

2023

ANNUAL COMPREHENSIVE FINANCIAL REPORT

For Fiscal Year Ended March 31, 2023



New York State and Local Retirement System

A pension trust fund of the State of New York

Office of the New York State Comptroller

Thomas P. DiNapoli

2023 Annual Comprehensive Financial Report

For Fiscal Year Ended March 31, 2023

New York State and Local Retirement System

Employees' Retirement System

Police and Fire Retirement System

A pension trust fund of the State of New York

Prepared by the staff of the



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Government Finance Officers Association

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New York State Employees' Retirement System

For its Annual Comprehensive
Financial Report
For the Fiscal Year Ended

March 31, 2022

Christopher P. Morill

Executive Director/CEO



Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2022***

Presented to

New York State and Local Retirement System

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

Presented by the Public Pension Coordinating Council, a confederation of

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

A handwritten signature in black ink that reads "Alan H. Winkle". The signature is written in a cursive style.

Alan H. Winkle
Program Administrator

Letter of Transmittal



Office of the New York State Comptroller
Thomas P. DiNapoli

New York State and Local Retirement System
110 State Street, Albany, New York 12244-0001

Phone: 866-805-0990
Web: www.osc.state.ny.us/retirement

September 30, 2023



To the Governor, the State Legislature
and the People of New York State:

I am pleased to present the Annual Comprehensive Financial Report for the New York State and Local Retirement System (the System or NYSLRS) for the fiscal year ended March 31, 2023.

We believe the enclosed financial statements and data are fairly presented in all material respects and are reported in a manner designed to present the financial position and results of the System's operations accurately. This report is intended to provide complete and reliable information as a basis for making management decisions, adhering to and complying with legal requirements, and ensuring responsible stewardship of the System's assets.

Responsibility for the accuracy of the data, and the completeness and fairness of the report, including all disclosures, rests with the System. All disclosures required and necessary to enable the public and the financial community to gain an understanding of the System's financial activities have been included. The Financial section of this report was prepared to conform with Generally Accepted Accounting Principles (GAAP) for governmental units, as set forth by the Governmental Accounting Standards Board (GASB), as well as the reporting requirements prescribed by the Government Finance Officers Association of the United States and Canada (GFOA). GAAP defines uniform minimum standards of, and guidelines for, financial accounting and reporting. These principles establish the framework within which financial transactions are recorded and reported, resulting in financial statements that provide comparability between government entities, consistency between accounting periods, and reliability for both internal and external users of financial statements.

The System's transactions are reported on the accrual basis of accounting. Sufficient internal accounting controls exist to provide reasonable assurance regarding the safekeeping of assets and the fair presentation of the financial statements and supporting schedules.

The Financial section features a Management's Discussion and Analysis (MD&A). GASB requires that the System provide a narrative introduction, overview and analysis to accompany the basic financial statements in the form of an MD&A. This letter of transmittal complements the MD&A and should be read in conjunction with it. The MD&A can be found in the Financial section immediately following the report of the independent auditors.

I am proud that the System was awarded a Certificate of Achievement for Excellence in Financial Reporting from GFOA for its Annual Comprehensive Financial Report for the fiscal year ended March 31, 2022. The Certificate of Achievement is a prestigious national award recognizing excellence in the preparation of state and local government financial reports. GFOA awards these certificates to those governments whose annual comprehensive financial reports meet or exceed the Association's strict criteria. To be awarded a Certificate of Achievement, a governmental unit must publish a comprehensive, easily readable and efficiently organized annual financial report that conforms to program standards and that satisfies both generally accepted accounting principles and applicable legal requirements.

The System has received this respected award for each of the past 19 years. We believe that our current report continues to meet the Certificate of Achievement program requirements and are submitting it to GFOA for consideration again this year.

NYSLRS administers two distinct systems. They are the New York State and Local Employees' Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS). The assets of ERS and PFRS are held in the New York State Common Retirement Fund (Fund) and managed by the Division of Pension Investment and Cash Management in the Office of the State Comptroller.

With more than one million participants, the System is one of the largest public retirement systems in the nation.

The System offers service retirement benefits for members who reach specific ages or have completed a specified number of years of service, depending on the system and plan in which they are enrolled, as well as disability retirement and death benefits. At the end of fiscal year 2022-23, the System had a total of 1,210,133 members, retirees and beneficiaries, and 2,979 participating employers. Over the past year, the number of new retirees and beneficiaries grew by more than 29,000.

Funding

The Fund's assets come from three main sources: employee (member) contributions, employer contributions, and investment income. The System is committed to meeting its long-term benefit obligations prudently and fairly. Member contributions are fixed by law. Annual employer contributions are actuarially determined, with a minimum contribution of 4.5 percent of member payroll.

The System announced in September 2022 that employer contribution rates would increase for State fiscal year 2023-24: the ERS average employer rate will increase from 11.6 to 13.1 percent of payroll and the PFRS average rate will increase from 27.0 percent to 27.8 percent of payroll.

In addition to investment performance, other factors that impacted rates include inflation and the increased Cost-of-Living Adjustment (COLA) for retirees, higher salary base and benefit changes enacted over the last year by the Legislature and Governor.

The Fund's assumed rate of return remained the same as the prior fiscal year, at 5.9 percent. To strengthen the Fund, I have lowered the assumed rate of return four times to reflect changes in economic and demographic conditions. As of September 1, 2022, nine systems other than NYSLRS have an assumed rate of return lower than 6.5 percent. New York manages considerably more assets than the nine other systems combined.

The System sets contribution rates based on sound actuarial principles, using reasonable assumptions, and collects what is billed annually to employers, ensuring that sufficient assets will be collected to pay benefits as they become due. For the fiscal year ended March 31, 2023, fiduciary net position represented 90.8 percent of total pension liability for ERS and 87.4 percent for PFRS. The Actuarial section provides a detailed discussion of the System's funding.

Investments

The Fund's primary objective is to provide the means to pay benefits to the participants and beneficiaries of the System through an investment program designed to protect and enhance the long-term value of its assets. Fund investments are made with the "prudence" and "exclusive benefit" fiduciary standards of investment. Our policies and practices ensure that the Fund is managed with high levels of ethical conduct and transparency. An independent fiduciary and conflict-of-interest review of the New York State Common Retirement Fund is issued every three years, with the last review in February 2022 noting that "The Fund ... continues to be a leader amongst its peers for management and operational transparency."

The Fund remains well-diversified and maintains focus on a disciplined, risk-controlled investment approach to achieve sustainable, long-term results. Market volatility throughout the fiscal year, ending March 31, 2023, led to a total portfolio return of negative 4.14 percent. The Fund ended the fiscal year with the value of \$248.5 billion.

In addition to providing the means to pay benefits, the Fund is responsible for implementing an asset allocation strategy with an appropriate balance between risk and return across a broad spectrum of capital markets. As of March 31, 2023, our long-term target allocation for the investment portfolio is 24 percent in fixed income assets (cash, bonds, mortgages and Treasury Inflation-Protected Securities or "TIPS"), 47 percent in public equities, including domestic and international public equities, and 29 percent in alternative investments, including private equity, real estate, real assets, credit, and opportunistic/absolute return strategy funds.

I will continue to manage the Fund with prudence, and a focus on stable, long-term results that ensure continued retirement security for our members and retirees.

Sustainable Investing and Stewardship

The Fund continues to be a leader in sustainable investing because it is essential to protecting the Fund's long-term value.

I am deeply concerned about climate change. Around the world, we are seeing the impact of record temperatures, floods, rising sea levels, droughts, and wildfires, but climate change is not just an environmental issue. It poses significant financial risks to the Fund's investments, to the economy and to our entire society. One of the Fund's biggest challenges is investing in the opportunities while mitigating the risks that climate change poses to its long-term value.

In 2019, I announced a Climate Action Plan — a multifaceted, comprehensive, and systematic set of actions to achieve our ambitious sustainable investment goals. The Fund also has a goal of net-zero greenhouse gas emissions by 2040.

My Climate Action Plan, along with our goal to transition the Fund's portfolio to net-zero greenhouse gas emissions by 2040, helps the Fund address the physical, transition and disclosure risks associated with climate change. A key component of the Fund's plan to position its portfolio for a low-carbon economy was the creation of a formal Sustainable Investments and Climate Solutions (SICS) program.

As of March 31, 2023, the Fund has committed an additional \$1.3 billion to our SICS program. These commitments will help us protect the Fund's long-term strength, transition its portfolio to net zero emissions by 2040 and position it for changes already happening in the markets. To date, the Fund has deployed over \$18 billion toward its goal of \$20 billion to specific investment opportunities in the SICS program.

I take tremendous pride in being the Fund's steward. Protecting the value of our holdings by mitigating investment risks and seizing opportunities are of critical importance. We consider a variety of factors during the investment process including environmental, social, and governance factors that are material to investment outcomes.

The Fund continued its track record of supporting New York State businesses through its In-State Investment Program by committing another \$410 million in investments. As of March 31, 2023, the program has supported over 560 companies across the State. The In-State Program has helped hundreds of New York businesses add and retain thousands of jobs and grow while achieving solid returns. The In-State Program is the largest and most comprehensive of any home state focused pension investment program in the United States. It has now committed \$2.5 billion to 60 funds, and \$2.1 billion of these commitments have been added since I took office.

Here at the Office of the State Comptroller, we also take pride in the fact that a portion of the Fund's assets are managed by New York State-certified Minority- and Women-Owned Business Enterprises and emerging managers (MWBE). Diversity has strengthened our bottom line, which demonstrates that expanding opportunities and access is not only the right approach; it's the best approach. In fiscal year 2022 – 2023, the total State Pension Fund commitments and investments managed by MWBE managers grew to an all-time high of nearly \$31.5 billion. In total, over \$2 billion in capital commitments were deployed to emerging and/or MWBE managers across the Fund's asset classes.

Accounting Practices

My staff is responsible for identifying control objectives for the protection of assets and the recording of all transactions to permit the preparation of financial statements in accordance with GAAP. The objective of internal controls is to provide reasonable assurance that the financial statements are free of material misstatements. We have designed, implemented and maintained internal controls to provide assurance that our control objectives are achieved.

The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgments by management. An internal control system includes the organization plan, the appropriate segregation of duties and responsibilities, the implementation of sound practices in the performance of duties, and the employment of personnel whose capabilities are commensurate with their responsibilities.

The System's financial information and internal controls are subject to examination by the New York State Department of Financial Services. Additionally, KPMG LLP, an independent, certified public accountant, audits the System's financial statements. KPMG's opinion appears on page 37 of this report. Lastly, pursuant to the New York State Government Accountability, Audit and Internal Control Act, the System is subject to an audit of its internal controls every three years.

We believe the internal controls in effect during the fiscal year ended March 31, 2023, adequately safeguard the System's assets and provide reasonable assurance regarding the proper recording of financial transactions.

Fighting Pension Fraud

Since taking office, detecting and preventing public corruption and fraud, including pension fraud, has been one of my top priorities. My office is committed to protecting the Fund and holding anyone who would attempt to defraud the Fund accountable including recouping money stolen from NYSLRS members and retirees. My anti-fraud and corruption initiative has led to over 286 arrests and the recovery of over \$83 million in stolen public funds. Over the past several years, my investigations of pension fraud have led to over 43 arrests and the recovery of almost \$3.5 million. I continue to maintain close partnerships with law enforcement officials across the State and country to root out and prosecute those who attempt to defraud the retirement system. I will continue to safeguard pension funds from fraud and protect the financial security of retirees and beneficiaries.

More information about other key programs and initiatives can be found in the Overview of the New York State and Local Retirement System on page 25 and the Overview of Investments on page 89.

Acknowledgements

I wish to thank the dedicated staff of the Office of the State Comptroller for doing the important work of our agency day in and day out. I am extremely proud of their commitment to serving our members, retirees, beneficiaries and employers.

I also wish to thank the members of the Advisory Council for the Retirement System, the Investment Advisory Committee, the Real Estate Advisory Committee, the Actuarial Advisory Committee and the Audit Advisory Committee for their commitment to the System's members, retirees and beneficiaries. We are deeply indebted to them for their continued support and counsel.

Lastly, I would like to thank the staff in our Division of Retirement Services and our Division of Pension Investment and Cash Management, who are responsible for preparing this report. Their professionalism and dedication are greatly appreciated.

I am confident you will find this report to be a complete and reliable accounting of the System.

Sincerely,



Thomas P. DiNapoli
State Comptroller

Administrative Organization

Advisory Committees

Advisory Council for the Retirement System

The Advisory Council for the Retirement System, appointed by the Comptroller pursuant to regulations of the Comptroller (2 NYCRR Part 320), advises and makes recommendations to the Comptroller on the formulation of policies in relation to the administration and management of the Common Retirement Fund and the Retirement System. At the annual meetings of the Council, the Comptroller and senior staff also exchange information and insights with the Council to help stakeholders understand the status and challenges of the Common Retirement Fund and the Retirement System.

Stephen J. Acquario

Executive Director
New York State Association of Counties

Honorable Stacey Pheffer Amato

Chair
Assembly Governmental Employees Committee
New York State Assembly

Peter A. Baynes

Executive Director
New York State Conference of Mayors

Heather Briccetti Mulligan

President & CEO
Business Council of New York State, Inc.

Mario Cilento

President
New York State AFL-CIO

Sam Fresina

President
New York State Professional Fire Fighters Association

Gerry Geist

Executive Director
Association of Towns of the State of New York

Diana Hinchcliff

President
Retired Public Employees Association, Inc.

Honorable Robert Jackson

Chair
Senate Civil Service and Pensions Committee
New York State Senate

Bryant Kolner

President
Alliance of Public Retiree Organizations of New York

Michael O'Meara

First Vice President
Police Conference
of New York, Inc.

Andrew Pallotta

President
New York State United Teachers

Michael Powers

President
New York State Correctional Officers
& Police Benevolent Association

Raymond Santander

Assistant Director, Research & Negotiations
AFSCME District Council 37

Robert Schneider

Executive Director
New York State School Boards Association

Wayne Spence

President
New York State Public Employees Federation

Fran Turner

Director of Legislative & Political Action
Civil Service Employees Association Local 1000, AFSCME

Ronald J. Walsh, Jr.

President
Council 82, AFSCME

Richard Wells

President
Police Conference of New York, Inc.

Barbara Zaron

President
New York State Organization of
Management Confidential Employees

Investment Advisory Committee

The Investment Advisory Committee is appointed by the Comptroller pursuant to Section 423 of the Retirement and Social Security Law. The Investment Advisory Committee advises the Comptroller on general investment issues. The Investment Advisory Committee reviews the investment policy statement and any amendments to it, and reviews and provides a recommendation to the Comptroller on the proposed asset allocation plan developed by the Chief Investment Officer after the completion of an asset liability study. The Investment Advisory Committee also periodically reviews the strategic plan of each Common Retirement Fund asset class, and monitors the Common Retirement Fund's risk profile, investment activity and performance on a periodic basis.

Tia Breakley

Chief Strategic Development Officer
Blue Meridian Partners

Phillipe Brugere-Trelat

Former Executive Vice President and Portfolio Manager
Franklin Templeton

William G. Clark

Chief Investment Officer
Federal Reserve Employees Benefits System

Timothy Collins

CEO & Senior Managing Director
Ripplewood Holdings, LLC

Hugh Johnson

Chairman & Chief Economist
Hugh Johnson Economics, LLC

Catherine A. Lynch, CFA (Chair)

Independent Director
BlackRock Fixed Income Funds Board

James Mitchell

Independent Board Director
JMJ Advisors, LLC

Diane C. Nordin, CFA

Director
Fannie Mae

Catherine James Paglia

Director
Enterprise Asset Management

Real Estate Advisory Committee

The Real Estate Advisory Committee is appointed by the Comptroller, with the consent of the Investment Advisory Committee, pursuant to Section 423 of the Retirement and Social Security Law. The Real Estate Advisory Committee reviews proposed mortgage and real estate investments. In the event the Real Estate Advisory Committee disapproves of a proposed mortgage or real estate investment, the investment will not be presented to the Comptroller and cannot be made by the Common Retirement Fund.

Louis M. Dubin

Managing Partner
Redbrick LMD

G. Gail Edwards

Independent Director

Michael Giliberto

President
S. Michael Giliberto & Company, Inc.

James M. Gottstine

Chief Operations Officer
Ciminelli Real Estate Corporation

JoAnn Hanson

President and Chief Executive Officer
Church Investment Group

L. Duane Jackson

Managing Member
Alinea Capital Partners, LLC

Rosey Miller

Chief Executive Officer
Regional Investment & Management

David H. Peirez, Esq. (Chair)

Partner
Reisman Peirez Reisman & Capobianco LLP

Deborah Ratner Salzberg

Principal
Uplands Real Estate Partners

Peter Tilles

Developer

Administrative Organization

continued

Actuarial Advisory Committee

The Actuarial Advisory Committee, appointed by the Comptroller pursuant to regulation (11 NYCRR 136-2), reviews and advises the Comptroller on the actuarial soundness and financial condition of the Retirement System and the Common Retirement Fund, and annually reviews the proposed actuarial assumptions and employer contributions.

Edward W. Brown
(Retired)

Armand de Palo
(Retired)

Michael Heller
(Retired)

Mark T. Koehne
(Retired)

Stanley Talbi
(Retired)

Administrative Organization

continued

Audit Advisory Committee

The Audit Advisory Committee, appointed by the Comptroller pursuant to regulation (11 NYCRR 136-2), reviews and reports to the Comptroller on the annual internal and external audit process related to the Retirement System, the Common Retirement Fund and the Annual Comprehensive Financial Report.

Jennifer Mulligan (Chair)

Business Office Manager/Controller
Questar III BOCES

Ruben Cardona

Partner
WithumSmith + Brown, PC

Alan Lubin

(Retired)

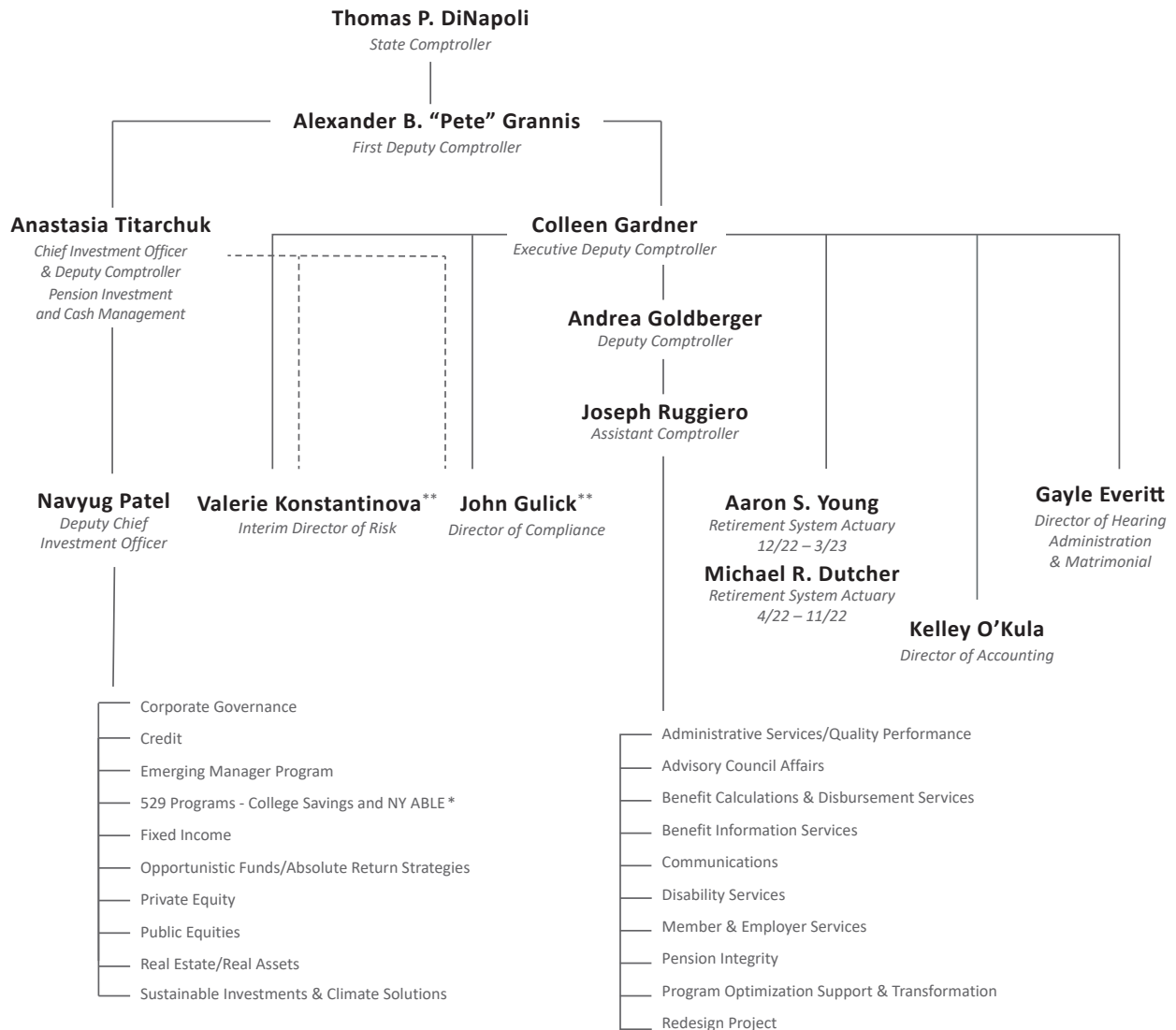
Julie McDonnell

Schenectady County Auditor

Paul Moore

Past President
Retired Public Employees Association, Inc.

New York State and Local Retirement System Organization Chart



*College Savings and NY ABLE are independent programs within OSC.

** Administrative reporting to the Chief Investment Officer.

Notes:

Information regarding investment managers and consultants can be found in the Investment Section on pages 120, 124, and 131-142. Information regarding consultants other than investment advisors can be found on page 84 in the Financial Section.

Overview of the New York State and Local Retirement System

Report from Executive Deputy Comptroller Colleen Gardner

I am proud of the work NYSLRS accomplished during the 2022-23 State fiscal year, and I am pleased to share highlights of that work with you.

Retirement Online

We launched *Retirement Online* in 2017. Since then, our members, retirees and beneficiaries have been using it to understand their retirement account information and to conduct business with NYSLRS that once required calling NYSLRS or mailing in a form — changing their address, managing beneficiary designations, creating a pension income verification letter, taking out a loan or receiving an estimate of their pension benefit. Using *Retirement Online* usually results in faster response times and enables NYSLRS staff to focus on more complex issues for our customers.

As of March 31, 2023, more than 416,000 members, retirees and beneficiaries had registered for *Retirement Online*. To date, members used *Retirement Online* to:

- Submit 132,683 beneficiary updates; and
- Complete 37,947 retirement applications.

In the last fiscal year alone, customers completed nearly 575,000 individual transactions, and members used *Retirement Online* to:

- Complete 404,095 retirement benefit estimates;
- Submit 31,674 loan applications, which is nearly 80 percent of the applications received; and
- Request 3,515 new service credit purchases.

Our final stage of the project was to move our payments, post-retirement earnings, and legal and matrimonial functions into the system. Most of these changes, including moving payment administration, went live in January 2023.

NYSLRS retirees can now update their direct deposit information, change their federal tax withholding and view a more detailed pay stub for their pension benefit. More than 10,500 retirees and beneficiaries subsequently created new *Retirement Online* accounts. And, as of March 31, 2023, retirees and beneficiaries made 8,588 changes to their federal tax withholdings and made 2,542 updates to their direct deposit information.

We continuously review our online features to ensure that they are secure and provide our customers with the best experience. Previously, customers had to contact our Call Center to unlock their accounts. We developed a safe way for users to unlock their *Retirement Online* accounts on their own. In the first month the unlock process took effect, 720 users — representing 77 percent of total lockouts — successfully unlocked their own accounts.

Overview of the New York State and Local Retirement System

Report from Executive Deputy Comptroller Colleen Gardner

CONTINUED

Our Employer Partnership

The employers who participate in NYSLRS are critical to our success. We rely on them to accurately report information to us and deliver information to our members. More than that, we couldn't provide members the benefits they've earned without our participating employers. So, we're committed to our partnership and to assisting them.

In April 2022, legislation temporarily removed overtime pay earned from April 1, 2020 through March 31, 2022 from the Tier 6 contribution rate calculation. By removing overtime earnings from the calculation, some Tier 6 members had their contribution rate lowered retroactive to April 1, 2022. So, in addition to notifying employers about the lowered rates, we needed to return excess contributions that were already reported to us. We asked employers for detailed overtime earnings information for 46,000 local and 70,000 State employees who might be eligible for the reduced rate and developed a new page in *Retirement Online* where they could report it. After validating the data, we notified employers of the new rates and issued contribution credits so they could refund their employees.

Providing our employer partners with the online tools they need to work with us is a top priority. New employer reporting requirements were enacted over the past decade with the introduction of Tiers 5 and 6. We developed our enhanced reporting process based on feedback from our employers and reporting changes required by law. Introduced in 2020, enhanced reporting is more efficient for employers, and it gives NYSLRS more of the information we need more quickly. To help employers with the transition to enhanced reporting, we provide customized training and one-on-one support, as well as reference tools and resources on our website. By the end of fiscal year 2022-23, 1,150 employers had transitioned to enhanced reporting — 42 percent of all our employers. Legacy reporting will be phased out after 2023, so we've stepped up our efforts to assist employers with upgrading to enhanced reporting.

Vesting for Tier 5 and 6 Members

In April 2022, legislation changed the vesting requirements for Tier 5 and 6 members. As of April 9, 2022, these members only need five years of service credit to be vested (eligible for a service retirement benefit). This affected 87,000 members who had between five and ten years of service. Members were notified about the legislation through social media, newsletters, and website announcements. The benefit estimate tool and service retirement application in *Retirement Online* were also updated so that these newly eligible members can estimate their pension benefit and retire based on their new eligibility.

Overview of the New York State and Local Retirement System

Report from Executive Deputy Comptroller Colleen Gardner

CONTINUED

Customer Service

Customer satisfaction is important to us. Each year, we measure key business metrics and compare them to those of peer retirement systems. We use this feedback to better serve our customers — to see where we perform well and reflect on areas that need improvement.

According to CEM Benchmarking, a global pension administration benchmarking service that NYSLRS has participated in for the past two decades, our total service score has increased by 20 percent over an eight-year period from 2015 to 2022. Improvements to our website and providing more opportunities for our members and retirees to conduct their business with us online have had the biggest impact on our score.

This is especially important as the number of participants we serve continues to grow. For the ten-year period covering 2013 – 2023, membership increased by 7.4 percent. During the same time, the number of retirees increased by 24.1 percent and the number of beneficiaries has grown by 28.6 percent. During the last year, NYSLRS added more than 29,000 new retirees and beneficiaries. In addition, a large number of retroactive contract settlements and accruals were reported for our members and retirees. NYSLRS' ability to meet industry standards for making adjustments and finalizing pension amounts has been hampered by the sheer volume of cases and difficulty in hiring new staff. While it will take some time to finalize pensions, retirees should rest assured that their pension will be adjusted after new earnings are reported to NYSLRS.

As NYSLRS' customer base expands, it is essential to find new customer service solutions to meet our growing needs. Last fall, we introduced a new chat feature on our public website. This automated "digital agent" provides customers with answers to their most common general questions, 24/7. The chat is monitored and taught to answer a wide range of questions accurately. In the future, this feature will be expanded to connect customers with a live Call Center agent and within their *Retirement Online* account.

Face-to-face consultations with NYSLRS representatives have been reinstated, but over 95 percent of consultations are conducted by phone. Members expressed appreciation for the flexibility of virtual sessions, which enabled us to serve more members than we could with in-person consultations. During the last fiscal year, more than 24,400 members received phone consultations, while nearly 8,400 members were assisted through virtual consultations and presentations. Many in-person meetings and conferences were reinstated over the past year. NYSLRS staff made presentations, conducted consultations, and staffed information tables, both virtual and in-person, assisting another 1,700 members. Our goal is to respond to changing customer needs in a timely and agile manner. In doing so, we stay focused on improving our customers' experience.

Overview of the New York State and Local Retirement System

Report from Executive Deputy Comptroller Colleen Gardner

CONTINUED

Fighting Fraud

We take preventing and detecting pension fraud very seriously. Identifying unreported retiree and beneficiary deaths is one way we detect fraud. During the last fiscal year, NYSLRS recovered more than \$1,200,000 in pension overpayments.

One of the duties of our Pension Integrity Bureau is to audit retirement data to verify that it has been reported accurately. In addition, each year a sampling of employers is selected to undergo an audit by our independent financial auditor of their reported data.

Retirement benefits are partially based on reported data, so these audits help ensure that the correct benefits are paid. The bureau also monitors *Retirement Online* for instances of online fraud and ensures appropriate internal controls are in place to protect the system and its data.

We will continue to search out unreported retiree deaths and online fraud. When inappropriate payments are identified, we will pursue full restitution.

Continued Response to the Pandemic

COVID-19 has resulted in tens of thousands of deaths across New York State. Sadly, the pandemic's victims include NYSLRS members, retirees and beneficiaries.

NYSLRS monitored member deaths, conducted outreach to employers and beneficiaries, and worked with beneficiaries to provide benefits in cases of public employee COVID-19 deaths. Through the end of the fiscal year, we recorded 347 active member deaths with COVID-19 listed as the cause of death on their death certificate. Of these, 212 had beneficiaries who were potentially eligible for the COVID-19 accidental death benefit — a pension benefit rather than a one-time payment. NYSLRS received accidental death benefit applications from 111 beneficiaries and 59 of these have been approved.

We continued to keep our customers updated throughout the year about the post-retirement earnings limits that apply to NYSLRS retirees. By executive order, the usual earnings limit of \$35,000 a year for retirees in a public sector job who are under age 65 was suspended by the Governor for much of 2020 and 2021, all of 2022, and for 2023, through the end of the State fiscal year in March. In addition, legislation suspended the earnings limit for retirees employed by school districts and Boards of Cooperative Educational Services (BOCES) through June 30, 2024.

Overview of the New York State and Local Retirement System

Report from Executive Deputy Comptroller Colleen Gardner

CONTINUED

New Laws Enacted in Calendar Year 2022 that Impact NYSLRS

Post-Retirement Earnings, Overtime Pay and Vesting

Chapter 56 of the Laws of 2022: This State budget bill included three parts that affected NYSLRS.

- Part HH waived the Section 212 post-retirement earnings limit for retirees working for a school district or BOCES until June 30, 2023. (Subsequent legislation passed in May 2023 waives the limit through June 30, 2024.)
- Part SS excludes overtime pay from the annual wages used to determine Tier 6 contribution rates during the period of April 1, 2022 to March 31, 2024.
- Part TT changes vesting for Tier 5 and 6 members from ten years to five years of service credit.

Service Credit for Unused Sick Leave

Chapter 60 of the Laws of 2022 allows members of the New York State and Local Police and Fire Retirement System represented by the Agency Police Services negotiating unit to receive service credit for up to 200 days of unused sick leave.

Names of Retirees Are Subject to FOIL

Chapter 482 of the Laws of 2022 clarifies that the names of retirees receiving public employees' retirement benefits are subject to disclosure pursuant to a Freedom of Information Law (FOIL) request, while the names of beneficiaries are not.

Certain Accidental Death Benefits Increased

Chapter 528 of the Laws of 2022 increases the amounts of certain special accidental death benefits for the surviving spouses, children and other eligible beneficiaries of former uniformed employees of the City of New York and the New York City Health and Hospitals Corporation, and for certain former employees of the Triborough Bridge and Tunnel Authority, who were members of certain New York City Retirement Systems and Pension Funds and died as a natural and proximate result of an accident sustained in the performance of duty.

World Trade Center Filing Notice Extended

Chapter 561 of the Laws of 2022 extends the deadline for filing notice regarding eligibility for World Trade Center benefits to September 11, 2026.

Accidental Disability Benefits for Certain Fire Personnel

Chapter 719 of the Laws of 2022 allows State fire protection specialists to be eligible to receive an accidental disability benefit of three-quarters of their final average salary, less worker's compensation.

Overview of the New York State and Local Retirement System

Report from Executive Deputy Comptroller Colleen Gardner

CONTINUED

Reductions in Ordinary Death Benefits Delayed

Chapter 720 of the Laws of 2022 delays reductions in the ordinary death benefits payable to NYSLRS beneficiaries ensuring that no reduction applies before a member becomes eligible for an unreduced retirement benefit.

COVID-19 Accidental Death Benefits Extended

Chapter 783 of the Laws of 2022 extends the coronavirus disease (COVID-19) accidental death benefit to the statutory beneficiaries of certain NYSLRS members until December 31, 2024.

Collection of Sex Designation Information by State Agencies

Article VII legislation enacted as part of the FY 2023 New York State Executive Budget expanded the New York State Gender Recognition Act (“GRA”) to require State agencies to offer “X” as an identifier when collecting information about a person’s sex. Our members and retirees can now update their membership information to reflect their individual identity and choose “X,” “M” or “F.”

Although the last fiscal year continued to present challenges and the number of new retirements continued to grow, we remained committed to providing quality service to our members, retirees, beneficiaries and employers. I look forward to reporting the results of our efforts in our next Annual Comprehensive Financial Report.

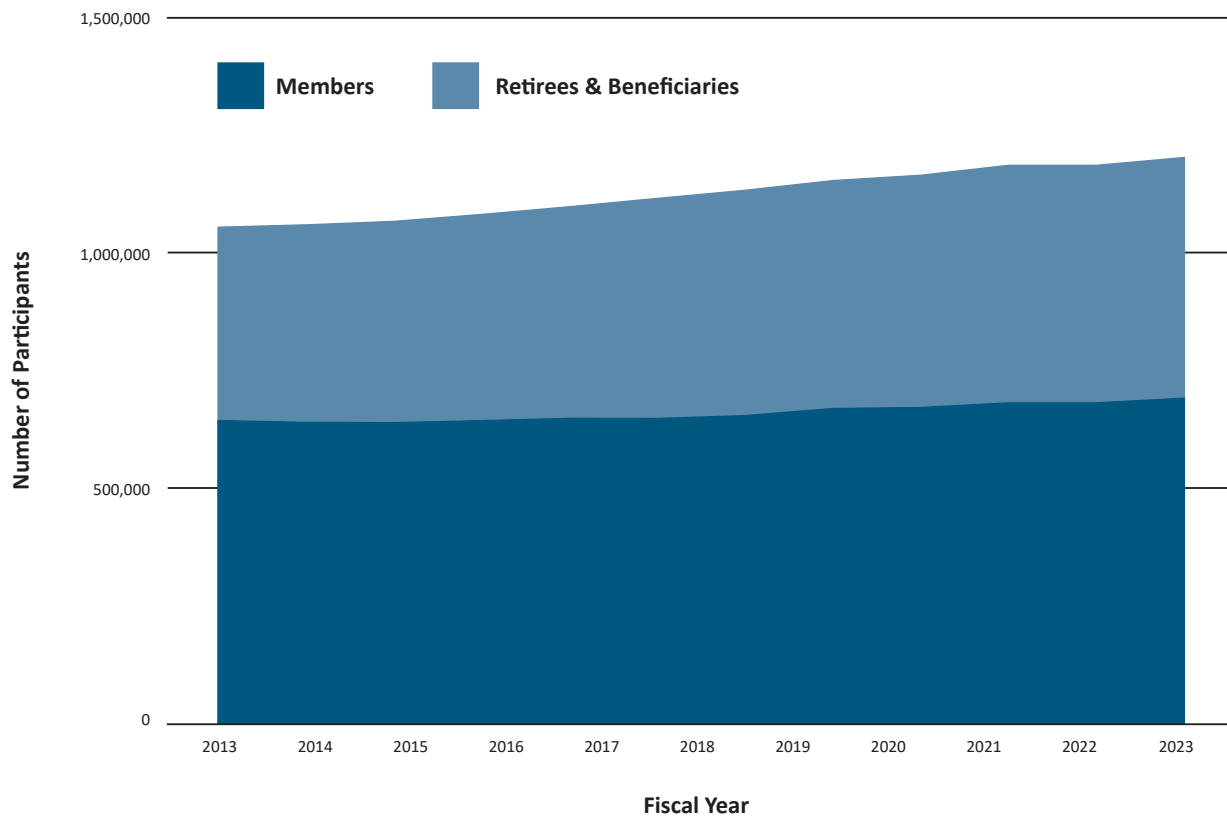
By the Numbers

Members and Retirees

There are 1,210,133 participants in the System, including 695,504 members and 514,629 retirees and beneficiaries.

The number of retirees is increasing more quickly than members. For example, in 2003 retirees and beneficiaries represented approximately 33 percent of the System’s participants. By fiscal year 2023, that number had increased to approximately 43 percent.






Benefit payments continue to rise, reflecting improvements in final average salaries over the past decades, cost-of-living adjustment (COLA) payments and benefit improvements enacted over the years.

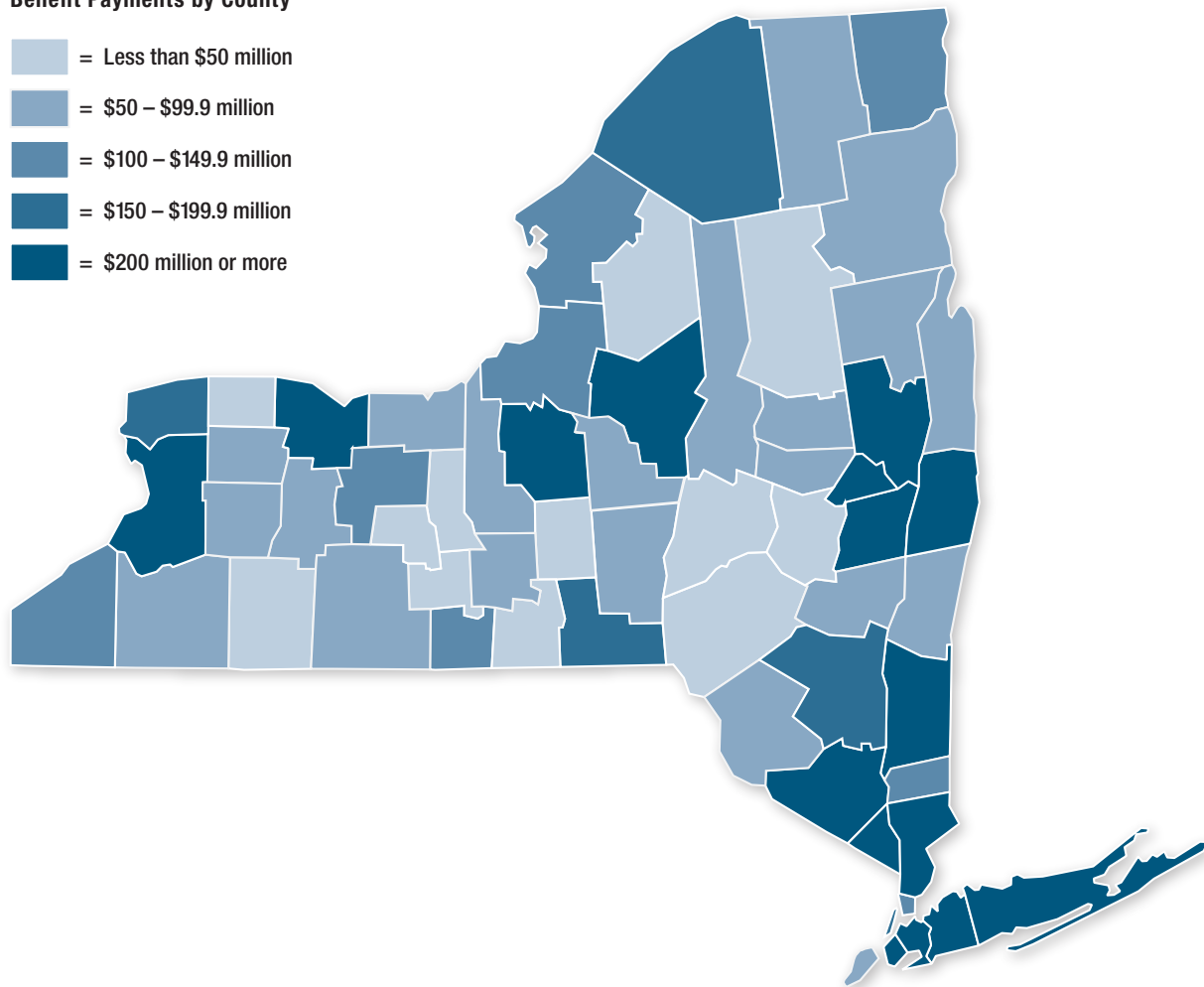


Retirees in New York State

Of the 514,629 retirees and beneficiaries in the System, 403,927 (approximately 78 percent) remain New York State residents. As such, benefit payments surpassing \$12.3 billion this year alone reach the State's communities and businesses, representing a significant stimulus to the State's economy.

Benefit Payments by County

-  = Less than \$50 million
-  = \$50 – \$99.9 million
-  = \$100 – \$149.9 million
-  = \$150 – \$199.9 million
-  = \$200 million or more



Annual Benefit Payments Within New York State

As of March 31, 2023.

County	Recipients	Annual Payments
Albany	20,356	\$ 718,055,379
Allegany	1,803	38,856,937
Bronx	3,848	123,656,372
Broome	8,607	194,543,777
Cattaraugus	3,764	88,585,890
Cayuga	3,677	97,150,997
Chautauqua	5,277	123,584,473
Chemung	3,931	105,305,566
Chenango	2,431	51,360,060
Clinton	4,971	143,598,450
Columbia	3,261	97,180,669
Cortland	1,947	44,617,305
Delaware	1,990	45,435,942
Dutchess	10,928	364,670,562
Erie	33,542	986,494,904
Essex	2,237	56,098,045
Franklin	3,606	98,005,959
Fulton	2,467	58,529,338
Genesee	2,667	66,595,651
Greene	2,768	78,873,310
Hamilton	521	12,112,853
Herkimer	2,718	61,950,612
Jefferson	4,148	107,154,756
Kings	6,322	217,695,847
Lewis	1,449	30,782,834
Livingston	3,266	81,885,149
Madison	2,895	68,650,234
Monroe	19,212	484,485,207
Montgomery	2,627	68,211,644
NY Military	9	131,533
Nassau	25,792	997,969,972
New York	4,617	175,643,065

County	Recipients	Annual Payments
Niagara	7,141	\$ 187,269,650
Oneida	10,862	296,921,638
Onondaga	15,287	400,758,011
Ontario	4,045	100,360,364
Orange	10,340	323,011,039
Orleans	1,802	42,657,588
Oswego	4,860	111,022,319
Otsego	2,364	49,898,948
Putnam	2,811	102,192,968
Queens	6,703	238,494,392
Rensselaer	10,061	334,054,282
Richmond	2,585	98,744,995
Rockland	7,247	259,562,127
Saratoga	12,377	400,976,006
Schenectady	9,322	305,325,409
Schoharie	1,835	47,376,155
Schuyler	913	21,140,053
Seneca	1,592	37,482,270
St. Lawrence	5,953	156,091,092
Steuben	3,703	86,553,151
Suffolk	39,062	1,467,322,534
Sullivan	3,229	91,472,472
Tioga	1,925	40,971,779
Tompkins	2,965	69,823,080
Ulster	6,699	184,582,172
Warren	3,293	88,382,831
Washington	3,037	78,407,712
Wayne	3,788	87,464,537
Westchester	17,183	647,010,108
Wyoming	2,349	60,345,990
Yates	940	21,363,164
Total	403,927	\$ 12,324,912,128

Note: The objective of this chart is to show the relative amounts paid to annuitants in the various locations within New York State. The numbers do not match the figures in the basic financial statements because the financial statement figures represent the sum of all benefit payments (including death benefits) made during the fiscal year, in accordance with Generally Accepted Accounting Principles (GAAP). The above numbers represent the sum of the annual benefits payable to all annuitants actively collecting as of the end of the fiscal year. The figures in the chart are easier to organize by county, as compared to figures found in the financial statements.

Annual Benefit Payments Within the United States

As of March 31, 2023.

State	Recipients	Annual Payments
Alabama	874	\$ 18,585,659
Alaska	57	1,284,834
Arizona	2,670	62,402,175
Arkansas	175	2,841,977
California	2,064	43,797,604
Colorado	853	19,522,871
Connecticut	2,650	77,986,067
Delaware	1,263	40,281,916
Florida	40,523	1,154,365,163
Georgia	4,293	99,772,927
Guam	1	10,328
Hawaii	115	2,892,997
Idaho	113	2,221,874
Illinois	385	8,555,567
Indiana	329	6,356,871
Iowa	85	1,325,061
Kansas	117	2,128,016
Kentucky	470	9,265,781
Louisiana	200	4,233,990
Maine	661	15,603,564
Maryland	1,581	35,057,612
Massachusetts	1,674	41,463,087
Michigan	361	6,766,750
Minnesota	170	2,903,591
Mississippi	214	4,519,898
Missouri	282	5,167,806
Montana	127	2,693,977

State	Recipients	Annual Payments
Nebraska	54	\$ 1,027,097
Nevada	1,348	37,047,547
New Hampshire	717	20,802,548
New Jersey	8,583	368,914,634
New Mexico	406	8,340,564
New York	403,927	12,324,912,128
North Carolina	10,331	262,161,032
North Dakota	21	443,923
Ohio	852	15,880,825
Oklahoma	169	2,696,285
Oregon	306	6,369,220
Pennsylvania	5,472	148,721,573
Puerto Rico	403	7,573,495
Rhode Island	262	6,895,165
South Carolina	7,753	224,367,574
South Dakota	89	2,657,971
Tennessee	2,557	70,038,436
Texas	2,610	61,644,440
Utah	163	3,270,050
Vermont	596	13,781,346
Virginia	3,962	91,892,253
Washington	539	12,032,332
Washington, D.C.	95	2,345,168
West Virginia	205	4,341,575
Wisconsin	174	3,242,239
Wyoming	79	1,958,578
Total	513,980	\$ 15,375,365,962

Annual Benefit Payments Outside the United States

As of March 31, 2023.

Recipients	Total Annual Payments
649	\$ 12,154,961

Note: The objective of this chart is to show the relative amounts paid to annuitants within the United States and outside the United States. The numbers do not match the figures in the basic financial statements because the financial statement figures represent the sum of all payments (including death benefits) made during the fiscal year, in accordance with Generally Accepted Accounting Principles (GAAP). The above numbers represent the sum of the annual benefits payable to all annuitants actively collecting as of the end of the fiscal year. The figures in the chart are easier to organize by state and country, as compared to figures found in the financial statements.

Financial



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Independent Auditors' Report



KPMG LLP
515 Broadway
Albany, NY 12207-2974

Independent Auditors' Report

The Trustee
New York State and Local Retirement System:

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the New York State and Local Retirement System (the System) as of and for the year ended March 31, 2023, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System as of March 31, 2023, and the changes in its fiduciary net position for the year then ended in accordance with U.S. generally accepted accounting principles.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with U.S. generally accepted accounting principles, and for 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.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

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In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit 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 System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis, schedule of changes in employers' net pension liability (asset) and related ratios, schedule of employer contributions, schedule of investment returns, and notes to required supplementary information be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits⁴ 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 System's basic financial statements. The schedule of administrative expenses, schedule of investment expenses and schedule of consulting fees are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The 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 schedule of administrative expenses, schedule of investment expenses and schedule of consulting fees are fairly stated, in all material respects, in relation to the basic financial statements as a whole.



Other Information

Management is responsible for the other information included in the annual comprehensive financial report. The other information comprises the introduction, investment, actuarial and statistical sections but does not include the basic financial statements and our auditors' report thereon. Our opinion on the basic financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated July 21, 2023 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

KPMG LLP

July 21, 2023, except for the Other Information section of our report, as to which the date is September 27, 2023

Management's Discussion and Analysis (Unaudited)

March 31, 2023

The following overview of the financial activity of the New York State and Local Retirement System (the System) for the fiscal year ended March 31, 2023 is intended to provide the reader with an analysis of the System's overall financial position. The System is comprised of the New York State and Local Employees' Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS). The net position of the System is held in the New York State Common Retirement Fund (the Fund), which was established to hold all assets and record changes in fiduciary net position allocated to the System. This management's discussion and analysis should be read in conjunction with the basic financial statements of the System, which follow.

Financial Highlights

The fiduciary net position of the System held in trust to pay pension benefits was \$249.5 billion as of March 31, 2023 and \$273.7 billion as of March 31, 2022. This amount reflects a decrease of \$24.2 billion from the prior fiscal year. This change is primarily the result of the net depreciation of the fair value of the investment portfolio. The Fund continues to diversify and monitor downside risks. Net depreciation/appreciation in fair value of investments for the fiscal years ended March 31, 2023 and 2022 was \$(17.3) billion and \$18.5 billion, respectively.

- The System's investments reported a negative money-weighted rate of return, net of investment expense, of 4.43 percent for the fiscal year ended March 31, 2023 and a positive money-weighted rate of return, net of investment expense, of 9.44 percent for the fiscal year ended March 31, 2022.
- Retirement and death benefits paid during the fiscal year ended March 31, 2023 to 514,629 annuitants totaled \$15.5 billion, as compared to \$14.7 billion paid to 507,923 annuitants for the fiscal year ended March 31, 2022. The increase is primarily due to the number of new retirees.
- Contributions from employers decreased to \$4.4 billion for the fiscal year ended March 31, 2023, from \$5.6 billion for the fiscal year ended March 31, 2022. The decrease in employer contributions was related to a decrease in contribution rates from the previous year.
- The Net Pension Liability (NPL) for ERS was \$21.4 billion for the measurement period ended March 31, 2023 as compared to a Net Pension Asset (NPA) of \$8.2 billion for the measurement period ended March 31, 2022. The fiduciary net position, restricted for pension benefits as of March 31, 2023, was \$211.2 billion, which represents 90.8 percent of the calculated total pension liability for ERS. This NPL is allocated to participating employers and reported in their financial statements pursuant to Governmental Accounting Standards Board (GASB) Statement 68.
- The NPL for PFRS was \$5.5 billion for the measurement period ended March 31, 2023 as compared to \$.6 billion for the measurement period ended March 31, 2022. The fiduciary net position, restricted for pension benefits as of March 31, 2023, was \$38.3 billion, which represents 87.4 percent of the calculated total pension liability for PFRS. This NPL is allocated to participating employers and reported in their financial statements pursuant to GASB Statement 68.

Management's Discussion and Analysis (Unaudited)

continued

Overview of the Financial Statements

The financial statements consist of the combining basic statement of fiduciary net position, the combining basic statement of changes in fiduciary net position, and the notes to the basic financial statements. The required supplementary information that appears after the notes to the basic financial statements is not a required part of the basic financial statements, but is supplementary information required by the GASB. The other supplementary information following the required supplementary information is not required, but management has chosen to include such information to increase transparency.

The combining basic statement of fiduciary net position reflects the resources available to pay members, retirees and beneficiaries at the close of the System's fiscal year. This statement also provides information about the fair value and composition of the System's fiduciary net position.

The combining basic statement of changes in fiduciary net position presents the changes to the System's fiduciary net position for the fiscal year, including net investment income (loss), which includes net appreciation (depreciation) in fair value of the investment portfolio, and contributions from members and employers. Benefits and administrative expenses paid by the System are included under the deductions section of the statement.

The notes to the basic financial statements are an integral part of the basic financial statements and provide additional information about the plans, policies, and performance of the System.

The required supplementary information includes: Management's Discussion and Analysis, Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios, Schedule of Employer Contributions and Schedule of Investment Returns and related notes to the required supplementary information.

The additional supplementary information includes: Schedule of Administrative Expenses, Schedule of Investment Expenses, and Schedule of Consulting Fees.

Management's Discussion and Analysis (Unaudited)

continued

Analysis of the Overall Financial Position of the System

The purpose of the System's investments is to provide for long-term growth, while also ensuring a reliable cash flow that meets the funding requirements of the near-term pension obligations. To achieve these goals, the investments are allocated to a variety of asset types and strategies in order to meet the System's current funding needs as well as future growth requirements. Equity-related investments are included for their long-term return and growth characteristics. While a majority of fixed income and debt-related investments are generally included in the allocation for their ability to control investment risk and provide for a reliable cash flow that meets the funding requirements, a portion is strategically invested in more actively traded markets. It is important to note that the change from year to year is due not only to changes in fair values but also to purchases, sales, and redemptions. Tables 1, 2, and 3 summarize and compare financial data for the current and prior years.

