Wayne Township
South Plainfield Borough	Weehawken Township *
South River Borough *	Wenonah Borough
South Toms River Borough *	West Amwell Township *
Southampton Township *	West Caldwell Township
Sparta Township	West Cape May Borough *
Spotswood Borough *	West Deptford Township
Spring Lake Borough *	West Long Branch Borough
Spring Lake Heights Borough *	West Milford Township
Springfield Township (Union)	West New York Town
Springfield Twp (Burlington) *	West Orange Township *
Stafford Township	West Paterson Borough
Stanhope Borough *	West Wildwood Borough *
Stillwater Township *	West Windsor Township
Stockton Borough	Westampton Township *
Stone Harbor Borough	Westfield Town
Stow Creek Township	Westville Borough
Stratford Borough *	Westwood Borough
Summit City *	Weymouth Township *
Surf City Borough	Wharton Borough *
Sussex Borough *	White Township *
Swedesboro Borough	Wildwood City *
Tabernacle Township *	Wildwood Crest Borough *
Tavistock Borough	Willingboro Township
Teaneck Township *	Winfield Township *
Tenafly Borough *	Winslow Township
Teterboro Borough *	Woodbine Borough *
Tewksbury Township *	Woodbridge Township
Tinton Falls Borough	Woodbury City
Toms River Township	Woodbury Heights Borough *
Totowa Borough *	Woodcliff Lake Borough *
Trenton City *	Woodland Township *
Tuckerton Borough *	Woodlynne Borough *
Union Beach Borough *	Wood-Ridge Borough
Union City	Woodstown Borough *
Union Township (Hunterdon) *	Woolwich Township
Union Township (Union)	Wrightstown Borough *
Upper Deerfield Township *	Wyckoff Township *
Upper Freehold Township *	
Upper Pittsgrove Township *	
Upper Saddle River Boro *	
Upper Township	
Ventnor City	
Vernon Township	
Verona Township *	
Victory Gardens Borough	
Vineland City	
Voorhees Township *	
Waldwick Borough *	
Wall Township	
Wallington Borough	
Wallpack Township	
Wanaque Borough	
Wantage Township	
Warren Township *	
Washington Borough *	
Washington Township (Bergen) *	

\* In addition to participating in the retirement system, also participates in the State Health Benefits Program/School Employees' Health Benefits Program



