

# Annual Comprehensive Financial Report

Fiscal Years Ended  
June 30, 2023 and June 30, 2022



Teachers' Retirement System of the City of New York  
A Fiduciary Fund of the City of New York



**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
A FIDUCIARY FUND OF THE CITY OF NEW YORK**

**ANNUAL COMPREHENSIVE FINANCIAL REPORT  
FOR FISCAL YEARS ENDED JUNE 30, 2023 AND JUNE 30, 2022**

Prepared by Accounting Units for the

**QUALIFIED PENSION PLAN  
and  
TAX-DEFERRED ANNUITY PROGRAM**

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Chief Actuary

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK**  
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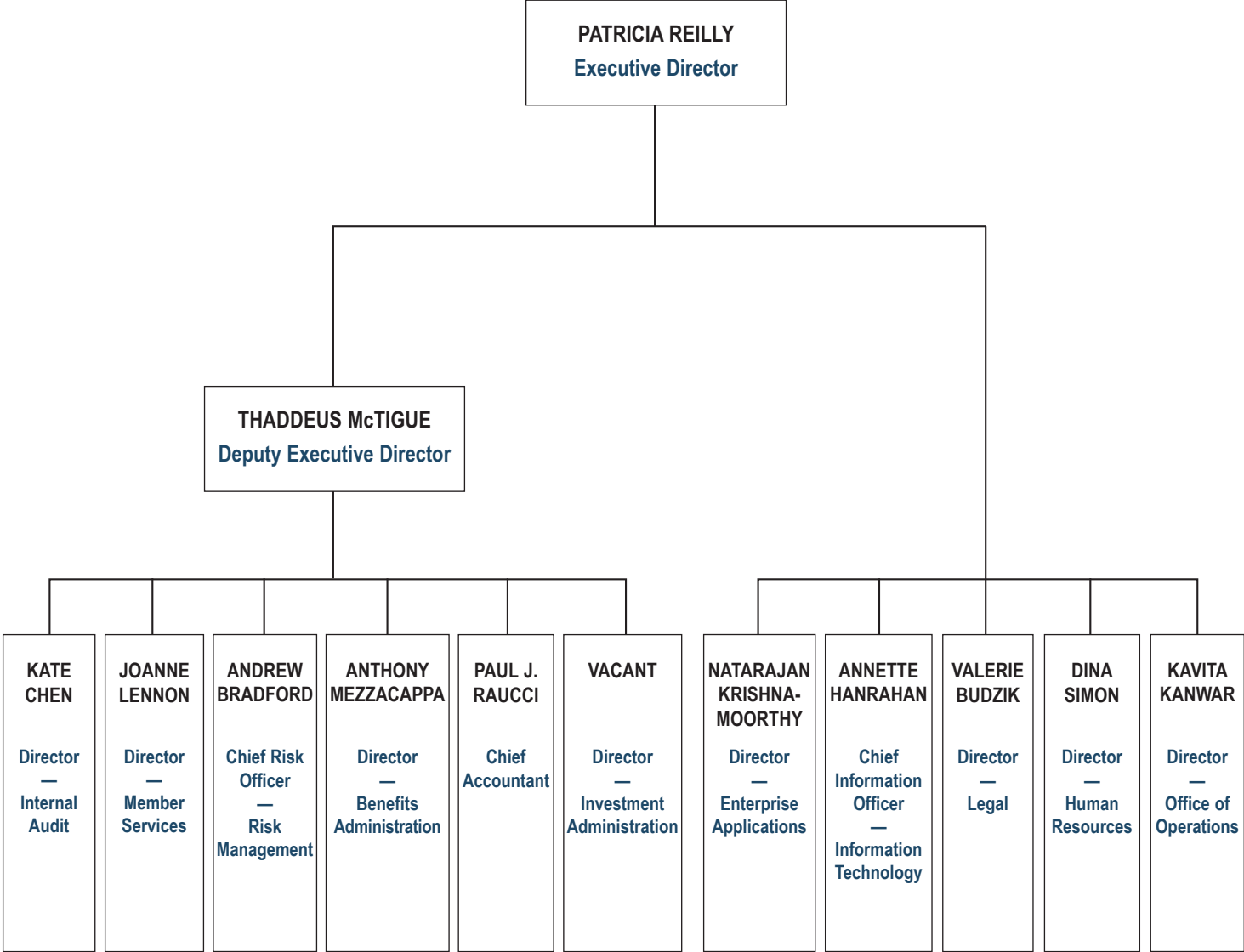
# Introductory Section





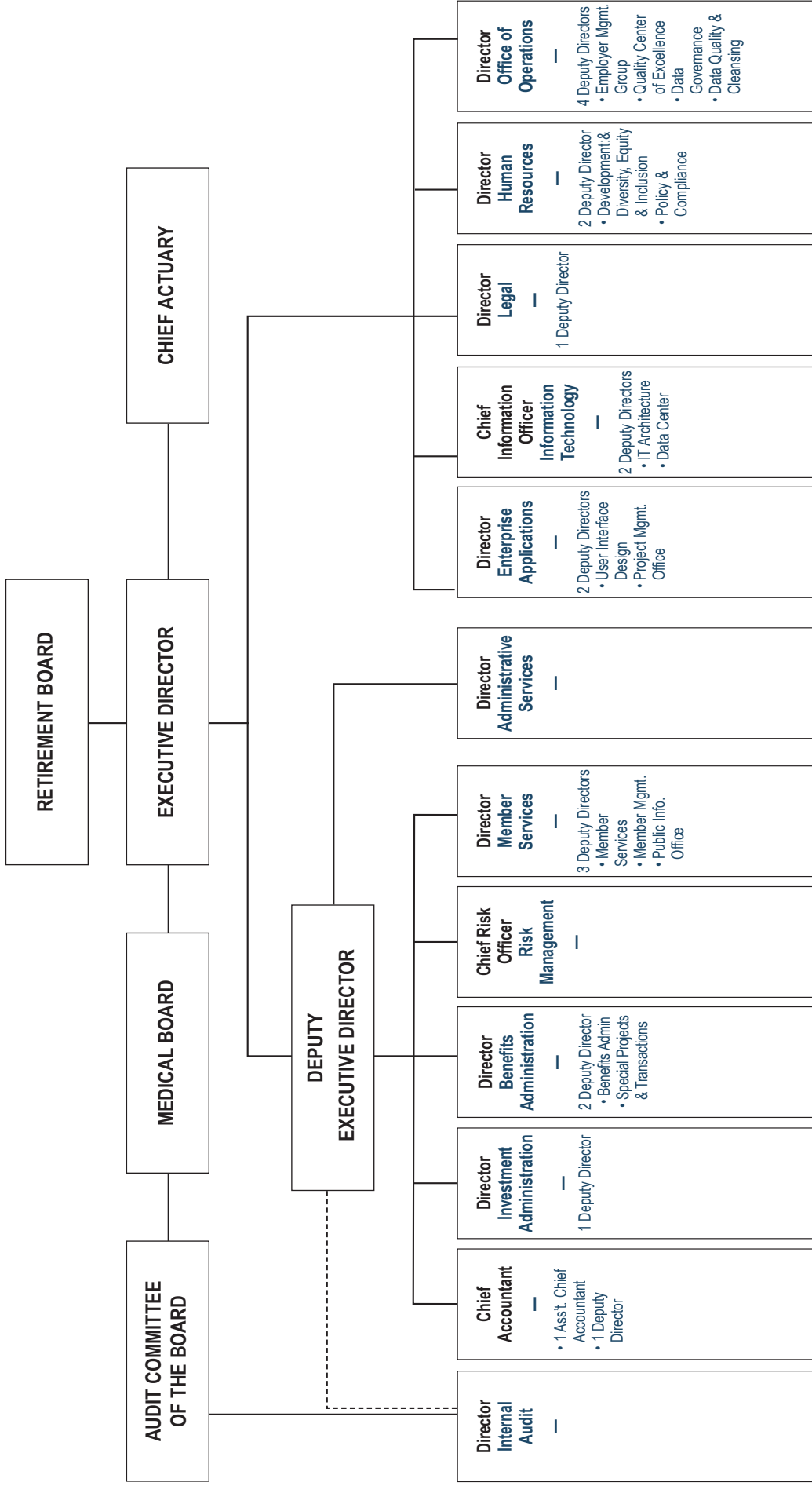
# PRINCIPAL OFFICIALS

as of June 30, 2023



# ORGANIZATION CHART

as of June 30, 2023





Government Finance Officers Association

Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting

Presented to

**Teachers' Retirement System of the City of New York  
New York**

For its Annual Comprehensive  
Financial Report  
For the Fiscal Year Ended

June 30, 2022

*Christopher P. Morrill*

Executive Director/CEO



December 20, 2023

Dear Members of the Board of Trustees:

We are pleased to present the *Annual Comprehensive Financial Report* of the Teachers' Retirement System of the City of New York (TRS) for the fiscal year ended June 30, 2023.

TRS was established on August 1, 1917 under Chapter 303 of the Laws of 1917 and is governed by the Administrative Code of the City of New York and the New York State Retirement and Social Security Law.

TRS' pension plan became a tax-qualified retirement plan under Section 401(a) of the Internal Revenue Code (IRC) and is known as our Qualified Pension Plan (QPP). The QPP is a cost-sharing, multiple employer defined-benefit pension plan. The QPP provides pension benefits to teachers and educational or administrative personnel employed by the Department of Education, participating New York City Charter Schools, and the City University of New York.

TRS' Tax-Deferred Annuity (TDA) Program was established and is administered pursuant to IRC Section 403(b) and NYC Administrative Code section 13-582, and became effective February 1, 1970. The TDA Program is a voluntary defined-contribution savings option available to TRS members.

### **Member Profile**

Our programs impact approximately 220,000 in-service members, retirees, and beneficiaries. Our membership includes individuals of varying ages, membership tiers, and employment status. And although many TRS members are currently in active service, more than 40% of them have retired. As of June 30, 2023, there were approximately 125,000 in-service members and approximately 95,000 retired members and beneficiaries receiving monthly benefits.

### **Participating Employers**

The participating employers that share the cost of the defined-benefit QPP plan are the New York City Department of Education (DOE), City University of New York (CUNY), and certain New York City Charter Schools that offer TRS benefits to their employees. Employees who become TRS members may participate in the TDA Program in addition to the QPP plan.

### **Initiatives**

During the past fiscal year, TRS implemented several initiatives, both internal and public-facing:

We completed implementation of Chapter 56 of the Laws of 2022, which lowered the vesting requirement from 10 years to 5, among other provisions. We also implemented provisions of the SECURE Act, which affected required distributions from the Tax-Deferred Annuity Program. Among the many internal projects completed in the fiscal year, we smoothed the processes for electronic payment of retirees, and enrollment of new members to limit contribution deficits. We also implemented an upgraded telecom system to support customer contact.

Under our modernization initiative, we introduced a major refresh to our secure portal, and continued to implement features supporting pension administration for our retiree and beneficiary population. Production stabilization continued through regular maintenance releases, and planning for future phases continued.

### **Financial Statements**

The financial statements and notes along with Management's Discussion and Analysis in this report present and analyze the changes in the TRS fiduciary net position for the fiscal year ended June 30, 2023. Since markets are dynamic and fluid, any judgment of the financial statements should also consider current market conditions.

## **Funding**

The Qualified Pension Plan's funding objective is to meet long-term benefit promises through employer and member contributions, together with investment earnings. Annual funding by employer contributions is determined through an actuarial valuation of all liabilities to the QPP with adjustments to allow for an incremental phase-in of newly assumed actuarial liabilities. As such, employer contributions have been increasing steadily in line with current membership liabilities.

The QPP's funding ratios are also developed as part of the QPP's actuarial valuation. The funding ratios are determined at specific points in time, are usually expressed in various relationships of assets to obligations, and, over time, can provide insight into the long-term financial trend of the QPP.

One measure of the QPP's funded status, the ratio of Actuarial Asset Value to the Entry Age Normal Actuarial Accrued Liability, determined as of June 30, 2021, is 83.8%. Please refer to the report's Actuarial Section for a detailed discussion of the Plan's measures of funded status.

Under Governmental Accounting Standards Board (GASB) Statement No. 67, Financial Reporting for Pension Plans, a defined-benefit pension plan is also required to report fiduciary net position as a percentage of the plan's total pension liability. This method reports assets at current fair market value and, as such, is more sensitive to market volatility. As of June 30, 2023, the Qualified Pension Plan's fiduciary net position represents 83.2% of the QPP's total pension liability.

Funds needed to finance the QPP's long-term benefit are accumulated through the collection of employer and member contributions and through income from investments. Primary expenses include benefit and survivor payments as well as investment and administrative expenses, and refunds of contributions to terminated employees. An overview of revenue and expenses, as well as asset and liability information, is provided in the Management's Discussion and Analysis portion of the Financial Section.

## **Management Responsibility for Financial Reporting and Internal Controls**

The financial statements were prepared in accordance with accounting principles generally accepted in the United States of America and GASB pronouncements. Management is responsible for the integrity and fairness of the information presented in the financial statements, including data that, out of necessity, is based on estimates and judgments. Management is also responsible for establishing and maintaining an effective internal control structure. A system of internal controls provides reasonable, but not absolute, assurance that assets are properly safeguarded and that financial statements are reliable. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived, and second, the valuation of the cost and benefits requires estimates and judgments by management. We believe that the internal controls currently in place support this purpose, and that the financial statements, accompanying schedules, and statistical tables are fairly presented in all material respects.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

### Investments

Assets of the QPP and the TDA Program are invested together in the following investment funds: the Pension Fund, the Diversified Equity Fund, the Balanced Fund, the International Equity Fund, the Sustainable Equity Fund, the U.S. Equity Index Fund, and the International Equity Index Fund. The performance summary for Fiscal Year 2023 follows:

Rate of Return by Fund—Fiscal Year 2023		
Fund	ROR	Gross vs. Net Returns
Pension	7.76%	Net of Fees
Variable Fund	ROR	Gross vs. Net Returns
Diversified Equity Fund	18.16%	Net of Fees
Balanced Fund	5.08%	Net of Fees
International Equity Fund	16.43%	Net of Fees
Sustainable Equity Fund	21.49%	Net of Fees
U.S. Equity Index Fund	18.81%	Net of Fees
International Equity Index Fund	12.01%	Net of Fees

For Funds other than the Pension Fund, members' accounts are valued on a monthly basis based on unit values. The unit values are based on each Fund's closing market value as of the end of the preceding month and are comparable to shares in mutual funds. TRS members who invest in these variable-return funds purchase units with their contributions.

The following table showing July unit values for 2023 and 2022 was based on the performance of the variable- return funds as of June 30. In addition to the changes in unit values, members' accounts are credited with a 4% increment factor increasing the number of units they hold, and their accounts are similarly discounted to offset this increase.

Unit Values for Fiscal Years 2023 and 2022		
Variable Fund	Unit Value July 2023	Unit Value July 2022
Diversified Equity Fund	\$120.740	\$106.266
Balanced Fund	15.528	15.368
International Equity Fund	11.328	10.121
Sustainable Equity Fund	25.561	21.882
U.S. Equity Index Fund	14.624	12.800
International Equity Index Fund	11.284	10.478

The Administrative Code of the City of New York and Retirement and Social Security Law authorize the investments of plan assets subject to the terms, conditions, limitations, and restrictions imposed by law. The New York State Retirement and Social Security Law, Banking Law, and the Administrative Code establish the criteria for permissible equity investments. Plan assets are diversified over a range of investments, and multiple investment strategies are used to limit risk. Details concerning the criteria for TRS' investments may be found in the Notes to the Financial Statements. A detailed discussion of TRS' investment strategies, asset classes, and yield information is provided in the report's Investment Section.

### Actuarial Reports

The Actuarial Section contains the Actuary's certification letter, the actuary's statements, a summary of actuarial assumptions, and the actuarial tables. The actuarial valuation provides a picture of the overall funding health of the QPP.

## Statistical Reports

Past and current data are contained in this section. The section includes tables that reflect the net position and demographic characteristics of the QPP and the TDA Program. Also captured in the tables, when applicable, is information comparing ten years of data. This look back shows overall trends in our programs and membership demographics that help to accurately forecast our future ability to meet our members' retirement needs.

## Independent Audit & Professional Services

State statutes require an annual audit by independent certified public accountants. TRS' auditor, Grant Thornton LLP, provides a Report of Independent Certified Public Accountants on the financial statements and schedules in the Financial Section of this Report.

Investment professionals are appointed under the direction of the Teachers' Retirement Board. Investment administration services for the TRSNYC Pension Fund are provided by the New York City Office of the Comptroller. Investment administration services for TRS's Variable-Return Funds are performed by TRS. The Office of the Comptroller and TRS hire consultants and other investment professionals to perform additional investment services. The listing of Investment Managers and Fees can be found on page 107. A listing of brokerage firms and the amounts paid to such firms can be found in the Schedule of Payments of Commissions to Brokers on page 115.

Legal services to TRS are provided by the City's Corporation Counsel and Groom Law Group.

Actuarial services are provided by the Office of the Actuary of the City of New York, which is employed by the City's five major pension systems.

## Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to TRS for its Annual Comprehensive Financial Report for the Fiscal Year ended June 30, 2022. This was the 35th consecutive year that TRS was accorded this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized Annual Comprehensive Financial Report. This report must satisfy both the generally accepted accounting principles and the applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current annual comprehensive financial report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA for its consideration.

## Acknowledgements

The compilation of the Report reflects the efforts of the TRS staff under the leadership of the Board of Trustees. It is intended to provide complete and reliable information as a basis for making management decisions, as a means of determining compliance with legal provisions, and as a means for determining responsible stewardship for the assets contributed by the members and their employers.

Finally, we would like to take this opportunity to express our gratitude to the staff, the advisors, and the many people who have worked diligently to ensure the successful operation of TRS.

Sincerely,



Patricia M. Reilly  
Executive Director



Paul J. Raucci  
Chief Accountant

## SUMMARY OF PLAN PROVISIONS

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## SUMMARY OF PLAN PROVISIONS

TRS' principal benefit provisions correspond to the tier structure established by applicable New York State Law<sup>1</sup>.

### Tiers III, IV, VI

Members with a date of membership of July 27, 1976 or later are covered by the following provisions:

#### SERVICE RETIREMENT

##### *Normal Service Retirement*

###### **Eligibility:**

A member is eligible to retire at age 62 (age 63 for Tier VI) with immediate payability after 5 or more years of service<sup>2</sup>.

Current members as of February 27, 2008 (excluding CUNY employees) were provided a 180-day period during which they were allowed to join a plan that permitted them to retire at age 55 and later with immediate payability and without reduction after 25 years of service, provided they pay an additional 1.85% of future pay, subject to contribution obligations.

After February 27, 2008, new members (excluding CUNY employees) are eligible to retire at age 55 and later with immediate payability and without reduction after 27 years of service and are required to pay an additional 1.85% of future pay, subject to contribution obligations.

After December 10, 2009, new members in a position represented by the UFT under the 55/27 retirement program are required to make contributions of 4.85% of salary until they have 27 years of credited service and contributions of 1.85% of salary thereafter.

After March 31, 2012, new Tier VI members are required to make contributions in amounts ranging from 3% to 6% per annum, based on annual wages earned during a "plan year," originally defined as April 1 to March 31, but amended to January 1 to December 31 as of January 1, 2016.<sup>3</sup>

###### **Benefits:**

- (1) For a member with fewer than 20 years of service, the benefit is 1.67% times FAS<sup>4</sup> multiplied by years of service.
- (2) For a member with at least 20 (Tier VI) but fewer than 30 years of service (Tier III/IV), the benefit is 2% times FAS multiplied by years of service (Tier III/IV) or 35% plus 2% times FAS multiplied by each additional year exceeding 20 years of service (Tier VI).
- (3) For a member with 30 or more years of service, the benefit is 2% times FAS for each of the first 30 years of service plus 1.5% times FAS for each additional year (Tier III/IV).

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

###### **Eligibility:**

A member is eligible to retire at age 55 or later with immediate payability, after 5 or more years of service.<sup>2</sup>

<sup>1</sup> Chapter 274 of the Laws of 1970 (Tiers I/II), as restricted by RSSL Article 11; RSSL Articles 14 and 15 (Tiers III/IV); Chapter 18 of the Laws of 2012 (Tier VI).

<sup>2</sup> Prior to the enactment of Chapter 56 of the Laws of 2022 on April 9, the vesting requirement was 10 years of service for all Tier VI members, as well as UFT-affiliated Tier IV members who joined TRS after December 10, 2009.

<sup>3</sup> For the first three plan years of membership, TRS uses projected annual earnings provided by the employer(s) to determine the contribution rates. For the fourth plan year of membership and each plan year thereafter, TRS uses the actual wages earned two plan years prior to the current plan year. Chapter 56 of the Laws of 2022 excludes overtime pay from the "actual wages" figure for plan years 2022, 2023, and 2024.

<sup>4</sup> Final Average Salary (FAS) is the average earned during any three consecutive years (any five consecutive years for Tier VI) providing the highest average salary. However, if salary earned during any year included in the three-year period (five-year period for Tier VI) exceeds the average of the previous two years by more than 10%, the amount in excess of 10% will be excluded.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

### **Benefits:**

The pension is calculated similarly to the pension of a Normal Service Retirement, but it is reduced as follows:

- (1) For a Tier III/IV member who retires prior to age 62 with less than 30 years of service and is not a member of an Age 55 Plan, the member's pension for service is reduced by 0.5% for each of the first 24 months that the payability date precedes age 62, and by 0.25% for each additional month.
- (2) A Tier III/IV member with 30 or more years of service receives no reduction in benefits because of early retirement.
- (3) For a Tier VI member who retires prior to age 63, the retirement allowance is reduced by 6.5% per year.

### ***Deferred Vested Benefit***

#### **Eligibility:**

A member who has 5 or more years of credited service upon termination of employment is entitled to a deferred vested benefit payable at age 55 or later.<sup>2</sup>

A member who elects payability before age 62 (age 63 for Tier VI) will receive a reduced benefit unless they have 30 years of service under Tier III/IV or meet the eligibility requirements of their retirement plan.

#### **Benefits:**

The benefit formulas are the same as those set forth under a Normal Service Retirement and an Early Service Retirement.

## DISABILITY RETIREMENTS

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

#### **Eligibility:**

A member is eligible for Ordinary Disability Retirement benefits if the member has completed 10 or more years of service and is incapacitated for performance of gainful employment. If the disability is judged to be the result of an accident in the performance of duty, the 10-year requirement is waived.

#### **Benefits:**

The benefit is the greater of: (a) 33.33% of FAS (66.67% of FAS for a member if the disability is judged to be the result of an accident in the performance of duty); or (b) 1.67% times FAS multiplied by the credited service.

A lump-sum disability benefit equals the in-service death benefit amount for members with: a terminal illness with a life expectancy of one year or less; or a medical condition of a long, continued, and indefinite duration requiring extraordinary care and treatment, regardless of life expectancy.

### ***Accident Disability Retirement***

#### **Eligibility:**

A member is entitled to an accident disability retirement allowance upon the occurrence of a disability caused by an accident in the actual performance of duty.

#### **Benefits:**

The retirement allowance will consist of a pension equal to 66.67% (60% under Tier III) of FAS.

## DEATH BENEFITS

### ***Ordinary Death Benefits***

#### **Benefits:**

For members joining TRS after January 1, 2001, Death Benefit #2 below would be payable if a member dies before retirement. For members joining prior to that date, the greater of the two death benefits described below would be payable.

**Death Benefit 1:**

This benefit provides one month's salary for each year of service up to a maximum of three years' salary. If the member would have been eligible to receive an unreduced retirement allowance at the time of the member's death, the benefit is a lump sum that is actuarially equivalent to the retirement allowance which would have been payable had the member retired on the day before dying, if greater.

**Death Benefit 2:**

This benefit provides one year's salary for each year of service up to a maximum of three years' salary after three years of service. The benefits reduce after age 60 at the rate of 5% per year, to a maximum reduction of 50% of the benefit in effect at age 60.

A benefit is also payable upon death after retirement and is expressed as follows:

- If death occurs in the first year after retirement, 50% of the benefit in force immediately before retirement.
- If death occurs in the second year following retirement, 25% of the benefit in force immediately before retirement.
- If death occurs subsequently, 10% of the benefit in force at age 60 or immediately before retirement if retirement was earlier than age 60.

If retirement occurs after age 60, the minimum death benefit payable after retirement is 10% of the death benefit in force at age 60.

The death benefit for a vested member with at least 10 years of credited service, who died while inactive before retirement, is equal to 50% of the death benefit that would have been payable had the member died on their last day of active service, in addition to a refund of the member contributions.

The Rules and Regulations adopted by the Teachers' Retirement Board in accordance with Chapter 581 of the Laws of 1970 provide that the first \$50,000 of each benefit on account of death in active service is payable from the Group Term Life Insurance Plan. Only the amount in excess of \$50,000, if any, is payable by TRS.

**Beneficiaries:**

The latest named beneficiary, duly designated with TRS, will receive the death benefits. If there is no eligible beneficiary on file, the benefits will be paid to the member's estate.

***Accidental Death Benefits*****Eligibility:**

A beneficiary is entitled to the benefit if the member died before the effective date of retirement as a natural and proximate result of an accident sustained in the performance of duty, and if the accident was not caused by the member's willful negligence.

**Benefits:**

Benefits are payable to "eligible beneficiaries," as defined by law. The beneficiary receives a benefit equal to 50% of the wages the member earned during the last year of actual service. If there is no eligible beneficiary on file, the benefits will be paid to the member's estate.

**Special Provisions:**

An Accidental Death Benefit (resulting from a qualifying World Trade Center-related condition or COVID-19, as defined in law) is payable to the eligible beneficiary(ies).

## Tiers I, II

Members with a date of membership before July 27, 1976 are covered by the following provisions:

### SERVICE RETIREMENT

#### *Twenty-Year Pension Plan*

##### **Eligibility:**

- (1) A Tier I member who elects the Twenty-Year Pension Plan is eligible to retire after having completed 20 years of service, with benefits to begin on the latter of: a) the day they cease active employment, b) age 55, or c) the date they could have completed 25 years of service had they remained active. Regardless of the number of years of service, such a member who has elected the Twenty-Year Pension Plan and who is at least 55 years of age may retire with benefits payable immediately by canceling the election of the Twenty-Year Pension Plan, thereby becoming eligible for the benefits under the Age-55-Increased-Benefits Pension Plan.
- (2) A member who joined TRS under Tier II must also have rendered five years of continuous service immediately prior to retiring and must have attained age 55.

##### **Benefits:**

The service retirement allowance for a Tier I member is the sum of the following:

- (1) 50% of the average salary<sup>5</sup>, reduced by an annuity which is the actuarial equivalent of the minimum accumulation<sup>6</sup>;
- (2) an annuity which is the actuarial equivalent of the accumulated contributions; and
- (3) for service in excess of 20 years, a pension for Increased-Take-Home-Pay<sup>7</sup>, which is the actuarial equivalent of the Reserve for Increased-Take-Home-Pay credited in such years, 1.2% of the average salary for each such year prior to July 1, 1970, and 1.7% of the average salary for each such year beginning on that date.

If a Tier II member retires prior to age 62 with less than 30 years of service, the member's pension for service is reduced by 0.5% for each of the first 24 months that the payability date precedes age 62, and by 0.25% for each additional month.

Current Tier II members as of February 27, 2008 (excluding CUNY employees) were provided a 180-day period during which they were allowed to join a plan that permitted them to retire at age 55 and later with immediate payability and without reduction after 25 years of service, provided they pay an additional 1.85% of future pay.

#### *Age-55-Increased-Benefits Pension Plan*

##### **Eligibility:**

- (1) A Tier I member who either elects the Age-55-Increased-Benefits Pension Plan or cancels the election of the Twenty-Year Pension Plan may retire after having attained age 55 with benefits payable immediately upon retirement.
- (2) A Tier II member must have rendered five years of continuous service immediately prior to retiring and must have attained age 55.

<sup>5</sup> For a Tier I member, salary earnable in the last year of the most recent three-year period during which the member held no more than one position, or the average annual salary earnable in any five consecutive years designated by the member. For a Tier II member, the average salary earned during any three consecutive years which provides the highest salary. However, if salary earned during any year included in the three-year period exceeds the average of the previous two years by more than 20%, the amount in excess of 20% will be excluded.

<sup>6</sup> The difference between (1) the amount of required contributions during the member's first 20 years of city service, accumulated with interest to the member's payability date, and (2) the amount of the reserve for Increased-Take-Home-Pay on the date such period of 20 years is completed.

<sup>7</sup> Increased-Take-Home-Pay consists of special contributions made by the employer at 2.5%, 5%, or 8% of salary, with applicable interest.

**Benefits:**

The service retirement allowance consists of a pension for service, a pension for Increased-Take-Home-Pay, and an annuity.

The pension for service is equal to 1.2% of the average salary multiplied by years of service prior to July 1, 1970, plus 1.53% of the average salary multiplied by years of service after June 30, 1970. The pension for Increased-Take-Home-Pay is the actuarial equivalent of the Reserve for Increased-Take-Home-Pay, and the annuity is the actuarial equivalent of the member's accumulated deductions.

If a Tier II member retires prior to age 62 with less than 30 years of service, his/her pension for service is reduced by 0.5% for each of the first 24 months that the payability date precedes age 62, and by 0.25% for each additional month.

Current Tier II members as of February 27, 2008 (excluding CUNY employees) were provided a 180-day period during which they were allowed to join a plan that permitted them to retire at age 55 and later with immediate payability and without reduction after 25 years of service, provided they pay an additional 1.85% of future pay.

**VESTED DEFERRED RETIREMENT ALLOWANCE****Eligibility:**

A member who either resigns or is dismissed from service would receive a benefit equal to the member's accumulated deductions. However, a member who is eligible for benefits under the Age-55-Increased-Benefits Pension Plan and who has at least 5 years of service immediately preceding resignation may instead elect to receive a deferred vested allowance.

**Benefits:**

This allowance is computed in the same manner as the retirement allowance for service retirement under the Age-55-Increased-Benefits Pension Plan, except that the allowance is deferred to age 55. Should a member who elected to receive a vested deferred retirement allowance and who had 10 years of service die before the attainment of age 55, the death benefit is 50% of the Ordinary Death Benefit in force on the last day of service.