Table 1

Summary schedule of fiduciary net position as of March 31, 2023, as compared to March 31, 2022:

	(Dollars in Thousands)			Percentage Change
	2023	2022	Dollar Change	
Assets:				
Investments	\$ 248,524,917	\$ 272,121,262	\$ (23,596,345)	(8.7)%
Securities lending collateral — invested	29,078,812	22,478,217	6,600,595	29.4
Receivables and other assets	<u>2,724,190</u>	<u>2,973,061</u>	<u>(248,871)</u>	<u>(8.4)</u>
Total assets	280,327,919	297,572,540	(17,244,621)	(5.8)
Liabilities:				
Securities lending obligations	29,079,603	22,506,168	6,573,435	29.2
Payables and other liabilities	<u>1,740,230</u>	<u>1,347,649</u>	<u>392,581</u>	<u>29.1</u>
Total liabilities	30,819,833	23,853,817	6,966,016	29.2
Net position, restricted for pension benefits	\$ 249,508,086	\$ 273,718,723	\$ (24,210,637)	(8.8)%

The fiduciary net position of the System totaled \$249.5 billion as of March 31, 2023, a decrease of \$24.2 billion from the prior fiscal year, primarily attributable to the net depreciation of invested assets.

Management's Discussion and Analysis (Unaudited)

continued

Table 2

Schedule of invested assets as of March 31, 2023, as compared to March 31, 2022:

	(Dollars in Thousands)			Percentage Change
	2023	2022	Dollar Change	
Domestic equity	\$ 75,054,447	\$ 94,271,236	(19,216,789)	(20.4)%
Global fixed income	48,479,229	52,497,456	(4,018,227)	(7.7)
International equity	33,944,147	39,188,932	(5,244,785)	(13.4)
Private equity	36,976,567	37,026,072	(49,505)	(0.1)
Real estate	25,054,357	22,873,140	2,181,217	9.5
Short-term investments	4,018,739	3,852,320	166,419	4.3
Real assets	7,811,998	6,051,188	1,760,810	29.1
Opportunistic funds/ARS investments	6,463,357	5,729,981	733,376	12.8
Mortgage loans	1,310,637	1,421,139	(110,502)	(7.8)
Credit	9,411,439	9,209,798	201,641	2.2
Total investments	\$ 248,524,917	\$ 272,121,262	\$ (23,596,345)	(8.7)%

The largest percentage increase to the invested assets were in real assets and opportunistic/ARS, which represent 3.1 percent and 2.6 percent of the total portfolio, respectively. In the real assets and opportunistic/ARS portfolios, the growth reflects asset appreciation and new allocations to bring these portfolios closer to the targeted allocation.

The largest percentage decrease to the invested assets was in domestic equity, which represents 30.2 percent of the total portfolio. The decrease in public equities primarily reflects market depreciation and rebalancing activities.

Management's Discussion and Analysis (Unaudited)

continued

Table 3

Summary schedule of changes in fiduciary net position for the year ended March 31, 2023, as compared to the year ended March 31, 2022:

	(Dollars in Thousands)			Percentage Change
	2023	2022	Dollar Change	
Additions:				
Net investment (loss) income	\$ (13,540,771)	\$ 22,374,115	\$ (35,914,886)	160.5%
Total contributions	<u>5,133,771</u>	<u>6,332,048</u>	<u>(1,198,277)</u>	<u>(18.9)</u>
Total additions	(8,407,000)	28,706,163	(37,113,163)	129.3
Deductions:				
Total benefits paid	15,595,642	14,905,023	690,619	4.6
Administrative expenses	<u>207,995</u>	<u>163,500</u>	<u>44,495</u>	<u>27.2</u>
Total deductions	15,803,637	15,068,523	735,114	4.9
Net (decrease) increase	(24,210,637)	13,637,640	(37,848,277)	277.5
Net position, restricted for pension benefits — beginning of year	273,718,723	260,081,083	13,637,640	5.2
Net position, restricted for pension benefits — end of year	\$ 249,508,086	\$ 273,718,723	\$ (24,210,637)	(8.8)%

The change in net investment income is primarily attributable to the net depreciation in fair value of investments from 2022 to 2023. The increase in total benefits paid is attributable to the number of new retirees.

Management's Discussion and Analysis (Unaudited)

continued

Economic Factors and Rates of Return

The Fund announced a negative investment performance for the fiscal year ended March 31, 2023, with a time-weighted rate of return of negative 4.14 percent. Public equity, private equity, fixed income and credit portfolios reported negative returns highlighting continuing concerns around inflation, geopolitical and trade tensions and a challenging final quarter of the fiscal year driven by multiple bank failures and liquidity concerns. We continue to monitor monetary policy, geopolitical tensions, and the possibility of stagflation here in the US and elsewhere in the world.

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all interested parties. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the New York State and Local Retirement System, 110 State Street, Albany, New York 12244-0001. The report can also be accessed on the Comptroller's website at: www.osc.state.ny.us/retirement/resources/financial-statements-and-supplementary-information.

Basic Financial Statements

Combining Basic Statement of Fiduciary Net Position

Year Ended March 31, 2023

	(Dollars in Thousands)		
	Employees' Retirement System	Police and Fire Retirement System	Total
Assets:			
Investments (notes 2(b), 4, 5, 8, and 11):			
Domestic equity	\$ 63,530,201	\$ 11,524,246	\$ 75,054,447
Global fixed income	41,035,479	7,443,750	48,479,229
Private equity	31,298,995	5,677,572	36,976,567
International equity	28,732,188	5,211,959	33,944,147
Real estate	21,207,382	3,846,975	25,054,357
Credit	7,966,358	1,445,081	9,411,439
Real assets	6,612,504	1,199,494	7,811,998
Opportunistic/ARS	5,470,940	992,417	6,463,357
Short-term	3,401,681	617,058	4,018,739
Mortgage loans	1,109,395	201,242	1,310,637
Total investments	210,365,123	38,159,794	248,524,917
Securities lending collateral — invested (notes 7 and 8)	24,613,902	4,464,910	29,078,812
Forward foreign exchange contracts (notes 6 and 8)	1,213	220	1,433
Receivables:			
Employers' contributions	101,320	94,953	196,273
Members' contributions	12,046	1,506	13,552
Member loans	909,265	9,850	919,115
Investment income	361,965	65,660	427,625
Investment sales	388,286	70,434	458,720
Other	63,210	13,098	76,308
Total receivables	1,836,092	255,501	2,091,593
Capital assets, at cost, net of accumulated depreciation	534,252	96,912	631,164
Total assets	237,350,582	42,977,337	280,327,919
Liabilities:			
Securities lending obligations (notes 7 and 8)	24,614,571	4,465,032	29,079,603
Forward foreign exchange contracts (notes 6 and 8)	1,212	220	1,432
Accounts payable — investments	583,739	105,889	689,628
Benefits payable	197,343	13,457	210,800
Other liabilities (note 2(f))	770,494	67,876	838,370
Total liabilities	26,167,359	4,652,474	30,819,833
Net position, restricted for pension benefits	\$ 211,183,223	\$ 38,324,863	\$ 249,508,086

See accompanying notes to basic financial statements.

Basic Financial Statements

continued

Combining Basic Statement of Changes in Fiduciary Net Position

Year Ended March 31, 2023

	(Dollars in Thousands)		
	Employees' Retirement System	Police and Fire Retirement System	Total
Additions:			
Income from investing activities:			
Interest income	\$ 1,285,811	\$ 231,375	\$ 1,517,186
Dividend income	1,424,417	256,316	1,680,733
Other income	1,201,920	216,279	1,418,199
Less: investment expenses	(790,200)	(142,192)	(932,392)
Net depreciation in fair value of investments	(14,636,186)	(2,633,846)	(17,270,032)
Total loss from investing activities	(11,514,238)	(2,072,068)	(13,586,306)
Income from securities lending activities:			
Securities lending income	655,995	118,043	774,038
Less: securities lending rebates	(614,007)	(110,487)	(724,494)
Less: securities lending management fees	(3,398)	(611)	(4,009)
Total income from securities lending activities	38,590	6,945	45,535
Total net investment loss	(11,475,648)	(2,065,123)	(13,540,771)
Contributions:			
Employers	3,305,845	1,098,241	4,404,086
Members	565,110	91,654	656,764
Interest on accounts receivable	9,388	6,138	15,526
Other, net	55,260	2,135	57,395
Total contributions	3,935,603	1,198,168	5,133,771
Total additions	(7,540,045)	(866,955)	(8,407,000)
Deductions:			
Benefits paid:			
Retirement benefits	12,745,565	2,428,677	15,174,242
Death benefits	289,991	20,263	310,254
Other, net	106,420	4,726	111,146
Total benefits paid	13,141,976	2,453,666	15,595,642
Administrative expenses	184,229	23,766	207,995
Total deductions	13,326,205	2,477,432	15,803,637
Net decrease	(20,866,250)	(3,344,387)	(24,210,637)
Net position, restricted for pension benefits — beginning of year	232,049,473	41,669,250	273,718,723
Net position, restricted for pension benefits — end of year	\$ 211,183,223	\$ 38,324,863	\$ 249,508,086

See accompanying notes to basic financial statements.

Notes to Basic Financial Statements

March 31, 2023

1. Description of Plans

The Office of the New York State Comptroller administers the following plans: the New York State and Local Employees’ Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS), which are collectively referred to as the New York State and Local Retirement System (the System). The net position of the System is held in the New York State Common Retirement Fund (the Fund), which was established to hold all assets and record changes in fiduciary net position allocated to the System.

The Comptroller of the State of New York serves as the trustee of the Fund and is the administrative head of the System. The Comptroller is an elected official determined in a direct statewide election and serves a four-year term. Thomas P. DiNapoli has served as Comptroller since February 7, 2007. In November 2022, he was elected for a new term commencing January 1, 2023.

The external advisory committees appointed by the Comptroller meet periodically throughout the year and provide independent, expert assistance in guiding the Fund. These committees include: the Advisory Council for the Retirement System; the Investment Advisory Committee; the Real Estate Advisory Committee; the Actuarial Advisory Committee; and the Audit Advisory Committee.

System benefits are established under the provisions of the New York State Retirement and Social Security Law (RSSL). Once a public employer elects to participate in the System, the election is irrevocable. The New York State Constitution provides that pension membership is a contractual relationship and plan benefits cannot be diminished or impaired. Benefits can be changed for future members only by enactment of a State statute. Generally, members of the System are employees, other than teachers, of the State and its municipalities, other than New York City.

ERS and PFRS are cost-sharing, multiple-employer, defined benefit pension plans. The System is included in the State of New York’s financial report as a pension trust fund. The Public Employees’ Group Life Insurance Plan (GLIP) provides death benefits in the form of life insurance. In these statements, GLIP amounts are apportioned to and included in ERS and PFRS.

As of March 31, 2023, the number of participating employers for ERS and PFRS consisted of the following:

	ERS	PFRS
State	1	1
Counties	57	4
Cities	61	61
Towns	919	169
Villages	481	298
Other	768	37
School districts	690	—
Total	2,977	570

Basic Financial Statements

Notes to Basic Financial Statements

continued

As of March 31, 2023, the System membership for ERS and PFRS consisted of the following:

	ERS	PFRS
Retirees and beneficiaries currently receiving benefits	474,561	40,068
Active members	481,547	32,603
Inactive members*	178,203	3,151
Total members and benefit recipients	1,134,311	75,822

* Includes vested members not currently receiving benefits and nonvested members.

(a) Membership Tiers

Pension legislation enacted in 1973, 1976, 1983, 2009 and 2012 established distinct classes of membership. For convenience, the System uses a tier concept to distinguish these groups, generally:

ERS

- Tier 1** Those persons who last became members before July 1, 1973.
- Tier 2** Those persons who last became members on or after July 1, 1973, but before July 27, 1976.
- Tier 3** Generally, those persons who are State correction officers who last became members on or after July 27, 1976, but before January 1, 2010, and all others who last became members on or after July 27, 1976, but before September 1, 1983.
- Tier 4** Generally, except for correction officers, those persons who last became members on or after September 1, 1983, but before January 1, 2010.
- Tier 5** Those persons who last became members on or after January 1, 2010, but before April 1, 2012.
- Tier 6** Those persons who first became members on or after April 1, 2012.

PFRS

- Tier 1** Those persons who last became members before July 31, 1973.
- Tier 2** Those persons who last became members on or after July 31, 1973, but before July 1, 2009.
- Tier 3** Those persons who last became members on or after July 1, 2009, but before January 9, 2010.
- Tier 4** Not Applicable.
- Tier 5** Those persons who last became members on or after January 9, 2010, but before April 1, 2012, or who were previously PFRS Tier 3 members who elected to become Tier 5.
- Tier 6** Those persons who first became members on or after April 1, 2012.

(b) Vesting

Members who joined the System prior to January 1, 2010 need five years of service to be 100 percent vested. Members who joined on or after January 1, 2010 (ERS) or January 9, 2010 (PFRS) require ten years of service credit to be 100 percent vested.

As of April 9, 2022, legislation was passed that reduced the number of years of service credit from ten years to five years. Therefore, all Members are vested when they reach five years of service.

(c) Employer Contributions

Participating employers are required under the RSSL to contribute to the System at an actuarially determined rate adopted annually by the Comptroller. The average contribution rate for ERS for the fiscal year ended March 31, 2023 was approximately 11.6 percent of covered payroll. The average contribution rate for PFRS for the fiscal year ended March 31, 2023 was approximately 27.0 percent of covered payroll. Delinquent annual bills for employer contributions accrue interest at the actuarial interest rate applicable during the year. For the fiscal year ended March 31, 2023, the applicable interest rate was 5.9 percent.

(d) Member Contributions

Generally, Tier 3, 4, and 5 members must contribute 3 percent of their salary to the System. As a result of Article 19 of the RSSL, eligible Tier 3 and 4 employees, with a membership date on or after July 27, 1976, who have ten or more years of membership or credited service with the System, are not required to contribute. Members cannot be required to begin making contributions or to make increased contributions beyond what was required when membership began. For Tier 6 members, the contribution rate varies from 3 percent to 6 percent depending on salary. Generally, Tier 5 and 6 members are required to contribute for all years of service.

(e) Benefits

Tiers 1 and 2

Eligibility: Tier 1 members, with the exception of those retiring under special retirement plans, must be at least age 55 to be eligible to collect a retirement benefit. There is no minimum service requirement for Tier 1 members. Tier 2 members, with the exception of those retiring under special retirement plans, must have five years of service and be at least age 55 to be eligible to collect a retirement benefit. The age at which full benefits may be collected for Tier 1 is 55, and the full benefit age for Tier 2 is 62.

Benefit Calculation: Generally, the benefit is 1.67 percent of final average salary for each year of service if the member retires with less than 20 years. If the member retires with 20 or more years of service, the benefit is 2 percent of final average salary for each year of service. Tier 2 members with five or more years of service can retire as early as age 55 with reduced benefits. Tier 2 members age 55 or older with 30 or more years of service can retire with no reduction in benefits. As a result of Article 19 of the RSSL, Tier 1 and Tier 2 members who worked continuously from April 1, 1999 through October 1, 2000 received an additional month of service credit for each year of credited service they have at retirement, up to a maximum of 24 additional months.

Final average salary is the average of the wages earned in the three highest consecutive years of employment. For Tier 1 members who joined on or after June 17, 1971, each year's compensation used in the final average salary calculation is limited to no more than 20 percent greater than the previous year. For Tier 2 members, each year of final average salary is limited to no more than 20 percent greater than the average of the previous two years.

Tiers 3, 4, and 5

Eligibility: Tier 3 and 4 members, with the exception of those retiring under special retirement plans, must have five years of service and be at least age 55 to be eligible to collect a retirement benefit. Tier 5 members, with the exception of those retiring under special retirement plans, must have five years of service and be at least age 55 to be eligible to collect a retirement benefit. The full benefit age for Tiers 3, 4 and 5 is 62.

Benefit Calculation: Generally, the benefit is 1.67 percent of final average salary for each year of service if the member retires with less than 20 years. If a member retires with between 20 and 30 years of service, the benefit is 2 percent of final average salary for each year of service. If a member retires with more than 30 years of service, an additional benefit of 1.5 percent of final average salary is applied for each year of service over 30 years. Tier 3 and 4 members with five or more years of service and Tier 5 members with five or more years of service can retire as early as age 55 with reduced benefits. Tier 3 and 4 members age 55 or older with 30 or more years of service can retire with no reduction in benefits.

Final average salary is the average of the wages earned in the three highest consecutive years of employment. For Tier 3, 4 and 5 members, each year's compensation used in the final average salary calculation is limited to no more than 10 percent greater than the average of the previous two years.

Basic Financial Statements

Notes to Basic Financial Statements

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Tier 6

Eligibility: Tier 6 members, with the exception of those retiring under special retirement plans, must have five years of service and be at least age 55 to be eligible to collect a retirement benefit. The full benefit age for Tier 6 is 63 for ERS members and 62 for PFRS members.

Benefit Calculation: Generally, the benefit is 1.67 percent of final average salary for each year of service if the member retires with less than 20 years. If a member retires with 20 years of service, the benefit is 1.75 percent of final average salary for each year of service. If a member retires with more than 20 years of service, an additional benefit of 2 percent of final average salary is applied for each year of service over 20 years. Tier 6 members with five or more years of service can retire as early as age 55 with reduced benefits.

Final average salary is the average of the wages earned in the five highest consecutive years of employment. For Tier 6 members, each year's compensation used in the final average salary calculation is limited to no more than 10 percent greater than the average of the previous four years.

Special Plans

The 25-Year Plans allow a retirement after 25 years of service with a benefit of one-half of final average salary, and the 20-Year Plans allow a retirement after 20 years of service with a benefit of one-half of final average salary. These plans are available to certain PFRS members, sheriffs, and correction officers.

Disability Retirement Benefits

Disability retirement benefits are available to ERS and PFRS members unable to perform their job duties because of permanent physical or mental incapacity. There are three general types of disability benefits: ordinary, performance of duty, and accidental disability benefits. Eligibility, benefit amounts, and other rules such as any offsets of other benefits depend on a member's tier, years of service, and plan.

Ordinary Death Benefits

Death benefits are payable upon the death, before retirement, of a member who meets eligibility requirements as set forth by law. The first \$50,000 of an ordinary death benefit is paid in the form of group term life insurance. The benefit is generally three times the member's annual salary. For most members, there is also a reduced post-retirement ordinary death benefit available.

Post-Retirement Benefit Increases

A cost-of-living adjustment is provided annually to: (i) all retirees who have attained age 62 and have been retired for five years; (ii) all retirees who have attained age 55 and have been retired for ten years; (iii) all disability retirees, regardless of age, who have been retired for five years; (iv) ERS recipients of an accidental death benefit, regardless of age, who have been receiving such benefit for five years; and (v) the spouse of a deceased retiree receiving a lifetime benefit under an option elected by the retiree at retirement. An eligible spouse is entitled to one-half the cost-of-living adjustment amount that would have been paid to the retiree when the retiree would have met the eligibility criteria. This cost-of-living adjustment is a percentage of the annual retirement benefit of the eligible retiree as computed on a base benefit amount not to exceed \$18,000 of the annual retirement benefit. The cost-of-living percentage shall be 50 percent of the annual Consumer Price Index as published by the U.S. Bureau of Labor, but cannot be less than 1 percent or exceed 3 percent.

2. Summary of Significant Accounting Policies

(a) Basis of Accounting

The System maintains records and accounts, and prepares financial statements using the accrual basis of accounting. Employer contributions are recognized when legally due, pursuant to statutory requirements, in accordance with the terms of each plan. Member contributions are based on earned member salaries and are recognized when due. Benefits, expenses, and refunds are recognized when due and payable.

(b) Investments

Investments are recorded on a trade-date basis and reported at fair value. Fair value is defined as the amount that can reasonably be expected to be received for an investment in a current sale between a willing buyer and a willing seller. Due to the nature of investments, it is reasonable that changes in the value of investments will occur in the near future, and such changes could materially affect the amounts reported. The amounts reported as investments on the financial statements are allocated between ERS and PFRS based on each system's monthly average equity in the Fund. See note 4(c) for detailed information on the System's policy on investment valuation and note 8 for more detail regarding the methods used to measure the fair value of investments.

(c) Member Loan Programs

Members who joined prior to January 1, 2018 are entitled to participate in a loan program that allows them to borrow up to 75 percent of their member contributions or \$50,000, whichever is less. Members who joined on or after January 1, 2018, may borrow up to 50 percent of their contribution balance or \$50,000, whichever is less. Repayment of outstanding amounts is generally made through payroll deductions within five years. The interest rate charged for COESC Member Loans is fixed at 1 percent below the actuarial interest rate at the time the loan is granted. The rate for loans issued during the fiscal year ended March 31, 2023 was 5.0 percent.

(d) Capital Assets

Capital assets are capitalized at cost and depreciated on a straight-line basis over the related assets estimated useful lives.

During the fiscal year ended March 31, 2014, the System began capitalizing outlays associated with the redesign of its pension administration system. As of March 31, 2023, capitalized outlays for the project total \$589.3 million. This project is currently ongoing and is expected to be completed in fiscal year 2024, at which time depreciation of the capitalized costs will begin.

(e) Contributions Receivable

Employers' contributions receivable are presented net of withdrawals, refunds, advance employer payments, and credits due employers. Receivable amounts from participating employers include \$20.4 million for amortization of retirement incentives, new plan adoptions, and retroactive membership. The RSSL includes several provisions related to the amortization of employer contribution amounts. These include:

- Chapter 57 of the Laws of 2010 authorized the State and local employers to amortize a portion of their annual pension costs during periods when actuarial contribution rates exceed thresholds established by the statute. Amortized amounts will be paid in equal annual installments over a ten-year period including a rate of interest set by the Comptroller annually. Employers may prepay these amounts at any time without penalty. The first payment will be due in the fiscal year following the decision to amortize. Chapter 57 further provides that when contribution rates fall below legally specified levels and all outstanding amortizations have been paid, employers that elected to amortize will be required to pay additional moneys into reserve funds, specific to each employer, which will be used to offset their contributions in the future. These reserve funds will be invested separately from pension assets.

The following represents the amortized receivable balance from the State and Local participating employers as of March 31, 2023, including the statutory amortization threshold and interest rate, for each respective fiscal year:

Chapter 57, Laws of 2010

Year	(Percentage of Payroll)		Interest	(Dollars in Millions)	
	ERS	PFRS		Local	
2011	9.5%	17.5%	5.00%	\$	—
2012	10.5	18.5	3.75		—
2013	11.5	19.5	3.00		—
2014	12.5	2.5	3.67		2.5
2015	13.5	21.5	3.15		8.9
2016	14.5	22.5	3.21		8.8
2017	15.1	23.5	2.33		2.3
2018	14.9	24.3	2.84		2.3
2019	14.4	23.5	3.64		2.7
2020	14.2	23.5	2.55		—
2021	14.1	24.4	1.33		—
2022	15.1	25.4	1.76		0.9
2023	14.1	26.4	3.61		—
				\$	28.4

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Notes to Basic Financial Statements

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- The fiscal year 2014 Enacted Budget included an alternate contribution program (the Alternate Contribution Stabilization Program) that provided certain participating employers with a one-time election to amortize slightly more of their required contributions than would be available for amortization under the 2010 legislation. In addition, the maximum payment period was increased from ten years to twelve years. The election was available to: counties, cities, towns, villages, BOCES, school districts and the four public health care centers operated in the counties of Nassau, Westchester and Erie. The State was not eligible to participate in the Alternate Contribution Stabilization Program.

The following represents the amortized receivable balance from Local participating employers as of March 31, 2023, including the statutory amortization threshold and interest rate, for each respective fiscal year:

Chapter 57, Laws of 2013

Year	(Percentage of Payroll)		Interest	(Dollars in Millions)
	ERS	PFRS		Local
2014	12.0%	20.0%	3.76%	\$ 7.3
2015	12.0	20.0	3.50	15.7
2016	12.5	20.5	3.31	15.9
2017	13.0	21.0	2.63	10.7
2018	13.5	21.5	3.31	11.2
2019	14.0	22.0	3.99	7.0
2020	14.2	22.5	2.87	5.6
2021	14.1	23.0	1.60	6.6
2022	14.6	23.5	2.24	18.2
2023	14.1	24.0	3.70	12.8
				\$ 111.0

(f) Postemployment Benefits Other than Pensions

Employees of the System participate in a Postemployment Benefits Other than Pensions (OPEB) Plan administered by the State. The State has established a trust to fund the OPEB plan. Substantially all of the System's employees may become eligible for postemployment benefits if they reach retirement age while working for the System. The costs of providing the postemployment benefits, which primarily consists of health insurance coverage, are shared between the System and the retired employee.

The System's net OPEB liability was measured as of March 31, 2022 and was determined by an actuarial valuation as of April 1, 2021 rolled forward to March 31, 2022. The net OPEB liability and related OPEB amounts were allocated to the System based on the percentage of the System's full-time equivalents to the total full-time equivalents of the State. The OPEB amounts recorded by the System include the net OPEB liability (\$254.8 million), deferred outflows of resources (\$30.9 million), deferred inflows of resources (\$39.9 million) and OPEB expense (-\$1.2 million). OPEB expense is recorded as part of administrative expenses on the combining statement of changes in fiduciary net position. Due to immateriality of the OPEB amounts to the System as a whole, the net OPEB liability, deferred outflows of resources and deferred inflows of resources are netted and included in other liabilities on the combining statement of fiduciary net position. Additionally, due to immateriality, the System has not presented all disclosures and required supplementary information prescribed by GASB Statement No. 75. For the fiscal year ended March 31, 2023, the System paid \$9.2 million in benefit payments.

(g) Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingencies. These estimates are subject to a certain amount of uncertainty in the near term, which could result in changes in the values reported for those assets in the combined statement of fiduciary net position. Estimates also affect the reported amounts of income/additions and expenses/deductions during the reporting period. Actual results could differ from these estimates.

3. System Reserves

The legally required reserves, as covered by provisions of the RSSL, are maintained by the System, are fully funded as of March 31, 2023, and are described below:

- *Annuity Savings Funds* – Funds in which contributions of Tier 1 and Tier 2 members are accumulated.
- *Annuity Reserve Funds* – Funds from which member contribution annuities are paid.
- *Pension Accumulation Funds* – Funds in which employer contributions and income from the investments of the System are accumulated.
- *Pension Reserve Funds* – Funds from which pensions are paid.
- *Designated Annuitant Funds* – Funds from which beneficiary annuities are paid.
- *Loan Insurance Funds* – Funds that provide loan insurance coverage for members with existing no default loan balances at time of death.
- *Group Life Insurance Plan Reserve* – Reserves that provide group term death benefits not to exceed \$50,000, payable upon the death of eligible members.
- *Coescalation (COESC) Contribution Funds* – Funds in which member contributions are accumulated. These funds are transferred to the Pension Accumulation Fund at retirement.

As of March 31, 2023, the System reserves for ERS and PFRS consisted of the following:

	(Dollars in Thousands)	
	ERS	PFRS
Annuity savings	\$ 1,992	\$ 71,377
Annuity reserve	48,012	43,054
Pension accumulation	71,083,973	10,013,467
Pension reserve	130,676,520	27,814,562
Designated annuitant	54,088	22,270
Loan insurance	—	126
Group Life Insurance Plan reserve	55,820	606
COESC contribution	9,262,818	359,401
Total	\$ 211,183,223	\$ 38,324,863

4. Investments

(a) Investment Policy

The State Comptroller, currently Comptroller Thomas P. DiNapoli, is Trustee of the Fund. He is directly accountable for the investment of Fund assets and for the oversight and management of the Fund. Comptroller DiNapoli is responsible for implementing an asset allocation with an appropriate balance of risk and return. The Trustee has put in place investment policies and practices designed to ensure that investments are made for the exclusive benefit of the participants and beneficiaries of the System, on whose behalf the assets of the Fund are invested, and that Fund investments are made with the care that a prudent person serving in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with like aims – the “prudence” and “exclusive benefit” fiduciary standards of investment. Additionally, the Trustee has adopted policies and practices to ensure that the Fund is managed with high levels of ethical conduct and transparency.

The Comptroller seeks the input of a wide range of internal and external advisors to determine the allocation of assets and the appropriate investment choices for the Fund. The Comptroller appoints a Chief Investment Officer to oversee the Division of Pension Investment and Cash Management (PICM) operations, manage staff, and supervise investments on a day-to-day basis. The Fund also relies on advice from a network of outside advisors, consultants, and legal counsel, as well as the members of independent external advisory committees appointed by the Comptroller. Outside advisors and internal investment staff are part of the chain of approval that must recommend all investment decisions before they reach the Comptroller for final approval.

The asset allocation is not intended to be an absolute limit on the type of investments that can be made by the Comptroller or considered by staff. The Comptroller is expressly permitted to invest the assets of the Fund pursuant to various provisions of State law, including, among others, Article 4-A of the RSSL, which also contains limitations on the amount and quality of investments the Fund may hold in certain asset categories. Investments purchased pursuant to these provisions are so-called “legal list” investments. In addition to the foregoing, section 177(9) of the RSSL contains a provision that currently provides that up to 35 percent of the Fund’s assets may be placed in investments not specifically authorized by any other provision of law. In making investments under this provision, the Comptroller is subject to the exclusive benefit and prudence standards in the statute. Subject to such standards, investments made under this provision must also, to the extent reasonably possible, benefit the overall economic health of the State. Investments made pursuant to section 177(9) of the RSSL are so-called “basket clause” investments.

(b) Asset Allocation

The following was the adopted asset allocation policy as of March 31, 2023:

Asset Class	Target Allocation
Domestic equity	32.0%
International equity	15.0
Private equity	10.0
Real estate	9.0
Opportunistic/Absolute Return Strategy	3.0
Credit	4.0
Real assets	3.0
Fixed Income	23.0
Cash	1.0
	100.0%

(c) Methods Used to Value Investments

Equity securities traded on a national or international exchange are reported at current quoted fair values.

Bonds and other fixed income assets are primarily reported at fair values obtained from independent pricing services.

Mortgages are valued on the basis of future principal and interest payments and are discounted at prevailing interest rates for similar instruments.

Direct investments in real estate are valued based on independent appraisals made every three years or according to the contract.

Real estate partnerships, global fixed income funds, commingled international equity funds and various alternative investments (private equity, opportunistic/ARS funds, real assets, and credit) are reported at net asset values as provided by the general partners or investment managers.

Information on securities lending is available in note 7. Information on foreign currency risks and derivative financial instruments can be found in note 5(f) and note 6, respectively.

The Fund trades in foreign exchange contracts in the normal course of its investing activities in order to manage exposure to market risks. Such contracts, which are generally for a period of less than one year, are used to purchase and sell foreign currency at a guaranteed future price. These contracts are recorded at fair value using foreign currency exchange rates.

(d) Rates of Return

In accordance with U.S. generally accepted accounting principles, the money-weighted rate of return on plan investments, net of investment expenses, was (4.43) percent for the year ended March 31, 2023. For internal purposes, the System evaluates investment performance using the time-weighted rate of return, gross of certain investment fees, which was (4.14) percent for the year ended March 31, 2023.

5. Deposit and Investment Risk Disclosure

(a) Custodial Credit Risk for Investments

Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the Fund, or are held either by the counterparty or the counterparty's trust department or agent, but not in the name of the Fund.

Equity and fixed income investments owned directly by the Fund, which trade in the United States (U.S.) markets, are generally held by the Fund's custodian, in separate accounts, in the name of the Comptroller of the State of New York in Trust for the Fund. These securities are typically held in electronic form through the Federal Book Entry System and by the Depository Trust Company (DTC) and its subsidiaries acting as an agent of the Fund's custodian bank. Securities held directly by the Fund that trade in markets outside the U.S. are held by a subsidiary of the Fund's custodian bank in the local market, a bank performing custodial services in the local market acting as an agent for the Fund's custodian bank, and in some foreign markets, the securities are held in electronic form by a DTC subsidiary or an organization similar to DTC.

Equity investments held indirectly by the Fund via limited partnerships, commingled investment funds, joint ventures, and other similar vehicles are held in custody by an organization contracted by the general partner and/or the investment management firm responsible for the management of each investment organization.

Title to real estate invested in by the Fund is held either by a real estate holding company or a real estate investment fund. Ownership of mortgage assets is documented by the Fund's holding of original mortgage and note documents by the Office of the State Comptroller's PICM.

(b) Custodial Credit Risk for Deposits

Deposits are exposed to custodial credit risk if the deposits are not covered by depository insurance or the deposits are uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging institution's trust department or agent, but not in the name of the Fund.

In accordance with existing policies and procedures, the PICM in the Office of the State Comptroller monitors deposit balances for the purpose of determining collateralization levels. Collateral sufficient to cover all uninsured deposits is held at the State's custodial bank.

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(c) Interest Rate Risk

The System is subject to interest rate risk, which is the risk that changes in market interest rates will adversely affect the fair value of the Fund's fixed income securities. Pursuant to the Fund's investment policies and procedures and to address changing economic factors and their impact on various sectors of the economy, PICM staff meets regularly to discuss the investment strategy for the fixed income portfolio. Several factors are taken into account when formulating this strategy, including sector weightings and the current duration of the portfolio.

The price volatility of the Fund's fixed income holdings is measured by duration. Effective duration is a measure of the price sensitivity of a bond to interest rate movements. Effective duration follows the concept that interest rates and bond prices move in opposite directions.

As of March 31, 2023, the duration of the fixed income portfolio is as follows (Dollars in Thousands):

Category	Fair Value	Percentage of Portfolio	Effective Duration (In Years)
Global fixed income:			
Core Portfolio:			
Treasury	\$ 18,241,435	37.6%	8.20
Treasury Inflation-Protected Securities (TIPS)	259,541	0.5	8.44
Federal agency	276,228	0.6	3.56
Corporate	14,115,535	29.1	5.50
Asset-backed	2,231,522	4.6	2.76
Commercial mortgage-backed	1,162,249	2.4	2.28
Mortgage-backed	5,495,509	11.3	6.54
Collateralized loan obligations	3,196,697	6.6	0.06
Municipal bonds	637,294	1.3	10.02
Core Portfolio	45,616,010	94.1	6.17
Externally managed funds:			
Advent Capital	436,821	0.9	3.31
Calvert Research and Management	250,290	0.5	6.19
DoubleLine Capital	220,594	0.5	14.61
Morgan Stanley Investment Management	245,011	0.5	8.2
New Century Advisors	534,819	1.1	5.39
Ramirez Asset Management	335,432	0.7	7.89
Schroder Investment Management	292,739	0.6	1.98
Teachers Advisors (Nuveen)	235,379	0.5	6.23
Wellington Management Company	312,134	0.6	6.38
Total global fixed income	\$ 48,479,229	100.0%	
Mortgage loans:			
Berkadia	990,593	75.6	4.23
CPC	320,044	24.4	8.68
Total Mortgage loans	\$ 1,310,637	100.0%	
Total	\$ 49,789,866		

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(d) Credit Risk of Debt Securities

Fixed income obligations purchased pursuant to section 177(1-a) of the RSSL must be investment grade at the time of their acquisition. A bond is considered investment grade if its credit rating is Baa or higher by Moody's or BBB- or higher by Standard & Poor's. Fixed income obligations purchased pursuant to section 177(9) of the RSSL, the "basket clause," are subject to a standard of prudence. As of March 31, 2023, credit ratings, obtained from several industry rating services, for the fixed income portfolio are as follows (Dollars in Thousands):

Quality Rating	Fair Value	Percentage of Fair Value
Global fixed income:		
AAA	\$ 30,085,942	62.06%
AA	3,710,634	7.66
A	7,219,226	14.89
BBB	6,981,015	14.40
BB	89,552	0.19
B	35,813	0.07
CCC	9,761	0.02
C	6,425	0.01
Not Rated	340,861	0.70
Total Global fixed income	\$ 48,479,229	100.0%
Mortgage loans:		
Not Rated	\$ 1,310,637	100.0%
Total	\$ 49,789,866	

(e) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Fund's investment in a single issuer.

As of March 31, 2023, the System did not hold any investments in any one issuer that totaled 5 percent or more of the pension plan's fiduciary net position. Investments issued or explicitly guaranteed by the U.S. government and pooled investments are excluded.

Issuer limits for investments held by the Fund are established by law and by policy guidelines adopted by the PICM.

Short-term fixed income investments not purchased pursuant to section 177(9) of the RSSL are generally limited to the following investment types maturing in one year or less:

- Obligations for which the full faith and credit of the U.S. government is pledged to provide payment of interest and principal.
- Obligations issued by any Federal Home Loan Bank or obligations fully guaranteed as to principal and interest by the Federal National Mortgage Association or the Federal Home Loan Mortgage Corporation.
- Commercial paper that has received the highest rating from two nationally recognized rating services. A maximum of \$500 million of the short-term portfolio may be invested in any one commercial paper issuer.
- Simultaneous purchase and sale of U.S. Treasury obligations may be executed with Primary Government dealers.
- Corporate and asset-backed securities (ABS) that are rated investment grade by two nationally recognized rating services. ABS must have a weighted average life of one year or less.

Fixed income investments not purchased pursuant to section 177(9) of the RSSL are generally limited to the following investment types with maturities longer than one year:

- Obligations for which the full faith and credit of the U.S. government is pledged to provide payment of principal and interest.
- Obligations payable in U.S. dollars issued by any department, agency, or political subdivision of the U.S. government or issued by any corporation, company, or other issuer of any kind or description created or existing under the laws of the U.S., any state of the U.S., the District of Columbia, or the Commonwealth of Puerto Rico, and obligations payable in U.S. funds of Canada or any province or city of Canada, provided each obligation at the time of investment shall be rated investment grade by two nationally recognized rating services (or by one nationally recognized rating service in the event only one such service rates such obligation). The aggregate investment by the Fund in the obligations of any one issuer shall not exceed 2 percent of the assets of the Fund or 5 percent of the direct liabilities of the issuer.
- Interest-bearing obligations payable in U.S. funds, which at the time of investment are rated in one of the three highest rating grades by each rating service approved by the New York State Department of Financial Services that has rated such obligations. The aggregate amount invested in the obligations of any single issuer may not exceed 1 percent of the assets of the Fund.
- Bonds issued or guaranteed by the State of Israel and approved by the United States Comptroller of the Currency, payable in U.S. dollars, not to exceed 5 percent of the assets of the Fund.
- Obligations issued or guaranteed by the International Bank for Reconstruction and Development (not to exceed 5 percent of the assets of the Fund), the Inter-American Development Bank, the Asian Development Bank, or the African Development Bank.

Fixed income investments purchased pursuant to section 177(9) of the RSSL are subject to standards of prudence and the exclusion benefit rules. Subject to such standards, investments made under section 177(9) must, to the extent reasonably possible, benefit the overall economic health of the State.

(f) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Fund has exposure through direct investments in international equities, international equity commingled funds, international real estate investments, international private equity investments, international opportunistic/ARS funds, international real asset funds and international credit funds. The Fund's asset allocation and investment policies allow for active and passive investments in international securities. The Fund permits the managers of direct investments in international equities to use forward currency contracts to manage their exposure to foreign currencies relative to the U.S. dollar. Where the Fund participates in commingled funds, limited partnerships, or other investment arrangements, the decision whether or not to use forward currency contracts to manage their foreign currency exposure is left up to the individual investment managers. To address the impact of changes in exchange rates, forward foreign exchange contracts are allowed when used to lessen portfolio volatility or hedge the portfolio's currency exposure.

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Foreign investments included in the combining basic statement of fiduciary net position as of March 31, 2023 are as follows:

(Dollars in Thousands)

	Equity	Cash	Real Estate	Private Equity, OARS, Real Assets, and Credit	Total
Albanian Lek	\$ —	\$ —	\$ 2	\$ —	\$ 2
Algerian Dinar	—	—	48	—	48
Angolan Kwanza	—	—	—	207	207
Argentine Peso	—	—	—	4,371	4,371
Australian Dollar	495,970	4,380	192,720	689,857	1,382,927
Bahamian Dollar	—	—	9,759	—	9,759
Barbadian Dollar	—	—	—	448	448
Bermudian Dollar	—	—	—	164,774	164,774
Botswana Pula	—	—	—	7,666	7,666
Brazilian Real	282,305	696	43,630	671,206	997,837
British Pound Sterling	2,674,930	5,986	582,081	4,200,309	7,463,306
Bulgarian Lev	—	—	63	18,745	18,808
Burmese Kyat	—	—	—	7,107	7,107
Cambodian Riel	—	—	—	177	177
Canadian Dollar	651,135	9,507	229,041	1,025,120	1,914,803
Cayman Islands Dollar	—	—	—	703,500	703,500
Central African CFA Franc	—	—	—	87	87
Chilean Peso	9,197	278	—	105,536	115,011
Chinese Renminbi (Yuan)	285,426	—	165,315	1,432,359	1,883,100
Colombian Peso	1,274	24	2	63,726	65,026
Costa Rican Colon	—	—	—	(930)	(930)
Czech Koruna	206	12	50,461	11,379	62,058
Danish Krone	583,401	5,814	259,776	345,596	1,194,587
Dominican Peso	—	—	—	185	185
Eastern Caribbean dollar	—	—	—	16,662	16,662
Egyptian Pound	1,494	34	—	15,292	16,820
Euro	5,600,206	4,147	1,991,871	8,325,474	15,921,698
Georgian Lari	—	—	—	25	25
Ghanaian Cedi	—	—	—	11,887	11,887
Guatemalan Quetzal	—	—	—	1,013	1,013
Hong Kong Dollar	1,458,096	1,111	67,692	204,697	1,731,596
Hungarian Forint	20,449	—	—	5,707	26,156
Icelandic Króna	—	—	—	7,614	7,614
Indian Rupee	515,765	1,510	229,402	1,469,689	2,216,366
Indonesian Rupiah	97,637	105	—	115,199	212,941
Iraqi Dinar	—	—	—	346	346
Israeli New Shekel	58,900	3,568	—	675,252	737,720
Jamaican Dollar	—	—	—	23	23
Japanese Yen	2,787,457	11,704	99,943	320,686	3,219,790
Kazakhstani Tenge	—	—	—	(6)	(6)
Kenyan Shilling	—	—	—	25,625	25,625
Lebanese Pound	—	—	—	76	76
Malaysian Ringgit	49,030	310	—	72,188	121,528
Maldivian Rufiyaa	—	—	7,222	7,170	14,392

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	Equity	Cash	Real Estate	Private Equity, OARS, Real Assets, and Credit	Total
Mauritian Rupee	\$ —	\$ —	\$ 35	\$ 69,822	\$ 69,857
Mexican Peso	90,150	269	6,111	45,903	142,433
Moroccan Dirham	—	—	—	8,138	8,138
New Taiwan Dollar	517,518	25,715	—	43,569	586,802
New Zealand Dollar	540	10	3,749	56,529	60,828
Nigerian Naira	—	—	—	47,448	47,448
Norwegian Krone	105,300	1,357	32,727	113,826	253,210
Panamanian Balboa	—	—	—	(2)	(2)
Peruvian Sol	—	—	—	53,175	53,175
Philippine Peso	7,364	51	130,670	76,255	83,644
Polish Zloty	21,110	308	—	66,981	218,812
Qatari Riyal	7,156	83	—	84	7,323
Romanian Leu	—	—	842	(152)	690
Russian Ruble	—	—	1,087	11,267	12,354
Rwanda Franc	—	—	—	166	166
Saudi Riyal	34,319	68	—	(2,380)	32,007
Serbian Dinar	—	—	1	1,393	1,394
Singapore Dollar	294,436	85	9,736	330,912	635,169
South African Rand	43,650	473	70	16,821	61,014
South Korean Won	633,970	182	39,361	399,450	1,072,963
Sri Lankan Rupee	—	—	70	2,060	2,130
Swedish Krona	405,283	288	295,589	617,417	1,318,577
Swiss Franc	903,136	1,943	51	480,175	1,385,305
Tanzanian Shilling	—	—	—	3,138	3,138
Thai Baht	88,754	—	—	94,568	183,322
Tunisian Dinar	—	—	—	309	309
Turkish Lira	28,586	110	—	61,428	90,124
Ugandan Shilling	—	—	—	3,960	3,960
Ukrainian Hryvnia	—	—	1,708	8,535	10,243
United Arab Emirates Dirham	13,047	—	11,048	74,741	98,836
Uruguayan Peso	—	—	—	(1,069)	(1,069)
Venezuelan Sovereign Bolívar	—	—	—	3,842	3,842
Vietnamese đồng	—	—	355	107,250	107,605
West African CFA Franc	—	—	—	3,081	3,081
Zambian Kwacha	—	—	—	2,670	2,670
Other	—	—	9,543	—	9,543
Total Subject to Foreign Currency Risk	18,767,197	79,845	4,471,781	23,527,354	46,846,177
Commingled International Equity in US Dollars	10,419,570	—	—	—	10,419,570
Foreign Investments in US Dollars	4,757,380	—	30	12,136,759	16,894,169
Total foreign investments	\$ 33,944,147	\$ 44,652	\$ 4,471,811	\$ 35,664,113	\$ 74,159,916

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6. Derivatives

A derivative is generally defined as an investment contract or security with a value that depends on, or is derived from, the value of an underlying asset, reference rate, or financial index.

Forward Currency Contracts

The System may enter into forward currency contracts to manage exposure to fluctuations in foreign currency exchange rates on portfolio holdings. The System also enters into forward exchange contracts to settle future obligations. A forward exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. A contract is classified as a forward contract when the settlement date is more than two days after the trade date. Risk associated with such contracts includes movement in the value of a foreign currency relative to the U.S. dollar. The contracts are valued at forward exchange rates and include net appreciation/depreciation in the combining statement of fiduciary net position. Realized gain or loss on forward currency contracts is the difference between the original contract and the closing value of such contract and is included in the combining basic statement of changes in fiduciary net position.

The table below summarizes the fair value of foreign currency contracts as of March 31, 2023 (Dollars in Thousands):

Currency	Forward Currency Contracts	Spot Currency Contracts	Totals
Australian Dollar	\$ (683)	\$ (872)	\$ (1,555)
Brazilian Real	—	(2,635)	(2,635)
British Pound Sterling	—	5,908	5,908
Canadian Dollar	—	(1,192)	(1,192)
Danish Krone	—	(1,939)	(1,939)
Euro	683	20,061	20,744
Hong Kong Dollar	—	(3,015)	(3,015)
Hungarian Forint	—	39	39
Indian Rupee	—	(147)	(147)
Indonesian Rupiah	—	174	174
Israeli New Shekel	—	(5,711)	(5,711)
Japanese Yen	—	(5,076)	(5,076)
Malaysian Ringgit	—	61	61
Mexican Peso	—	(399)	(399)
New Taiwan Dollar	(313)	—	(313)
New Zealand Dollar	—	(25)	(25)
Norwegian Krone	162	285	447
Polish Zloty	—	(1,474)	(1,474)
Singapore Dollar	—	823	823
South African Rand	274	(936)	(662)
South Korean Won	—	(66)	(66)
South African Rand	—	—	—
South Korean Won	—	—	—
Swedish Krona	—	—	—
Swiss Franc	—	—	—
Thai Baht	—	—	—
Turkish Lira	—	—	—
U.S. Dollar	—	—	—
United Arab Emirates Dirham	—	—	—
Total	\$ 123	\$ 3,864	\$ 3,987

7. Securities Lending Program

Section 177-d of the RSSL authorizes the Fund to enter into security loan agreements with broker/dealers and state or national banks. The Fund has two providers to manage a securities lending program. These programs are subject to written contracts between the Fund and the Contractor who acts as securities lending agent for the Fund. The securities lending agents are authorized to lend securities within the borrower limits and guidelines established by the Fund. Types of collateral received from borrowers for securities loaned are cash, government securities, and obligations of federal agencies. The securities lending providers are authorized to invest the cash collateral in short-term investments that are legal for the Fund. These include domestic corporate and bank notes, U.S. Treasury obligations, obligations of federal agencies, repurchase agreements, and specific asset-backed securities. All rights of ownership to securities pledged as collateral remain with the borrower except in the event of default. As of March 31, 2023, there were no violations of legal or contractual provisions. The Fund has not experienced any losses resulting from the default of a borrower or lending agent during the year ended March 31, 2023.

The Fund lends fixed income, domestic equity, and international equity securities to approved broker/dealers. Collateral for securities loaned equals 102 percent of fair value for domestic securities and 105 percent for international securities. Credit risk associated with the investment of cash collateral pledged by borrowers is mitigated by the maturity restrictions, percentage limitations, and rating requirements for individual asset classes included in the Fund's reinvestment guidelines. Each Contractor acknowledges responsibility to reimburse the Fund for losses that might arise from managing the program in a manner inconsistent with the contract. The Fund manages its market risk by recording investments at market value daily and maintaining the value of the collateral held by the Fund in excess of the value of the securities loaned. As of March 31, 2023, the fair value of securities on loan was \$28.6 billion. The associated collateral was \$29.2 billion, of which \$29.2 billion was cash collateral and \$.09 million was securities. The cash collateral has been reinvested in other instruments, which had a fair value of \$29.1 billion as of March 31, 2023. The securities lending obligations were \$29.1 billion. The unrealized loss in invested cash collateral on March 31, 2023 was \$.8 million, which is reported in the combining basic statement of changes in fiduciary net position as part of "Net depreciation in fair value of investments."

All open security loans can be terminated on demand by either the Fund or the borrower. To provide sufficient liquidity, the policy of the Fund is to maintain a minimum of 5 percent collateral in overnight investments, 10 percent must mature within seven days, and 20 percent must mature within 30 days. While the Fund's Securities Lending Investment Guidelines allow investments up to a maximum of three years for U.S. Treasury and federal agency obligations and one year for all other investments, the average term of open security loans at March 31, 2023 was 23.3 days. All loans were open loans. There were no direct matching loans.

The collateral pool is valued at fair value obtained from independent pricing services.

8. Fair Value Measurement

The System's investments, measured and reported at fair value, including securities lending collateral and obligations and forward foreign exchange contracts, are classified according to the following hierarchy in which the levels are based on the nature of inputs used to measure the fair value of the investment:

Level 1 – Investment fair values based on prices quoted or published in active markets for identical assets.

Level 2 – Investment fair values based on observable inputs for the assets either directly or indirectly, other than those considered Level 1 inputs, which may include quoted or published prices for identical assets in markets that are not considered to be active, and quoted or published prices of similar assets in active or inactive markets.

Level 3 – Investment fair values based on unobservable inputs.

The categorization of investments within the hierarchy above is based solely upon the objectivity of the inputs used in the measurement of the fair value of the investments and does not reflect the level of risk associated with the investments. Investments classified in Level 1 of the fair value hierarchy are valued from predetermined external pricing vendors or primary dealers who source quoted or published prices in active markets which are readily attainable exit values of these securities. Investments classified in Level 2 are subject to alternative pricing sources, including a combination of price sources, descriptive data and pricing models based on attributes such as spread data, sector, quality, duration, and prepayment characteristics. Investments classified as Level 3 are valued using best available sources such as property appraisals, discounted cash flow models and public market comparables of similar assets where applicable. The values are supplied by advisors or general partners who hold those or similar assets in investment vehicles they oversee. These pricing sources may or may not be indicative of realizable exit values attainable for the assets.