## Participating Education Employers

Atlantic Co Audio Visual Aids Comm *	Caldwell West Caldwell Board of Ed *	Elizabeth Board of Education *	Hampton Borough Board of Education *
Burlington Co Audio Visual Aids Comm *	Califon Boro Board of Education *	Elk Twp Board of Education	Hampton Township Board of Education *
Gloucester Co Audio Visual Aid Comm *	Camden City Board of Education *	Elmer Board of Education	Hanover Park Regional High School Dist *
Morris Audio Visual Commission	Cape May City Board of Education *	Elmwood Park Borough Board of Ed *	Hanover Township Board of Education *
Ocean Co Audio Visual Aids Commission *	Cape May Pt Boro Board of Education	Elsinboro Township Board of Education *	Harding Township Board of Education
Warren Co Audio Visual Aids	Carlstadt Borough Board of Education	Emerson Borough Board of Education *	Hardwick Twp Board of Education
Absecon Board of Education	Carlstadt East Rutherford Board of Ed	Englewood City Board of Education *	Harmony Township Board of Education *
Alexandria Twp Board of Education	Carteret Board of Education	Englewood Cliffs Board of Education *	Harrington Park Board of Education
Allamuchy Board of Education	Cedar Grove Twp Board of Education	Essex Fells Board of Education	Harrison Town Board of Ed (Hudson)
Allendale Boro Board of Education	Central Regional High School District	Estell Manor Board of Education *	Harrison Twp Board of Ed (Gloucester)
Allenhurst Board of Education *	Chatham School District	Evesham Twp Board of Education	Hasbrouck Heights Board of Education
Alloway Twp Board of Education	Cherry Hill Twp Board of Education	Ewing Township Board of Education *	Haworth Borough Board of Education *
Alpha Board of Education *	Chesilhurst Boro Board of Education *	Fair Haven Borough Board of Education	Hawthorne Board of Education
Alpine Board of Education *	Chester Twp Board of Education	Fair Lawn Board of Education	Hazlet Twp Board of Education
Andover Regional Board of Education *	Chesterfield Twp Board of Education *	Fairfield Twp Bd of Ed (Cumberland) *	Helmetta Boro Board of Education *
Asbury Park Board of Education *	Cinnaminson Twp Board of Education	Fairfield Twp Board of Education (Essex)	Henry Hudson Regional School District
Atlantic City Board of Education	Clark Twp Board of Education	Fairview Boro Board of Education *	High Bridge Borough Board of Education
Atlantic Highlands Board of Education *	Clayton Borough Board of Education	Farmingdale Board of Education *	High Point Regional High School
Audubon Borough Board of Education	Clearview Regional Board of Education	Flemington Raritan Board of Education	Highland Park Board of Education
Avalon Borough Board of Education	Clementon Board of Education	Florence Township Board of Education	Highlands Boro Board of Education
Avon By The Sea Boro Board of Ed *	Cliffside Park Board of Education	Florham Park Board of Education *	Hillsdale Borough Board of Education *
Bamegat Twp Board of Education	Clifton City Board of Education	Folsom Borough Board of Education *	Hillside Board of Education
Bass River Twp Board of Education *	Clinton Town Board of Education	Fort Lee Board of Education	Hoboken Board of Education
Bay Head Board of Education	Clinton Twp Board of Education	Frankford Township Board of Education	Ho-Ho-Kus Board of Education *
Bayonne Board of Education	Closter Board of Education *	Franklin Boro Board of Education *	Holland Twp Board of Education
Beach Haven Borough Board of Ed *	Collingswood Borough Board of Education	Franklin Lakes Board of Education	Holland Township Board of Education *
Bedminster Twp Board of Education	Colts Neck Twp Board of Education	Franklin Twp Board of Ed (Gloucester)	Hopatcong Board of Education
Belleville Board of Education	Commercial Twp Board of Education	Franklin Twp Board of Ed (Somerset)	Hope Twp Board of Education *
Bellmawr Borough Board of Education *	Corbin City Board of Education *	Franklin Twp Board of Education (Warren)	Hopewell Twp Board v Ed (Cumberland)
Belmar Boro Board of Education	Cranbury Township Board of Education	Franklin Twp Board of Ed Hunterdon)	Hopewell Valley Regional School District
Belvidere Town Board of Education	Cranford Twp Board of Education *	Freehold Boro Board of Education	Howell Twp Board of Education