**DISABILITY RETIREMENTS*****Ordinary Disability Retirement*****Eligibility:**

Regardless of the Plan elected, a member who has completed 10 or more years of City service preceding the occurrence of disability, for causes other than an accident in the actual performance of duty, is entitled to an ordinary disability retirement allowance.

**Benefits:**

If, at the time of becoming disabled, the member could have retired for service with benefits payable immediately, the ordinary disability allowance will be the same as the service retirement allowance without reduction on account of age. For all other members, the ordinary disability allowance is computed in the same manner as though the member had been eligible for service retirement under the Age-55-Increased-Benefits Pension Plan with benefits payable immediately, but never less than the allowance that would have been payable under the provisions in effect prior to July 1, 1970.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

### *Accident Disability Retirement*

#### **Eligibility:**

A member is entitled to an accident disability retirement allowance upon the occurrence of a disability caused by an accident in the actual performance of duty.

#### **Benefits:**

The retirement allowance will consist of a pension equal to 75% of the average salary in the last 5 years, plus a pension which is the actuarial equivalent of the Reserve for Increased-Take-Home-Pay, and an annuity purchased with the member's accumulated deductions.

## DEATH BENEFITS

### *Ordinary Death Benefits*

#### **Benefits:**

Upon the death of a member in active service, a benefit is paid to the deceased's estate or to such person(s) as the member shall have nominated.

#### **Tier I Members**

- If a member completed less than 10 years of City Service, the benefit is equal to the compensation earnable by the member in the 6 months immediately preceding death.
- If the total number of years of City Service is greater than 10, but less than 20, the benefit is equal to the compensation earnable by the member during the 12 months immediately preceding death.
- If the total number of years of City Service exceeds 20, the benefit is equal to twice the compensation earnable by the member during the 12 months immediately preceding death.
- In addition, the member's accumulated deductions and the Reserve for Increased-Take-Home-Pay are paid to the member's estate or to the designated beneficiary.

The benefits payable on account of such a member who, at the time of death, would have been eligible for service retirement is either the benefit described above or a lump sum that is actuarially equivalent to the retirement allowance which would have been payable had the member retired on the day before dying, whichever is larger.

**Tier II Members** must choose between the two following death benefits so that, upon the member's death, benefits are paid pursuant to the member's election:

**Death Benefit 1:** This benefit provides one month's salary for each year of service, up to a maximum of three years' salary. In addition, the member's accumulated deductions are payable.

If the member would have been eligible to receive an unreduced retirement allowance at the time of death, the benefit is a lump sum that is actuarially equivalent to the retirement allowance which would have been payable had the member retired on the day before dying, if greater.

**Death Benefit 2:** In addition to a refund of the member's accumulated deductions, this benefit provides one year's salary for each year of service up to a maximum of three years' salary after three years of service. The benefit reduces after age 60 at the rate of 5% per year, to a maximum reduction of 50% of the benefits in effect at age 60.



A benefit is also payable upon death after retirement and is expressed as follows:

- If death occurs in the first year after retirement, 50% of the benefit in force immediately before retirement.
- If death occurs in the second year following retirement, 25% of the benefit in force immediately before retirement.
- If death occurs subsequently, 10% of the benefit in force at age 60 or immediately before retirement if retirement was earlier than age 60.

If retirement occurs after age 60, the minimum death benefit payable after retirement is 10% of the death benefit in force at age 60.

The death benefit for a vested member with at least 10 years of credited service, who died while inactive before becoming eligible for unreduced retirement benefits, is equal to 50% of the death benefit that would have been payable had the member died on their last day of active service, in addition to a refund of the member contributions.

The Rules and Regulations adopted by the Teachers' Retirement Board in accordance with Chapter 581 of the Laws of 1970 provide that the first \$50,000 of each benefit on account of death in active service is payable from the Group Term Life Insurance Plan. Only the amount in excess of \$50,000, if any, is payable by TRS.

**Beneficiaries:**

The latest named beneficiary, duly designated with TRS, will receive the death benefits. If there is no eligible beneficiary on file, the benefits will be paid to the member's estate.

**ACCIDENTAL DEATH BENEFITS**

**Eligibility:**

A member is entitled to accidental death benefits upon the occurrence of death caused by an accident in the actual performance of duty and not the result of willful negligence.

**Benefits:**

The accidental death benefits are (a) a lump-sum equal to the Reserve for Increased-Take-Home-Pay and (b) a pension equal to 50% of the average salary in the last five years payable annually to the widow until remarriage or death, or if there is no widow, to a child or children until the attainment of age 18 of the youngest child, or if there is no widow, or child, to the dependent parents, and (c) a lump-sum equal to the member's accumulated deductions and Reserve for Increased-Take-Home-Pay payable to the member's estate or to the designated beneficiary. Alternatively, the beneficiary of a Tier I member may elect to receive a lump sum that is actuarially equivalent to the retirement allowance which would have been payable if the member had retired on the day before the member's death, provided that the death occurred after the member became eligible to retire for service.

## Cost-of-Living Adjustments

### Eligibility:

Automatic annual Cost-of-Living Adjustments (COLA) are applicable to retired members in all tiers. COLA are payable to members who are either (1) at least age 62 and have been retired for at least 5 years or (2) at least age 55 and have been retired for at least 10 years. Additionally, COLA are payable to members who retired for disability after being retired for 5 or more years and beneficiaries receiving accidental death benefits who have been receiving them for at least 5 years.

### Benefits:

Starting with benefits for September 2001, the annual increase for COLA is equal to 50% of the increase in the Consumer Price Index for all Urban Consumers (CPI-U) based on the year ending March 31, rounded to the next higher 0.1%, not less than 1% nor greater than 3% of the first \$18,000 of the sum of maximum retirement allowance and prior COLA.

COLA are payable during the life of the retired member. Fifty percent of the amount is also payable after the member's death and during the life of the spouse beneficiary if such retired member had elected one of the options under the Administrative Code which provides that benefits are to be continued for the life of such spouse after the death of the retired member, and where the death of such retired member occurred or occurs more than 30 days after the effective date of the retirement of such member.

## Options on Retirement

A member, upon retirement, may receive the basic retirement allowance in monthly installments throughout life with all payments ending at death, or may elect to receive the actuarial equivalent in the following optional forms.

- (1) A joint-and-survivor allowance under which reduced payment will be made during life, with a provision that upon the member's death, the same payments or 50% of such payments shall be continued throughout the life of other such person(s) as the member shall have designated. (Applicable to members under Tiers I and II.)
- (2) A joint-and-survivor allowance under which reduced payments will be made during life, with a provision that upon the member's death, 100% or less (*i.e.*, in 10% increments) of such payments shall be continued throughout the life of such other person(s) as the member shall have designated. (Applicable to members under Tier III.)
- (3) A joint-and-survivor allowance under which reduced payments will be made during life, with a provision that upon a member's death, 100% or less (*i.e.*, in 25% increments) of such payments shall be continued throughout the life of such other person(s) as the member shall have designated. (Applicable to members under Tiers IV and VI.)
- (4) A joint-and-survivor allowance under which reduced payments will be made during life, with a provision that in the event of a member's death prior to the death of the designated beneficiary, the person designated would receive a percentage of the payments under the applicable plan, which had been received by the member under that plan. Should the designated beneficiary predecease the member, the member's retirement allowance "pops up" to the amount which would have been payable, had no optional modification of the retirement allowance been in effect. (All Tiers)
- (5) A ten-year or five-year certain and life allowance under which reduced payments will be made during life, with a provision that in case of death within ten or five years of retirement, the balance that would have been payable had the member survived for ten or five years, shall continue to be paid to the designated beneficiary or estate. (All Tiers)



- (6) A cash refund allowance under which reduced payment will be made during life, with a provision that, in case of death before such payments have equaled the present value of the retirement allowance at the time of retirement, the balance shall be paid to the designated beneficiary or estate in a lump-sum. (Applicable to members under Tier I.)
- (7) A cash refund allowance under which reduced payments will be made during life, with a provision that, in case of death before such payments have equaled the present value of the retirement allowance at the time of retirement, the balance from the annuity portion of the retirement allowance shall be paid to the designated beneficiary or estate in a lump-sum. (Applicable to members under Tier II.)
- (8) A cash refund allowance under which reduced payment will be made during life, with a provision that, upon the member's death, a sum specified by the retiree at the time of retirement, would be paid to the designated beneficiary or estate. (Applicable to members under Tiers I and II, by resolution of the Teachers' Retirement Board.)
- (9) Such other actuarial equivalent optional forms as may be certified by the Actuary and approved by the Teachers' Retirement Board. (All Tiers)

### **Annuitization Options for Beneficiaries of a Death Benefit**

Upon a member's death, the beneficiary may elect to receive the actuarial equivalent of a lump-sum death benefit, otherwise payable, in one of the following forms: 1) An annual amount payable for life in monthly installments, all payments ending at death (only available to the beneficiary of a member who joined under Tiers I and II); or 2) A cash refund allowance under which reduced payments will be made during life, with a provision that, in case of death before such payments have equaled the lump-sum payable upon the member's death, the balance shall be paid to the designated beneficiary or estate (only available to the beneficiary of a member joined under Tier I).





# Financial Section



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**REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS**

To the Board of Trustees of  
Teachers' Retirement System of the City of New York

**Opinion**

We have audited the combining financial statements of Teachers' Retirement System of the City of New York Qualified Pension Plan and the Teachers' Retirement System of the City of New York Tax-Deferred Annuity Program, which collectively comprise the Teachers' Retirement System of the City of New York (the "System"), which comprise the combining statements of fiduciary net position as of June 30, 2023 and 2022 and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to combining financial statements, which collectively comprise the System's basic combining financial statements.

In our opinion, the accompanying combining financial statements present fairly, in all material respects, the combining fiduciary net position of the System as of June 30, 2023 and 2022, and the changes in the combining fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

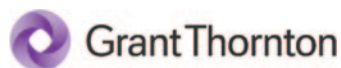
**Basis for opinion**

We conducted our audits of the financial statements in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditor's 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 audits. 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 combining financial statements in accordance with accounting principles generally accepted in the United States of America, 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 one year after the date the financial statements are available to be issued.

**Auditor's responsibilities for the audit of the financial statements**

Our objectives are to obtain reasonable assurance about whether the combining financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's 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 US GAAS 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 combining financial statements.

In performing an audit in accordance with US GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the combining 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 combining 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**

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, schedule 1 - schedules of changes in the employer's net pension liability and related ratios for each of the ten years in the period ended June 30, 2023, schedule 2 - schedules of employer contributions for each of the ten years in the period ended June 30, 2023, and schedule 3 - schedule of investment returns for each of the ten years in the period ended June 30, 2023, be presented to supplement the basic combining financial statements. Such information is the responsibility of management and, although not a required part of the basic combining 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 combining financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with US GAAS. These limited procedures 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 combining financial statements, and other knowledge we obtained during our audit of the basic combining 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 basic combining financial statements as a whole. The schedule of administrative expenses, and schedule of investment expenses and services ("Additional Supplementary Information") for the year ended June 30, 2023, are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such supplementary 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 combining financial statements. The information has been subjected to the auditing procedures, applied in the audit of the basic combining financial statements and certain additional procedures. These additional procedures included comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic combining financial statements or to the basic combining financial statements themselves, and other additional procedures in accordance with US GAAS. In our opinion, the Additional Supplementary Information is fairly stated, in all material respects, in relation to the basic combining financial statements taken as a whole.

**Other information**

Management is responsible for the other information. The other information comprises the accompanying Introductory Section, Investment Section, Actuarial Section, and Statistical Section, but does not include the basic combining financial statements and our auditor's report thereon. Our opinion on the basic combining 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 combining financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic combining 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.

*Grant Thornton LLP*

New York, New York

October 26, 2023

(except for the Additional Supplementary Information and the Other information section of our report, as to which the date is December 20, 2023)

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

June 30, 2023 and 2022

This narrative discussion and analysis of the Teachers' Retirement System of the City of New York's ("TRS" or the "System") financial performance provides an overview of the System's combining financial activities for the Fiscal Years ended June 30, 2023 and 2022. It is meant to assist the reader in understanding TRS' combining financial statements by providing an overall review of the combining financial activities during the years and the effects of significant changes, as well as a comparison with prior years' activity and results. This discussion and analysis is intended to be read in conjunction with the System's combining financial statements. TRS administers the TRS Qualified Pension Plan ("QPP") and the TRS Tax-Deferred Annuity ("TDA") Program. The QPP is a cost-sharing, multiple-employer, defined-benefit pension plan. The QPP provides pension benefits to New York City ("The City" or "City") public school teachers and certain other personnel, participating Charter Schools, and participating City University of New York ("CUNY") teachers and other personnel. The TDA Program is a tax-deferred annuity program described in Internal Revenue Code section 403(b) and is available as a supplemental savings option to QPP members.

#### OVERVIEW OF COMBINING FINANCIAL STATEMENTS

The following discussion and analysis is intended to serve as an introduction to the System's combining financial statements. The combining financial statements, which are prepared in conformity with Generally Accepted Accounting Principles ("GAAP"), as prescribed by Government Accounting Standards Board ("GASB"), include the financial statements of the QPP and the TDA Programs and are as follows:

- **The Combining Statements of Fiduciary Net Position** – presents the financial position of the System at fiscal year-end. It provides information about the nature and amounts of resources with present service capacity that the System presently controls (assets), consumption of net assets by the System that is applicable to a future reporting period (deferred outflow of resources), present obligations to sacrifice resources that the System has little or no discretion to avoid (liabilities), and acquisition of net assets by the System that is applicable to a future reporting period (deferred inflow of resources), with the difference between assets/deferred outflow of resources and liabilities/deferred inflow of resources being reported as net position. Investments are shown at fair value. All other assets and liabilities are determined on an accrual basis of accounting.
- **The Combining Statements of Changes in Fiduciary Net Position** – presents the results of activities during the fiscal year. All changes affecting the assets/deferred outflow and liabilities/deferred inflow of the System are reflected on an accrual basis when the activity occurred, regardless of the timing of the related cash flows. In that regard, changes in the fair values of investments are included in the year's activity as net appreciation (depreciation) in fair value of investments.
- **The Notes to Combining Financial Statements** – provide additional information that is essential to a full understanding of the data provided in the combining financial statements. The notes present information about the System's accounting policies, significant account balances and activities, material risks, obligations, contingencies, and subsequent events, if any.
- **Required Supplementary Information ("RSI") (Unaudited)** – as required by GASB, the RSI includes the management discussion and analysis (this section) and information presented following the notes to combining financial statements.



## Teachers' Retirement System of the City of New York

## MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

## HIGHLIGHTS AND RECENT DEVELOPMENTS

*Employer Information*

Employers that participate in TRS include the New York City Department of Education (“DOE”), CUNY (both Junior and Senior Colleges), and New York City Charter Schools that elect to participate. All employers may participate in the QPP and the TDA Program.

The following schedule provides the 2023 QPP summary information of the employer groups.

*Contributions from Employers and Members*

	Members Active	Contribution Employer	Contribution Member	Members Retired	Pension Payments
DOE	117,000	\$ 2.9 billion	\$ 275 million	92,000	\$ 4.8 billion
CUNY	8,000	\$ 142 million	\$ 16 million	2,800	\$ 146 million
Charter Schools	500	\$ 5.5 million	\$ 2 million	Less than 60	\$ 2.4 million

*United Federation of Teachers (“UFT”) Contract*

On July 10, 2023, the United Federation of Teachers (“UFT”), the primary union for the DOE’s employees, ratified its new collective bargaining agreement. The contract is retroactive to September 14, 2022 and runs through November 28, 2027. The contract provides for retroactive and future wage increases as well as annual bonuses. The wage increases and certain other payments are pensionable. They impact member and employer contributions, as well as annual retirement payments.

## FINANCIAL HIGHLIGHTS

*QPP Fiduciary Net Position*

The QPP’s net position restricted for benefits is held in trust for the payment of future benefits to members and pensioners. The QPP’s net position restricted for benefits was \$67.9 billion, \$64.0 billion, and \$78.3 billion as of June 30, 2023, 2022, and 2021, respectively. The System’s employer contributions amounted to \$3.1 billion, \$3.4 billion, and \$3.2 billion for Fiscal Years 2023, 2022, and 2021, respectively. The QPP’s benefit payments totaled \$4.9 billion, \$4.9 billion, and \$4.7 billion for Fiscal Years 2023, 2022, and 2021, respectively. Below is a summary of the QPP’s net position and changes in net position.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

#### QPP Fiduciary Net Position

June 30, 2023, 2022, and 2021

(In thousands)

	2023	2022	2021
Cash	\$ 70,795	\$ 86,489	\$ 74,742
Receivables for investments sold	1,826,650	1,544,209	3,560,628
Receivables for accrued interest and dividends	378,152	339,801	304,145
Member loan receivables	333,351	301,958	310,380
Investments, at fair value	101,588,747	96,153,573	110,210,315
Collateral from securities lending	4,378,298	828,300	1,242,351
Other assets	169,089	166,039	46,194
Total assets	<u>108,745,082</u>	<u>99,420,369</u>	<u>115,748,755</u>
Accounts payable	339,755	308,685	349,820
Payable for investments purchased	2,295,806	2,230,369	5,723,528
Accrued benefits payable	7,398	44,285	49,585
Investments due to TDA Program	33,663,158	31,868,042	30,036,173
Payable for securities lending	4,378,298	828,300	1,242,351
Other liabilities	126,411	131,260	-
Total liabilities	<u>40,810,826</u>	<u>35,410,941</u>	<u>37,401,457</u>
Net position restricted for benefits	<u>\$ 67,934,256</u>	<u>\$ 64,009,428</u>	<u>\$ 78,347,298</u>

Cash balances amounted to \$70.8 million at June 30, 2023, a decrease of 15.7 million (-18.1%) from June 30, 2022. Cash balances amounted to \$86.5 million at June 30, 2022, an increase of \$11.7 million (15.7%) from June 30, 2021. Cash balances consist of advances to investment managers' accounts, accounts used to process reimbursement transfers between the System's investment programs, and bank accounts associated with the collections of loan insurance premiums and loan service charges. As of June 30, 2023, the largest cash balances consisted of the International and Domestic Equity investment manager, with \$45.9 million and \$11.0 million, respectively. Large cash balances held by an investment manager are due to recent sales, foreign currency balances or the general investment cycle. Foreign currency gets repatriated into USD and there is no daily sweep of currencies like with U.S. Dollar investments. The Domestic Equity cash balance was due to a sale with a June 30th settlement.

Receivables for investment securities sold amounted to \$1.8 billion at June 30, 2023, an increase of \$282.4 million (18.3%) from June 30, 2022. Receivables for investment securities sold amounted to \$1.5 billion at June 30, 2022, a decrease of \$2.0 billion (-56.6%) from June 30, 2021. These balances are principally composed of receivables for securities that have been sold but have not yet settled (*i.e.*, the cash has not been collected). The changes resulted primarily from timing differences between trade and settlement dates occurring around fiscal year-end. Trades typically do not settle until a few days after the trade date.

Receivables for accrued interest and dividends amounted to \$378.2 million as of June 30, 2023, an increase of \$38.4 million (11.3%) from June 30, 2022. Receivables for accrued interest and dividends amounted to \$339.8 million as of June 30, 2022, an increase of \$35.7 million (11.7%) from June 30, 2021. Changes in accrued earnings are impacted primarily by the cumulative value of the interest- or dividend-bearing securities, as well as by changes in discount rates and interest-payable dates.

## Teachers' Retirement System of the City of New York

## MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

At June 30, 2023, member loan receivables amounted to \$333.4 million, an increase of \$31.4 million (10.4%) from the previous year. At June 30, 2022, member loan receivables amounted to \$302.0 million, a decrease of \$8.4 million (-2.7%) from the previous year.

Investments at June 30, 2023 were \$101.6 billion, an increase of \$5.4 billion (5.7%) from June 30, 2022. Investments at June 30, 2022 were \$96.2 billion, a decrease of \$14.1 billion (-12.8%) from June 30, 2021. As of June 30, 2023, the QPP's total investment portfolio, including both the TRSNYC Pension and Variable-Return Funds, consisted of 49% equity investments, 32% fixed income securities and 19% alternative investments. The alternative investments consisted of private equity (8%), private real estate investments (6%), opportunistic-fixed income (3%), and infrastructure securities (2%). The \$5.4 billion annual increase in investments is primarily the result of \$7.8 billion in net investment income, less \$1.5 billion of QPP payments in excess of QPP contributions, less \$467 million TDA fixed return fund payments and net transfer out in excess of TDA fixed return fund interest, less \$217 million net increase in the year-over-year net receivables for investments securities sold. Also, investments as of June 30, 2023, in comparison with investments as of June 30, 2022, reflect the equity and fixed income markets' annual returns. For the year ended June 30, 2023, the Russell 3000 Index, a broad measure of U.S. equity markets, returned (19.0%). The Morgan Stanley Capital International ("MSCI") World Index Custom Benchmark excluding the United States returned (16.4%). The NYC Custom-Structured Index returned (-1.18%). The Bloomberg U.S. Mortgage Backed Securities Index returned (-1.52%). For the year ended June 30, 2022, the Russell 3000 Index, a broad measure of U.S. equity markets, returned (-13.9%). The Morgan Stanley Capital International ("MSCI") World Index Custom Benchmark excluding the United States returned (-17.73%). The NYC Custom-Structured Index returned (-9.75%). The Dow Jones U.S. Select Real Estate Securities Index returned (-6.4%).

Other assets at June 30, 2023 totaled \$169.1 million, a \$3.1 million (1.8%) increase from June 30, 2022. The year-over-year increase in other assets, as of June 30, 2023, was primarily due to increases of receivables from the DOE Gulino employer portion, increases due from the TDA Program, less decreases due from Corpus expenses. Other assets at June 30, 2022 totaled \$166.0 million, a \$119.8 million (259.4%) increase from June 30, 2021. The year-over-year increase in other assets, as of June 30, 2022, was primarily due to recognition of \$127.8 million lease assets less an \$8.0 million decrease in amounts due from the TDA Program.

Accounts payable at June 30, 2023 amounted to \$339.8 million, a \$31.1 million (10.1%) increase from June 30, 2022. Accounts payable as of June 30, 2023 consisted of balances due to depositories (55.2%), reserve for expenses (12.4%), accrued investment expenses (15.7%), unclaimed funds (7.3%), and other payables (9.4%). Accounts payable at June 30, 2022 amounted to \$308.7 million, a \$41.1 million (-11.8%) decrease from June 30, 2021. Accounts payable as of June 30, 2022 consisted of balances due to depositories (49.7%), reserve for expenses (18.0%), accrued investment expenses (15.1%), unclaimed funds (8.2%), and other payables (9.0%).

Payables for investment securities purchased at June 30, 2023 amounted to \$2.3 billion, a \$65.4 million (2.9%) increase from June 30, 2022. Payables for investment securities purchased at June 30, 2022 amounted to \$2.2 billion, a \$3.5 billion (-61.0%) decrease from June 30, 2021. Investments purchased are accounted for on a trade-date basis. The increase resulted from timing differences between settlement dates and trade dates, similar to receivables for investment securities sold (discussed earlier).

Accrued benefits payable at June 30, 2023 amounted to \$7.4 million, a \$36.9 million (-83.3%) decrease from June 30, 2022. The \$36.9 million decrease is primarily attributed to a decrease of pending death benefits due to beneficiaries at year-end. Accrued benefits payable at June 30, 2022 amounted to \$44.3 million, a \$5.3 million (-10.7%) decrease from June 30, 2021. The \$5.3 million decrease is primarily attributed to a decrease of pending death benefits due to beneficiaries at year-end.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

Investments due to the TDA Program reflect the TDA Program's share of assets of the TRSNYC Pension Fund/Fixed Fund investments. Assets in the TDA Program's Fixed-Return Fund are pooled with the QPP assets as System assets in the TRSNYC Pension Fund for investment purposes only. The amounts owned by the TDA Program are equal to member contributions, inter-fund transfers from other TDA Program Passport Funds, and earnings applied in accordance with statutory-interest rates (7% for members of the UFT and 8.25% for certain other members). See Note 2 for a full description of the TDA Fixed-Return Fund investment program.

Other liabilities represent amounts due to vendors for the underlying leased assets measured at the present value of the future payments. At June 30, 2023, other liabilities amounted to \$126.4 million, a decrease of \$4.8 million (-3.7%) from June 30, 2022. At June 30, 2022, other liabilities amounted to \$131.3 million.

#### QPP Changes in Fiduciary Net Position

Years ended June 30, 2023, 2022, and 2021

(In thousands)

	2023	2022	2021
Additions:			
Member contributions	\$ 292,473	\$ 273,686	\$ 247,751
Employer contributions	3,143,803	3,364,379	3,193,270
Net receipts (payments to) other retirement systems	(6,564)	(2,993)	(5,550)
Net securities lending income	9,235	4,932	6,396
Net investment income (loss)	7,835,149	(10,858,794)	22,356,592
Total additions	<u>11,274,096</u>	<u>(7,218,790)</u>	<u>25,798,459</u>
Deductions:			
Administrative expenses	73,784	71,490	68,100
TDA Rebalance	66,064	(2,537)	4,175
Benefits payments and withdrawals	4,947,702	4,909,488	4,699,448
Payment of statutory interest to TDA Program	2,261,718	2,140,639	1,998,388
Total deductions	<u>7,349,268</u>	<u>7,119,080</u>	<u>6,770,111</u>
Net increase (decrease) in net position	3,924,828	(14,337,870)	19,028,348
Net position restricted for benefits			
Beginning of year	<u>64,009,428</u>	<u>78,347,298</u>	<u>59,318,950</u>
End of year	<u>\$ 67,934,256</u>	<u>\$ 64,009,428</u>	<u>\$ 78,347,298</u>

TRS received \$292.5 million in member contributions in Fiscal Year 2023, an \$18.8 million (6.9%) increase from Fiscal Year 2022. TRS received \$273.7 million in member contributions in Fiscal Year 2022, a \$25.9 million (10.5%) increase from Fiscal Year 2021. The \$18.8 million increase in Fiscal Year 2023 and the \$25.9 million increase in Fiscal Year 2022 were both primarily due to UFT salary increases and a larger active Tier VI membership.

## Teachers' Retirement System of the City of New York

## MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

Employer contributions during Fiscal Year 2023, including other employer contributions, were \$3.1 billion, a \$220.6 million (-6.6%) decrease from Fiscal Year 2022. Employer contributions during Fiscal Year 2022, including other employer contributions, were \$3.4 billion, a \$171.1 million (5.4%) increase from Fiscal Year 2021. The Fiscal Year 2023 decrease in employer contributions was primarily due to investment experience gains. (See Note 5 – QPP Net Pension Liability.) The June 30, 2021 (Lag) actuarial valuation and June 30, 2020 (Lag) actuarial valuation were used to determine Fiscal Year 2023 and 2022 employer contributions, respectively.

The QPP's net investment income for Fiscal Year 2023 was \$7.8 billion, an \$18.7 billion increase from Fiscal Year 2022. The QPP's net investment income of \$7.8 billion consisted of \$2.6 billion in dividend and interest income plus a net gain of \$5.8 billion on the appreciation in fair value of the QPP's investments and \$518.9 million in investment expenses. Net investment income (loss) for the QPP portion of the TRSNYC Pension Fund, QPP portion of the Diversified Equity Fund, QPP portion of the Balanced Fund, QPP portion of the International Equity Fund, QPP portion of the Sustainable Equity Fund, QPP portion of the U.S. Equity Index Fund, and QPP portion of the International Equity Index Fund totaled \$6.9 billion, \$906.1 million, \$2.1 million, \$1.3 million, \$2.8 million, \$1.0 million, and \$44.0 thousand, respectively. The QPP's net investment income (loss) for Fiscal Year 2022 was -\$10.9 billion, a \$33.2 billion (loss) decrease from Fiscal Year 2021. The QPP's net investment income (loss) of -\$10.9 billion consisted of \$2.7 billion in dividend and interest income less a net loss of \$13.0 billion on the appreciation in fair value of the QPP's investments and \$535.3 million in investment expenses. Net investment income (loss) for the QPP portion of the TRSNYC Pension Fund, QPP portion of the Diversified Equity Fund, QPP portion of the Balanced Fund, QPP portion of the International Equity Fund, QPP portion of the Sustainable Equity Fund, QPP portion of the U.S. Equity Index Fund, and QPP portion of the International Equity Index Fund totaled -\$9.8 billion, -\$1.1 billion, -\$3.4 million, -\$1.9 million, -\$3.0 million, -\$546.4 thousand, and -\$25.0 thousand, respectively.

For Fiscal Year 2023, the QPP's effective net investment income for the QPP portion of the TRSNYC Pension Fund increased due to investment returns attributable to the TDA Program's TRSNYC Pension Fund assets. The TDA Fixed-Return Fund program resulted in approximately \$170.8 million more assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of the TDA Program's investment returns being above the statutory rates. For Fiscal Year 2022, the QPP's effective net investment income for the QPP portion of the TRSNYC Pension Fund decreased due to investment returns attributable to the TDA Program's TRSNYC Pension Fund assets. The TDA Fixed-Return Fund program resulted in approximately \$5.3 billion fewer assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of the TDA Program's investment returns being below the statutory rates. The table below displays the TDA Program's impact on the QPP's Contingent Reserve Fund of Employer's Contributions for Fiscal Years 2023, 2022, and 2021.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

#### Revenue (Expense) to Contingent Reserve Fund

#### TRSNYC Pension Fund Assets (QPP)\*

Years ended June 30, 2023, 2022, and 2021

(In thousands)

	2023	2022	2021
Net investment income (loss)	\$ 6,929,785	\$ (9,762,620)	\$ 20,059,992
TDA percent of fixed assets as of June 30	35.10%	35.11%	29.18%
TDA percent of fixed assets as of 6/30/20:			33.67%
TDA percent of fixed assets (average)	35.10%	32.14%	31.42%
Investment income on account of TDA investment	\$ 2,432,482	\$ (3,138,080)	\$ 6,303,326
Less statutory interest to TDA	(2,261,718)	(2,140,639)	(1,998,388)
Revenue (expense) to QPP contingent reserve	<u>\$ 170,764</u>	<u>\$ (5,278,719)</u>	<u>\$ 4,304,938</u>

\*Includes security-lending income

Administrative expenses during Fiscal Year 2023 were \$73.8 million, an increase of \$2.3 million (3.2%) from Fiscal Year 2022. The System continues its phased implementation to replace its legacy IBM A/S 400 computer system with a system based on Microsoft's .NET programming framework. Sagitec, an outside vendor and a provider of Pension Database Systems, and Cognizant, a software testing company, have been assisting with this multi-year project. In Fiscal Year 2023, the System continued with the implementation of additional new pension payroll modules and development of active account modules. The change in administrative expenses also reflects the annual update in the System's administrative expenses attributed to the QPP. (See Note 8.) In addition, Fiscal Year 2023 QPP and TDA administrative expenses increased by \$2.9 million and \$701.7 thousand respectively, due to recognition of interest and amortization expenses as required by GASB No. 87. The QPP's total administrative expenses for Fiscal Year 2023 accounted for 80.4% of the System's administrative expenditures. The balance of \$18.0 million (19.6%) was expensed to the TDA Program. Administrative expenses during Fiscal Year 2022 were \$71.5 million, an increase of \$3.4 million (5.0%) from Fiscal Year 2021. In addition, Fiscal Year 2022 QPP and TDA administrative expenses increased by \$3.5 million and \$1.8 million respectively, due to recognition of interest and amortization expenses as required by GASB No. 87. The QPP's total administrative expenses for Fiscal Year 2022 accounted for 78.2% of the System's administrative expenditures. The balance of \$19.9 million (21.8%) was expensed to the TDA Program. Less GASB No. 87 recognition, the System's administrative expenditures amounted to \$88.2 million, \$86.0 million, and \$86.4 million for Fiscal Years 2023, 2022, and 2021, respectively.