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The table below summarizes assets and liabilities carried at fair value based on levels from the fair value hierarchy as of March 31, 2023, with certain assets carried at net asset value (NAV) and cost also included to allow reconciliation to the statement of fiduciary net position (Dollars in Thousands):

	Total	Level 1	Level 2	Level 3
Assets:				
Investments by fair value level:				
Fixed income securities:				
Short-term instruments	\$ 3,164,655	\$ —	\$ 3,164,655	\$ —
Global fixed income securities	48,479,229	91,718	48,387,511	—
Total fixed income securities	51,643,884	91,718	51,552,166	—
Equity securities:				
Domestic equities	70,187,678	70,187,489	—	189
International equities	31,861,806	31,861,443	99	264
Total equity securities	102,049,484	102,048,932	99	453
Credit	10,113	—	—	10,113
Mortgages	1,310,637	—	—	1,310,637
Private equity	523,088	—	—	523,088
Opportunistic/ARS	77,675	—	—	77,675
Real assets	47,505	—	—	47,505
Real estate	1,612,061	—	—	1,612,061
Securities lending collateral	18,075,949	—	18,075,949	—
Forward foreign exchange contracts	1,433	—	1,433	—
Total investment assets by fair value level	\$ 175,351,829	\$ 102,140,650	\$ 69,629,647	\$ 3,581,532
Investments measured at cost:				
Securities lending collateral	\$ 11,002,863			
Total investments measured at cost	\$ 11,002,863			
Investments measured at Net Asset Value (NAV):				
Domestic equities ¹	\$ 4,866,769			
International equities ²	2,082,341			
Alternative investments:³				
Credit	9,401,326			
Private equity	36,453,479			
Opportunistic/ARS	6,385,682			
Real assets	7,764,493			
Real estate	23,442,296			
Total alternative investments	83,447,276			
Total investments measured at NAV	\$ 90,396,386			
Investment related cash and cash equivalents not included in above	854,084			
Total investment assets	\$ 277,605,162			
Liabilities:				
Investments by fair value level:				
Forward foreign exchange contracts	(1,432)	—	(1,432)	—
Total investment liabilities by fair value level	\$ (1,432)	\$ —	\$ (1,432)	\$ —

Basic Financial Statements

Notes to Basic Financial Statements

continued

The table below summarizes liquidity information for investments valued at NAV (Dollars in Thousands):

Investments measured at NAV	Amount	Unfunded Commitments	Redemption Frequency	Notice Period
Domestic equities ¹	\$ 4,866,769	\$ N/A	N/A, Weekly, Monthly, Annually	N/A, 2-90 days
International equities ²	2,082,341	N/A	Daily, Monthly, Quarterly	15-120 days
Alternative investments ³				
Credit	9,401,326	7,281,045	N/A, monthly, 1-3 years	N/A, 1-30 days, 18 months
Private equity	36,453,479	14,167,305	N/A	N/A
Opportunistic/ARS	6,385,682	3,499,949	N/A, Monthly, Quarterly	NA, 5-90 days
Real assets	7,764,493	4,768,789	N/A	N/A
Real estate	23,442,296	8,446,450	N/A	N/A
Total investments measured at NAV	\$ 90,396,386	\$ 38,163,538		

¹ Domestic equities consist of one commingled investment vehicle and one fund for which the System is the only investor. The funds invest primarily in publicly traded domestic equity securities. The investments are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

² International equities consist of six commingled investment vehicles and one fund for which the System is the only investor. The funds invest primarily in publicly traded international equity securities. The investments are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

³ Alternative investments include private equity, opportunistic/ARS funds, real assets, credit and real estate through various fund structures. Private equity (13.3 percent* at March 31, 2023) consists of buyout, growth equity, co-investments, special situations, distressed/turnaround, venture capital, and fund of funds. Opportunistic/ARS (2.3 percent* at March 31, 2023) consists of investments in strategies including hedged equity, credit, global macro, closed-end funds, and investments that don't fit the mandates of the other asset classes. Real assets (2.8 percent* at March 31, 2023) consist of commodities, farmland, capital assets, infrastructure, and renewables. Credit (3.4 percent* at March 31, 2023) consists of non-investment grade public and private credit strategies in direct lending, distressed and special situations, specialty finance, structured credit and real assets credit through closed-end and open-end funds, co-investments, separately managed accounts and fund-of-funds. Real estate (9.0 percent* at March 31, 2023) consists of investments in separate accounts, joint ventures, co-investments and commingled funds. The fair values of the alternative investments have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partner's capital. NAV is used as a practical expedient to estimate fair value. Private equity, real assets, and real estate are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over a span of 5-10 years.

*Percentages are stated relative to total investments and securities lending collateral invested.

See note 7 for detailed securities lending information and note 6 for detail forward foreign currency information.

9. Net Pension Liability of Participating Employers

The components of the net pension liability of the employers participating in the System as of March 31, 2023, were as follows:

	(Dollars in Thousands)		
	Employees' Retirement System	Police and Fire Retirement System	Total
Employers' total pension liability	\$ 232,627,259	\$ 43,835,333	\$ 276,462,592
Fiduciary net position	211,183,223	38,324,863	249,508,086
Employers' net pension liability	\$ 21,444,036	\$ 5,510,470	\$ 26,954,506
Ratio of fiduciary net position to the employers' total pension liability	90.78%	87.43%	90.25%

(a) Actuarial Assumptions

The total pension liability at March 31, 2023 was determined using a roll forward procedure to advance the liability calculated using system assumptions and member demographics from the actuarial valuation completed as of April 1, 2022.

Economic assumptions used in the April 1, 2022 actuarial valuation include:

	ERS	PFRS
Inflation	2.9%	2.9%
Salary increases	4.4	6.2
Investment rate of return (net of investment expense, including inflation)	5.9	5.9
Cost-of-living adjustments	1.5%	1.5%

To set the long-term expected rate of return on pension plan investments, consideration was given to a building-block method using best-estimate ranges of expected future real rates of return (expected return, net of investment expenses and inflation) 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.

Demographic assumptions used in the April 1, 2022 actuarial valuation are based on the results of an actuarial experience study completed April 1, 2020. Demographic assumptions are primarily based on System experience over the period April 1, 2015 – March 31, 2020. Annuitant mortality rates are adjusted to incorporate mortality improvements under the Society of Actuaries' Scale MP-2021.

Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of March 31, 2023 (see Investment policy – note 4(a)) are summarized below:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	4.30%
International equity	6.85
Private equity	7.50
Real estate	4.60
Opportunistic/ARS portfolio	5.38
Credit	5.43
Real assets	5.84
Fixed Income	1.50
Cash	0.00

The real rate of return is net of the long-term inflation assumption of 2.50 percent.

(b) Discount Rate

The discount rate used to calculate the total pension liability was 5.9 percent. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the System’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(c) Sensitivity of the Net Pension Liability to the Discount Rate Assumption

The following presents the current period net pension liability of the employers calculated using the current-period discount rate assumption of 5.9 percent, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage-point lower (4.9 percent) or one percentage-point higher (6.9 percent) than the current assumption (Dollars in Thousands):

	One Percent Decrease (4.9%)	Current Assumption (5.9%)	One Percent Increase (6.9%)
ERS net pension liability (asset)	\$ 51,821,029	\$ 21,444,036	\$ (3,939,482)
PFRS net pension liability	\$ 11,486,837	\$ 5,510,470	\$ 561,683

10. Federal Income Tax Status

ERS and PFRS are qualified defined benefit retirement plans under section 401(a) of the Internal Revenue Code (IRC) and are exempt from federal income taxes under section 501(a) of the IRC. ERS and PFRS last received favorable determination letters from the Internal Revenue Service dated August 28, 2014 stating that ERS and PFRS are in compliance with the applicable requirements of the Internal Revenue Code. Therefore, no provision for income taxes has been included in the System's financial statements.

11. Commitments

As of March 31, 2023, the System had contractual commitments totaling \$15.0 billion to fund future private equity investments, \$8.5 billion to fund future real estate investments, \$3.8 billion to fund future investments in opportunistic/ARS funds, \$4.9 billion to fund future real asset investments and \$7.5 million to fund future credit investments. When compared to note 8 the variances that exist are due to the above representing total commitments of the investment type inclusive of investments measured at fair value and net asset value. Future commitments will be funded over the commitment period through transaction income including distributions, redemptions, and maturities.

12. Contingencies

The System is a defendant in litigation proceedings involving individual benefit payments, participant eligibility, and other issues arising from its normal activities. Management of the System believes there will be no material adverse effect on the basic financial statements as a result of the outcome of these matters.

Required Supplementary Information (Unaudited)

Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios (Unaudited)

(Dollars in Thousands)

	2023 Employees' Retirement System	2022 Employees' Retirement System	2021 Employees' Retirement System	2020 Employees' Retirement System	2019 Employees' Retirement System
Total pension liability:					
Service cost	\$ 4,208,576	\$ 4,046,170	\$ 4,157,172	\$ 3,365,522	\$ 3,218,553
Interest	12,826,486	12,656,540	11,133,759	12,529,672	12,463,933
Changes of benefit Terms	543,056	—	—	—	—
Difference between expected and actual experience	2,518,585	(1,003,716)	299,922	745,602	704,393
Changes in assumptions	1,797,644	—	22,441,226	(575,504)	888,656
Benefit payments	(13,035,556)	(12,415,017)	(11,850,537)	(11,207,761)	(10,781,781)
Refunds of contributions	(106,420)	(89,246)	(97,646)	(64,699)	(90,915)
Net change in total pension liability	8,752,371	3,194,731	26,083,896	4,792,832	6,402,839
Total pension liability — beginning	223,874,888	220,680,157	194,596,261	189,803,429	183,400,590
Total pension liability — ending (a)	232,627,259	223,874,888	220,680,157	194,596,261	189,803,429
Fiduciary net position:					
Contributions — employer	3,305,845	4,528,207	4,062,302	3,920,360	3,890,215
Contributions — member	565,110	494,802	427,032	395,338	345,846
Net investment income (loss)	(11,475,648)	18,984,398	59,964,043	(7,470,542)	9,140,487
Benefit payments	(13,035,556)	(12,415,017)	(11,850,537)	(11,207,761)	(10,781,781)
Refunds of contributions	(106,420)	(89,246)	(97,646)	(64,699)	(90,915)
Administrative expense	(184,229)	(144,128)	(144,234)	(121,694)	(119,304)
Other additions	64,648	109,874	103,941	(53,444)	160,431
Net change in fiduciary net position	(20,866,250)	11,468,890	52,464,901	(14,602,442)	2,544,979
Fiduciary net position — beginning	232,049,473	220,580,583	168,115,682	182,718,124	180,173,145
Fiduciary net position — ending (b)	211,183,223	232,049,473	220,580,583	168,115,682	182,718,124
Net pension liability (asset)— ending (a) – (b)	\$ 21,444,036	\$ (8,174,585)	\$ 99,574	\$ 26,480,579	\$ 7,085,305
Ratio of fiduciary net position to total pension liability	90.78%	103.65%	99.95%	86.39%	96.27%
Covered payroll	\$ 29,933,841	\$ 28,772,307	\$ 27,976,135	\$ 28,169,321	\$ 27,374,387
Net pension liability (asset) as a percentage of covered payroll	71.64%	(28.41)%	0.36%	94.01%	25.88%

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

See accompanying independent auditors' report and notes to required supplementary information.

Required Supplementary Information (Unaudited)

continued

Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios (Unaudited)

(Dollars in Thousands)

	2018 Employees' Retirement System	2017 Employees' Retirement System	2016 Employees' Retirement System	2015 Employees' Retirement System
Total pension liability:				
Service cost	\$ 3,004,697	\$ 2,951,979	\$ 2,916,374	\$ 2,989,807
Interest	12,063,525	11,723,859	11,198,823	11,581,437
Changes of benefit Terms	—	—	—	—
Difference between expected and actual experience	1,235,058	226,737	(2,378,116)	135,177
Changes in assumptions	—	—	5,350,157	—
Benefit payments	(10,200,205)	(9,740,272)	(9,224,904)	(8,829,751)
Refunds of contributions	(103,071)	(65,261)	(150,294)	(77,388)
Net change in total pension liability	6,000,004	5,097,042	7,712,040	5,799,282
Total pension liability — beginning	177,400,586	172,303,544	164,591,504	158,792,222
Total pension liability — ending (a)	183,400,590	177,400,586	172,303,544	164,591,504
Fiduciary net position:				
Contributions — employer	3,949,873	3,949,710	4,347,619	4,893,110
Contributions — member	318,439	306,218	289,332	272,004
Net investment income (loss)	18,128,993	17,194,267	(327,068)	10,582,102
Benefit payments	(10,200,205)	(9,740,272)	(9,224,904)	(8,829,751)
Refunds of contributions	(103,071)	(65,261)	(150,294)	(77,388)
Administrative expense	(106,972)	(93,943)	(93,012)	(93,357)
Other additions	181,725	200,379	198,333	193,176
Net change in fiduciary net position	12,168,782	11,751,098	(4,959,994)	6,939,896
Fiduciary net position — beginning	168,004,363	156,253,265	161,213,259	154,273,363
Fiduciary net position — ending (b)	180,173,145	168,004,363	156,253,265	161,213,259
Net pension liability (asset)— ending (a) – (b)	\$ 3,227,445	\$ 9,396,223	\$ 16,050,279	\$ 3,378,245
Ratio of fiduciary net position to total pension liability	98.24%	94.70%	90.68%	97.95%
Covered payroll	\$ 26,686,412	\$ 26,200,001	\$ 25,644,078	\$ 24,480,045
Net pension liability (asset) as a percentage of covered payroll	12.09%	35.86%	62.59%	13.80%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available. See accompanying independent auditors' report and notes to required supplementary information.

Required Supplementary Information (Unaudited)

continued

Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios (Unaudited)

(Dollars in Thousands)

	2023 Police and Fire Retirement System	2022 Police and Fire Retirement System	2021 Police and Fire Retirement System	2020 Police and Fire Retirement System	2019 Police and Fire Retirement System
Total pension liability:					
Service cost	\$ 990,375	\$ 951,585	\$ 970,797	\$ 743,762	\$ 713,480
Interest	2,420,655	2,363,162	2,020,024	2,252,536	2,236,527
Changes of benefit Terms	42,038	—	—	—	—
Difference between expected and actual experience	417,029	86,530	180,496	76,209	106,384
Changes in assumptions	181,610	—	4,930,229	147,086	118,521
Benefit payments	(2,448,940)	(2,304,619)	(2,172,230)	(2,038,392)	(1,959,831)
Refunds of contributions	(4,726)	(96,141)	(1,558)	(284)	(1,404)
Net change in total pension liability	1,598,041	1,000,517	5,927,758	1,180,917	1,213,677
Total pension liability — beginning	42,237,292	41,236,775	35,309,017	34,128,100	32,914,423
Total pension liability — ending (a)	43,835,333	42,237,292	41,236,775	35,309,017	34,128,100
Fiduciary net position:					
Contributions — employer	1,098,241	1,099,539	967,488	862,346	854,094
Contributions — member	91,654	82,792	65,309	58,360	40,673
Net investment income (loss)	(2,065,123)	3,389,717	10,685,563	(1,328,229)	1,621,289
Benefit payments	(2,448,940)	(2,304,619)	(2,172,230)	(2,038,392)	(1,959,831)
Refunds of contributions	(4,726)	(96,141)	(1,558)	(284)	(1,404)
Administrative expense	(23,766)	(19,372)	(20,863)	(17,356)	(17,173)
Other additions/deductions	8,273	16,834	12,711	(23,402)	9,723
Net change in fiduciary net position	(3,344,387)	2,168,750	9,536,420	(2,486,957)	547,371
Fiduciary net position — beginning	41,669,250	39,500,500	29,964,080	32,451,037	31,903,666
Fiduciary net position — ending (b)	38,324,863	41,669,250	39,500,500	29,964,080	32,451,037
Net pension liability — ending (a) – (b)	\$ 5,510,470	\$ 568,042	\$ 1,736,275	\$ 5,344,937	\$ 1,677,063
Ratio of fiduciary net position to total pension liability	87.43%	98.66%	95.79%	84.86%	95.09%
Covered payroll	\$ 4,185,198	\$ 4,043,065	\$ 3,862,735	\$ 4,024,660	\$ 3,730,337
Net pension liability as a percentage of covered payroll	131.67%	14.05%	44.95%	132.80%	44.96%

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

See accompanying independent auditors' report and notes to required supplementary information.

Required Supplementary Information (Unaudited)

continued

Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios (Unaudited)

(Dollars in Thousands)

	2018 Police and Fire Retirement System	2017 Police and Fire Retirement System	2016 Police and Fire Retirement System	2015 Police and Fire Retirement System
Total pension liability:				
Service cost	\$ 674,079	657,407	\$ 628,863	\$ 625,648
Interest	2,154,117	2,065,752	1,935,222	1,997,215
Changes of benefit Terms	—	—	—	—
Difference between expected and actual experience	241,387	302,375	(537,163)	39,833
Changes in assumptions	—	—	1,531,662	—
Benefit payments	(1,827,136)	(1,708,410)	(1,683,580)	(1,606,417)
Refunds of contributions	1,493	5,632	(1,694)	(158)
Net change in total pension liability	1,243,940	1,322,756	1,873,310	1,056,121
Total pension liability — beginning	31,670,483	30,347,727	28,474,417	27,418,296
Total pension liability — ending (a)	32,914,423	31,670,483	30,347,727	28,474,417
Fiduciary net position:				
Contributions — employer	873,434	837,253	792,585	904,339
Contributions — member	30,950	22,609	17,297	12,789
Net investment income (loss)	3,209,040	3,030,977	(57,765)	1,862,789
Benefit payments	(1,827,136)	(1,708,410)	(1,683,580)	(1,606,417)
Refunds of contributions	1,493	5,631	(1,694)	(158)
Administrative expense	(15,834)	(13,191)	(13,608)	(13,794)
Other additions/deductions	33,889	36,021	134,548	37,623
Net change in fiduciary net position	2,305,836	2,210,890	(812,217)	1,197,171
Fiduciary net position — beginning	29,597,830	27,386,940	28,199,157	27,001,986
Fiduciary net position — ending (b)	31,903,666	29,597,830	27,386,940	28,199,157
Net pension liability — ending (a) – (b)	\$ 1,010,757	\$ 2,072,653	\$ 2,960,787	\$ 275,260
Ratio of fiduciary net position to total pension liability	96.93%	93.46%	90.24%	99.03%
Covered payroll	\$ 3,683,960	\$ 3,633,237	\$ 3,526,980	\$ 3,257,100
Net pension liability as a percentage of covered payroll	27.44%	57.05%	83.95%	8.45%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available. See accompanying independent auditors' report and notes to required supplementary information.

Required Supplementary Information (Unaudited)

continued

Schedule of Employer Contributions (Unaudited)

(Dollars in Millions)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
ERS										
Actuarially determined contribution (1)	\$ 3,273	\$ 4,528	\$ 4,062	\$ 3,920	\$ 3,890	\$ 3,950	\$ 3,950	\$ 4,348	\$ 4,893	\$ 5,138
Contributions in relation to the actuarially determined contribution (2)	3,273	4,528	4,062	3,920	3,890	3,950	3,950	4,348	4,893	5,138
Contribution deficiency (excess)	-	-	-	-	-	-	-	-	-	-
Covered payroll	29,934	28,772	27,976	28,169	27,374	26,686	26,200	25,644	24,480	24,361
Contributions as a percentage of covered payroll	10.93%	15.74%	14.52%	13.92%	14.21%	14.80%	15.08%	16.96%	19.99%	21.09%
PFRS										
Actuarially determined contribution (1)	\$ 1,077	\$ 1,100	\$ 968	\$ 862	\$ 854	\$ 873	\$ 837	\$ 793	\$ 904	\$ 926
Contributions in relation to the actuarially determined contribution (2)	1,077	1,100	968	862	854	873	837	793	904	926
Contribution deficiency (excess)	-	-	-	-	-	-	-	-	-	-
Covered payroll	4,185	4,043	3,863	4,025	3,730	3,684	3,633	3,527	3,257	3,233
Contributions as a percentage of covered payroll	25.73%	27.21%	25.06%	21.42%	22.90%	23.70%	23.04%	22.48%	27.76%	28.64%
(1) The actuarially determined contribution includes normal costs, the GLIP amounts, adjustments made to record the reconciliation of projected salary to actual salary, and miscellaneous accounting adjustments.										
(2) The contributions in relation to the actuarially determined contribution reflects actual payments and installment payment plans.										

See accompanying independent auditors' report and notes to required supplementary information.

Schedule of Investment Returns (Unaudited)

	2023	2022	2021	2020	2019	2018	2017	2016	2015
Annual money-weighted rate of return, net of investment expenses ¹	(4.43)%	9.44%	33.43%	(2.64)%	5.14%	11.29%	11.40%	0.03%	6.98%
¹ Investment expenses include management fees, investment and accounting staff salaries and benefits, and other investment-related expenses.									

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available. See accompanying independent auditors' report and notes to required supplementary information.

Required Supplementary Information (Unaudited)

continued

Notes to Required Supplementary Information

Year Ended March 31, 2023

Changes in Benefit Terms

The New York State Legislature lowered the vesting requirement for Tier 5 and Tier 6 from ten years to five years (Chapter 56 of the Laws of 2022), prior to the April 1, 2022 actuarial valuation.

Changes of Assumptions

2023: For the April 1, 2022 funding valuation, the mortality improvement assumption was updated to Society of Actuaries' Scale MP-2021, the inflation assumption was increased to 2.9% and the cost-of-living assumption was updated to 1.5%. Further, the recognition of unexpected investment returns will occur in equal installments over 8 years. Finally, active member withdrawal rates for Tiers 5 and 6 were revised to reflect the New York State Legislature's change in benefit terms.

2022: For the April 1, 2021 funding valuation, the mortality improvement assumption was updated to Society of Actuaries' Scale MP-2020, the inflation assumption was increased to 2.7% and the cost-of-living assumption was updated to 1.4%, while the salary scale assumption changed to 4.4% in ERS and 6.2% in PFRS and the discount rate assumption was reduced to 5.9%. Further, a market restart was implemented to immediately recognize the market value of assets in the funding valuation.

2021: For the April 1, 2020 funding valuation, the demographic assumptions (pensioner mortality and active member decrements) were updated based on the System's experience from April 1, 2015 through March 31, 2020 and the mortality improvement assumption was updated to Society of Actuaries' Scale MP-2019.

Methods and Assumptions Used in Calculations of Actuarially Determined Contributions

The April 1, 2021 actuarial valuation determined the employer rates for contributions payable in fiscal year 2023. The following actuarial methods and assumptions were used:

Actuarial cost method	The System is funded using the Aggregate Cost Method. All unfunded actuarial liabilities are evenly amortized (as a percentage of projected pay) over the remaining worker lifetimes of the valuation cohort.
Asset valuation period	Market restart
Inflation	2.7%
Salary scale	4.4% in ERS, 6.2% in PFRS, indexed by service
Investment rate of return	5.9% compounded annually, net of investment expenses, including inflation.
Cost-of-living adjustments	1.4% annually
Active member decrements	Based upon FY 2016-2020 experience
Pensioner mortality	Gender/Collar specific tables based upon FY 2016-2020 experience
Mortality improvement	Society of Actuaries' Scale MP-2020

Other Supplementary Information (Unaudited)

Schedule of Administrative Expenses (Unaudited)

Year Ended March 31, 2023

(Dollars in Thousands)

Personal services:	
Salaries	\$ 77,343
Overtime salaries	3,702
Fringe benefits	<u>60,803</u>
Total personal services	141,848
Building occupancy expenses:	
Building, lease, and condominium fees	5,348
Utilities and municipal assessments	107
Office supplies and services	150
Telephone	<u>385</u>
Total building occupancy expenses	5,990
Computer expenses:	
IT shared services*	<u>52,750</u>
Total computer expenses	52,750
Personal and operating expenses:	
Training	77
Travel and auto expenses — includes pre-retirement seminars	458
Postage — includes member and retiree communication	1,674
Depreciation expense — Imaging System	1,832
Printing — includes member and retiree communication	118
Subscriptions/memberships	<u>260</u>
Total personal and operating expenses	4,419
Professional expenses:	
Audit services	520
Medical/clinical services	1,921
Miscellaneous consulting services	<u>547</u>
Total professional expenses	2,988
Total	\$ 207,995
* The System has implemented a shared service, information technology (IT) model within the New York State Office of the State Comptroller, wherein all IT costs, including personal services, will be incorporated into the IT shared services and reflected as nonpersonal service expenditures.	

See accompanying independent auditors' report.

Other Supplementary Information (Unaudited)

continued

Schedule of Investment Expenses (Unaudited)

Year Ended March 31, 2023

(Dollars in Thousands)

Investment expenses:	
Investment management and incentive fees:	
Private equity	\$ 218,300
Opportunistic/ARS	181,569
International equity	128,403
Real estate	110,350
Domestic equity	96,275
Real assets	68,230
Credit assets	62,805
Multi-Asset Class	9,258
Fixed income	4,254
Total investment management and incentive fees	879,444
Investment-related expenses:	
Miscellaneous expenses	20,341
Data processing expenses/licenses	8,308
Custodial fees	5,709
Legal fees	5,652
Mortgage loan servicing fees	2,985
Compliance/Risk monitoring	2,165
Private equity consulting and monitoring	2,097
Administrative expenses	1,229
Research services	997
General consulting	799
Real estate consulting and monitoring	727
Opportunistic consulting and monitoring	600
Real assets consulting and monitoring	468
Fixed income consulting	399
Audit and audit-related fees	250
Emerging manager program consulting and monitoring	110
Domestic equity consulting and monitoring	77
Global equity consulting	35
Total investment-related expenses	52,948
Total investment expenses	\$ 932,392

See accompanying independent auditors' report.

Other Supplementary Information (Unaudited)

continued

Schedule of Consulting Fees (Unaudited)

Year Ended March 31, 2023

Fees in excess of \$50,000 paid to outside professionals other than investment advisors.

	Amount	Nature
JP Morgan Chase Bank	\$ 5,708,996	Custodial Banking Services
FIS Capital Markets US LLC	3,942,880	EDP Expense/Licenses
Bloomberg Finance LP	1,517,893	EDP Expense/Licenses
Morgan Lewis & Bockius LLP	1,090,926	Legal Services
Frank Russell Index Subscriptions US	856,065	EDP Expense/Licenses
Foster Garvey PC	853,634	Legal Services
MSCI BarraOne LLC	808,850	Compliance/Risk Monitoring
Seyfarth Shaw LLP	721,860	Legal Services
Cox, Castle & Nicholson LLP	569,932	Legal Services
Intex Solutions, Inc.	553,150	Compliance/Risk Monitoring
KPMG LLP	518,185	Audit Services
FactSet Research Systems, Inc.	517,397	EDP Expense/Licenses
K&L Gates LLP	458,911	Legal Services
DLA Piper LLP	417,917	Legal Services
Seward & Kissel LLP	412,607	Legal Services
Orrick Herrington & Sutcliffe LLP	404,711	Legal Services
JP Morgan Chase Bank	372,839	Custodial Banking Services
Jurisolutions, Inc.	369,389	Medical/Clinical Services
Moody's Analytics, Inc.	335,815	EDP Expense/Licenses
EFL Associates	292,945	Staff Recruitment Services
Ernst & Young LLP	289,392	Tax Services
National Claim Evaluations, Inc.	288,333	Medical/Clinical Services
D & D Medical Associates PC	277,173	Medical/Clinical Services
Certified Management Consultants	255,490	Medical/Clinical Services
CEO Risk Advisory Services	250,125	Compliance/Risk Monitoring
eFront Financial Solutions, Inc.	239,171	EDP Expense/Licenses
First Choice Evaluations LLC	229,319	Medical/Clinical Services
Verizon Business Network Services LLC	228,933	IT Consulting Services
PitchBook Data, Inc.	210,000	EDP Expense/Licenses
Reinhart Boerner Van Deuren SC	207,305	Legal Services
Strategas Securities, LLC	206,000	Research
Fitch Solutions, Inc.	204,000	Research
Arthur J Gallagher Risk Management	201,844	Audit Services
First Advantage Back Track Reports, LLC	184,070	Compliance/Risk Monitoring
Lenox Park Solutions LLC	160,000	Administrative Expense
Brigar X-Press Solutions, Inc.	150,449	Medical/Clinical Services
Institutional Shareholder Services	126,569	Administrative Expense
MSCI ESG Research Inc	123,000	Research
Pillsbury Winthrop Shaw Pittman LLP	123,000	Legal Services
Integral Consulting Services, Inc.	122,583	Medical/Clinical Services
Standard & Poors	122,017	EDP Expense/Licenses
BDO USA LLP	108,570	Compliance/Risk Monitoring
Glass Lewis & Co, LLC	106,232	Administrative Expense
CoStar Group Inc.	105,637	Research
Honeywell International Inc.	102,917	Miscellaneous Consulting Services
Marcum Accountants/Advisors	90,950	Compliance/Risk Monitoring
Chapman and Cutler LLP	86,372	Legal Services
Corporate Resolutions, Inc.	85,500	Compliance/Risk Monitoring
Groom Law Group	80,515	Legal Services
Hirschler Fleischer	76,659	Legal Services
Training The Street LLC	75,625	Training
McKinsey & Company, Inc.	65,000	Miscellaneous Consulting Services
Planetrics Ltd	65,000	Research
Dane Street LLC	60,653	Medical/Clinical Services
Eurasia Group	60,000	Research
Mazzone Hospitality-Compass Group USA Inc	59,220	Administrative Expense
Capital Economics	56,650	Research
BCA Research, Inc.	56,375	Research
Content Critical Solutions Inc.	54,943	Medical/Clinical Services
William E Mccarthy	53,700	Miscellaneous Consulting Services
Nossaman LLP	50,573	Legal Services
Labaton Sucharow LLP	50,000	Legal Monitoring Services
Piper Sandler & Co.	50,000	Research

See accompanying independent auditors' report.

Independent Auditors' Report on Internal Control



KPMG LLP
515 Broadway
Albany, NY 12207-2974

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

The Trustee
New York State and Local Retirement System:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the New York State and Local Retirement System (the System), which comprise the combining basic statement of fiduciary net position as of March 31, 2023, and the related combining basic statement of changes in fiduciary net position for the year then ended, and the related notes to the basic financial statements, and have issued our report thereon dated July 21, 2023.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's basic financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.



Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

July 21, 2023

Investment



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Overview of Investments

Overall Objectives and Performance

The Division of Pension Investment and Cash Management (PICM) in the Office of the State Comptroller (OSC) is responsible for the management of the assets of the New York State Common Retirement Fund (Fund or CRF). The Fund's primary objective is to provide the means to pay benefits to the participants in the New York State and Local Retirement System (System or NYSLRS) through an investment program designed to protect and enhance the long-term value of the assets. We are responsible for implementing an asset allocation strategy with an appropriate balance of risk and return. Investments in equities, although historically volatile, provide superior long-term performance and growth characteristics, while fixed income investments provide less volatility and more predictable cash flow to meet the System's funding requirements and pension obligations. Alternative investments provide diversification and incremental returns.

The Fund's investment performance for the fiscal year ended March 31, 2023 was negative 4.14 percent, gross of certain investment fees. The investment performance information provided in this section of the Annual Comprehensive Financial Report was calculated by the Fund's custodian, J.P. Morgan, using a daily time-weighted rate of return based on the market value of assets.

Fiscal Year Capital Market Overview

In the first quarter of fiscal year ending March 31, 2023, equity and fixed income markets declined significantly while credit spreads widened amidst a very difficult period for nearly all asset classes. The inflationary environment worsened during the quarter, even as global central banks moved aggressively to tighten monetary policy. Supply chain disruptions tied to the war in Ukraine and China's zero-COVID policy worked to keep inflation elevated and served to erode the purchasing power of consumers, while global central banks were forced to prescribe increasingly restrictive monetary actions.

Hopes for easing inflationary conditions and an eventual pivot to more accommodative monetary policy dominated investor sentiment in the first half of the second quarter, leading to strong gains for risk assets. However, as the quarter progressed, comments from Federal Reserve Open Market Committee (FOMC) members took an increasingly hawkish tone, at times admonishing market participants in public speeches for ignoring the Committee's stated resolve to tackle inflation. Risk assets were sold off following the FOMC comments and didn't catch relief for the remainder of the quarter as the inflation readings came in above expectations and exacerbated negative sentiment. Additionally, fixed income markets suffered significant losses as inflationary dynamics forced global central banks into further tightening monetary policy.

In the third quarter, equity and fixed income markets delivered improved results while continuing to experience elevated volatility. The combination of tightening monetary policy and persistent inflation, as well as continued supply shocks and energy availability concerns in Europe, led some industry observers to increase odds of a global recession in 2023. International events, including the war in Ukraine, energy price shocks, and trade tensions continued to test economic and political relationships across multiple countries and regions.

During the final quarter of the fiscal year, both defensive and risk assets generally provided positive returns. Over the last month of the fourth quarter, market price action, investor sentiment, and headlines were driven by the failure of multiple U.S. banks, the most prominent being Silicon Valley Bank and Signature Bank — which represented the second and third largest bank failures in U.S. history. After the collapse of these banks, concerns around liquidity spread, and sharp declines in market value for other U.S. regional banks and some European banks followed. The Federal Reserve, U.S. Treasury Department, and Federal Deposit Insurance Corporation all intervened to assure depositors of access to their capital and calm funding markets.

Public Equities

The role of the Fund's public equities portfolio is to provide the largest source of returns over the long-term through diversified, global equity market exposure. The public equities asset class continues to rely on broad passive index funds in the more efficient segments of the equity markets. This allows the Fund to maintain exposure to market returns at very low costs. The staff continues to employ a variety of active strategies in less efficient markets where active management is more likely to outperform.

Internally managed passive index funds comprise the bulk of the domestic equity portion of the public equity portfolio. Active allocations in domestic equity are primarily in small capitalization strategies and in a mix of styles. International and global allocations place greater emphasis on externally managed active mandates in a variety of strategies. Recent strategic efforts include allocations to sustainable oriented investment strategies that serve to mitigate the risks associated with the effects of climate change and strategies that help to align the public equity portfolio with its various benchmarks. As needed, the public equity portfolio continues to serve as a source of liquidity for the payment of benefits to plan beneficiaries, including over the past fiscal year.

Over the course of the fiscal year, the market was characterized by a variety of attributes that included, among others, sharp dispersion in sector performance; rotations between growth style and value style leadership; corporate earnings buoyed, in part, by pricing power; and narrow breadth, with the market being led by a small number of the largest companies, primarily big tech companies. The year's market backdrop of persistent inflation; rising interest rates; vacillating fears of a looming recession; geopolitical tensions, particularly between the U.S. and China; continuing war in Ukraine; and banking industry turmoil all contributed to investor uncertainty, prompting risk-on/risk-off activity and driving market volatility. Taken together, prevailing market conditions made it difficult for investors to realize outperformance or consistent performance.

For the fiscal year, the total public equity portfolio generated a return of negative 7.27 percent, slightly outperforming the benchmark MSCI All Country World Index return of negative 7.44 percent. The domestic equity portion of the portfolio generated a return of negative 8.29 percent, outperforming the benchmark Russell 3000 Index return of negative 8.58 percent by 29 basis points. The international equity portion of the portfolio returned negative 4.85 percent, outperforming the MSCI All Country World Index ex. U.S. IMI benchmark return of negative 5.84 percent by 99 basis points. The global equity portion of the portfolio, in which active managers allocate between domestic and international equities, returned negative 5.72 percent, outperforming the MSCI All Country World Index return of negative 7.44 percent by 172 basis points.

The public equities portfolio's target allocation, as of March 31, 2023, is 47.00 percent while the actual allocation is 44.14 percent. Over the five-year period, the public equities portfolio has generated a return of 8.26 percent, in contrast to the benchmark return of 6.93 percent over the same time frame. Long-term public equity returns remain strong despite the recent market decline.

Fixed Income

The fixed income portfolio is designed to provide a consistent source of funds to help address the cash flow needs of the Fund. Additionally, these assets provide downside protection against the volatility of the overall portfolio's equity-like strategies, while achieving efficiency in the risk/return profile for fixed income. The Fund accomplishes these goals by investing internally in long-term and short-term assets, while external managers focus on increasing returns and diversification, primarily through higher-yielding fixed income investments. The short-term fixed income portfolio offers liquidity to meet monthly pension fund liabilities, as well as providing funding for the other asset classes within the Fund.

At the start of the past fiscal year, it was becoming evident that the spike in inflation was far from transient. To bring inflation back towards a 2 percent goal, the Federal Reserve hiked short-term interest rates four times during the first half of the fiscal year, raising the Federal Funds target rate from 0.50 percent to 3.25 percent. With interest rates higher across the yield curve and spreads generally wider in response to high inflation, the first half of the fiscal year was a historically difficult period for the bond market. Performance of the fixed income market was severely negative during this six-month period, with the total return on the broad market benchmark approximately negative 9.22 percent.

The Federal Reserve continued to aggressively fight inflation and, over the second half of the fiscal year, had raised the Federal Funds rate to 5 percent. By the end of the fiscal year, it appeared that inflation was finally starting to abate, with U.S. Consumer Price Index (CPI) declining from a high of 9 percent to 5 percent. In response, Treasury yields declined modestly over the second half of the fiscal year, except for short-maturity Treasury bills. In this environment, spreads were able to move somewhat tighter as well. Thus, the bond market generated solid returns over the second half of the fiscal year, with the total return for the broad market benchmark approximately 4.83 percent.

For the fiscal year, the fixed income portfolio produced a total return of negative 4.33 percent. In comparison, the benchmark (the Bloomberg U.S. Aggregate Bond Index) returned negative 4.78 percent. Although the asset class produced a negative return, the portfolio outperformed its benchmark by 0.45 percent. The portfolio generated incremental return largely through sector allocation. Specifically, an overweight to some specific structured products (such as asset-backed securities and collateralized loan obligations) proved to be a benefit as these sectors produced returns that were better than the benchmark. In addition, a modest overweight to corporate bonds with relatively short maturities added incremental yield to the portfolio while taking less spread risk.

Over a longer horizon, the fixed income portfolio has produced positive returns and added incremental return versus the benchmark. The portfolio's target allocation as of March 31, 2023, is 23.00 percent while the actual allocation is 20.47 percent. Over the five-year period, the fixed income portfolio generated a return of 1.30 percent, in contrast to the benchmark return of 0.91 percent over the same time frame. Going forward, we expect to continue to manage the fixed income portfolio with a focus on adding value through sector rotation and security selection.

Private Equity

The Fund's private equity portfolio is designed to generate long-term returns that exceed those of public equities through participation in private equity investments. Closed-end funds and co-investments managed by specialized investment managers are the two primary structures utilized to invest in private companies. The Fund seeks to partner with the very best private equity investors, including emerging and diverse managers, across various investment strategies and geographies, international managers who have expertise to source attractive opportunities in global markets, and with local managers that focus their investments within New York State (In-State Investment Program). The Fund also seeks to commit capital to industry sectors, such as technology, that show high potential for economic growth and capital appreciation, and that will further enhance the diversification of the portfolio.

Because private equity investments involve long-term contractual commitments to a manager, the Fund will seek to invest with managers who have demonstrated the capacity to consistently deliver superior returns. The Fund can better achieve such superior returns through active portfolio monitoring, which requires frequent and direct interaction with investment managers to monitor performance and ensure proper alignment of interests between manager and investor.

During FY 2023, the CRF private equity portfolio invested in 21 private equity funds for a total of \$3.74 billion in total commitments. In addition to fund investments, the private equity program seeks to exploit those long-term commitments and alignments of interests by making co-investments alongside select managers on improved economic terms. The Fund made 29 discretionary co-investments totaling over \$310 million in invested capital in portfolio companies alongside Fund managers. The Fund has established private equity co-investment programs focused on opportunities sourced from its core private equity portfolio, the Emerging Manager Program, the In-State Investment Program and its Israel investment program.

For the fiscal year, the CRF private equity program generated a negative 2.87 percent return as compared to the benchmark return of negative 2.05 percent. While the performance trails the Cambridge U.S. Private Equity Index benchmark (1Q Lag), the CRF's Private Equity Program is a global investment program, so the Cambridge benchmark is an imperfect comparison.

The private equity portfolio's target allocation, as of March 31, 2023, is 10.00 percent while the actual allocation is 14.61 percent. Over the five-year and ten-year periods, the private equity portfolio generated returns of 15.21 percent and 13.78 percent, respectively, in contrast to the benchmark returns of 16.25 percent and 15.10 percent over the same time frame. As noted above, this is due to the imperfect benchmark comparison.

Real Estate

The real estate portfolio seeks to create a diversified real estate portfolio across various property sectors, geographic locations, and risk profiles, encompassing core and non-core strategies such as core-plus/value-add and opportunistic approaches. At this point in the economic cycle, the Real Estate team is focused on managing volatility while meeting its long-term investment objectives. The real estate allocation's mandate to the overall Fund is to provide the following:

- Long-term net annualized internal rate of return of 7.20 percent composed of a steady stream of income through less risky, core investments, and enhanced returns from riskier core-plus/value-add and opportunistic investments;
- Low correlation to other asset classes within the CRF's portfolio;
- Periodic liquidity; and
- Protection against Inflation.

Overview of Investments

continued

During the recent fiscal year, the portfolio generated a return of 5.66 percent, underperforming the weighted blend NCREIF NFI ODCE (Net) Index benchmark, which returned 7.26 percent over the same period. The decline in the one-year return is significant compared to the previous fiscal year, primarily attributed to negative private real estate returns witnessed in late 2022 through the first quarter of 2023. This decline can be attributed to challenges in the capital markets, specifically reduced transaction volumes, upward pressure on capitalization rates, and limited available financing.

While the real estate sector has shown signs of a slowdown, the overall fundamentals remain favorable. Investments in industrial and multifamily properties continue to be preferred due to positive underlying trends. Strong demand, low vacancy rates, and ongoing e-commerce expansion support the industrial sector. Multifamily properties benefit from robust demographic trends and barriers to homeownership, although some markets have experienced declines in affordability, affecting near-term fundamentals. The office sector remains weak, as hybrid work schedules have not provided stability, although the tide may turn amid increased layoffs and recession concerns. Retail is generally viewed as less attractive, but necessity-based retail investments have garnered investor interest due to their yield potential.

As of March 31, 2023, the target allocation for the real estate portfolio stands at 9.00 percent, while the actual allocation is slightly higher at 10.29 percent. Over a five-year period, the portfolio has delivered a return of 8.56 percent, outperforming the benchmark's return of 8.17 percent during the same timeframe. The portfolio's over-allocation to industrial and self-storage properties has contributed to this outperformance.

Real Assets

Real assets are a classification of investment opportunities that have unique characteristics that can serve multiple functions in an institutional portfolio. Typically described as tangible assets with strong barriers to entry, inflation participation, Gross Domestic Product (GDP) sensitivity and low correlations to traditional markets, they cover a wide spectrum of opportunities ranging from agriculture, capital assets, infrastructure, natural resources, and renewable assets. These opportunities will have duration attributes like that of most pension funds. The Fund uses these assets to provide inflation sensitivity, with strong downside protection and low correlations to traditional equity markets, while maintaining a strong minimum return objective superior to that of traditional income-generating assets.

Strategy and style selection has been critical to meeting the portfolio's objectives with a tilt towards infrastructure assets and smaller allocations to capital assets and natural resources. Given the stated investment parameters, the Fund has adopted the U.S. CPI plus 500 basis points as the real assets portfolio's overall policy benchmark.

The real assets portfolio has proven to be a strategic diversifier in the current economic environment. Despite inflationary trends seen within global markets, the real asset portfolio remained positive during the fiscal year. For the fiscal year ending March 31, 2023, the real assets portfolio returned 14.23 percent. This compares favorably to the benchmark return of 9.8 percent.

The portfolio's performance was augmented by sector exposures to digital infrastructure which remained resilient during the pandemic. Moreover, investments in infrastructure are expected to weather potential recessionary trends given the essential nature of the asset class.

The real asset portfolio's current weight of 3.11 percent is slightly above its target allocation of 3.00 percent as of March 31, 2023. Over the five-year period, the real assets portfolio has generated a return of 10.52 percent, in contrast to the benchmark return of 9.02 percent during the same period. While allocations to energy have recently provided performance leadership, infrastructure continues to reduce overall portfolio volatility risk.

Credit

The Credit portfolio's mandate is to significantly outperform the Fund's actuarial return target while maintaining a relatively low correlation to other asset classes outside the traditional fixed income markets. To accomplish this objective, the team invests through external managers across the fixed income universe and seeks attractive risk-adjusted returns using a diverse set of investments. These investments focus on credit opportunities arising from: a lack of availability of credit due to inefficient markets or market dislocations; structural market changes (e.g., those driven by a shifting regulatory landscape); market or industry-specific mispricing; and availability of illiquidity premium relative to liquid market investments. The strategies deployed to accomplish the team's mandate fall into the following categories: Direct Lending, Distressed & Special Situations, Mezzanine Finance, Specialty Finance, Structured Credit, Real Assets Credit, and Real Estate Credit. In addition, the Liquid Credit sub-strategy focuses on non-investment grade markets globally and includes high-yield bonds, leveraged loans, structured credit, and emerging market debt.

Last year's inadequate performance in the Credit asset class is a direct result of the rapid transition away from the low interest rate environment we have experienced since the 2008-09 Global Financial Crisis. To force COVID-related inflation back down, central banks launched an accelerated increase in interest rates. Higher discount rates mean lower valuations for nearly all risk assets, especially fixed coupons, and high duration securities. Borrowers required to refinance existing debt are quoted rates three to four times higher this time around. Those with floating coupon debt are watching their interest expenses erode their profit margins. Credit losses are limited as defaults are only beginning to rise and are far from historical highs.

For the fiscal year, the credit portfolio produced a total return of negative 0.62 percent. In comparison, the benchmark (Credit Suisse Leveraged Loan Index +2.5 percent) returned 4.67 percent. The negative return was largely due to the historically steep increase in interest rates as global central banks attempted to reduce inflation. The adverse impact was most felt on fixed coupon securities, such as the high yield portion in the liquid credit strategies. A plan was initiated in early 2022 to reduce the overallocation to liquid credit by 50 percent before the end of the fiscal year as a source of funding for private credit investments, but it wasn't enough to avoid the damage. Over the fiscal year, liquid credit funds generated a negative 7.6 percent. Alternatively, the floating rate nature of the private credit investments allowed them to generate a return of 3.5 percent for the fiscal year. The best performing private credit sub-strategies were led by real assets and real estate credit, followed by corporate direct lending.

The credit portfolio's target allocation, as of March 31, 2023, is 4.00 percent while the actual allocation is 3.74 percent. Over the five-year period, the credit portfolio has generated a return of 5.06 percent, in contrast to the benchmark return of 6.13 percent over the same time frame. A significant portion of the underperformance was due to the over-allocation to high yield strategies as the rest of the portfolio returned 9.9 percent over the same period. The team continues to source private credit investments as opportunities arise to achieve the 4.00 percent allocation to this strategy.

Opportunistic and Absolute Return Strategies (OARS)

The OARS portfolio's mandate is to add alpha to the Fund's overall portfolio while maintaining a relatively low correlation to other asset classes and enhancing the CRF's overall portfolio diversification. The portfolio invests across the capital structures of public and private companies and other strategies that may be distinguished from the mandates of other asset classes by their history, investment structures, terms, duration, risk/return profiles, portfolio construction requirements, or other relevant characteristics. OARS investments may not fit other asset classes' mandates or portfolio construction needs. The portfolio may invest with managers in various formats, including Funds of One, Separately Managed Accounts, Commingled Funds, Co-investments, and Fund of Funds. OARS consists of two sub-portfolios, the Opportunistic portfolio and a legacy Hedge Fund portfolio titled Absolute Return Strategies (ARS). All investments since 2015 have been in the Opportunistic sub-portfolio, with no new ARS investments since 2015. The portfolio targets an absolute return of at least 8.80 percent. For the fiscal year, the OARS portfolio returned 1.54 percent versus the absolute return benchmark of 8.80 percent.

The backdrop of a rapid increase in interest rates by central banks to reduce inflation caused by stimulus, supply chain issues and other macro factors created headwinds to achieving our 8.8 percent absolute return target. The dispersion of returns from the various strategies within the ARS portion of the portfolio was significant. Risk parity, emerging markets macro, and event credit strategies struggled the most during the year. Event-driven strategies also had a difficult year given the slowdown in new issuance and mergers. Managers who could be nimble and tactically change strategies or anticipate momentum were the most successful as the market dynamics evolved. However, even these managers were only slightly up on the year.

The Opportunistic portion of the OARS portfolio consists of strategies including Buyouts, Growth Equity, Multi-Asset Managers, Venture Capital, and others. This portion of the portfolio returned 1.0 percent for the fiscal year. The most significant positive attribution came from the Buyout strategies.

The OARS portfolio's target allocation, as of March 31, 2023, is 3.00 percent while the actual allocation is 2.59 percent. The ARS portion of the portfolio makes up 55 percent, while the Opportunistic portion is 45 percent of the overall portfolio. Over the five-year period, the OARS portfolio has generated a return of 5.85 percent, in contrast to the benchmark return of 8.80 percent over the same time frame. This underperformance was mainly driven by legacy investments in hedge funds that have been redeemed. The team continues to source investments as opportunities arise to achieve the 3.00 percent allocation to this strategy.

Other Programs

Pursuit

The Fund seeks to diversify its investments and achieve a risk-adjusted rate of return through a commitment to Pursuit, formerly known as the New York Business Development Corporation (NYBDC). Pursuit underwrites loans to small businesses in New York State, often with guarantees from the U.S. Small Business Administration, for working capital, equipment, the acquisition of real property, capital improvements and the refinancing of existing loans. Pursuit has successfully completed loans to a wide range of business enterprises, including retailers, restaurants, small manufacturers, and a variety of other service businesses across the State. By focusing exclusively on small business lending, Pursuit can frequently offer more favorable terms than other lenders. Pursuit has an active Veteran's Loan Program where New York business owners who serve in the National Guard or Reserve, along with honorably discharged former active-duty members, can access small business loans.

Pursuit also has a goal of making at least 25 percent of its loans to Minority- and Women-Owned Business Enterprises (MWBEs). In 2021, 20 percent of Pursuit loans that were due to Fund investments were made to women-owned businesses and 28 percent were made to minority-owned businesses.

The Common Retirement Fund has been an investor in NYBDC since 1987, with commitments totaling \$500 million. In 2018, the Fund approved a fifth \$100 million commitment to support NYBDC's small business loan program. Since this program began in 1987, Pursuit (NYBDC) has made 1,227 loans totaling \$462 million to businesses that employ over 25,000 New Yorkers. During the fiscal year ended March 31, 2023, there were no new loans.

Financing for Businesses in New York State

In 2000, the Fund initiated the New York (In-State) Private Equity Investment Program. The In-State Program is designed to generate a market rate of return consistent with the risk of private equity while increasing the diversification of the Fund's investment portfolio and expanding the availability of capital for New York State businesses. By making sound strategic investments in new and expanding New York companies and making equity and debt capital available to small businesses often overlooked by investment professionals in this asset class, the program is also proving to be an important contributor to the State's economy. The In-State Program provides a model for how the pension fund can identify profitable investment opportunities and generate market rate returns, while supporting business development and job growth in New York State.

On March 31, 2023, the Fund's private equity portfolio included investments in over 560 New York businesses with a market value of \$2.9 billion. This figure reflects only the Fund's share of these investments; the total value of New York companies held by the Fund's partnerships was more than \$41.4 billion.

Included in the Fund's New York State portfolio are: LeverPoint in Clifton Park, UCM Digital Health in Troy, Delorios in Utica, Ingredients Plus in Lakeville, Movable Ink in New York City, AeroSafe in Rochester, and ACV Auctions in Buffalo.

Overview of Investments

continued

As of March 31, 2023, the Fund had over \$700 million of remaining commitments available for investment in the In-State Program. Commitments to this program totaled \$2.5 billion. These commitments are devoted exclusively to New York State investment opportunities. The 18 managers in the program are:

- *Armory Square Ventures*, an early-stage venture capital fund located in Syracuse.
- *Ascent Biomedical Ventures NY*, a New York City-based venture capital fund focusing on life sciences.
- *Grosvenor Capital Management*, a fund that makes investments alongside other private equity funds investing in New York State.
- *Contour Venture Partners*, an early-stage venture fund based in New York City.
- *DeltaPoint Capital*, a growth equity fund located in Rochester.
- *Gotham Ventures (fka DFJ Gotham)*, a New York City-based fund focused on early-stage venture capital investments.
- *Easton Hunt Capital Partners*, a New York City-based fund that pursues a broad strategy of investing in companies in a wide range of industries and stages of development.
- *Founders Equity*, a New York City-based fund that makes growth equity investments.
- *Graycliff Partners*, a New York City-based fund that targets buyout and growth equity investments.
- *Tribeca Venture Partners*, a New York City-based early-stage applied technology venture firm focused on investing in business information and technology-enabled services companies.
- *Primary Venture Partners (fka High Peaks Ventures)*, an early-stage venture capital fund based in New York City and Albany.
- *Hamilton Lane*, three special situations funds that make equity and credit investments alongside other private equity managers investing in New York State.
- *Activate Venture Partners (fka Milestone Venture Partners)*, a New York City-based fund that focuses on companies providing technology-enhanced businesses services.
- *Paladin Homeland Security Fund (NY)*, a Washington, D.C.-based fund that opened a New York office to invest in companies that address a broad range of government and commercial security needs.
- *SoftBank Capital NY*, a New York City and Buffalo-based fund that invests in digital media and technologies that leverage broadband.
- *Summer Street Capital Partners*, a growth equity investment fund located in Buffalo.
- *Trillium Lakefront Partners NY*, a Rochester-based fund that focuses on investing in technology companies in upstate New York.
- *Wheatley Partners*, a technology venture fund with a focus on information and medical technology located in New York City and Long Island.

Emerging Manager Program

The goal of the Emerging Manager Program is to identify newer and smaller investment managers that have the potential to add value to the CRF's investment portfolio across all asset classes. Due to the size of assets under management, these managers would not typically be identified as an investment opportunity in the CRF's standard institutional investment manager search process. The Emerging Manager Program also provides the CRF with opportunities to invest with qualified business enterprises that are majority owned or are substantially owned and operated by women or minority managers.

Smaller investment management funds may generate superior performance returns because of their entrepreneurial nature and increased investment flexibility. Historically, several CRF emerging managers have outperformed their more established peers, a trend the CRF staff expects to continue. Graduates of the Emerging Manager Program are a natural source of new relationships for the CRF's investment portfolio, allowing the program to organically structure and form new relationships that can evolve to meet institutional investment mandates.