Bergenfield Board of Education *	Cresskill Board of Education	Freehold Regional High School District	Hunterdon Central High School
Berkeley Heights Board of Education	Cumberland Regional School Dist	Freehold Twp Board of Education	Interlaken Borough Board of Education
Berkeley Twp Board of Education	Deal Boro Board of Education *	Frelinghuysen Twp Board of Education	Irvington Board of Education
Berlin Borough Board of Education	Deerfield Township Board of Education	Frenchtown Borough Board of Education *	Island Heights Boro Board of Education *
Berlin Township Board of Education	Delanco Twp Board of Education	Galloway Township Board of Education	Jackson Township Board of Education
Bernards Twp Board of Education	Delaware Twp Board of Education *	Garfield City Board of Education *	Jamesburg Borough Board of Education *
Bethlehem Twp Board of Education	Delaware Valley Regional High School Dist.	Garwood Borough Board of Education	Jefferson Township Board of Education
Beverly City Board of Education *	Delsea Regional High School District	Gateway Regional High School	Jersey City Public Schools *
Black Horse Pike Regional School District	Demarest Boro Board of Education *	Gibbsboro Borough Board of Education	Kearny Board v Education
Blairstown Twp Board of Education	Dennis Twp Board of Education	Glassboro Board of Education	Kearny Town Board of Education
Bloomfield Twp Board of Education	Denville Twp Board of Education	Glen Ridge Board of Education	Kenilworth Borough Board of Education
Bloomington Board of Education	Deptford Twp Board of Education	Glen Rock Borough Board of Education *	Keyport Borough Board of Education
Bloomsbury Borough Board of Education *	Dover Board of Education	Gloucester City Board of Education *	Kingsway Regional School District
Bogota Boro Board of Education *	Downe Twp Board of Education	Great Meadows Regional Board of Ed	Kingwood Township Board of Education
Boonton Town Board of Education	Dumont Borough Board Of Education	Greater Egg Harbor Regional	Kinnelon Borough Board of Education
Boonton Twp Board of Education	Dumellen Board of Education	Green Township Board of Education	Kittatinny Regional High School
Bordentown Regional School District *	Eagleswood Twp Board of Education *	Greenwich Twp Bd of Ed (Cumberland) *	Knowlton Twp Board of Education
Bound Brook Boro Board of Education	East Amwell Township Board of Ed *	Greenwich Twp Board of Ed (Gloucester)	Lacey Township Board of Education *
Bradley Beach Board of Education	East Brunswick Twp Board of Education	Greenwich Twp Board of Ed (Warren)	Lafayette Twp Board of Education
Branchburg Twp Board of Education	East Hanover Twp Board of Education *	Guttenberg Boro Board of Education	Lakeland Regional High School District
Branchville Board of Education	East Newark Borough Board of Ed *	Hackensack City Board of Education *	Lakewood Twp Board of Education *
Brick Twp Board of Education	East Orange City Board of Education *	Hackettstown Board of Education	Lambertville City Board of Education *
Bridgeton Board of Education	East Rutherford Boro Board of Education	Haddon Heights Board of Education	Laurel Springs Borough Board of Ed
Bridgewater-Raritan Regional School Dist	East Windsor Regional School Dist	Haddon Township Board of Education	Lavallette Borough Board of Education
Brielle Boro Board of Education	Eastampton Township Board of Education	Haddonfield Board of Education	Lawrence Twp Board of Ed (Cumberland)
Brigantine City Board of Education *	Eastern Camden Co Regional School Dist	Hainesport Township Board of Education	Lawrence Twp Board of Education (Mercer)
Brooklawn Boro Board of Education	Eatontown Board of Education *	Haledon Borough Board of Education *	Lebanon Borough Board of Education *
Buena Regional School District	Edgewater Boro Board of Education	Hamburg Borough Board of Education	Lebanon Township Board of Education
Burlington City Board of Education	Edgewater Park Twp Board of Education *	Hamilton Twp Board of Education (Atlantic)	Lenape Regional High School District
Burlington Twp Board of Education	Edison Twp Board of Education	Hamilton Twp Board of Education (Mercer)	
Butler Boro Board of Education	Egg Harbor City Board of Education *	Hammonton Town Board of Education	
Byram Twp Board of Education	Egg Harbor Twp Board of Education		