The TDA rebalance during Fiscal Year 2023 resulted in \$66.1 million in transfers from the QPP TRSNYC Pension Fund to the TDA Program. The Administrative Code of The City of New York under sections 13-582 and 13-577 provides for certain internal transfer of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets and follow liability reviews conducted by the Actuary of The City of New York. Also, \$3.2 million was transferred to the QPP Program's Variable-Return Funds from the QPP TRSNYC Pension Fund. The \$3.2 million transfer increased the investments held by the QPP Program's Variable-Return Funds and decreased the investments held by the QPP's TRSNYC Pension Fund but did not impact net investments held by the QPP (see Note 2, Intra-Fund Payable/Receivable). The TDA rebalance during Fiscal Year 2022 resulted in \$2.5 million in transfers to the QPP TRSNYC Pension Fund from the TDA Program.



## Teachers' Retirement System of the City of New York

## MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

Benefit payments and withdrawals during Fiscal Year 2023 were \$4.9 billion, a \$38.2 million (0.8%) increase from Fiscal Year 2022. The \$38.2 million increase in benefit payments and withdrawals was primarily due to a \$36.1 million (0.8%) increase in payments to retirees. In total, benefit payments and withdrawals distributed during Fiscal Year 2023 were composed of 97.7% in retirement benefits and 2.3% in refund/withdrawals and survivor benefits.

Payments of statutory interest due to the TDA from its investment in the TRSNYC Pension Fund Assets (Fixed-Return Fund) during Fiscal Year 2023 were \$2.3 billion, an increase of \$121.1 million (5.7%) from Fiscal Year 2022. Payments of statutory interest due to the TDA from its investment in the TRSNYC Pension Fund Assets (Fixed-Return Fund) during Fiscal Year 2022 were \$2.1 billion, an increase of \$142.3 million (7.1%) from Fiscal Year 2021.

**TDA Program Financial Highlights** – The TDA Program's net position restricted for benefits was \$45.4 billion, \$42.2 billion, and \$43.0 billion as of June 30, 2023, 2022, and 2021, respectively. Member contributions amounted to \$1.1 billion, \$1.1 billion, and \$1.1 billion for Fiscal Years 2023, 2022, and 2021, respectively. Benefit payments and withdrawals totaled \$2.0 billion, \$1.9 billion, and \$1.0 billion for Fiscal Years 2023, 2022, and 2021, respectively. Below is a summary of the TDA program's net position and changes in net position.

**TDA Program's Fiduciary Net Position**

June 30, 2023, 2022, and 2021

(In thousands)

	2023	2022	2021
Cash	\$ 9,037	\$ 9,983	\$ 7,222
Receivables for investments sold	3,979	2,473	5,275
Receivables for accrued interest and dividends	23,957	21,565	21,013
Member loan receivables	469,682	418,199	410,153
Investments, at fair value	11,844,357	10,451,408	13,014,474
Investment in TRSNYC Pension Fund	33,663,158	31,868,042	30,036,173
Collateral from securities lending	673,841	529,602	542,063
Other assets	42,717	43,495	8,781
Total assets	<u>46,730,728</u>	<u>43,344,767</u>	<u>44,045,154</u>
Accounts payable	44,008	43,330	52,205
Payable for investment securities purchased	5,664	6,306	2,605
Accrued benefits payable	570,164	526,673	488,806
Payable for securities lending transactions	673,841	529,602	542,063
Other liabilities	33,605	34,787	-
Total liabilities	<u>1,327,282</u>	<u>1,140,698</u>	<u>1,085,679</u>
Net position held in trust for benefits	<u>\$ 45,403,446</u>	<u>\$ 42,204,069</u>	<u>\$ 42,959,475</u>

Cash balances amounted to \$9.0 million at June 30, 2023, a decrease of \$946 thousand (-9.5%) from June 30, 2022. Cash balances amounted to \$10.0 million at June 30, 2022, an increase of \$2.8 million (38.2%) from June 30, 2021. Cash balances consist of accounts used to reimburse the funds of the Variable-Annuity Program and accounts used for advance funding of the Variable-Return Funds' investment managers.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

### Teachers' Retirement System of the City of New York

#### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

Receivables for investment securities sold at June 30, 2023 amounted to \$4.0 million, an increase of \$1.5 million (60.9%) from June 30, 2022. Receivables for investment securities sold at June 30, 2022 amounted to \$2.5 million, a decrease of \$2.8 million (-53.1%) from June 30, 2021. These balances are principally composed of receivables for securities that have been sold but have not yet settled (*i.e.*, the cash has not been collected). The year-over-year changes resulted from timing differences in trading and settlement dates. Trades typically do not settle until a few days after the trade date.

Receivables for accrued earnings at June 30, 2023 were \$24.0 million, an increase of \$2.4 million (11.1%) from June 30, 2022. Receivables for accrued earnings at June 30, 2022 were \$21.6 million, an increase of \$552.0 thousand (2.6%) from June 30, 2021. Changes in accrued earnings are impacted by the cumulative value of the interest or dividend-bearing securities, discount rates, and interest payable dates at fiscal year-end.

Member loan receivables at June 30, 2023 amounted to \$469.7 million, an increase of \$51.5 million (12.3%) from June 30, 2022. There were 32,098 new TDA loan issues in Fiscal Year 2023 compared to 24,294 in Fiscal Year 2022, an increase of 7,804 (32.1%) from Fiscal Year 2022. For Fiscal Year 2023, loan disbursements amounted to \$281.5 million, and principal and interest payments amounted to \$246.5 million. Member loan receivables at June 30, 2022 amounted to \$418.2 million, an increase of \$8.0 million (2.0%) from June 30, 2021. There were 24,294 new TDA loan issues in Fiscal Year 2022 compared to 22,376 in Fiscal Year 2021, an increase of 1,918 (8.6%) from Fiscal Year 2021. For Fiscal Year 2022, loan disbursements amounted to \$220.1 million, and principal and interest payments amounted to \$231.3 million.

The Variable-Return Funds' investments at June 30, 2023, including collateral received for securities lending, were \$12.5 billion, an increase of \$1.5 billion (14.0%) from June 30, 2022. The Variable-Return Funds' investments at June 30, 2022, including collateral received for securities lending, were \$11.0 billion, a decrease of \$2.6 billion (-19.0%) from June 30, 2021.

Assets of the TDA Program's Fixed-Return Fund invested in the TRSNYC Pension Fund at June 30, 2023 were \$33.7 billion, an increase of \$1.8 billion (5.6%) from June 30, 2022. In addition to the 7% statutory return for UFT members [and 8.25% for non-UFT members] for Fiscal Year 2023, contributions, withdrawals, and investment transfers to (from) the Fixed-Return Fund totaled \$716.0 million, -\$1.7 billion, and \$459.6 million, respectively. Assets of the TDA Program's Fixed-Return Fund invested in the TRSNYC Pension Fund at June 30, 2022 were \$31.9 billion, an increase of \$1.8 billion (6.1%) from June 30, 2021. In addition to the 7% statutory return for UFT members [and 8.25% for non-UFT members] for Fiscal Year 2022, contributions, withdrawals, and investment transfers to (from) the Fixed-Return Fund totaled \$735.1 million, -\$1.5 billion, and \$362.8 million, respectively.

Other assets at June 30, 2023 were \$42.7 million, a decrease of \$778 thousand (-1.8%) from June 30, 2022. Other assets at June 30, 2022 were \$43.5 million, an increase of \$34.7 million (395.3%) from June 30, 2021. The year-over-year increase in other assets, as of June 30, 2022, was primarily due to recognition of \$33.9 million of leased assets. Besides leased assets, other assets primarily represent assets already allocated for future administrative expenses.

Accounts payable at June 30, 2023 amounted to \$44.0 million, an increase of \$678 thousand (1.6%) from June 30, 2022. Accounts payable at June 30, 2022 amounted to \$43.3 million, a decrease of \$8.9 million (-17.0%) from June 30, 2021. The TDA Program's accounts payable balance primarily represents a reserve fund to pay the TDA Program's investment and administrative expenses.

Payables for investment securities purchased at June 30, 2023 amounted to \$5.7 million, a decrease of \$642 thousand (-10.2%) from June 30, 2022. Payables for investment securities purchased at June 30, 2022 amounted to \$6.3 million, an increase of \$3.7 million (142.1%) from June 30, 2021. Investments purchased are accounted for on a trade-date basis. The changes resulted from timing differences in settlement and trade dates, similar to receivables for investments sold (discussed earlier).



## Teachers' Retirement System of the City of New York

## MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

Accrued benefits payable at June 30, 2023 amounted to \$570.2 million, an increase of \$43.5 million (8.3%) from June 30, 2022. Accrued benefits payable at June 30, 2022 amounted to \$526.7 million, an increase of \$37.9 million (7.8%) from June 30, 2021. Both fiscal years' increases are primarily attributed to increases of benefits due to beneficiaries at year-end.

Other liabilities represent amounts due to vendors for the underlying leased assets measured at the present value of the future payments. At June 30, 2023, other liabilities amounted to \$33.6 million.

**Changes in TDA Program's Fiduciary Net Position****Years ended June 30, 2023, 2022, and 2021****(In Thousands)**

	2023	2022	2021
<b>Additions:</b>			
Member contributions	\$ 1,061,225	\$ 1,088,219	\$ 1,060,833
Net investment income (loss)	1,850,042	(2,088,612)	3,909,235
Net securities lending income	2,509	1,568	1,699
Total additions	<u>2,913,776</u>	<u>(998,825)</u>	<u>4,971,767</u>
<b>Deductions:</b>			
Administrative expenses	17,998	19,872	18,290
TDA rebalance	(66,064)	2,537	(4,175)
Benefits payments and withdrawals	2,024,183	1,874,811	1,020,090
Receipt of statutory interest for portion of investment in TRSNYC Pension Fund	(2,261,718)	(2,140,639)	(1,998,388)
Total deductions	<u>(285,601)</u>	<u>(243,419)</u>	<u>(964,183)</u>
Net increase (decrease) in net position	3,199,377	(755,406)	5,935,950
<b>Net position restricted for benefits</b>			
Beginning of year	<u>42,204,069</u>	<u>42,959,475</u>	<u>37,023,525</u>
End of year	<u>\$ 45,403,446</u>	<u>\$ 42,204,069</u>	<u>\$ 42,959,475</u>

TRS's TDA Program received \$1.1 billion in member contributions during Fiscal Year 2023, a decrease of \$27.0 million (-2.5%) from Fiscal Year 2022. TRS's TDA Program received \$1.1 billion in member contributions during Fiscal Year 2022, an increase of \$27.4 million (2.6%) from Fiscal Year 2021.

Net investment income for the TDA Program's Variable-Return Funds for Fiscal Year 2023 increased by \$3.9 billion from Fiscal Year 2022. Net investment income for the TDA Program's Variable-Return Funds for Fiscal Year 2022 decreased by \$6.0 billion (loss) from Fiscal Year 2021. Net investment gains/losses primarily reflect the appreciation/depreciation in fair value of the TDA Program's Variable-Return Fund investments, including both realized and unrealized gains and losses.

Administrative expenses for the Fiscal Year ended June 30, 2023 totaled \$18.0 million, a decrease of \$1.9 million (-9.4%) from Fiscal Year 2022. Administrative expenses for the Fiscal Year ended June 30, 2022 totaled \$19.9 million, an increase of \$1.6 million (8.7%) from Fiscal Year 2021. Fiscal Year 2023 TDA administrative expenses included a \$701.7 thousand expense due to recognition of future lease expenses as required by GASB No. 87. The TDA Program accounted for a portion of the System's total administrative expenses; see QPP administrative expenses above and Note 8.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

The TDA rebalance during Fiscal Year 2023 resulted in a \$66.1 million transfer from the TRSNYC Pension Fund to the TDA Program. The TDA rebalance during Fiscal Year 2022 resulted in a \$2.5 million transfer from the TDA Program to the TRSNYC Pension Fund. The Administrative Code of the City of New York under sections 13-582 and 13-577 provides for certain internal transfers of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets; see Note 2, Intra-Fund Payable/Receivable.

Benefit payments and withdrawals for the Fiscal Year ended June 30, 2023 totaled \$2.0 billion, an increase of \$149.4 million (8.0%) from Fiscal Year 2022. The Fiscal Year 2023 increase was due to increases in partial withdrawals. Benefit payments and withdrawals for the Fiscal Year ended June 30, 2022 totaled \$1.9 billion, an increase of \$854.7 million (83.8%) from Fiscal Year 2021. The increase was due to Fiscal Year 2022 disbursements of required minimum withdrawals, previously temporarily suspended due to the CARES Act of 2020.

Receipts of statutory interest for the TDA Program's Fixed-Return Fund portion in investments in the TRSNYC Pension Fund assets for Fiscal Year 2023 were \$2.3 billion, an increase of \$121.1 million (5.7%) from Fiscal Year 2022. Receipts of statutory interest for the TDA Program's Fixed-Return Fund portion in investments in the TRSNYC Pension Fund assets for Fiscal Year 2022 were \$2.1 billion, an increase of \$142.3 million (7.1%) from Fiscal Year 2021.

#### Cash Flow

Monthly contributions, loan repayments, and interest and dividends earned on investments less benefit payments, new loans, and investment and administrative expenses account for the System's non-investment cash flow. The table below provides a three-year summary.

(In thousands)	June 30, 2023 QPP	June 30, 2023 TDA	June 30, 2022 QPP	June 30, 2022 TDA	June 30, 2021 QPP	June 30, 2021 TDA
Contributions	\$ 3,436,276	\$1,061,225	\$ 3,638,065	\$ 1,088,219	\$ 3,441,021	\$ 1,060,833
Contributions - Loan adj.	-	(350)	-	(21)	-	(87)
Loan repayments (cash)	144,506	246,513	142,132	231,268	148,284	224,288
401(a) receipts (payments)	(6,564)	-	(2,993)	-	(5,550)	-
Interest income	1,476,900	36,009	1,412,618	22,992	1,197,604	30,357
Interest income - Loan adj.	(19,330)	(31,233)	(18,433)	(29,633)	(14,341)	(28,119)
Dividend income	1,115,816	188,809	1,238,843	198,217	1,075,166	159,751
Investment expenses (net)	(518,867)	(11,230)	(535,284)	(24,194)	(405,713)	(13,732)
Benefits/withdrawals	(4,947,702)	(2,024,183)	(4,909,488)	(1,874,811)	(4,699,448)	(1,020,090)
Withdrawals - Loan adj.	18,440	16,056	22,905	11,145	10,208	7,828
New loans	(174,607)	(281,521)	(137,894)	(220,082)	(130,464)	(212,148)
Administrative expenses	(73,784)	(17,998)	(71,490)	(19,872)	(68,100)	(18,290)
Admin exp- GASB87 adj.	2,877	702	3,491	1,851	-	-
	<u>\$ 453,961</u>	<u>\$ (817,201)</u>	<u>\$ 782,472</u>	<u>\$ (614,921)</u>	<u>\$ 548,667</u>	<u>\$ 190,591</u>

## Teachers' Retirement System of the City of New York

## MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

**Investments**

TRS investment funds include both QPP and TDA Program assets. The table below details the QPP and TDA Program's portions of the funds.

TRS Investment Funds by Plan Percentage	June 30, 2023 QPP	June 30, 2023 TDA	June 30, 2022 QPP	June 30, 2022 TDA	June 30, 2021 QPP	June 30, 2021 TDA
TRSNYC Pension Fund	64.9%	35.1%	64.9%	35.1%	70.8%	29.2%
Variable-Return Funds:						
Diversified Equity Fund*	33.4%	62.0%	34.8%	60.8%	36.3%	59.5%
Balance Fund**	6.7%	93.3%	7.9%	92.1%	9.6%	90.4%
International Equity Fund	3.2%	96.8%	4.3%	95.7%	4.5%	95.5%
Sustainable Equity Fund***	2.8%	97.2%	3.1%	96.9%	3.3%	96.7%
U.S. Equity Index Fund****	4.9%	95.1%	4.6%	95.4%	6.9%	93.1%
International Equity Index Fund****	1.1%	98.9%	3.0%	97.0%	1.0%	99.0%

\* Remaining portion is held by Board of Education Retirement System.

\*\* Bond Fund prior to January 1, 2018.

\*\*\* Socially Responsive Equity Fund prior to October 1, 2019.

\*\*\*\* New funds established as of January 1, 2020.

To rate investment performance, both the TRSNYC Pension Fund assets and Variable-Return Funds' investments are monitored with various benchmarks.

In addition to other indices, the "policy index" is a custom benchmark for the complete TRSNYC Pension Fund. As of June 30, 2023, the policy index includes the following percentage weights:

**TRSNYC Pension Fund Policy Index as of June 30, 2023\***

Investment Type	Benchmark	Percent
U.S. Equity	Russell 3000	25.7%
International Developed EAFE Markets	MSCI World ex USA IMI Net	9.3%
Int'l Active - Global	MSCI World Net Dividends Index	1.1%
Emerging Markets	MSCI Custom TRS Emerging Markets (Net)	9.2%
International Emerging Managers FoF	NYC Blended Custom Benchmark for FoF	0.9%
Private Equity	Russell 3000 + 300 b.p. per annum	7.0%
Private Real Estate - Core	NFI - ODCE Net	3.0%
Private Real Estate - Non-Core	NFI - ODCE Net + 200 bps	2.5%
Infrastructure	CPI + 4%	2.4%
U.S. Treasury Short-Term	FTSE US Government Bond 1-3 Years Index	2.7%
U.S. Treasury Intermediate	USBIG TSY AGN 1-10Y	9.1%
U.S. Treasury Long Duration	FTSEUS Government Bond 10+ Years Index	3.2%
Mortgage	Bloomberg U.S. Mortgage Backed Securities	5.1%
ETI	ETI Custom Benchmark	0.7%
Investment Grade Corporate	NYC Custom IGC Benchmark	5.8%
High Yield	Bloomberg U.S. HY 2% Issuer Cap	5.1%
TIPS	Bloomberg Global Inf-Linked: US TIPS	3.4%
Opportunistic Fixed	OFI - JPMGHY/CSFB 50/50 Blend Plus 300 b.p. per annum	3.8%
		<u>100.0%</u>

\* Source: Teachers' Retirement System of New York City Performance Overview as of June 30, 2023, prepared by State Street Bank and Trust Company ("State Street").

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2023 and 2022

Variable-Return Funds are benchmarked using the Russell 3000 Index, Dow Jones U.S. Total Stock Market Index, MSCI ACWI ex USA IMI Net Index, FTSE Global All Cap Index, Bloomberg U.S. 1-5 Year Government/Credit Float Adjusted Index, as well as numerous other indices.

TRS earns additional investment income by lending its investment securities. The borrowers provide collateral to TRS that is valued in excess of the securities loaned, and the collateral is invested in short-term interest-bearing funds. For the Fiscal Year ended June 30, 2023, net securities lending income amounted to \$11.7 million, an increase of \$5.2 million from Fiscal Year 2022. For the Fiscal Year ended June 30, 2022, net securities lending income amounted to \$6.5 million, a decrease of \$1.6 million from Fiscal Year 2021. (See Note 2.)

Investments held by TRS, including collateral from securities-lending transactions, are listed according to their investment classification in the following table:

Investment Summary (by Asset Class)  
(In thousands)

	2023	2022	2021
Short-term investments	\$ 1,434,590	\$ 3,083,489	\$ 3,219,653
Debt securities	31,158,869	31,150,798	35,378,973
Equity securities	61,248,269	54,492,993	70,549,286
Alternative investments	19,591,376	17,877,701	14,076,877
Collateral from securities lending	5,052,139	1,357,902	1,784,414
Total	<u>\$ 118,485,243</u>	<u>\$ 107,962,883</u>	<u>\$ 125,009,203</u>

Investment Summary (by Plan)  
(In thousands)

	2023	2022	2021
TRSNYC Pension Fund:			
QPP	\$ 62,255,871	\$ 58,902,644	\$ 72,900,195
TDA	33,663,158	31,868,042	30,036,173
Total	<u>95,919,029</u>	<u>90,770,686</u>	<u>102,936,368</u>

Variable-Return Funds:

QPP	5,669,718	5,382,887	7,273,947
TDA	11,844,357	10,451,408	13,014,474
Total	<u>17,514,075</u>	<u>15,834,295</u>	<u>20,288,421</u>

Collateral for Security Lending

QPP Pension Fund	4,052,373	525,316	911,346
QPP Variable-Return Funds	325,925	302,984	331,005
TDA Variable-Return Funds	673,841	529,602	542,063

Total	<u>5,052,139</u>	<u>1,357,902</u>	<u>1,784,414</u>
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Total investments	<u>\$ 118,485,243</u>	<u>\$ 107,962,883</u>	<u>\$ 125,009,203</u>
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**Teachers' Retirement System of the City of New York**

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED**

**June 30, 2023 and 2022**

**CONTACT INFORMATION**

This financial report is designed to provide a general overview of the Teachers' Retirement System's finances. Questions concerning any data provided in this report or requests for additional information should be directed to Mr. Paul J. Raucci, Chief Accountant, Teachers' Retirement System of the City of New York, 55 Water Street, New York, New York 10041.

\* \* \* \* \*

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### COMBINING STATEMENT OF FIDUCIARY NET POSITION

June 30, 2023  
(In thousands)

	QPP	TDA	Eliminations	Total
<b>ASSETS</b>				
Cash	\$ 70,795	\$ 9,037	\$ -	\$ 79,832
Receivables:				
Investments securities sold	1,826,650	3,979	-	1,830,629
Accrued interest and dividends	378,152	23,957	-	402,109
Member loans (Note 6)	333,351	469,682	-	803,033
Total receivables	2,538,153	497,618	-	3,035,771
Investments - at fair value (Notes 2 and 3):				
TRSNYC Pension Fund Assets (Fixed-Return Fund):				
Short-term investment:				
Commercial paper	7,048	-	-	7,048
Short-term investment fund	1,094,454	-	-	1,094,454
U.S. treasury bills and agencies	151,349	-	-	151,349
Debt securities:				
U.S. government	13,194,373	-	-	13,194,373
Corporate and other	14,822,382	-	-	14,822,382
Treasury inflation-protected securities	3,142,114	-	-	3,142,114
Equity securities:				
Domestic equity	26,917,090	-	-	26,917,090
International equity	16,998,843	-	-	16,998,843
Alternative investments	19,591,376	-	-	19,591,376
Collateral from securities lending (Fixed-Return Fund)	4,052,373	-	-	4,052,373
Variable-Return Funds:				
Diversified Equity Fund:				
Short-term investments	75,724	92,788	-	168,512
Equity securities	5,525,485	10,275,133	-	15,800,618
Debt securities				
Balanced Fund:	87	1,221	-	1,308
Short-term investments	37,698	526,948	-	564,646
International Equity Fund:				
Short-term investments	88	2,710	-	2,798
International equity	7,617	233,748	-	241,365
Sustainable Equity Fund:				
Short-term investments	251	8,805	-	9,056
Equity securities	15,548	544,584	-	560,132
U.S. Equity Index Fund:				
Short-term investments	1	13	-	14
Equity securities	6,959	135,041	-	142,000
International Equity Index Fund:				
Short-term investments	1	50	-	51
Equity securities	259	23,316	-	23,575
Collateral from securities lending (Variable-Return Funds)	325,925	673,841	-	999,766
Total investments	105,967,045	12,518,198	-	118,485,243
TDA investment in TRSNYC Pension Fund	-	33,663,158	(33,663,158)	-
Other assets	169,089	42,717	(23,514)	188,292
Total assets	108,745,082	46,730,728	(33,686,672)	121,789,138
<b>LIABILITIES</b>				
Accounts payable	339,755	44,008	(23,514)	360,249
Payable for investment securities purchased	2,295,806	5,664	-	2,301,470
Accrued benefits payable	7,398	570,164	-	577,562
Due to TDA program's Fixed-Return Fund	33,663,158	-	(33,663,158)	-
Securities lending (Note 2)	4,378,298	673,841	-	5,052,139
Other liabilities	126,411	33,605	-	160,016
Total liabilities	40,810,826	1,327,282	(33,686,672)	8,451,436
Net position restricted for benefits:				
Benefits to be provided by QPP	67,934,256	-	-	67,934,256
Benefits to be provided by TDA Program	-	45,403,446	-	45,403,446
Total net position restricted for benefits	\$ 67,934,256	\$ 45,403,446	\$ -	\$ 113,337,702

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

## Teachers' Retirement System of the City of New York

## COMBINING STATEMENT OF FIDUCIARY NET POSITION

June 30, 2022  
(In thousands)

	QPP	TDA	Eliminations	Total
<b>ASSETS</b>				
Cash	\$ 86,489	\$ 9,983	\$ -	\$ 96,472
Receivables:				
Investments securities sold	1,544,209	2,473	-	1,546,682
Accrued interest and dividends	339,801	21,565	-	361,366
Member loans (Note 6)	301,958	418,199	-	720,157
Total receivables	2,185,968	442,237	-	2,628,205
Investments - at fair value (Notes 2 and 3):				
TRSNYC Pension Fund Assets (Fixed-Return Fund):				
Short-term investment:				
Commercial paper	453,349	-	-	453,349
Short-term investment fund	812,986	-	-	812,986
Discount notes	52,418	-	-	52,418
U.S. Treasury bills and agencies	1,551,644	-	-	1,551,644
Debt securities:				
U.S. government	13,757,296	-	-	13,757,296
Corporate and other	13,989,550	-	-	13,989,550
Treasury inflation-protected securities	3,403,952	-	-	3,403,952
Equity securities:				
Domestic equity	23,674,370	-	-	23,674,370
International equity	15,197,420	-	-	15,197,420
Alternative investments	17,877,701	-	-	17,877,701
Collateral from securities lending (Fixed-Return Fund)	525,316	-	-	525,316
Variable-Return Funds:				
Diversified Equity Fund:				
Short-term investments	95,485	105,160	-	200,645
Equity securities	5,217,721	9,120,327	-	14,338,048
Balanced Fund:				
Short-term investments	105	1,224	-	1,329
Equity securities	42,523	495,497	-	538,020
International Equity Fund:				
Short-term investments	106	2,359	-	2,465
International equity	8,524	191,240	-	199,764
Sustainable Equity Fund:				
Short-term investments	267	8,386	-	8,653
Equity securities	13,620	427,040	-	440,660
U.S. Equity Index Fund:				
Equity securities	4,092	85,585	-	89,677
International Equity Index Fund:				
Equity securities	444	14,590	-	15,034
Collateral from securities lending (Variable-Return Funds)	302,984	529,602	-	832,586
Total investments	96,981,873	10,981,010	-	107,962,883
TDA investment in TRSNYC Pension Fund	-	31,868,042	(31,868,042)	-
Other assets	166,039	43,495	(15,787)	193,747
Total assets	99,420,369	43,344,767	(31,883,829)	110,881,307
<b>LIABILITIES</b>				
Accounts payable	308,685	43,330	(15,787)	336,228
Payable for investment securities purchased	2,230,369	6,306	-	2,236,675
Accrued benefits payable	44,285	526,673	-	570,958
Due to TDA program's Fixed-Return Fund	31,868,042	-	(31,868,042)	-
Securities lending (Note 2)	828,300	529,602	-	1,357,902
Other liabilities	131,260	34,787	-	166,047
Total liabilities	35,410,941	1,140,698	(31,883,829)	4,667,810
Net position restricted for benefits:				
Benefits to be provided by QPP	64,009,428	-	-	64,009,428
Benefits to be provided by TDA Program	-	42,204,069	-	42,204,069
Total net position restricted for benefits	\$ 64,009,428	\$ 42,204,069	\$ -	\$ 106,213,497

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

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### COMBINING STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Year ended June 30, 2023

(In thousands)

	<u>QPP</u>	<u>TDA</u>	<u>Total</u>
<b>Additions</b>			
Contributions:			
Member contributions (Note 4)	\$ 292,473	\$ 1,061,225	\$ 1,353,698
Employer contributions	3,086,082	-	3,086,082
Other employer contributions	57,721	-	57,721
Total contributions	<u>3,436,276</u>	<u>1,061,225</u>	<u>4,497,501</u>
Investment income (loss) (Note 2):			
Interest income	1,476,900	36,009	1,512,909
Dividend income	1,115,816	188,809	1,304,625
Net appreciation (depreciation) in fair value of investments	5,761,300	1,636,454	7,397,754
Total investment income (loss)	<u>8,354,016</u>	<u>1,861,272</u>	<u>10,215,288</u>
Less:			
Investment expenses	534,098	18,234	552,332
Net decrease in variable expense provision	(15,231)	(7,004)	(22,235)
Net investment income (loss)	<u>7,835,149</u>	<u>1,850,042</u>	<u>9,685,191</u>
Securities lending transactions:			
Securities lending income	9,542	2,784	12,326
Less - securities lending fees	(307)	(275)	(582)
Net securities lending income	<u>9,235</u>	<u>2,509</u>	<u>11,744</u>
Other:			
Net receipts from other retirement systems	(6,564)	-	(6,564)
Total additions	<u>11,274,096</u>	<u>2,913,776</u>	<u>14,187,872</u>
<b>Deductions</b>			
Benefit payments and withdrawals	4,947,702	2,024,183	6,971,885
Administrative expenses (Note 8)	73,784	17,998	91,782
Other:			
Statutory interest for TDA Program's Fixed-Return Fund	2,261,718	(2,261,718)	-
TDA rebalance	66,064	(66,064)	-
Total deductions	<u>7,349,268</u>	<u>(285,601)</u>	<u>7,063,667</u>
Net increase (decrease) in net position	3,924,828	3,199,377	7,124,205
Net position restricted for benefits			
Beginning of year	<u>64,009,428</u>	<u>42,204,069</u>	<u>106,213,497</u>
End of year	<u>\$ 67,934,256</u>	<u>\$ 45,403,446</u>	<u>\$ 113,337,702</u>

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



## Teachers' Retirement System of the City of New York

## COMBINING STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Year ended June 30, 2022  
(In thousands)

	<u>QPP</u>	<u>TDA</u>	<u>Total</u>
<b>Additions</b>			
Contributions:			
Member contributions (Note 4)	\$ 273,686	\$ 1,088,219	\$ 1,361,905
Employer contributions	3,303,798	-	3,303,798
Other employer contributions	60,581	-	60,581
Total contributions	<u>3,638,065</u>	<u>1,088,219</u>	<u>4,726,284</u>
Investment income (loss) (Note 2):			
Interest income	1,412,618	22,992	1,435,610
Dividend income	1,238,843	198,217	1,437,060
Net (depreciation) appreciation in fair value of investments	<u>(12,974,971)</u>	<u>(2,285,627)</u>	<u>(15,260,598)</u>
Total investment (loss) income	<u>(10,323,510)</u>	<u>(2,064,418)</u>	<u>(12,387,928)</u>
Less:			
Investment expenses	544,879	27,002	571,881
Net decrease in variable expense provision	<u>(9,595)</u>	<u>(2,808)</u>	<u>(12,403)</u>
Net investment (loss) income	<u>(10,858,794)</u>	<u>(2,088,612)</u>	<u>(12,947,406)</u>
Securities lending transactions:			
Securities lending income	7,057	1,742	8,799
Less - securities lending fees	<u>(2,125)</u>	<u>(174)</u>	<u>(2,299)</u>
Net securities lending income	<u>4,932</u>	<u>1,568</u>	<u>6,500</u>
Other:			
Net receipts from other retirement systems	<u>(2,993)</u>	<u>-</u>	<u>(2,993)</u>
Total additions	<u>(7,218,790)</u>	<u>(998,825)</u>	<u>(8,217,615)</u>
<b>Deductions</b>			
Benefit payments and withdrawals	4,909,488	1,874,811	6,784,299
Administrative expenses (Note 8)	71,490	19,872	91,362
Other:			
Statutory interest for TDA Program's Fixed-Return Fund	2,140,639	(2,140,639)	-
TDA rebalance	<u>(2,537)</u>	<u>2,537</u>	<u>-</u>
Total deductions	<u>7,119,080</u>	<u>(243,419)</u>	<u>6,875,661</u>
Net (decrease) increase in net position	(14,337,870)	(755,406)	(15,093,276)
Net position restricted for benefits			
Beginning of year	<u>78,347,298</u>	<u>42,959,475</u>	<u>121,306,773</u>
End of year	<u>\$ 64,009,428</u>	<u>\$ 42,204,069</u>	<u>\$ 106,213,497</u>

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

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS

June 30, 2023 and 2022

#### NOTE 1 – SYSTEM AND PLAN DESCRIPTIONS

The City of New York (“The City” or “City”) maintains a number of pension systems providing benefits for employees of its various agencies (as defined within New York State (“State”) and City laws). The City’s five major actuarially-funded pension systems are the Teachers’ Retirement System of the City of New York (“TRS” or the “System”), the New York City Employees’ Retirement System (“NYCERS”), the New York City Board of Education Retirement System (“BERS”), the New York City Police Pension Funds (“POLICE”), and the New York City Fire Pension Funds (“FIRE”). Each pension system is a separate Public Employee Retirement System (“PERS”) with a separate oversight body and is financially independent of the others.