The CRF has established a policy framework for the Emerging Manager Program's operational guidelines and procedures to achieve the following objectives:

- To increase the CRF's utilization of emerging managers, including MWBE managers, consistent with applicable investment and fiduciary standards.
- To proactively identify best-in-class emerging managers who demonstrate the capacity and return profile to become viable long-term partners of the Fund.
- To employ prudent selection processes and practices consistent with the high fiduciary standards for all the CRF's investment management decisions and processes.
- To maintain guidelines and funding strategies that will encourage inclusion and ongoing support for the development of emerging managers.
- To generate appropriate risk-adjusted investment returns by identifying new investment opportunities with the potential for strong performance and by further diversifying the portfolio, and
- To cultivate, develop and incubate the next generation of external portfolio managers that would be candidates for transition into the CRF's core pool of investment managers.

As of March 31, 2023, the Fund has approximately \$31.5 billion invested with or committed to minority-owned or women-owned firms. MWBEs now represent approximately 22 percent of our externally managed active mandates.

Sustainable Investments and Climate Change Solutions Program

Sustainable Investments and Climate Solutions Program (SICS) is a thematic, multi-asset class investment program designed to strengthen the CRF’s portfolio by capitalizing on opportunities and mitigating risks through investments that advance one or more of nine themes split equally into three categories: *Resources & Environment*, *Human Rights & Social Inclusion*, and *Economic Development*. The SICS program works across asset classes to source, identify, and collaboratively adjudicate prospective investments with CRF asset class teams. CRF investments classified in the SICS program are subject to the same fiduciary and risk and return requirements applicable to investments in the subject asset classes.

CRF SICS CATEGORIES AND THEMES

Resources and Environment	Human Rights and Social Inclusion	Economic Development
Climate and Environment	Education	Financial inclusion
Resource efficiency	Demographic empowerment	Sustainable infrastructure
Pollution and waste management	Health and wellbeing	Affordable housing

Sustainable investments target inescapable secular trends. The SICS program improves the diversification of the CRF portfolio and is intended to enhance risk-adjusted returns.

In its November 2020 Financial Stability Report, the Federal Reserve Board illustrates financial system vulnerabilities caused by climate change. Awareness of various risks (disclosure, physical, and transition risks) has become an increasing expectation of modern fiduciaries. For example, inadequate disclosures can lead to regulatory investigations and shareholder claims; assets can become damaged by weather and climate-related events; and resource-based assets can become devalued due to low-carbon norms. Moreover, inadequate disclosures can impair fully informed investment decision making.

SICS is a key component of the Fund’s plan to position its portfolio for a low-carbon economy. SICS builds on the Fund’s initial \$10 billion commitment to sustainable investment strategies.

SICS provides CRF with a systematic platform to opportunistically expand investment opportunities across assets that are consistent with the goals of the Climate Action Plan. As of March 31, 2023, CRF has committed over \$20 billion to investments in SICS including green bonds, resource efficiency, green buildings, renewable energy, and climate indices.

Pension Risk Management

Risk Oversight

Prudent risk-taking in line with strategic priorities is fundamental to providing adequate returns and affordable pension plan funding. The primary objective of Pension Risk Management (PRM) is to provide an investment risk framework for the Fund as a whole, and across asset classes, to help maintain the economic viability of the System. PRM also works to monitor liquidity and other non-investment risks, to the extent that these risks may affect the overall objectives of the Fund. The Fund's risk management framework is based on transparency, management accountability and independent oversight. CRF's approach to risk taking is supported by the following principles:

- Establish a clear risk appetite based on the approved asset allocation targets and levels of risk we are prepared to take;
- Have in place risk management and compliance policies that set out authorities and responsibilities for taking and managing risk across the CRF and its asset classes;
- Seek to establish resilient risk constraints that promote multiple perspectives on risk; and
- Actively identify and monitor risks and work to ensure they remain within acceptable levels.

PRM instituted a comprehensive risk review framework to continually identify risks, controls, and monitoring capabilities. An emerging events risk framework was also established to highlight newly arising risks and determine the most appropriate ways to navigate macroeconomic and geopolitical turmoil.

Central to the Fund's risk framework is the Risk Appetite Statement, which was approved by the Fund's Trustee, Comptroller DiNapoli, in 2018:

The CRF provides a secure pension for generations of NYSLRS members, retirees, and beneficiaries. In the pursuit of this mission, the CRF is committed to the highest standards of ethics and prudent investment management. In their decision making, the Trustee and staff of the CRF may take prudent investment risks when compensated by higher expected returns to generate stronger long-term performance. Regardless of potential returns, the CRF endeavors to avoid the risk of a loss of asset value that could compromise the economic viability of the current plan structure or call into question the integrity and responsibility of the CRF or its staff. Therefore, the CRF diligently seeks to identify and avoid such risk.

Risk Governance

Effective governance sets a solid foundation for comprehensive risk management discipline. The CRF's risk governance is based on the "Three Lines of Defense" model, where each line has a specific role within defined responsibilities and works in close collaboration to identify, assess, and mitigate risks.

The First Line of Defense is the hands-on, active risk management that portfolio management teams practice during day-to-day management of a portfolio or trading position. Examples of first-line risk activities include analyzing risks in support of investment decisions, adjusting portfolio positions in anticipation of developing risks, or analyzing all aspects of risks in support of written investment proposals. First-line activities are generally restricted to one portfolio or to one asset class and are put into practice by personnel whose collective, routine function is to make investment decisions.

The Second Line of Defense includes functions such as Risk Management and Compliance which are a step removed from active asset management. The functions within the second line articulate standards and expectations for the effective management of risk and controls, including providing institutional leadership on CRF-wide risk issues, and advising on, establishing, and maintaining related policies. They are responsible for producing an independent risk assessment and risk reporting for senior management and regulatory authorities. Risk Management and Compliance is also responsible for articulating and designing the risk appetite framework across the CRF.

The Third Line of Defense is an audit function. This function monitors the effectiveness of risk management, compliance, and governance practices.

The CRF's operations, financial information and internal controls are subject to examination by the New York State Department of Financial Services. Additionally, KPMG LLP, an independent, certified public accountant, audits the System's financial statements annually. The Comptroller's Office of Internal Audit also regularly reviews various aspects of PICM's operations, investment procedures, and internal controls.

The CRF's governance includes a committee structure and a comprehensive set of policies which are reviewed and approved by the Comptroller and his respective committees in accordance with their responsibilities and level of authority.

The Fund's Trustee

The Comptroller, as the Fund's Trustee, is responsible for our strategic direction, supervision, and control, and for defining our overall tolerance for risk. In particular, the Comptroller approves the risk management framework and sets overall risk appetite among other responsibilities.

Investment Advisory Committee

The Investment Advisory Committee advises the Comptroller on general investment issues. The Investment Advisory Committee periodically reviews the strategic plan and monitors the CRF's risk profile. The Director of Risk is a participant at each Investment Advisory Committee meeting and provides a formal presentation to the Investment Advisory Committee on liquidity and market risk on an annual basis. Investment Advisory Committee members also receive quarterly risk updates in conjunction with the Investment Advisory Committee meeting.

Risk Committee

The Director of Risk has responsibilities for advising the Chief Investment Officer (CIO), the Executive Deputy Comptroller for Retirement Services (EDCRS) and the Comptroller on risk issues and making formal recommendations to the CIO, the EDCRS and the Comptroller on investment risk and investment-related risk issues. In addition, recognizing that risk is multi-dimensional, and that risk cannot be reduced to a single measure or be fully encompassed by any one professional discipline, the Director of Risk seeks advice from the Committee. The purposes of the Committee are (1) to provide support and advice to the Director of Risk on risk issues and (2) to provide multidisciplinary advice on risk and risk management programs at PICM.

Compliance

Rebalance Committee

The Rebalance Committee, chaired by the Director of Risk, makes sure the CRF's invested exposure is aligned with its approved asset allocation targets. The Rebalance Committee meets at least monthly to review and analyze the Fund's current asset allocation, cash flow projections including benefit payments and capital calls, and current capital markets conditions and outlook. In addition, the Rebalance Committee ensures that the CRF's short-term liquidity needs are adequate. The Rebalance Committee may also discuss the basket bill position, as necessary for the purposes of monitoring the overall allocation per statutory guidelines.

The primary purpose of the Compliance Program is to monitor compliance by PICM staff and external managers with applicable statutes, policies and procedures, conflicts of interest and other ethical standards governing the Fund. In an effort to meet this objective, the activities of the Compliance Office primarily include the reporting, development or monitoring of: the Fund's investment-related policies and procedures; statutory and policy mandates for trading by both internal staff and external equity managers; personal trading activities of employees pursuant to the Comptroller's "Insider Trading Policies;" Annual Compliance Questionnaire and investigative due diligence for external managers, broker-dealers and consultants; and regulatory filings required under Section 13 of the Securities and Exchange Act of 1934.

It is the policy of the Fund to conduct a complete broker review every five years and an annual update to adjust as deemed necessary by staff. The Fund conducted the most recent annual broker application process in 2021, requiring new applying brokers to submit a questionnaire which was evaluated by Compliance and other PICM staff. As a result of the Fund's annual broker approval process, the Fund now has 24 approved fixed income and 18 approved equity broker-dealer firms to execute trades for the internally managed portfolios. A total of six of these trading partners are MWBEs or owned by Disabled American Veterans firms. For the fiscal year, these MWBE and Disabled Veteran brokers accounted for 40 percent of the internally managed public equity commissions, while executing approximately 10 percent of all long-term and 15 percent of all short-term fixed income broker trades.

Corporate Governance

Corporate Governance Program and Environmental, Social and Governance (ESG) Strategy

The Fund's investment philosophy requires the consideration of ESG factors in the investment process because they can influence both risks and returns. Assessing company and external manager performance with respect to ESG factors, and encouraging both to embrace ESG best practices, can help protect the long-term value of the Fund's investments.

The Fund has publicly released its ESG Strategy which delineates its ESG beliefs, practices, and key factors, and outlines expectations for asset managers and public equity portfolio companies. The Fund's ESG Strategy can be accessed on the Comptroller's website at www.osc.state.ny.us/files/common-retirement-fund/2020/pdf/ESG-strategy-report-2020.pdf.

The Fund's Corporate Governance Program is tasked with executing the Fund's ESG Strategy, with a focus on the following key ESG factors:

- **Environment (E):** climate risks and opportunities, natural resource and raw material usage, and pollution and waste management.
- **Social (S):** human capital management, labor relations, human rights, health and safety, supply chain labor standards, privacy and data security, product safety and quality, and community impact.
- **Governance (G):** risk oversight, board and governance practices, corporate strategy and capital allocation, executive compensation, inclusion and diversity, and lobbying and political spending.

Implementation of the Fund's ESG Strategy includes promoting sound ESG practices through active ownership — using the CRF's voice and votes to address investment risks. The Fund's active ownership work takes many forms, including voting on nearly 30,000 proxy ballot items annually, engaging directly with portfolio companies, conducting external manager ESG due diligence and risk assessments, and advocating for public policies that will help protect the long-term value of our investments.

Proxy voting at public equity portfolio companies' meetings is an effective means of engaging and communicating with boards of directors and management about the Fund's ESG priorities and can be a powerful tool for enhancing long-term value. The Fund's independent proxy voting is an important fiduciary obligation that is executed pursuant to its Proxy Voting Guidelines, which are updated biennially. Not only do these guidelines provide direction for the Fund's voting decisions, but they also guide other corporate engagements and policy initiatives, articulating to the capital markets the Fund's view of what constitutes good corporate governance and ESG best practices. Guidelines can be accessed on the Comptroller's website at www.osc.state.ny.us/files/common-retirement-fund/corporate-governance/pdf/proxy-voting-guidelines-2022.pdf.

Stewardship, in its many forms, can serve to protect and enhance the value of the Fund's investments. The Fund's stewardship work utilizes various engagement strategies, including shareholder proposals, written correspondence, investor statements, press strategies and meetings with companies' directors and executives. The Fund's engagements result in companies providing improved disclosures and taking important actions to address ESG risks and opportunities. Further background on the Fund's stewardship work can be accessed on the Comptroller's website at www.osc.state.ny.us/common-retirement-fund/corporate-governance.

ESG Integration incorporates ESG factors into the Fund's analysis of investment risk and manager performance. Risk assessments that evaluate material ESG factors are systematically applied across all asset classes. Due diligence of external managers includes an assessment of their ESG policies, which are customized for each asset class. In addition, annual surveys of and engagements with the Fund's managers can provide updated information about their ESG policies and practices.

Public Policy and Advocacy supports policies, laws and regulations that promote the overall stability, transparency and functionality of financial markets and the economy generally, which can improve returns and reduce risks for the Fund. The Fund's public policy activities take many forms, including meetings and correspondence with elected representatives, regulators and other public officials, testimony at hearings and forums, comments on regulatory and legislative proposals, and participation in State, national, and international forums, and initiatives.

Climate-Related Financial Disclosures

The purpose of this section is to report on the Fund's efforts to address climate risk in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), an organization established by the Financial Stability Board of the G20 (a forum convened by 19 leading industrial nations and the European Union) to guide the financial community in its understanding and reporting of climate risks. The Fund supports the TCFD recommendations.

Governance

As Trustee, the Comptroller is responsible for the prudent investment of the Fund. The Comptroller believes that climate change presents significant risks to the Fund's investments, as well as unique investment opportunities. With leadership and direction from the Comptroller, the Fund has established a team to implement its 2019 Climate Action Plan. This team includes the Chief Investment Officer, investment professionals representing all asset classes, the Director of the Sustainable Investment and Climate Solutions Program, the Bureau of Corporate Governance, legal, risk, and operations staff. The team is tasked with developing action plans and executing strategies to address climate risks and identify investment opportunities for the Fund. In addition, the Fund has contracted consultants and data providers to provide unique research and analysis services.

Strategy

The Fund recognizes that there are different short-, medium-, and long-term risks posed by climate change. Because the Fund expects to exist in perpetuity, it must consider all these time horizons. The transition to a low-carbon economy is already underway and accelerating globally; it is likely to affect virtually every investment in the Fund's broadly diversified portfolio.

The Fund has identified significant short- and medium-term transition risks in developed markets due to implementation of the Paris Agreement, technological advances and changing market demand. However, changes resulting from efforts to mitigate climate change will also create investment opportunities in a lower carbon economy. Across all asset classes, the Fund actively seeks to expand its investments in climate solutions that meet the CRF's requirements for risk, return and scale.

The Fund also believes physical risks are significant in all time frames. Extreme weather events are already affecting businesses around the world and pose a growing threat to the Fund's investments. Measuring these risks is challenging due to difficulties in accurately projecting weather events at the local level, but the Fund expects that better climate, weather, and financial modeling will allow for improved assessments in the near term. The Fund expects to see greater physical risks in the long run if the world fails to limit temperature rise.

Risk Management

The 2019 Climate Action Plan provides a framework for the Fund to formally integrate climate considerations into risk assessments, investment decision making, engagements, and public policy advocacy. The Fund's staff reviews studies to stay informed about the science associated with climate change, and actively seeks to identify advanced climate risk assessments to inform investment strategies.

Pursuant to the Climate Action Plan, the Fund committed to establishing a series of assessment frameworks and minimum standards to review the transition-readiness of companies in high impact sectors. Beginning in 2019, the Fund commenced assessments of thermal coal mining companies, and then reviewed oil sands companies in 2020, followed by shale oil and gas companies in 2021. A total of 83 such energy companies have been engaged and assessed, with investment restrictions resulting for a total of 52 companies that could not demonstrate readiness for the transition to the low carbon economy. In 2022, the Fund completed its annual review of thermal coal and oil sands companies to ensure that all the companies that meet our threshold criteria are reviewed for transition readiness. This review led to the Fund's decision to continue investment restrictions for 28 companies and newly restrict or divest from six additional coal companies.

The Fund reviews all such divestment policies biennially and reassesses individual companies annually, engaging with each one to garner any new or additional information about their transition strategies. Moving forward, in addition to conducting annual reviews of thermal coal, oil sands, and shale oil and gas companies, the Fund is currently evaluating the transition readiness of companies in the integrated oil and gas sector.

The Fund continues to utilize the ESG scorecards to evaluate prospective investments with external managers, incorporating climate-specific criteria into this key risk assessment tool. The criteria used to evaluate each manager's climate capabilities include governance, risk assessments, engagements, proxy voting, and climate reporting in line with TCFD recommendations. In addition, the Fund has been engaging with existing managers regarding these criteria to better understand their approach to addressing climate risks, investing in climate opportunities, and their net-zero alignments and strategies. The Fund also continues to utilize the Global Real Estate Sustainability Benchmark (GRESB) to measure the sustainability performance of the Fund's real estate and infrastructure assets in areas such as energy, greenhouse gas and water.

The SICS Program is a key component of the Fund's plan to position its portfolio to address climate risks and opportunities across asset classes. By the end of fiscal year 2022-23, the Fund had committed more than \$18 billion toward its total goal of \$20 billion to specific investment opportunities in the SICS Program across all asset classes, including actively and passively managed public equity strategies, green bonds, clean and green infrastructure funds, and private equity, as well as green building real estate funds.

The Fund has undertaken significant corporate engagement as described in its annual Corporate Governance Stewardship Report and its Climate Action Plan Progress Report. This includes filing over 160 climate-change-related shareholder resolutions since 2008 and reaching more than 85 agreements with portfolio companies on climate issues such as setting greenhouse gas (GHG) emissions reduction targets and renewable energy and energy efficiency goals. The Fund continues to engage with high-risk companies directly and in collaboration with other investors through the global Climate Action 100+ initiative. The Fund's proxy voting guidelines also incorporate criteria to evaluate each company's climate performance, including climate transition targets, strategies, capital allocation alignment, and TCFD disclosures, which inform the Fund's director votes. In 2022, the Fund withheld support from or voted against over 460 individual directors at over 50 portfolio companies that lacked robust climate risk management.

Finally, the Fund continues to provide public policy leadership at the international, federal, and state levels on climate change issues that may impact its returns on a variety of issues, including implementation of the Paris Agreement, tax credits for solar and wind power, low-carbon fuel standards, carbon pricing, the Regional Greenhouse Gas Initiative, and Securities and Exchange Commission (SEC) requirements for corporate disclosure of material climate risks. Moving forward, as the Biden administration has established climate change as one of its top priorities, the Fund will continue to work on key legislative and regulatory issues including corporate climate disclosures, emissions standards, meaningful carbon pricing, clean energy infrastructure funding, and tax incentives that drive climate solution investments. Specifically, in 2022, the Fund submitted comments to the U.S. Securities and Exchange Commission in support of the proposed rule entitled *The Enhancement and Standardization of Climate-Related Disclosures for Investors*. Also, the Fund filed comments with the U.S. Environmental Protection Agency on its proposed rulemaking, *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*. In addition, the Fund supported the passage and enactment of the Inflation Reduction Act (IRA), which makes the largest climate investment in American history, including \$369 billion in funding and tax incentives to drive the energy transition, grow domestic clean energy manufacturing, address environmental justice, and develop climate solutions.

Metrics and Targets

In December 2020, the Fund announced its goal to reduce greenhouse gas emissions from the Fund's entire portfolio to net-zero by 2040. The Fund is pursuing its ambitious goal through a combination of sustainable investments, engagements with portfolio companies and managers, public policy advocacy and, in limited instances where it is consistent with fiduciary duty, divestment. To measure the Fund's progress towards net zero, the Fund set an interim goal of attaining 50 percent alignment with a 1.5-degree scenario by 2030. Currently, 13 percent of the Fund's public equity and corporate fixed income holdings are aligned with a 1.5-degree future. In addition, the Fund adopted other interim engagement and investment goals for 2030 that include actively engaging with 50 percent of the Fund's publicly traded assets in high-impact sectors on achieving net-zero emissions by 2040 and allocating at least 75 percent of the \$20 billion committed to the SICS Program to investments in climate solutions.

In addition, the Fund currently uses the following metrics to assess climate risks and opportunities:

- Carbon emissions metrics.
 - Annual average weighted emissions intensity assessment of public equity holdings (including Scope 1 and 2 greenhouse gas emissions). In 2022, the global equity portfolio emissions intensity was 21 percent lower than its benchmark (a composite comprising 72 percent Russell 3000 and 28 percent MSCI ACWI ex-U.S.). Emissions intensity is calculated as a weighted average of companies' carbon footprints (scope 1 & 2) divided by the total portfolio market value. Global equity, however, saw a 25 percent increase in year-over-year emissions intensity from 2021, primarily due to equity markets declining in 2022. On an absolute basis, there was a small increase in the portfolio emissions from 2021 due to the post-pandemic rebound in the economy.
 - The corporate fixed income portfolio's emissions intensity was 5.4 percent higher than its benchmark (U.S. Bloomberg Barclays Aggregate), mainly due to higher portfolio allocation to the utilities sector. The fixed income portfolio emissions intensity increased by 1.8 percent year-over-year, also due to higher portfolio allocation to the utilities sector. Much of the increased allocation to utilities is in relatively short-term duration bonds and therefore will not necessarily increase the Fund's longer-term exposure to the sector.
 - The Fund believes that carbon emissions metrics can be useful in assessing transition risks, especially regulatory risks, and can inform the Fund's prioritized engagements. But these metrics, which are by their very nature backward-looking, are not an effective measure of the future direction of companies. The Fund also recognizes that the significant time lag between when emissions occur and when emissions data is verified and reported, makes it even more difficult to derive actionable information from the measurement of portfolio emissions. There are also challenges in assessing scope 3 emissions due to limited availability of accurate data.
- Portfolio exposure to assets that are significantly affected by climate change and the low-carbon transition as recommended by the TCFD.
- Capital allocation to the SICS Program. The Fund has committed \$20 billion in total to the SICS Program and has deployed more than \$18 billion toward that goal to date.
- Transition assessment and minimum standards to evaluate companies in the high impact sectors recommended by the TCFD, with assessments of thermal coal mining, oil sands production and shale oil and gas companies completed to date.

Investment Results

Based on Fair Market Values as of March 31, 2023.

	Annualized Rate of Return ⁽¹⁾			
	1 Year	3 Years	5 Years	10 Years
Total Fund	(4.14)%	11.92%	7.50%	8.02%
Public Equity	(7.27)	16.50	8.26	9.70
MSCI All Country World Index	(7.44)	15.36	6.93	8.06
Private Equity ⁽²⁾	(2.87)	18.28	15.21	13.78
Cambridge U.S. Private Equity Index (1Q Lag) ⁽³⁾	(2.05)	19.05	16.25	15.10
Real Estate ⁽²⁾	5.66	11.22	8.56	10.45
Real Estate Benchmark ⁽⁴⁾	7.26	9.68	8.17	9.18
Credit ⁽²⁾	(0.62)	8.72	5.06	–
Credit Suisse Leveraged Loan Index + 2.5%	4.67	11.07	6.13	–
Opportunistic/Absolute Return Strategy Funds (O/ARS) ⁽²⁾	1.54	10.58	5.85	5.40
CRF Actuarial Return + 2%	8.80	8.80	8.80	9.00
Real Assets ⁽²⁾	14.23	12.50	10.52	–
U.S. CPI + 5%	9.80	10.55	9.02	–
Fixed Income ⁽²⁾	(4.33)	(1.59)	1.30	1.51
Bloomberg Barclays Aggregate Bond Index	(4.78)	(2.77)	0.91	1.36
Short-Term Investments	2.84	1.22	1.73	1.28

(1) Investment return calculations were prepared by the Custodian using a time-weighted rate of return. These figures are for investment management purposes and may not agree with audited statements. Due to reporting timing differences, actual results may differ from reported results.

(2) Private Equity, Real Estate and Real Assets are reported on a three-month lag (adjusted by cash flows); Credit and O/ARS are reported on a one-month lag (adjusted by cash flows). Alternative asset classes and non-core fixed income are generally reported net of fees.

(3) The vendor's official results are presented as annualized Internal Rate of Returns (IRRs). However, the Custodian reports the vendor's index as quarterly delinked returns on a three-month lag. This time-weighted and lagged methodology is most comparable to the Custodian returns for the Private Equity composite.

(4) Effective April 1, 2019, the Real Estate benchmark is an asset-weighted blend of quarter lagged benchmarks. Core Real Estate is proxied to the NCREIF NFI ODCE (Net) Index. Non-Core Real Estate is proxied to the same index with a 100 basis point annual premium. The Real Estate benchmark returns prior to April 1, 2019 follow the NCREIF Property (Gross) Index on a one-quarter lag.

Investment Summary

The following table summarizes the fair values of Fund investments by asset type for March 31, 2023 and 2022. (Dollars In Thousands)

Asset Type	Fair Value March 31, 2023	Percentage of Total Fair Value	Fair Value March 31, 2022	Percentage of Total Fair Value
Domestic Equity	\$ 75,054,447	30.2%	\$ 94,271,236	34.7%
Global Fixed Income	48,479,229	19.5	52,497,456	19.3
International Equity	33,944,147	13.7	39,188,932	14.4
Private Equity	36,976,567	14.9	37,026,072	13.6
Real Estate	25,054,357	10.1	22,873,140	8.4
Short-Term Investments	4,018,739	1.6	3,852,320	1.4
Real Assets	7,811,998	3.1	6,051,188	2.2
Opportunistic/ARS	6,463,357	2.6	5,729,981	2.1
Mortgage Loans	1,310,637	0.5	1,421,139	0.5
Credit	9,411,439	3.8	9,209,798	3.4
Total Investments	\$ 248,524,917	100.0%	\$ 272,121,262	100.0%

Note: This table reflects percentages derived from financial statement figures and may differ slightly from the asset allocation figures because certain investments have been reclassified.

Asset Allocation — March 31, 2023

The Fund diversifies its assets among various classes including domestic and international equity, fixed income, private equity, real estate, opportunistic and absolute return strategy funds, credit and real assets.

Asset liability studies, conducted periodically with help from an investment consultant, identify the optimal mix of assets to meet the growth requirements of pension obligations while controlling risk as measured by return volatility. In the fiscal year ended March 31, 2020, the Fund conducted an asset liability analysis and adopted a Long-Term Policy Allocation which was implemented on April 1, 2020.

The Fund has formal rebalancing guidelines which ensure a disciplined process for meeting asset allocation goals, as well as allocation ranges for individual asset classes which minimize unnecessary turnover.

Asset Type	Allocation as of March 31, 2023	Long-Term Policy Allocation
Equity		
Domestic Equity	31.31%	32.0%
International Equity	12.83	15.0
Alternative Assets		
Private Equity	14.61%	10.0%
Real Estate	10.29	9.0
Opportunistic/Absolute Return Strategy	2.59	3.0
Credit	3.74	4.0
Real Assets	3.11	3.0
Fixed Income	20.47%	23.0%
Cash	1.06%	1.0%

Note: A detailed listing of the New York State and Local Retirement System's assets as of March 31, 2023, is on our website at www.osc.state.ny.us.

Public Equity Performance

For the Fiscal Year Ending March 31, 2023.

	Total Assets (Dollars in Millions)	Annualized Rate of Return				Portfolio Since Inception	Benchmark Since Inception*	Inception Date
		1 Year	3 Years	5 Years	10 Years			
Total Public Equity	\$ 108,122.2	(7.27)%	16.50%	8.26%	9.70%			
MSCI All Country World Index		(7.44)%	15.36%	6.93%	8.06%			
Total Domestic Equity Composite	\$ 70,302.1	(8.29)%	18.13%	10.36%	11.53%	10.42%	10.41%	1/1/91
Russell 3000 Index		(8.58)%	18.48%	10.45%	11.73%			
Total Passive Domestic Equity	\$ 56,918.0	(8.38)%	18.46%	10.85%	11.92%	10.64%	10.32%	11/1/86
CRF Large Cap Index Fund	40,923.5	(8.23)	18.30	11.91	12.69	11.72	11.70	8/1/78
CRF Midcap Index Fund	8,711.9	(8.77)	19.08	8.02	9.71	11.31	11.32	11/1/91
CRF Small Cap Index Fund	1,206.5	(11.15)	17.75	4.89	8.48	7.88	7.74	10/1/05
CRF Low Emission Index Fund	4,351.2	(8.20)	18.25	11.00	–	11.92	11.98	1/1/16
CRF TPI Climate Transition Index	1,724.9	(8.35)	–	–	–	(9.17)	(9.12)	1/18/22
Russell Top 200 (S&P 500 To 1/1/16)		(8.27)%	18.36%	11.92%	12.70%			
Russell Midcap (S&P 400 Mid Cap To 1/1/16)		(8.77)%	19.20%	8.06%	9.69%			
Russell 2000 Index		(11.61)%	17.51%	4.71%	8.04%			
Russell 1000 Index		(8.39)%	18.56%	10.87%	12.01%			
Total Multi Factor Composite	\$ 6,264.9	(5.47)%	18.38%	10.96%	–	12.10%	11.38%	1/1/16
CRF High Efficiency Defensive Index Fund	2,421.1	(4.06)	17.42	12.03	–	12.84	11.96	1/1/16
AQR Capital Management	3,843.9	(6.35)	19.62	–	–	9.42	10.61	6/1/18
Russell 1000 Index		(8.39)%	18.56%	10.87%	12.01%	–	–	
Total Active SMID Cap Composite	\$ 968.4	(13.61)%	20.63%	9.05%	11.31%	11.27%	8.95%	3/1/08
Fiera Capital	748.4	(11.70)	22.43	10.41	11.90	11.65	9.56	3/1/08
Lisanti Capital	220.0	(19.57)	14.28	8.99	–	10.28	8.23	6/30/14
Russell 2500 Index		(10.37)%	19.43%	6.65%	9.07%	–	–	
Total Active Small Cap Composite	\$ 5,087.6	(9.78)%	16.81%	7.50%	10.27%	9.84%	9.27%	8/1/91
Artisan Partners	570.6	(5.79)	11.11	9.75	–	11.15	7.55	8/26/13
Brown Capital Management	976.5	(19.58)	5.67	4.54	11.32	13.52	8.50	9/1/94
Channing Capital Management	563.9	(12.20)	23.04	5.59	–	6.37	5.78	4/1/15
EARNEST Partners	1,241.3	(2.16)	21.96	7.74	10.69	10.13	7.82	6/1/01
Leading Edge Investment Advisors	587.8	(8.10)	22.28	8.30	–	8.27	6.07	4/1/15
Palisade Capital Management	612.9	(3.91)	20.64	–	–	6.60	3.42	6/1/18
PENN Capital Management	534.7	(15.36)	30.69	8.63	–	7.24	6.92	9/27/13
Russell 2000 Index		(11.61)%	17.51%	4.71%	8.04%	–	–	
Total Long-Only Alpha Composite	\$ 1,022.9	4.28%	17.38%	8.91%	9.65%	11.26%	13.27%	9/1/11
Triam Partners Strategic Investment Fund-N, L.P.	1,022.9	1.89	14.29	8.92	–	7.76	7.92	2/1/15
S&P 500 Index		(7.73)%	18.60%	11.19%	12.24%	–	–	
Total Domestic Transition Accounts	\$ 40.4							

* Benchmarks for all accounts will vary according to mandate.

Public Equity Performance

continued

For the Fiscal Year Ending March 31, 2023.

	Total Assets (Dollars in Millions)	Annualized Rate of Return				Portfolio Since Inception	Benchmark Since Inception*	Inception Date
		1 Year	3 Years	5 Years	10 Years			
Total Non U.S. Equity Composite	\$ 26,428.0	(4.85)%	12.28%	3.14%	4.94%	5.84%	5.03%	10/1/89
MSCI ACWI Ex U.S. IMI (MSCI ACWI Ex U.S. to 1/1/17)		(5.84)%	12.20%	2.35%	4.35%			
Total Non U.S. Passive Composite	\$ 8,330.9	(5.07)%	12.65%	2.86%	4.42%	5.54%	5.27%	11/1/04
BlackRock ACWI Ex U.S. IMI	7,527.1	(5.24)	12.58	2.73	4.47	5.56	5.27	11/1/04
BlackRock MSCI Climate Change Index	803.8	–	–	–	–	0.60	0.61	1/31/23
Total Active ACWI Ex U.S. Composite	\$ 7,388.4	(7.12)%	12.05%	4.42%	6.41%	6.63%	5.27%	11/1/04
Acadian Asset Management	1,989.2	(8.71)	13.26	2.81	6.24	6.67	5.27	11/1/04
Ariel Investments	343.5	(3.27)	8.65	–	–	4.39	5.26	11/1/18
Baillie Gifford	1,874.7	(7.29)	9.45	3.54	6.07	5.82	4.10	2/1/99
GQG Partners	753.9	(3.11)	14.94	9.67	–	9.67	2.47	4/1/18
LSV Asset Management	689.5	(2.32)	–	–	–	14.80	11.91	10/1/20
Wellington Management	1,737.5	(8.52)	9.97	4.00	–	8.96	7.49	3/1/16
MSCI ACWI Ex U.S.		(5.07)%	11.80%	2.47%	4.17%			
Total EAFE Composite	\$ 6,406.3	(1.82)%	13.17%	4.49%	5.87%	5.98%	4.52%	10/1/89
Capital Group	2,047.3	(0.33)	13.17	6.68	7.19	7.43	4.65	9/1/89
Mondrian Investment Partners	1,943.1	(0.03)	12.64	2.74	4.91	6.14	4.79	1/1/98
Xponance	1,096.5	(1.74)	–	–	–	1.33	1.99	2/1/21
Total EAFE Small Cap Composite	\$ 1,317.9	(6.48)%	13.80%	–	–	2.84%	1.25%	7/1/18
Acadian Asset Management	367.8	(8.40)	18.52	–	–	5.11	1.25	7/1/18
Artisan International SMID	277.5	(6.79)	–	–	–	(6.79)	(8.93)	4/1/22
Barings International	295.9	(7.88)	7.39	–	–	(0.54)	1.13	8/1/18
Global Alpha Capital Management	376.7	(3.10)	15.37	4.16	–	9.27	4.86	10/1/13
MSCI EAFE Index		(1.38)%	12.99%	3.52%	5.00%			
Total Emerging Markets Composite	\$ 2,808.5	(10.70)%	6.89%	(1.34)%	1.97%	7.22%	6.42%	1/1/92
Martin Currie	540.8	(11.37)	7.61	–	–	2.73	2.17	10/8/19
Morgan Stanley	579.8	(11.12)	8.46	(1.33)	2.05	6.26	5.14	11/1/93
PGIM Quantitative Solutions	849.4	(11.86)	9.73	(0.95)	2.33	2.86	2.34	2/1/12
RockCreek Group	574.1	(11.66)	1.65	(1.87)	–	1.45	2.16	10/18/13
Wellington Management	251.5	(3.42)	–	–	–	(7.62)	(9.51)	1/1/21
MSCI Emerging Markets Index		(10.70)%	7.83%	(0.91)%	2.00%			
Cevian Capital II, LP	\$ 1,493.9	11.65%	25.82%	8.76%	8.10%	9.87%	5.86%	9/1/11
MSCI Europe Index		1.38%	15.00%	4.35%	5.36%			
Total Global Equity Composite	\$ 11,386.3	(5.72)%	16.91%	7.71%	9.64%	8.44%	7.35%	9/1/94
CRF FTSE Environmental Technology 50	251.0	(11.95)	26.06	13.69	11.89	7.67	7.83	11/1/09
ARGA Investment Management	302.6	4.80	25.82	8.75	–	9.45	8.05	5/1/17
Bell Asset Management	117.2	(4.86)	16.40	10.30	–	10.69	8.78	5/1/17
Brandes Investment Partners	1,805.0	1.60	20.97	6.59	7.89	6.89	5.20	11/1/99
Generation Investment Management	1,509.1	(12.41)	16.42	9.69	13.52	15.31	11.14	4/8/09
Goldman Sachs Asset Management	3,328.9	(3.12)	16.28	8.52	–	9.11	8.04	1/1/15
Pictet Asset Management	575.4	–	–	–	–	15.87	9.75	7/1/22
QTRON Investments	116.1	(5.15)	18.64	–	–	10.41	8.63	5/22/19
Strategic Global Advisors	224.7	(3.85)	16.60	7.16	–	8.46	8.78	5/1/17
T. Rowe Price	1,214.8	(12.06)	16.15	10.69	13.61	11.92	8.00	3/1/11
Templeton Investments	1,941.4	(3.83)	15.25	3.78	6.38	6.71	8.00	3/1/11
MSCI All Country World Index		(7.44)%	15.36%	6.93%	8.06%			
Global Transition Account	\$ 5.8							

* Benchmarks for all accounts will vary according to mandate. Composite market values include transition accounts and accrued management fees.

Public Equity Fund of Fund Performance

For the Fiscal Year Ending March 31, 2023.

	Total Assets (Dollars in Millions)	Annualized Rate of Return				Portfolio Since Inception	Benchmark Since Inception*	Inception Date
		1 Year	3 Years	5 Years	10 Years			
Total Xponance EAFE Composite	\$ 1,096.5	(1.74)%	–	–	–	1.33%	1.99%	2/1/21
ARGA Investment Management	174.0	6.51	23.45%	–	–	13.83	5.76	8/5/19
Foresight Global	174.6	3.13	–	–	–	3.88	1.99	2/1/21
Frontier Global Partners	153.4	(2.36)	14.18	–	–	7.89	5.93	8/5/19
Martin Investment Management	171.1	(4.70)	–	–	–	3.32	1.99	2/1/21
Osmosis Investment Management	194.8	(2.76)	15.36	3.67%	–	6.31	5.00	11/1/15
Redwood Investment Management	146.1	(7.82)	–	–	–	(7.82)	(1.38)	4/1/22
Trinity Alps Capital Management	84.9	(5.76)	–	–	–	(10.14)	1.99	2/1/21
MSCI EAFE Index		(1.38)%	12.99%	3.52%	–			
Total Leading Edge Investment Advisors Composite	\$ 587.8	(8.10)%	22.28%	8.30%	–	8.27%	6.07%	4/1/15
Altravue Capital	77.4	17.63	–	–	–	24.54	14.89	7/29/20
Bridge City Capital	68.8	(7.62)	17.68	–	–	9.06	4.91	2/28/20
Denali Advisors	78.9	(6.83)	25.43	–	–	11.09	7.40	8/28/19
Granahan Investment Management	77.3	(14.48)	15.35	11.72	–	13.82	5.14	9/29/17
Granite Investment Partners	88.1	(9.96)	19.92	8.83	–	9.00	6.07	4/1/15
Nicholas Investment Partners	61.2	(19.82)	18.78	9.61	–	8.71	5.93	4/1/15
Palisades Investment Partners	64.7	(7.48)	25.60	11.87	–	10.81	6.07	4/1/15
Phocas Financial Corporation	74.2	(11.04)	25.34	5.69	–	6.47	5.78	4/1/15
Russell 2000 Index		(11.61)%	17.51%	4.71%	–			
Total GSAM Composite	\$ 3,328.9	(3.12)%	16.28%	8.52%	–	9.11%	8.04%	1/1/15
GSAM AIMS Global Account Cayuga	534.7	(11.35)	12.98	8.96	–	11.14	7.27	12/23/14
GSAM AIMS Global Account Iroquois	281.7	(10.12)	11.84	6.12	–	8.75	7.16	11/20/14
GSAM AIMS Global Account Mohawk	365.2	5.09	24.04	7.15	–	6.04	7.23	11/26/14
GSAM AIMS Global Account Mohican	479.9	0.82	14.44	7.82	–	9.11	8.82	7/22/16
GSAM AIMS Global Account Onondaga	629.3	(1.60)	16.23	10.89	–	11.06	8.38	12/17/14
GSAM AIMS Global Account Shinnecock	558.2	(0.95)	23.04	–	–	14.17	7.85	10/21/19
GSAM AIMS Global Account Tuscarora	481.4	(3.69)	19.75	5.83	–	7.22	7.91	12/22/14
MSCI World Index		(7.02)%	16.40%	8.01%	–			

* Benchmarks for all accounts will vary according to mandate. Composite market values include transition accounts and accrued management fees.

Domestic Equity Portfolio — Ten Largest Holdings

For the Fiscal Year Ending March 31, 2023.

Company	Shares	Fair Value	Percentage of Domestic Equity
Apple, Inc.	26,058,499	\$ 4,297,046,485	5.7%
Microsoft Corp.	13,702,271	3,950,364,729	5.3
Amazon.com, Inc.	16,283,016	1,681,872,723	2.2
Alphabet, Inc. — Class A	11,273,482	1,169,398,288	1.6
NVIDIA Corp.	4,077,547	1,132,620,230	1.5
Alphabet, Inc. — Class C	9,849,860	1,024,385,440	1.4
Berkshire Hathaway, Inc. — Class B	2,967,718	916,342,287	1.2
Tesla, Inc.	4,298,659	891,799,796	1.2
UnitedHealth Group, Inc.	1,870,668	884,058,990	1.2
Meta Platforms, Inc.	3,992,028	846,070,414	1.1

Note: A detailed listing of the New York State and Local Retirement System's assets as of March 31, 2023 is on our website at www.osc.state.ny.us.

Fixed Income Portfolio and Comparison

As of March 31, 2023.

Sector	Fair Value (Dollars in Millions)	Fair Value Percentage	Effective Duration	Current Yield
Treasury	\$ 18,241.4	38.9%	8.20	1.95%
Treasury Inflation-Protected Securities (TIPS)	259.5	0.6	8.44	0.76
Federal Agency	276.2	0.6	3.56	2.56
Corporate	14,115.5	30.1	5.50	3.74
Asset-Backed	2,231.5	4.8	2.76	3.56
Commercial Mortgage-Backed	1,162.2	2.5	2.28	4.03
Mortgage-Backed	5,495.5	11.7	6.54	3.50
Berkadia Mortgages	990.6	2.1	4.23	3.55
CPC Mortgages	320.0	0.7	8.68	4.57
Collateralized Loan Obligations	3,196.7	6.8	0.06	6.25
Municipal Bonds	637.3	1.4	10.02	3.62
Total Core Portfolio	\$ 46,926.6	100.0%	6.17	3.16%
Externally Managed Funds				
Advent Capital	\$ 436.8		3.31	1.20%
Calvert Research and Management	\$ 250.3		6.19	3.73%
DoubleLine Capital	\$ 220.6		14.61	3.73%
Morgan Stanley Investment Management	\$ 245.0		8.20	2.79%
New Century Advisors	\$ 534.8		5.39	1.37%
Ramirez Asset Management	\$ 335.4		7.89	5.18%
Schroder Investment Management	\$ 292.7		1.98	4.53%
Teachers Advisors (Nuveen)	\$ 235.4		6.23	4.09%
Wellington Management Company	\$ 312.1		6.38	4.57%

Fixed Income Performance

As of March 31, 2023.

	Annualized Rate of Return		
	1 Year	3 Years	5 Years
Common Retirement Fund — Internal Core	(4.26)%	(1.67)%	1.28%
Treasuries	(6.73)	(6.19)	0.28
Treasury Inflation-Protected Securities (TIPS)	(17.07)	(3.23)	N/A
Agencies	(2.90)	(2.82)	0.12
Corporate Bonds	(3.37)	0.72	2.31
Municipal Bonds	(10.56)	(4.07)	0.06
Asset-Backed	0.74	2.84	1.20
Commercial Mortgage-Backed	(3.69)	0.37	1.59
Mortgage-Backed	(3.19)	(1.67)	0.97
Collateralized Loan Obligations	2.12	5.35	2.55
Bloomberg Barclays U.S. Aggregate Bond Index	(4.78)%	(2.77)%	0.91%

Fixed Income Portfolio — Ten Largest Holdings

As of March 31, 2023.

Issue	Fair Value (Dollars in Millions)	Percentage of Fixed Income
Treasury Bonds Due 2/28/2026	\$ 537.1	1.13%
Treasury Bonds Due 2/15/2039	469.2	0.98
Treasury Bonds Due 11/15/2044	466.7	0.98
Treasury Bonds Due 5/15/2030	433.9	0.91
Treasury Bonds Due 2/15/2045	410.9	0.86
Treasury Bonds Due 10/31/2025	389.3	0.82
Treasury Bonds Due 8/15/2030	387.1	0.81
Treasury Bonds Due 11/30/2028	379.1	0.80
Treasury Bonds Due 5/15/2050	377.9	0.79
Treasury Bonds Due 11/15/2031	375.6	0.79
Total	\$ 4,226.8	8.87%

Note: A detailed listing of the New York State and Local Retirement System's assets as of March 31, 2023 is on our website at www.osc.state.ny.us.

Real Estate Portfolio

As of March 31, 2023.

	Equity Amount	Percentage	Mortgage Amount	Percentage
Property Diversification				
Industrial/R&D	\$ 8,658,943,239	35.1%	\$ –	0.0%
Land for Development	47,388,432	0.2	–	0.0
Lodging	606,609,982	2.5	–	0.0
Office	4,015,065,042	16.3	611,580,649	46.7
Other*	3,738,599,352	15.2	–	0.0
Residential	4,522,174,815	18.3	320,044,735	24.4
Retail	3,079,985,937	12.5	379,011,072	28.9
Total	\$ 24,668,766,799	100.0%	\$ 1,310,636,456	100.0%
Regional Diversification				
Northeast	\$ 3,414,218,951	13.8%	\$ 1,310,636,456	100.0%
Mideast	1,792,736,692	7.3	–	0.0
Southeast	2,371,472,043	9.6	–	0.0
Southwest	2,497,942,055	10.1	–	0.0
Midwest	1,222,531,352	5.0	–	0.0
Mountain	1,021,530,279	4.1	–	0.0
Pacific	7,916,727,280	32.1	–	0.0
Non-U.S.	4,431,608,147	18.0	–	0.0
Total	\$ 24,668,766,799	100.0%	\$ 1,310,636,456	100.0%

Note: Equity and mortgage amounts are based on the fair value of the Fund's full real estate portfolio.

* Other includes alternative property types (i.e. self storage, medical office, data centers, student housing).

These figures may not agree with the audited statements due to timing and classification differences made for investment management purposes.

Opportunistic Real Estate

Number of Active Partnerships	Capital Committed (Dollars in Millions)	Capital Contributed (Dollars in Millions)	Current Market Value (Dollars in Millions)	Cumulative Distributions (Dollars in Millions)	Total Value / Exposure (Dollars in Millions)
108	\$ 27,886.0	\$ 19,005.5	\$ 12,163.2	\$ 13,089.4	\$ 25,252.6

These figures may not agree with the audited statements due to timing and classification differences made for investment management purposes.

Alternative Investments Summary

As of March 31, 2023.

	Number of Partnerships	Capital Committed	Capital Contributed	Fair Value	Cumulative Distributions	Total Value
Private Equity Funds						
Corporate Finance/Buyout	166	\$ 34,893,078,874	\$ 31,950,132,799	\$ 20,643,413,876	\$ 30,911,093,976	\$ 51,554,507,852
Co-Investment	28	6,462,653,922	4,992,710,848	4,288,561,312	3,161,985,150	7,450,546,462
Distressed/Turnaround	13	2,006,578,418	1,901,056,115	990,538,687	1,758,090,733	2,748,629,420
Fund of Funds	40	8,029,367,835	8,246,763,123	2,223,409,390	9,698,275,422	11,921,684,812
Growth Equity	46	7,421,986,340	6,489,148,826	4,742,991,182	5,531,125,574	10,274,116,756
Special Situations	29	5,267,271,119	5,285,750,989	2,621,210,271	4,311,507,677	6,932,717,948
Venture Capital	34	1,352,409,091	1,296,784,770	1,437,467,403	1,037,019,320	2,474,486,723
Other	N/A	N/A	28,974,702	28,974,702	N/A	28,974,702
Total Private Equity*	356	\$ 65,433,345,599	\$ 60,191,322,172	\$ 36,976,566,823	\$ 56,409,097,852	\$ 93,385,664,675
Opportunistic/Absolute Return Strategy Funds (ARS)						
Opportunistic Funds	35	\$ 7,085,031,257	\$ 3,634,505,214	\$ 2,743,185,363	\$ 1,670,151,445	\$ 4,413,336,808
ARS Funds						
Equity Long-Short	2	N/A	N/A	493,536,850	N/A	493,536,850
Event and Merger	1	N/A	N/A	65,133,029	N/A	65,133,029
Event Driven	11	N/A	N/A	1,065,579,389	N/A	1,065,579,389
Fund of Funds	1	N/A	N/A	59,487	N/A	59,487
Relative Value	1	N/A	N/A	358,197,449	N/A	358,197,449
Structured Credit	2	N/A	N/A	568,970,997	N/A	568,970,997
Tactical Trading	4	N/A	N/A	1,168,694,641	N/A	1,168,694,641
Total ARS Funds	22	N/A	N/A	\$ 3,720,171,842	N/A	\$ 3,720,171,842
Total Opportunistic/Absolute Return Strategy	57	\$ 7,085,031,257	\$ 3,634,505,214	\$ 6,463,357,205	\$ 1,670,151,445	\$ 8,133,508,650
Real Assets	45	\$ 11,783,592,250	\$ 7,653,230,307	\$ 7,811,998,351	\$ 2,305,284,651	\$ 10,117,283,002
Credit	60	\$ 18,377,958,412	\$ 12,882,077,054	\$ 9,411,438,384	\$ 6,280,280,773	\$ 15,691,719,157

*The total figures include the Fund's private equity investments and other investments through Pursuit.

Public Equity Management Fees

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees	Incentive Fees	Total
Acadian Asset Management, LLC	\$ 7,776,264	\$ –	\$ 7,776,264
AQR Capital Management, LLC	3,721,164	–	3,721,164
ARGA Investment Management, LP	1,408,196	–	1,408,196
Ariel Investments, LLC	1,614,381	–	1,614,381
Artisan Partners, LP	6,312,059	–	6,312,059
Baillie Gifford Overseas, Ltd.	4,922,583	–	4,922,583
Baring International Investment, Ltd.	1,749,000	–	1,749,000
Bell Asset Management, Ltd.	197,549	–	197,549
BlackRock Institutional Trust Company, NA	2,504,757	–	2,504,757
Brandes Investment Partners, LP	3,578,644	–	3,578,644
Brown Capital Management, Inc.	7,007,089	–	7,007,089
Capital International, Inc.	2,471,497	1,713,069	4,184,566
Cevian Capital, LLP	12,908,687	–	12,908,687
Channing Capital Management, LLC	2,571,931	–	2,571,931
Eagle Capital Management, LLC	2,961,963	–	2,961,963
EARNEST Partners, LLC	4,147,500	–	4,147,500
Fiera Capital, Inc.	3,527,120	–	3,527,120
Generation Investment Management, LLP	10,842,541	–	10,842,541
Genesis Investment Management, LLP	1,983,731	–	1,983,731
Global Alpha Capital Management, Ltd.	2,123,701	–	2,123,701
Goldman Sachs Asset Management	1,261,697	–	1,261,697
Goldman Sachs Asset Management *	20,783,636	–	20,783,636
GQG Partners, LLC	2,975,570	–	2,975,570
Leading Edge Investment Advisors, LP *	4,049,532	–	4,049,532
Lisanti Capital Growth, LLC	569,224	–	569,224
LSV Asset Management	2,877,612	–	2,877,612
Martin Currie, Inc.	2,303,508	–	2,303,508
Mondrian Investment Partners, Inc.	4,908,848	–	4,908,848
Morgan Stanley Emerging Markets Fund, Inc.	7,360,267	–	7,360,267
Palisade Capital Management, LLC	2,774,183	–	2,774,183
Penn Capital Management Company, Inc.	2,325,051	–	2,325,051
PGIM Quantitative Solutions, LLC	806,204	237,769	1,043,973
Pictet Asset Management	2,013,334	–	2,013,334
QTRON Investments, LLC	176,851	–	176,851
Rock Creek Group, LP	3,223,276	–	3,223,276
Rock Creek Group, LP *	1,761,216	–	1,761,216
Rockefeller & Company Asset Management	1,506,796	–	1,506,796
Russell Investments Group, LLC	716,490	–	716,490
Strategic Global Advisors, LLC	423,428	–	423,428
T. Rowe Price Associates, Inc.	5,081,614	–	5,081,614
Templeton Investment Counsel, LLC	876,252	–	876,252
Triam Fund Management, LP	6,935,683	–	6,935,683
ValueAct Capital Management, LP	49,464,483	–	49,464,483
Wellington Management Company, LLP	9,127,426	–	9,127,426
Xponance, Inc. *	4,094,162	–	4,094,162
Total	\$ 222,726,700	\$ 1,950,838	\$ 224,677,538

* Represents Fund of Funds relationship and includes sub-manager fee payments.

Public Equity Commissions — Internally Managed

For the Fiscal Year Ended March 31, 2023.

Broker	Shares	Commission \$ U.S.
Bank of America	13,653,386	\$ 136,534
Barclays Capital	34,973,451	182,321
BTIG	14,048,167	140,160
Citigroup Global Markets	12,897,175	128,972
Cowen and Company	15,717,330	157,173
Goldman Sachs	13,278,750	132,787
Great Pacific Securities	19,011,097	190,111
Guzman & Company	19,272,762	192,728
Instinet	13,695,007	136,950
J.P. Morgan Chase	25,143,033	187,574
Loop Capital Markets	19,101,526	191,015
Morgan Stanley	1,368,200	13,682
Penserra Securities	20,054,056	200,540
Piper Sandler Companies	12,450,309	124,503
Sanford C. Bernstein & Company	13,728,463	137,285
Siebert Williams Shank & Company	19,120,602	191,206
Virtu	14,981,453	148,438
Total	282,494,767	\$ 2,591,979

Public Equity Commissions — Externally Managed

For the Fiscal Year Ended March 31, 2023.