\* In addition to participating in the retirement system, also participates in the State Health Benefits Program/School Employees' Health Benefits Program

## Participating Education Employers, *continued*

Lenape Valley Regional High School Dist	Montgomery Twp Board of Education	Paterson Board of Education *	Sea Girt Board of Education *
Leonia Borough Board of Education	Montvale Borough Board of Education *	Paulsboro Boro Board of Education	Sea Isle City Board of Education *
Lincoln Park Boro Board Of Education	Montville Twp Board of Education	Pemberton Borough Board of Education	Seaside Heights Board of Education
Linden City Board of Education	Moonachie Borough Board of Education	Pemberton Township Board of Education	Seaside Park Board of Education *
Lindenwold Borough Board of Education	Moorestown Township Board OofEd *	Penns Grove Carneys Point Regional	Secaucus Town Board of Education
Linwood Board of Education *	Morris Hills Regional District	Pennsauken Twp Board of Education	Shamong Twp Board of Education
Little Egg Harbor Twp Board of Education	Morris Plains Board of Education	Pennsville Twp Board of Education	Shiloh Borough Board of Education
Little Falls Board of Education	Morris School District	Pequannock Twp Board of Education	Shore Regional High School District
Little Ferry Board of Education *	Mount Arlington Board of Education	Perth Amboy Board of Education	Shrewsbury Borough Board of Education
Little Silver Board of Education	Mount Ephraim Board of Education	Phillipsburg Town Board of Education	Somerdale Boro Board of Education
Livingston Board of Education	Mount Holly Twp Board of Education	Pine Hill Borough Board of Education	Somers Point City Board of Education
Lodi Board of Education	Mount Laurel Twp Board of Education	Pinelands Regional School District *	Somerset Hills Board of Education
Logan Township Board of Education	Mount Olive Twp Board of Education	Piscataway Board of Education Admn Bldg	Somerville Board of Education
Long Beach Island Board of Education *	Mountain Lakes Boro Board of Ed *	Pitman Board of Education	South Amboy Board of Education
Long Branch Board of Education	Mountainside Boro Board of Education *	Plainfield Board of Education	South Belmar Board of Education
Long Hill Twp Board of Education	Mullica Twp Board of Education *	Pleasantville Board of Education	South Bound Brook Board of Education
Longport Borough Board of Education *	National Park Borough Board of Ed	Plumsted Twp Board of Education	South Brunswick Board of Education *
Lopatcong Township Board of Education	Neptune City Board of Education	Pohatcong Twp Board of Education	South Hackensack Board of Education *
Lower Alloways Creek Board of Ed *	Neptune Twp Board of Education	Point Pleasant Boro Board of Education	South Harrison Twp Board of Education
Lower Cape May Regional School District *	Netcong Borough Board of Education	Pompton Lakes Board of Education	South Hunterdon Regional Bd of Ed *
Lower Township Board of Education *	New Brunswick Board of Education	Port Republic City Board of Education *	South Orange-Maplewood Board of Ed *
Lumberton Twp Board of Education	New Hanover Twp Board of Education	Princeton Regional School	South Plainfield Board of Education
Lyndhurst Twp Board of Education	New Hanover Twp Board of Education	Prospect Park Board of Education *	South River Boro Board of Education
Madison Boro Board of Education	New Milford Board of Education	Quinton Township Board of Education *	Southampton Twp Board of Education
Magnolia Borough Board of Education	New Providence Board of Education	Ramapo Indian Hills Reg High School Dist	Southern Regional High School District
Mahwah Board of Education	Newark Public Schools *	Ramsey Borough Board of Education	Sparta Board of Education
Mainland Regional High School *	Newton Board of Education	Rancocas Valley Regional High School	Spotswood Board of Education
Manalapan Englishtown Reg Schools *	North Arlington Board of Education	Randolph Township Board of Education	Spring Lake Boro Board of Education
Manasquan Borough Board of Education	North Bergen Board of Education *	Readington Twp Board of Education	Spring Lake Heights Board of Education
Manchester Township Board of Education	North Brunswick Board of Education	Red Bank Board of Education *	Springfield Twp Board of Ed (Union)
Mannington Township Board of Education	North Caldwell Board of Education	Red Bank Regional High School District	Springfield Twp Board of Ed (Burlington)
Mansfield Twp Board of Ed (Burlington)	North Haledon Boro Board of Education *	Ridgefield Boro Board of Education *	Stafford Township Board of Education
Mansfield Twp Board of Ed (Warren)	North Hanover Township Board of Ed	Ridgefield Park Board of Education *	Stanhope Borough Board of Education
Mantoloking Boro Board of Education	North Hunterdon-Voorhees	Ridgewood Twp Board of Education	Sterling High School District
Manville Borough Board of Education	North Plainfield Board of Education	Ringwood Boro Board of Education *	Stillwater Township Board of Education *
Maple Shade Board of Education	North Warren Regional High School	River Dell Regional School District *	Stockton Borough Board of Education *
Margate City Board of Education *	North Wildwood Board of Education *	River Edge Boro Board of Education	Stone Harbor Board of Education *
Marlboro Township Board of Education	Northern Burlington Co Regional	River Vale Twp Board of Education	Stow Creek Township Board of Education
Maurice River Township Board of Ed	Northern Highlands Reg High School *	Riverdale Borough Board of Education *	Stratford Board of Education
Maywood Board of Education	Northern Valley Regional High School Dist	Riverside Township Board of Education	Summit Board of Education
Medford Lakes Boro Board of Education	Northfield Board of Education	Riverton Boro School Board	Sussex-Wantage Regional School District
Medford Township Board of Education	Northvale Board of Education *	Robbinsville Twp Board of Education	Swedesboro Woolwich Board of Education
Mendham Boro Board of Education *	Norwood Board of Education *	Rochelle Park Twp Board of Education *	Tabernacle Twp Board of Education
Mendham Township Board of Education	Nutley Board of Education	Rockaway Borough Board of Education *	Teaneck Board of Education *
Merchantville Boro Board of Education *	Oakland Board of Education	Rockaway Township Board of Education	Tenafly Board of Education *
Metuchen Boro Board of Education	Oaklyn Borough Board of Education	Rockleigh Borough Board of Ed	Tewksbury Twp Board of Education
Middle Township Board of Education *	Ocean City Board of Education	Rocky Hill Board of Education	Tinton Falls Board of Education *
Middlesex Board of Education	Ocean Gate Board of Education *	Roosevelt Borough Board of Education *	Toms River School District
Middletown Twp Board of Education	Ocean Twp Board of Ed (Monmouth)	Roseland Board of Education	Totowa Borough Board of Education *
Midland Park Boro Board of Education *	Ocean Twp Board of Education (Ocean) *	Roselle Boro Board of Education	Trenton City Board of Education
Milford Borough Board of Education *	Oceanport Schools	Roselle Park Boro Board of Education	Union Beach Boro Board of Education
Millburn Twp Public Schools	Old Bridge Board of Education	Roxbury Twp Board of Education	Union City Board of Education
Millstone Borough Board of Education	Old Tappan Board of Education	Rumson Boro Board of Education	Union Twp of Ed (Hunterdon)
Millstone Township Board of Education	Oldmans Twp Board of Education	Rumson Fair Haven Regional High School	Upper Deerfield Twp Board of Education
Milltown Borough Board Of Education	Oradell Board of Education	Runnemede Borough Board of Education	Upper Freehold Regional
Millville Board of Education	Oxford Twp Board of Education	Rutherford Boro Board of Education	Upper Pittsgrove Twp Board of Education
Mine Hill Twp Board of Education *	Palisades Park Board of Education	Saddle Brook Board of Education *	Upper Saddle River Board of Education *
Monmouth Beach Board of Education *	Palmyra Borough Board of Education	Saddle River Board of Education *	Upper Township Board of Education
Monmouth Regional School	Paramus Board of Education	Salem City Board of Education	Ventnor City Board of Education
Monroe Twp Board of Ed (Gloucester)	Parsippany Troy Hills Board of Education	Sandyston Walpack School Dist *	Vernon Township Board of Education
Monroe Twp Board of Ed (Middlesex)	Pascack Valley Regional High School Dist *	Sayreville Board of Education Selover Elm	Verona Board of Education
Montague Board of Education	Passaic Board of Education *	Scotch Plains Fanwood Board of Education	Victory Gardens Boro Board of Education *
Montclair Board of Education	Passaic Co Manchester Regional High *	Sea Bright Boro Board of Education *	Vineland City Board of Education
	Passaic Co Regional High School Dist 1 *		