TRS administers the TRS Qualified Pension Plan (the “QPP”) and the TRS Tax-Deferred Annuity Program (the “TDA Program”).

The QPP is a cost-sharing, multiple-employer pension plan. The QPP provides pension benefits for City public school teachers, certain other school employees, and college teachers. The Employers, in addition to The City, are the City University of New York (“CUNY”), several Charter Schools, and certain members of TRS who are on leave to conduct union business for the United Federation of Teachers (“UFT”) (each, an “Employer” and collectively, the “Employers”). Substantially all teachers in the public schools of The City become members of the QPP, and certain other specified school and college personnel may become members on the first day of permanent employment.

The QPP functions in accordance with State and City laws, which establish benefit terms and Employer and member contribution requirements for the QPP. The QPP is a tax-qualified retirement plan under section 401(a) of the Internal Revenue Code (“IRC”) that has received a favorable determination letter from the Internal Revenue Service (“IRS”). The QPP combines features of a defined-benefit pension plan with those of a defined-contribution pension plan, but is a defined-benefit pension plan for financial reporting purposes. Contributions are made by the Employers and the members.

The TDA Program was established and is administered pursuant to IRC Section 403(b) and New York City Administrative Code (“NYCAC”) section 13-582 and became effective February 1, 1970. Members of the QPP have the option to participate in the TDA Program, which provides a means of deferring income tax payments on members’ voluntary contributions until after retirement or upon withdrawal of contributions. Contributions to the TDA Program are made by the members only and are voluntary. Benefits provided under the TDA Program are derived from members’ accumulated contributions and earnings thereon. The TDA Program is a defined-contribution pension plan for financial reporting purposes.

The QPP and TDA Program are fiduciary funds of The City and are included in the Pension and Other Employee Benefit Trust Funds section of The City’s Annual Comprehensive Financial Report (“ACFR”).

#### ***Board of Trustees (“TRS Board”)***

The Teachers' Retirement Board, a seven-trustee Board, sets policy and oversees TRS' operations. Three TRS Board trustees are elected from and by the TRS membership. These trustees serve three-year terms. The Mayor appoints two Board trustees, one of whom must be a member of the Panel for Educational Policy. The New York City Comptroller (“Comptroller”) and the Chair of the Panel for Educational Policy are the other two Board trustees, each of which may designate a representative to act on his or her behalf.

**Teachers' Retirement System of the City of New York**  
**NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED**  
**June 30, 2023 and 2022**

**Membership Data**

The QPP's and TDA Program's membership, at June 30, 2023 and 2022, consisted of:

	QPP	
	2023*	2022
Retirees and beneficiaries receiving benefits	95,000	92,282
Terminated vested members not yet receiving benefits	19,000	19,630
Terminated non-vested members**	6,000	5,106
Active members receiving salary	125,000	123,674
Total	245,000	240,692
	TDA Program	
	2023*	2022
Retirees receiving a TDA annuity	2,800	2,730
Retirees or Inactive members with TDA deferral	64,000	63,000
Active members with TDA	97,000	93,997
Total	163,800	159,727

\* Preliminary

\*\* As of June 30, 2020, members who are on leave with insufficient service for vesting and assumed to not return to active service are classified as terminated non-vested members.

The QPP's and TDA Program's membership, at June 30, 2021 and 2020, the dates of the membership data used in determining Fiscal Year 2023 and Fiscal Year 2022 employer contributions, consisted of:

	QPP	
	2021	2020
Retirees and beneficiaries receiving benefits	89,997	89,536
Terminated vested members not yet receiving benefits	15,128	15,502
Terminated non-vested members** / Other inactives***	4,574	5,604
Active members	123,211	124,276
Total	232,910	234,918
	TDA Program	
	2021	2020
Retirees receiving a TDA annuity	2,724	2,755
Retirees or inactive members with TDA deferral	60,594	59,636
Active members with TDA	96,790	95,111
Total	160,108	157,502

\*\*\* Prior to June 30, 2020, represents members who are no longer on payroll but not otherwise classified.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

**Summary of Benefits**

*QPP Plan*

The State Constitution provides that the pension rights of public employees are contractual and shall not be diminished or impaired. In 1973, 1976, 1983, and 2012, significant amendments made to the New York State Retirement and Social Security Law ("RSSL") modified certain benefits and member contributions for employees joining the QPP on or after the effective date of such amendments. As such, benefits under the QPP fall into various categories (also referred to as "Tiers") based on the year when an employee joined the QPP. A brief overview follows:

- Members who joined prior to July 1, 1973 ("Tier I") are entitled to service retirement benefits of 50% of "final salary" (as defined within State and City laws) after 20 years of service; a portion is provided from member contributions, plus additional benefits equal to specified percentages (as defined within State and City laws) per year of service of "final salary" for years in excess of the 20-year minimum. These benefits are increased, where applicable, by an annuity attributable to accumulated member contributions in excess of the minimum required balance and by any benefits attributable to Increased-Take-Home-Pay ("ITHP") contributions [accumulated after the 20th year of member qualifying service]. ITHP represents amounts contributed by The City to members' QPP accounts in lieu of members' own contributions. These amounts reduce the contributions that members would have to make to the QPP during their service and thereby increase their take-home pay. Members have the choice of waiving their ITHP reduction, which would reduce their take-home pay, but provide them with increased benefits upon retirement.

In addition, these same members could elect a service retirement benefit with no minimum service requirement that provides an annual benefit for each year of service equal to a specified percentage (as described within State statutes and City laws) of "final salary" payable on attainment of age 55. This benefit is increased, where applicable, by an annuity attributable to the member's contributions and by any benefits attributable to the Employers' contributions with respect to such service under the ITHP contributions.

- Members who joined the QPP after June 30, 1973 and before July 27, 1976 ("Tier II") have provisions similar to Tier I, except that the eligibility for retirement and the salary base for benefits are different and there is a limitation on the maximum benefit. This maximum limitation was subsequently eliminated under Chapter 574 of the Laws of 2000 for all Tier II members who retired after December 8, 2000. Members retiring prior to the age of 62 without 30 years of credited service are subject to an age-reduction factor in their retirement allowance. Effective February 27, 2008, active members were eligible to enroll in a 55-retirement-age minimum and 25 credited years of service retirement option ("55/25 retirement option") enabling them to eliminate any age-reduction factor in their retirement allowance (Chapter 19 of Laws of 2008). Those choosing the 55/25 retirement option are required to make additional contributions of 1.85% of salary from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of credited service, whichever is later.

For Tier I and II members enrolled in the QPP prior to July 27, 1976, ITHP contributions made on their behalf, as well as their own contributions, are invested, at their election, in the Fixed-Return Fund or in Variable-Return Funds. Members can elect to invest in multiples of 5% and change their elections on a quarterly basis. Members receive statutory returns, currently 8.25%, on member contributions or ITHP contributions to the Fixed-Return Fund ("Fixed Annuity Program").

Certain members of Tier I and Tier II have the right to make voluntary member contributions ("Voluntary Contributions") in excess of their required member contributions ("Required Contributions"). Both the investment of the Voluntary Contributions and the Required Contributions

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

are directed by each member. A member may invest in: (1) the QPP's Fixed-Return Fund, in which it is credited with interest at the Statutory-Interest Rate (currently 8.25% for Tier I and Tier II contributions and 7.0% for United Federation of Teachers ("UFT") members and 8.25% for non-UFT members for TDA Contributions); and/or (2) in one or more of the QPP's Variable-Return Funds (see Note 2 – Investment Programs). At the time of retirement or refund of contributions, a member's aggregate balance of actual Required Contributions and Voluntary Contributions, including the actual accumulated earnings thereon, less the outstanding balance of any member loans ("Net Actual Contributions"), may exceed ("Excess of Contributions") or fall short of ("Deficiency of Contributions") the member's Expected Balance. The Expected Balance is the sum of the Required Contributions which a member should have made during his or her credited service, plus the earnings that would have accumulated thereon at the Statutory-Interest rate. The amount of the member's retirement annuity or the refund of contributions that he or she is entitled to is increased by any Excess of Contributions or reduced by any Deficiency of Contributions. The total value of active members' Excess of Contributions, net of all Deficiencies of Contributions, is \$27.6 million and \$33.8 million, for the years ended June 30, 2023 and 2022, respectively. Actuarial estimates of the impact of Excesses and Deficiencies are incorporated into the calculation of the QPP's net pension liability.

The Variable-Return Funds include only member contributions and ITHP contributions made on their behalf, as described above, and are expressed in terms of units that are valued monthly based on investment experience. At retirement, monthly annuities attributable to member Voluntary Excess Contributions and ITHP contributions can be paid in both fixed and variable amounts, based on the member's election, which can be changed quarterly. Other benefits are paid only in fixed amounts. Monthly annuities attributable to investments in the Variable-Return Funds are not fixed in amount, but are based on investment experience through the preceding month.

- Members who joined the QPP on or after July 27, 1976 and prior to September 1, 1983 ("Tier III") were later mandated into Tier IV. However, these members retain their Tier III rights. Tier III requires member contributions of 3.0% of salary for a 10-year period (Chapter 126 of the Laws of 2000), and generally provides for reducing benefits by one-half of the primary Social Security benefit attributable to service with the Employer and for an annual cost-of-living escalator in pension benefits of not more than 3.0%. Members retiring prior to the age of 62 without 30 years of credited service are subject to an age-reduction factor in their retirement allowance.
- Members who joined the QPP on or after September 1, 1983 ("Tier IV") were required to make contributions of 3.0% of salary until termination of service. As of October 1, 2000, these members are not required to make contributions after the 10th anniversary of their membership date or completion of 10 years of credited service, whichever is earlier (Chapter 126 of the Laws of 2000). The annual benefit is approximately 1.67% of "final average salary" per year of service for members with less than 20 years of service and 2.0% of "final average salary" per year of service for members with 20 to 30 years of service, plus a 1.5% addition of "final average salary" per year of service in excess of 30 years of service. Members retiring prior to the age of 62 without 30 years of credited service experience an age-reduction factor in their retirement allowance. Effective February 27, 2008, active members were eligible to enroll in a 55-retirement-age minimum and 25-credited years of service retirement option enabling them to eliminate any age-reduction factor in their retirement allowance. Those choosing the age 55 retirement option are required to make additional contributions of 1.85% of salary from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of credited service, whichever is later. Members joining after February 27, 2008 are automatically enrolled in a 55-retirement-age minimum and 27-credited years of service retirement program ("55/27 retirement program"). These members are required to make additional plan contributions of 1.85% of salary until they have accumulated 27 years of credited service.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

Members under the 55/27 retirement program who joined after December 10, 2009, but before April 1, 2012, were required to make contributions of 4.85% of salary until they have 27 years of credited service and contributions of 1.85% of salary thereafter.

- Members who joined on and after April 1, 2012 ("Tier VI") are required to make contributions of 3.0% per year through March 31, 2013. Thereafter, contributions range from 3.0% to 6.0% in accordance with a schedule based on salary. Member contributions continue until retirement. Salary is limited to the New York State Governor's salary. Tier VI members are generally eligible to retire with unreduced benefits beginning at age 63 or with reduced benefits beginning at age 55, if vested. As of April 9, 2022, Tier VI members are vested after five years of service (Chapter 56 of the Laws of 2022).

Members enrolled in the QPP on or after July 27, 1976 ("Tier III, IV, and VI") who resign or otherwise terminate from service prior to eligibility for a benefit, are refunded all of their member contributions with 5.0% interest (RSSL, Article 15). Tier III, IV, and VI members who work for the Department of Education also receive a monthly supplemental contribution. Monthly supplemental contributions totaling \$550 per year for supervisors and administrators and \$400 per year for other eligible members is credited to the members' Annuity Savings Accumulation Fund ("ASAF").

Under all service retirement categories, annuities attributable to member contributions are reduced on an actuarial basis for any loans with unpaid balances outstanding at the date of retirement.

Subject to certain conditions, members become fully vested and eligible for benefits upon the completion of five years of service.

The QPP provides death benefits and retirement benefits on the occurrence of accidental or ordinary disability. In terms of payment options of the retirement annuity, the QPP provides a number of options depending on whether retirement payments, following death, will continue to an assigned beneficiary.

During the Spring 2000 session, the State Legislature approved and the State Governor ("Governor") authorized automatic Cost-of-Living Adjustments ("COLAs") for certain retirees and beneficiaries (Chapter 125 of the Laws of 2000). COLA is payable to all members who are either: (1) at least age 62 and have been retired for at least five years; or (2) at least age 55 and have been retired for at least 10 years. Additionally, COLA is payable to members who retired for disability after being retired for five or more years and beneficiaries receiving accidental death benefits who have been receiving them for at least five years. COLA is one-half of the increase in the Consumer Price Index for All Urban Consumers ("CPI-U") based on the year ending March 31, rounding to the next higher 0.1%, not less than 1% nor greater than 3% of the first \$18,000 of the sum of the maximum retirement allowance and prior COLA.

#### *TDA Program*

The TDA Program is administered by the TRS Board. Contributions to the TDA Program are made by the members only and are voluntary. To participate in the TDA Program, active members of the QPP are required to submit a salary-reduction agreement and enrollment request. Members may choose to stop contributions at any time. A participant may elect to exclude an amount of compensation (within the maximum allowed by the IRS) from current taxable income by contributing it to the TDA Program. This maximum amount is calculated based on various individual factors. Members can elect to invest in the Fixed-Return Fund or the Variable-Return Funds.

A participant may withdraw all or part of the balance of their account prior to or at the time of retirement. As of January 1, 1989, the tax laws restricted withdrawals of tax-deferred annuity contributions and accumulated earnings thereon for reasons other than retirement or termination. Contributions made after



## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

December 31, 1988 and investment earnings credited after December 31, 1988 may only be withdrawn upon attainment of age 59½ or for reasons of hardship (as defined by IRS regulations).

If a member dies while an in-service employee, the full value of his/her TDA Program account at the date of death is paid to the member's beneficiary or estate.

When a member resigns before attaining vested rights under the QPP, (s)he may withdraw the value of the account or may leave the account in the TDA Program for a period of up to seven school years after the date of resignation, provided the member does not withdraw their account from the QPP. If a member resigns after attaining vested rights under the QPP, (s)he may leave the account in the TDA Program, provided the member does not withdraw their QPP funds. Once a withdrawal is made from the QPP, the member's participation in the TDA Program is automatically terminated, and the value of the account in the TDA Program will be paid out to the member. Upon death, TDA balances are paid to the assigned beneficiaries or may be invested on behalf of the beneficiaries in the TDA Program's Variable-Return Funds. The option for new beneficiaries to invest in the TDA Program's Variable-Return Funds was statutorily rescinded in August 2021.

At retirement, several payment options are available to those who annuitize their TDA Program funds. Generally, payment options similar to the QPP are available under the TDA Program.

See "Investments" below for a discussion of TDA investment programs.

*Excess Benefit Plan*

The System also administers an Excess Benefit Plan ("EBP") in accordance with Chapter 623 of the laws of 2004. The EBP pays an additional benefit for any member whose QPP benefit payable was reduced due to the limitations of Internal Revenue Code Section 415(b). In Fiscal Year 2023 the EBP paid four retirees a total of \$59 thousand and retained as of June 30, 2022 \$4.8 thousand EBP contributions for future EBP payments.

**NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Basis of Accounting** – The QPP and the TDA Program use the accrual basis of accounting where the measurement focus is on the flow of economic resources. Revenues are recognized in the accounting period in which they are earned, and expenses are recognized in the period incurred. Contributions from members are recognized when the Employers make payroll deductions from members' salary. Employer contributions to the QPP are recognized when due, and the Employer has a legal obligation to provide the contributions. Benefit payments and withdrawals are recognized when due and payable in accordance with the terms of the QPP and the TDA Program.

**Use of Estimates** – The preparation of combining financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities, at the date of the combining financial statements, and revenues and expenses, during the reporting period. Actual results could differ from those estimates.

**Investment Valuation** – Investments are reported at fair value. Fair value is defined as the quoted market price at the end of the last trading day for the specified period, except for Alternative investments, which are considered long-term and illiquid in nature. Alternative investments consist of limited partnership structures invested in privately held investments for which exchange quotations are not readily available, and are valued at estimated fair value. Fair value at fiscal year-end is based on the fair value of net assets reported in the most recently available partnership's capital account statements from the general partner, adjusted for any subsequent contributions, distributions, management fees and changes in values of foreign

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

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currency. They include investments held within Private Equity, Real Estate, Opportunistic Fixed Income, and Infrastructure.

Purchases and sales of securities are reflected on the trade date. Dividend income is recorded on the ex-dividend date. Interest income is recorded as earned on an accrual basis.

**Fair Value Measurement** – Government Accounting Standards Board (“GASB”) Statement No. 72, *Fair Value Measurement and Application* (“GASB 72”), describes fair value as an exit price, requiring investments to be categorized under a fair value hierarchy prescribed by GASB. GASB 72 establishes a hierarchy of inputs used to measure fair value consisting of three levels based on market price observability. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, and typically reflect management’s estimates of assumptions that market participants would use in pricing the asset or liability. GASB 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that were used for the fair value measurements.

**Investment Presentation** – The TDA Program Fixed-Return Fund’s portion of TRSNYC Pension Fund assets are shown as commingled with the QPP’s portion of TRSNYC Pension Fund assets, and an offsetting liability is used to show the TDA Program’s share of the funds.

**Investment Programs** – Prior to July 1, 2008, investments were comprised of the assets of the following investment programs: the TRSNYC Pension Fund (which includes the Fixed-Return Fund, which was previously referred to as the Fixed Annuity Program) and two Variable-Return Funds – the Diversified Equity Fund and the Stable-Value Fund. As of July 1, 2008, the investment programs were expanded to include three new Variable-Return Funds – the International Equity Fund, the Inflation Protection Fund, and the Socially Responsive Equity Fund. On January 1, 2012, the Stable-Value Fund became the Bond Fund. On January 1, 2018, the Bond Fund became the Balanced Fund. The Balanced Fund’s objective is to seek current income and some capital appreciation by investing in a portfolio that includes both stocks and bonds. As of October 1, 2019, the Socially Responsive Equity Fund became the Sustainable Equity Fund. On January 1, 2020, the investment programs were expanded to include two new Variable-Return Funds – U.S. Equity Index Fund and International Equity Index Fund. The investment objective of the U.S. Equity Index Fund is to track the total return of the broad U.S. equity market, including large-, mid-, and small-capitalization stocks. The investment objective of the International Equity Index Fund is to track the total return of non-U.S. equity markets, including developed markets and emerging markets. As of April 1, 2020, the Inflation Protection Fund was discontinued. The TRS investment programs are collectively referred to as TRS Passport Funds.

All investment programs excluding the TRSNYC Pension Fund are referred to as the Variable-Return Funds. The TRSNYC Pension Fund includes System investments from QPP employer contributions, QPP Tier I and II members’ and ITHP contributions, QPP Tier III, IV, and VI members’ contributions, and ASAF contributions and TDA Program member contributions invested in the Fixed-Return Fund. Investing in Variable-Return Funds is available for both QPP Tier I and II members’ and ITHP contributions, and TDA program investments.

In the Fixed-Return Fund, deposits from members’ TDA Program accounts are invested along with QPP assets and TDA Program accounts and are credited with a fixed rate of return, determined by the New York State Legislature (“Statutory-Interest Rates”). Payment of the Statutory Interest is an obligation of The City (NYCAC section 13-533). The Statutory-Interest Rates are as follows:

- 7% for TDA investments by members who are serving in (or resigned/retired from) titles represented by the UFT. The crediting rate of 7% has been in effect since December 11, 2009. The prior crediting rate of 8.25% had been in effect from July 1, 1988 to December 11, 2009.



## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

- 8.25% for TDA investments by all other members. This crediting rate has been in effect since July 1, 1988.

TDA Program assets are pooled with QPP assets for investment purposes only. NYC Administrative Code section 13-582, subdivision [k], provides for the maintenance of TDA accounts in the Annuity Savings Fund ("Fixed-Return Fund") and Variable Annuity Programs ("Variable-Return Funds"), which are distinct from similar funds for the QPP. This is in accordance with requirements that assets of the TDA Program be accounted for separately from assets of the QPP Plan. Statutory Rates received by funds invested in the QPP and the TDA Program's Annuity Savings Fund ("Fixed-Return Fund") are set, respectively, by NYCAC sections 13-638.2 and 13-582 [d].

Assets in the TDA Fixed-Return Fund are invested with assets of the QPP on a pro-rata basis consistent with the QPP's asset allocation policy. Earnings on these investments over (or under) the Statutory Rates are considered by The City's Chief Actuary of the Office of the Actuary (the "Actuary") in determining employer contribution obligations. Earnings over the Statutory Rates accrue to the benefit of the QPP. Earnings under the Statutory Rates are considered by the Actuary in determining employer contributions to the QPP, such that The City is ultimately responsible for any deficiency. For financial reporting purposes, TDA fixed return assets, invested alongside QPP assets, are reflected as a receivable due from the QPP equal in amount to the aggregate original principal amounts contributed by TDA Program members to the fixed return program, plus accrued interest at the Statutory Rate adjusted for withdrawals and transfers to or from variable funds. This receivable is reported by the TDA Program as an Investment in the Fixed-Return Fund, and the corresponding liability is reported by the QPP as Fixed-Return Funds due to TDA.

Assets of the Variable-Return Funds of the QPP and the TDA Program Diversified Equity Fund are co-invested along with certain assets of the BERS. These financial statements reflect the QPP's and TDA Program's Variable-Return Funds' proportionate shares of Diversified Equity Fund investments and the related activity.

**Other Employer Contributions** – Include amounts for Contingent Reserve Funds for half (or employer's portion) of Additional Member Contributions (Chapter 19 1.85%), buyback payments for outside and military service, and The New York City Department of Education ("DOE") supplemental contributions for the ASAF and Annuity Savings Fund ("ASF"). The Employer portion of Additional Member Contributions is not part of the employer's appropriation amount and also not recoverable by the member upon the member's resignation.

**Investment Expenses** – The Variable-Return Funds maintain a reserve for administrative and investment expenses. As of June 30, 2023, the reserve was \$42.0 million for QPP and \$22.6 million for TDA. The expense reserve and net investment expenses for 2023 were reduced by \$15.2 million for QPP and \$7.0 million for TDA. As of June 30, 2022, the reserve was \$55.5 million for QPP and \$28.4 million for TDA. The expense reserve and net investment expenses for 2022 were reduced by \$9.6 million for QPP and \$2.8 million for TDA.

**Income Taxes** – Income earned by the QPP and TDA Program is not subject to federal income tax.

**Accounts Payable** – Accounts payable is principally comprised of amounts owed to the System's banks due to depositories, unclaimed payments, reserves for investment and administrative expenses for the Variable-Return Funds, and investment expenses accrued to the QPP and TDA Program. The System's practice is to fully invest its day-end cash balances in a pooled short-term fund. A typical benefit payment bank account would show no balance, since funding only occurs when benefit payment checks are presented to the bank for payment each day.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

**Intra-fund Payable/Receivable** – At fiscal year-end, intra-fund payables/receivables between the TRSNYC Pension Fund and the Variable-Return Funds are excluded from QPP and TDA Program assets. The NYCAC Sections 13-577 and 13-582 provide for certain internal transfers of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets. In Fiscal Year 2023, \$66.1 million was transferred to the QPP Variable-Return Funds from the QPP TRSNYC Pension Fund. In addition, in Fiscal Year 2023, \$3.2 million was transferred to the TDA from the QPP Program.

In Fiscal Year 2022, \$41.5 million was transferred from the QPP Variable-Return Funds to the QPP TRSNYC Pension Fund. In addition, in Fiscal Year 2022, \$2.5 million was transferred from the TDA to the QPP Program.

**Payment of Statutory-Interest on the TDA Program's Fixed-Return Fund** – The fixed interest, credited to TDA Program member account balances invested in the Fixed-Return Fund (7.0% APR for UFT members after December 10, 2009; 8.25% APR for non-UFT members and for UFT members prior to December 10, 2009), and owed and transferred to the TDA Program, is reported as a transfer payment of interest by the QPP and transfer receipt of interest for the TDA Program.

**Inter-Plan Eliminations** – Included on the Combining Statements of Fiduciary Net Position and the Combining Statements of Changes in Fiduciary Net Position is an elimination column, the purpose of which is to remove from the statement any transactions involving dealings between reported entities. The eliminations include offsetting payables and receivables associated with the TDA Program's investment in the TRSNYC Pension Fund. In addition, payables and receivables between the QPP, the TDA Program, and the System's administrative expense fund are eliminated.

**Securities-Lending Transactions** – State statutes and Board policies permit the Funds to lend their investments to broker-dealers and other entities for collateral, for the same securities in the future with a simultaneous agreement to return the collateral in the form of cash, U.S. Treasury, and U.S. Government securities. The Funds' agent lends the following types of securities: short-term securities, common stocks, long-term corporate bonds, U.S. Government and U.S. Government agency bonds, asset-backed securities, international equities, and bonds held in collective investment funds. In return, the Funds receive collateral in the form of cash, U.S. Treasury, and U.S. Government agency securities at 100% to 105% of the principal plus accrued interest for reinvestment. At June 30, 2023 and 2022, management believes that the Funds had no credit risk exposure to borrowers because the fair value of collateral held by the System equaled or exceeded the fair value of securities lent to the borrowers. Also, the contracts with the Funds' Securities Lending Agent (the "Agent") require the Agent to indemnify the Funds as follows: In the situation when a borrower goes into default, the Agent will liquidate the collateral to purchase replacement securities. Any shortfall before the replacement securities' cost and the collateral value is covered by the Agent. All securities loans can be terminated on demand within a period specified in each agreement by either the Funds or the borrowers. Cash collateral is invested by the securities-lending agent using approved Lender's Investment guidelines. The weighted-average maturity is 171.4 days for collateral investments under State Street's TRSNYC Pension Fund investments and 2.1 days for JPMorgan Chase's Variable-Return Fund investments. The securities-lending program in which the Funds participate only allows pledging or selling securities in the case of borrower default.

During Fiscal Year 2023, net earnings from the securities-lending program were \$11.7 million. Net earnings from QPP were \$9.2 million, including \$7.9 million from TRSNYC Pension Fund and \$1.3 million from Variable-Return Funds. The TDA net earnings from the Variable-Return Funds securities-lending program amounted to \$2.5 million.