Broker	Shares	Commission \$ U.S.	Broker	Shares	Commission \$ U.S.
Abel Noser	4,749,938	\$ 192,980	Electronic Brokerage Systems	354,654	\$ 6,699
Academy Securities	541,152	8,985	Evercore ISI	4,137,949	103,939
Allen & Company	387,652	9,841	Exane	17,246,127	196,565
Auerbach Grayson & Company	1,356,761	29,089	Goldman Sachs	560,658,545	651,225
Axis Capital	262,399	6,082	Goodbody Stockbrokers	693,598	17,613
B. Riley FBR	277,586	9,687	Guggenheim Securities	591,431	17,819
Baader Bank	407,681	19,152	Haitong International Securities Company	1,717,112	16,606
Banco Bradesco	4,315,180	8,440	Hibernia Southcoast Capital	206,028	6,181
Banco BTG Pactual	19,899,665	27,221	HSBC	295,693,414	398,049
Bank of America	105,610,011	747,712	ICICI Brokerage Services Mumbai	14,195,839	22,672
Barclays Capital	18,996,107	244,267	India Infoline	1,143,034	17,102
Barrenjoey	196,986	5,893	Instinet	275,682,873	419,913
Bay Crest Partners	1,620,780	28,364	Itau Unibanco	5,830,265	19,537
Berenberg	5,604,709	123,550	J.P. Morgan Chase	701,131,630	1,191,882
BMO Capital Markets	5,528,314	87,836	Jefferies	118,665,408	710,606
BTIG	18,296,777	189,456	JMP Securities	660,519	18,719
C.L. King & Associates	1,396,694	53,767	Johnson Rice & Company	211,380	6,345
Cabrera Capital Markets	5,929,343	83,647	JonesTrading Institutional Services	17,082,182	542,178
Canaccord Genuity Group	2,661,735	99,699	Keefe Bruyette & Woods	2,557,480	60,416
Cantor Fitzgerald & Company	5,926,560	118,724	Kepler Cheuvreux	17,379,678	93,567
Capital Institutional Services	1,647,654	57,668	KeyBanc Capital Markets	2,486,007	90,306
Carnegie Investment Bank	2,035,483	22,844	Kotak Securities	372,449	9,122
CastleOak Securities	4,198,478	45,561	Liquidnet	44,405,005	422,896
China International Capital Corporation	1,617,218	5,154	Loop Capital Markets	15,540,565	333,668
CIMB Securities	10,453,985	7,100	Luminex Trading & Analytics	1,287,940	13,696
Citigroup Global Markets	236,542,017	545,864	Macquarie Group	129,012,420	205,584
CJS Securities	397,282	12,160	Mischler Financial Group	5,519,208	78,913
CLSA	162,267,441	285,404	Mitsubishi UFJ Securities	631,069	14,146
Compass Point Research & Trading	213,215	8,529	Mizuho Securities	3,954,431	74,508
Cowen and Company	16,695,181	276,617	Morgan Stanley	503,222,016	1,355,339
Craig-Hallum Capital Group	1,650,444	73,926	Needham & Company	3,244,788	129,720
Credit Suisse	74,557,970	448,614	Nomura Securities	2,731,674	20,910
D.A. Davidson & Company	375,864	14,160	North South Capital	1,145,081	41,283
Daiwa Capital Markets	3,634,075	49,067	Northcoast Research Partners	252,102	10,084
Danske Bank	2,021,372	12,894	Northern Trust Company	453,536	9,021
DNB	473,688	15,522	Numis Securities	1,491,298	9,483
Edelweiss Securities	235,225	5,443	Oddo BHF Group	220,976	6,876

Public Equity Commissions — Externally Managed

continued

Broker	Shares	Commission \$ U.S.
Olivetree Financial	1,223,025	\$ 7,671
Oppenheimer & Company	3,046,140	90,248
Penserra Securities	9,053,875	50,295
Pershing	7,700,050	74,867
Piper Sandler Companies	8,752,911	239,815
Raymond James & Associates	6,129,795	183,337
RBC Capital Markets	26,853,247	358,302
Redburn	6,683,027	68,564
Robert W. Baird & Company	6,433,065	225,136
Rosenblatt Securities	1,065,131	35,569
Roth Capital Partners	581,493	23,810
Sanford C. Bernstein & Company	39,528,635	275,674
Santander Group	2,241,741	12,758
Scotia Capital	3,411,709	31,115
Seaport Global Securities	380,637	10,202
Siebert Williams Shank & Company	4,824,399	105,843
Skandinaviska Enskilda Banken	1,058,741	19,995
SMBC Nikko Securities	2,380,092	41,850
Societe Generale	38,843,711	66,061
Stephens	2,842,359	109,191
Stifel	15,077,240	217,089
StoneX Financial	429,300	26,802
Strategas Securities	367,410	14,117
SVB Leerink	367,800	12,945
Svenska Handelsbanken	762,458	8,379
TD Securities	340,346	5,782
Telsey Advisory Group	2,507,593	107,454
The Benchmark Company	498,241	19,091
Truist Securities	1,916,365	66,462
UBS	189,294,849	461,388
Virtu	47,863,077	273,919
Wedbush Securities	347,134	12,182
Wells Fargo Securities	4,260,280	89,894
William Blair & Company	5,722,353	202,594
XP Investimentos	1,514,400	5,333
Various ¹	20,106,687	115,855
Total	3,939,201,649	\$ 14,993,696

¹Commissions paid to brokers that totaled less than \$5,000 for the year are reported under the "Various" line item.

Global Fixed Income Management Fees

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees	Incentive Fees	Total
Advent Capital Management, LLC	\$ 2,180,071	\$ -	\$ 2,180,071
Calvert Research and Management	337,143	-	337,143
DoubleLine Capital, LP	567,393	-	567,393
New Century Advisors, LLC	330,985	-	330,985
Teachers Advisors, LLC (Nuveen)	349,820	-	349,820
Ramirez Asset Management, Inc.	488,436	-	488,436
Total	\$ 4,253,848	\$ -	\$ 4,253,848

Long-Term Domestic Bond Transactions — Internally Managed

For the Fiscal Year Ended March 31, 2023.
Summarized by Broker or Direct Issuer.

Long-Term Broker	Par \$ U.S.
Barclays Capital	\$ 427,728,000
BMO Capital Markets	827,891,000
BofA Securities	875,715,852
Citigroup Global Markets	738,106,147
Credit Suisse	175,000,000
Daiwa Capital Markets	824,650,000
Deutsche Bank	589,000,000
Development Corp for Israel	37,500,000
Goldman Sachs	464,209,000
Great Pacific Securities	789,499,998
HSBC	280,000,000
J.P. Morgan Chase	1,077,520,510
Jefferies	61,000,000
Mischler Financial Group	181,400,000
Morgan Stanley	1,289,588,435
RBC Capital Markets	511,050,000
Samuel A. Ramirez & Company	55,045,000
Scotia Capital	415,000,000
Siebert Williams Shank & Company	84,750,000
TD Securities	631,700,000
Truist Securities	284,752,000
UBS	10,000,000
Wells Fargo Securities	872,444,000
Total	\$ 11,503,549,942

Long-Term Domestic Bond Transactions — Externally Managed

For the Fiscal Year Ended March 31, 2023.
Summarized by Broker or Direct Issuer.

Long-Term Broker	Par \$ U.S.
Academy Securities	\$ 217,050,000
American Veterans Group	54,295,000
Amherst Pierpont	5,414,000
Barclays Capital	459,999,551
BMO Capital Markets	912,052,028
BNP Paribas Securities Corp.	86,239,803
BNY Mellon Capital Markets	37,433,052
BofA Securities	446,231,672
Brean Capital	724,110
BTIG	33,097,000
Cabrera Capital Markets	73,515,000
Cantor Fitzgerald & Company	1,825,000
CIBC World Markets Corp.	2,010,000
Citadel Securities	386,157,700
Citigroup Global Markets	706,585,146
Citizens Capital Markets	37,000
Credit Agricole	1,999,000
Credit Suisse	56,942,907
Deutsche Bank	19,292,742
Evercore ISI	1,123,000
FHN Financial Securities Corp.	24,541,000
Goldman Sachs	132,635,225
HSBC	88,001,000
Hilltop Securities	1,009,230
J.P. Morgan Chase	829,445,138
Jane Street Execution Services	6,271,000
Janney Montgomery Scott	3,375,000
Jefferies	88,251,000
KeyBanc Capital Markets	3,360,000
LarrainVial Securities	527,000
Loop Capital Markets	7,000,000
MarketAxess Corp.	27,422,000
Mesirow Financial	2,500,000
Millennium Advisors	26,000
Mitsubishi UFJ Securities	21,602,735
Mizuho Securities	13,224,011

Long-Term Broker	Par \$ U.S.
MKM Partners	\$ 211,000
Morgan Stanley	261,534,343
MUFG Securities Americas	2,370,314
NatWest Markets	42,780,000
Nomura Securities	228,711,013
Old Mission Markets	24,000
Oppenheimer & Company	4,992,000
Performance Trust Capital Partners	1,120,483
Piper Sandler Companies	4,078,000
PNC Capital Markets	258,000
R.W. Pressprich & Company	7,100,000
Raymond James & Associates	46,175,000
RBC Capital Markets	307,798,000
Santander Securities	9,138,763
Scotia Capital	7,989,000
Seaport Global Securities	795,000
Siebert Williams Shank & Company	1,150,000
SMBC Nikko Securities	1,405,000
Societe Generale	47,428,000
State Street	522,000
Stifel	16,302,000
StoneX Financial	19,315,274
SumRidge Partners	118,000
Susquehanna Financial Group	53,000
SWBC Investment Services	2,055,000
TD Securities	82,059,000
TradeWeb	3,720,000
Tradition Securities and Derivatives	425,000
Truist Securities	10,312,905
Trumid Financial	73,000
U.S. Bancorp	248,000
UBS	109,745,000
Virtu	160,000
Wells Fargo Securities	463,446,871
Total	\$ 6,434,827,015

Short-Term Domestic Bond Transactions — Internally Managed

For the Fiscal Year Ended March 31, 2023.

Summarized by Broker or Direct Issuer.

Short-Term Broker	Par \$ U.S.
Barclays Capital	\$ 1,678,480,000
BNY Mellon Capital Markets	23,718,282,000
BofA Securities	15,265,199,000
Citigroup Global Markets	15,142,921,000
Credit Suisse	1,484,090,000
Deutsche Bank	76,985,000
Goldman Sachs	915,639,000
Great Pacific Securities	15,998,087,000
J.P. Morgan Chase	23,276,641,000
Jefferies	68,336,000
Mischler Financial Group	2,807,186,000
Morgan Stanley	25,000,000
RBC Capital Markets	17,959,973,000
Siebert Williams Shank & Company	200,000,000
TD Securities	38,189,000
Toyota Motor Credit	91,263,000
Wells Fargo Securities	65,200,000
Total	\$ 118,811,471,000

Multi-Asset Class Management Fees

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees	Incentive Fees	Total
Morgan Stanley Investment Management	\$ 3,029,777	\$ -	\$ 3,029,777
Schroder Investment Management	3,154,540	-	3,154,540
Wellington Management Company	3,073,546	-	3,073,546
Total	\$ 9,257,863	\$ -	\$ 9,257,863

Multi-Asset Class — Public Equity Commissions — Externally Managed

For the Fiscal Year Ended March 31, 2023.

Broker	Shares	Commission \$ U.S.
Bank of America	31,476,105	\$ 29,548
Barclays Capital	3,710,217	26,193
Berenberg	176,604	6,419
BMO Capital Markets	358,276	6,710
Citigroup Global Markets	5,677,963	20,733
Cowen and Company	1,546,021	13,308
Credit Suisse	6,014,725	92,600
Evercore ISI	216,149	5,181
Goldman Sachs	15,278,572	68,284
HSBC	23,546,390	104,588
J.P. Morgan Chase	20,493,503	52,205
Jane Street Execution Services	12,097,509	211,207
Jefferies	12,374,057	87,057
Liquidnet	1,287,306	18,864
Morgan Stanley	8,981,931	39,283
RBC Capital Markets	606,059	6,091
Sanford C. Bernstein & Company	20,084,213	181,674
UBS	8,327,353	44,540
Virtu	16,092,159	165,166
Various ¹	18,072,717	60,424
Total	206,417,829	\$ 1,240,075

¹Commissions paid to brokers that totaled less than \$5,000 for the year are reported under the "Various" line item.

Multi-Asset Class — Long-Term Domestic Bond Transactions — Externally Managed

For the Fiscal Year Ended March 31, 2023.

Summarized by Broker or Direct Issuer.

Long-Term Broker	Par \$ U.S
AllianceBernstein	\$ 19,389,116
Amherst Pierpont	2,800,000
Bank of America	526,597,378
Bank of Montreal	75,596,400
Barclays Capital	205,711,973
BMO Capital Markets	10,224,375
BNP Paribas Securities Corp.	14,012,700
BOK Financial	24,127,070
Brean Capital	2,475,000
Cabrera Capital Markets	250,000
CastleOak Securities	260,000
Citadel Securities	114,979,885
Citigroup Global Markets	561,275,762
Credit Agricole	8,371,685
Credit Suisse	40,785,191
Daiwa Capital Markets	203,000
Deutsche Bank	35,250,200
Drexel Hamilton	185,000
Fifth Third Securities	3,287,000
Flow Traders US Institutional Trading	100,000
Goldman Sachs	728,076,045
HSBC	50,455,463
J.P. Morgan Chase	735,265,387
Jane Street Execution Services	8,600,000
Jefferies	11,235,879
KeyBanc Capital Markets	730,000
KeyCorp	375,000
Liquidnet	67,316
Loop Capital Markets	847,000
Luminex Trading & Analytics	30,285
MarketAxess Corp.	2,290,000

Long-Term Broker	Par \$ U.S
Millennium Advisors	\$ 1,850,000
Mitsubishi UFJ Securities	1,235,000
Mizuho Securities	25,060,000
Morgan Stanley	273,616,151
National Bank of Canada	1,525,000
NatWest Markets	1,561,100
Nomura Securities	13,497,800
PNC Capital Markets	1,741,000
Raymond James & Associates	415,000
RBC Capital Markets	37,183,000
Santander Group	400,000
Scotiabank	3,260,000
Seaport Global Securities	1,245,000
SMBC Nikko Securities	1,956,000
Societe Generale	1,590,000
Standard Chartered Bank	200,000
State Street	630,000
Stifel	875,000
StoneX Financial	6,629,154
Sumitomo Mitsui Financial Group	1,225,000
SumRidge Partners	617,000
Susquehanna Financial Group	2,775,000
TD Securities	4,058,289
TP ICAP	2,525,000
TradeWeb	1,780,000
Truist Securities	1,782,000
U.S. Bancorp	3,815,000
UBS	32,160,992
Virtu	15,898,195
Wells Fargo Securities	170,168,558
Total	\$ 3,795,128,349

Real Estate Management Fees (Expensed)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
ARA Fund Management, Ltd.	\$ 1,200,936
ARES Management	7,651,834
Artemis Real Estate Partners, LLC	5,740,282
Avanath Capital Management, LLC, Series C	550,468
Basis Management Group	1,972,603
Blackstone Real Estate Advisors	20,485,281
Bridge Investment Group	8,153,689
Brookfield Asset Management Inc.	12,861,597
Carlyle Group	2,878
Cherokee Advisers, LLC	714,148
CIM Group, LP	3,193,315
Clarion Partners	4,639,111
Fairfield	448,275
Franklin Templeton Institutional, LLC (Lake Montauk)	523,827
GCM Grosvenor	2,831,884
GID Investment Advisers LLC	854,800
Heitman Capital Management, LLC	1,414,275
J.P. Morgan Investment Management, Inc.	8,922,115
Jamestown Premier GP, LP	1,668,374
Kayne Anderson Capital Advisors	1,968,750
LaSalle Investment Management, Inc.	2,692,285
MetLife Investment Management, LLC	711
NIAM AB	1,143,459
Noble Investment Management, LLC	2,292,905
Prologis, LP	12,909,362
Rockpoint Real Estate Funds	39,937
UBS Realty Investors LLC	1,839,771
Westbrook Realty Management	3,633,714
Total	\$ 110,350,585

Real Estate Management Fees (Capitalized)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
ACA Advisors (Aetos)	\$ 33,051
ARES Management	234,928
Asana Partners, LP	6,435,623
Avanath Capital Management, LLC, Series C	73,068
Blackstone Real Estate Advisors	10,675,015
Cherokee Advisers, LLC	(3,275)
Clarion Partners	3,722,479
Cortland Partners, LLC	2,847,332
Exeter Europe	4,128,104
Fairfield	255,514
GreenOak Real Estate Advisors	1,168,345
Heitman Capital Management, LLC	2,013,865
J.P. Morgan Investment Management, Inc.	344,747
KKR & Company	3,021,889
Landmark	412,976
LaSalle Investment Management, Inc.	2,172,112
Mesa West Capital	1,497,903
MetLife Investment Advisors, LLC	6,883,498
NIAM AB	1,406,257
NREP	3,178,596
Oaktree Capital Management	1,969,203
PGIM Fund Management Ltd.	8,160,486
Stockbridge Real Estate Funds	476,956
Total	\$ 61,108,671

Private Equity Management Fees (Expensed)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
57 Stars, LLC	\$ 1,283,159
Access Capital Advisors, LLC	101,932
ACON Investments, LLC	1,002,225
Affinity Equity Partners Ltd.	6,302,781
African Capital Alliance Limited	961,885
Apollo Management, LP	5,642,954
Ares Management, LP	1,470,479
Armory Square Ventures, LP	312,500
Asia Alternatives Management, LLC	3,613,739
Blackstone Group, LP	12,371,917
Bridgepoint Capital Ltd.	6,576,375
Brookfield Asset Management, Ltd.	8,257,033
CCMP Capital Advisors, LP	193,829
Centerbridge Partners, LP	1,488,092
Cinven Capital Management, Ltd.	3,326,017
Clearlake Capital Group, LP	940,137
Contour Venture Partners, LP	615,425
CVC Capital Partners BV	23,458,428
Dyal Capital Partners	2,671,732
EQT Partners, Inc.	4,883,167
Fairview Capital Partners, Inc.	138,475
Farol Asset Management, LP	1,488,402
FountainVest Partners (Asia), Ltd.	591,407
Francisco Partners, L.P.	1,546,651
Freeman, Spogli & Company, Inc.	2,231,196
GCM Grosvenor, Inc.	317,385
GenNx360 Capital Partners, LP	1,061,811
Hamilton Lane Advisors, LLC	3,930,594
HarbourVest Partners, LLC	1,510,754
Helios Investment Partners LLP	1,507,309
Hellman & Friedman Investors, Inc.	5,293,412
Hony Capital, Ltd.	2,926,121

Manager	Management Fees
ICV Partners, LLC	\$ 645,507
IK Investment Partners, Ltd.	3,979,055
Insight Partners, LLC	10,495,300
J.P. Morgan Chase & Co.	501,942
KKR & Company, LP	14,253,242
KSL Capital Partners, LLC	2,397,851
Leonard Green & Partners, LP	1,219,475
Lindsay Goldberg & Company, LLC	4,795,367
Muller & Monroe Asset Management, LLC	2,334,843
Neuberger Berman Group, LLC	2,870,668
Nordic Capital, Ltd.	1,016,462
Paladin Capital Group, LLC	23,947
Palladium Equity Partners, LLC	2,566,088
Performance Equity Management, LLC	372,994
Pine Brook Road Partners, LLC	1,057,995
Primary Venture Partners, LLC	995,333
Providence Equity Partners, LLC	3,607,626
Roark Capital Group Inc.	595,336
RRJ Capital	708,592
Searchlight Capital Partners, LP	4,750,677
Siris Capital Group, LLC	2,377,429
Snow Phipps Group, LLC	1,354,620
Stepstone Group, LP	41,470
TA Associates Management, LP	3,879,803
Thoma Bravo, LLC	1,314,972
Towerbrook Capital Partners, LP	2,768,465
TPG Capital, LP	8,510,572
Tribeca Venture Partners, LLC	204,304
Vertu Capital, Ltd.	2,680,018
Vista Equity Partners, LLC	28,432,144
Warburg Pincus, LLC	(469,644)
Total	\$ 218,299,775

Private Equity Management Fees (Capitalized)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
Activate Venture Partners	\$ 239
Bridgepoint Capital Ltd.	176,272
Cinven Capital Management, Ltd.	1,042,864
Francisco Partners Management, LP	512,288
Hamilton Lane Advisors, LLC	837,012
HarbourVest Partners, LLC	1,938,315
Institutional Venture Partners	91,640
NCH Capital Inc.	334,467
Nordic Capital, Ltd.	76,199
Oaktree Capital Management, LP	6,736,694
RRJ Capital	2,298,851
SAIF Partners	559,090
Softbank Capital Partners	300,000
Summer Street Capital Partners, LLC	246,376
Tribeca Venture Partners, LLC	307,674
Warburg Pincus, LLC	152,287
Total	\$ 15,610,268

Private Equity — Fee, Expense and Carried Interest Analysis

For the Fiscal Year Ended March 31, 2023.

Total Expenses	
Net Management Fees	\$ 233,910,044
Partnership Expenses	<u>141,003,591</u>
Total Expenses	\$ 374,913,635
Ratio — Total Expenses/Total Private Equity Allocation	0.67%
Total Profit Sharing (Carried Interest)	
Profit Sharing (Carried Interest)	\$ <u>401,273,573</u>
Total Profit Sharing	\$ 401,273,573
Ratio — Total Profit Sharing/Total Actively Invested Private Equity Allocation	0.97%
Total Expenses + Profit Sharing (Carried Interest)	
Total Expenses	\$ 374,913,635
Total Profit Sharing	<u>401,273,573</u>
Total Expenses and Profit Sharing (Carried Interest)	\$ 776,187,208
Total Private Equity Allocation	
Unfunded Capital Commitments	\$ 14,959,251,218
Net Asset Value (NAV) as of 3/31/2023	36,976,566,823
Distributions for FY 2023	<u>4,240,215,681</u>
Total Private Equity Allocation	\$ 56,176,033,722
Ratio — Total Expenses + Profit Sharing/Total Private Equity Allocation	1.38%
Total Actively Invested Private Equity Allocation	
Net Asset Value (NAV) as of 3/31/2023	\$ 36,976,566,823
Distributions for FY 2023	<u>4,240,215,681</u>
Total Actively Invested Private Equity Allocation	\$ 41,216,782,504
Ratio — Total Expenses + Profit Sharing/Total Actively Invested Private Equity Allocation	1.88%

Note: The profit sharing and partnership expenses were compiled based on information provided directly by the General Partner or calculated by the Fund's consultant applying the Fund's pro-rata ownership to carried interest and/or distribution and expense information provided in the Audited Financial Statements and Quarterly Financial Statements. Materials provided by General Partners consist of partners' capital statements, Institutional Limited Partners Association (ILPA) templates, and/or templates the consultant provided for the purposes of this analysis.

Opportunistic/Absolute Return Strategies Funds Management and Incentive Fees (Expensed)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees	Incentive Fees	Total
ADV Partners Capital Management, Ltd.	\$ 2,962,060	\$ –	\$ 2,962,060
Altura Capital Group LLC	574,601	–	574,601
B Capital Group, LLC	7,885,743	–	7,885,743
Bain Capital Public Equity, LP	138,557	2,852,056	2,990,613
BCK Capital Management, LP	993,243	491,729	1,484,972
Bridgewater Associates, LP	1,586,517	–	1,586,517
Carlyle Aviation Partners	623,439	–	623,439
Caspian Capital, LP	4,306,491	–	4,306,491
Constellation Capital Management Inc.	2,025,425	–	2,025,425
Cowen Sustainable Investments	3,349,452	–	3,349,452
D.E. Shaw and Company, LP	24,985,969	57,873,961	82,859,930
Fortress Investment Group, LLC	107,503	215,126	322,629
Frazier Healthcare Partners	1,793,657	–	1,793,657
Highland Capital Management, LP	73	–	73
Hollis Park Partners, LP	122,915	–	122,915
Insight Venture Management, LLC	1,506,000	–	1,506,000
King Street Capital Management LP	3,148,553	624	3,149,177
Knighthood Capital Management LLC	3,224,751	–	3,224,751
Landmark Partners, LLC	3,088,282	–	3,088,282
Mariner Investment Group LLC	1,133,690	–	1,133,690
Marshall Wace, LLP	6,588,269	6,271,120	12,859,389
Neuberger Berman Group, LLC	1,277,263	–	1,277,263
NGP Energy Capital Management	1,118,855	–	1,118,855
Pacific Alternative Asset Management Company, LLC	46,518	–	46,518
Patient Square Capital, LP	8,173,046	–	8,173,046
Pharo Management, LLC	3,358,427	–	3,358,427
Rock Creek Group, LP	30,652	–	30,652
Schultze Asset Management, LLC	103,002	–	103,002
Stellex Capital Management, LP	3,574,533	12,177,388	15,751,921
Systematica Investments, Ltd.	1,874,255	2,994,270	4,868,525
Tilden Park Capital Management LP	5,084,342	1,524,803	6,609,145
Varde Management, LP	1,049,131	–	1,049,131
Vivo Capital, LLC	844,360	488,308	1,332,668
Total	\$ 96,679,574	\$ 84,889,385	\$ 181,568,959

Opportunistic Funds Management Fees (Capitalized)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
Frazier Healthcare Partners LLC	\$ 548,773
GrowthCurve Capital, LP	5,674,394
KSL Capital Partners, LLC	2,696,332
Landmark Partners, LLC	2,071,428
Total	\$ 10,990,927

Real Assets Management Fees (Expensed)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
Brookfield Asset Management	\$ 13,966,934
Carlyle Aviation Partners	4,371,781
Copenhagen Infrastructure Partners	2,805,917
DIF Capital Partners, Ltd.	1,311,086
EQT Fund Management S.a.r.l.	6,536,499
Excelsior Capital	1,000,000
Global Infrastructure Management LLC	2,900,260
Grain Management, LLC	5,935,731
GSO Capital Partners	1,971,920
Hull Street Energy, LLC	2,615,681
I Squared Capital	9,697,501
ITE Management, LP	71,210
KKR & Company, LP	1,827,809
Meridiam Infrastructure North America Corporation	2,400,000
Morgan Stanley Investment Management, Ltd.	2,081,233
Northleaf Capital Partners	818,015
Oaktree Capital Management, LP	1,222,388
Patria Investments, Ltd.	872,095
Stonepeak Partners, LP	5,823,687
Total	\$ 68,229,746

Real Assets Management Fees (Capitalized)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
Blackstone Group, LP	\$ 3,911,279
Castlelake, LP	579,231
IFM Investors, Ltd.	5,670,838
ITE Management, LP	2,633,958
Kayne Anderson Capital Advisors, LP	1,102,973
Pantheon Ventures, LP	2,703,827
Carlyle Aviation Partners	1,002,125
Nuveen	2,321,998
Total	\$ 19,926,229

Credit Management Fees (Expensed)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees	Incentive Fees	Total
Avenue Capital Group	\$ –	\$ 572,518	\$ 572,518
Blackrock Institutional Trust Company	2,572,868	–	2,572,868
Blackstone Group, LP	7,562,021	14,915,802	22,477,823
Brookfield Asset Management, Ltd.	519,884	–	519,884
Clearlake Capital Group, LP	4,880,879	–	4,880,879
Domain Capital Group, LLC	1,423,740	–	1,423,740
Intermediate Capital Group PLC	1,090,026	–	1,090,026
KSL Capital Partners, LLC	2,407,340	–	2,407,340
Neuberger Berman Group, LLC	4,850,294	–	4,850,294
Oak Hill Advisors, LP	–	2,935,157	2,935,157
Orchard Global Asset Management	–	4,388,514	4,388,514
Silver Rock Group	575,000	–	575,000
SSG Capital Management, Ltd.	4,495,662	1,276,959	5,772,621
TPG Capital, LP	2,260,273	6,078,589	8,338,862
Total	\$ 32,637,987	\$ 30,167,539	\$ 62,805,526

Credit Management Fees (Capitalized)

For the Fiscal Year Ended March 31, 2023.

Manager	Management Fees
Blantyre Capital Limited	\$ 3,038,138
Bridgepoint Capital Ltd.	3,270,863
Intermediate Capital Group PLC	2,465,096
Silver Rock Capital Partners LP	244,431
Total	\$ 9,018,528

Consultant and Advisor Fees

For the Fiscal Year Ended March 31, 2023.

Aksia, LLC	\$	600,000
Albourne America, LLC		467,731
Bard Consulting, LLC		15,000
Callan LLC		355,000
FX Transparency, LLC		35,000
Hamilton Lane Advisors, LLC		1,875,000
McKinsey & Company, Inc.		65,000
Meketa Investment Group		42,700
Mercer Investments		395,710
RV Kuhns & Associates, Inc.		771,471
Stockbridge Risk Management, Inc.		10,441
The Townsend Group		595,528
Total	\$	5,228,581

Actuarial



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Statement of the Actuary

September 30, 2023

As the Actuary for the New York State and Local Employees' Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS), it is my duty to ensure that the New York State and Local Retirement Systems (the Systems) properly fund the benefits of members, retirees, and beneficiaries. A discussion of the plan provisions can be found at the beginning of the Notes to Basic Financial Statements. The Systems' funding policy is established by the New York State Retirement and Social Security Law. The Systems have a funding objective of employer contributions that, over time, are a level percentage of payroll and accumulate assets over an employee's working lifetime sufficient to pay benefits as they become due.

Each year, the Actuarial Bureau generates actuarial valuations that determine the annual contributions required of participating employers. The most recent valuation was dated April 1, 2022 and determined the employer contribution rates paid by local participating employers by February 1, 2024, and paid by the State by March 1, 2024. Fundamentally, employer contribution rates are calculated by comparing assets to liabilities.

Instead of using the market value of assets, which can be found in the Systems' financial statements, the valuation smooths the unexpected investment gain or loss. The smoothing procedure is discussed in the schedule, Elements of the Actuarial Valuation. The smoothed value of assets, called the actuarial value of assets, is used to establish the employer contribution rates.

The development of the Systems' liabilities begins with a snapshot of participant data as of the valuation date. For active members, the data includes date of birth, credited service, salary, tier, and plan. For retired members and beneficiaries, the data includes date of birth, benefit type, monthly benefit amount, and the form of the pension payment (for example, single life allowance or joint and survivor, possibly with a pop-up feature or with a period certain). In preparation for the valuation, the participant data is validated by running reasonableness tests and reconciling every individual on a year-over-year basis.

To develop a liability for a payee (that is, a retiree or beneficiary), the valuation determines the present value of payments expected to be made for the payee's lifetime.

To develop a liability for an active member, the valuation considers the four ways a member may leave active status: withdrawal, disablement, death, or retirement. These are called *decrements*. For each decrement, the valuation projects the expected benefit, based on estimated pay and service under the member's plan benefit formula. Then, the liability is determined consistent with any other payee; when the benefit is not a lump sum, the liability equals the present value of the expected benefit payments to be made for the payee's lifetime.

The exact timing of an active member becoming a payee, or the exact timing of a payee death, cannot be determined precisely. Therefore, valuations include assumptions about these uncertainties. Actuarial assumptions are grouped into two broad categories: demographic assumptions (rates of employee turnover, disability, mortality, and retirement) and economic assumptions (interest rates, inflation, and salary growth).

Proper funding requires that the liabilities are developed using reasonable actuarial assumptions and methods. The Actuary reviews information contained in the financial statements and performs annual experience studies, ascertaining how closely the Systems' demographic experience is conforming to the assumptions. If significant deviations occur that the Actuary believes may indicate permanent shifts, the Actuary may recommend assumption changes to the Comptroller of the State of New York.

Statement of the Actuary

continued

In addition to internal analysis, external parties will review various elements and inputs of the actuarial valuation. The Systems retain an external auditor to independently review its financial records every year. An Actuarial Advisory Committee meets annually to review the actuarial assumptions and the results of the actuarial valuation. The Systems also engage the services of an outside actuarial consultant to perform a review every five years. Similarly, every five years, the Systems are audited by the New York State Department of Financial Services. Lastly, the Comptroller of the State of New York, in their role as sole trustee of the Systems, established an Office of Internal Audit to help fulfill their fiduciary objectives.

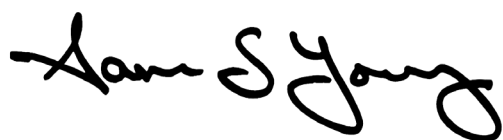
The April 1, 2021 valuation, determining the February 1, 2023 employer contribution rates found in this report, was performed under the direction and supervision of former Retirement Systems' Chief Actuary, Michael Dutcher, using the assumptions adopted by the Comptroller, a summary of which is included later in this section. The assumptions and methods used for funding purposes were certified by the former Chief Actuary as meeting the parameters set by Actuarial Standards of Practice.

The former Chief Actuary is responsible for all the valuation results and other actuarial calculations contained in this report. In the Notes to Basic Financial Statements, the former Chief Actuary prepared the Net Pension Liability (Asset) of Participating Employers, but all other notes were prepared by others.

Within the Actuarial Section of the Annual Comprehensive Financial Report, the current Retirement Systems' Chief Actuary, Aaron S. Young, prepared the following schedules: Actuarial Cost Method and Valuation, Elements of the Actuarial Valuation, Actuarial Valuation Balance Sheets, Local Government Employers' Final Contribution Rates for Select Plans, Contribution Rate Trends for Local Governments, Employer Contributions, Historical Trends, Changes in Contributions, Assets and Accrued Liabilities, Solvency Test, Schedule of Active Member Data, and Schedule of Retired Members and Beneficiaries.

In addition to the funding valuation report for the ERS and the PFRS, separate reports are issued to provide financial reporting for the Systems in accordance with Governmental Accounting Standards Board (GASB) Statement No. 67. Reports containing the actuarial results of the financial reporting valuations are based upon the measurement date of March 31, 2023. Additional publications issued by the Actuary annually include the Annual Report to the Comptroller on Actuarial Assumptions and the Report of the Actuary.

On the basis of the foregoing, I hereby certify that, to the best of my knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial practices that are consistent with the principles prescribed by the Actuarial Standards Board as well as the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries, of which I am a member.



Aaron Schottin Young, MA, FSA, EA, MAAA

Retirement Systems Chief Actuary
New York State and Local Employees' Retirement System
New York State and Local Police and Fire Retirement System

Actuarial Cost Method and Valuation

Actuarial Cost Method

An actuarial cost method is a procedure for allocating the costs of a retirement system to particular time periods. It does not determine how much a system will ultimately cost; rather, it determines the portion of the estimated total cost that is to be allocated to a particular year.

For 70 years, by virtue of applying the definition of normal cost found in New York State Retirement and Social Security Law, the actuarial funding method used by the System was the aggregate method (AGG). Chapter 210 of the Laws of 1990 changed the funding method to a modified projected unit credit (PUC) method beginning in the fiscal year ending March 31, 1991 (referred to as fiscal year 1991). This law was challenged and the challenge was upheld by the New York State Supreme Court. On appeal, both the Appellate Division and the New York State Court of Appeals unanimously agreed with the New York State Supreme Court. These decisions allowed the Comptroller to return to the aggregate funding method beginning with the 1995 fiscal year. To ease the transition in the Employees' Retirement System (ERS) and to help prevent budget crises among participating employers, the Comptroller devised a plan to phase-in non-GLIP (New York State Public Employees' Group Life Insurance Plan) rates beginning in the 1995 fiscal year when the rates were zero. The rates increased by 1.5 percent per year until 1999, when the transition would cease. However, due to excellent investment gains and favorable experience, almost all ERS employer bills were below the transition rates in 1997, and in 1998 all were below the transition rates, so the transition ceased in 1998.

The aggregate method is ultimately an amortization policy. All valuation gains and losses are amortized evenly over the remaining working lifetimes of the active membership. The fact that the method does not allow arbitrary amortization periods or increasing payments is useful in a public setting as budgetary pressures can inspire a temptation to fund benefits over time frames that extend beyond the working lifetimes of the benefit recipients, and/or with back-loaded payments, which is not prudent and compromises intergenerational equity.

The "drawback" of the aggregate cost method is that it defines the accrued liability to be the actuarial value of assets. Thus the unfunded accrued liability is always zero, and the system's funded ratio is always 100 percent. This "drawback" is overcome by using the entry age normal cost method for purposes of financial disclosures. In this report, the reader should assume that any funding data provided is under the aggregate cost method unless otherwise noted as under the entry age normal method. The actuarial assumptions used are the same under either method.

Actuarial Valuation

At the beginning of the fiscal year, the Actuary, by law, determines the System's actuarial assets and liabilities. The actuarial valuation is important since it determines the rates of employer contributions. Chapter 49 of the Laws of 2003 mandates that the actuarial valuation undertaken on the first day of a fiscal year be used to determine contribution rates for the next succeeding fiscal year, to be applied to salaries as of the end of that fiscal year. Chapter 94 of the Laws of 2015 changed the billable salary to compensation earned during the previous fiscal year.

Each valuation differs markedly from the March 31, point-in-time snapshot of the System provided by the Financial Statements. The two measurements serve different purposes and use different techniques.

Two examples help make this clear:

- The actuarial assets for valuation purposes include the current value of all the future contributions employers and employees will make on behalf of current members. The Financial Statement balance sheet asset figure includes only contributions previously received and invested.
- The actuarial assets smooth out the investment performance by using a multi-year smoothing procedure. Techniques like this are widely practiced and professionally recommended to protect employers from volatile contribution rates. The Financial Statements, on the other hand, simply present fair values of assets on the last day of the fiscal year.

Aggregate Actuarial Funding Method

Actuarial liabilities are the valuation date values (called the actuarial present values) of the benefits the Retirement System expects to pay to current members, retirees, and beneficiaries. The actuarial present value of benefits is calculated by projecting the amount of future service retirement, death, and disability benefits (based on past and future service, salary, and plan) to be paid, and then discounting for assumed investment earnings, employee turnover, and other contingencies.

The actuarial present value of the contributions that employers must make to the System to fund the projected benefit payment is equal to the actuarial liabilities, minus the sum of the actuarial value of present assets and the present value of employee contributions.

Under the aggregate funding method, the actuarial present value of the contributions that employers must make to the System is funded as a level percentage of salary over the projected future working lifetimes of current members.

Elements of the Actuarial Valuation

Actuarial Assumptions

The actuarial assumptions for employer contribution rates for the fiscal year ending 2023 were adopted effective April 1, 2021. These assumptions and their predecessors are shown below. All assumptions presume ongoing Systems.

Fiscal Year Ended 3/31		Salary Scale*		Interest Rate	Multiple-Decrement Tables Based on Systems' Experience
1987 – 88	Inflation Productivity & Merit	5.00% 2.30% 7.30%		8.00%	4/1/81– 3/31/86 experience
1989 – 92	Inflation Productivity & Merit	5.00% 2.00% 7.00%		8.75%	4/1/81– 3/31/86 experience
1993 – 96	Inflation Productivity & Merit	5.00% 2.00% 7.00%		8.75%	4/1/86 – 3/31/91 experience
		ERS	PFRS		
1997 – 98	Inflation Productivity & Merit	4.75% 1.25% 6.00%	4.75% 1.75% 6.50%	8.50%	4/1/90 – 3/31/95 experience
1999 – 2000	Inflation Productivity & Merit	3.50% 2.50% 6.00%	3.50% 3.00% 6.50%	8.50%	4/1/90 – 3/31/95 experience
2001	Inflation Productivity & Merit	3.00% 2.50% 5.50%	3.00% 3.00% 6.00%	8.00%	4/1/90 – 3/31/95 experience
2002 – 04	Inflation Productivity & Merit	3.00% 2.90% 5.90%	3.00% 3.90% 6.90%	8.00%	4/1/95 – 3/31/00 experience
2005	Inflation Productivity & Merit	3.00% 2.40% 5.40%	3.00% 3.90% 6.90%	8.00%	4/1/95 – 3/31/00 experience
2006	Inflation Productivity & Merit	3.00% 2.40% 5.40%	3.00% 3.90% 6.90%	8.00%	4/1/95 – 3/31/00 experience with subsequent adjustments
2007 – 11	Inflation Productivity & Merit	3.00% 2.40% 5.40%	3.00% 3.70% 6.70%	8.00%	4/1/00 – 3/31/05 experience with subsequent adjustments
2012 – 16	Inflation Productivity & Merit	2.70% 2.20% 4.90%	2.70% 3.30% 6.00%	7.50%	4/1/05 – 3/31/10 experience with subsequent adjustments
2017 – 19	Inflation Productivity & Merit	2.50% 1.30% 3.80%	2.50% 2.00% 4.50%	7.00%	4/1/10 – 3/31/15 experience with subsequent adjustments
2020	Inflation Productivity & Merit	2.50% 1.70% 4.20%	2.50% 2.50% 5.00%	7.00%	4/1/10 – 3/31/15 experience with subsequent adjustments
2021	Inflation Productivity & Merit	2.50% 1.70% 4.20%	2.50% 2.50% 5.00%	6.80%	4/1/10 – 3/31/15 experience with subsequent adjustments
2022	Inflation Productivity & Merit	2.50% 2.00% 4.50%	2.50% 3.20% 5.70%	6.80%	4/1/15 – 3/31/20 experience with subsequent adjustments
2023	Inflation Productivity & Merit	2.70% 1.70% 4.40%	2.70% 3.50% 6.20%	5.90%	4/1/15 – 3/31/20 experience with subsequent adjustments

* This is an approximate value. Salary scales vary by age and plan and are based on each System's experience.

Elements of the Actuarial Valuation

continued

Selected Actuarial Assumptions Used in the April 1, 2021 Valuation

These illustrations show the number of people expected to decrement during the year (that is: decease, service retire, disability retire, or withdraw) per 10,000 members and the salary scale assumption. Demographic assumptions are computed by the Actuary and adopted by the Comptroller. They are based on recent member experience.

Service Retirement — ERS

Age	Service (in years)		
	< 20	20 – 29.99	≥ 30
Tiers 2 – 4			
55	573	824	3,812
60	472	708	1,766
65	1,539	2,517	2,182
Tiers 5 – 6			
55	461	664	824
60	379	571	708
65	1,539	2,517	2,182

Service Retirement — PFRS

Service	20-year (All Tiers)	20-year with additional 60ths (All Tiers)
20	2,721	1,007
25	955	885
30	728	1,630

Service Retirees — Mortality

Age	ERS Male Clerk	ERS Female Clerk	PFRS
55	50	37	28
60	69	46	48
70	136	106	134
80	440	313	469

Disability Retirees — Mortality

Age	ERS Male	ERS Female	PFRS
30	35	36	13
40	81	111	14
60	300	261	61
80	730	610	576

Elements of the Actuarial Valuation

continued

Disability Retirement — Ordinary and Accidental

Age	ERS Ordinary	ERS Accidental	PFRS Ordinary*	PFRS Accidental
35	5	0	3	2
40	8	0	19	17
45	14	0	35	32
50	23	0	37	32

* Includes performance of duty.

Ordinary Death

Age	ERS	PFRS
35	6	3
40	8	4
45	10	5
50	13	7

Withdrawal — ERS (Ten-year ultimate rates)

Age	ERS Tier 4	ERS Tier 6
35	203	173
40	194	165
45	188	160
50	142	121

Withdrawal — PFRS

Service	PFRS Tier 2	PFRS Tier 6
5	113	90
10	67	67
15	27	27

Salary Scale — Annual Percentage Increase

Service	ERS	PFRS
5	4.95	8.00
10	4.18	4.00
15	3.63	4.00
20	3.30	4.00
25	3.30	4.00

Actuarial Value of Assets

The actuarial asset values are determined by applying the assumed return on investments (5.9 percent for the April 1, 2021 valuation) to the financial statement plan net position with adjustments for cash flow (contributions and deductions). This smoothing method expects and immediately recognizes the assumed return on assets while phasing in unexpected gains/losses over a five-year period. The method treats realized and unrealized gains in the same manner. The Group Term Life Insurance Plan assets appreciate at the same rate as our short-term investment pool.

In the April 1, 2021 valuation of the System and Group Life Insurance Plan (GLIP) for fiscal year 2023, the difference between market and actuarial values of smoothed investments was:

	Investments (Dollars in Millions)	
Actuarial Value	\$	225,811
Market Value	\$	258,136
Difference	\$	(32,235)

Administrative Expenses

The cost of administering the System is borne by the State and local employers on a current disbursement basis.

Group Life Insurance Plan (GLIP)

GLIP provides for up to \$50,000 of member and certain post-retirement death benefits to be paid as life insurance. All benefits provided are on a one-year term insurance basis. Participating employers are billed each year based on the aggregate of anticipated claims for the plan year. Premiums are set so that the reserve will, at its lowest amount during any year, be approximately equal to payables. Payables is an estimate of the amount payable for claims currently being processed, plus claims incurred but not yet reported.

Deficiency Costs

An employer may also have a deficiency contribution. When a new employer joins a System, any past service liability is paid for by separate annual payments over a period of up to 25 years. These payments are not affected by the funding method.

Rate and Contribution Comparability

Unless stated otherwise, rates and contributions assume a payment date of February 1 before the fiscal year end to provide for comparability of State and local government rates and costs.

Actuarial Valuation Balance Sheets

Actuarial assets and liabilities are used to determine employer contributions for the fiscal year ending March 31. Values are in millions of dollars, as calculated in the April 1, 2020 valuation for fiscal year end (FYE) 2022 billing and the April 1, 2021 valuation for fiscal year end 2023 billing.

	FYE 2022 Billing*	FYE 2023 Billing*
	(Dollars in Millions)	
ERS		
Actuarial Assets		
Actuarial Value of Present Assets:		
Held for Current Retirees & Beneficiaries	\$ 116,711	\$ 131,389
Held for Members	56,524	80,155
Member Contributions	8,273	8,805
Total	\$ 181,509	\$ 220,349
Actuarial Present Value of Prospective Contributions:		
From Employers	\$ 37,767	\$ 30,133
From Members	5,913	7,033
Total	\$ 43,680	\$ 37,166
Total Actuarial Assets	\$ 225,188	\$ 257,515
Actuarial Liabilities		
Actuarial Present Value of Benefits for Current Retirees & Beneficiaries:		
Service Retirement Benefits	\$ 111,927	\$ 126,238
Disability Retirement Benefits	4,683	5,048
Death Benefits	102	104
Total	\$ 116,711	\$ 131,389
Actuarial Present Value of Benefits for Members:		
Service Retirement Benefits	\$ 105,089	\$ 122,262
Disability Retirement Benefits	1,453	1,696
Death Benefits	1,088	1,179
Other	847	989
Total	\$ 108,477	\$ 126,125
Total Actuarial Liabilities	\$ 225,188	\$ 257,515
* Numbers may not add up due to rounding.		

Actuarial Valuation Balance Sheets

continued

	FYE 2022 Billing*	FYE 2023 Billing*
	(Dollars in Millions)	
PFRS		
Actuarial Assets		
Actuarial Value of Present Assets:		
Held for Current Retirees & Beneficiaries	\$ 23,038	\$ 26,477
Held for Members	9,090	12,764
Member Contributions	175	183
Total	\$ 32,303	\$ 39,424
Actuarial Present Value of Prospective Contributions:		
From Employers	\$ 10,426	\$ 10,680
From Members	1,004	1,137
Total	\$ 11,430	\$ 11,817
Total Actuarial Assets	\$ 43,733	\$ 51,242
Actuarial Liabilities		
Actuarial Present Value of Benefits for Current Retirees & Beneficiaries:		
Service Retirement Benefits	\$ 19,048	\$ 22,060
Disability Retirement Benefits	3,775	4,169
Death Benefits	215	248
Total	\$ 23,038	\$ 26,477
Actuarial Present Value of Benefits for Members:		
Service Retirement Benefits	\$ 19,140	\$ 22,930
Disability Retirement Benefits	1,390	1,656
Death Benefits	146	159
Other	19	20
Total	\$ 20,695	\$ 24,765
Total Actuarial Liabilities	\$ 43,733	\$ 51,242
* Numbers may not add up due to rounding.		

New York Public Employees' Group Life Insurance Plan

Actuarial Assets	2022	2023
	(Dollars in Millions)	
Assets		
Investments	\$ 181	\$ 98
Premiums Receivable	–	–
Total Assets	\$ 181	\$ 98
Liabilities		
Managed Overdraft (cash)	11	1
Claims Being Processed	41	55
Claims Unreported	21	24
Reserve for Mortality Fluctuations	108	18
Total Liabilities	\$ 181	\$ 98

Local Government Employers’ Final Contribution Rates for Select Plans

The following contribution rates are for the fiscal year ending March 31, 2023 and assume a February 1, 2023 payment date.

All rates exclude any contribution rates due to amortization payments, prior years’ adjustments, deficiency costs, retirement incentive programs and certain benefits electable by local governments, such as credit for unused sick leave or one-year final average salary. All rates include Group Life Insurance.

	Plan ID	Percentage of Payroll				
		Tier 1	Tier 2	Tiers 3 & 4	Tier 5	Tier 6
ERS						
Age-based plans						
Basic, Age 55, Age 60 Contributory	71-a	8.5	7.9	n/a	n/a	n/a
Article 14	A14	n/a	n/a	12.9	n/a	n/a
Article 15	A15	n/a	n/a	12.9	11.0	8.1
Guaranteed Benefits	75-e	15.5	14.0	n/a	n/a	n/a
Career	75-g	16.6	15.2	n/a	n/a	n/a
New Career	75-h/75-i	17.3	15.8	n/a	n/a	n/a
25-year plans						
Sheriffs and Deputies	89-a	19.7	18.6	n/a	n/a	n/a
Article 14B Sheriffs — 25-year	551	18.6	18.5	17.4	15.6	12.3
Article 14B Sheriffs — 25-year + 1/60th	551-e	19.5	19.4	18.3	16.7	13.4
full service for 1/60th	551-ee	20.2	20.1	19.0	17.3	13.9
County Law Enforcement	89-e, etc.	20.5	20.4	16.5	14.6	11.4
20-year plans						
Sheriffs and Deputies	89-b	22.3	17.7	n/a	n/a	n/a
additional 1/60th	89-b(m)	22.5	18.9	n/a	n/a	n/a
Article 14B Sheriffs — 20-year	552	22.6	22.5	21.1	19.4	16.0
Article 14B Sheriffs — 20-year + 1/60th	553	22.6	22.5	21.5	20.0	16.8
full service for 1/60th	553b	23.5	23.4	22.4	20.8	17.5
Detective Investigators	89-d	22.0	21.8	n/a	n/a	n/a
additional 1/60th	89-d(m)	22.1	21.9	n/a	n/a	n/a

Local Government Employers' Final Contribution Rates for Select Plans

continued

	Plan ID	Percentage of Payroll				
		Tier 1	Tier 2	Tier 3	Tier 5*	Tier 6*
PFRS						
Age-based plans						
Basic, Age 55, Age 60 Contributory	371-a	13.1	11.1	11.1	7.6	4.1
Guaranteed Benefits	375-e	21.7	17.3	17.3	13.5	9.6
Career	375-g	24.0	19.1	19.1	15.2	11.3
New Career	375-i	24.9	19.6	19.6	15.8	11.8
Improved Career	375-j	24.9	19.6	19.6	15.8	11.8
25-year plans						
Contributory	384	n/a	n/a	n/a	20.4	15.8
additional 1/60th	384(f)	n/a	n/a	n/a	21.5	16.5
Non-Contributory	384	25.3	24.5	24.5	23.3	21.4
additional 1/60th	384(f)	26.2	25.9	25.9	24.6	22.6
20-year plans						
Contributory	384-d	n/a	n/a	n/a	25.0	20.2
additional 1/60th	384-e	n/a	n/a	n/a	25.3	20.5
Non-Contributory	384-d	29.8	29.0	29.7	27.6	25.2
additional 1/60th	384-e	30.2	29.9	29.7	28.5	26.1
* Age-based plans in Tier 5 and Tier 6 are contributory.						
There is no Tier 4 in PFRS.						

Contribution Rate Trends for Local Governments

Contribution rates are based on a February 1 payment date. Each rate is applied to the salary of members covered by that particular plan. Rates were calculated under the aggregate method. All rates include Group Life Insurance and administrative rates.

Actual costs borne by employers are shown in the Statistical Section.