\* In addition to participating in the retirement system, also participates in the State Health Benefits Program/School Employees' Health Benefits Program



**Participating Education Employers, *continued***

Voorhees Twp Board of Education	Raritan Valley Community College *	Queen City Academy Charter School	Camden County Technical Schools *
Waldwick Boro Board of Education *	Salem Community College *	Red Bank Charter School	Cape May Co Technical School Dist
Wall Township Board of Education	Sussex County Comm. College *	Ridge And Valley Charter School	Cumberland Co Bd of Voc Ed
Wallington Borough Board of Education *	Union County College *	Riverbank Charter School of Excellence	Essex Co Vocational School
Walkill Valley Regional High School	Vineland Developmental Center	Robert Treat Academy Charter School	Gloucester Co Vo-Tech School Dist
Wanaque Board of Education	Warren County Community College *	Roseville Community Charter School	Hudson Co Schools of Technology
Warren Hills Regional Schools	Woodbine Developmental Center	Soaring Heights Charter School *	Hunterdon County Vocational *
Warren Township Board of Education	Academy For Urban Leadership	Sussex County Charter School	Mercer Co Vocational Schools
Washington Boro Board of Education	Academy Charter High School	Team Academy Charter School	Middlesex Co Vocational School *
Washington Twp Board of Ed (Morris)	Adelaide Sanford Charter School	Teaneck Community Charter School *	Monmouth Co Vocational Schools *
Washington Twp Board of Ed (Warren)	Barack Obama Green Charter High School	Trenton Community Charter School *	Morris Co Vocational School District
Washington Twp Board of Ed (Gloucester)	Bergen Arts And Science Charter School	Union County Teams Charter School	Ocean County Vocational School *
Watchung Borough Board of Education	Bridgeton Public Charter School	Unity Charter School *	Passaic Co Vocational School
Watchung Hills Regional High School	Burch Charter School For Excellence	University Academy Charter High School	Salem Co Vocational School *
Waterford Twp Board of Education	Camden Academy Charter High School	University Heights Charter School *	Somerset Co Vocational School
Wayne Board of Education	Camden Promise Charter School	Village Charter School *	Sussex County Vocational
Weehawken Twp Board of Education *	Camden's Pride Charter School	Vineland Public Charter School	Union Co Vocational Schools *
Wenonah Borough Board of Education *	Central Jersey Arts Charter School *	Visions Academy Charter High School	Warren Co Vocational School *
West Amwell Twp Board of Education *	Central Jersey College Prep Charter	Communications Workers of America	
West Cape May Boro Board of Education *	Charter Tech *	Newark Teachers' Union	
West Essex Regional School District *	Classical Acad. Charter School *	NJ State Federation of Teachers	
West Long Branch Board of Education	Community Charter School of Paterson	NJEA	
West Milford Township Board of Education	Cresthaven Academy Charter School	Piscataway Twp Education Association	
West Morris Regional High School Dist *	Dr Lena Edwards Academy Charter School	Trenton Education Association	
West New York Board of Education *	East Orange Community Chart School	Woodbridge Twp Ed Association	
West Orange Township Board of Education	Eco Charter School	Camden Co Ed Services Commission	
West Paterson Boro Board of Education *	Elysian Charter School of Hoboken *	Essex Co Educational Service Commission	
West Windsor Plainsboro Regional *	Englewood On The Palisades Char *	Hunterdon Co Ed Services Commission	
Westampton Township Board of Education	Ethical Comm Charter School Jersey City	Middlesex Co Ed Services Commission	
Westfield Town Board of Education	Freedom Academy Charter School	Monmouth Ocean Ed Service Commission	
Westville Board of Education *	Galloway Community Charter School	Morris Co Education Services Commission	
Westwood Regional School District *	Granville Charter Middle School	Passaic Co. Ed Services Commission *	
Weymouth Township Board of Education *	Gray Charter School *	Somerset Co Ed Services Commission *	
Wharton Borough Board of Education *	Great Oaks Charter School	Sussex Co Ed Services Comm Bd of Ed *	
White Township Board of Education	Greater Brunswick Charter School *	Union Co Ed Services Commission *	
Wildwood Crest Board of Education *	Hatikvah International Academy C S	Ramapo College of New Jersey *	
Willingboro Twp Board of Education *	Hoboken Charter School	Richard Stockton College of NJ *	
Winfield Township Board of Education *	Hoboken Dual Language Charter School	State Library Affiliated W/TESC *	
Winslow Township Board of Education	Hope Academy Charter School	The College of New Jersey *	
Woodbine Borough Board of Education	Hudson Arts & Sciences Charter School	Thomas Edison State University *	
Woodbridge Township Board of Education	International Charter School	Atlantic Co Special Services *	
Woodbury City Board of Education	Jersey City Comm Charter School *	Bergen Co Bd Of Special Services	
Woodbury Heights Board of Education *	Jersey City Golden Door Charter	Burlington Co Bd Special Services	
Woodcliff Lake Board of Education *	John P Holland Charter School	Cape May Co Special Services *	
Woodland Twp Board of Education *	Leap Academy Charter School	Gloucester Co Sp Services School District	
Woodlyne Board of Education *	Learning Comm. Charter School *	Mercer Co Special Ser School Dist	
Wood-Ridge Board of Education *	Maria L. Varisco-Rogers Charter *	Salem Co Sp Services School Dist *	
Woodstown-Pilesgrove Regional School	Marion P. Thomas Charter School *	Stockton Affiliated Services Inc	
Wyckoff Township Board of Education *	Mets Charter School	Warren Co Sp Services School Dist	
Atlantic Cape Community College *	Millville Public Charter School	Kean University *	
Bergen Community College *	New Horizon Community Charter School	Montclair State University *	
Brookdale Community College *	Newark Legacy Charter School	New Jersey City University *	
Burlington Co College *	Newark Educators' Comm Charter School	NJ Institute Of Technology *	
Camden County College *	New Lisbon Developmental Center	Rowan University *	
Cumberland County College *	North Star Academy Charter School	Rowan University-Rutgers Camden	
Essex County College *	Pace Charter School of Hamilton *	Rutgers University *	
Gloucester County College *	Paterson Chart School - Science/Tech	Univ. Of Med & Dentistry New Brunswick *	
Hudson Co Community College *	Paul Robeson Charter School	Univ. Of Medicine & Dentistry - Newark *	
Mercer Co Community College *	Peoples Preparatory Charter School	Univ. Of Medicine & Dentistry - Stratford *	
Middlesex County College	Phillips Academy Chart. Schl of Paterson	William Paterson University Of NJ *	
Morris County College *	Pleasantech Academy Charter School	Atlantic Co Vocational Schools *	
Ocean County College *	Pride Academy Charter School	Bergen Co Vocational School	
Passaic County Community College *	Princeton Charter School	Burlington Co Institute of Tech	

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## Participating Agencies and Authorities