During Fiscal Year 2022, net earnings from the securities-lending program were \$6.5 million. Net earnings from QPP were \$4.9 million, including \$4.0 million from TRSNYC Pension Fund and \$897.9 thousand from Variable-Return Funds. The TDA net earnings from the Variable-Return Funds securities-lending program amounted to \$1.6 million.

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

GASB Statement No. 28, *Accounting and Financial Reporting for Securities-Lending Transactions*, requires that securities loaned as assets and related liabilities be reported in the Combining Statements of Fiduciary Net Position. Cash received as collateral on securities-lending transactions and investments made with that cash are reported as assets. As of the balance sheet date, the maturities of the investments made with cash collateral on average exceed the maturities of the securities loans by approximately 167.2 days for State Street's TRSNYC Pension Fund investments and 1.1 days for JPMorgan Chase's Variable-Return Fund investments. Securities received as collateral are also reported as assets if the government entity has the ability to pledge or sell them with a borrower default. Accordingly, the System records the investments purchased with the cash collateral from securities lending with a corresponding liability for securities lending. Securities on loan are carried at fair value; as of June 30, 2023 and 2022, the values on loan by the TRSNYC Pension Fund were \$4.0 billion and \$546.0 million, respectively, and the values on loan by the Variable-Return Funds were \$977.1 million and \$811.9 million, respectively. Collateral received related to securities lending as of June 30, 2023 and 2022 was \$4.1 billion million and \$562.5 million, respectively, for the TRSNYC Pension Fund, and \$999.8 million and \$832.6 million, respectively, for the Variable-Return Funds.

**Implementation of Governmental Accounting Standards Board (GASB) Statements**

GASB Statement No. 98, *The Annual Comprehensive Financial Report*, establishes the term Annual Comprehensive Financial Report and its acronym ACFR. The term replaced Comprehensive Annual Financial Report and its acronym in generally accepted accounting principles for state and local governments. The System, beginning in fiscal year 2021, had decided to early implement this pronouncement and has applied the change as of the issuance of this report.

GASB Statement No. 87, *Leases*, establishes a single model for lease accounting based on the principle that leases are financings of the right to use of an underlying asset. It requires recognition of lease assets and liability for certain leases and associated inflows or outflows of resources based on the provision of the lease contract. The purpose of this Statement is to standardize comparability of financial statements and enhancing the consistency of the information about leasing activities of governments (see Note 8, Administrative Expenses).

GASB Statement No. 97, *Certain Component Unit Criteria, and Accounting and Financial reporting for Internal Revenue Code Section 457 Deferred Compensation Plans* ("GASB 97"), clarifies component unit criteria for a potential component unit in the absence of a governing board in determining financial accountability; limits the applicability of financial burden criteria in paragraph 7 of GASB Statement No. 84; and classifies Section 457 Deferred Compensation plans as either a pension plan or other employee benefit plan. The adoption of GASB Statement No. 97 did not have a significant impact on these financial statements.

GASB Statement No. 96, *Subscription-Based Information Technology Arrangements* ("SBITA"), establishes a uniformed approach for the accounting and financial reporting requirements for eligible SBITAs, grounded on the principle that these arrangements are financings of the right to use specific technology resources. The Statement defines recognition of SBITA assets and corresponding liabilities for certain agreements, and the associated inflows or outflows of resources. The objective of this Statement is to standardize the comparability of financial statements and enhance the consistency of information regarding the technology subscription agreements of governments. As of June 30, 2023, the adoption of GASB 96 did not have a significant impact on these financial statements.

**Reclassifications** – Certain prior year investment disclosure amounts have been reclassified to conform to the current year presentation. Alternative investments totaling approximately \$17,900,000 previously reported as Level 3 in the Fair Value hierarchy as of June 30, 2022 have been reclassified as Net Asset Value Practical Expedient to conform with the June 30, 2023 presentation. Certain investments previously reported as U.S. government & agency type investments in the credit risk and interest rate risk disclosures as of June 30,

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

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2022 have been reclassified to mortgage debt securities type investments to conform with the June 30, 2023 presentation. (See Note 3)

#### NOTE 3 – INVESTMENTS AND DEPOSITS

The Comptroller acts as an investment advisor to TRS and employs an independent consultant for the TRSNYC Pension Fund. In addition, TRS employs an independent investment consultant as an investment advisor for its Variable-Return Funds. TRS utilizes investment managers to manage the long-term debt and equity portfolios. The managers are regularly reviewed with regard to both their investment performance and their adherence to investment guidelines.

RSSL and NYCAC authorize the investment of assets subject to the terms, conditions, limitations, and restrictions imposed by law for investments by savings bank and domestic life insurance companies. The State Retirement and Social Security Law §§ 176-178(a), Banking Law § 235, and the ACNY establish the criteria for permissible equity investments. Investments up to 35% of total assets of the QPP and the TDA Program may be made in instruments not expressly permitted by the State RSSL.

QPP and TDA Program assets are diversified over a range of investments, and multiple strategies are used in an effort to limit overall risk.

TRS possesses investment policy statements for its QPP and TDA Program, and investment risk management is an inherent function of the asset allocation process. The System's assets are diversified over a broad range of asset classes and encompass multiple investment strategies aimed at limiting concentration risk. The asset allocation per investment program targeted for Fiscal Years 2023 and 2022 included securities in the following categories. TRSNYC Pension Fund primarily holds QPP assets, and the returns from this fund impact the funding of the QPP, a defined-benefit plan. The Variable-Return Funds primarily relate to the TDA Program, a defined-contribution plan.

TRSNYC Pension Fund Target Asset Allocations Investment Type	Asset Allocation Percentages *	
	2023	2022
Common stock	24.7%	24.8%
International investments - Non-U.S.	10.3%	10.4%
International investments - Emerging markets	9.6%	9.6%
Alternative investments - Real estate	5.8%	5.8%
Alternative investments - Private equity	8.5%	8.6%
Alternative investments - Infrastructure	2.4%	1.9%
Alternative investments - Opportunistic fixed income	3.7%	3.6%
Fixed income	35.0%	35.3%
Total	100.0%	100.0%

\* Represents adjusted target policy percentages.

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

Variable-Return Funds Target Asset Allocations Investment Type	Asset Allocation Percentages	
	2023	2022
Diversified Equity (Variable A):		
Common stock - Passive	62.00%	62.0%
Common stock - Active	15.00%	15.0%
Common stock - Defensive	0.00%	0.0%
International investments	23.00%	23.0%
Balanced Fund (formerly Bond Fund - Variable B):		
Fixed Income	70.00%	70.0%
Equity	30.00%	30.0%
International Equity (Variable C):		
International Investments	100.00%	100.0%
Sustainable Equity (former Socially Responsible - Variable E):		
Sustainable Equity BA SEF	100.00%	100.0%
U.S. Equity Index (established January 1, 2020 - Variable F):		
U.S. Equity Index Fund	100.00%	100.0%
International Equity Index (established January 1, 2020 - Variable G):		
International Equity Index Fund	100.00%	100.0%

State Street is currently the custodial bank for the securities of the TRS NYC Pension Fund. JPMorgan Chase is currently the custodial bank for the securities of the Variable-Return programs.

The information reflected in the Credit Ratings and in the Years to Maturity is derived from the Custodians' Risk and Performance Analytics Reporting System.

**Concentrations** – In accordance with RSSL § 177, the System's investment programs do not have investments in any individual company that may represent more than 2% of the QPP or TDA Program total net assets or 5% of the company's total outstanding shares. The above concentration exclusion does not apply to obligations of the United States, or those for which the faith of the United States is pledged to provide payment of the interest and principal.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

**Credit Risk** – The possibility of a loss or default resulting from a borrower's inability to repay a loan or fulfill its contractual debt obligations. Portfolios, other than U.S. Government and related portfolios, have credit rating limitations. Investment Grade portfolios are limited to mostly ratings, of BBB/Baa2 and above, except that they are also permitted a 10% maximum exposure to BB & B/Ba2 & B2 rated securities. While high yield non-investment grade managers primarily invest in BB & B/Ba2 & B2 rated securities, they can also invest up to 10% of their portfolio in securities rated CCC/Caa2.

The quality ratings of the TRSNYC Pension Fund investments, by percentage of the rated portfolio, as described by nationally recognized rating organizations, at June 30, 2023 and 2022, are as follows:

Investment Type Pension Fund June 30, 2023 (in percent)	Moody's Quality Ratings													Caa1 & Below	Not Rated	Total				
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3				B1	B2	B3	
U.S. government & agency Mortgage debt securities	49.62%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.78%	50.40%
Corporate bonds	12.85%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	12.85%
Short-term: Commercial paper	0.95%	0.01%	0.10%	0.29%	2.48%	1.27%	2.43%	2.49%	3.35%	2.17%	1.59%	1.52%	2.48%	2.63%	2.20%	2.21%	1.91%	-%	2.80%	32.88%
Discount notes and T-bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.02%	0.02%
Pooled fund	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.47%	0.47%
Percent of rated portfolio	63.42%	0.01%	0.10%	0.29%	2.48%	1.27%	2.43%	2.49%	3.35%	2.17%	1.59%	1.52%	2.48%	2.63%	2.20%	2.21%	1.91%	7.45%	100.00%	

Investment Type Pension Fund June 30, 2022* (in percent)	Moody's Quality Ratings													Caa1 & Below	Not Rated	Total				
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3				B1	B2	B3	
U.S. government & agency Mortgage debt securities	49.44%	0.01%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.93%	50.38%
Corporate bonds	11.66%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	11.66%
Short-term: Commercial paper	1.05%	0.02%	0.10%	0.16%	1.13%	1.84%	1.70%	2.22%	2.66%	2.57%	1.21%	1.71%	1.99%	2.06%	1.99%	1.64%	1.60%	3.35%	29.00%	
Discount notes and T-bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	1.31%	1.31%
Pooled fund	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	4.41%	4.41%
Percent of rated portfolio	62.15%	0.03%	0.10%	0.16%	1.13%	1.84%	1.70%	2.22%	2.66%	2.57%	1.21%	1.71%	1.99%	2.06%	1.99%	1.64%	1.60%	13.24%	100.00%	

\* Certain prior-year investment amounts have been reclassified to conform to the current year presentation.



Teachers' Retirement System of the City of New York  
 NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The quality ratings of the Variable-Return Fund investments, both QPP and TDA, by percentage of the rated portfolio, as described by nationally recognized statistical rating organizations, at June 30, 2023 and 2022, are as follows:

Investment Type Variable-Return Funds June 30, 2023 (In percent)	Moody's Quality Ratings													Not Rated	Total			
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3			B1	B2	B3
Corporate	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Short-term: U.S. Treasury bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Money market funds	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Percent of rated portfolio	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%

Investment Type Variable-Return Funds June 30, 2022 (In percent)	Moody's Quality Ratings													Not Rated	Total			
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3			B1	B2	B3
Corporate	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Short-term: U.S. Treasury bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Money market funds	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Percent of rated portfolio	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

**Custodial Credit Risk** – Deposits are exposed to custodial credit risk if they are uninsured and uncollateralized. Custodial credit risk is the risk that in the event of a failure of the counterparty or depository financial institution, the Fund will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the Funds and are held by either the counterparty or the counterparty's trust department or agent but not in the name of the Funds. Consistent with the Funds' investment policy, investments are held by the custodians of the TRSNYC Pension Fund and Variable-Return Funds and registered in the System's or QPP and TDA Program's name.

Generally, the System is the sole account owner of the custodial account. However, the Diversified Equity Fund is co-invested along with certain assets of BERS. Also, as of June 30, 2023, 0.6% of the TRSNYC Pension Fund assets were held in NYC commingled trust accounts owned 100% by The City's pension systems and related funds.

All of the System's deposits are insured by the Federal Deposit Insurance Corporation ("FDIC") or are collateralized by securities held by a financial institution separate from the Funds' depository financial institution. However, the Fund's cash balances can exceed FDIC insured limits. Non-invested cash is swept into the custodial bank's short-term investment intraday account, which is not FDIC insured.

**Interest Rate Risk** – Interest rate risk is the risk that the value of debt securities will be affected by fluctuations in market interest rates. The duration of the portfolio, relative to the duration of the portfolio's benchmark, is monitored by the Comptroller's Bureau of Asset Management.



## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The lengths of investment maturities (in years) of TRSNYC Pension Fund investments, both QPP and TDA, as shown by the percent of the rated portfolio at June 30, 2023 and 2022, are as follows:

Investment Type TRSNYC Pension Fund June 30, 2023	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government & agency	50.40%	0.04%	32.28%	7.96%	10.12%
Mortgage debt securities	12.85%	0.00%	0.14%	0.28%	12.43%
Corporate bonds	32.88%	0.39%	16.15%	7.89%	8.45%
Short-term:					
Commercial paper	0.02%	0.02%	-%	-%	-%
Discount notes and treasury bills	0.47%	0.47%	-%	-%	-%
Pooled funds	3.38%	3.38%	-%	-%	-%
Percent of rated portfolio	<u>100.00%</u>	<u>4.30%</u>	<u>48.57%</u>	<u>16.13%</u>	<u>31.00%</u>

Investment Type TRSNYC Pension Fund June 30, 2022*	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government & agency	50.38%	0.11%	32.03%	9.25%	8.99%
Mortgage debt securities	11.66%	-%	0.09%	0.37%	11.20%
Corporate bonds	29.00%	0.31%	11.78%	9.35%	7.56%
Short-term:					
Commercial paper	1.31%	1.31%	-%	-%	-%
Discount notes and treasury bills	4.41%	4.41%	-%	-%	-%
Pooled funds	3.24%	3.24%	-%	-%	-%
Percent of rated portfolio	<u>100.00%</u>	<u>9.38%</u>	<u>43.90%</u>	<u>18.97%</u>	<u>27.75%</u>

\* Certain prior-year investment amounts have been reclassified to conform to the current year presentation.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The lengths of investment maturities (in years) of the Variable-Return Funds for QPP and TDA, as shown by the percent of the rated portfolio at June 30, 2023 and 2022, are as follows:

Investment Type Variable-Return Funds June 30, 2023	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Corporate bonds	-%	-%	-%	-%	-%
Short-term:					
U.S. Treasury bills	-%	-%	-%	-%	-%
Money market funds	100.00%	100.00%	-%	-%	-%
Percent of rated portfolio	100.00%	100.00%	-%	-%	-%

Investment Type Variable-Return Funds June 30, 2022	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Corporate bonds	-%	-%	-%	-%	-%
Short-term:					
U.S. Treasury bills	-%	-%	-%	-%	-%
Money market funds	100.00%	100.00%	-%	-%	-%
Percent of rated portfolio	100.00%	100.00%	-%	-%	-%

**Foreign Currency Risk** – Foreign currency risk is the risk that changes in the exchange rates will adversely impact the fair value of an investment. Currency risk is present in underlying portfolios that invest in foreign stocks and/or bonds. The currency markets have proven to be effective diversifiers in a total portfolio context; therefore, the TRSNYC Pension Fund has numerous managers that invest globally. In general, currency exposure is viewed as a benefit for its diversification reasons and not as an inherent risk within the portfolio. In addition, the TRSNYC Variable-Return Funds have investments in foreign stocks and/or bonds denominated in foreign currencies.

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

Foreign currency exposures as of June 30, 2023 and 2022, are as follows:

Trade Currency (in thousands)	Pension Fund June 30, 2023	Variable-Return Funds June 30, 2023	Pension Fund June 30, 2022	Variable-Return Funds June 30, 2022
Euro Currency	\$ 4,804,784	\$ 959,267	\$ 4,247,372	\$ 764,184
Hong Kong Dollar	2,111,599	246,875	2,319,755	284,169
Japanese Yen	1,575,151	564,538	1,514,993	481,602
Indian Rupee	1,411,194	155,005	1,061,362	129,449
British Pound Sterling	1,378,907	444,595	1,250,952	389,827
New Taiwan Dollar	1,375,382	131,348	1,047,773	104,419
South Korean Won	1,209,951	190,256	985,851	162,763
Swiss Franc	796,306	258,517	783,479	220,379
Canadian Dollar	609,642	74,920	539,810	67,925
Brazilian Real	504,215	32,912	399,482	48,899
Australian Dollar	358,709	138,437	338,665	120,804
Danish Krone	323,755	70,985	331,315	55,862
Chinese Yuan (Offshore)	307,440	14	249,250	-
Indonesian Rupiah	263,366	35,248	197,797	23,663
Swedish Krona	243,945	82,514	186,758	66,412
South African Rand	198,603	57,273	184,427	57,889
Singapore Dollar	184,974	42,154	185,121	40,884
Mexican Nuevo Peso	184,145	37,454	125,461	35,504
Thai Baht	158,253	28,232	152,332	21,554
Chinese Yuan Renminbi	124,776	30,322	154,595	33,747
UAE Dirham	80,189	22,350	44,405	12,155
Polish Zloty	80,084	9,122	78,890	13,853
Norwegian Krone	69,230	17,937	58,494	18,147
Malaysian Ringgit	63,253	5,296	68,896	9,889
Qatari Rial	55,162	-	48,624	-
Philippines Peso	44,038	1,134	33,281	537
Turkish Lira	36,745	1,932	28,798	9,180
Chilean Peso	33,844	271	22,038	711
Kuwaiti Dinar	24,213	-	10,887	-
Hungarian Forint	17,276	41	13,202	1,367
Israeli Shekel	15,863	7,314	31,104	6,879
New Zealand Dollar	7,429	4,104	12,028	6,241
Colombian Peso	2,869	-	3,390	-
Egyptian Pound	2,693	10,173	1,002	6,940
Czech Koruna	2,514	23	6,049	3,699
Russian Ruble	276	10,472	1,793	8,634
Vietnamese Dong	248	-	-	-
Peruvian Nuevo Sol	14	51	44	63
Pakistan Rupee	5	-	7	-
Saudi Arabian Ryal	-	19,849	-	10,879
	<u>\$ 18,661,042</u>	<u>\$ 3,690,935</u>	<u>\$ 16,719,482</u>	<u>\$ 3,219,109</u>

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK**

**Teachers' Retirement System of the City of New York**

**NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED**

**June 30, 2023 and 2022**

**Securities Lending Transactions**

*Credit Risk* – The quality ratings of investments held as collateral for Securities Lending by the TRSNYC Pension Fund at June 30, 2023 and 2022 are as follows:

Investment Type and Fair Value of Securities Lending Transactions - TRSNYC Pension Fund

	Moody's Quality Ratings						Total
	Aaa & Below	A1	A2	A3	Baa2	Not Rated	
June 30, 2023 (In thousands)							
Short-term:							
Reverse repurchase agreements	\$ 284,837	-	\$ -	-	\$ -	\$ 683,370	\$ 968,207
Money market	643,936	-	-	-	-	168,637	812,573
U.S. agency	-	-	-	-	-	1,869,833	1,869,833
Cash or cash equivalent	405,291	-	-	-	-	-	405,291
Uninvested	-	-	-	-	-	(3,531)	(3,531)
<b>Total</b>	<b>\$ 1,334,064</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,718,309</b>	<b>\$ 4,052,373</b>
Percent of securities lending portfolio	32.92%	-%	-%	-%	-%	67.08%	100.00%

Uninvested securities are due to late collateral settlements where the cash positions changed after cash-collateral investments were made. As of June 30, 2023, the System had a greater amount of cash-collateral investments than amount in open loans, which resulted in an overinvestment of \$3.5 million.

	Moody's Quality Ratings						Total
	Aaa & Below	A1	A2	A3	Baa2	Not Rated	
June 30, 2022 (In thousands)							
Short-term:							
Reverse repurchase agreements	\$ -	-	\$ -	-	\$ -	\$ 124,727	\$ 124,727
Money market	267,664	-	-	-	-	86,136	353,800
U.S. agency	-	-	-	-	-	-	-
Cash or cash equivalent	-	53,170	-	-	-	-	53,170
Uninvested	-	-	-	-	-	(6,381)	(6,381)
<b>Total</b>	<b>\$ 267,664</b>	<b>\$ 53,170</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 204,482</b>	<b>\$ 525,316</b>
Percent of securities lending portfolio	50.95%	10.12%	-%	-%	-%	38.93%	100.00%

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The quality ratings of investments held as collateral for Securities Lending under the Variable-Return Funds at June 30, 2023 and 2022 are as follows:

Investment Type and Fair Value of Securities Lending Transactions - Variable-Return Funds June 30, 2023 (In thousands)		Moody's Quality Ratings		
	Aaa	A3	Not Rated	Total
Government	\$ 926,787	\$ -	\$ -	\$ 926,787
Short-term:				
Repurchase agreements	38,287	-	33,513	71,800
U.S. Treasury	1,177	-	-	1,177
Uninvested	-	-	2	2
<b>Total</b>	<b>\$ 966,251</b>	<b>\$ -</b>	<b>\$ 33,515</b>	<b>\$ 999,766</b>
Percent of securities lending portfolio	96.65%	-%	3.35%	100.00%
Investment Type and Fair Value of Securities Lending Transactions - Variable-Return Funds June 30, 2022 (In thousands)		Moody's Quality Ratings		
	Aaa	A3	Not Rated	Total
Government	\$ 712,403	\$ -	\$ -	\$ 712,403
Short-term:				
Repurchase agreements	81,289	-	32,748	114,037
U.S. Treasury	6,147	-	-	6,147
Uninvested	-	-	-	-
<b>Total</b>	<b>\$ 799,839</b>	<b>\$ -</b>	<b>\$ 32,748</b>	<b>\$ 832,587</b>
Percent of securities lending portfolio	96.07%	-%	3.93%	100.00%

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK**

**Teachers' Retirement System of the City of New York**

**NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED**

**June 30, 2023 and 2022**

*Interest Rate Risk* – The lengths of investment maturities (in years) of the collateral for Securities Lending held by the TRSNYC Pension Fund at June 30, 2023 and 2022 are as follows:

Years to Maturity

Investment Type TRSNYC Pension Fund

June 30, 2023 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Short-term:					
Reverse repurchase agreement	\$ 968,207	\$ 968,207	\$ -	\$ -	\$ -
Money market	812,573	812,573	-	-	-
U.S. agency	1,869,833	919,735	950,098	-	-
Cash equivalents	405,291	405,291	-	-	-
Uninvested	(3,531)	(3,531)	-	-	-
<b>Total</b>	<b>\$4,052,373</b>	<b>\$3,102,275</b>	<b>\$ 950,098</b>	<b>\$ -</b>	<b>\$ -</b>
Percent of securities lending portfolio	100.00%	76.55%	23.45%	-%	-%

Years to Maturity

Investment Type TRSNYC Pension Fund

June 30, 2022 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Short-term:					
Reverse repurchase agreement	\$ 124,727	\$ 124,727	\$ -	\$ -	\$ -
Money market	353,800	353,800	-	-	-
Cash equivalents	53,170	53,170	-	-	-
Uninvested	(6,381)	(6,381)	-	-	-
<b>Total</b>	<b>\$ 525,316</b>	<b>\$ 525,316</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Percent of securities lending portfolio	100.00%	100.00%	-%	-%	-%

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The lengths of investment maturities (in years) of the collateral for Securities Lending held under the Variable-Return Funds at June 30, 2023 and 2022 are as follows:

## Years to Maturity

## Investment Type Variable-Return Funds

June 30, 2023 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ 926,787	\$ 88,157	\$ 438,445	\$ 203,088	\$ 197,097
Short-term:					
Repurchase agreements	71,800	71,800	-	-	-
U.S. Treasury	1,177	1,177	-	-	-
Uninvested	2	2	-	-	-
<b>Total</b>	<b>\$ 999,766</b>	<b>\$ 161,136</b>	<b>\$ 438,445</b>	<b>\$ 203,088</b>	<b>\$ 197,097</b>
Percent of securities lending portfolio	<u>100.00%</u>	<u>16.12%</u>	<u>43.85%</u>	<u>20.31%</u>	<u>19.72%</u>

## Years to Maturity

## Investment Type Variable-Return Funds

June 30, 2022 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ 712,403	\$ 76,085	\$ 324,425	\$ 156,505	\$ 155,388
Short-term:					
Repurchase agreements	114,037	114,037	-	-	-
U.S. Treasury	6,147	6,147	-	-	-
Uninvested	-	-	-	-	-
<b>Total</b>	<b>\$ 832,587</b>	<b>\$ 196,269</b>	<b>\$ 324,425</b>	<b>\$ 156,505</b>	<b>\$ 155,388</b>
Percent of securities lending portfolio	<u>100.00%</u>	<u>23.57%</u>	<u>38.97%</u>	<u>18.80%</u>	<u>18.66%</u>

**Rate of Return** – For the years ended June 30, 2023 and 2022, the annual money-weighted rate of return on the TRS NYC Pension Fund was 7.72% and (-9.72%), respectively. The money-weighted rate of return expresses investment performance, net of investment expense adjusted for the changing amounts actually invested. In Fiscal Year 2015, the System adopted GASB 72. GASB 72 was issued to address accounting and financial reporting issues related to fair value measurements.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The System has the following recurring fair value measurements as of June 30, 2023 and 2022:

GASB 72 - Disclosure (TRSNYC Pension Fund) (In thousands)	2023			Total
	Level 1	Level 2	Level 3	
Investments - at fair value (Notes 2 and 3):				
Short-term investments:				
Commercial paper	\$ -	\$ 7,048	\$ -	\$ 7,048
Short-term investment fund	-	1,094,454	-	1,094,454
U.S. Treasury bills and agencies	-	151,349	-	151,349
Debt securities:				
U.S. government	-	13,194,373	-	13,194,373
Corporate and other	-	14,556,070	266,312	14,822,382
Treasury inflation-protected securities	-	3,142,114	-	3,142,114
Equity securities:				
Domestic equity	26,906,170	-	10,920	26,917,090
International equity	16,994,199	-	4,644	16,998,843
Total investments in the Fair Value hierarchy	<u>\$ 43,900,369</u>	<u>\$ 32,145,408</u>	<u>\$ 281,876</u>	<u>76,327,653</u>
Alternative investments measured at NAV				<u>19,591,376</u>
Total pension fund investments				<u>\$ 95,919,029</u>

GASB 72 - Disclosure (TRSNYC Pension Fund) (In thousands)	2022			Total
	Level 1	Level 2	Level 3	
Investments - at fair value (Notes 2 and 3):				
Short-term investments:				
Commercial paper	\$ -	\$ 453,349	\$ -	\$ 453,349
Discount notes	-	52,418	-	52,418
Short-term investment fund	-	812,986	-	812,986
U.S. Treasury bills and agencies	-	1,551,644	-	1,551,644
Debt securities:				
U.S. government	-	13,757,296	-	13,757,296
Corporate and other	-	13,558,337	431,213	13,989,550
Treasury inflation-protected securities	-	3,403,952	-	3,403,952
Equity securities:				
Domestic equity	23,668,902	37	5,431	23,674,370
International equity	15,197,392	-	28	15,197,420
Total investments in the Fair Value hierarchy	<u>\$ 38,866,294</u>	<u>\$ 33,590,019</u>	<u>\$ 436,672</u>	<u>72,892,985</u>
Alternative investments measured at NAV*				<u>17,877,701</u>
Total pension fund investments				<u>\$ 90,770,686</u>

\* Certain prior-year investment amounts have been reclassified to conform to the current year presentation.



## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The below table summarizes the assets that measure fair market value using NAV as a practical expedient (In thousands):

Asset	As of June 30, 2023		As of June 30, 2022		Redemption Frequency (Ranges if Eligible)	Redemption Notice Period (Ranges if Eligible)
	Fair Value	Unfunded Commitments	Fair Value	Unfunded Commitments		
Infrastructure	\$ 2,289,380	\$ 1,432,135	\$ 1,699,055	\$ 1,506,241	N/A	N/A
Private equity	8,146,204	3,501,898	7,724,308	3,840,083	N/A	N/A
Private real estate	5,534,456	2,495,765	5,242,509	3,081,856	Quarterly	30 - 90 days
Opportunistic fixed income	3,336,820	1,122,698	3,211,829	2,492,283	N/A	N/A
Fixed income investment company	284,516	-	-	-	Monthly	15 days
	<u>\$ 19,591,376</u>	<u>\$ 8,552,496</u>	<u>\$17,877,701</u>	<u>\$ 10,920,463</u>		

**Equity, Debt Securities and Short-Term Investments**

Equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets issued by pricing vendors for these securities. Debt, equity securities, and short-term investments classified in Level 2 of the fair value hierarchy are valued using prices determined by the use of matrix pricing techniques maintained by the various pricing vendors for these securities. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Debt and equity securities classified in Level 3 of the fair value hierarchy are securities whose stated market price is unobservable by the marketplace; many of these securities are priced by the issuers or industry groups for these securities. Fair value is defined as the quoted market value on the last trading day of the period. These prices are obtained from various pricing sources by the System's custodian bank.

**Alternative Investments**

Alternative investments include Private Equity, Real Estate, Opportunistic Fixed Income, and Infrastructure Investments. These are investments for which exchange quotations are not readily available and are valued at estimated fair value by the General Partner (GP). Alternative investments are measured at fair value using the NAV as a practical expedient and are not classified in the fair value hierarchy. The fair value quantities presented in the table below align with the amounts shown in the entity's financial statements.

Fair value is determined by the GP or the fund administrator using one or more valuation methodologies outlined in GASB 72, depending upon the availability of data required by each methodology. In some cases, the GP may use multiple approaches to estimate a valuation range.

Because of the subjective nature of estimated fair value of the private investments, such value may differ significantly from the values that would have been used had a ready market existed for these investments. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will generally be liquidated within 10 years but in some cases can take longer.