Plan Name (Section)										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
ERS										
Guaranteed Benefits (75-e)										
Tier 1	25.8	24.8	22.6	19.6	19.5	19.4	19.2	19.4	22.5	15.5
Tier 2	23.3	22.5	20.5	17.6	17.5	17.4	17.3	17.5	20.3	14.0
Career (75-g)										
Tier 1	27.3	26.3	24.0	20.7	20.7	20.5	20.4	20.6	24.0	16.6
Tier 2	24.9	24.0	21.9	18.7	18.7	18.6	18.5	18.7	21.9	15.2
New Career (75-i)										
Tier 1	28.5	27.4	25.0	21.6	21.5	21.4	21.2	21.4	25.0	17.3
Tier 2	26.0	25.1	22.9	19.6	19.5	19.4	19.3	19.5	22.8	15.8
Article 14/15										
Tier 3	20.8	20.1	18.6	15.8	15.8	15.7	15.7	16.0	18.0	12.9
Article 15										
Tier 4	20.8	20.1	18.6	15.8	15.8	15.7	15.7	16.0	18.0	12.9
Tier 5	16.7	16.4	15.3	13.0	13.0	12.9	13.1	13.3	15.0	11.0
Tier 6	11.3	10.8	10.4	9.2	9.2	9.2	9.2	9.5	10.5	8.1

Contribution Rate Trends for Local Governments

continued

Plan Name (Section)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	PFRS									
Guaranteed Benefits (375-e)										
Tier 1	22.1	21.4	19.4	18.6	19.0	18.5	18.9	20.0	22.4	21.7
Tiers 2 & 3	18.1	17.8	16.1	15.4	15.7	15.3	15.6	16.5	17.9	17.3
Tier 5*	13.0	12.7	12.1	11.4	11.7	11.3	11.8	12.6	13.2	13.5
Tier 6*	7.3	7.2	6.4	7.1	7.3	7.0	7.3	8.0	8.4	9.6
Career (375-g)										
Tier 1	24.1	23.4	21.2	20.3	20.8	20.3	20.7	21.9	24.8	24.0
Tiers 2 & 3	19.7	19.4	17.6	16.8	17.2	16.7	17.1	18.1	19.8	19.1
Tier 5*	14.5	14.2	13.5	12.8	13.0	12.6	13.2	14.0	15.0	15.2
Tier 6*	8.6	8.5	7.6	8.4	8.5	8.2	8.6	9.3	10.1	11.3
New Career (375-i)										
Tier 1	24.9	24.2	21.9	21.0	21.5	21.0	21.4	22.6	25.7	24.9
Tiers 2 & 3	20.3	19.9	18.1	17.3	17.7	17.2	17.6	18.6	20.4	19.6
Tier 5*	15.1	14.7	14.0	13.2	13.5	13.1	13.6	14.5	15.6	15.8
Tier 6*	8.9	8.7	7.9	8.6	8.8	8.5	8.8	9.6	10.6	11.8
25-Year (384) — Contributory										
Tiers 1, 2 & 3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tier 5	18.4	18.1	16.6	15.9	16.2	15.8	16.2	17.3	20.2	20.4
Tier 6	12.3	12.0	11.2	11.2	11.4	11.0	11.3	12.2	14.7	15.8
25-Year + 1/60ths (384(f)) — Contributory										
Tiers 1, 2 & 3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tier 5	20.2	19.7	17.9	17.3	17.7	17.2	17.7	18.8	21.3	21.5
Tier 6	13.8	13.3	12.4	12.4	12.7	12.3	12.6	13.6	15.3	16.5
25-Year (384) — Non-Contributory										
Tier 1	24.0	23.2	21.2	20.9	21.4	20.8	21.2	22.5	26.0	25.3
Tiers 2 & 3	23.9	23.1	21.0	20.2	20.6	20.1	20.5	21.6	25.2	24.5
Tier 5	22.9	22.1	20.1	19.3	19.7	19.2	19.5	20.7	24.0	23.3
Tier 6	20.4	19.6	17.9	17.7	18.1	17.6	17.7	18.7	21.9	21.4
25-Year + 1/60ths (384(f)) — Non-Contributory										
Tier 1	26.1	25.1	22.7	22.0	22.5	21.9	22.3	23.6	26.9	26.2
Tiers 2 & 3	25.9	24.8	22.5	21.8	22.3	21.7	22.1	23.4	26.6	25.9
Tier 5	24.7	23.7	21.5	20.8	21.2	20.7	21.1	22.3	25.3	24.6
Tier 6	22.0	21.1	19.2	19.0	19.4	18.9	19.1	20.2	23.1	22.6
* Age-based plans in Tier 5 and Tier 6 are contributory.										
There is no Tier 4 in PFRS.										

Contribution Rate Trends for Local Governments

continued

Plan Name (Section)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	20-Year (384-d) — Contributory									
Tiers 1, 2 & 3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tier 5	22.7	22.0	20.1	19.5	19.9	19.4	19.8	21.0	25.5	25.0
Tier 6	16.0	15.4	14.3	14.5	14.8	14.4	14.6	15.7	19.8	20.2
20-Year + 1/60ths (384-e) — Contributory										
Tiers 1, 2 & 3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tier 5	23.0	22.3	20.4	20.2	20.6	20.1	20.6	21.9	25.9	25.3
Tier 6	16.3	15.6	14.5	15.1	15.4	15.0	15.3	16.4	20.2	20.5
20-Year (384-d) — Non-Contributory										
Tier 1	29.2	28.0	25.4	24.7	25.2	24.6	25.0	26.4	31.2	29.8
Tier 2	28.4	27.3	24.7	24.1	24.6	24.0	24.3	25.6	30.4	29.0
Tier 3	27.5	26.1	24.4	23.8	24.3	23.7	24.2	25.7	29.9	29.7
Tier 5	27.1	26.1	23.6	22.9	23.4	22.9	23.2	24.5	28.9	27.6
Tier 6	24.1	23.1	21.0	21.0	21.5	20.9	21.0	22.2	26.4	25.2
20-Year + 1/60ths (384-e) — Non-Contributory										
Tier 1										
1990-1998 elections (avg.)	29.6	28.4	25.8	25.0	25.6	25.0	25.3	26.7	31.6	30.2
all other years	29.6	28.4	25.8	25.0	25.6	25.0	25.3	26.7	31.6	30.2
Tier 2										
1990-1998 elections (avg.)	28.8	27.6	25.1	24.8	25.3	24.7	25.1	26.6	31.1	29.9
all other years	28.8	27.6	25.1	24.8	25.3	24.7	25.1	26.6	31.1	29.9
Tier 3	27.5	26.1	24.4	23.8	24.3	23.7	24.2	25.7	29.9	29.7
Tier 5	27.5	26.3	23.9	23.7	24.2	23.6	24.0	25.3	29.6	28.5
Tier 6	24.4	23.3	21.3	21.7	22.1	21.6	21.7	23.0	27.0	26.1
There is no Tier 4 in PFRS.										

Employer Contributions

Contributions here may differ from those appearing elsewhere in the Actuarial Section because these tables deal only with the contributions attributable to the fiscal year shown. Actual contributions may include adjustments due to previous years, such as amortization payments/credits and reconciliation of other years' bills. Employers who opted into either of the Contribution Stabilization Programs (Ch. 57 Laws of 2010 and Laws of 2013) are allowed to amortize a portion of their contribution. The following amounts show their total obligation. The average rates below are for normal, administrative and Group Life Insurance contributions.

Comparison of Employer Contributions*

For fiscal years ending 2022 and 2023. (Dollars in Millions)

	2023 Contribution			2022 Contribution		
	Salary	Contribution	Average Rate	Salary	Contribution	Average Rate
ERS						
Tier 1	\$ 41	\$ 7	17.5%	\$ 52	\$ 13	25.2%
Tier 2	46	7	15.9	62	14	23.0
Tiers 3 & 4	16,127	2,173	13.5	16,797	2,783	16.6
Tier 5	1,615	188	11.6	1,610	224	13.9
Tier 6	12,104	1,045	8.6	10,252	1,026	10.0
Total	\$ 29,934	\$ 3,421	11.4%	\$ 28,772	\$ 4,060	14.1%
PFRS						
Tier 1	\$ 1	\$ –	34.7%	\$ 1	\$ –	35.7%
Tier 2	2,460	746	30.3	2,559	808	31.6
Tier 3	12	3	28.7	17	5	29.2
Tier 5	214	55	25.8	216	58	26.6
Tier 6	1,500	308	20.5	1,251	251	20.1
Total	\$ 4,185	\$ 1,112	26.6%	\$ 4,043	\$ 1,122	27.8%
There is no Tier 4 in PFRS.						

Deficiency contributions for Fiscal Year 2023 (as of February 1, 2023) totaled \$1,305,434.

*Numbers may not add up due to rounding.

Employer Contributions

continued

Final Employer Contributions by Employer Type*

Attributable to fiscal year 2023 costs only. (Dollars in Millions)

Employer	Normal	Administrative	GLIP	Total
ERS				
State	\$ 1,319	\$ 72	\$ 22	\$ 1,414
Counties	585	31	9	625
Cities	85	5	2	92
Towns	184	11	4	198
Villages	59	3	1	63
Miscellaneous	522	32	11	565
Schools	430	26	9	464
Total	\$ 3,184	\$ 180	\$ 57	\$ 3,421
PFRS				
State	\$ 216	\$ 6	\$ -	\$ 221
Counties	232	6	-	238
Cities	304	8	-	312
Towns	115	3	-	118
Villages	93	3	-	95
Miscellaneous	123	3	-	127
Total	\$ 1,083	\$ 29	\$ -	\$ 1,112

*Numbers may not add up due to rounding.

Employer Contributions by Tier*

(Dollars in Millions)

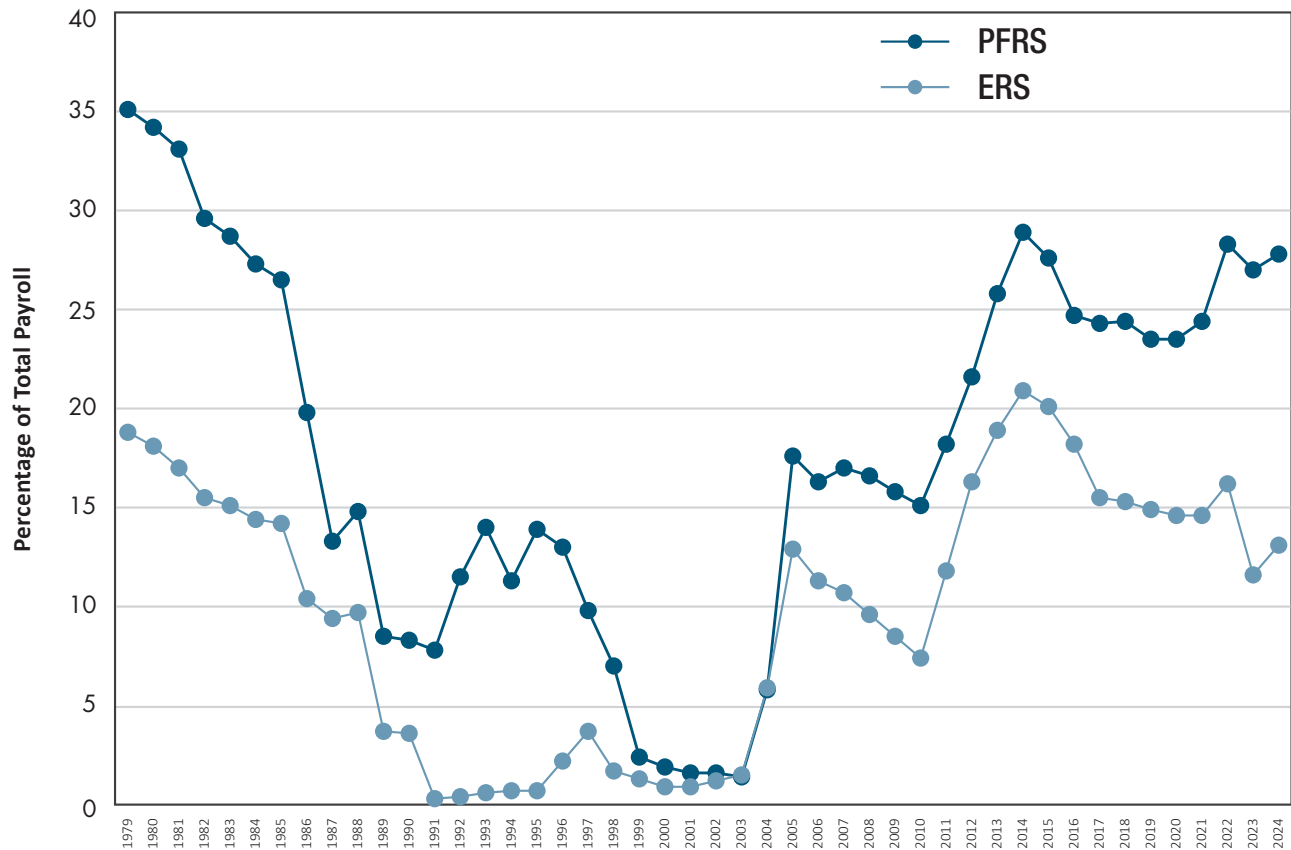
	2023 (as of February 1, 2023)		2022 (as of February 1, 2022)	
	Employer Contributions Attributable to Year	Percentage	Employer Contributions Attributable to Year	Percentage
ERS				
Tier 1	\$ 7	0.2%	\$ 13	0.3%
Tier 2	7	0.2	14	0.3
Tiers 3 & 4	2,173	63.5	2,783	68.5
Tier 5	188	5.5	224	5.5
Tier 6	1,045	30.6	1,026	25.3
Total	\$ 3,421	100.0%	\$ 4,060	100.0%
PFRS				
Tier 1	\$ 0	0.0%	\$ 0	0.0%
Tier 2	746	67.1	808	72.0
Tier 3	3	0.3	5	0.4
Tier 5	55	5.0	58	5.1
Tier 6	308	27.7	251	22.4
Total	\$ 1,112	100.0%	\$ 1,122	100.0%
There is no Tier 4 in PFRS.				

*Numbers may not add up due to rounding.

Historical Trends (Rates as a Percentage of Salary, 1979 – 2024)

The State is obligated to pay its annual bill to NYSLRS on March 1, one month before the end of the fiscal year. Through 2004, local employers paid their bills by December 15, three and one-half months before the end of the fiscal year. Beginning in 2005, the payment date for local employers was changed to February 1; however, employers can choose to pay a discounted prepayment amount by December 15 of the previous year.

Trends in Employer Contribution Rates



Changes in Contributions

The System's experience in many areas (employee salary growth or decrease, investment return, legislative enactments of benefits) is assessed and quantified yearly. Each element can, but may not, cause an increase or decrease in the contributions to be collected.

Analysis of Changes (By Source)

Experience during one fiscal year produces the increase or decrease in contributions for the following year.

(Dollars in Millions)

Fiscal Year Valuation Date	Fiscal Year Bill Date	Contributions for Preceding Fiscal Year Bill	Salary Growth	Return on Investments	Assumption Changes	Changes in Benefits	Other Adjustments	Projected Contributions for Fiscal Year Shown*
ERS								
2013	2015	\$ 5,243	\$ 97	\$ 521	\$ (539)	n/a	\$ (182)	\$ 5,140
2014	2016	5,143	(24)	(937)	633	n/a	(187)	4,628
2015	2017	4,515	35	(396)	273	n/a	(433)	3,994
2016	2018	3,995	85	120	22	n/a	(195)	4,027
2017	2019	4,005	108	(123)	131	n/a	(111)	4,010
2018	2020	3,977	39	(210)	298	n/a	(123)	3,981
2019	2021	3,998	128	50	105	n/a	(166)	4,115
2020	2022	4,113	120	511	246	n/a	(308)	4,682
2021	2023	4,554	(19)	(3,997)	3,058	n/a	(255)	3,331
2022	2024	3,356	129	(91)	96	59	330	3,879
PFRS								
2013	2015	\$ 936	\$ 3	\$ 79	\$ (83)	n/a	\$ (18)	\$ 917
2014	2016	917	23	(143)	52	n/a	(7)	842
2015	2017	809	1	(70)	161	n/a	(73)	828
2016	2018	857	60	17	36	n/a	(75)	895
2017	2019	888	31	(21)	12	n/a	(19)	891
2018	2020	866	(3)	(34)	49	n/a	8	886
2019	2021	875	12	6	53	n/a	(15)	931
2020	2022	981	136	85	133	n/a	(115)	1,220
2021	2023	1,093	(70)	(646)	567	n/a	150	1,094
2022	2024	1,094	69	(14)	9	4	30	1,193

* This is an estimated figure. Minor adjustments, mostly salary-related, result in the final contribution figure for the year as shown in the Contributions for Preceding Fiscal Year Bill column.

Note: Chapter 94 of the Laws of 2015 changed the definition of billing salary beginning with fiscal year 2016. The billing rates are applied to salaries as of the end of the previous fiscal year, rather than the end of the fiscal year when the contributions are made.

The Projected Contributions for Fiscal Year Shown is based on one year of salary projection (previously a two-year projection) and the Contributions for Preceding Fiscal Year Bill is based on known salaries from the previous fiscal year (previously a one-year projection). This explains the large decrease in contributions from the projected to the actual amount for fiscal year 2016.

Assets and Accrued Liabilities

Plan assets can be expressed as the fair value or the actuarial value of assets. The fair value of assets represents the fair value of investments as of the last day of the fiscal year. The actuarial value of assets smooths the volatility in the fair value by phasing in unexpected gains and losses over a period of five years. The actuarial accrued liability is the portion of the actuarial present value of future benefits that is attributed to service rendered as of the valuation date. Note that the asset values do not include the following dedicated assets: Group Life Insurance Plan, Non-Member Contributions, Administrative Overbill Account, Loan Insurance Reserve and Annuity Savings Fund.

(Dollars in Millions)

Valuation Date	Fair Value of Assets (FVA)	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AL)	Ratio of Assets to AL based on	
				FVA	AVA
ERS					
4/1/13	\$ 139,580	\$ 132,067	\$ 149,211	93.5%	88.5%
4/1/14	154,119	145,985	158,638	97.2	92.0
4/1/15	161,065	156,648	167,065	96.4	93.8
4/1/16	156,088	162,119	172,246	90.6	94.1
4/1/17	167,820	168,246	178,216	94.2	94.4
4/1/18	179,995	175,430	184,504	97.6	95.1
4/1/19	182,541	180,723	189,751	96.2	95.2
4/1/20	167,933	181,509	195,734	85.8	92.7
4/1/21	220,349	220,349	219,298	100.5	100.5
4/1/22	231,828	226,336	227,975	101.7	99.3
PFRS					
4/1/13	\$ 24,436	\$ 23,112	\$ 25,815	94.7%	89.5%
4/1/14	26,961	25,474	27,377	98.5	93.0
4/1/15	28,154	27,330	29,336	96.0	93.2
4/1/16	27,337	28,362	30,620	89.3	92.6
4/1/17	29,539	29,586	31,776	93.0	93.1
4/1/18	31,838	31,009	32,989	96.5	94.0
4/1/19	32,386	32,050	34,260	94.5	93.5
4/1/20	29,896	32,303	36,170	82.7	89.3
4/1/21	39,424	39,424	41,083	96.0	96.0
4/1/22	41,596	40,619	42,785	97.2	94.9

Solvency Test

The System is funded in accordance with the aggregate method. The following solvency test is one means of checking the System's funding progress. In this test, the System's actuarial value of assets is compared to:

- (1) the required member contributions on deposit;
- (2) the liabilities for future benefits to persons who have retired; and
- (3) the employer-financed liabilities for service already rendered by active members.

The accrued liabilities in this chart are calculated in accordance with the entry age normal method.

Valuation Date	Accrued Liability (Dollars in Millions)				Actuarial Assets (Dollars in Millions)	Portion of Actuarial Accrued Liabilities Covered by Actuarial Assets		
	Member Contributions (1)	Retiree (2)	Active (3)	Total (1) + (2) + (3)		(1)	(2)	(3)
ERS								
4/1/13	\$ 8,328	\$ 78,743	\$ 62,140	\$ 149,211	\$ 132,067	100.0%	100.0%	72.4%
4/1/14	8,462	85,528	64,648	158,638	145,985	100.0	100.0	80.4
4/1/15	8,608	90,163	68,294	167,065	156,648	100.0	100.0	84.7
4/1/16	8,635	95,102	68,509	172,246	162,119	100.0	100.0	85.2
4/1/17	8,666	100,320	69,230	178,216	168,246	100.0	100.0	85.6
4/1/18	8,537	107,506	68,461	184,504	175,430	100.0	100.0	86.7
4/1/19	8,567	111,708	69,476	189,751	180,723	100.0	100.0	87.0
4/1/20	8,273	116,711	70,750	195,734	181,509	100.0	100.0	79.9
4/1/21	8,805	131,389	79,104	219,298	220,349	100.0	100.0	101.3
4/1/22	8,528	138,626	80,821	227,975	226,336	100.0	100.0	98.0
PFRS								
4/1/13	\$ 5	\$ 14,948	\$ 10,862	\$ 25,815	\$ 23,112	100.0%	100.0%	75.1%
4/1/14	10	15,958	11,409	27,377	25,474	100.0	100.0	83.3
4/1/15	20	17,072	12,244	29,336	27,330	100.0	100.0	83.6
4/1/16	34	17,599	12,987	30,620	28,362	100.0	100.0	82.6
4/1/17	55	18,920	12,801	31,776	29,586	100.0	100.0	82.9
4/1/18	85	20,265	12,639	32,989	31,009	100.0	100.0	84.3
4/1/19	125	21,625	12,510	34,260	32,050	100.0	100.0	82.3
4/1/20	175	23,038	12,957	36,170	32,303	100.0	100.0	70.2
4/1/21	183	26,477	14,423	41,083	39,424	100.0	100.0	88.5
4/1/22	251	28,015	14,519	42,785	40,619	100.0	100.0	85.1

Schedule of Active Member Data

Fiscal Year Ending March 31	Active Members	Annual Member Payroll (Dollars in Millions)	Percentage Increase in Annual Member Payroll	Average Salary
ERS				
2013	498,266	\$ 24,405	0.5%	\$ 48,979
2014	493,209	24,361	(0.2)	49,392
2015	491,558	24,480	0.5	49,801
2016	494,411	24,985	2.1	50,536
2017	496,441	25,520	2.1	51,406
2018	500,945	25,973	1.8	51,847
2019	501,037	26,668	2.7	53,226
2020	497,659	27,350	2.6	54,958
2021	469,968	27,074	(1.0)	57,608
2022	473,915	27,650	2.1	58,343
PFRS				
2013	30,780	\$ 3,163	(0.9)%	\$ 102,754
2014	31,218	3,233	2.2	103,549
2015	31,372	3,257	0.8	103,822
2016	31,720	3,416	4.9	107,700
2017	32,332	3,522	3.1	108,930
2018	32,470	3,548	0.7	109,265
2019	32,573	3,593	1.3	110,309
2020	32,888	3,910	8.8	118,902
2021	31,922	3,719	(4.9)	116,499
2022	32,169	3,884	4.4	120,735

Schedule of Retired Members and Beneficiaries

Added to and Removed from Benefit Payroll

Fiscal Year	Number of Retired Members and Beneficiaries		Annual Benefits of Retired Members and Beneficiaries		Total Number of Retired Members and Beneficiaries	Total Annual Benefit	Percentage Increase in Total Annual Benefits	Average Annual Benefit
	Added During the Year	Removed During the Year	Added During the Year	Removed During the Year				
ERS								
2013	23,424	13,993	\$ 627,992,358	\$ 207,014,141	380,899	\$ 8,515,215,928	5.20%	\$ 22,356
2014	23,320	14,931	636,672,277	229,131,028	389,288	8,922,757,178	4.79	22,921
2015	21,832	14,339	615,594,488	225,462,412	396,781	9,312,889,254	4.37	23,471
2016	25,517	15,186	764,025,727	247,047,150	407,112	9,829,867,831	5.55	24,145
2017	25,828	15,441	783,795,021	260,190,707	417,499	10,353,472,145	5.33	24,799
2018	31,709	14,655	974,084,983	248,074,441	434,553	11,079,482,687	7.01	25,496
2019	26,559	16,393	860,370,424	283,931,808	444,719	11,655,921,302	5.20	26,210
2020	25,018	19,931	824,249,961	318,809,092	449,806	12,161,362,171	4.34	27,037
2021	26,155	17,700	860,284,597	297,582,782	458,261	12,724,063,986	4.63	27,766
2022	27,115	16,712	988,935,582	357,043,950	468,664	13,355,955,619	4.97	28,498
PFRS								
2013	1,629	798	\$ 120,115,279	\$ 25,836,637	32,537	\$ 1,517,961,244	6.62%	\$ 46,653
2014	1,431	851	99,767,882	27,650,778	33,117	1,590,078,348	4.75	48,014
2015	1,222	812	89,763,321	27,980,968	33,527	1,651,860,701	3.89	49,270
2016	1,163	859	90,801,381	30,667,776	33,831	1,711,994,306	3.64	50,604
2017	2,028	903	157,020,746	32,764,190	34,956	1,836,250,862	7.26	52,530
2018	2,027	940	162,851,223	34,346,639	36,043	1,964,755,446	7.00	54,511
2019	2,011	978	169,652,095	37,229,104	37,076	2,097,178,437	6.74	56,564
2020	1,763	1,238	146,089,459	59,162,270	37,601	2,184,105,626	4.14	58,086
2021	1,960	1,194	162,871,045	35,722,187	38,367	2,311,254,484	5.82	60,241
2022	1,971	1,079	191,514,388	48,007,465	39,259	2,454,761,407	6.21	62,527

For both systems, annual benefits are based on option 0 benefits (prior to option selection and partial lump sum distribution) plus cost-of-living adjustments (COLA).

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Statistical



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Schedule of Additions to Fiduciary Net Position

(Dollars in Thousands)

Year Ending	Member Contributions	Employer Contributions	Other Income*	Investment Income/(Loss)	Total
2023	\$ 656,764	\$ 4,404,086	\$ 72,921	\$ (13,540,771)	\$ (8,407,000)
ERS	565,110	3,305,845	64,648	(11,475,648)	(7,540,045)
PFRS	91,654	1,098,241	8,273	(2,065,123)	(866,955)
2022	\$ 577,594	\$ 5,627,746	\$ 126,708	\$ 22,374,115	\$ 28,706,163
ERS	494,802	4,528,207	109,874	18,984,398	24,117,281
PFRS	82,792	1,099,539	16,834	3,389,717	4,588,882
2021	\$ 492,341	\$ 5,029,790	\$ 116,652	\$ 70,649,606	\$ 76,288,389
ERS	427,032	4,062,302	103,941	59,964,043	64,557,318
PFRS	65,309	967,488	12,711	10,685,563	11,731,071
2020	\$ 453,698	\$ 4,782,706	\$ 146,762	\$ (8,798,771)	\$ (3,415,605)
ERS	395,338	3,920,360	138,859	(7,470,542)	(3,015,985)
PFRS	58,360	862,346	7,903	(1,328,229)	(399,620)
2019	\$ 386,519	\$ 4,744,309	\$ 170,154	\$ 10,761,776	\$ 16,062,758
ERS	345,846	3,890,215	160,431	9,140,487	13,536,979
PFRS	40,673	854,094	9,723	1,621,289	2,525,779
2018	\$ 349,389	\$ 4,823,307	\$ 215,614	\$ 21,338,033	\$ 26,726,343
ERS	318,439	3,949,873	181,725	18,128,993	22,579,030
PFRS	30,950	873,434	33,889	3,209,040	4,147,313
2017	\$ 328,827	\$ 4,786,963	\$ 236,401	\$ 20,225,244	\$ 25,577,435
ERS	306,218	3,949,710	200,379	17,194,267	21,650,574
PFRS	22,609	837,253	36,022	3,030,977	3,926,861
2016	\$ 306,631	\$ 5,140,204	\$ 332,880	\$ (384,834)	\$ 5,394,881
ERS	289,333	4,347,619	198,332	(327,069)	4,508,215
PFRS	17,298	792,585	134,548	(57,765)	886,666
2015	\$ 284,793	\$ 5,797,449	\$ 230,799	\$ 12,444,891	\$ 18,757,932
ERS	272,004	4,893,110	193,176	10,582,102	15,940,392
PFRS	12,789	904,339	37,623	1,862,789	2,817,540
2014	\$ 281,398	\$ 6,064,133	\$ 192,581	\$ 20,598,593	\$ 27,136,705
ERS	273,545	5,137,935	175,677	17,496,541	23,083,698
PFRS	7,853	926,198	16,904	3,102,052	4,053,007

* Includes interest earned on member loans, interest on accounts receivable and transfers from other systems.

Schedule of Investment Income/(Loss)

(Dollars in Thousands)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Net Change in Fair Value of Investments	\$(17,270,032)	\$18,519,023	\$ 67,602,333	\$(12,135,353)	\$ 7,179,934	\$17,859,769	\$16,923,203	\$ (3,934,853)	\$ 9,275,335	\$17,432,110
Interest	1,517,186	1,234,903	1,195,961	1,321,234	1,321,174	1,312,608	1,349,658	1,446,569	1,447,757	1,366,175
Dividends	1,680,733	1,653,824	1,556,765	1,794,002	1,825,117	1,723,896	1,611,929	1,593,010	1,589,248	1,498,622
Real Estate and Mortgages	558,630	604,534	500,894	459,732	523,165	472,188	531,225	491,949	414,345	353,821
Alternative	735,432	853,919	598,918	440,806	354,214	352,488	230,919	174,552	174,850	259,960
Security Lending Income	774,037	45,123	47,393	29,326	48,942	73,563	74,428	52,878	35,639	28,381
International Equity	246,362	452,267	148,733	197,033	242,877	295,388	153,368	360,723	137,227	220,090
Other Including Prior Year Adjustment	(122,225)	(27,891)	(85,210)	(117,563)	(5,575)	(14,581)	33,456	1,461	(40,881)	17,187
Security Lending Expenses	(728,502)	(14,607)	(11,927)	(2,735)	(4,893)	(49,128)	(18,001)	(5,278)	(3,563)	(2,838)
Investment Expenses	(932,392)	(946,980)	(904,254)	(785,253)	(723,179)	(688,158)	(664,941)	(565,845)	(585,066)	(574,915)
Net Investment Income/(Loss)	\$(13,540,771)	\$ 22,374,115	\$ 70,649,606	\$ (8,798,771)	\$ 10,761,776	\$ 21,338,033	\$ 20,225,244	\$ (384,834)	\$ 12,444,891	\$ 20,598,593

Schedule of Deductions from Fiduciary Net Position

(Dollars in Thousands)

Year Ending	Retirement Allowances	Post-Retirement Supplements	Death Benefits	Separation from Service	Administrative Expenses	Other Expenses	Total
2023	\$ 14,402,759	\$ 771,483	\$ 310,254	\$ 43,987	\$ 207,995	\$ 67,159	\$ 15,803,637
ERS	12,076,625	668,940	289,991	39,362	184,229	67,058	13,326,205
PFRS	2,326,134	102,543	20,263	4,625	23,766	101	2,477,432
2022	\$ 13,791,579	\$ 690,266	\$ 237,791	\$ 32,755	\$ 163,500	\$ 152,632	\$ 15,068,523
ERS	11,594,341	593,110	227,566	29,620	144,128	59,626	12,648,391
PFRS	2,197,238	97,156	10,225	3,135	19,372	93,006	2,420,132
2021	\$ 13,096,127	\$ 668,641	\$ 257,999	\$ 37,390	\$ 165,097	\$ 61,814	\$ 14,287,068
ERS	11,034,609	571,485	244,443	36,158	144,234	61,488	12,092,417
PFRS	2,061,518	97,156	13,556	1,232	20,863	326	2,194,651
2020	\$ 12,424,608	\$ 662,035	\$ 159,510	\$ 12,760	\$ 139,050	\$ 275,831	\$ 13,673,794
ERS	10,489,929	563,583	154,249	12,472	121,694	244,530	11,586,457
PFRS	1,934,679	98,452	5,261	288	17,356	31,301	2,087,337
2019	\$ 11,880,340	\$ 646,606	\$ 214,666	\$ 34,645	\$ 136,477	\$ 57,674	\$ 12,970,408
ERS	10,030,590	548,382	202,809	32,984	119,304	57,931	10,992,000
PFRS	1,849,750	98,224	11,857	1,661	17,173	(257)	1,978,408
2018	\$ 11,197,802	\$ 628,287	\$ 201,252	\$ 34,969	\$ 122,806	\$ 66,609	\$ 12,251,725
ERS	9,478,272	530,354	191,579	34,302	106,972	68,769	10,410,248
PFRS	1,719,530	97,933	9,673	667	15,834	(2,160)	1,841,477
2017	\$ 10,617,500	\$ 615,032	\$ 216,150	\$ (5,406)	\$ 107,134	\$ 65,037	\$ 11,615,447
ERS	9,015,444	516,852	207,976	820	93,943	64,441	9,899,476
PFRS	1,602,056	98,180	8,174	(6,226)	13,191	596	1,715,971
2016	\$ 10,113,758	\$ 606,536	\$ 188,190	\$ 34,488	\$ 106,620	\$ 117,500	\$ 11,167,092
ERS	8,536,930	508,112	179,861	33,097	93,012	117,197	9,468,209
PFRS	1,576,828	98,424	8,329	1,391	13,608	303	1,698,883
2015	\$ 9,651,227	\$ 601,850	\$ 183,091	\$ 27,628	\$ 107,151	\$ 49,918	\$ 10,620,865
ERS	8,152,183	502,916	174,652	26,067	93,357	51,321	9,000,496
PFRS	1,499,044	98,934	8,439	1,561	13,794	(1,403)	1,620,369
2014	\$ 9,098,453	\$ 596,556	\$ 203,820	\$ 29,972	\$ 105,662	\$ 48,725	\$ 10,083,188
ERS	7,702,970	497,142	185,169	28,439	92,266	51,341	8,557,327
PFRS	1,395,483	99,414	18,651	1,533	13,396	(2,616)	1,525,861

Schedule of Total Changes in Fiduciary Net Position

(Dollars in Thousands)

Year Ending	Member Contributions	Employer Contributions	Other Income	Investment Income/(Loss)	Total Additions
2023	\$ 656,764	\$ 4,404,086	\$ 72,921	\$ (13,540,771)	\$ (8,407,000)
ERS	565,110	3,305,845	64,648	(11,475,648)	(7,540,045)
PFRS	91,654	1,098,241	8,273	(2,065,123)	(866,955)
2022	\$ 577,594	\$ 5,627,746	\$ 126,708	\$ 22,374,115	\$ 28,706,163
ERS	494,802	4,528,207	109,874	18,984,398	24,117,281
PFRS	82,792	1,099,539	16,834	3,389,717	4,588,882
2021	\$ 492,341	\$ 5,029,790	\$ 116,652	\$ 70,649,606	\$ 76,288,389
ERS	427,032	4,062,302	103,941	59,964,043	64,557,318
PFRS	65,309	967,488	12,711	10,685,563	11,731,071
2020	\$ 453,698	\$ 4,782,706	\$ 146,762	\$ (8,798,771)	\$ (3,415,605)
ERS	395,338	3,920,360	138,859	(7,470,542)	(3,015,985)
PFRS	58,360	862,346	7,903	(1,328,229)	(399,620)
2019	\$ 386,519	\$ 4,744,309	\$ 170,154	\$ 10,761,776	\$ 16,062,758
ERS	345,846	3,890,215	160,431	9,140,487	13,536,979
PFRS	40,673	854,094	9,723	1,621,289	2,525,779
2018	\$ 349,389	\$ 4,823,307	\$ 215,614	\$ 21,338,033	\$ 26,726,343
ERS	318,439	3,949,873	181,725	18,128,993	22,579,030
PFRS	30,950	873,434	33,889	3,209,040	4,147,313
2017	\$ 328,827	\$ 4,786,963	\$ 236,401	\$ 20,225,244	\$ 25,577,435
ERS	306,218	3,949,710	200,379	17,194,267	21,650,574
PFRS	22,609	837,253	36,022	3,030,977	3,926,861
2016	\$ 306,631	\$ 5,140,204	\$ 332,880	\$ (384,834)	\$ 5,394,881
ERS	289,333	4,347,619	198,332	(327,069)	4,508,215
PFRS	17,298	792,585	134,548	(57,765)	886,666
2015	\$ 284,793	\$ 5,797,449	\$ 230,799	\$ 12,444,891	\$ 18,757,932
ERS	272,004	4,893,110	193,176	10,582,102	15,940,392
PFRS	12,789	904,339	37,623	1,862,789	2,817,540
2014	\$ 281,398	\$ 6,064,133	\$ 192,581	\$ 20,598,593	\$ 27,136,705
ERS	273,545	5,137,935	175,677	17,496,541	23,083,698
PFRS	7,853	926,198	16,904	3,102,052	4,053,007

Schedule of Total Changes in Fiduciary Net Position

continued

Retirement Allowances	Post-Retirement Supplement	Death Benefits	Separation from Service	Administrative Expenses	Other Expenses	Total Deductions	Net Increase / Decrease
\$ 14,402,759	\$ 771,483	\$ 310,254	\$ 43,987	\$ 207,995	\$ 67,159	\$ 15,803,637	\$ (24,210,637)
12,076,625	668,940	289,991	39,362	184,229	67,058	13,326,205	(20,866,250)
2,326,134	102,543	20,263	4,625	23,766	101	2,477,432	(3,344,387)
\$ 13,791,579	\$ 690,266	\$ 237,791	\$ 32,755	\$ 163,500	\$ 152,632	\$ 15,068,523	\$ 13,637,640
11,594,341	593,110	227,566	29,620	144,128	59,626	12,648,391	11,468,890
2,197,238	97,156	10,225	3,135	19,372	93,006	2,420,132	2,168,750
\$ 13,096,127	\$ 668,641	\$ 257,999	\$ 37,390	\$ 165,097	\$ 61,814	\$ 14,287,068	\$ 62,001,321
11,034,609	571,485	244,443	36,158	144,234	61,488	12,092,417	52,464,901
2,061,518	97,156	13,556	1,232	20,863	326	2,194,651	9,536,420
\$ 12,424,608	\$ 662,035	\$ 159,510	\$ 12,760	\$ 139,050	\$ 275,831	\$ 13,673,794	\$ (17,089,399)
10,489,929	563,583	154,249	12,472	121,694	244,530	11,586,457	(14,602,442)
1,934,679	98,452	5,261	288	17,356	31,301	2,087,337	(2,486,957)
\$ 11,880,340	\$ 646,606	\$ 214,666	\$ 34,645	\$ 136,477	\$ 57,674	\$ 12,970,408	\$ 3,092,350
10,030,590	548,382	202,809	32,984	119,304	57,931	10,992,000	2,544,979
1,849,750	98,224	11,857	1,661	17,173	(257)	1,978,408	547,371
\$ 11,197,802	\$ 628,287	\$ 201,252	\$ 34,969	\$ 122,806	\$ 66,609	\$ 12,251,725	\$ 14,474,618
9,478,272	530,354	191,579	34,302	106,972	68,769	10,410,248	12,168,782
1,719,530	97,933	9,673	667	15,834	(2,160)	1,841,477	2,305,836
\$ 10,617,500	\$ 615,032	\$ 216,150	\$ (5,406)	\$ 107,134	\$ 65,037	\$ 11,615,447	\$ 13,961,988
9,015,444	516,852	207,976	820	93,943	64,441	9,899,476	11,751,098
1,602,056	98,180	8,174	(6,226)	13,191	596	1,715,971	2,210,890
\$ 10,113,758	\$ 606,536	\$ 188,190	\$ 34,488	\$ 106,620	\$ 117,500	\$ 11,167,092	\$ (5,772,211)
8,536,930	508,112	179,861	33,097	93,012	117,197	9,468,209	(4,959,994)
1,576,828	98,424	8,329	1,391	13,608	303	1,698,883	(812,217)
\$ 9,651,227	\$ 601,850	\$ 183,091	\$ 27,628	\$ 107,151	\$ 49,918	\$ 10,620,865	\$ 8,137,067
8,152,183	502,916	174,652	26,067	93,357	51,321	9,000,496	6,939,896
1,499,044	98,934	8,439	1,561	13,794	(1,403)	1,620,369	1,197,171
\$ 9,098,453	\$ 596,556	\$ 203,820	\$ 29,972	\$ 105,662	\$ 48,725	\$ 10,083,188	\$ 17,053,517
7,702,970	497,142	185,169	28,439	92,266	51,341	8,557,327	14,526,371
1,395,483	99,414	18,651	1,533	13,396	(2,616)	1,525,861	2,527,146

Service Retirees — ERS

This table shows the number (*Number*), average final average salary (*Avg FAS*), and average annual pension benefit prior to option selection, including any cost-of-living adjustment (*Avg Pen*), of surviving Employees' Retirement System service retirees on March 31, 2023. Groupings are based on years of service and age, with a breakdown by category of employer.

Years of Service	Nearest Age														
	Under 55			55 – 64			65 – 74			75 – 84			85 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
State															
Under 10	–	–	–	1,074	47,694	4,709	2,698	46,553	5,710	1,628	40,628	5,752	450	30,695	4,993
10 – 14	–	–	–	2,908	52,219	8,638	8,582	47,818	9,522	6,098	38,352	8,562	2,548	31,061	8,328
15 – 19	–	–	–	1,839	59,198	13,772	5,064	56,745	15,719	3,741	45,841	14,421	1,989	35,513	13,500
20 – 24	7	110,282	55,007	2,924	73,823	27,898	8,333	69,409	29,994	6,948	55,132	26,257	3,248	40,722	22,636
25 – 29	860	106,205	52,890	6,264	85,511	42,370	10,607	74,940	40,289	7,369	58,806	34,685	2,569	44,462	30,030
30 – 34	16	110,890	55,149	11,240	86,755	53,375	16,679	77,156	49,875	8,314	61,604	42,864	2,067	49,263	37,985
35 & Over	–	–	–	4,717	81,875	56,820	16,200	76,694	58,482	11,108	67,836	55,436	2,051	59,219	51,784
Total	883	106,322	52,948	30,966	78,304	41,027	68,163	69,333	38,632	45,206	56,488	33,750	14,922	42,445	25,848
Counties															
Under 10	–	–	–	832	43,020	4,242	2,301	39,767	4,775	1,521	35,503	4,872	363	27,787	4,396
10 – 14	–	–	–	1,740	46,355	7,584	5,244	41,373	8,172	3,808	34,817	7,829	1,734	26,759	7,163
15 – 19	–	–	–	1,082	52,850	12,153	3,022	47,936	13,210	2,545	41,650	13,040	1,370	31,596	12,028
20 – 24	361	95,565	49,847	2,045	65,836	27,233	5,550	57,721	25,213	4,069	48,613	23,486	1,713	36,546	20,310
25 – 29	443	95,749	49,624	2,371	85,518	43,019	4,523	65,251	35,198	3,164	53,157	31,317	1,190	39,451	26,733
30 – 34	16	119,818	69,095	4,766	80,382	50,670	6,330	67,371	43,942	2,909	55,299	38,813	662	43,702	33,497
35 & Over	–	–	–	1,438	78,213	55,240	5,275	71,022	54,709	3,169	65,571	53,664	572	52,160	45,729
Total	820	96,138	50,102	14,274	70,520	35,624	32,245	57,991	29,761	21,185	48,489	25,869	7,604	35,256	19,125
Cities															
Under 10	–	–	–	131	38,151	3,787	360	36,175	4,460	223	31,078	4,225	67	23,388	3,623
10 – 14	–	–	–	290	44,324	7,147	804	39,261	7,646	624	32,099	7,226	257	24,649	6,569
15 – 19	–	–	–	160	50,419	11,577	517	46,363	12,898	376	38,471	12,107	192	26,942	10,371
20 – 24	–	–	–	272	61,973	23,249	768	56,844	24,501	516	45,224	21,620	229	30,844	17,464
25 – 29	–	–	–	211	67,578	31,445	623	63,111	33,990	459	48,290	28,857	183	36,211	25,073
30 – 34	–	–	–	884	71,595	45,197	1,203	62,109	40,573	527	51,406	36,330	136	39,653	31,139
35 & Over	–	–	–	304	75,191	52,901	1,110	65,113	50,414	602	55,291	45,730	133	41,999	37,853
Total	–	–	–	2,252	63,580	32,600	5,385	55,436	29,560	3,327	44,275	24,370	1,197	31,532	18,195
Towns															
Under 10	–	–	–	277	40,900	4,198	852	33,716	4,177	778	28,529	3,945	192	23,689	3,569
10 – 14	–	–	–	474	49,419	8,292	1,521	43,095	8,708	1,202	33,221	7,503	507	24,679	6,460
15 – 19	–	–	–	338	53,698	12,563	1,142	48,070	13,480	818	39,592	12,281	412	29,464	10,915
20 – 24	–	–	–	607	63,396	23,720	1,659	58,830	25,449	1,283	48,110	22,857	493	34,915	19,277
25 – 29	–	–	–	350	67,994	32,493	1,250	64,352	34,817	885	52,989	31,103	352	40,802	26,719
30 – 34	–	–	–	1,704	81,037	51,143	1,750	70,528	45,764	812	54,411	37,781	231	43,497	32,911
35 & Over	–	–	–	778	90,811	63,822	2,018	77,319	59,828	922	64,403	52,582	184	49,819	42,662
Total	–	–	–	4,528	71,537	37,966	10,192	59,523	31,275	6,700	45,775	23,604	2,371	33,737	18,059

Service Retirees — ERS

continued

Years of Service	Nearest Age														
	Under 55			55 – 64			65 – 74			75 – 84			85 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
Villages															
Under 10	–	–	–	100	38,960	4,212	242	33,672	4,062	206	30,801	4,126	67	24,820	3,810
10 – 14	–	–	–	144	49,580	8,024	486	41,599	8,314	352	33,942	7,549	182	24,651	6,364
15 – 19	–	–	–	109	55,157	13,105	317	50,155	14,105	266	40,859	12,659	131	28,765	11,050
20 – 24	–	–	–	172	61,572	23,068	490	62,487	26,973	363	52,515	24,675	166	34,086	19,028
25 – 29	–	–	–	119	73,844	35,903	343	67,203	36,083	274	54,638	31,942	115	38,163	25,184
30 – 34	–	–	–	463	82,928	52,499	535	68,288	44,096	278	52,090	36,392	70	41,555	32,272
35 & Over	–	–	–	204	88,107	61,779	540	75,187	57,839	288	62,721	51,263	72	45,829	41,373
Total	–	–	–	1,311	70,782	36,732	2,953	59,285	30,448	2,027	47,232	24,403	803	32,594	17,626
Miscellaneous															
Under 10	–	–	–	806	51,824	5,306	2,030	50,282	5,972	1,184	43,393	5,902	227	32,470	5,083
10 – 14	–	–	–	1,588	58,524	9,744	3,996	54,520	10,810	2,537	44,151	9,804	932	31,117	8,174
15 – 19	–	–	–	1,070	61,284	14,053	2,690	60,983	16,690	1,810	50,331	15,593	624	35,590	13,023
20 – 24	–	–	–	1,459	72,928	27,301	4,483	69,397	29,566	2,797	57,411	26,932	748	42,478	22,718
25 – 29	–	–	–	820	82,060	38,725	3,176	75,491	40,462	2,085	64,090	36,807	574	47,596	31,290
30 – 34	–	–	–	3,472	95,741	60,346	4,569	85,049	54,822	1,719	69,738	47,207	469	54,198	40,639
35 & Over	–	–	–	1,268	99,558	70,014	3,289	85,478	65,164	1,921	77,511	62,825	461	65,246	55,681
Total	–	–	–	10,483	79,426	38,603	24,233	70,341	34,089	14,053	58,171	29,459	4,035	42,917	23,936
School Districts															
Under 10	–	–	–	1,233	25,384	2,591	3,637	24,087	2,957	2,514	20,428	2,818	734	15,231	2,484
10 – 14	–	–	–	2,259	32,896	5,659	6,311	31,541	6,393	4,662	26,245	5,872	2,550	19,407	5,177
15 – 19	–	–	–	1,725	37,993	9,173	5,091	35,829	10,108	3,693	30,281	9,445	1,877	22,370	8,572
20 – 24	–	–	–	2,568	46,825	18,074	8,922	44,742	19,660	5,760	37,303	18,026	2,341	25,755	14,574
25 – 29	–	–	–	1,142	56,680	27,375	5,103	49,111	26,797	3,757	40,219	24,032	1,565	27,560	19,058
30 – 34	–	–	–	2,337	67,893	42,614	4,006	55,496	35,965	2,223	43,951	30,581	762	32,774	25,257
35 & Over	–	–	–	812	74,835	52,661	2,150	63,206	48,512	1,309	49,978	40,522	390	38,846	34,354
Total	–	–	–	12,076	47,661	20,853	35,220	41,939	18,827	23,918	34,059	16,075	10,219	24,093	12,497

Service Retirees — PFRS

This table shows the number (*Number*), average final average salary (*Avg FAS*), and average annual pension benefit prior to option selection, including any cost-of-living adjustment (*Avg Pen*), of surviving Police and Fire Retirement System service retirees on March 31, 2023. Groupings are based on years of service and age, with a breakdown by category of employer.

Years of Service	Nearest Age														
	Under 40			40 – 49			50 – 59			60 – 69			70 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
State															
Under 10	–	–	–	–	–	–	16	47,036	5,851	13	42,363	6,586	8	30,156	12,692
10 – 14	–	–	–	–	–	–	11	65,469	13,596	34	50,498	10,741	32	25,573	6,340
15 – 19	–	–	–	1	124,636	60,046	10	95,632	28,278	21	75,771	25,826	19	41,640	17,190
20 – 24	–	–	–	281	149,209	77,691	585	133,947	72,358	409	92,998	51,418	757	41,950	30,008
25 – 29	–	–	–	6	158,960	94,334	524	147,743	91,005	414	123,606	77,656	415	67,243	46,431
30 – 34	–	–	–	–	–	–	278	161,106	110,490	595	143,929	99,529	479	84,576	61,644
35 & Over	–	–	–	–	–	–	8	175,428	122,800	129	152,006	105,215	240	95,237	72,973
Total	–	–	–	288	149,327	77,976	1,432	142,735	85,363	1,615	122,795	78,616	1,950	64,042	45,978
Counties															
Under 10	–	–	–	–	–	–	4	60,241	7,436	7	62,068	7,738	3	37,701	5,269
10 – 14	–	–	–	–	–	–	6	98,039	20,865	14	78,291	16,426	26	31,531	7,957
15 – 19	–	–	–	–	–	–	4	123,987	33,787	6	95,194	30,950	14	47,337	17,994
20 – 24	–	–	–	52	194,539	101,475	370	171,426	91,579	302	140,440	76,249	1,046	66,122	42,040
25 – 29	–	–	–	5	216,769	124,603	398	199,351	122,890	427	176,038	110,618	459	108,344	72,342
30 – 34	–	–	–	–	–	–	280	218,900	149,112	580	199,437	138,317	889	132,123	96,386
35 & Over	–	–	–	–	–	–	28	234,246	155,066	175	224,114	157,206	634	158,354	121,815
Total	–	–	–	57	196,489	103,504	1,090	194,445	118,511	1,511	181,718	118,111	3,071	110,174	78,337
Cities															
Under 10	–	–	–	–	–	–	13	50,801	6,387	34	40,219	5,528	14	40,329	8,109
10 – 14	–	–	–	–	–	–	24	62,017	12,904	57	41,610	8,994	85	25,109	6,809
15 – 19	–	–	–	1	89,828	67,371	11	77,544	25,658	44	54,469	16,686	38	39,426	16,562
20 – 24	–	–	–	365	127,537	64,725	1,771	105,731	54,567	1,494	85,443	45,860	1,834	46,499	30,141
25 – 29	–	–	–	14	121,112	66,739	646	126,736	74,218	859	107,027	65,183	906	68,686	44,939
30 – 34	–	–	–	–	–	–	285	136,443	88,670	784	124,388	83,319	1,115	79,155	57,012
35 & Over	–	–	–	–	–	–	12	149,093	99,537	236	130,355	85,896	742	91,201	70,140
Total	–	–	–	380	127,201	64,806	2,762	113,250	62,173	3,508	100,915	60,301	4,734	64,984	44,978
Towns															
Under 10	–	–	–	–	–	–	24	40,637	4,399	31	37,222	4,658	44	26,796	4,702
10 – 14	–	–	–	–	–	–	9	60,679	12,342	40	49,146	10,419	54	29,255	7,701
15 – 19	–	–	–	1	98,631	49,316	6	80,709	21,526	27	57,946	18,077	22	37,261	15,256
20 – 24	–	–	–	150	135,684	68,727	593	114,914	58,931	508	89,732	47,569	419	55,011	34,262
25 – 29	–	–	–	10	156,927	86,409	167	136,592	78,525	200	112,240	65,763	170	77,716	47,941
30 – 34	–	–	–	–	–	–	97	160,007	104,381	219	142,982	94,196	245	95,166	67,553
35 & Over	–	–	–	–	–	–	7	191,761	129,231	109	161,180	106,088	173	118,633	89,403
Total	–	–	–	161	136,773	69,705	903	121,621	65,819	1,134	107,229	62,221	1,127	74,249	49,229

Service Retirees — PFRS

continued

Years of Service	Nearest Age														
	Under 40			40 – 49			50 – 59			60 – 69			70 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
Villages															
Under 10	–	–	–	–	–	–	25	36,970	3,986	71	30,523	3,853	42	18,744	2,571
10 – 14	–	–	–	–	–	–	12	50,394	9,856	40	45,643	10,491	76	23,959	6,174
15 – 19	–	–	–	–	–	–	12	74,337	21,982	24	49,939	16,170	42	30,447	12,588
20 – 24	–	–	–	99	123,785	61,927	505	108,907	55,089	440	84,750	44,443	483	52,262	32,651
25 – 29	–	–	–	3	239,765	135,597	154	148,392	81,803	164	118,842	66,763	162	72,229	43,663
30 – 34	–	–	–	–	–	–	76	188,246	118,699	161	152,384	97,247	184	99,835	69,743
35 & Over	–	–	–	–	–	–	4	220,810	141,756	83	169,843	110,215	158	122,175	90,688
Total	–	–	–	102	127,196	64,094	788	121,144	64,070	983	102,342	57,365	1,147	68,443	44,561
Miscellaneous															
Under 10	–	–	–	–	–	–	3	95,670	12,178	13	72,206	10,377	4	59,329	6,581
10 – 14	–	–	–	–	–	–	1	55,990	9,798	9	92,013	21,996	15	27,669	6,444
15 – 19	–	–	–	–	–	–	2	138,949	39,610	5	111,719	32,594	7	51,590	19,022
20 – 24	–	–	–	165	189,161	100,044	270	180,172	95,668	203	134,293	72,045	373	88,809	52,912
25 – 29	–	–	–	22	212,625	124,801	185	206,493	126,504	197	165,745	103,373	185	130,243	83,776
30 – 34	–	–	–	–	–	–	40	173,043	113,693	148	176,815	122,103	170	148,609	105,615
35 & Over	–	–	–	–	–	–	1	190,089	121,657	46	194,706	135,348	84	135,711	103,949
Total	–	–	–	187	191,922	102,956	502	188,407	107,626	621	156,785	96,268	838	113,243	74,197

Disability Retirees — ERS

This table shows the number (*Number*), average final average salary (*Avg FAS*), and average annual pension benefit prior to option selection, including any cost-of-living adjustment (*Avg Pen*), of surviving Employees' Retirement System disability retirees on March 31, 2023. Groupings are based on years of service and age, with a breakdown by category of employer.