Aberdeen Twp Fire Dist 2	Ocean Grove Board Of Fire Commission	Haddon Township Housing Authority *	South Bergen Jointure Commission
Aberdeen Twp Fire District 1 *	Ocean Twp Fire District 1 *	Harrison Town Housing Authority	Burlington County Bridge Commission
Bordentown Fire District #1 *	Ocean Twp Fire District 2 *	Highland Park Housing Authority *	Cape May Co Bridge Commission *
Bordentown Twp Fire District 2 *	Old Bridge Twp District 1	Highlands Housing Authority *	Essex & Union Joint Meeting *
Brick Township Fire Dist 2	Old Bridge Twp Fire District 2	Hightstown Boro Housing Authority *	Madison-Chatham Joint Meeting *
Brick Twp Fire District 1	Old Bridge Twp Fire District 3 *	Hoboken Housing Authority *	Second River Joint Meeting
Brick Twp Joint Board of Fire Commission *	Old Bridge Twp Fire District 4	Irvington Housing Authority *	General Assembly *
Burlington Twp Fire District 1	Pine Hill Fire District 1	Jersey City Housing Authority *	Senate *
Cherry Hill Fire District 13	Pine Hill Fire District 1	Keansburg Boro Housing Authority *	Bedminster & Far Hills Pub Library *
Chesterfield-Ham. Fire District #1 *	Plainsboro Twp Fire District 1 *	Lakewood Housing Authority	Chatham Joint Free Public Library *
Cinnaminson Twp Fire Dist #1	Plumsted Fire District #1 *	Linden City Housing Authority *	Chester Boro/Twp Public Library *
Delran Twp Fire District #1 *	Riverside Twp Fire District # 1	Lodi Housing Authority *	Elizabeth Public Library *
Deptford Twp Fire District *	Toms River Twp Fire District 1	Long Branch City Housing Authority *	Hillside Public Library
Dover Twp Fire District 2	Towaco Fire District 2	Madison Boro Housing Authority	Linden City Free Public Library
East Brunswick Twp Fire District #1	Voorhees Fire District *	Middletown Twp Housing Authority *	Matawan Aberdeen Public Library *
Florence Twp. Fire District #1	Wall Township Fire District 2	Millville Housing Authority	Montclair Library *
Gloucester Twp Fire District 2	Wall Township Fire District 3	Morris County Housing Authority	Morristown/Morris Joint Library *
Gloucester Twp Fire District 3 *	Washington Twp Board of Fire Commission	Morristown Housing Authority *	Orange City Library
Gloucester Twp Fire District 4	Washington Twp Fire District #1	Neptune City Housing Authority	Princeton Joint Public Library *
Gloucester Twp Fire District 5 *	Westville Fire District # 1	Neptune Twp Housing Authority *	Rahway Public Library
Gloucester Twp Fire District 6 *	Winslow Twp Fire District 1 *	New Brunswick Housing Authority *	Ridgewood Public Library *
Haddon Twp Fire District 1 *	Woodbridge Bd Of Fire Commission 9	Newark Housing Authority *	Roselle Borough
Hamilton Twp Fire District 2 *	Woodbridge Fire District 5 *	Newton Town Housing Authority *	Union Township Library
Hamilton Twp Fire District 3 *	Woodbridge Twp Fire District 2 *	North Bergen Housing Authority *	West Orange Library *
Hamilton Twp Fire District 4 *	Woodbridge Twp Fire District #12	Ocean City Housing Authority *	Atlantic City Convention Center *
Hamilton Twp Fire District 5 *	Woodbridge Twp Fire District 1 *	Old Bridge Housing Authority	NJ Public Broadcasting Authority
Hamilton Twp Fire District 6 *	Woodbridge Twp Fire District 11	Orange City Housing Authority *	Northwest Bergen Central Dispatch *
Hamilton Twp Fire District 7 *	Woodbridge Twp Fire District 8	Passaic City Housing Authority *	Trenton Downtown Association
Hamilton Twp Fire District 8 *	Woodbridge Twp Fire District 7 *	Paterson Housing Authority *	Middlesex Co Mosquito Extern Comm
Hamilton Twp Fire District 9 *	Asbury Park Housing Authority *	Penns Grove Housing Authority *	Monmouth Co Mosquito Extern Comm *
Hanover Twp Fire District 2	Atlantic City Housing Authority *	Perth Amboy Housing Authority	Ocean Co Mosquito Commission *
Hanover Twp Fire District 3	Bayonne Housing Authority *	Phillipsburg Housing Authority	Salem Co Mosquito Commission *