Certain alternative investments are not fully funded upon subscribing to the investment. The GP can draw down or call for capital as the fund goes into more investments or when the need arises such as expenses associated with the partnership. The residual balance of uncalled capital is also known as unfunded commitments which are restricted to the maximum amount of the limited partners' total committed amount.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

GASB 72 - Disclosure (Variable-Return Funds) June 30, 2023 (In thousands)	2023			Total
	Level 1	Level 2	Level 3	
Investments - at fair value				
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 168,512	\$ -	\$ 168,512
Equity securities	15,541,181	258,185	1,252	15,800,618
Balanced Fund:				
Short-term investments	-	1,308	-	1,308
Equity securities	564,646	-	-	564,646
International Equity Fund:				
Short-term investments	-	2,798	-	2,798
International equity	224,884	16,477	4	241,365
Sustainable Equity Fund:				
Short-term investments	-	9,056	-	9,056
Equity securities	560,132	-	-	560,132
U.S. Equity Index Fund:				
Short-term investments	-	14	-	14
Equity securities	142,000	-	-	142,000
International equity index fund:				
Short-term investments	-	51	-	51
Equity securities	23,575	-	-	23,575
<b>Total Variable-Return Funds investments</b>	<b>\$ 17,056,418</b>	<b>\$ 456,401</b>	<b>\$ 1,256</b>	<b>\$ 17,514,075</b>

GASB 72 - Disclosure (Variable-Return Funds) June 30, 2022 (In thousands)	2022			Total
	Level 1	Level 2	Level 3	
Investments - at fair value				
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 200,645	\$ -	\$ 200,645
Equity securities	14,123,601	212,001	2,446	14,338,048
Balanced Fund:				
Short-term investments	-	1,329	-	1,329
Equity securities	538,020	-	-	538,020
International Equity Fund:				
Short-term investments	-	2,465	-	2,465
International equity	185,939	13,647	178	199,764
Sustainable Equity Fund:				
Short-term investments	-	8,653	-	8,653
Equity securities	440,660	-	-	440,660
U.S. Equity Index Fund:				
Equity securities	-	89,677	-	89,677
International equity index fund:				
Equity securities	-	15,034	-	15,034
<b>Total Variable-Return Funds investments</b>	<b>\$ 15,288,220</b>	<b>\$ 543,451</b>	<b>\$ 2,624</b>	<b>\$ 15,834,295</b>

Equity securities classified in Level 1 of the fair value hierarchy (above) are valued using prices quoted in active markets for those securities.

Equity, short-term investments, and debt securities classified in Level 2 of the fair value hierarchy (above) are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices.

Securities are classified in Level 3 (above) when inputs to the valuation methodology are unobservable and significant to the fair value measurement. Instruments are often based on internally developed models of the custodian, in which there are few, if any, external observations. Generally, Level 3 includes distressed securities or alternative investments.

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

**NOTE 4 – QPP CONTRIBUTIONS**

The financial objective of the QPP is to fund members' retirement benefits during their active service and to establish employer contribution rates that, expressed as a percentage of annualized covered payroll, will remain approximately level from year to year. The Employers contribute amounts that, together with member contributions and investment income, are intended to ultimately be sufficient to accumulate assets to pay benefits when due.

**Member Contributions** – Members who joined prior to July 27, 1976 contribute by salary deductions on the basis of a normal rate of contribution that is assigned by the QPP at membership. This member normal rate, which is dependent upon age, years of prior service, and actuarial tables in effect at the time of membership, is determined so as to provide approximately one-fourth of the service retirement allowance at the earliest age for service retirement. For age at membership equal to 20 and with no prior service, the member normal rate is equal to 4.6%. For age at membership equal to 40 with no prior service, the member normal rate is equal to 3.6%.

Members who joined on or after July 27, 1976 are mandated to contribute 3% of salary. Effective October 1, 2000, these members are not required to make contributions after the 10th anniversary of their membership date or completion of 10 years of credited service, whichever is earlier.

Effective February 27, 2008, active members were eligible to enroll in a 55 retirement-age minimum and 25 credited years of service retirement option ("55/25 retirement option"), enabling them to eliminate any age-reduction factor in their retirement allowance. Those choosing the age 55/25 retirement option are required to make additional contributions of 1.85% of salary from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of credited service, whichever is later. Members joining after February 27, 2008 are automatically enrolled in a 55-retirement-age minimum and 27 credited years of service retirement program ("55/27 retirement program"). These members are required to make additional pension contributions of 1.85% of salary until they have accumulated 27 years of credited service. Chapter 504 of the Laws of 2009 ("Chapter 504/09") provides that individuals joining after December 10, 2009, who participate in the 55/27 retirement program, are required to make pension contributions of 4.85% of salary until they have 27 years of credited service and contributions of 1.85% of salary thereafter.

Under Chapter 18 of the Laws of 2012, members who join on and after April 1, 2012 are automatically enrolled in Tier VI. These members are required to make contributions ranging from 3.0% (based on a salary of \$45,000 and less) to 6.0% (based on a salary above \$100,000) until separation from service or retirement.

**Employer Contributions** – Statutorily-required contributions ("Statutory Contributions") to the QPP, determined by the Actuary in accordance with the State statutes and City laws, are generally funded by the Employers within the appropriate fiscal year. These contributions consider any expected deficiencies between the statutory rates of interest on TDA Program deposits in the Fixed-Return Fund and on statutory rates of interest credited to QPP members and actual investment earnings on such funds. The Statutory Contribution for the year ended June 30, 2023, based on an actuarial valuation as of June 30, 2021, was \$3.1 billion, and the Statutory Contribution for the year ended June 30, 2022, based on an actuarial valuation as of June 30, 2020, was \$3.3 billion. The Statutory Contributions for Fiscal Years 2023 and 2022 were equal to the Actuarial Contributions. Refer to the Schedule of Employers' Contributions in the accompanying required supplementary information for more information on the actuarial methods and assumptions applied by the Actuary to determine the Statutory Contributions.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

#### NOTE 5 – QPP NET PENSION LIABILITY

The components of the net pension liability of the Employers at June 30, 2023 and 2022 were as follows:

	2023	2022
	(in millions)	
Total pension liability	\$ 81,613	\$ 78,721
Fiduciary net position*	67,934	64,010
Employers' net pension liability	<u>\$ 13,679</u>	<u>\$ 14,711</u>
Fiduciary net position as a percentage of the total pension liability	<u>83.2%</u>	<u>81.3%</u>

\* Such amounts represent the preliminary System's fiduciary net position and may differ from the final System's fiduciary net position.

#### Actuarial Methods and Assumptions

The total pension liability as of June 30, 2023 and 2022 was calculated from the actuarial valuations as of June 30, 2022 (Preliminary) and June 30, 2021 (Preliminary), respectively, that were rolled forward to develop the total pension liability to the respective fiscal year-end. The following actuarial assumptions were applied to all periods included in the measurement:

Projected Salary Increases	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per annum.
Investment Rate of Return	7.0% per annum, net of Investment Expenses.
COLAs	1.5% per annum for AutoCOLA. 2.5% per annum for Escalation.

The above assumptions were developed assuming a long-term Consumer Price Inflation assumption of 2.5% per annum.

The fiscal-year 2022 results reflect a change in the plan provisions from the prior year. This change reflects the enactment of Chapter 56 of the Laws of 2022.

Pursuant to Section 96 of the New York City Charter, studies of the actuarial assumptions used to value liabilities of the five actuarially-funded New York City Retirement Systems ("NYCRS") are conducted every two years. The most recent of these studies was performed by Bolton, Inc. and included experience through June 30, 2017. Milliman is performing the current experience study that covers the period through June 30, 2021.

On January 17, 2019, the Actuary Issued a Report titled "Proposed Changes in Actuarial Assumptions and Methods for Determining Employer Contributions for fiscal years beginning on and after July 1, 2018 for the New York City Teachers' Retirement System." The actuarial assumptions and methods described in that report are referred to as the "2019 A&M."

On July 23, 2021, the Actuary issued a memorandum titled "Proposed Changes to Actuarial Assumptions and Methods." The actuarial assumptions and methods described in that memorandum amend certain assumptions and methods from the 2019 A&M. This revised set of actuarial assumptions and methods are referred to as the "Revised 2021 A&M."

**Teachers' Retirement System of the City of New York**  
**NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED**  
**June 30, 2023 and 2022**

The June 30, 2022 total pension liability was calculated from the Preliminary June 30, 2021 actuarial valuation (adjusted for Chapter 56 of the Laws of 2022 and certain other post-valuation refinements), which was based on the Revised 2021 A&M.

The June 30, 2023 total pension liability was calculated from the Preliminary June 30, 2022 actuarial valuation which was based on the Revised 2021 A&M.

The Entry Age Normal ("EAN") cost method of funding is utilized by the System's Actuary to calculate the contribution required of the Employer.

Under this method, the Present Value ("PV") of Future Benefits ("PVFB") of each individual included in the actuarial valuation is allocated on a level basis over the earnings (or service) of the individual between entry age and assumed exit age(s). The Employer portion of this PVFB allocated to a valuation year is the Normal Cost. The portion of this PVFB not provided for at a valuation date by the PV of Future Normal Costs or future member contributions is the Accrued Liability ("AL").

The excess, if any, of the AL over the Actuarial Value of Asset ("AVA") is the Unfunded Accrued Liability ("UAL").

Under this method, actuarial gains and losses, as they occur, reduce and increase the UAL and are explicitly identified and amortized.

Increases or decreases in obligations due to benefit changes, actuarial assumption changes, and actuarial method changes are also explicitly identified and amortized.

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

#### **Expected Rate of Return on Investments**

The long-term expected rate of return on QPP investments was determined using a building-block method in which best-estimate ranges of expected real rates of return (*i.e.*, expected returns, net of QPP investment expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocations and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table as of June 30, 2023 and 2022:

Asset Class	As of June 30, 2023		As of June 30, 2022	
	Target Asset Allocation	Long-Term Expected Real Rate of Return	Target Asset Allocation	Long-Term Expected Real Rate of Return
<b>Public Markets</b>				
U.S. public market equities	25.0%	5.3%	25.0%	5.3%
Developed public market equities	10.0%	6.1%	10.0%	5.7%
Emerging public market equities	9.5%	7.5%	9.5%	7.1%
Fixed income	32.5%	2.1%	32.5%	1.4%
<b>Private Markets (Alternative Investments)</b>				
Private equity	7.0%	10.4%	7.0%	10.8%
Private real estate	7.0%	7.8%	7.0%	8.0%
Infrastructure	4.0%	7.9%	4.0%	7.7%
Opportunistic-fixed income	5.0%	5.2%	5.0%	6.0%
<b>Total</b>	<b>100.0%</b>		<b>100.0%</b>	

#### **Discount Rate**

The discount rate used to measure the total pension liability was 7.0%. The projections of cash flows used to determine the discount rate assumed that employee contributions will be made at the rates applicable to the current Tier for each member and that Employer contributions will be made at rates as determined by the Actuary. Based on those assumptions, the QPP's fiduciary net position was projected to be available to make all projected future benefit payments of current active and non-active QPP members. Therefore, the long-term expected rate of return on QPP investments was applied to all periods of projected benefit payments to determine the total pension liability. The following presents the net pension liability of the Employers, calculated using the discount rate of 7.0%, as well as what the Employers' net pension liability would be if it were calculated using a discount rate that is one-percentage point lower (6.0%) or one-percentage point higher (8.0%) than the current rate as of June 30, 2023 and 2022:

	1% Decrease (6.0%)	Discount Rate (7.0%)	1% Increase (8.0%)
	(In thousands)		
Employers' net pension liability -			
June 30, 2023	\$ 22,931,877	\$ 13,678,909	\$ 5,912,852
June 30, 2022	\$ 23,662,403	\$ 14,711,335	\$ 7,192,331

## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

**NOTE 6 – MEMBER LOANS**

The balance of member loans receivable for the QPP at June 30, 2023 and 2022 was \$333.4 million and \$302.0 million, respectively. QPP members are permitted to borrow up to 75% of their own contributions, including accumulated interest. Outstanding loan balances are insured in order to protect members' balances in case of death. In return for insurance coverage, Tiers III, IV, and VI members supplement their loan interest payments of 6.0% APR with a 0.1% insurance fee. Tiers I and II members pay loan interest payments of 6.0% APR and are not subject to the insurance fee. Upon termination of employment before retirement, certain QPP members are entitled to refunds of their own contributions, including accumulated interest, less any loans outstanding.

The balance of member loans receivable for the TDA Program at June 30, 2023 and 2022 was \$469.7 million and \$418.2 million, respectively. Members of the TDA Program are permitted to borrow up to 75% of their own contributions, including accumulated interest. TDA Program members supplement their member loans' interest payments (7.0% for UFT, 8.25% for all other members) with a 0.3% ("APR") insurance fee. This fee funds a reserve, which is used to repay members' loan balances outstanding in case of death. Upon termination of employment before retirement, members are entitled to refunds of their own contributions, including accumulated interest, less any loans outstanding.

**NOTE 7 – RELATED PARTIES**

The Comptroller has been appointed by law as custodian for assets of the QPP and TDA Program with discretionary authority. Securities are held by certain banks under custodial agreements with the Comptroller. The Comptroller and the NYC Financial Information Services Agency and Office of Payroll Administration ("FISA-OPA") provide cash receipt and cash disbursement services and financial services; the Office of Actuary ("OA") provides actuarial services; the Office of Management and Budget ("OMB") provides budget review services; and The City's Corporation Counsel provides legal services to TRS. The cost of providing such services amounted to \$15.1 million and \$12.8 million in Fiscal Years 2023 and 2022, respectively. The City also provides other administrative services.

**NOTE 8 – ADMINISTRATIVE EXPENSES**

Chapter 593 of the Laws of 1996 ("Chapter 593/96"), effective July 1, 1996, authorized the Board of Trustees to draw upon its assets to pay the administrative expenses incurred by TRS. Prior to Fiscal Year 1997, The City and Variable Annuity Programs had paid all administrative expenses. After Chapter 593/96, administrative expenses incurred by the System are attributed to the QPP and the Variable-Return Funds of the TDA Program. The cost sharing is weighted and depends on an assessment of the prior year's administrative activities. Total TRS administrative expenses, attributable to the QPP and TDA Program, amounted to \$91.8 million and \$91.4 million for Fiscal Years 2023 and 2022, respectively. In addition to TRS' administrative expenses, other City agencies attribute the cost for services rendered by them during the fiscal year; see Note 7 above. Fiscal Year 2023 Administrative expense included \$3.6 million due to recognition of interest and amortization expenses as required by GASB No. 87.

In accordance with GASB Statement No. 87, *Leases*, beginning July 1, 2021, the System recognized lease assets and liabilities for office space and mailing system. These lease agreements began in 2015 and 2019, respectively.

In November 2015, the System amended and extended its lease agreement for office space. The agreement will expire on May 31, 2039.



# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

At June 30, 2023, the right to use the office space (asset) amounted to \$152.0 million, net of annual amortization in the amount of \$9.5 million. At June 30, 2022, the right to use the office space (asset) amounted to \$161.6 million, net of annual amortization in the amount of \$9.5 million.

At June 30, 2023, the future minimum principal and interest payments required under the lease contracts are as follows (in thousands):

	Beginning Balance	Annual Year-end Interest Accrual	Total Annual Payment	Ending Balance
2024	\$ 160,016	\$ 3,378	\$ (9,579)	\$ 153,815
2025	153,815	3,224	(11,156)	145,883
2026	145,883	3,051	(11,156)	137,778
2027	137,778	2,874	(11,155)	129,497
2028	129,497	2,694	(11,156)	121,035
2029-2033	121,035	10,436	(59,684)	71,787
2034-2038	71,787	4,553	(64,467)	11,873
2039	11,873	107	(11,980)	-

#### NOTE 9 – CONTINGENT LIABILITIES AND OTHER MATTERS

**Contingent Liabilities** – The QPP and TDA Program have certain contingent liabilities. TRS management, on advice from legal counsel, believes that such proceedings and contingencies will not have a material effect on the fiduciary net position of the QPP or cause changes in its fiduciary net position. Under the State statutes and City laws that govern the functioning of the QPP, increases in the obligation of the QPP to members and beneficiaries ordinarily result in increases in the obligations of the Employers to the QPP.

**DOE Class Action** – In 1996, a class action was brought against The City Board of Education and the State under Title VII of the Civil Rights Act of 1964 alleging that the use by the Board of Education of two teacher certification examinations mandated by the State had a disparate impact on minority candidates. In 2006, the United States Court of Appeals for the Second Circuit dismissed the claims against the State. In December 2012, the District Court decided a controlling legal question against The City. On February 4, 2013, the Second Circuit affirmed the District Court's decision. The District Court has appointed a Special Master to oversee claimants' individualized hearings both as to damages and eligibility for Board of Education employment. The hearings relate to members of the class that took the Liberal Arts and Science Test ("LAST") from 1996 to 2004. On June 5, 2015, the Court ruled that a second version of LAST, LAST-2, that was administered from 2004 to 2014, violated Title VII because it did not measure skills necessary to do the job. In August 2015, the Court found that the State's new teacher certification test, the Academic Literacy Skills Test ("ALST"), administered since Spring 2014, was not discriminatory and evaluated skills necessary to do the job. Hearings to determine each claimant's damages, including pension damages, are ongoing. Currently, approximately 5,300 LAST and LAST-2 class members have submitted claim forms and may be eligible for damages. While some final judgments have been entered, it is too early to permit an accurate estimation of the ultimate potential cost to The City.

**Actuarial Audit** – Pursuant to Section 96 of the New York City Charter, studies of the actuarial assumptions used to value liabilities of the five actuarially-funded NYCERS are conducted every two years. Refer to Note 5 (QPP Net Pension Liability) for the results of the most recent actuarial audits for the QPP.

**Revised Actuarial Assumptions and Methods** – In accordance with the ACNY and with appropriate practice, the Boards of Trustees of the five actuarially-funded NYCERS are to periodically review and adopt actuarial assumptions as proposed by the Actuary for use in the determination of Employer Contributions.



## Teachers' Retirement System of the City of New York

## NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

The most recently completed study was published by Bolton, Inc., dated June 2019. Bolton analyzed experience for the 4- and 10-year periods ended June 30, 2017 and made recommendations with respect to the actuarial assumptions and methods based on their analysis. Based, in part, on these recommendations, the Actuary proposed new assumptions and methods for use in determining Employer Contributions for Fiscal Years beginning on and after July 1, 2018. These assumptions and methods were adopted by the Board of Trustees during Fiscal Year 2019 (See Note 5 for more information).

**New York State Legislation (only significant laws since Fiscal Year 2012 included)**

Chapter 18 of the Laws of 2012 ("Chapter 18/12") placed certain limitations on the Tier III and Tier IV benefits available to participants hired on and after April 1, 2012 in most New York State PERS, including TRS. These changes are sometimes referred to as Tier VI.

Chapter 3 of the Laws of 2013 implemented changes in the actuarial procedures for determining Employer Contributions beginning Fiscal Year 2012. In particular, Chapter 3/13 continued the One-Year Lag Methodology ("OYLM"), employed the Entry Age Actuarial Cost Method ("EAACM"), established an Actuarial Interest Rate ("AIR") assumption of 7.0% per annum, net of expenses, continued it and other interest rates until June 30, 2016, and defined the amortization of Unfunded Actuarial Accrued Liabilities ("UAAL").

Chapter 489 of the Laws of 2013 ("Chapter 489/13") extended the Notice of Participation filing deadline to September 11, 2014 for vested members to file a sworn statement indicating participation in the World Trade Center Rescue, Recovery, and Clean-up Operations.

Chapter 427 of the Laws of 2014 ("Chapter 427/14") provides non-contributory retirement service credit for members called to active military duty on or after September 11, 2001 and prior to January 1, 2006, who did not receive their full salary from a participating employer and who are otherwise eligible to receive retirement service credit for such service. Such members would not be required to make member contributions to receive such credit.

Chapter 510 of the Laws of 2015 clarifies for Tier VI the definition of multiple employers for the purpose of exclusion of wages, and changes the plan year for contributions from plan year April 1 to March 31 to plan year January 1 to December 31. Chapter 41 of the Laws of 2016 was enacted on May 31, 2016. This amendment removes the specified periods of time, medal requirements, and theaters of operation in which military service would have had to have been rendered for a service purchase pursuant to RSSL § 1000. Accordingly, for a member to be eligible to purchase service credit pursuant to RSSL § 1000 for pre-membership military service, the member need only have been honorably discharged from the military; all other requirements of RSSL § 1000 remain the same. This law is not retroactive and does not permit retired members to purchase service credit.

Chapter 326 of the Laws of 2016, enacted on September 11, 2016, extends the deadline to file a Notice of Participation in the World Trade Center Rescue, Recovery, and Clean-up Operations to September 11, 2018. Proper filing of a Notice of Participation is a requirement for a member to be eligible for a World Trade Center disability or death benefit.

Chapter 266 of the Laws of 2018 extends the time for members or eligible beneficiaries to file a Notice of Participation in World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2022. This law was signed on September 7, 2018, and shall be deemed to have been in full force and effect on and after September 11, 2001.

Chapter 89 of the Laws of 2020 provides death benefits to statutory beneficiaries of members whose death was a result of or was contributed to by Coronavirus Disease ("COVID-19"). This law provides an Accidental Death Benefit to the eligible beneficiaries of a member or a retiree who retired after March 1, 2020, where

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## Teachers' Retirement System of the City of New York

### NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2023 and 2022

such member reported for work outside their home and contracted COVID-19 within 45 days after reporting for work, and whose death was caused by COVID-19 or where COVID-19 contributed to such member's death and where such death occurred before January 1, 2021. Amounts payable are reduced by payments of any ordinary death benefits or option benefit paid to another statutory beneficiary. Chapter 78 of 2021 extended the deadline for statutory beneficiaries of members who died prior to January 1, 2023.

Chapter 357 of the Laws of 2021 eliminated TDA beneficiary accounts for beneficiaries of members who die on or after July 1, 2021.

Chapter 391 of the Laws of 2021 extended for a 2-year period the 7% Actuarial Interest Rate assumption.

Chapter 56 of the Laws of 2022, signed on April 9, 2022, was passed as part of the budget and provided for the following three relevant parts:

- **Part HH** waives RSSL 211 and 212 approval and income limitations on retirees as a result of earnings from employment in public schools in the state. This is waiver was extended to June 30, 2024 in subsequent legislation.
- **Part SS** excludes certain forms of overtime and extracurricular compensation from the salary used to determine Tier 6 BMC Contribution Rates during the specified period of 2022 through 2024.
- **Part TT** reduces the vesting requirement from 10 years to 5 years for Tier 6 and certain Tier 4 members and allows for retirement with 5 years of service.

Chapter 775 of the Laws of 2022 amends the section of law colloquially referred to as the "Basket Clause" and raises the permissible limit on the allocation of certain investment from 25% to 35%.

#### ***Other Legislation***

The SECURE 2.0 Act of 2022 increases the age at which Required Minimum Distributions must commence to 75 in steps over a ten-year period. Effective 2026, the act will also require that certain age-based catch-up contributions to the TDA be made on a Roth basis.

**Teachers' Retirement System of the City of New York**  
**REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)**  
**QUALIFIED PENSION PLAN**  
**SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS**

**June 30,**  
**(In thousands)**

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability:										
Service cost	\$ 1,659,314	\$ 1,626,586	\$ 1,588,162	\$ 1,555,755	\$ 1,691,144	\$ 1,436,617	\$ 1,386,674	\$ 1,271,308	\$ 1,223,158	\$ 1,205,662
Interest	6,024,949	3,868,974	7,145,949	4,838,801	4,914,552	5,071,481	5,147,042	4,131,177	4,027,139	4,407,702
Changes of benefit terms	-	14,121	-	-	-	-	-	-	-	-
Differences between expected and actual experience	155,841	(297,901)	(393,805)	(34,324)	(1,188,247)	(2,235,673)	1,008,249	1,229,501	1,507,964	-
Changes of assumptions	-	-	(338,383)	-	(826,850)	-	-	2,432,878	-	-
Benefit payments/withdrawals	(4,947,702)	(4,909,488)	(4,699,448)	(4,591,086)	(4,487,680)	(4,351,924)	(4,219,312)	(4,107,455)	(4,024,272)	(3,818,248)
Net change in total pension liability	2,892,402	302,292	3,302,475	1,769,146	102,919	(79,499)	3,322,653	4,960,409	2,733,969	1,795,116
Total pension liability - beginning	78,720,763	78,418,471	75,115,996	73,346,850	73,243,931	73,323,430	70,000,777	65,040,368	62,306,379	60,511,262
Total pension liability - ending (a)	81,613,165	78,720,763	78,418,471	75,115,996	73,346,850	73,243,931	73,323,430	70,000,777	65,040,368	62,306,378
Plan fiduciary net position:										
Contributions - employer	3,086,082	3,303,798	3,131,607	3,590,822	3,696,686	3,889,710	3,888,399	3,760,714	3,325,528	3,054,424
Contributions - other employer*	57,721	60,581	61,663	61,748	62,513	59,979	57,368	n/a	n/a	n/a
Contributions - other employee	292,473	273,686	247,751	226,920	217,205	195,241	180,076	173,696	158,590	154,962
Net investment income	7,844,384	(10,853,862)	22,362,988	3,911,187	5,721,310	6,275,115	8,133,280	960,267	1,611,929	9,435,906
Benefit payments/withdrawals	(4,947,702)	(4,909,488)	(4,699,448)	(4,591,086)	(4,487,680)	(4,351,924)	(4,219,312)	(4,107,455)	(4,024,272)	(3,818,248)
Payment of interest on TDA fixed funds	(2,261,718)	(2,140,639)	(1,998,388)	(1,846,173)	(1,716,679)	(1,595,462)	(1,466,615)	(1,354,207)	(1,248,998)	(1,147,923)
Administrative expenses	(73,784)	(71,490)	(68,100)	(64,532)	(64,291)	(65,076)	(60,790)	(59,367)	(58,391)	(46,042)
Other changes	(72,628)	(456)	(9,725)	39,853	28,671	29,170	(46,229)	1,233	329	404
Net change in plan fiduciary net position	3,924,828	(14,337,870)	19,028,348	1,328,739	3,457,735	4,436,753	6,466,178	(625,119)	(235,275)	7,633,483
Plan fiduciary net position - beginning	64,009,428	78,347,298	59,318,950	57,990,211	54,532,476	50,095,723	43,629,545	44,254,664	44,489,939	36,856,456
Plan fiduciary net position - ending (b) **	67,934,256	64,009,428	78,347,298	59,318,950	57,990,211	54,532,476	50,095,723	43,629,545	44,254,664	44,489,939
Employer's net pension liability - ending (a)-(b)	\$ 13,678,909	\$ 14,711,335	\$ 71,173	\$ 15,797,046	\$ 15,356,639	\$ 18,711,455	\$ 23,227,707	\$ 26,371,232	\$ 20,785,704	\$ 17,816,440
Plan fiduciary net position as a percentage of the total pension liability	83.24%	81.30%	99.91%	78.97%	79.06%	74.45%	68.32%	62.33%	68.04%	71.41%
Covered payroll***	\$ 11,825,124	\$ 11,469,453	\$ 11,203,878	\$ 10,903,755	\$ 10,404,404	\$ 9,200,180	\$ 8,818,537	\$ 8,256,100	\$ 8,074,522	\$ 7,964,149
TRS's net pension liability as a percentage of covered payroll	115.68%	128.27%	0.64%	144.88%	147.60%	203.38%	263.40%	319.42%	257.42%	223.71%

\*Includes amounts for Employer's portion of Additional Member Contributions and supplemental contributions for the ASAF and ASF Funds.

\*\*Such amounts represent the preliminary Systems' fiduciary net position and may differ from the Systems' final fiduciary net position.

\*\*\*Projected payroll at time 1:0 under previous roll-forward methodology through 2018. Actual payroll at valuation date (time = 0) beginning in 2019.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULES OF EMPLOYER CONTRIBUTIONS

Fiscal years ended June 30,  
 (In thousands)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Actuarially determined contributor	\$ 3,086,082	\$ 3,303,798	\$ 3,131,607	\$ 3,590,822	\$ 3,696,686	\$ 3,889,710	\$ 3,888,399	\$ 3,702,569	\$ 3,270,007	\$ 2,998,694
Contributions in relation to the actuarially determined contributor	3,086,082	3,303,798	3,131,607	3,590,822	3,696,686	3,889,710	3,888,399	3,702,569	3,270,007	2,998,694
Contribution deficiency (excess) <sup>1</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered payroll <sup>1</sup>	\$ 11,825,124	\$ 11,469,453	\$ 11,203,878	\$ 10,903,755	\$ 10,404,404	\$ 9,200,180	\$ 8,818,537	\$ 8,256,100	\$ 8,074,522	\$ 7,964,149
Contributions as a percentage of covered payroll	26.098%	28.805%	27.951%	32.932%	35.530%	42.279%	44.093%	44.846%	40.498%	37.652%

<sup>1</sup> Projected employee payroll at time 1.0 under previous roll-forward methodology through 2018. Actual employee payroll at valuation date (time = 0) beginning in 2019.

**Teachers' Retirement System of the City of New York**

**REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)**  
**QUALIFIED PENSION PLAN**  
**SCHEDULES OF EMPLOYER CONTRIBUTIONS**

**Note to Schedule:**

The above actuarially determined contributions were developed using a One-Year Lag Methodology, under which the actuarial valuation determines the Employer contribution for the second following fiscal year (e.g., fiscal year 2023 contributions were determined using an actuarial valuation as of June 30, 2021). The methods and assumptions used to determine the actuarially determined contributions are as follows:

	June 30, 2021	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017
	Entry age	Entry age	Entry age	Entry age	Entry age
Actuarial cost method					
Amortization method for unfunded actuarial accrued liabilities:					
Initial unfunded	Increasing dollar Level dollar	Increasing dollar Level dollar	Increasing dollar Level dollar	Increasing dollar Level dollar	Increasing dollar Level dollar
Post-2010 unfunded	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)
Remaining amortization period:					
Initial unfunded	-	-	-	-	-
2010 ERI	5 years (closed)	6 years (closed)	7 years (closed)	8 years (closed)	9 years (closed)
2011 Actuarial gain/loss	6 years (closed)	7 years (closed)	8 years (closed)	9 years (closed)	10 years (closed)
2012 Actuarial gain/loss	7 years (closed)	8 years (closed)	9 years (closed)	10 years (closed)	11 years (closed)
2013 Actuarial gain/loss	8 years (closed)	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)
2014 Actuarial gain/loss	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)
2014 Assumption change	13 years (closed)	14 years (closed)	15 years (closed)	16 years (closed)	17 years (closed)
2015 Actuarial gain/loss	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)
2016 Actuarial gain/loss	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)
2017 Actuarial gain/loss	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)
2017 ASAF method change	16 years (closed)	17 years (closed)	18 years (closed)	19 years (closed)	20 years (closed)
2017 Method change	16 years (closed)	17 years (closed)	18 years (closed)	19 years (closed)	20 years (closed)
2017 Assumption change	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	16 years (closed)
2018 Actuarial gain/loss	17 years (closed)	18 years (closed)	19 years (closed)	20 years (closed)	NA
2018 Method change	13 years (closed)	14 years (closed)	15 years (closed)	16 years (closed)	NA
2019 Actuarial gain/loss	18 years (closed)	19 years (closed)	20 years (closed)	NA	NA
2019 Assumption change	13 years (closed)	14 years (closed)	15 years (closed)	16 years (closed)	NA
2019 Method change	18 years (closed)	19 years (closed)	20 years (closed)	NA	NA
2020 Actuarial gain/loss	14 years (closed)	15 years (closed)	16 years (closed)	17 years (closed)	18 years (closed)
2020 Method Change	19 years (closed)	20 years (closed)	NA	NA	NA
2020 OWBPA	7 years (closed)	8 years (closed)	NA	NA	NA
2021 Actuarial gain/loss	15 years (closed)	NA	NA	NA	NA
2021 Method Change	2 years (closed)	NA	NA	NA	NA
2021 Plan Change	20 years (closed)	NA	NA	NA	NA
Actuarial value of assets method <sup>1</sup>	Five-year moving average of fair values with a "Market Value Restart" as of June 30, 2019	Five-year moving average of fair values with a "Market Value Restart" as of June 30, 2019	Five-year moving average of fair values with a "Market Value Restart" as of June 30, 2019	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.