Years of Service	Nearest Age														
	Under 55			55 – 64			65 – 74			75 – 84			85 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
State															
Under 10	107	50,404	32,446	232	34,737	16,969	352	26,853	13,074	162	22,646	12,622	39	21,298	10,495
10 – 14	337	58,975	27,020	797	47,276	18,635	1,044	39,321	15,154	539	29,353	13,831	175	23,827	12,166
15 – 19	206	67,509	33,345	750	54,726	23,027	918	43,840	19,393	530	34,298	18,327	153	25,171	16,427
20 – 24	79	81,274	44,636	639	60,788	29,138	728	47,539	23,184	407	37,707	24,082	58	28,115	22,863
25 – 29	42	79,761	47,121	545	71,025	43,085	436	56,120	33,290	217	40,007	27,193	31	31,653	28,409
30 – 34	4	59,522	28,198	126	77,636	49,911	173	51,153	34,538	73	40,034	29,168	12	28,061	27,031
35 & Over	1	72,972	23,723	20	48,436	24,821	51	51,268	31,999	8	39,771	30,865	1	25,733	21,492
Total	776	63,475	32,331	3,109	56,316	27,322	3,702	43,568	20,860	1,936	33,542	19,262	469	25,215	16,214
Counties															
Under 10	55	73,805	50,074	52	39,385	21,325	59	30,970	16,311	48	23,271	13,446	14	19,196	9,329
10 – 14	168	65,804	34,191	329	51,103	22,968	374	40,248	15,755	223	30,198	13,059	68	21,302	11,329
15 – 19	125	79,187	39,689	342	59,754	28,742	335	47,461	22,723	177	32,998	16,321	42	26,143	16,435
20 – 24	58	77,028	39,282	283	72,257	38,014	271	54,587	29,538	109	40,161	25,364	23	30,091	25,673
25 – 29	11	83,263	48,660	160	78,362	48,017	157	58,005	34,703	44	41,392	29,659	10	26,338	24,082
30 – 34	2	75,095	39,120	34	85,307	55,959	59	64,347	43,447	12	48,816	36,509	–	–	–
35 & Over	–	–	–	5	82,239	56,067	11	55,593	37,040	1	112,277	86,764	–	–	–
Total	419	72,903	39,024	1,205	62,734	32,463	1,266	48,252	24,400	614	33,532	17,982	157	24,017	15,430
Cities															
Under 10	3	48,261	16,993	9	37,337	14,348	16	22,894	11,461	10	24,065	12,932	6	26,289	11,713
10 – 14	14	55,584	19,401	57	45,949	15,967	73	37,237	12,679	35	34,122	13,438	9	21,990	10,198
15 – 19	12	57,722	19,812	60	47,760	16,955	77	39,260	15,465	42	32,215	14,265	6	22,293	13,957
20 – 24	10	71,135	26,111	38	52,477	20,754	49	41,846	19,734	20	32,708	19,012	6	26,166	24,302
25 – 29	5	55,509	24,970	31	52,390	24,438	39	39,571	21,570	14	37,377	26,521	5	23,626	20,044
30 – 34	1	69,093	37,713	9	69,879	37,699	11	42,188	26,305	5	32,013	21,910	1	12,787	15,350
35 & Over	–	–	–	1	59,183	36,574	1	40,615	28,557	–	–	–	–	–	–
Total	45	59,414	21,867	205	49,400	19,408	266	38,369	16,639	126	32,741	16,348	33	23,555	15,369
Towns															
Under 10	8	35,866	13,633	11	37,929	15,359	19	35,148	17,006	9	27,698	15,044	4	17,864	6,979
10 – 14	27	57,648	20,165	98	46,808	16,180	92	39,757	14,251	37	30,005	14,832	15	24,985	10,766
15 – 19	18	53,831	21,776	111	53,468	19,142	102	46,038	18,050	43	34,064	15,074	10	24,053	15,115
20 – 24	19	69,394	26,507	81	64,630	25,388	79	47,728	22,800	41	40,578	28,532	8	33,905	29,444
25 – 29	4	65,704	30,470	43	71,028	33,201	49	53,253	27,601	23	40,906	30,584	1	23,161	18,229
30 – 34	1	79,875	43,359	13	77,577	42,178	26	50,549	33,050	7	41,314	31,839	2	28,738	29,100
35 & Over	–	–	–	1	57,778	35,100	8	54,072	32,593	1	60,147	49,520	–	–	–
Total	77	58,098	22,264	358	56,689	22,198	375	45,728	20,664	161	35,889	21,602	40	25,966	16,313

Disability Retirees — ERS

continued

Years of Service	Nearest Age														
	Under 55			55 – 64			65 – 74			75 – 84			85 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
Villages															
Under 10	1	39,990	14,060	4	34,874	14,305	5	35,260	14,203	8	20,872	10,900	1	10,201	12,308
10 – 14	12	56,842	19,780	26	47,995	17,032	32	43,823	16,114	16	26,894	13,177	1	17,569	22,148
15 – 19	4	58,200	19,854	31	58,319	20,647	29	47,282	18,805	15	33,396	17,832	5	16,257	15,029
20 – 24	5	59,341	22,813	25	59,793	24,157	20	49,785	22,053	6	39,953	26,219	1	14,571	11,755
25 – 29	1	94,947	42,159	18	68,948	31,733	12	57,928	29,669	6	35,540	25,627	–	–	–
30 – 34	–	–	–	5	79,459	42,151	7	66,282	39,163	3	34,445	23,430	1	33,018	27,459
35 & Over	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	23	58,545	21,176	109	58,059	23,174	105	48,616	20,983	54	30,639	17,535	9	17,405	16,535
Miscellaneous															
Under 10	14	43,769	15,338	31	39,804	15,432	49	37,980	16,260	21	27,159	12,629	5	20,750	10,800
10 – 14	49	50,301	17,515	166	49,434	16,998	248	45,363	15,220	100	36,672	13,126	22	28,869	13,539
15 – 19	30	64,503	21,692	151	56,170	19,770	212	46,403	17,116	77	38,110	16,139	8	28,743	15,604
20 – 24	12	68,338	24,963	137	60,900	24,259	123	54,144	22,412	39	46,452	23,428	8	21,175	17,249
25 – 29	3	77,543	34,245	92	64,785	29,976	77	52,688	28,767	16	42,984	29,380	3	35,932	31,188
30 – 34	2	76,226	41,289	27	69,980	38,150	28	52,930	32,116	4	52,178	36,725	1	24,959	28,754
35 & Over	–	–	–	2	50,778	21,611	7	56,717	32,980	–	–	–	–	–	–
Total	110	56,525	20,078	606	56,462	22,178	744	47,774	19,223	257	38,444	16,930	47	27,042	15,681
School Districts															
Under 10	1	61,534	21,269	23	25,635	9,938	49	20,403	8,450	30	19,116	9,315	19	12,057	5,726
10 – 14	50	38,634	13,504	284	35,913	12,124	389	30,570	9,888	246	25,865	9,396	52	20,599	7,746
15 – 19	29	55,088	18,805	221	41,351	14,339	313	35,278	12,682	167	30,080	11,928	30	18,572	10,410
20 – 24	14	54,523	20,956	153	47,402	18,673	142	36,590	15,980	54	30,882	16,569	13	24,200	14,288
25 – 29	5	59,950	27,125	67	52,899	24,926	64	45,390	22,976	33	32,138	21,045	4	31,702	27,385
30 – 34	1	99,904	53,682	23	55,795	30,623	21	45,617	27,316	4	51,274	36,585	–	–	–
35 & Over	–	–	–	2	62,809	37,782	3	62,925	40,964	–	–	–	–	–	–
Total	100	47,538	17,245	773	41,570	15,715	981	33,823	12,911	534	27,889	11,832	118	19,482	9,485

Disability Retirees — PFRS

This table shows the number (*Number*), average final average salary (*Avg FAS*), and average annual pension benefit prior to option selection, including any cost-of-living adjustment (*Avg Pen*), of surviving Police and Fire Retirement System disability retirees on March 31, 2023. Groupings are based on years of service and age, with a breakdown by category of employer.

Years of Service	Nearest Age														
	Under 40			40 – 49			50 – 59			60 – 69			70 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
State															
Under 10	8	97,571	59,919	16	86,337	55,622	30	56,924	36,923	44	36,868	25,009	36	20,750	20,354
10 – 14	1	106,096	79,572	15	116,369	70,141	31	85,913	52,845	27	49,637	31,391	65	25,359	23,884
15 – 19	–	–	–	10	132,089	75,476	39	107,263	68,390	48	67,171	42,134	79	31,928	28,077
20 – 24	–	–	–	11	143,254	99,964	52	126,247	85,277	47	95,837	64,496	73	45,070	35,265
25 – 29	–	–	–	–	–	–	27	147,533	104,272	32	114,911	78,330	36	70,462	49,912
30 – 34	–	–	–	–	–	–	4	135,830	96,187	12	138,268	102,602	27	91,918	69,815
35 & Over	–	–	–	–	–	–	–	–	–	2	144,351	104,085	11	96,071	75,332
Total	9	98,519	62,103	52	115,838	73,008	183	107,354	71,298	212	76,962	51,640	327	43,679	35,437
Counties															
Under 10	3	90,557	61,742	8	79,941	50,144	35	85,173	54,914	20	53,743	37,888	36	28,522	34,464
10 – 14	3	141,622	82,200	28	144,400	93,983	79	115,666	83,335	42	82,880	55,649	128	37,258	35,989
15 – 19	–	–	–	25	169,610	116,418	104	134,439	94,550	55	106,131	75,827	215	52,309	46,604
20 – 24	–	–	–	21	182,528	121,059	126	161,124	109,675	100	130,369	91,420	252	67,356	55,985
25 – 29	–	–	–	1	187,494	140,620	64	189,007	135,789	66	158,320	114,036	72	94,216	73,262
30 – 34	–	–	–	–	–	–	15	197,613	146,951	29	200,989	148,152	39	121,485	93,443
35 & Over	–	–	–	–	–	–	–	–	–	6	178,928	120,715	20	142,304	110,299
Total	6	116,090	71,971	83	155,946	103,927	423	145,302	101,779	318	128,243	91,052	762	63,496	53,938
Cities															
Under 10	12	82,873	49,138	31	81,819	50,502	62	61,722	41,656	55	43,592	31,084	44	25,895	23,933
10 – 14	5	87,379	51,942	53	85,758	50,774	135	70,834	45,475	108	55,071	36,715	106	28,192	24,958
15 – 19	3	90,455	52,331	50	102,261	60,670	150	86,210	53,982	138	65,535	43,287	171	36,398	30,792
20 – 24	–	–	–	10	127,045	81,571	174	102,499	63,511	166	84,391	54,257	258	46,291	36,887
25 – 29	–	–	–	–	–	–	59	112,716	71,933	108	94,788	59,867	136	57,392	43,160
30 – 34	–	–	–	–	–	–	13	132,132	78,590	41	115,820	76,004	83	67,830	49,845
35 & Over	–	–	–	–	–	–	–	–	–	3	178,514	134,798	23	72,409	51,650
Total	20	85,137	50,318	144	93,508	56,290	593	88,573	55,878	619	75,798	49,501	821	45,549	36,146
Towns															
Under 10	2	97,185	59,696	12	87,856	60,091	25	63,775	42,321	26	43,041	29,652	7	19,911	21,347
10 – 14	4	112,887	56,579	26	106,991	67,413	37	87,779	56,280	46	64,848	39,963	48	30,681	26,540
15 – 19	1	79,764	59,823	18	125,675	80,229	56	102,265	68,126	35	74,218	48,206	54	39,855	35,095
20 – 24	–	–	–	6	123,712	80,720	57	126,262	83,080	67	92,268	63,187	61	54,619	42,945
25 – 29	–	–	–	–	–	–	19	139,622	89,267	34	114,461	74,940	28	68,417	53,315
30 – 34	–	–	–	–	–	–	3	170,016	112,353	18	147,661	102,310	14	96,683	69,745
35 & Over	–	–	–	–	–	–	–	–	–	1	120,255	60,920	4	128,010	99,682
Total	7	103,669	57,933	62	110,330	71,004	197	106,238	69,666	227	86,130	57,183	216	50,358	40,769

Disability Retirees — PFRS

continued

Years of Service	Nearest Age														
	Under 40			40 – 49			50 – 59			60 – 69			70 & Over		
	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen	Number	Avg FAS	Avg Pen
Villages															
Under 10	6	102,526	71,682	8	65,738	46,608	22	59,615	41,231	28	39,045	27,248	21	20,359	23,141
10 – 14	–	–	–	17	111,559	63,888	42	81,007	53,693	36	64,632	42,063	44	33,624	28,762
15 – 19	2	128,699	77,073	13	110,067	68,965	60	101,507	64,164	43	72,788	48,145	67	45,205	38,336
20 – 24	–	–	–	11	148,556	88,031	47	124,284	77,611	47	86,148	56,556	47	59,012	46,104
25 – 29	–	–	–	1	124,590	62,295	13	159,968	97,797	20	135,837	89,786	20	81,019	57,559
30 – 34	–	–	–	–	–	–	4	201,242	114,445	12	142,299	99,774	13	86,042	61,103
35 & Over	–	–	–	–	–	–	–	–	–	3	134,644	67,910	4	77,239	49,340
Total	8	109,069	73,030	50	112,240	67,723	188	103,884	65,898	189	81,625	53,981	216	49,802	39,952
Miscellaneous															
Under 10	2	94,099	56,698	9	94,722	70,040	14	81,426	52,595	18	57,510	39,596	9	36,880	31,316
10 – 14	–	–	–	18	120,733	74,272	44	115,520	80,899	24	81,309	56,504	26	54,903	38,822
15 – 19	–	–	–	8	122,829	77,501	19	129,680	87,847	24	107,049	72,932	41	68,070	53,809
20 – 24	–	–	–	8	161,892	98,334	42	166,903	114,360	65	131,866	92,571	52	87,706	65,305
25 – 29	–	–	–	–	–	–	10	208,364	149,041	38	157,025	116,274	20	107,177	77,638
30 – 34	–	–	–	–	–	–	–	–	–	8	183,573	133,902	9	152,054	117,904
35 & Over	–	–	–	–	–	–	–	–	–	–	–	–	3	155,157	119,902
Total	2	94,099	56,698	43	123,336	78,464	129	137,832	95,027	177	121,823	86,587	160	81,803	61,668

New Option Selections

This table shows the number of new retirees (*Number*), and the total amount paid to new retirees in annual benefits after option selection and any partial lump sum distribution* (*\$ Amount*), during the given fiscal year. Groupings are based on option selected, with breakdowns by retirement system and member legal sex.

Options	2019		2020		2021		2022		2023	
	Number	\$ Amount	Number	\$ Amount	Number	\$ Amount	Number	\$ Amount	Number	\$ Amount
ERS Females										
Single Life Allowance**	7,072	175,527,699	7,494	193,955,163	8,077	213,349,680	7,981	214,111,702	6,948	181,001,036
Cash Refund	3	116,424	8	255,096	3	238,208	3	70,683	1	29,023
Joint Allowance — Full	867	14,305,912	606	11,590,002	843	17,598,093	736	15,594,487	629	12,669,810
Joint Allowance — Half	164	4,603,746	135	3,982,328	199	5,438,576	166	4,678,604	130	3,656,825
Five Year Certain	122	3,271,204	92	2,756,281	109	2,911,558	122	3,558,873	87	2,590,350
Ten Year Certain	390	8,617,407	298	7,529,028	294	8,230,932	266	7,382,200	207	5,472,429
Pop-Up — Full	1,922	49,174,363	2,103	54,882,652	1,932	50,079,503	1,731	46,255,257	1,487	38,142,961
Pop-Up — Half	862	30,449,620	848	29,941,152	829	28,910,032	776	27,868,782	595	23,151,863
Other (Option 4)	676	24,896,907	764	29,259,512	1,402	51,651,839	1,370	50,398,824	1,200	43,571,474
Total	12,078	310,963,285	12,348	334,151,218	13,688	378,408,424	13,151	369,919,416	11,284	310,285,774
ERS Males										
Single Life Allowance**	3,489	112,196,278	3,501	118,808,585	3,578	123,212,184	3,509	125,451,810	3,271	112,994,460
Cash Refund	2	89,243	2	45,768	1	132,310	2	112,345	–	–
Joint Allowance — Full	1,740	55,387,988	1,409	50,905,250	1,641	62,449,602	1,710	64,500,597	1,367	49,840,068
Joint Allowance — Half	239	9,581,695	213	9,828,230	249	11,298,867	236	9,999,062	211	10,118,014
Five Year Certain	55	1,895,058	35	1,258,873	55	2,096,271	54	2,280,306	44	1,660,311
Ten Year Certain	229	6,929,664	148	4,733,889	161	6,148,667	141	5,102,470	151	5,239,115
Pop-Up — Full	2,559	93,913,676	2,740	102,742,477	2,341	91,433,789	2,184	84,808,600	1,853	70,956,648
Pop-Up — Half	728	33,166,966	715	32,589,400	685	32,704,597	630	30,973,065	535	26,168,944
Other (Option 4)	956	46,899,818	972	48,802,333	1,288	60,908,507	1,307	62,897,730	1,073	51,347,871
Total	9,997	360,060,391	9,735	369,714,808	9,999	390,384,798	9,773	386,125,989	8,505	328,325,435
PFRS Females										
Single Life Allowance**	66	4,677,275	83	6,433,337	60	4,520,475	80	6,570,255	80	6,521,028
Cash Refund	–	–	–	–	–	–	–	–	–	–
Joint Allowance — Full	6	296,999	4	301,195	3	179,244	7	344,923	7	307,715
Joint Allowance — Half	1	77,433	–	–	5	511,519	1	78,880	1	54,739
Five Year Certain	1	77,829	1	116,993	–	–	1	144,129	–	–
Ten Year Certain	6	464,880	6	496,751	11	1,107,545	4	264,964	8	948,945
Pop-Up — Full	18	1,049,748	19	1,396,329	15	1,056,648	8	455,687	30	2,208,261
Pop-Up — Half	8	531,088	8	632,727	11	936,944	12	1,055,359	5	536,001
Other (Option 4)	9	762,431	9	695,924	14	1,251,756	17	1,605,613	13	1,262,666
Total	115	7,937,687	130	10,073,259	119	9,564,134	130	10,519,814	144	11,839,356
PFRS Males										
Single Life Allowance**	421	29,947,306	391	31,485,743	449	36,727,925	405	32,375,925	400	32,134,288
Cash Refund	–	–	1	71,591	–	–	–	–	–	–
Joint Allowance — Full	244	18,881,698	173	13,985,544	247	20,403,913	219	18,293,700	196	16,486,166
Joint Allowance — Half	52	4,741,723	40	3,776,545	63	6,339,285	54	5,250,626	36	3,839,279
Five Year Certain	6	469,869	3	137,439	3	303,062	4	498,069	4	384,358
Ten Year Certain	47	3,861,153	19	1,560,943	45	3,986,930	39	3,453,267	39	3,928,108
Pop-Up — Full	430	30,376,811	428	30,749,752	456	34,128,873	405	31,609,097	434	35,502,018
Pop-Up — Half	174	14,765,782	142	12,705,827	141	13,414,969	123	10,467,772	141	14,139,696
Other (Option 4)	247	22,890,719	223	21,908,590	298	28,192,059	242	23,734,870	253	26,127,012
Total	1,621	125,935,066	1,420	116,381,978	1,702	143,497,020	1,491	125,683,330	1,503	132,540,930

* In the fiscal year ending March 31, 2023, seven ERS retirees selected partial lump sums which totaled \$1,044,953 and 151 PFRS retirees selected partial lump sums which totaled \$35,562,580. There were nine new retirees not reported in this table whose legal sex was unknown and whose annual benefits totaled \$205,689.

** Includes Single Life Allowance and Option ½.

Option Selections — Total Payments

This table shows the number of surviving retirees (*Number*), and the total amount paid to surviving retirees in annual benefits after option selection and any partial lump sum distribution* (*\$ Amount*), on March 31 of the given year. Groupings are based on option selected, with breakdowns by retirement system and member legal sex.

Options	2019		2020		2021		2022		2023	
	Number	\$ Amount	Number	\$ Amount	Number	\$ Amount	Number	\$ Amount	Number	\$ Amount
ERS Females										
Single Life Allowance**	152,563	2,862,124,619	153,725	2,979,273,483	155,918	3,112,384,906	158,676	3,257,286,808	159,903	3,359,118,734
Cash Refund	5,299	76,843,755	4,775	72,194,493	4,377	67,916,247	4,070	64,713,908	3,722	60,386,972
Joint Allowance — Full	11,421	152,048,415	11,615	159,884,469	12,092	173,056,112	12,456	184,859,914	12,717	193,349,522
Joint Allowance — Half	2,872	60,904,589	2,870	63,111,606	2,938	66,541,788	2,990	69,506,007	3,004	71,617,985
Five Year Certain	3,779	69,125,708	3,662	69,572,558	3,567	70,224,731	3,508	71,285,328	3,394	71,140,779
Ten Year Certain	7,041	112,567,552	7,011	116,331,193	7,012	120,916,879	6,998	124,791,744	6,904	126,483,717
Pop-Up — Full	22,346	444,996,611	24,020	494,118,843	25,427	537,220,378	26,748	578,447,263	27,728	609,861,604
Pop-Up — Half	15,549	401,594,114	15,958	424,654,736	16,377	447,014,336	16,711	468,078,804	16,899	484,428,738
Other (Option 4)	8,110	252,826,035	8,745	279,543,719	9,961	326,165,307	11,190	373,319,356	12,265	414,630,186
Total	228,980	4,433,031,398	232,381	4,658,685,104	237,669	4,921,440,687	243,347	5,192,289,135	246,536	5,391,018,240
ERS Males										
Single Life Allowance**	67,333	1,873,321,039	67,614	1,928,355,918	68,033	1,984,790,144	68,803	2,053,366,991	69,222	2,106,707,157
Cash Refund	3,178	74,872,721	2,886	69,453,638	2,610	64,292,207	2,393	59,950,181	2,172	55,327,605
Joint Allowance — Full	32,422	871,363,515	32,469	897,130,873	32,642	929,668,182	33,067	968,087,550	33,005	987,848,927
Joint Allowance — Half	7,976	278,040,483	7,730	276,376,551	7,510	274,849,146	7,324	273,742,359	7,139	272,710,928
Five Year Certain	1,785	47,612,911	1,689	46,783,149	1,614	46,456,806	1,590	47,273,038	1,539	46,719,841
Ten Year Certain	4,675	118,606,728	4,572	118,557,208	4,490	120,039,266	4,444	121,486,232	4,362	122,496,283
Pop-Up — Full	32,789	982,552,440	34,682	1,068,486,475	36,002	1,137,566,580	37,259	1,202,027,136	38,128	1,251,281,953
Pop-Up — Half	15,050	558,862,486	15,290	579,559,321	15,395	596,573,836	15,523	614,772,156	15,514	625,332,208
Other (Option 4)	12,191	511,565,281	12,908	552,402,528	13,851	602,998,488	14,897	659,060,331	15,733	705,391,816
Total	177,399	5,316,797,601	179,840	5,537,105,666	182,147	5,757,234,659	185,300	5,999,765,979	186,814	6,173,816,722
PFRS Females										
Single Life Allowance**	1,135	66,721,803	1,214	73,186,217	1,263	77,230,840	1,338	83,844,236	1,404	90,080,025
Cash Refund	4	253,161	4	253,162	4	253,162	4	253,162	4	253,162
Joint Allowance — Full	57	2,785,671	59	3,019,737	62	3,199,695	69	3,547,216	76	3,855,822
Joint Allowance — Half	32	1,981,483	32	1,981,483	37	2,494,102	38	2,572,983	39	2,627,722
Five Year Certain	18	1,114,808	19	1,231,800	19	1,231,800	20	1,383,765	20	1,383,765
Ten Year Certain	105	6,090,277	109	6,540,722	119	7,592,549	123	7,856,004	130	8,702,525
Pop-Up — Full	194	10,236,019	212	11,625,143	227	12,710,126	234	13,196,019	263	15,412,261
Pop-Up — Half	112	6,088,553	119	6,627,755	129	7,505,354	141	8,578,276	146	9,131,899
Other (Option 4)	56	4,412,811	65	5,108,735	77	6,266,123	94	7,891,802	109	9,347,363
Total	1,713	99,684,586	1,833	109,574,757	1,937	118,483,754	2,061	129,123,466	2,191	140,794,548
PFRS Males										
Single Life Allowance**	15,058	662,634,652	14,859	679,609,710	14,675	699,432,337	14,558	718,613,939	14,455	737,163,882
Cash Refund	1,198	41,381,216	1,127	39,497,836	1,049	37,116,794	977	34,875,600	911	33,130,461
Joint Allowance — Full	3,641	196,644,810	3,729	207,687,851	3,882	224,780,152	4,031	240,142,581	4,153	254,304,313
Joint Allowance — Half	1,477	90,168,956	1,466	91,967,811	1,473	95,942,110	1,483	99,675,040	1,466	100,816,420
Five Year Certain	330	13,837,335	317	13,555,294	307	13,470,260	294	13,536,232	278	13,469,320
Ten Year Certain	1,375	59,847,097	1,330	59,371,442	1,319	61,808,085	1,320	64,268,170	1,297	66,069,920
Pop-Up — Full	4,544	244,142,774	4,915	273,727,808	5,270	303,350,605	5,638	334,972,393	5,985	366,365,896
Pop-Up — Half	3,055	197,956,731	3,137	207,905,337	3,201	218,102,071	3,261	226,372,728	3,319	236,393,447
Other (Option 4)	2,318	188,071,753	2,513	208,535,266	2,768	233,826,623	3,003	258,752,409	3,270	286,762,210
Total	32,996	1,694,685,323	33,393	1,781,858,359	33,944	1,887,829,041	34,565	1,991,209,097	35,134	2,094,475,872

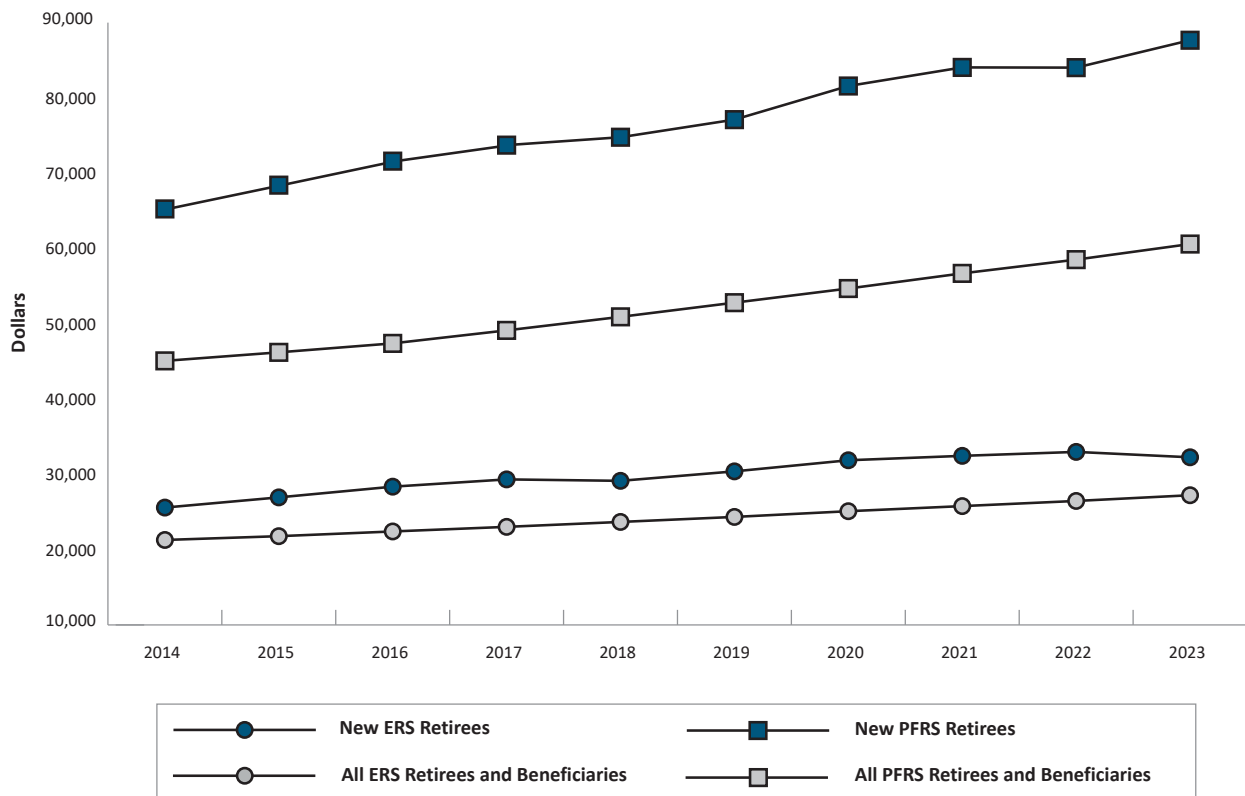
* In the nine years since this program began, 64 ERS retirees have selected partial lump sums which totaled \$8,730,885. In the 15 years since the program began, 2,140 PFRS retirees have selected partial lump sums which totaled \$325,212,846. As of the fiscal year ending March 31, 2023, there were 119 retirees not reported in this table whose legal sex was unknown and whose annual benefits totaled \$3,783,975.

** Includes Single Life Allowance figures and Option ½.

Average Pension Benefits Paid During Year Shown

This table shows the average annual benefit payments to all retirees and beneficiaries receiving benefits during the given fiscal year compared with average annual benefit payments to new retirees during the year. The benefit consists of actual payments after option selection and any partial lump sum distribution, plus any cost-of-living adjustment. A breakdown is provided by retirement system. The marked line graph (below) shows the trend in these benefit payments over the past ten years.

Year	ERS		PFRS	
	All Retirees & Beneficiaries	New Retirees	All Retirees & Beneficiaries	New Retirees
2014	\$ 21,285	\$ 25,588	\$ 45,074	\$ 65,256
2015	21,788	26,941	46,207	68,414
2016	22,415	28,364	47,397	71,603
2017	23,026	29,331	49,123	73,729
2018	23,680	29,139	50,922	74,779
2019	24,345	30,397	52,804	77,116
2020	25,105	31,872	54,684	81,584
2021	25,783	32,458	56,695	84,053
2022	26,467	32,982	58,522	84,024
2023	27,227	32,267	60,592	87,663



Average Benefit Pay Types

New Benefits: ERS

This table shows the number of retirements granted (*Number*), the average monthly retirement allowance prior to option selection or any partial lump sum distribution (*Monthly Allowance*), and the average final average salary (*Average FAS*) of members retiring during the fiscal year ending March 31, 2023. Groupings are based on years of service, with a breakdown by retirement type.

Years of Service	Number	Monthly Allowance	Average FAS
Service Retirements			
Under 5	2	\$ 130	\$ 49,849
5 – 9	1,704	420	42,720
10 – 14	2,752	849	52,899
15 – 19	2,246	1,294	57,780
20 – 24	4,241	2,398	68,492
25 – 29	2,767	3,635	84,144
30 – 34	3,822	4,657	89,500
35 – 39	1,515	5,579	96,115
40 & Over	522	6,427	98,207
Total	19,571	\$ 2,851	\$ 72,071
Ordinary Disability Retirements			
Under 5	5	\$ 805	\$ 29,148
5 – 9	3	1,394	51,292
10 – 14	59	1,539	57,133
15 – 19	42	1,684	61,260
20 – 24	33	2,277	73,178
25 – 29	18	2,878	77,036
30 – 34	7	3,572	80,557
35 – 39	–	–	–
40 & Over	–	–	–
Total	167	\$ 1,926	\$ 63,526
Performance of Duty Disability Retirements			
Under 5	–	\$ –	\$ –
5 – 9	14	4,666	74,762
10 – 14	9	5,344	88,348
15 – 19	24	5,428	90,607
20 – 24	9	5,383	89,228
25 – 29	1	8,335	133,370
30 – 34	–	–	–
35 – 39	–	–	–
40 & Over	–	–	–
Total	57	\$ 5,271	\$ 86,891
Accidental Disability Retirements			
Under 5	–	\$ –	\$ –
5 – 9	–	–	–
10 – 14	–	–	–
15 – 19	–	–	–
20 – 24	2	6,833	109,329
25 – 29	1	3,763	100,557
30 – 34	–	–	–
35 – 39	–	–	–
40 & Over	–	–	–
Total	3	\$ 5,810	\$ 106,405

Average Benefit Pay Types

continued

New Benefits: PFRS

This table shows the number of retirements granted (*Number*), the average monthly retirement allowance prior to option selection or any partial lump sum distribution (*Monthly Allowance*), and the average final average salary (*Average FAS*) of members retiring during the fiscal year ending March 31, 2023. Groupings are based on years of service, with a breakdown by retirement type.

Years of Service	Number	Monthly Allowance	Average FAS
Service Retirements			
Under 5	–	\$ –	\$ –
5 – 9	38	532	48,876
10 – 14	25	1,142	61,994
15 – 19	11	2,475	88,758
20 – 24	683	6,782	156,295
25 – 29	383	9,009	179,581
30 – 34	242	9,712	175,988
35 – 39	95	10,818	192,097
40 & Over	22	9,910	169,762
Total	1,499	\$ 7,841	\$ 163,099
Ordinary Disability Retirements			
Under 5	–	\$ –	\$ –
5 – 9	–	–	–
10 – 14	1	2,236	80,517
15 – 19	2	2,431	87,531
20 – 24	–	–	–
25 – 29	–	–	–
30 – 34	–	–	–
35 – 39	–	–	–
40 & Over	–	–	–
Total	3	\$ 2,366	\$ 85,193
Performance of Duty Disability Retirements			
Under 5	2	\$ 135	\$ 3,252
5 – 9	6	3,191	76,595
10 – 14	12	4,693	112,640
15 – 19	19	5,443	130,655
20 – 24	12	5,482	131,587
25 – 29	10	6,152	147,671
30 – 34	5	4,905	117,768
35 – 39	1	6,928	166,293
40 & Over	–	–	–
Total	67	\$ 5,044	\$ 121,061
Accidental Disability Retirements			
Under 5	2	\$ 4,284	\$ 70,776
5 – 9	12	6,062	106,809
10 – 14	13	8,191	136,360
15 – 19	17	8,753	143,345
20 – 24	23	9,072	150,754
25 – 29	9	10,176	165,093
30 – 34	1	12,010	192,168
35 – 39	1	14,185	226,961
40 & Over	–	–	–
Total	78	\$ 8,500	\$ 141,091

New Benefits — Service Retirements by Age and Service

This table shows the number of retirements granted (*Number*), the average annual retirement allowance prior to option selection or any partial lump sum distribution (*Allowance*), and the average allowance as a percentage of the average final average salary (%) of new service retirees during the fiscal year ending March 31, 2023. Groupings are based on years of service and age at retirement, within each retirement system.

Years of Service	Age at Retirement											
	50 – 59			60 – 64			65 – 69			70 & Over		
	Number	Allowance	%	Number	Allowance	%	Number	Allowance	%	Number	Allowance	%
ERS												
Under 5	–	\$ –	–	–	\$ –	–	1	\$ 1,700	5	1	\$ 1,443	2
5 – 9	241	4,152	9	555	4,984	12	624	5,452	12	284	5,016	13
10 – 14	533	8,208	15	982	10,288	20	862	10,913	20	375	11,114	20
15 – 19	400	12,680	22	813	15,419	28	727	16,467	28	306	17,384	29
20 – 24	749	26,201	36	1,687	28,687	43	1,305	29,472	43	500	31,190	43
25 – 29	813	48,013	49	1,101	41,487	53	624	41,648	54	229	43,737	55
30 – 34	2,018	57,862	62	1,157	54,204	62	449	55,201	63	198	47,217	64
35 – 39	522	64,509	69	610	67,182	70	271	72,852	71	112	62,805	71
40 & Over	8	79,203	75	172	71,947	76	198	72,865	79	144	89,084	83
Total	5,284	\$ 41,669	47	7,077	\$ 33,283	43	5,061	\$ 29,280	39	2,149	\$ 30,589	40

Years of Service	Age at Retirement											
	40 – 49			50 – 54			55 – 59			60 & Over		
	Number	Allowance	%	Number	Allowance	%	Number	Allowance	%	Number	Allowance	%
PFRS												
Under 5	–	\$ –	–	–	\$ –	–	–	\$ –	–	–	\$ –	–
5 – 9	–	–	–	–	–	–	24	6,363	12	14	6,423	14
10 – 14	–	–	–	–	–	–	18	13,351	20	7	14,640	28
15 – 19	1	60,046	48	–	–	–	9	26,123	29	1	31,614	35
20 – 24	378	81,263	52	210	84,928	52	72	77,381	52	23	63,597	50
25 – 29	40	108,973	57	188	110,184	59	117	109,946	60	38	91,336	60
30 – 34	–	–	–	45	117,109	64	151	118,936	66	46	108,169	67
35 – 39	–	–	–	–	–	–	22	136,924	68	73	127,684	67
40 & Over	–	–	–	–	–	–	–	–	–	22	118,928	69
Total	419	\$ 83,858	52	443	\$ 98,915	56	413	\$ 96,937	56	224	\$ 98,530	60

New Benefits — Accidental and Ordinary Death

Accidental Death Benefits

During the fiscal year ending March 31, 2023, the Employees' Retirement System approved 40 accidental death benefits, which averaged \$31,384 annually. The Police and Fire Retirement System approved five accidental death benefits, which averaged \$65,357 annually.

Ordinary Death Benefits

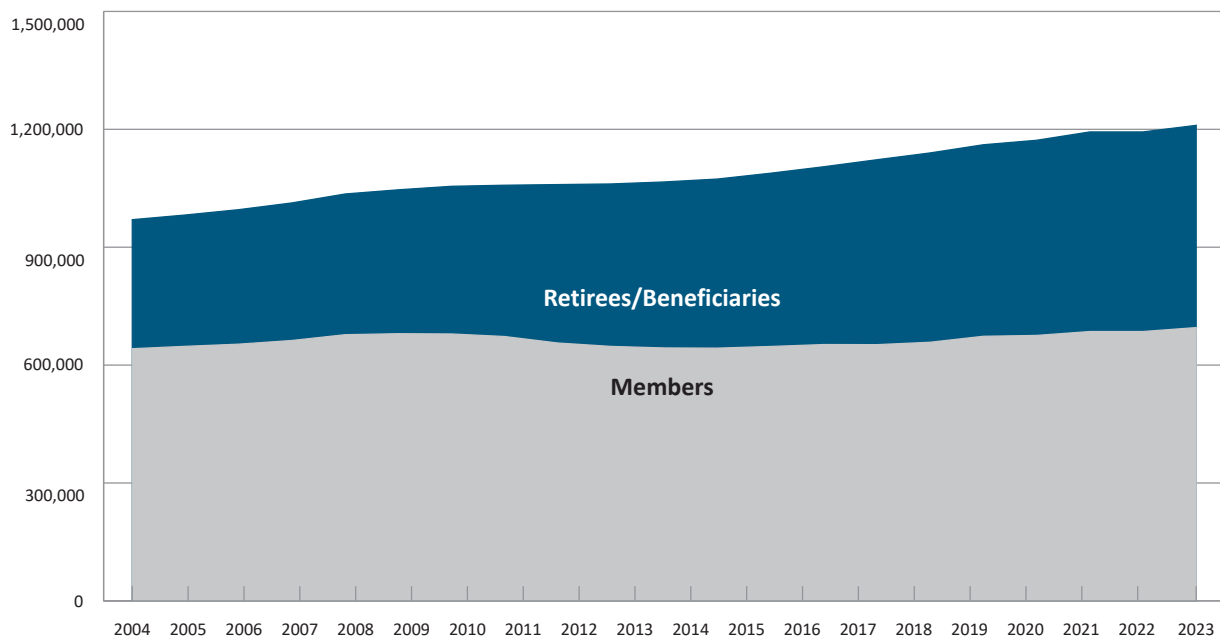
This table shows the number of ordinary death benefits granted (*Number*), the average benefit paid (*Average Benefit*), and the average benefit paid as a percentage of average final average salary (*Percentage of Salary*) of new ordinary death beneficiaries during the fiscal year ending March 31, 2023. Groupings are based on years of service, with a breakdown by retirement system.

Years of Service	ERS			PFRS		
	Number	Average Benefit	Percentage of Salary	Number	Average Benefit	Percentage of Salary
Under 5	112	\$ 79,619	159.8	7	\$ 86,429	100.1
5 – 9	118	126,125	238.3	3	262,000	300.1
10 – 14	92	151,001	253.8	6	221,833	240.5
15 – 19	97	190,364	269.3	6	360,750	285.8
20 – 24	82	181,166	270.1	7	777,768	628.6
25 – 29	40	238,692	275.7	2	1,149,606	799.3
30 – 34	23	213,437	275.5	2	1,330,962	684.4
35 – 39	15	216,451	264.5	–	–	–
40 & Over	10	375,594	465.1	–	–	–
Total	589	\$ 156,999	243.9	33	\$ 463,394	382.8

Combined System Participants

This table shows participant counts for ERS and PFRS combined. *Members* represent those participants not currently collecting a benefit, while *Retirees/Beneficiaries* represent those currently collecting a benefit. The *Total Participants* column represents the sum of the member and retiree/beneficiary counts. The *Percentage Changed* column shows the percentage change increase or decrease in counts calculated on a year-over-year basis. The stacked line graph (below) shows the trends in these counts over the prior 20 years.

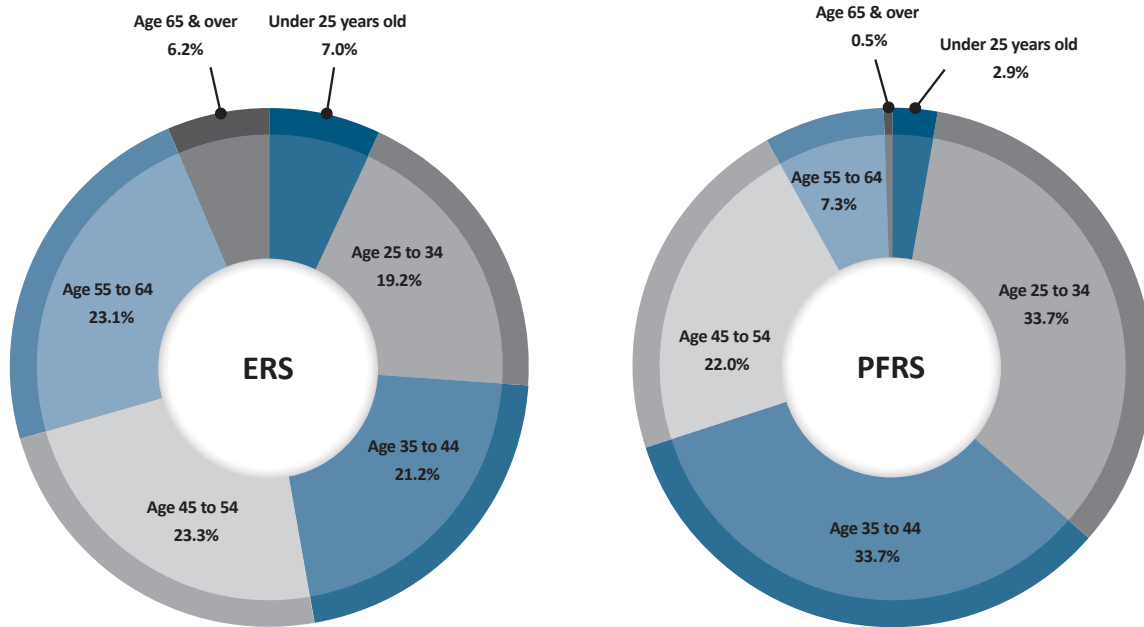
Fiscal Year	Members	Percentage Changed	Retirees/ Beneficiaries	Percentage Changed	Total Participants	Percentage Changed
2004	641,721	(1)	328,357	5	970,078	1
2005	647,758	1	334,251	2	982,009	1
2006	653,291	1	342,245	2	995,536	1
2007	662,633	1	350,066	2	1,012,699	2
2008	677,321	2	358,109	2	1,035,430	2
2009	679,908	0	366,178	2	1,046,086	1
2010	679,217	0	375,803	3	1,055,020	1
2011	672,723	(1)	385,031	2	1,057,754	0
2012	656,224	(2)	403,174	5	1,059,398	0
2013	647,574	(1)	413,436	3	1,061,010	0
2014	643,659	(1)	422,405	2	1,066,064	0
2015	643,178	0	430,308	2	1,073,486	1
2016	647,399	1	440,943	2	1,088,342	1
2017	652,324	1	452,455	3	1,104,779	2
2018	652,030	0	470,596	4	1,122,626	2
2019	658,176	1	481,795	2	1,139,971	2
2020	673,336	2	487,407	1	1,160,743	2
2021	675,519	0	496,628	2	1,172,147	1
2022	685,450	1	507,923	2	1,193,373	2
2023	695,504	1	514,629	1	1,210,133	1



Membership by Age and Years of Service

This table shows membership counts (*Number*), and percentage of the system’s total membership count (*Percentage*), as of the fiscal year ending March 31, 2023. Groupings are based on age and years of service, with a breakdown by retirement system.

Age	Years of Service											
	Total		0 – 4		5 – 9		10 – 19		20 – 29		30 & Over	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
ERS												
Under 25	46,347	7.0	46,030	7.0	317	–	–	–	–	–	–	–
25 – 34	126,809	19.2	98,058	14.9	25,462	3.9	3,289	0.5	–	–	–	–
35 – 44	139,874	21.2	61,542	9.3	35,930	5.4	39,111	5.9	3,291	0.5	–	–
45 – 54	153,862	23.3	43,150	6.5	31,716	4.8	46,102	7.0	29,546	4.5	3,348	0.5
55 – 64	152,107	23.1	29,983	4.5	28,318	4.3	47,496	7.2	33,553	5.1	12,757	1.9
65 & Over	40,751	6.2	7,884	1.2	8,020	1.2	12,638	1.9	7,808	1.2	4,401	0.7
Total	659,750	100.0	286,647	43.4	129,763	19.7	148,636	22.5	74,198	11.2	20,506	3.1
PFRS												
Under 25	1,030	2.9	1,025	2.9	5	–	–	–	–	–	–	–
25 – 34	12,033	33.7	7,346	20.5	4,172	11.7	515	1.4	–	–	–	–
35 – 44	12,037	33.7	1,910	5.3	3,226	9.0	6,423	18.0	478	1.3	–	–
45 – 54	7,873	22.0	319	0.9	560	1.6	3,094	8.7	3,675	10.3	225	0.6
55 – 64	2,605	7.3	110	0.3	240	0.7	335	0.9	941	2.6	979	2.7
65 & Over	176	0.5	33	0.1	53	0.1	24	0.1	9	–	57	0.2
Total	35,754	100.0	10,743	30.0	8,256	23.1	10,391	29.1	5,103	14.3	1,261	3.5



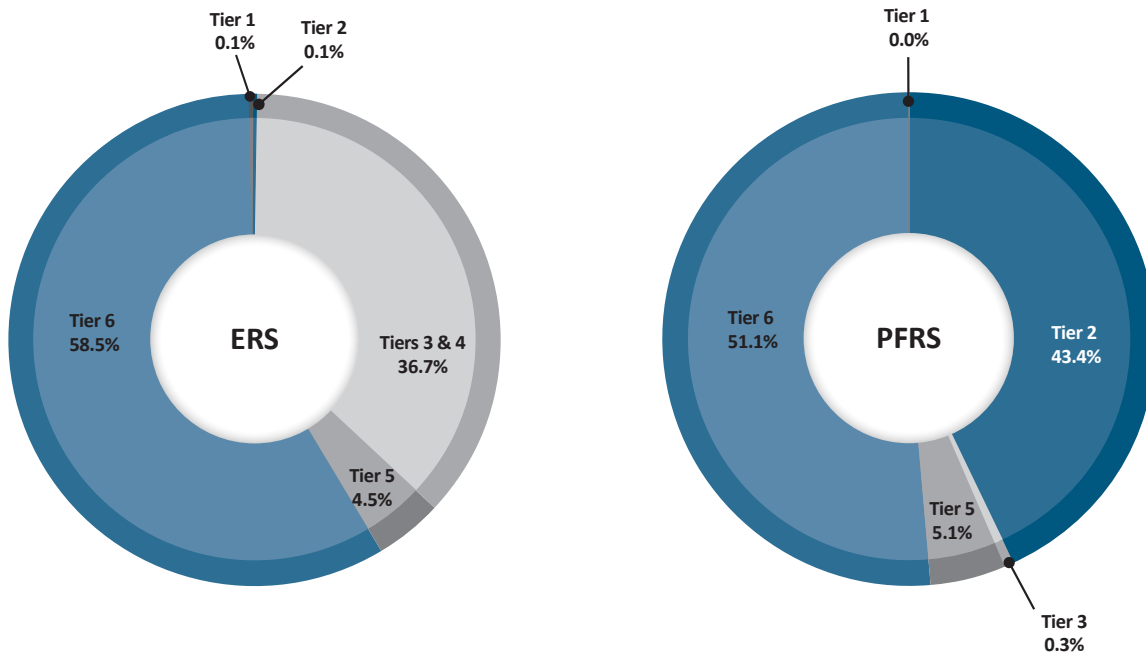
Note: Percentages may not sum to 100% due to rounding.

Membership by Tier

This table shows membership counts (*Number*), and percentage of the system’s total membership count (*Percentage*), as of the fiscal year ending March 31, 2023. Groupings are based on tier, with a breakdown by retirement system.

	ERS		PFRS		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Tier 1	873	0.1	13	–	886	0.1
Tier 2	847	0.1	15,508	43.4	16,355	2.4
Tiers 3 & 4*	242,418	36.7	121	0.3	242,539	34.9
Tier 5	29,490	4.5	1,828	5.1	31,318	4.5
Tier 6	386,122	58.5	18,284	51.1	404,406	58.1
Total	659,750	100.0	35,754	100.0	695,504	100.0

* There is no Tier 4 in the Police and Fire Retirement System.



Note: Percentages may not sum to 100% due to rounding.

Membership by Status

This table shows membership counts by status — active or inactive — as of the fiscal year ending March 31, 2023, with a breakdown by retirement system. Active status means the member was reported on payroll at the fiscal year end. Inactive status means the member was not reported on payroll (including pending retirement and pending deaths) at the fiscal year end. The sum of these two statuses represents the total membership count for the system.