Harrison Township Fire District #1	Belmar Housing Authority	Plainfield Housing Authority *	Warren Co Mosquito Extern Commission
Hazlet Township Fire District #1	Bergen Co Housing Authority	Pleasantville Housing Authority *	Camden County Park Police
Hopewell Twp Fire District 1 *	Berkeley Twp Housing Authority *	Princeton Housing Authority *	Mercer County Park Commission *
Howell Twp Fire District 1	Beverly City Housing Authority *	Rahway City Housing Authority *	Morris County Park Commission
Howell Twp Fire District 2	Boonton Housing Authority *	Red Bank Boro Housing Auth *	Somerset Co Park Commission
Howell Twp Fire District 3 *	Brick Twp Housing Authority *	Salem City Housing Authority *	Bayonne City Parking Authority *
Howell Twp Fire District 4	Bridgeton City Housing Auth *	Sayreville Housing Authority *	Bloomfield Parking Authority *
Jackson Bd Fire District 2 *	Buena Boro Housing Auth *	Secaucus Housing Authority	Camden City Park Authority *
Jackson Twp Fire District 3 *	Burlington City Housing Auth *	South Amboy Housing Authority *	Dover Twp Parking Authority
Jackson Twp Fire District 4	Camden City Housing Authority *	Trenton Housing Authority *	Dunellen Parking Authority *
Jersey City Fire Department	Cape May City Housing Authority *	Union City Housing Authority *	East Orange Parking Authority *
Lakewood Twp Fire District 1	Carteret Housing Authority *	Vineland Housing Authority	Elizabeth City Parking Authority *
Lambertville City Fire District #1	Clementon Housing Authority	Weehawken Twp Housing Authority *	Fort Lee Parking Authority Hackettstown
Lindenwold Twp Fire District 1 *	Cliffside Park Housing *	West New York Housing Authority	Parking Authority
Manalapan Fire District 2	Collingswood Boro Housing Auth *	Wildwood City Housing Authority *	Hoboken City Parking Authority
Manalapan Twp Fire District 1	Dover Town Housing Authority	Woodbridge Housing Authority *	Jersey City Parking Authority *
Manasquan Boro Fire District 1	East Orange Housing Authority *	Camden Co Health Services Center	Long Branch Parking Authority *
Marlboro Twp Fire District 1	Edgewater Housing Authority *	Essex Regional Health Commission *	Metuchen Parking Authority
Marlboro Twp Fire District 3	Edison Twp Housing Authority *	Hudson Regional Health Commission *	Montclair Parking Authority *
Middle Township Fire District #1 *	Elizabeth City Housing Authority *	Mid Bergen Regional Health Commission *	Morristown Parking Authority
Millstone Township Fire District #1 *	Englewood Housing Authority *	Middle Brook Regional Health Comm *	New Brunswick Parking Authority *
Monroe Twp Fire District 1 *	Florence Twp Housing Authority	Monmouth Co Health Department *	Newark Parking Authority
Monroe Twp Fire District 2 *	Fort Lee Housing Authority *	Monmouth Co Regional Health Comm 1	North Bergen Parking Authority
Monroe Twp Fire District 3 *	Franklin Twp Housing Authority	Northwest Bergen Health Commission *	North Plainfield Parking Authority *
Montville Twp Fire District 1 *	Freehold Boro Housing Authority *	Ocean Co Board of Health	Paterson Parking Authority *
Montville Twp Fire District 3 *	Garfield Housing Authority *	Middlesex Co Joint Health Insurance Fund	Perth Amboy City Parking Authority
Moorestown Twp Fire District 1 *	Glassboro Borough Housing Authority *	Middlesex Co Municipal Joint Ins Fund *	Rahway Parking Authority *
Moorestown Twp Fire District 2	Gloucester Co Housing Authority *	NJ School Board Association Ins Group *	South Orange Twp Parking Authority *
Mount Laurel Fire District #1 *	Gloucester Twp Housing Authority *	Statewide Insurance Fund	South River Parking Authority
Neptune Fire District 1 *	Guttenberg Housing Authority *	Bayshore Jointure Commission *	Trenton Parking Authority *
North Hudson Regional Fire & Rescue	Hackensack Housing Authority *	Morris-Union Jointure Commission	Union City Parking Authority