<sup>1</sup> As of June 30, 2014 valuation, the AVA is constrained to be within a corridor of 80% to 120% of the fair value. As of the June 30, 2018 valuation, the AVA is determined by re-characterizing the interest credited on TDA Fixed Fund account balances as investment income instead of as a cash disbursement.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULES OF EMPLOYER CONTRIBUTIONS

Note to Schedule:

The above actuarially determined contributions were developed using a One-Year Lag Methodology, under which the actuarial valuation determines the Employer contribution for the second following fiscal year (e.g., fiscal year 2023 contributions were determined using an actuarial valuation as of June 30, 2021). The methods and assumptions used to determine the actuarially determined contributions are as follows:

	June 30, 2016		June 30, 2015		June 30, 2014		June 30, 2013		June 30, 2012	
	Entry age	Increasing dollar Level dollar	Entry age	Increasing dollar Level dollar	Entry age	Increasing dollar Level dollar	Entry age	Increasing dollar Level dollar	Entry age	Increasing dollar Level dollar
Actuarial cost method										
Amortization method for unfunded actuarial accrued liabilities:										
Initial unfunded	16 years (closed)		17 years (closed)		18 years (closed)		19 years (closed)		20 years (closed)	
Post-2010 unfunded	-		1 years (closed)		2 years (closed)		3 years (closed)		4 years (closed)	
Remaining amortization period:										
Initial unfunded	10 years (closed)		11 years (closed)		12 years (closed)		13 years (closed)		14 years (closed)	
2010 ERI	11 years (closed)		12 years (closed)		13 years (closed)		14 years (closed)		15 years (closed)	
2011 Actuarial gain/loss	12 years (closed)		13 years (closed)		14 years (closed)		15 years (closed)		NA	
2012 Actuarial gain/loss	13 years (closed)		14 years (closed)		15 years (closed)		NA		NA	
2013 Actuarial gain/loss	14 years (closed)		15 years (closed)		20 years (closed)		NA		NA	
2014 Actuarial gain/loss	18 years (closed)		19 years (closed)		NA		NA		NA	
2014 Assumption change	15 years (closed)		NA		NA		NA		NA	
2015 Actuarial gain/loss	15 years (closed)		NA		NA		NA		NA	
2016 Actuarial gain/loss	NA		NA		NA		NA		NA	
2017 Actuarial gain/loss	NA		NA		NA		NA		NA	
2017 ASAF method change	NA		NA		NA		NA		NA	
2017 Method change	NA		NA		NA		NA		NA	
2017 Assumption change	NA		NA		NA		NA		NA	
2018 Actuarial gain/loss	NA		NA		NA		NA		NA	
2018 Method change	NA		NA		NA		NA		NA	
2019 Actuarial gain/loss	NA		NA		NA		NA		NA	
2019 Assumption change	NA		NA		NA		NA		NA	
2019 Method change	NA		NA		NA		NA		NA	
2020 Actuarial gain/loss	NA		NA		NA		NA		NA	
2020 Method Change	NA		NA		NA		NA		NA	
2020 OWBPA	NA		NA		NA		NA		NA	
2021 Actuarial gain/loss	NA		NA		NA		NA		NA	
2021 Method Change	NA		NA		NA		NA		NA	
2021 Plan Change	NA		NA		NA		NA		NA	
Actuarial value of assets method <sup>1</sup>	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of fair values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	

<sup>1</sup> As of June 30, 2014 valuation, the AVA is constrained to be within a corridor of 80% to 120% of the fair value. As of the June 30, 2018 valuation, the AVA is determined by re-characterizing the interest credited on TDA Fixed Fund account balances as investment income instead of as a cash disbursement.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULES OF EMPLOYER CONTRIBUTIONS

Valuation Dates	June 30, 2021	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017
Actuarial assumptions: Assumed rate of return <sup>2</sup>	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.
Post-retirement mortality <sup>3</sup>	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019
Active service: withdrawal, death, disability, service retirement <sup>3</sup>	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019
Salary increases <sup>2</sup>	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.
Cost-of-living adjustments <sup>2</sup>	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.

<sup>2</sup> Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

<sup>3</sup> As of June 30, 2019, applies mortality improvement scale MP-2020 published by the Society of Actuaries to post-retirement mortality, active ordinary death mortality rates, and pre-commencement mortality rates for terminated vesteds. Prior to June 30, 2019, MP-2018 was applied to post-retirement mortality. Prior to June 30, 2017, MP-2015 was applied to post-retirement mortality. Prior to June 30, 2014, Scale AA was applied to post-retirement mortality.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULES OF EMPLOYER CONTRIBUTIONS

Valuation Dates	June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012
Actuarial assumptions: Assumed rate of return <sup>2</sup>	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.
Post-retirement mortality <sup>3</sup>	Tables adopted by Retirement Board during Fiscal Year 2016	Tables adopted by Retirement Board during Fiscal Year 2016	Tables adopted by Retirement Board during Fiscal Year 2016	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012
Active service: withdrawal, death, disability, service retirement <sup>3</sup>	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012
Salary increases <sup>2</sup>	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.
Cost-of-living adjustments <sup>2</sup>	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.

<sup>2</sup> Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

<sup>3</sup> As of June 30, 2019, applies mortality improvement scale MP-2020 published by the Society of Actuaries to post-retirement mortality, active ordinary death mortality rates, and pre-commencement mortality rates for terminated vesteds. Prior to June 30, 2019, MP-2018 was applied to post-retirement mortality. Prior to June 30, 2017, MP-2015 was applied to post-retirement mortality. Prior to June 30, 2014, Scale AA was applied to post-retirement mortality.



**Teachers' Retirement System of the City of New York**  
**REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)**  
**QUALIFIED PENSION PLAN**  
**SCHEDULE OF INVESTMENT RETURNS**

The following table displays the annual money-weighted rate of return, net of investment expense, for TRSNYC Pension Fund investments for each of the past ten fiscal years:

<u>Fiscal Year Ended</u>	<u>Money- Weighted Rate of Return</u>
June 30, 2023	7.72%
June 30, 2022	(9.72)%
June 30, 2021	24.80%
June 30, 2020	4.92%
June 30, 2019	7.50%
June 30, 2018	8.14%
June 30, 2017	12.50%
June 30, 2016	1.66%
June 30, 2015	2.81%
June 30, 2014	17.60%

See Report of Independent Certified Public Accountants.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

ADDITIONAL SUPPLEMENTARY INFORMATION  
SCHEDULE OF ADMINISTRATIVE EXPENSES

SCHEDULE 4

Year Ended June 30, 2023

	Total	QPP	TDA
<b>PERSONNEL SERVICES</b>			
Staff Salaries	\$34,327,239	\$28,017,343	\$6,309,896
Social Security	2,060,309	1,681,591	378,718
Insurance (Health)	6,475,970	5,285,583	1,190,387
Welfare Benefit Fund	1,333,539	1,088,413	245,126
TOTAL PERSONNEL SERVICES	44,197,057	36,072,930	8,124,127
<b>PROFESSIONAL SERVICES</b>			
Data Processing Support and Licenses	5,851,911	4,776,236	1,075,675
Temporary and Consultant Staffing	5,472,447	4,466,524	1,005,923
Outside Professional Services	1,048,672	855,909	192,763
TOTAL PROFESSIONAL SERVICES	12,373,030	10,098,669	2,274,361
<b>MODERNIZATION AND DOE CLASS EXPENSES</b>			
Consultants and Temporary Costs	10,060,096	7,571,117	2,488,979
IT Vendor Development Costs	3,682,512	2,809,002	873,510
QA Vendor Non-IT Costs	5,079,714	3,904,372	1,175,342
Equipment Costs	64,017	48,187	15,830
Other Expenses	20,573	15,831	4,742
TOTAL MODERNIZATION AND DOE CLASS	18,906,912	14,348,509	4,558,403
<b>RENTALS</b>			
Office Space Lease	9,343,212	7,625,780	1,717,432
GASB 87 Lease adjustment	3,578,404	2,876,698	701,706
Real Estate Taxes & Operating Expenses	475,475	388,075	87,400
Equipment Leasing	97,527	79,600	17,927
TOTAL RENTALS	13,494,618	10,970,153	2,524,465
<b>COMMUNICATION</b>			
Telephone	82,617	67,431	15,186
Postage	777,625	634,685	142,940
Local Travel Expense*	41,320	33,725	7,595
Non-Local Travel Expense**	91,504	74,684	16,820
TOTAL COMMUNICATION	993,066	810,525	182,541
<b>OTHER OPERATING EXPENSES</b>			
Utilities	290,226	236,878	53,348
Supplies and Materials	135,561	110,643	24,918
Maintenance, Repairs, and Services	882,577	720,345	162,232
Office Equipment and Furniture	72,679	59,319	13,360
Storage	85,779	70,013	15,766
Printing	221,133	180,485	40,648
Training Programs	97,081	79,236	17,845
Dues and Subscriptions	32,088	26,190	5,898
TOTAL OTHER OPERATING EXPENSES	1,817,124	1,483,109	334,015
<b>TOTAL ADMINISTRATIVE EXPENSES***</b>	<b>\$91,781,807</b>	<b>\$73,783,895</b>	<b>\$17,997,912</b>

\* Total TRS Local Travel Expense includes Courier \$32,021, Meals & Refreshments \$8,122, and Conferences \$1,177.

\*\* Total TRS Non-Local Travel Expense includes Hotels & Meals \$41,387, Travel Fare \$23,698, and Conferences \$26,419.

\*\*\* The QPP Fixed Return Fund's administrative expense amounted to \$50,931,613, of which the modernization portion was \$1,653,312, and DOE class action expense was \$3,638,733. The Variable Return Fund's administrative expense amounted to \$36,136,641, of which the modernization portions attributable to the QPP and TDA were \$2,891,990 and \$1,361,492, respectively, and the DOE class action expense portions attributable to the QPP and TDA were \$6,164,474 and \$3,196,911, respectively. Administrative expenses offset by loan service charge revenues amounted to \$1,135,149; portions attributable to the QPP and TDA were \$309,620 and \$825,529, respectively. In addition, total administrative expenses include the \$3,578,404 GASB 87 lease adjustment.

The schedule shows total expenses paid by TRS. Other administrative expenses of \$15,101,819 were paid on TRS' behalf by other City agencies under Regulation 85 of the New York State Superintendent of Insurance Regulations.

See Note 8 of the Financial Statements for Administrative Expenses.

See Report of Independent Certified Public Accountants.

**ADDITIONAL SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF INVESTMENT EXPENSES AND SERVICES (QPP & TDA)**  
Year Ended June 30, 2023

<b>INVESTMENT CATEGORY</b>	<b>ASSETS UNDER MANAGEMENT</b>	<b>INVESTMENT EXPENSES AND SERVICES</b>
Pension Fund	\$95,919,029,089	\$517,094,195
Diversified Equity and Int'l Equity Funds	15,969,130,227	22,318,581
Balanced Fund	565,954,493	457
International Equity Fund	244,163,115	946,030
Sustainable Equity Fund	569,188,007	1,716,544
U.S. Equity Index Fund	142,013,220	1,714
International Equity Index Fund	23,626,315	450
<b>OTHER INVESTMENT SERVICES</b>		
NYC Office of Comptroller (Fixed-Return Fund)		4,431,253
Consultant		3,545,848
Legal		1,080,936
Other Services		1,196,283
<b>Provision for Expense Reduction</b>		(22,235,701)
	<b>\$113,433,104,466*</b>	<b>\$530,096,589</b>

*\*Excludes \$5,052,139,375 in securities lending*





# Investment Section





## REPORT ON INVESTMENT ACTIVITY

The below report on investment activity was prepared by Rocatton Investment Advisors. Fund summaries of the System's Investment Options follow it. After the reports are disclosures of sector returns, asset class allocation, investment management and other service fees, and bond and equity holdings. The disclosures supplement the investment information of the Financial Section.

### **Prepared by Rocatton Investment Advisors, LLC, Investment Consultant to the Teachers' Retirement System of the City of New York**

As of June 30, 2023, TRS offered seven investment program options to its membership: the Fixed Return Fund, the Diversified Equity Fund, the Balanced Fund, the International Equity Fund, the Sustainable Equity Fund, the U.S. Equity Index Fund, and the International Equity Index Fund. State Street and JP Morgan Chase are the custodians of the assets of these investment programs. The custodian calculates the return information using time-weighted compound return. The structure of each of these programs differs, depending upon its investment objective. These seven programs and their objectives are described below.

The pooled New York City Pension Fund includes a) all funds that Tier I/II members invested in the Fixed Return Fund and b) Employer Contribution assets for Tier I/II members c) all Tier III/IV/VI QPP funds d) all TDA funds invested in the Fixed Return Fund. The Fixed Return Fund currently provides Tier I/II participants with an 8.25% return. Tier III/IV/VI members are credited 5% in their QPP accounts. UFT members and non-UFT members with TDA funds invested in the Fixed Return Fund are provided with 7.0% and 8.25% returns, respectively. The combined QPP and TDA Fixed Return Funds assets totaled \$95.9 billion as of June 30, 2023. The overall Pension Fund had a net-of-fee return of 7.76% for the fiscal year ending June 30, 2023. As of June 30, 2023, the Fund had 28% U.S. equity investments, 18% non-U.S. equity investments, 20% in alternative investments, 34% fixed income investments and short-term investments. The Fund's long-term asset allocation policy is based on the Fund's long-term investment horizon of more than 20 years. The investment structure has a significant emphasis on risk control. For example, as of June 30, 2023, approximately 91% of U.S. equity assets were invested in indexed or risk-controlled strategies. This emphasis on indexed and risk-controlled strategies also enables the program to control costs more effectively. The Fund's fixed income holdings are primarily high-quality U.S. securities with smaller allocations to sectors such as enhanced yield.

The Diversified Equity Fund's objective is to achieve a rate of return comparable to the broad equity market. As of June 30, 2023, the Diversified Equity Fund, including both QPP and TDA assets, had \$16.0 billion in assets and a net-of-fee return of 18.16% for the fiscal year ending June 30, 2023. As of June 30, 2023, this portfolio's target structure is a mixture of U.S. equities (77%) and non-U.S. equities (23%). The diversification of this portfolio beyond U.S. equities is intended to broaden diversification. Again, risk control and cost-effectiveness are a very important focus of the investment structure. For example, as of June 30, 2023, approximately 71% of the assets within the Diversified Equity Fund were invested in indexed strategies.

The Balanced Fund's objective is to seek current income and some capital appreciation. The Balanced Fund invests in both stocks and bonds and targets a conservative mix of approximately 70% bonds and 30% stocks. The Fund's bond allocation is passively managed and includes allocations to short-term U.S. Treasuries, Agencies, short-term investment-grade Corporate Bonds, and some foreign securities. The Fund's stock allocation is passively managed and is composed of U.S. and non-U.S. companies located in developed and emerging markets, traded on a variety of stock exchanges, and denominated in a variety of currencies around the world. As of June 30, 2023, the combined QPP and TDA Balanced Funds' assets totaled \$566.0 million, and the Fund earned a net-of-fee return of 5.08% for the fiscal year ending June 30, 2023.

The International Equity Fund invests primarily in the stocks of non-U.S. companies located in both developed and emerging markets. The objective of this fund is to provide a return comparable to the return of the non-U.S. developed equity markets over a full market cycle. As of June 30, 2023, the combined QPP and TDA International Equity Funds' assets totaled \$244.2 million. For the fiscal year ending June 30, 2023, the International Equity Fund returned 16.43%, net of fees.

The Sustainable Equity Fund invests primarily in stocks of large- and mid-cap U.S. and non-U.S. companies that, in the manager's view, effectively implement sustainable business strategies to drive their prospects for future earnings growth. The objective of this fund is to provide a rate of return comparable to the broad equity market

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

while focusing on sustainability characteristics including environmental, social, and governance (ESG) factors. As of June 30, 2023, the combined QPP and TDA Sustainable Equity Funds' assets totaled \$569.2 million. For the fiscal year ending June 30, 2023, the Socially Responsive Equity Fund returned 21.49%, net of fees.

The U.S. Equity Index Fund invests primarily in stocks of large-, mid-, and small-cap companies in the U.S. The objective of this fund is to track the total return of the broad U.S. equity market, including large-, mid-, and small-capitalization stocks. As of June 30, 2023, the combined QPP and TDA U.S. Equity Index Funds' assets totaled \$142.0 million. For the fiscal year ending June 30, 2023, the U.S. Equity Index returned 18.81%, net of fees.

The International Equity Index Fund invests primarily in stocks of large-, mid-, and small-cap companies located in both developed and emerging markets. The objective of this fund is to closely track the total return of the broad non-U.S. equity markets, including developed and emerging markets. As of June 30, 2023, the combined QPP and TDA International Equity Index Funds' assets totaled \$23.6 million. For the fiscal year ending June 30, 2023, the International Equity Index returned 12.01%, net of fees.

The investment strategies of these investment managers are monitored periodically for consistency with TRS' overall investment objectives.

### ECONOMIC REVIEW

Over course of the 12 months ending June 30, 2023, equity markets rallied strongly despite a more hawkish stance among central banks. By the end of June 2023, many believed that markets were pricing in a lower chance of recession in the subsequent 12 months. By the end of June 2023, lingering concerns from earlier in calendar year 2023 related to the U.S. and European banking sectors subsided. The FDIC and the Federal Reserve managed to contain the initial banking turmoil in March 2023, but U.S. regional banks remained vulnerable thereafter.

During the 12-month period ending June 30, 2023, interest rate volatility remained high in the U.S. There was a notable increase in short-term U.S. interest rates as the Federal Reserve took action to raise rates and curb inflation.

Global growth remained mixed to end the 12-month period ending June 30, 2023, as the U.S. and Japanese data showed resilience while growth momentum in China and Europe appeared to be losing steam. In China, the post-reopening recovery fizzled out, due in part to pressure from a weak property sector. In summary, the much-anticipated weakness in U.S. growth and U.S. inflation never arrived. Concerns related to U.S. regional banks did not spill over to other parts of the economy, and the U.S. debt ceiling crisis was averted.

The U.S. economy and growth remained resilient, with strong macroeconomic data and improving earnings prospects, despite the headwinds from elevated inflation, tightening credit conditions, and a rapid rise in interest rates. This solid momentum provided hope that the U.S. economy could experience a moderate slowdown rather than a full-blown recession.

### U.S. MARKETS REVIEW

The S&P 500 posted positive results, returning 19.59% for the one-year period ending June 30, 2023. The broad U.S. equity market, as measured by the Russell 3000 Index, returned 18.95% over the same one-year period. During the 12 months ending June 30, 2023, growth stocks generally outperformed value stocks, and larger-cap stocks outperformed smaller-cap stocks.

Given the rise in interest rates during the period, the Bloomberg U.S. Aggregate Bond Index, a broad index of U.S. investment grade bonds, returned -0.94% for the year ending June 30, 2023. During that period, U.S. investment grade corporate bonds returned 1.55%.

### INTERNATIONAL MARKETS REVIEW

Outside of the U.S., developed international markets also produced strong positive returns in U.S. dollar terms, with the MSCI EAFE Index returning 18.77%. While emerging markets lagged the U.S. and non-U.S. developed markets, the MSCI EM Index still produced positive results, returning 1.75% in U.S. dollar terms during the one-year period ending June 30, 2023.

#### ***Rocaton Investment Advisors, LLC***

20 Glover Avenue  
Norwalk, Connecticut 06850

*Performance information for MSCI non-U.S. equity indices represents Total Return Net Dividends in U.S. Dollar Terms.*



## INVESTMENT OPTIONS

Below is a depiction of the investment programs in the QPP and the TDA Program available to members. The programs' portfolios are structured differently to allow members to diversify their investments. Please see pages 93-97 for detailed descriptions of the investment programs.

PENSION FUND	DIVERSIFIED EQUITY FUND	BALANCED FUND	
(Member Contributions, Pension Reserve Funds & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	
Tiers I/II QPP funds in the Fixed Return Fund	Tiers I/II QPP funds in the Diversified Equity Fund	Tiers I/II QPP funds in the Balanced Fund	
+			
All Tiers III/IV/VI QPP Funds	+	+	
+			
All Tiers' TDA funds in the Fixed Return Fund	All Tiers' TDA funds in the Diversified Equity Fund	All Tiers' TDA funds in the Balanced Fund	

INTERNATIONAL EQUITY FUND	SUSTAINABLE EQUITY FUND	U.S. EQUITY INDEX FUND	INTERNATIONAL EQUITY INDEX FUND
(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)
Tiers I/II QPP funds in the International Equity Fund	Tiers I/II QPP funds in the Sustainable Equity Fund	Tiers I/II QPP funds in the U.S. Equity Index Fund	Tiers I/II QPP funds in the International Equity Index Fund
+	+	+	+
All Tiers' TDA funds in the International Equity Fund	All Tiers' TDA funds in the Sustainable Equity Fund	All Tiers' TDA funds in the U.S. Equity Index Fund	All Tiers' TDA funds in the International Equity Index Fund

**Note:** Members' QPP accounts receive additional contributions from their employer: "Pension Reserve" funds, which are invested in the Pension Fund, are provided to all members on a statutory basis consistent with generally accepted actuarial principles; actuarial variations are performed annually as of June 30. "Increased-Take-Home Pay" (ITHP) funds, provided by the City of New York to Tier I and Tier II members only, are invested according to member designation in any combination of the seven investment programs.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK**

The table below compares accumulations as of June 30, 2023, based on assumed contributions of \$100.00 per month into each of the Fixed Return, Diversified Equity, Balanced, International Equity, Sustainable Equity, U.S. Equity Index, and International Equity Index Funds.

**10-YEAR COMPARISON OF ACCUMULATIONS  
IN TRS' INVESTMENT PROGRAMS  
As of June 30, 2023**

<b>MONTHS OF PARTICIPATION</b>	<b>12</b>	<b>24</b>	<b>36</b>	<b>48</b>	<b>60</b>	<b>72</b>	<b>84</b>	<b>96</b>	<b>108</b>	<b>120</b>
<b>Fixed Return Fund (TDA/UFT)<sup>1</sup></b>	\$1,239	\$2,564	\$3,982	\$5,499	\$7,122	\$8,859	\$10,718	\$12,707	\$14,835	\$17,112
<b>Fixed Return Fund (All others)<sup>1</sup></b>	\$1,245	\$2,594	\$4,053	\$5,633	\$7,343	\$9,194	\$11,198	\$13,367	\$15,715	\$18,257
<b>Diversified Equity Fund<sup>2</sup></b>	\$1,343	\$2,525	\$3,936	\$5,660	\$7,488	\$9,410	\$11,671	\$14,180	\$16,669	\$19,490
<b>Balanced Fund<sup>3</sup></b>	\$1,246	\$2,409	\$3,623	\$4,947	\$6,344	N/A	N/A	N/A	N/A	N/A
<b>International Equity Fund<sup>4</sup></b>	\$1,338	\$2,499	\$3,791	\$5,313	\$6,868	\$8,374	\$10,185	\$12,129	\$13,964	\$15,871
<b>Sustainable Equity Fund<sup>5</sup></b>	\$1,391	\$2,550	\$3,973	\$5,912	\$8,017	\$10,253	\$12,841	\$15,736	\$18,649	\$21,977
<b>U.S. Equity Index Fund<sup>6</sup></b>	\$1,348	\$2,566	\$4,071	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>International Equity Index Fund<sup>7</sup></b>	\$1,307	\$2,456	\$3,734	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<sup>1</sup> Fixed Return Fund

QPP: Tiers I/II members are credited with 8.25% annually on QPP investments in the Fixed Return Fund; this rate has been in effect since July 1, 1988.

TDA: Members who are represented by the United Federation of Teachers (UFT) are credited with 7% annually on TDA investments. This rate has been in effect since December 11, 2009; the previous rate was 8.25%. Members who are not represented by the UFT are credited with 8.25% annually on TDA investments in the Fund; this rate has been in effect since July 1, 1988. The numbers in the chart represent the accumulation for a UFT member.

<sup>2</sup> Based on July 2023 unit value of \$120.740

<sup>3</sup> Based on July 2023 unit value of \$15.528

<sup>4</sup> Based on July 2023 unit value of \$11.328

<sup>5</sup> Based on July 2023 unit value of \$25.561

<sup>6</sup> Based on July 2023 unit value of \$14.624

<sup>7</sup> Based on July 2023 unit value of \$11.284

**PENSION FUND**  
**Fund Summary**  
 Fiscal Year 2023

**Return: 7.76%**

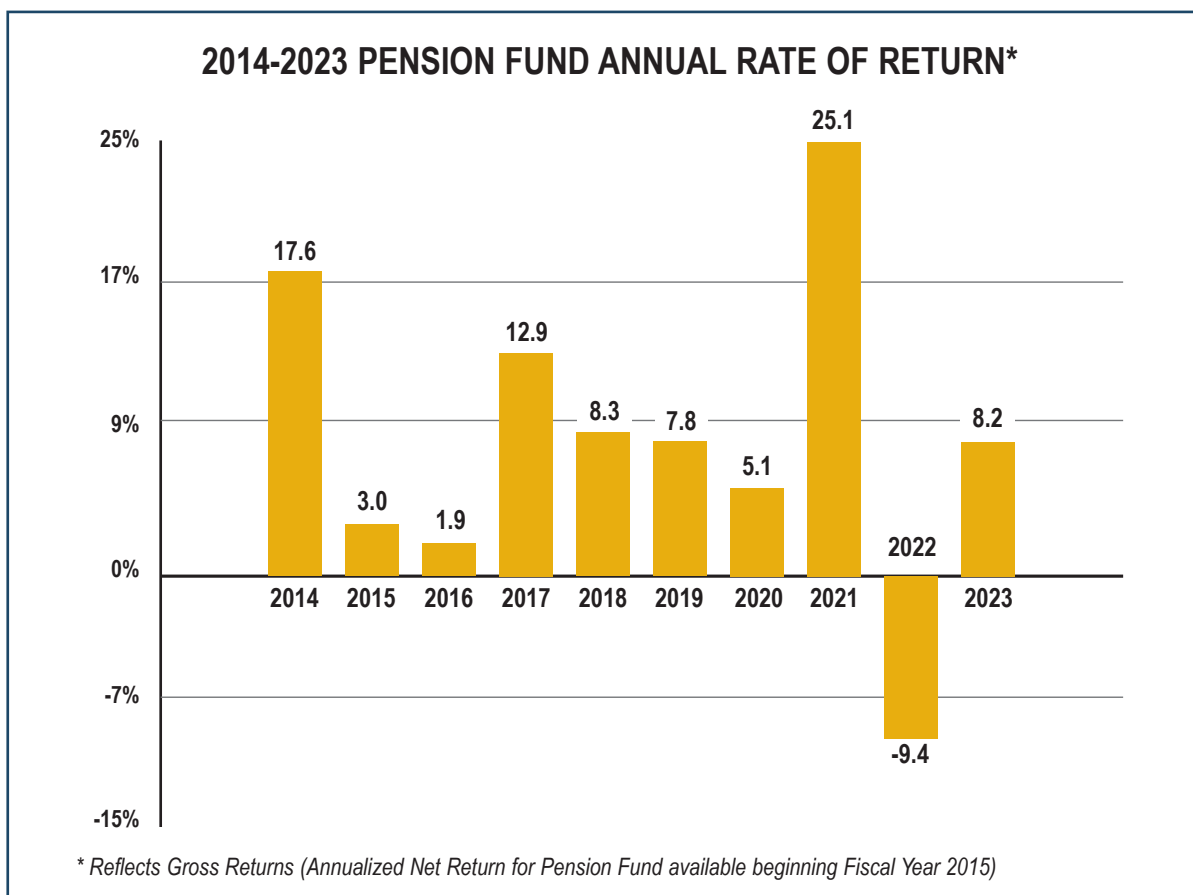
**Total Investments: \$95.9 Billion**

During Fiscal Year 2023, the Pension Fund’s portfolio, consisting primarily of equities and fixed-income investments, yielded a net return of 7.76% and a gross return of 8.24%. The 8.24% gross return was an increase from the -9.77% return for Fiscal Year 2022.

an annual rate of return that is set by the New York State Legislature in accordance with applicable laws. The combined QPP and TDA Fixed Return Fund assets totaled \$95.9 billion as of June 30, 2023.

The Pension Fund includes a) all funds that Tier I/II members invested in the Fixed Return Fund; b) Employer Contribution assets for Tier I/II members; c) all Tier III/IV/VI Qualified Pension Plan (QPP) funds; and d) all Tax-Deferred Annuity (TDA) Program funds invested in the Fixed Return Fund. The Fixed Return Fund provides

The Comptroller of the City of New York invests the Pension Fund’s holdings in a diversified portfolio, as authorized by the Teachers’ Retirement Board. This portfolio consists of U.S. and international equities and fixed-income instruments, with smaller allocations to private equity and real estate investments.