	ERS			PFRS		
	Active	Inactive	Total	Active	Inactive	Total
2014	493,209	116,356	609,565	31,218	2,876	34,094
2015	491,558	117,079	608,637	31,372	3,169	34,541
2016	494,411	117,883	612,294	31,720	3,385	35,105
2017	496,441	120,702	617,143	32,332	2,849	35,181
2018	500,945	115,961	616,906	32,470	2,654	35,124
2019	501,037	122,053	623,090	32,573	2,513	35,086
2020	497,659	140,087	637,746	32,888	2,702	35,590
2021	469,968	170,613	640,581	31,922	3,016	34,938
2022	473,915	176,336	650,251	32,169	3,030	35,199
2023	481,547	178,203	659,750	32,603	3,151	35,754

Number of Employers

As of March 31, 2023.

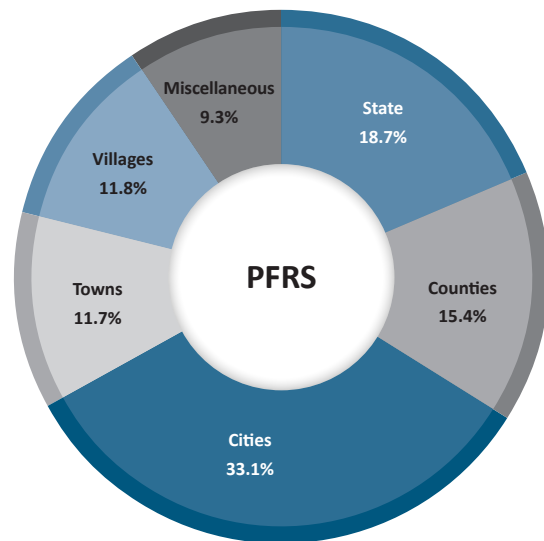
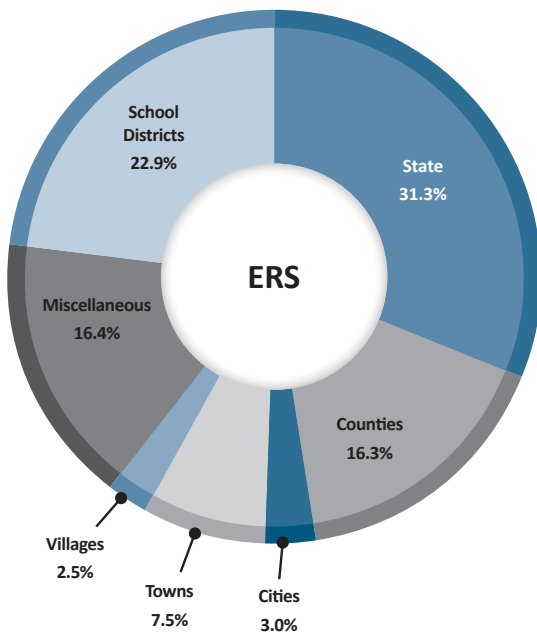
Category	ERS	PFRS
State	1	1
Counties	57	4
Cities	61	61
Towns	919	169
Villages	481	298
Miscellaneous	768	37
School Districts	690	0
Total*	2,977	570

* Please note that some ERS employers are also PFRS employers. Therefore the total of ERS employers and PFRS employers above will not equal the total number of NYSLRS participating employers.

Total Membership by Employer Type

This table shows total and active membership counts, grouped by primary employer type as of the fiscal year ending March 31, 2023, with a breakdown by retirement system. Active status means the member was reported on payroll at the fiscal year end.

	ERS		PFRS		Total	
	Total	Active	Total	Active	Total	Active
State	206,787	152,422	6,689	6,060	213,476	158,482
Counties	107,865	79,781	5,510	5,403	113,375	85,184
Cities	19,772	14,735	11,824	10,924	31,596	25,659
Towns	49,771	35,490	4,195	3,719	53,966	39,209
Villages	16,184	11,340	4,215	3,354	20,399	14,694
Miscellaneous	108,106	75,259	3,321	3,143	111,427	78,402
School Districts	151,265	112,520	-	-	151,265	112,520
Total	659,750	481,547	35,754	32,603	695,504	514,150



Note: Numbers may not add up due to rounding. A detailed listing of employers as of March 31, 2023 is available on our website at www.osc.state.ny.us/files/retirement/employers/pdf/participating-employers.pdf.

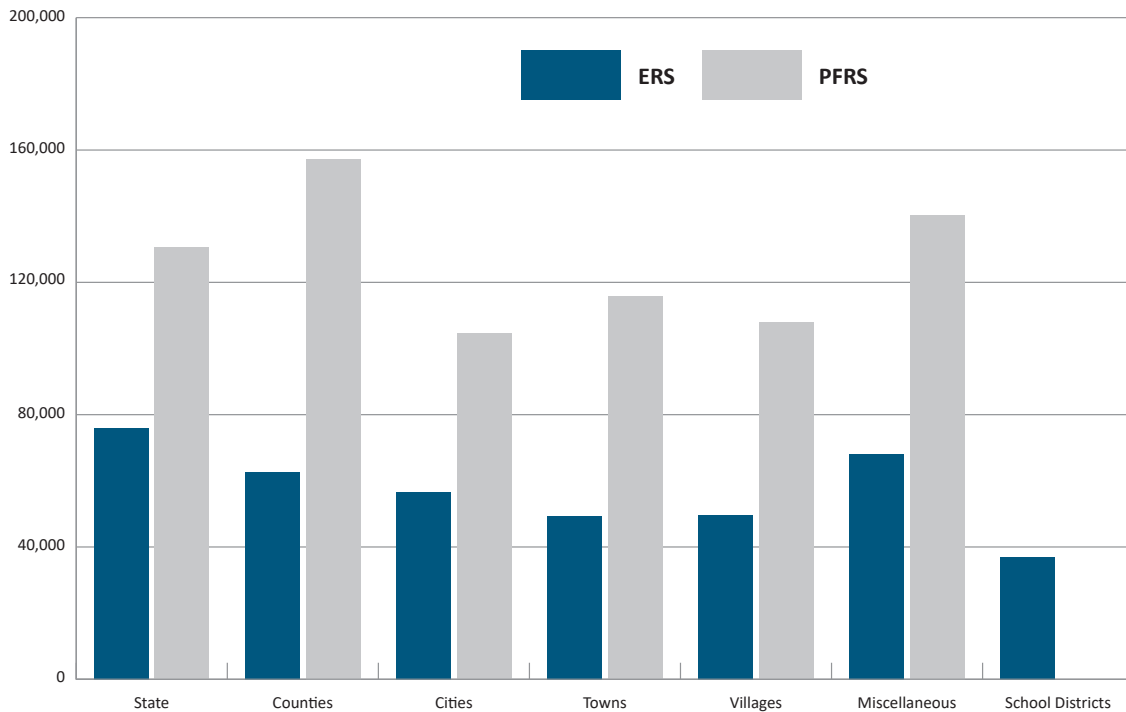
Average Salary by Employer Type

This table shows the average salary (*Average Salary*), membership counts (*Total Members**), and total salary (*Total Salaries*) for active members as of the fiscal year ending March 31, 2023. Groupings are based on primary employer type, with a breakdown by retirement system. Active status means the member was reported on payroll at the fiscal year end.

	Average Salary	Total Members*	Total Salaries
ERS			
State	\$ 75,995	152,422	\$ 11,583,298,112
Counties	62,711	79,781	5,003,166,845
Cities	56,607	14,735	834,105,455
Towns	49,357	35,490	1,751,689,317
Villages	49,680	11,340	563,372,322
Miscellaneous	68,166	75,259	5,130,127,290
School Districts	36,921	112,520	4,154,373,194
Total	\$ 60,264	481,547	\$ 29,020,132,536
PFRS			
State	\$ 130,542	6,060	\$ 791,086,152
Counties	157,281	5,403	849,788,656
Cities	104,529	10,924	1,141,875,114
Towns	115,787	3,719	430,612,895
Villages	107,891	3,354	361,867,164
Miscellaneous	140,414	3,143	441,320,991
Total	\$ 123,196	32,603	\$ 4,016,550,972

* Active members receiving salary.

The bar graph below represents the average salary by retirement system for each primary employer type.



Members and Salaries by Plan — ERS

These tables show membership counts (*Members*) and total salary (*Total Salaries*) for active members in the Employees' Retirement System, as of the fiscal year ending March 31, 2023. Groupings are based on plan, with a breakdown by tier. Active status means the member was reported on payroll at the end of the fiscal year.

Plan	Tier 1		Tier 2	
	Members	Total Salaries	Members	Total Salaries
Age 55/60 Contributory	2	\$ 4,000	1	\$ 67,123
Age 55 75-c	4	54,679	7	262,288
Age 55 75-e	1	44,935	–	–
Age 55 75-g	12	652,430	6	232,096
Age 55 75-h	180	17,932,173	196	19,526,324
Age 55 75-i	260	17,516,700	312	19,111,343
Regular Correction Officers/Security Hospital Treatment Asst. ¼ Disability	–	–	–	–
Correction Officers 89	–	–	1	118,539
Sheriffs 89-a	–	–	–	–
Sheriffs 89-b	–	–	–	–
Sheriffs 89-b(m)	–	–	–	–
Investigators 89-d	–	–	–	–
Investigators 89-d(m)	–	–	–	–
Sheriffs — 551	–	–	–	–
Sheriffs — 551e	–	–	–	–
Sheriffs — 552	–	–	–	–
Sheriffs — 553	–	–	–	–
Legislators 80-a	–	–	–	–
Unified Court Peace Officers	–	–	6	884,103
25-Year Correction Officers/Sheriffs/Office of Mental Health	2	197,963	–	–
25-Year 1/60 Peace Officers, Amb Med Techs, Paramedics	1	142,446	–	–
Total	462	\$ 36,545,325	529	\$ 40,201,817

Members and Salaries by Plan — ERS

continued

Plan	Tier 3 & 4		Tier 5		Tier 6	
	Members	Total Salaries	Members	Total Salaries	Members	Total Salaries*
Article 14 & 15	174,084	\$ 13,480,964,507	21,454	\$ 1,401,510,864	248,820	\$ 10,666,508,883
Regular Correction Officers/ Security Hospital Treatment Asst. ½ Disability	319	45,945,755	24	1,986,063	216	17,054,370
Article 14 Correction Officers	7,712	842,784,084	798	70,093,802	8,489	643,769,127
Sheriffs — 551	93	10,587,064	8	726,489	74	4,735,444
Sheriffs — 551e	45	3,723,535	8	665,682	55	3,222,243
Sheriffs — 552	242	25,503,842	37	3,422,627	289	19,773,479
Sheriffs — 553	931	117,981,391	171	18,285,327	895	69,211,675
Unified Court Peace Officers	3,718	414,640,414	296	27,503,106	2,204	166,180,735
25-Year Correction Officers/Sheriffs/Office of Mental Health	4,299	500,323,802	613	62,653,492	4,443	295,349,094
25-Year 1/60 Peace Officers, Paramedics	9	749,061	1	62,017	10	282,539
20-Year 1/60 Investigators	9	1,778,547	2	258,681	6	596,547
Westchester County Criminal Investigators	18	2,864,063	2	255,878	9	1,049,617
25-Year 1/60 ½ Accidental Disability Amb Med Techs	92	13,412,665	5	444,234	13	1,040,245
25-Year ¾ Accidental Disability Fire Marshals	28	4,129,878	5	576,959	10	777,564
Total	191,599	\$ 15,465,388,609	23,424	\$ 1,588,445,222	265,533	\$ 11,889,551,563

* Reportable Tier 6 salary is capped at the Governor's salary, which was \$250,000 for fiscal year 2023.

There may be plans with no member count and salary greater than zero. Members who work for multiple employers may have salary under multiple plans but will only be counted once, under their primary plan.

Members and Salaries by Plan — PFRS

These tables show membership counts (*Members*) and total salary (*Total Salaries*) for active members in the Police and Fire Retirement System, as of the fiscal year ending March 31, 2023. Groupings are based on plan, with a breakdown by tier and contributory status. Active status means the member was reported on payroll at the end of the fiscal year.

Plan	Tier 1		Tier 2		Tier 3	
	Members	Total Salaries	Members	Total Salaries	Members	Total Salaries
Age 55/60 Basic	–	\$ –	8	\$ 142,844	–	\$ –
Age 55 375-c	–	–	54	1,532,406	–	–
Age 55 375-e	–	–	14	364,272	–	–
Age 55 375-g	–	–	19	899,491	–	–
Age 55 375-h	–	–	1	152,558	–	–
Age 55 375-i	–	–	75	5,834,305	–	–
Age 55 375-j	–	–	4	643,930	–	–
State Police 381-b	–	–	2,274	373,228,204	–	–
Regional Park Police 383-a	–	–	119	16,544,325	–	–
EnCon Police 383-b	–	–	160	22,839,261	1	106,765
Forest Ranger 383-c	–	–	75	9,954,093	2	218,571
SUNY Police 383-d	–	–	220	26,883,279	5	584,401
25-Year 384	–	–	23	2,152,263	2	105,882
25-Year 384(f)	–	–	51	8,278,645	16	2,094,273
20-Year 384-d	–	–	4,138	573,467,185	–	–
20-Year 1/60 384-e	2	361,358	6,957	1,252,858,374	–	–
Article 14 Police and Fire	–	–	–	–	67	8,463,366
Total	2	\$ 361,358	14,192	\$ 2,295,775,436	93	\$ 11,573,258

Members and Salaries by Plan — PFRS

continued

Plan	Tier 5 Contributory		Tier 5 Non-Contributory		Tier 6 Contributory		Tier 6 Non-Contributory	
	Members	Total Salaries	Members	Total Salaries	Members	Total Salaries*	Members	Total Salaries*
Age 55/60 Basic	3	\$ 49,920	–	\$ –	10	\$ 81,864	–	\$ –
Age 55 375-c	3	143,290	–	–	47	1,020,933	–	–
Age 55 375-e	1	25,923	–	–	48	563,397	–	–
Age 55 375-g	2	36,383	–	–	11	295,056	–	–
Age 55 375-h	–	–	–	–	2	153,084	–	–
Age 55 375-i	4	494,681	–	–	16	1,716,647	–	–
Age 55 375-j	–	–	–	–	2	152,917	–	–
State Police 381-b	122	16,443,968	–	–	2,437	269,904,156	–	–
Regional Park Police 383-a	3	347,377	–	–	103	7,143,428	–	–
EnCon Police 383-b	9	978,979	–	–	118	11,993,668	–	–
Forest Ranger 383-c	2	212,365	–	–	79	6,632,569	–	–
SUNY Police 383-d	45	4,543,626	–	–	287	21,813,801	–	–
25-Year 384	4	354,860	–	–	30	1,610,687	–	–
25-Year 384(f)	6	1,240,591	4	857,238	44	4,237,961	3	388,444
20-Year 384-d	566	65,949,910	100	9,769,461	5,403	438,483,623	20	266,569
20-Year 1/60 384-e	758	101,127,045	85	10,771,542	7,901	722,208,839	38	6,826,116
Article 14 Police and Fire	–	–	–	–	–	–	–	–
Total	1,528	\$ 191,948,919	189	\$ 21,398,242	16,538	\$ 1,488,012,630	61	\$ 7,481,129

* Reportable Tier 6 salary is capped at the Governor's salary, which was \$250,000 for fiscal year 2023.

There may be plans with no member count and salary greater than zero. A member who works for multiple employers may have salary under multiple plans but will only be counted once, under their primary plan.

Retirees and Beneficiaries by Age

This table shows retiree and beneficiary counts as of the fiscal year ending March 31, 2023, grouped by age, with a breakdown by retirement system.

Age	ERS			PFRS		
	Retirees & Beneficiaries	Retirees	Beneficiaries	Retirees & Beneficiaries	Retirees	Beneficiaries
0 – 25	110	–	110	8	–	8
26 – 30	193	1	192	8	2	6
31 – 35	334	5	329	17	8	9
36 – 40	503	58	445	70	56	14
41 – 45	841	217	624	413	388	25
46 – 50	1,515	765	750	1,689	1,642	47
51 – 55	4,838	3,671	1,167	3,964	3,875	89
56 – 60	32,192	30,282	1,910	6,467	6,283	184
61 – 65	70,497	67,194	3,303	6,106	5,877	229
66 – 70	98,671	93,607	5,064	5,186	4,847	339
71 – 75	100,107	93,444	6,663	5,999	5,497	502
76 – 80	75,904	68,795	7,109	5,132	4,594	538
81 – 85	45,548	39,733	5,815	3,016	2,655	361
86 – 90	26,288	21,956	4,332	1,364	1,126	238
91 – 95	12,715	10,347	2,368	503	401	102
96 – 100	3,798	2,975	823	117	79	38
101+	507	410	97	9	4	5
Total	474,561	433,460	41,101	40,068	37,334	2,734

Retirees and Beneficiaries — ERS

This table shows the number (*Number*), the average annual modified pension benefit prior to option selection and without any cost-of-living adjustment (*Average Option 0 Benefit w/o COLA*), and the average cost-of-living adjustment (*Average COLA*) of surviving Employees' Retirement System retirees and beneficiaries* as of March 31, 2023. Groupings are based on the fiscal year of the member's retirement. The modified pension benefit has been reduced for any partial lump sum distribution.

Year of Retirement	Number	Average Option 0 Benefit w/o COLA	Average COLA	Total
1963	2	\$ 2,112	\$ 8,019	\$ 10,131
1964	–	–	–	–
1965	1	2,284	4,169	6,453
1966	2	2,779	9,533	12,311
1967	–	–	–	–
1968	–	–	–	–
1969	3	2,289	4,961	7,250
1970	4	2,016	3,597	5,613
1971	6	4,262	7,633	11,895
1972	11	6,974	8,427	15,402
1973	16	3,423	4,903	8,326
1974	22	8,281	8,976	17,257
1975	35	6,320	6,568	12,888
1976	62	6,067	6,210	12,277
1977	93	6,120	6,506	12,626
1978	132	6,238	5,939	12,178
1979	174	5,759	5,404	11,162
1980	232	6,052	4,793	10,845
1981	316	5,950	4,290	10,240
1982	401	7,084	4,378	11,462
1983	462	6,835	4,018	10,853
1984	699	9,595	4,784	14,379
1985	770	8,935	4,293	13,228
1986	1,079	9,429	4,273	13,702
1987	1,337	10,321	4,524	14,844
1988	1,411	11,449	4,463	15,912
1989	1,839	12,260	4,374	16,635
1990	2,315	13,483	4,240	17,724
1991	4,075	17,817	4,685	22,502
1992	3,962	14,871	4,122	18,994
1993	3,530	15,856	3,902	19,759

* 9,093 of the 41,101 beneficiaries are not eligible for COLA and are not included in the above counts.

Year of Retirement	Number	Average Option 0 Benefit w/o COLA	Average COLA	Total
1994	3,447	\$ 15,720	\$ 3,664	\$ 19,384
1995	4,363	16,689	3,701	20,390
1996	8,422	21,823	4,039	25,863
1997	8,029	20,241	3,677	23,918
1998	6,271	17,742	3,159	20,901
1999	7,125	17,497	2,991	20,488
2000	8,912	18,860	2,907	21,766
2001	10,051	22,263	2,973	25,236
2002	8,521	20,070	2,678	22,748
2003	19,474	29,081	2,906	31,987
2004	9,729	20,083	2,272	22,354
2005	12,011	22,302	2,207	24,509
2006	13,537	23,087	2,069	25,156
2007	14,292	25,585	2,007	27,593
2008	14,951	27,332	1,905	29,238
2009	14,027	27,279	1,740	29,019
2010	16,218	28,867	1,625	30,492
2011	25,454	35,134	1,594	36,728
2012	16,313	27,812	1,325	29,138
2013	16,504	27,440	1,182	28,622
2014	18,139	28,348	1,043	29,392
2015	19,201	29,686	898	30,584
2016	19,744	31,248	759	32,007
2017	20,177	32,010	585	32,595
2018	21,311	32,397	406	32,803
2019	20,800	33,358	–	33,358
2020	20,835	34,527	–	34,527
2021	22,426	34,370	–	34,370
2022	22,692	35,202	–	35,202
2023	19,501	\$ 34,421	\$ –	\$ 34,421

* 9,093 of the 41,101 beneficiaries are not eligible for COLA and are not included in the above counts.

Retirees and Beneficiaries — PFRS

This table shows the number (*Number*), the average annual modified pension benefit prior to option selection and without any cost-of-living adjustment (*Average Option 0 Benefit w/o COLA*), and the average cost-of-living adjustment (*Average COLA*) of surviving Police and Fire Retirement System retirees and beneficiaries* as of March 31, 2023. Groupings are based on the fiscal year of the member's retirement. The modified pension benefit has been reduced for any partial lump sum distribution.

Year of Retirement	Number	Average Option 0 Benefit w/o COLA	Average COLA	Total
1963	–	\$ –	\$ –	\$ –
1964	–	–	–	–
1965	–	–	–	–
1966	1	3,252	11,873	15,125
1967	3	4,861	13,284	18,145
1968	2	7,081	19,224	26,305
1969	2	5,042	13,972	19,013
1970	1	4,241	5,259	9,500
1971	3	13,898	18,195	32,093
1972	15	7,318	15,174	22,492
1973	19	7,228	13,365	20,592
1974	30	8,370	14,583	22,953
1975	22	8,813	13,199	22,011
1976	24	9,814	14,407	24,221
1977	71	10,482	13,626	24,108
1978	71	11,377	13,679	25,056
1979	107	11,217	12,448	23,665
1980	116	12,454	11,862	24,316
1981	111	13,304	10,422	23,726
1982	175	14,646	9,983	24,628
1983	193	15,392	9,526	24,918
1984	201	17,581	9,589	27,170
1985	232	19,483	9,179	28,662
1986	375	20,662	8,954	29,616
1987	401	22,832	8,941	31,774
1988	525	24,743	8,413	33,155
1989	585	24,845	8,018	32,863
1990	641	27,381	7,276	34,657
1991	714	30,596	6,889	37,485
1992	807	34,611	6,236	40,846
1993	780	34,016	5,957	39,973

* 507 of the 2,734 beneficiaries are not eligible for COLA and are not included in the above counts.

Year of Retirement	Number	Average Option 0 Benefit w/o COLA	Average COLA	Total
1994	739	\$ 33,009	\$ 5,448	\$ 38,458
1995	624	37,979	4,986	42,965
1996	646	36,843	4,743	41,585
1997	633	40,721	4,427	45,148
1998	624	39,385	4,028	43,413
1999	662	40,400	3,909	44,309
2000	798	47,262	3,536	50,798
2001	1,011	52,796	3,505	56,301
2002	877	54,149	3,299	57,448
2003	1,181	60,953	3,069	64,022
2004	1,137	58,678	2,883	61,561
2005	1,039	58,771	2,601	61,372
2006	1,053	59,412	2,379	61,791
2007	1,073	60,476	2,221	62,697
2008	1,098	62,831	1,975	64,806
2009	1,039	66,263	1,840	68,103
2010	1,072	68,317	1,648	69,965
2011	1,226	68,893	1,454	70,347
2012	1,186	70,792	1,261	72,053
2013	1,204	69,439	1,049	70,488
2014	1,205	72,504	732	73,236
2015	1,306	75,463	586	76,049
2016	1,266	78,645	475	79,121
2017	1,212	80,205	380	80,586
2018	1,506	84,828	214	85,042
2019	1,566	86,328	1	86,329
2020	1,447	88,670	–	88,670
2021	1,677	89,939	–	89,939
2022	1,623	88,170	–	88,170
2023	1,604	\$ 91,950	\$ –	\$ 91,950

* 507 of the 2,734 beneficiaries are not eligible for COLA and are not included in the above counts.

Local Government Salaries and Billings — ERS

The contribution amounts shown below are due February 1 preceding the fiscal year end (FYE).

FYE	Salaries	Contributions	Normal	Deficiency	GLIP*	Administrative
Counties						
2014	\$ 4,336,303,275	\$ 961,029,407	\$ 932,736,131	\$ -	\$ 15,028,728	\$ 13,264,548
2015	4,268,067,445	916,967,766	884,569,811	-	14,822,845	17,575,110
2016	4,268,067,445	764,800,462	729,885,087	-	17,843,119	17,072,256
2017	4,442,433,004	718,015,326	685,263,761	-	14,981,831	17,769,734
2018	4,526,327,445	719,117,404	685,809,717	-	15,202,362	18,105,325
2019	4,550,654,486	704,395,273	671,966,793	-	18,776,511	13,651,969
2020	4,711,426,453	721,858,881	682,580,561	-	15,721,198	23,557,122
2021	4,760,305,412	731,642,789	688,184,857	-	19,656,355	23,801,577
2022	4,752,745,726	821,596,734	777,146,609	-	15,933,651	28,516,474
2023	4,873,400,674	605,358,806	567,451,450	-	8,666,950	29,240,406
Cities						
2014	673,091,884	137,981,259	133,304,614	-	2,672,375	2,004,270
2015	679,974,366	134,647,196	129,157,994	-	2,744,601	2,744,601
2016	679,974,366	118,631,364	112,511,612	-	3,399,861	2,719,891
2017	711,933,076	106,482,115	100,786,663	-	2,847,726	2,847,726
2018	742,043,938	108,756,209	102,819,863	-	2,968,173	2,968,173
2019	744,199,863	105,742,763	99,789,168	-	3,721,006	2,232,589
2020	758,132,484	105,255,949	98,432,744	-	3,032,535	3,790,670
2021	772,791,379	107,820,375	100,092,450	-	3,863,959	3,863,966
2022	756,927,178	116,756,626	109,187,353	-	3,027,709	4,541,564
2023	793,963,459	87,481,081	81,129,371	-	1,587,928	4,763,782
Towns						
2014	1,514,279,860	320,436,350	308,991,586	729,377	6,121,687	4,593,700
2015	1,541,087,303	304,935,776	292,018,266	704,881	6,104,792	6,107,837
2016	1,541,087,303	277,193,215	262,917,719	409,489	7,701,640	6,164,367
2017	1,579,960,510	240,525,450	227,504,169	384,233	6,317,184	6,319,864
2018	1,615,922,678	241,429,341	228,132,484	372,380	6,460,806	6,463,671
2019	1,624,034,309	236,023,695	222,651,419	385,020	8,115,114	4,872,142
2020	1,654,262,964	235,874,419	220,645,937	343,749	6,613,385	8,271,348
2021	1,666,644,088	238,596,311	221,621,654	312,725	8,328,687	8,333,245
2022	1,666,275,361	263,906,092	246,959,685	287,029	6,661,724	9,997,654
2023	1,721,980,427	194,322,683	180,265,932	282,275	3,442,590	10,331,886
Villages						
2014	468,173,558	96,707,532	93,193,118	224,737	1,879,811	1,409,866
2015	475,868,379	93,000,032	88,986,865	214,831	1,899,168	1,899,168
2016	475,868,379	84,779,246	80,364,318	134,970	2,377,750	1,902,208
2017	492,146,116	74,142,234	70,095,276	109,818	1,968,570	1,968,570
2018	505,159,356	74,546,172	70,399,418	105,502	2,020,626	2,020,626
2019	514,793,219	73,871,365	69,638,093	114,888	2,573,977	1,544,407
2020	526,403,820	74,482,744	69,641,376	103,704	2,105,622	2,632,042
2021	537,296,960	76,180,937	70,693,112	114,846	2,686,487	2,686,492
2022	547,228,239	85,752,128	80,151,189	128,655	2,188,914	3,283,370
2023	559,006,694	62,512,063	57,915,091	124,916	1,118,015	3,354,041

* Group Life Insurance Plan (GLIP).

Local Government Salaries and Billings — ERS

continued

FYE	Salaries	Contributions	Normal	Deficiency	GLIP*	Administrative
Miscellaneous						
2014	\$ 3,968,529,764	\$ 826,997,637	\$ 797,752,084	\$ 791,616	\$ 16,258,823	\$ 12,195,114
2015	4,016,329,736	786,826,716	753,471,524	785,464	16,284,864	16,284,864
2016	4,016,329,736	692,441,164	656,011,033	285,120	20,080,556	16,064,455
2017	4,218,674,267	624,983,230	590,938,378	295,426	16,874,713	16,874,713
2018	4,400,266,244	636,996,945	601,504,023	292,092	17,600,415	17,600,415
2019	4,548,171,902	639,193,644	602,507,287	300,990	22,740,865	13,644,502
2020	4,769,848,444	656,970,743	613,752,143	289,923	19,079,412	23,849,265
2021	4,928,473,582	681,965,509	632,481,941	198,772	24,642,379	24,642,417
2022	4,953,008,124	753,565,970	703,828,602	207,282	19,812,034	29,718,052
2023	5,097,739,540	557,568,720	516,583,359	203,439	10,195,482	30,586,440
Schools						
2014	3,295,866,762	685,241,928	661,805,954	135,753	13,314,400	9,985,821
2015	3,337,348,846	654,771,133	627,945,059	139,518	13,343,278	13,343,278
2016	3,337,348,846	593,311,380	563,142,438	134,423	16,685,833	13,348,686
2017	3,463,921,681	524,114,526	496,273,503	129,599	13,855,712	13,855,712
2018	3,591,452,866	533,074,424	504,209,323	133,487	14,365,807	14,365,807
2019	3,656,797,566	527,849,814	498,457,959	137,491	18,283,980	10,970,384
2020	3,739,951,074	528,865,706	495,064,555	141,616	14,959,764	18,699,771
2021	3,841,977,275	544,514,579	505,949,072	145,661	19,209,895	19,209,951
2022	3,758,535,947	587,739,235	550,003,627	150,240	15,034,149	22,551,219
2023	3,972,602,402	442,911,406	410,975,825	154,748	7,945,212	23,835,621
* Group Life Insurance Plan (GLIP).						

For the FYEs 2014-2015, the contribution amounts include the normal cost of benefits including supplemental pensions and, in some cases, the Retirement Incentive Program, Deficiency Contributions, the Group Life Insurance Plan (GLIP), and the administrative cost of the System for the fiscal year.

For FYE 2016, **and all subsequent FYEs**, the contribution amounts include the normal cost of benefits including supplemental pensions, Deficiency Contributions, GLIP, the administrative cost of the System for the fiscal year, and accounting adjustments. Accounting adjustments include prior year adjustments, prepayment discounts, and reconciliation of actual versus estimated salary amounts.

Legislation enacted in July of 2015 (Chapter 94, Laws of 2015), requires the System to use prior year actual salaries rather than current year estimated salaries in the calculation of required contributions. This change eliminates the need for reconciliation of actual versus estimated salaries, the result of which is reflected in the FYE 2016 salaries.

Local Government Salaries and Billings — PFRS

The contribution amounts shown below are due February 1 preceding the fiscal year end (FYE).

FYE	Salaries	Contributions	Normal	Deficiency	GLIP	Administrative
Counties						
2014	\$ 742,952,940	\$ 215,606,426	\$ 212,605,235	\$ -	\$ -	\$ 3,001,191
2015	748,062,218	204,532,593	200,811,227	-	744,273	2,977,093
2016	748,062,218	183,660,699	180,668,452	-	-	2,992,247
2017	813,351,565	197,749,660	193,682,901	-	-	4,066,759
2018	837,536,191	205,595,002	201,407,318	-	837,538	3,350,146
2019	826,111,820	194,974,879	192,496,544	-	-	2,478,335
2020	829,447,380	197,111,060	192,963,822	-	-	4,147,238
2021	820,311,457	204,533,703	199,611,831	-	-	4,921,872
2022	817,314,990	235,991,642	232,722,382	-	-	3,269,260
2023	847,846,533	233,521,627	227,586,702	-	-	5,934,925
Cities						
2014	940,121,957	270,589,638	266,868,512	-	-	3,721,126
2015	935,625,377	266,374,021	261,525,612	-	969,687	3,878,722
2016	935,625,377	220,521,730	216,779,231	-	-	3,742,499
2017	1,012,327,983	244,289,630	239,227,991	-	-	5,061,639
2018	1,032,008,361	249,454,963	244,294,924	-	1,032,013	4,128,026
2019	1,046,903,046	244,069,656	240,928,943	-	-	3,140,713
2020	1,073,918,736	249,937,319	244,567,724	-	-	5,369,595
2021	1,068,635,389	258,554,169	252,142,350	-	-	6,411,819
2022	1,072,164,847	302,975,473	298,686,813	-	-	4,288,660
2023	1,137,572,489	307,035,129	299,072,121	-	-	7,963,008
Towns						
2014	351,821,273	101,830,050	100,430,452	-	-	1,399,598
2015	361,105,021	99,600,409	97,809,899	-	358,100	1,432,410
2016	361,105,021	103,194,597	101,750,184	-	-	1,444,413
2017	375,409,567	91,053,202	89,176,144	-	-	1,877,058
2018	385,731,210	94,187,748	92,259,099	-	385,724	1,542,925
2019	386,276,966	90,799,386	89,640,559	-	-	1,158,827
2020	396,084,139	92,527,775	90,547,356	-	-	1,980,419
2021	406,409,795	98,904,597	96,466,136	-	-	2,438,461
2022	405,318,283	115,075,298	113,454,025	-	-	1,621,273
2023	428,401,134	115,836,496	112,837,688	-	-	2,998,808
Villages						
2014	296,688,354	83,549,031	82,367,874	-	-	1,181,157
2015	298,766,157	81,460,417	79,943,884	-	303,296	1,213,237
2016	298,766,157	69,981,037	68,788,007	-	-	1,193,030
2017	316,804,801	73,308,396	71,724,373	-	-	1,584,023
2018	323,473,812	75,751,635	74,134,267	-	323,456	1,293,912
2019	327,388,623	73,872,681	72,890,527	-	-	982,154
2020	337,679,673	76,094,089	74,405,690	-	-	1,688,399
2021	344,249,844	80,165,375	78,099,874	-	-	2,065,501
2022	346,200,166	94,477,950	93,093,149	-	-	1,384,801
2023	361,570,900	94,268,283	91,737,287	-	-	2,530,996

Local Government Salaries and Billings — PFRS

continued

FYE	Salaries	Contributions	Normal	Deficiency	GLIP	Administrative
Miscellaneous						
2014	\$ 324,198,568	\$ 88,966,389	\$ 87,744,530	\$ -	\$ -	\$ 1,221,859
2015	322,131,168	89,840,321	88,189,827	-	330,099	1,320,395
2016	322,131,168	73,328,115	72,039,593	-	-	1,288,522
2017	332,682,130	78,709,281	77,045,873	-	-	1,663,408
2018	345,926,023	82,341,868	80,612,241	-	345,923	1,383,704
2019	355,303,151	81,963,609	80,897,700	-	-	1,065,909
2020	368,595,543	84,573,906	82,730,930	-	-	1,842,976
2021	612,045,010	147,894,883	144,222,611	-	-	3,672,272
2022	441,412,586	122,175,420	120,409,769	-	-	1,765,651
2023	463,388,052	122,688,884	119,445,168	-	-	3,243,716

For the FYEs 2014-2015, the contribution amounts include the normal cost of benefits including supplemental pensions and, in some cases, the Retirement Incentive Program, Deficiency Contributions, the Group Life Insurance Plan (GLIP), and the administrative cost of the System for the fiscal year.

For FYE 2016, **and all subsequent FYEs**, the contribution amounts include the normal cost of benefits including supplemental pensions, Deficiency Contributions, GLIP, the administrative cost of the System for the fiscal year, and accounting adjustments. Accounting adjustments include prior year adjustments, prepayment discounts, and reconciliation of actual versus estimated salary amounts.

Legislation enacted in July 2015 (Chapter 94, Laws of 2015), requires the System to use prior year actual salaries rather than current year estimated salaries in the calculation of required contributions. This change eliminates the need for reconciliation of actual versus estimated salaries, the result of which is reflected in the FYE 2016 salaries.

Contributions Recorded 2014 – 2023

Contributions recorded are the amounts presented in the System’s financial statements and include employer costs plus or minus any adjustments in amounts receivable and changes resulting from legislation.

(Dollars in Millions)

Year Ended 3/31	Employer Contributions*	Member Contributions
2014		
Total	\$ 6,064.1	\$ 281.4
State	2,372.7	
Local	3,691.4	
2015		
Total	\$ 5,797.4	\$ 284.8
State	2,263.0	
Local	3,534.4	
2016		
Total	\$ 5,140.2	\$ 306.6
State	1,958.4	
Local	3,181.8	
2017		
Total	\$ 4,787.0	\$ 328.8
State	1,813.6	
Local	2,973.4	
2018		
Total	\$ 4,823.3	\$ 349.4
State	1,802.1	
Local	3,021.2	
* Includes employer premiums to Group Life Insurance Plan.		

Year Ended 3/31	Employer Contributions*	Member Contributions
2019		
Total	\$ 4,744.3	\$ 386.5
State	1,771.5	
Local	2,972.8	
2020		
Total	\$ 4,782.7	\$ 453.7
State	1,759.3	
Local	3,023.4	
2021		
Total	\$ 5,029.8	\$ 492.3
State	1,870.5	
Local	3,159.3	
2022		
Total	\$ 5,627.7	\$ 577.6
State	2,049.4	
Local	3,578.3	
2023		
Total	\$ 4,404.0	\$ 656.8
State	1,556.7	
Local	2,847.3	
* Includes employer premiums to Group Life Insurance Plan.		

20-Year Summary*

	2023	2022	2021	2020	2019	2018	2017	2016	2015
Total Participants	1,210,133	1,193,373	1,172,147	1,160,743	1,139,971	1,122,626	1,104,779	1,088,342	1,073,486
Number of Members	695,504	685,450	675,519	673,336	658,176	652,030	652,324	647,399	643,178
ERS (a)	659,750	650,251	640,581	637,746	623,090	616,906	617,143	612,294	608,637
State	206,787	204,937	206,913	207,643	203,421	201,912	203,317	202,153	201,194
Counties	107,865	107,099	105,523	105,939	103,965	103,438	104,452	104,756	105,582
Cities	19,772	19,047	18,530	18,583	18,251	18,138	18,146	18,048	18,079
Towns	49,771	49,743	48,351	47,833	46,611	45,897	45,608	45,450	44,826
Villages	16,184	16,020	15,543	15,257	14,867	14,615	14,474	14,256	14,129
Miscellaneous	108,106	105,659	103,731	101,807	99,042	98,035	97,376	95,759	94,341
School Districts	151,265	147,746	141,990	140,684	136,933	134,871	133,770	131,872	130,486
PFRS (a)	35,754	35,199	34,938	35,590	35,086	35,124	35,181	35,105	34,541
State	6,689	6,407	6,493	6,785	6,712	6,606	6,596	6,309	6,009
Counties	5,510	5,399	5,149	5,306	5,303	5,386	5,323	5,348	5,179
Cities	11,824	11,785	11,654	11,745	11,659	11,757	11,880	12,018	11,856
Towns	4,195	4,138	4,108	4,147	4,090	4,061	4,127	4,182	4,196
Villages	4,215	4,208	4,181	4,175	4,072	4,160	4,213	4,340	4,343
Miscellaneous	3,321	3,262	3,353	3,432	3,250	3,154	3,042	2,908	2,958
Members by Tier (b)									
ERS Tier 1	873	1,043	1,305	1,552	1,937	2,313	3,241	3,809	4,520
ERS Tier 2	847	1,042	1,364	1,762	2,278	2,817	3,668	4,420	5,375
ERS Tiers 3 through 6	658,030	648,166	637,912	634,432	618,875	611,776	610,234	604,065	598,742
PFRS Tier 1	13	17	19	24	27	40	54	77	92
PFRS Tier 2	15,508	17,032	18,763	20,500	21,938	23,733	25,518	27,364	28,179
PFRS Tiers 3, 5 & 6	20,233	18,150	16,156	15,066	13,121	11,351	9,609	7,664	6,270
Retirees & Beneficiaries	514,629	507,923	496,628	487,407	481,795	470,596	452,455	440,943	430,308
ERS	474,561	468,664	458,261	449,806	444,719	434,553	417,499	407,112	396,781
PFRS	40,068	39,259	38,367	37,601	37,076	36,043	34,956	33,831	33,527
Employers	3,547	3,539	3,623	3,616	3,692	3,044	3,040	3,040	3,032
ERS	2,977	2,969	3,052	2,959	3,015	3,017	3,013	3,010	3,006
PFRS	570	570	571	657	677	684	687	686	682
Benefit Payments (c)	\$ 15,484.6	\$ 14,719.7	\$ 14,022.7	\$ 13,246.1	\$ 12,741.6	\$ 12,027.3	\$ 11,448.7	\$ 10,908.5	\$ 10,436.2
Retirement Allowances	14,402.8	13,791.6	13,096.1	12,424.6	11,880.3	11,197.8	10,617.5	10,113.8	9,651.2
Death Benefits (Lump Sum)	310.3	237.8	258.0	159.5	214.7	201.2	216.2	188.2	183.1
COLA Payments	771.5	690.3	668.6	662.0	646.6	628.3	615.0	606.5	601.9
# of Service Retirements	21,070	24,170	25,212	23,159	22,928	28,312	22,762	21,984	18,039
# of Death Benefits Paid	667	1,458	1,108	897	793	857	915	751	900
# of Disability Retirements	375	379	297	477	883	922	718	626	720
Employer Contributions	\$ 4,404.0	\$ 5,518.0	\$ 5,029.8	\$ 4,782.7	\$ 4,744.3	\$ 4,823.3	\$ 4,787.0	\$ 5,140.2	\$ 5,797.4
ERS	3,250.4	4,352.5	3,932.9	3,818.3	3,766.8	3,852.5	3,858.6	4,232.4	4,802.2
PFRS	1,098.2	1,060.5	967.5	862.3	854.1	869.8	837.3	792.6	901.0
Group Life Insurance Plan	55.4	105.0	129.4	102.1	123.4	101.0	91.1	115.2	94.2
Rate (as a % of Salary) (d)									
ERS	11.6%	16.2%	14.6%	14.6%	14.9%	15.3%	15.5%	18.2%	20.1%
PFRS	27.0%	28.3%	24.4%	23.5%	23.5%	24.4%	24.3%	24.7%	27.6%
Employee Contributions	\$656.8	\$ 577.6	\$ 492.3	\$ 453.7	\$ 386.5	\$ 349.4	\$ 328.8	\$ 306.6	\$ 284.8
ERS	565.1	494.8	427.0	395.3	345.8	318.4	306.2	289.3	272.0
PFRS	91.7	82.8	65.3	58.4	40.7	31.0	22.6	17.3	12.8
Investments (e)	\$248,524.9	\$ 272,121.3	\$ 258,135.8	\$ 194,317.2	\$ 210,523.7	\$ 207,416.0	\$ 192,410.6	\$ 178,639.7	\$ 184,502.0
Equities	108,998.6	133,460.2	133,744.2	93,221.9	109,560.6	114,797.1	103,688.4	90,755.4	94,293.5
Global Fixed Income	48,479.2	52,497.5	47,722.9	45,410.3	45,651.6	44,820.8	44,002.6	44,661.2	47,652.2
Commercial Mortgages	1,310.6	1,421.1	1,043.6	1,011.8	897.0	843.4	800.3	796.4	852.9
Short-Term Investments	4,018.7	3,852.3	11,082.7	5,697.7	6,119.0	3,366.6	5,653.3	5,578.8	5,252.5
Private Equity	36,976.6	37,026.1	29,470.2	20,314.2	19,751.0	17,500.5	15,348.5	13,961.4	14,247.4
Equity Real Estate	25,054.4	22,873.1	17,648.0	15,693.7	15,678.5	14,182.7	12,937.4	12,639.7	12,123.4
Opportunistic/ Absolute Return Strategy	6,463.4	5,730.0	5,016.1	9,881.9	10,646.0	10,386.3	9,589.5	9,748.7	9,681.0
Credit	9,411.4	9,209.8	8,478.5	0.0	0.0	0.0	0.0	0.0	0.0
Other	7,812.0	6,051.2	3,929.6	3,085.7	2,220.0	1,518.6	390.6	498.1	399.1
Rate of Return (f)	(4.1)%	9.5%	33.6%	(2.7)%	5.2%	11.4%	11.5%	0.2%	7.2%
Core Fixed Income	(4.3)%	(2.9)%	2.6%	7.4%	4.8%	2.1%	2.5%	1.8%	5.5%
Equity Investments	(4.2)%	13.3%	44.2%	(5.4)%	5.6%	14.5%	14.8%	(0.4)%	8.3%
Administrative Cost	\$208.0	\$ 163.5	\$ 165.1	\$ 139.1	\$ 136.5	\$ 122.8	\$ 107.1	\$ 106.6	\$ 107.2
Financial Statement Assets	\$249,508.1	\$ 273,718.7	\$ 260,081.1	\$ 198,079.8	\$ 215,169.2	\$ 212,076.8	\$ 197,602.2	\$ 183,640.2	\$ 189,412.4

20-Year Summary*

continued

2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
1,066,064	1,061,010	1,059,398	1,057,754	1,055,020	1,046,086	1,035,430	1,012,699	995,536	982,009	970,078
643,659	647,574	656,224	672,723	679,217	679,908	677,321	662,633	653,291	647,758	641,721
609,565	613,930	622,107	637,921	643,875	643,700	641,119	626,923	617,989	612,410	606,155
201,192	202,570	203,274	213,089	216,582	219,741	220,216	215,296	211,041	208,899	207,641
106,688	108,302	111,051	114,111	115,722	116,515	117,084	115,944	115,472	118,006	117,514
18,182	18,176	18,420	18,667	18,897	18,893	18,992	18,843	18,891	18,979	18,933
44,676	44,407	44,644	44,416	44,361	43,403	43,203	41,989	41,393	40,561	39,841
14,073	14,040	14,051	14,165	14,150	14,000	13,891	13,597	13,388	13,106	12,878
94,396	95,199	97,225	98,115	97,960	97,272	95,601	92,736	90,879	86,791	85,732
130,358	131,236	133,442	135,358	136,203	133,876	132,132	128,518	126,925	126,068	123,616
34,094	33,644	34,117	34,802	35,342	36,208	36,202	35,710	35,302	35,348	35,566
5,792	5,630	5,548	5,779	5,973	6,222	6,223	6,219	5,955	6,038	5,898
5,003	5,076	5,372	5,499	5,560	5,841	5,898	5,873	5,850	5,833	5,814
11,812	11,868	11,974	12,137	12,289	12,433	12,414	12,206	12,147	12,113	12,374
4,162	4,153	4,178	4,205	4,249	4,340	4,364	4,295	4,261	4,217	4,231
4,330	4,370	4,433	4,512	4,547	4,592	4,621	4,591	4,641	4,653	4,732
2,995	2,547	2,612	2,670	2,724	2,780	2,682	2,526	2,448	2,494	2,517
5,249	6,230	7,551	10,718	13,395	16,829	20,513	25,053	29,492	34,980	39,622
6,297	7,538	9,222	12,911	15,651	18,097	20,315	22,458	24,263	25,938	27,398
598,019	600,162	605,334	614,292	614,829	608,774	600,291	579,412	564,234	551,492	539,135
123	172	230	304	393	576	745	924	1,143	1,503	2,076
29,188	30,295	31,830	33,091	34,261	35,632	35,457	34,786	34,159	33,845	33,490
4,783	3,177	2,057	1,407	688	0	0	0	0	0	0
422,405	413,436	403,174	385,031	375,803	366,178	358,109	350,066	342,245	334,251	328,357
389,288	380,899	371,468	353,940	345,106	336,273	328,726	321,113	313,837	306,531	301,528
33,117	32,537	31,706	31,091	30,697	29,905	29,383	28,953	28,408	27,720	26,829
3,027	3,029	3,040	3,039	3,035	3,026	3,021	3,010	3,001	2,993	2,985
3,002	3,004	3,016	3,016	3,011	3,001	2,995	2,983	2,974	2,967	2,959
681	681	682	681	681	683	683	683	685	684	684
\$ 9,898.8	\$ 9,450.2	\$ 8,862.8	\$ 8,464.6	\$ 7,663.1	\$ 7,212.1	\$ 6,835.6	\$ 6,383.4	\$ 6,028.9	\$ 5,674.7	\$ 5,347.5
9,098.4	8,669.8	8,109.3	7,717.0	6,931.8	6,497.1	6,142.8	5,722.9	5,388.6	5,041.0	4,722.1
203.8	194.2	185.0	192.3	183.0	180.5	181.7	164.6	161.2	161.9	157.3
596.6	586.2	568.5	555.3	548.3	534.5	511.1	495.9	479.1	471.8	468.1
19,702	19,962	28,259	19,092	19,193	17,979	17,261	16,390	16,827	14,533	23,655
810	844	879	984	955	935	1,014	832	932	1,041	1,025
963	1,026	1,161	844	1,421	1,020	950	1,227	1,267	1,463	1,103
\$ 6,064.1	\$ 5,336.1	\$ 4,585.2	\$ 4,164.5	\$ 2,344.2	\$ 2,456.2	\$ 2,648.4	\$ 2,718.6	\$ 2,782.2	\$ 2,964.8	\$ 1,286.5
5,045.6	4,435.6	3,790.6	3,525.8	1,785.5	1,898.7	2,073.5	2,116.0	2,271.4	2,434.5	1,052.3
926.3	808.5	706.4	538.8	465.0	492.8	510.6	502.5	433.4	455.3	158.4
92.2	92.0	88.2	99.9	93.7	64.7	64.3	100.1	77.3	75.0	75.8
20.9%	18.9%	16.3%	11.9%	7.4%	8.5%	9.6%	10.7%	11.3%	12.9%	5.9%
28.9%	25.8%	21.6%	18.2%	15.1%	15.8%	16.6%	17.0%	16.3%	17.6%	5.8%
\$ 281.4	\$ 269.1	\$ 273.2	\$ 286.2	\$ 284.3	\$ 273.3	\$ 265.7	\$ 250.2	\$ 241.2	\$ 227.3	\$ 221.9
273.5	264.8	268.5	284.5	282.8	269.0	263.1	247.2	237.7	224.5	217.4
7.9	4.3	4.7	1.7	1.5	4.3	2.6	2.9	3.5	2.8	4.5
\$ 176,835.1	\$ 160,660.8	\$ 150,658.9	\$ 147,237.0	\$ 132,500.2	\$ 108,960.7	\$ 153,877.7	\$ 154,575.5	\$ 140,453.3	\$ 126,083.5	\$ 119,245.0
93,191.7	83,049.5	79,059.2	79,945.0	72,674.0	47,871.0	83,153.7	90,119.7	88,550.9	80,917.2	74,876.5
41,410.6	38,559.5	33,440.5	31,037.9	33,726.1	36,541.6	36,571.4	33,536.2	28,889.0	29,310.8	29,691.2
853.9	812.7	803.0	851.3	845.7	710.2	772.4	889.7	1,162.7	1,281.9	1,530.0
6,592.8	6,461.3	7,397.7	8,360.2	3,086.1	3,826.7	6,443.1	8,551.1	6,619.3	2,602.5	1,879.1
14,369.8	14,072.6	14,925.9	14,620.4	12,584.0	10,563.7	12,699.4	10,044.8	8,284.8	6,832.4	6,738.8
12,529.3	11,195.4	9,339.5	7,631.0	5,551.1	7,066.5	8,909.4	6,752.7	5,430.7	4,634.0	4,529.4
7,887.0	6,509.8	5,693.1	4,791.2	4,033.2	2,381.0	5,328.3	4,681.3	1,516.0	504.7	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0%	10.4%	6.0%	14.6%	25.9%	(26.4)%	2.6%	12.6%	14.6%	8.5%	28.8%
(0.5)%	4.7%	9.0%	8.0%	7.4%	2.4%	8.6%	6.0%	1.7%	3.0%	8.9%
19.1%	12.5%	4.9%	17.1%	41.3%	(30.8)%	0.9%	15.0%	19.1%	10.6%	42.8%
\$ 105.7	\$ 105.7	\$ 100.6	\$ 101.3	\$ 100.0	\$ 99.2	\$ 90.3	\$ 79.8	\$ 78.5	\$ 65.3	\$ 69.6
\$ 181,275.3	\$ 164,221.8	\$ 153,394.4	\$ 149,548.6	\$ 134,251.7	\$ 110,937.8	\$ 155,845.9	\$ 156,625.2	\$ 142,620.1	\$ 128,037.7	\$ 120,799.0

Notes to 20-Year Summary

* Combined Systems unless noted; dollars in millions; data as of March 31 fiscal year end.

- (a) Includes active members and inactive members identified with their last employer.
- (b) Tiers 3 through 6 membership statistics are combined. Tier 6 was enacted on April 1, 2012.
- (c) Total does not include Employee Contributions Refunded or Other Benefits found in the Financial Statements.
- (d) Beginning in the 2006 fiscal year, all rates assume a February 1 payment date prior to the close of the fiscal year. Previous years assume rates based on a December 15 payment date. Contributions include normal, administrative, retirement incentive and deficiency costs.
- (e) Investments for 1995 and later years are shown at (and rate of return is calculated on) fair value as required by GASB 25, which the System adopted that year.
- (f) Generally, the Rate of Return is calculated on a time-weighted, gross-of-fees, basis.



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