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**Participating Agencies and Authorities, *continued***

West New York Parking Authority	NJ Sports & Exposition Authority	Delran Sewerage Authority *	Ocean Grove Sewerage Authority
West Windsor Parking Authority *	NJ Transit Corporation	Deptford Twp Municipal Utilities Auth *	Ocean Twp Municipal Utility Authority
Camden Co Pollution Control Fin	NJ Turnpike Authority	East Windsor Municipal Utilities Authority *	Ocean Twp Sewerage Authority *
Union Co Pollution Control Authority	NJ Water Supply Authority *	Eatontown Sewerage Authority	Old Bridge Municipal Utility Authority
Warren Co Pollution Control *	North Jersey Water Supply Commission	Edgewater Park Sewerage Authority	Passaic County Utility Authority
Carteret Port Authority	Palisades Interstate Park Commission *	Egg Harbor Twp Municipal Utilities Auth *	Passaic Valley Water Commission
Perth Amboy Port Authority	Passaic Valley Sewerage Commission	Elk Township Municipal Utilities Authority	Pemberton Twp Municipal Utilities Auth *
Salem City Municipal Port Authority *	Pinelands Commission *	Evesham Municipal Utilities Authority *	Penns Grove Sewerage Authority
Atlantic Co Improvement Authority *	Rowan University Foundation	Ewing Lawrence Sewerage Authority *	Pennsauken Sewerage Authority *
Bayonne Local Redevelopment Agency *	South Jersey Port Corporation	Florham Park Sew Authority	Pennsville Sewerage Authority
Bergen County Improvement Authority *	South Jersey Transportation Authority	Franklin Twp Sewerage Authority *	Pequannock, Lincoln Park & Fairfield *
Bridgeton Zone Development Authority *	Waterfront Commission Of Ny Harbor *	Gloucester Co Utilities Authority	Pine Hill Boro Municipal Utilities Authority
Camden City Redevelopment Agency	Joint Dispatch Authority For Spring Lake	Gloucester Twp Municipal Utilities Auth *	Plainfield Area Regional Sewer Authority *
Camden Co Improvement Authority	Bergen County Soil Conservation District *	Hackettstown Municipal Utilities Auth *	Plainfield Municipal Utilities Authority
Carteret Redevelopment Agency *	Burlington Co Soil Conservation District *	Hamilton Twp Municipal Utilities Auth *	Pompton Lakes Municipal Utilities Auth *
Cumberland Co Improvement Authority *	Camden Co Soil Conservation District *	Hanover Sewerage Authority *	Rahway Valley Sewerage Authority *
Essex Co Improvement Authority *	Cape Atlantic Soil Conservation District *	Hazlet Twp Sewerage Authority *	Raritan Twp Municipal Utilities Authority *
Gloucester Co Improvement Authority	Cumberland-Salem Conservation District *	Hillsborough Twp Mun. Utilities Authority *	Readington-Lebanon Sewerage Authority *
Greater Wildwood Tourism Imp & Da *	Freehold Soil Conservation District *	Hudson-Essex Passaic *	Riverside Sew Authority
Hudson Co Economic Development Corp	Gloucester Co Soil Conservation District *	Jackson Twp Municipal Utilities Authority *	Rockaway Valley Regional Sewer Auth *
Hudson Co Improvement Authority *	Hunterdon Co Soil Conservation District *	Jersey City Incinerator Authority	Rockleigh Boro Sewerage Authority
Jersey City Redevelopment Agency *	Mercer Co Soil Conservation District *	Jersey City Municipal Utilities Authority	Runnemede Sewerage Authority
Mercer Co Improvement Authority *	Morris Co Soil Conservation District *	Kearny Municipal Utilities Authority *	Secaucus Municipal Utilities Authority
Middlesex County Improvement Authority	Ocean Co Soil Conservation District *	Lacey Municipal Utilities Authority *	Somers Point Sewerage Authority
Passaic County Improvement Authority	Sussex Co Soil Conservation *	Lakewood Twp Municipal Utilities Auth *	Somerset Raritan Valley Sewerage Auth *
Rahway City Redevelopment Agency	Warren Co Soil Conservation District *	Lambertville Sewerage Authority *	Somerset Regional Animal Shelter *
Salem Co Improvement Authority *	Atlantic Highlands-Highlands Regional	Landis Sewerage Authority	South Monmouth Reg Sewerage Auth *
Sayreville Economic & Redev Agency *	Sewerage Authority	Lebanon Boro Sew Authority *	South Toms River Sewerage Authority *
South Jersey Economic Development Dist *	Atlantic City Municipal Utilities Authority *	Linden Roselle Sewerage Authority *	Southeast Morris Co Muni Utilities Auth *
Vineland-Millville Urban Enterprise Zone *	Atlantic Co Utilities Authority *	Little Egg Harbor Mun. Utilities Authority *	Stafford Municipal Utilities Authority
Wildwoods Joint Construction	Bayonne Municipal Utilities Authority *	Logan Twp Municipal Utilities Authority *	Stony Brook Regional Sewerage Auth *
Casino Reinvestment Development Auth *	Bayshore Regional Sewerage Authority *	Long Branch Sewerage Authority *	Sussex Co Municipal Utilities Authority *
Compensation Rating & Ins Bureau *	Beach Haven Sewerage Authority *	Lower Twp Municipal Utilities Authority *	Toms River Twp Municipal Utilities Auth *
Delaware River Basin Commission *	Beachwood Sewerage Authority	Manasquan River Reg Sewerage Auth	Two Rivers Water Reclamation Authority *
Delaware River Joint Toll Bridge Comm	Bergen Co Utilities Authority	Manchester Utilities Authority	Union Co Utilities Authority
Delaware River Port Authority	Berkeley Twp Sewerage Authority *	Mantua Twp Municipal Utilities Authority *	Wanaque Borough Sewerage Authority *
Ed Information & Resource Center	Berkeley Twp Municipal Utilities Authority *	Marlboro Twp Municipal Utilities Auth *	Wanaque Valley Reg Sewerage Authority *
Fort Monmouth Planning Authority *	Bernards Twp Sewerage Authority *	Merchantville Pennsauken Water Comm	Warren Co Municipal Utilities Authority *
Interstate Environmental Commission *	Beverly Sewerage Authority *	Middlesex Co Utilities Authority	Washington Twp Mun. Ut Auth. (Mercer)
Lake Hopatcong Commission *	Bordentown Sewerage Authority *	Middletown Twp Sewerage Authority *	Washington Twp Mun. Ut Auth. (Gloucester) *
Meadowlands Conservation Trust	Brick Twp Municipal Utilities Authority *	Monmouth Co Bayshore Outfill Authority *	Washington Twp Mun. Ut Auth. (Morris) *
NJ Building Authority *	Buena Boro Municipal Utilities Authority *	Monroe Twp Mun. Ut Auth. (Gloucester) *	Waterford Twp Municipal Utilities Auth *
NJ Commerce & Economic Growth Comm *	Camden Co Municipal Utilities Authority	Montville Twp Municipal Utilities Authority	W. Milford Twp Municipal Utilities Auth *
NJ Economic Development Authority *	Cape May Co Municipal Utilities Authority	Mount Holly Municipal Utilities Authority	Western Monmouth Utilities Authority *
NJ Educational Facilities Authority *	Carlstadt Sewerage Authority	Mount Laurel Twp Municipal Utilities Auth	Weymouth Twp Municipal Utilities Auth
NJ Firemens Home *	Cameys Point Twp Sewerage Authority	Musconetcong Sewerage Authority *	Willingboro Municipal Utilities Authority *
NJ Health Care Facilities *	Cinnaminson Sewerage Authority	Neptune Twp Sewerage Authority *	Woodbine Municipal Utilities Authority *
NJ Housing & Mortgage Finance Agency *	Clinton Twp Sewerage Authority *	North Bergen Municipal Utilities Authority	Woodstown Sewerage Authority
NJ Meadowland Commission *	Cumberland Co Utilities Authority *	North Hudson Sewerage Authority *	Wrightstown Municipal Utilities Authority *
NJ Redevelopment Authority *	Delanco Sewerage Authority *	Northwest Bergen Co Utility Authority *	
NJ Schools Development Authority *	Delaware Twp Municipal Utilities Authority	Ocean Co Utilities Authority *	

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## Participating State Departments and Pension Funds

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All New Jersey State Government Departments and their Associated Divisions

The following locations participate in the State Health Benefits Program only:

Essex County Pension Fund; Hudson County Pension Fund; Jersey City Pension Fund; UMDNJ Pension Fund

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