## DIVERSIFIED EQUITY FUND

### Fund Summary

Fiscal Year 2023

**Return: 18.16%**

**Total Investments: \$16.0 Billion**

For the 12-month period ending June 30, 2023, the Global Market Composite Benchmark, which represents a passive implementation of the underlying U.S. and Non-U.S. equity market opportunity set of the Diversified Equity Fund, returned 17.58%. As of January 1, 2022, the Global Market Composite Benchmark is comprised of 77% Russell 3000 Index and 23% MSCI ACWI ex-US IMI Index and includes no fees. Between July 1, 2021 and January 1, 2022, the Global Market Composite Benchmark was comprised of 80% Russell 3000 Index and 20% MSCI ACWI ex-US IMI Index. Prior to July 2021, the Composite Benchmark was the Russell 3000 Index. For the 12-month period ending June 30, 2023, the Diversified Equity Fund returned 18.16%, after fees. The Fund invests in a diversified blend of investment strategies that historically have made the Diversified Equity Fund less volatile over long time periods than the overall U.S. equity market. The Hybrid Benchmark, which includes no fees, is constructed based upon a passive reflection of the Diversified Equity Fund's target asset allocation among domestic stocks and international equities. As of June 30, 2023, the Hybrid Benchmark was 65% Russell 3000 Index, 23% International Composite Benchmark, and 12% Active US Equity Composite benchmark. Over the 12-month period ending June 30, 2023, the Diversified Equity Fund outperformed the Hybrid Benchmark's return of 17.67%.

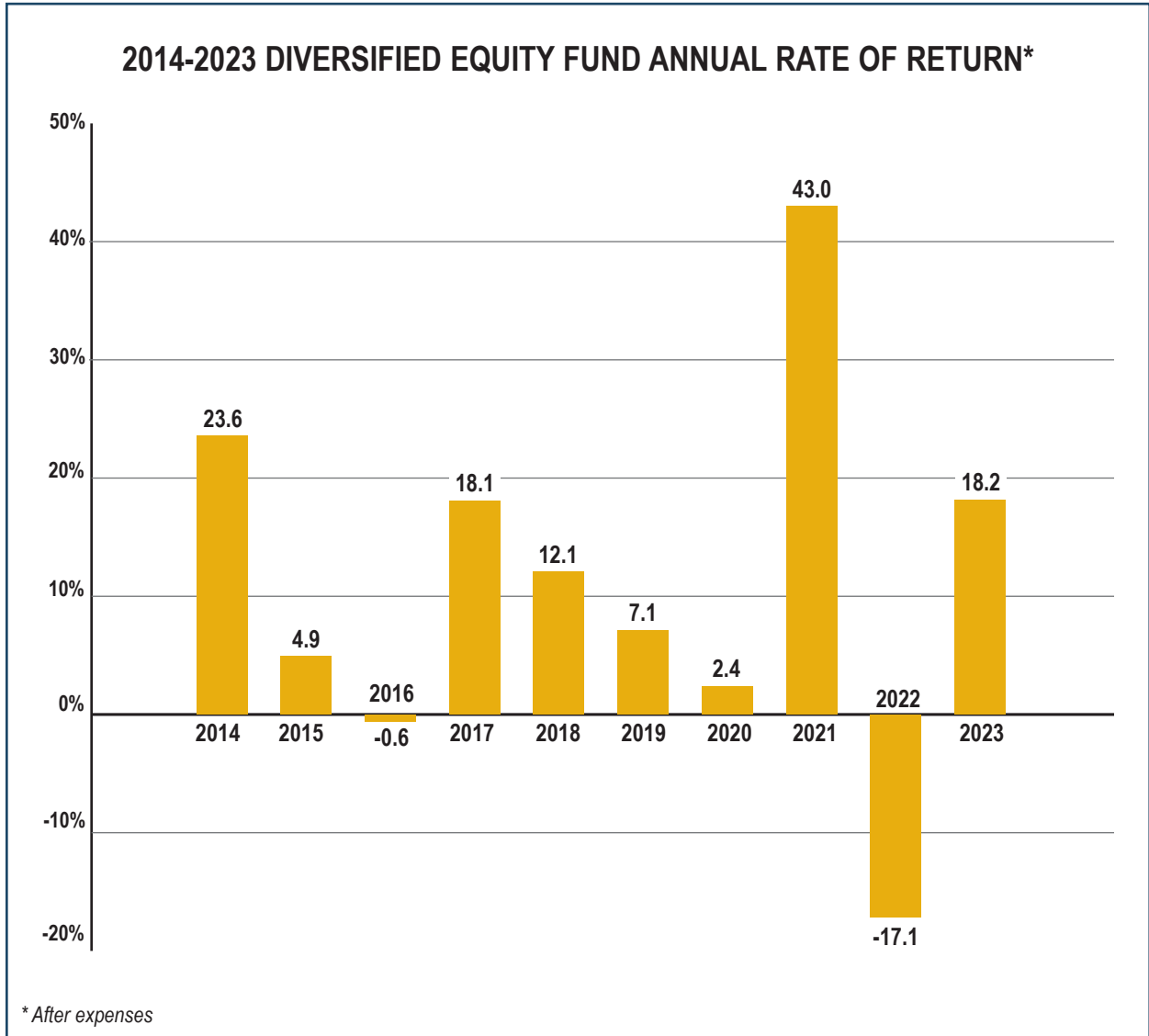
For the three-year period ending June 30, 2023, the Diversified Equity Fund returned 11.88% on an annualized basis after fees, trailing the Global

Market Composite Benchmark's annualized return of 12.95% and the Hybrid Benchmark's annualized returns of 11.92% over the same period. For the five-year period ending June 30, 2023, the Diversified Equity Fund returned 8.97%, annualized after fees, behind the Global Market Composite Benchmark's annualized return of 10.84% and the Hybrid Benchmark's annualized returns of 9.51%.

As of June 30, 2023, approximately 77% of the Diversified Equity Fund's portfolio was invested in the U.S. common stock market. The Diversified Equity Fund's portfolio also contained approximately 23% in international stocks as of the fiscal year-end. The international stock allocations contribute to portfolio diversification.

The Diversified Equity Fund utilizes several different investment strategies managed by professional money management firms. These strategies are classified into the component sectors described here:

- The Passive Core (or index) sector is comprised of one index mandate.
- The Active Domestic Equity sector is comprised of strategies focused on particular market capitalization ranges and investment styles.
- The International Equity sector is comprised of strategies focused on particular market capitalization ranges and investment styles across developed and emerging markets.



## BALANCED FUND

### Fund Summary

Fiscal Year 2023

**Return: 5.08%**

**Total Investments: \$566.0 Million**

The Balanced Fund has targets of 70% U.S. short-term fixed income and 30% passive world equity. The Fund aims to passively track its benchmark, which is 70% Bloomberg U.S. Govt/Credit 1-5 Year Float Adjusted Index and 30% FTSE Global All Cap Index. For the one-year period ending June 30, 2023,

the Fund returned 5.08%, after fees, compared with the Balanced Fund Composite Benchmark return of 5.12%. For the three-year period ending June 30, 2023, the Balanced Fund returned 2.32%, annualized after fees, versus its benchmark return of 2.41%.

## INTERNATIONAL EQUITY FUND

### Fund Summary

Fiscal Year 2023

**Return: 16.43%**

**Total Investments: \$244.2 Million**

As of June 30, 2023, the International Equity Fund was primarily comprised of a mix of active and passive management, implemented by one passive and 10 active non-U.S. equity managers, which invest primarily in the stocks of non-U.S. companies located in developed and emerging markets. For the one-year period ending June 30, 2023, the International Equity Fund returned 16.43%, after fees, outperforming the International Composite Benchmark, which returned 13.29%. For the three-year period ending June 30, 2023,

the International Equity Fund returned 8.27%, after fees, outperforming the benchmark return of 7.08%. Over the longer five-year period ending June 30, 2023, the International Equity Fund has returned 4.75%, after fees, outperforming the benchmark return of 3.61%. The total return of this option reflects performance of the underlying managers as well as the impact of cash flows into and out of the Fund.

**SUSTAINABLE EQUITY FUND****Fund Summary**

Fiscal Year 2023

**Return: 21.49%****Total Investments: \$569.2 Million**

The Sustainable Equity Fund invests in the common stock of large- and mid-cap U.S. companies that, in the manager's view, effectively implement sustainable business strategies to drive their prospects for future earnings growth. For the one-year period ending June 30, 2023, the Sustainable Equity Fund returned 21.49%, after fees, versus the Sustainable Fund Composite Benchmark's return of 27.11%. The Sustainable Fund Composite Benchmark is comprised of the S&P 500 Index through September 30, 2019, and the Russell 1000 Growth Index thereafter. For

the three-year period ending June 30, 2023, the Sustainable Equity Fund returned 11.24%, after fees, underperforming the Sustainable Fund Composite Benchmark return of 13.73% for the same period. Over the longer five-year period ending June 30, 2023, the Sustainable Equity Fund has also trailed the benchmark, returning 11.92%, after fees, against the benchmark return of 14.95%. The total return of this option reflects performance of the underlying manager as well as the impact of cash flows into and out of the Fund.

**U.S. EQUITY INDEX FUND****Fund Summary**

Fiscal Year 2023

**Return: 18.81%****Total Investments: \$142.0 Million**

The U.S. Equity Index Fund was added to the Passport Funds in January 2020. The fund tracks the Dow Jones U.S. Total Stock Market Index, which represents the broad U.S. equity market excluding the smallest and least liquid stocks. For the one-year period ending June 30, 2023, the U.S. Equity Index

Fund returned 18.81%, after fees, versus the benchmark return of 18.90% for the same period. The total return of this option reflects performance of the underlying manager as well as the impact of cash flows into and out of the Fund.

**INTERNATIONAL EQUITY INDEX FUND****Fund Summary**

Fiscal Year 2023

**Return: 12.01%****Total Investments: \$23.6 Million**

The International Equity Index Fund was added to the Passport Funds in January 2020. The objective of the fund is to track the MSCI ACWI ex-US IMI Net Index, which includes both non-U.S. developed and emerging markets. For the one-year period ending June 30, 2023, the International Equity Index Fund

returned 12.01%, after fees, versus the index return of 12.47% for the same period. The total return of this option reflects performance of the underlying manager as well as the impact of cash flows into and out of the Fund.

**ANNUALIZED INVESTMENT RESULTS<sup>1</sup>**

As of June 30, 2023

	Current Year 2023	3 Year	Annualized 5 Year	10 Year
<b>TRS Pension Fund<sup>2</sup></b>	8.24%	7.06%	6.81%	7.69%
Benchmark: Policy Index <sup>3</sup>	6.81%	6.22%	6.34%	7.44%
<b>TRS Diversified Equity Fund</b>	18.16%	11.88%	8.97%	10.11%
Hybrid Benchmark <sup>4</sup>	17.67%	11.92%	9.51%	10.76%
Global Market Composite Benchmark <sup>5</sup>	17.58%	12.95%	10.84%	12.06%
<b>TRS Balanced Fund</b>	5.08%	2.32%	3.28%	N/A
Benchmark: Custom Benchmark <sup>6</sup>	5.12%	2.41%	3.54%	3.70%
<b>TRS International Equity Fund</b>	16.43%	8.27%	4.75%	5.96%
Benchmark: International Equity Composite Benchmark <sup>7</sup>	13.29%	7.08%	3.61%	5.52%
<b>TRS Sustainable Equity Fund</b>	21.49%	11.24%	11.92%	11.97%
Benchmark: Sustainable Fund Composite Benchmark <sup>8</sup>	27.11%	13.73%	14.95%	14.18%
<b>TRS U.S. Equity Index Fund<sup>9</sup></b>	18.81%	14.98%	N/A	N/A
Benchmark: Dow Jones U.S. Total Stock Market Index	18.90%	13.74%	11.26%	12.24%
<b>TRS International Equity Index Fund<sup>10</sup></b>	12.01%	7.72%	N/A	N/A
Benchmark: MSCI ACWI ex-US IMI Net Index	12.47%	7.33%	3.38%	4.88%

1 Performance calculations reflect time-weighted compound returns. Chart reflects TRS Pension Fund's gross returns. Investment results of variable-return funds are net of operational fees (advisory and custody) and administrative expenses.

2 Average crediting rates for the Fixed Annuity Program for the specified period. These rates are set by the New York State Legislature. QPP: Tier I/II members are credited with 8.25% annually on QPP investments. TDA: Members who are represented by the United Federation of Teachers (UFT) are credited with 7% annually on TDA investments. Members who are not represented by the UFT are credited with 8.25% annually on TDA investments in the Fund.

3 The "Policy Index" is a custom benchmark representing the weighted average return of the weighted benchmark indexes for each major investment program within the TRS Pension Fund. For the weights of the benchmark indexes, see the MD&A of the Financial Section.

4 The Hybrid Benchmark is rebalanced monthly to the Fund's target weights of its underlying composites, which are 65% Russell 3000 / 23% International Composite Benchmark / 12% Active US Equity Composite Benchmark.

5 The Global Market Composite Benchmark is 77% Russell 3000 Index and 23% MSCI ACWI ex-US IMI Index as of January 1, 2022. Prior to July 1, 2021, the performance history reflects the Russell 3000 Index.

6 The Balanced Fund Composite Benchmark return is composed of 70% Bloomberg Barclays U.S. Government / Credit 1-5 Year Float Adjusted Index and 30% FTSE Global All Cap Index.

7 The International Equity Composite Benchmark reflects the underlying strategy benchmarks at target and is currently comprised of 60% MSCI EAFE / 25% MSCI Emerging Markets Index / 11% MSCI ACWI ex USA Small Cap Index / 4% S&P Developed ex US Small Cap Index. These weights have changed periodically over time with the strategy targets. Prior to January 2022, the weights were 63% MSCI EAFE / 22% MSCI Emerging Markets Index / 11% MSCI ACWI ex USA Small Cap Index / 4% S&P Developed ex US Small Cap Index.

8 The Sustainable Fund Composite Benchmark was the S&P 500 Index through September 30, 2019, and the Russell 1000 Growth Index thereafter.

9 The U.S. Equity Index Fund has existed since January 1, 2020. Performance of the Fund's benchmark is representative of how the Fund would have performed prior to Fund inception; this is because the Fund is passively managed. Any difference between the returns of the Fund and that of its underlying mutual fund is due to the timing of cash flows.

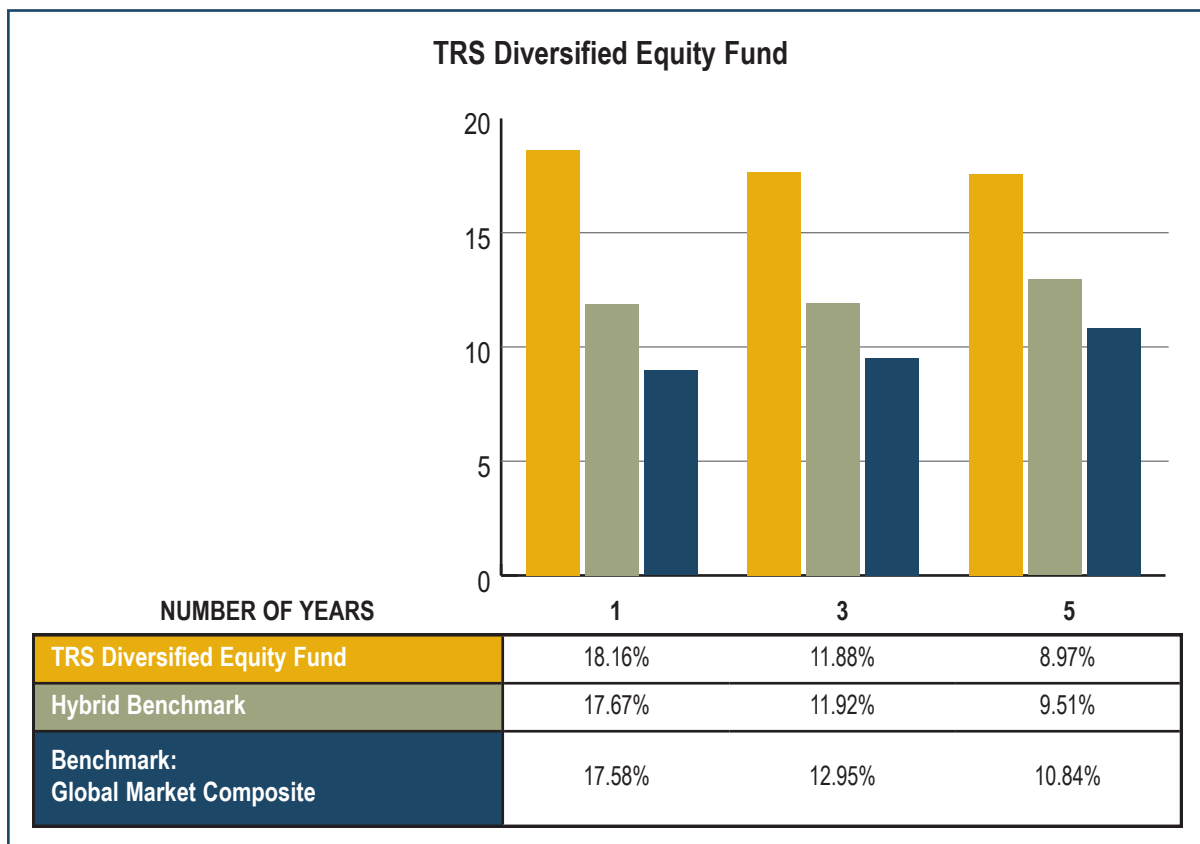
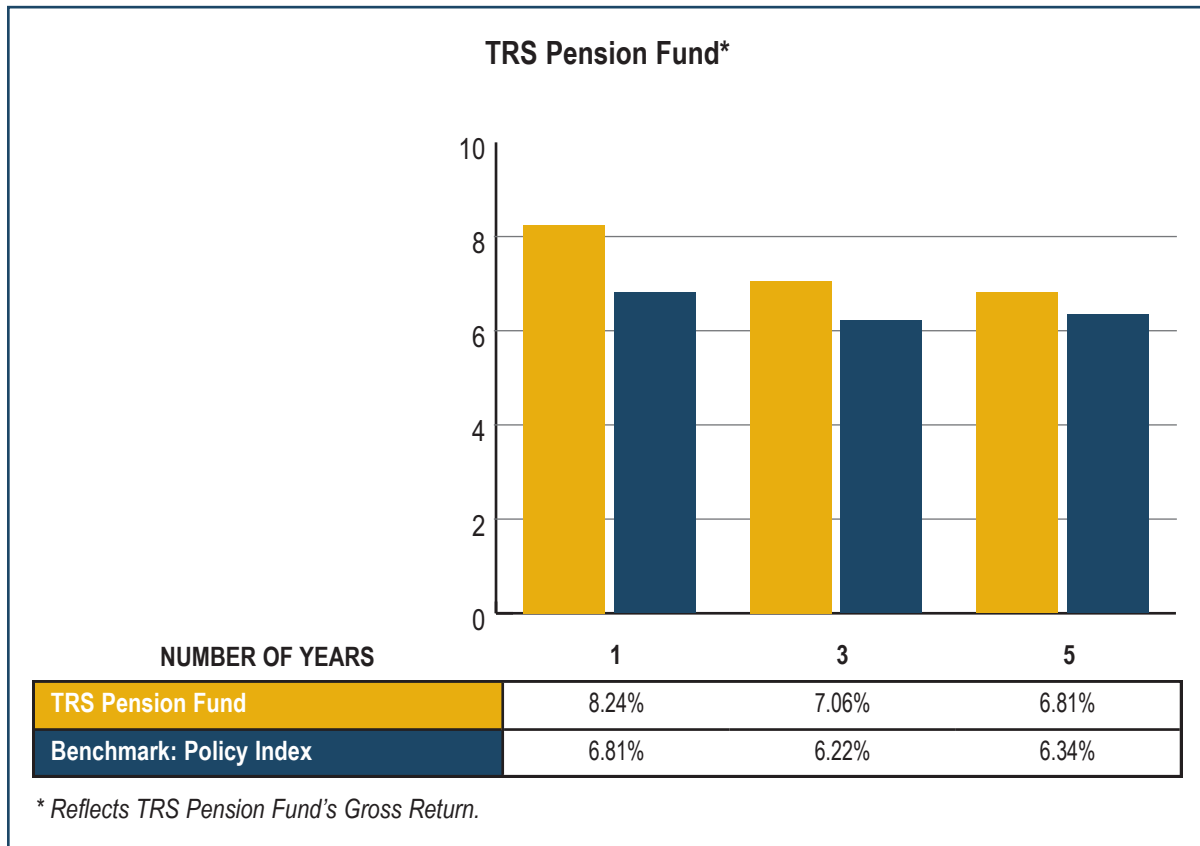
10 The International Equity Index Fund has existed since January 1, 2020. Performance of the Fund's benchmark is representative of how the Fund would have performed prior to Fund inception; this is because the Fund is passively managed. Any difference between the returns of the Fund and that of its underlying mutual fund is due to the timing of cash flows.

The above information has been gathered from reliable sources, but TRS can only take responsibility for the accuracy of the information concerning its own investment programs.



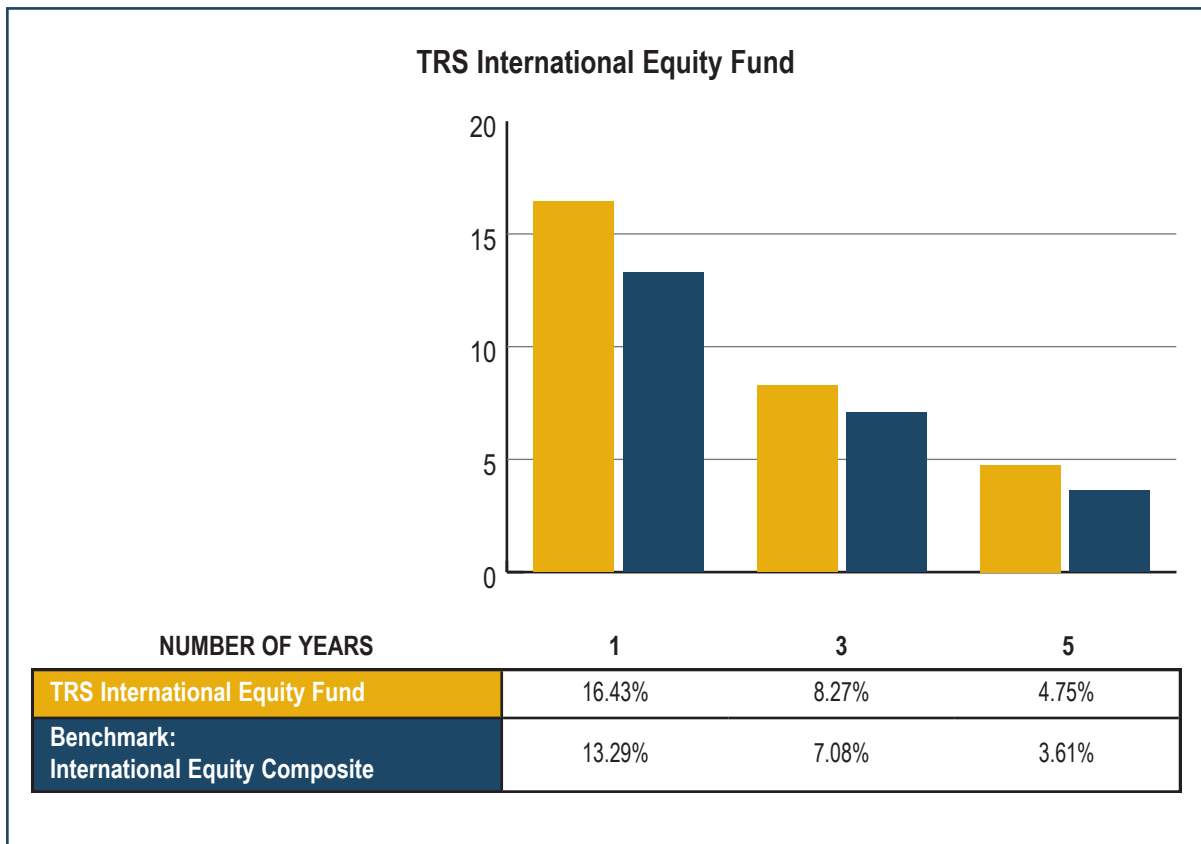
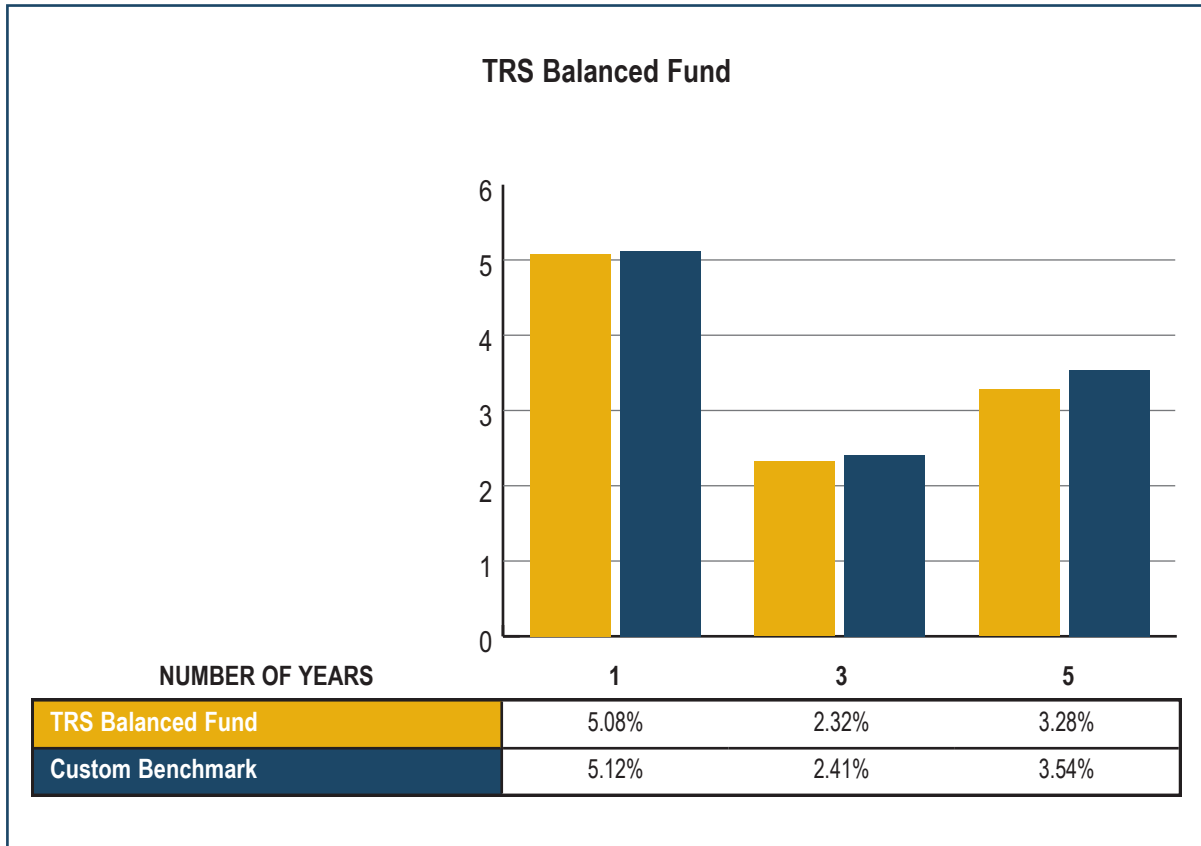
## ANNUALIZED INVESTMENT RESULTS

As of June 30, 2023



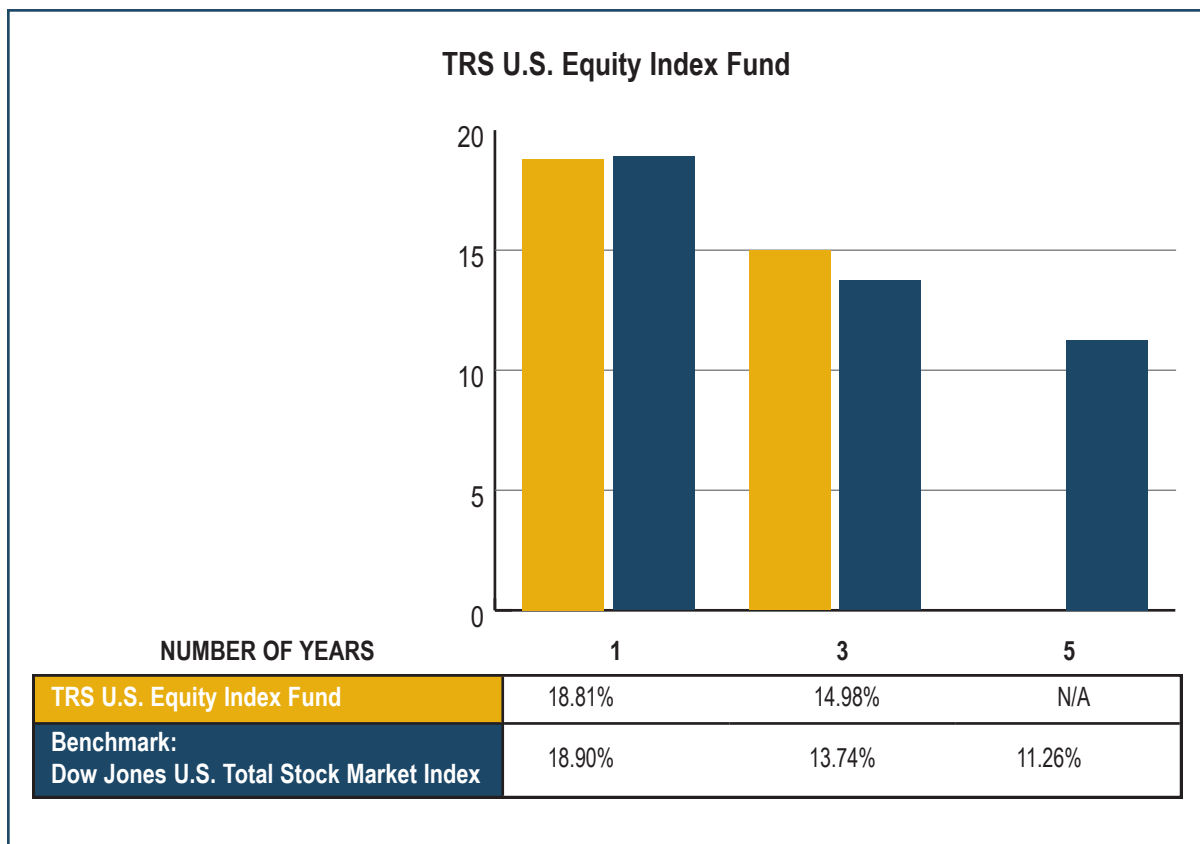
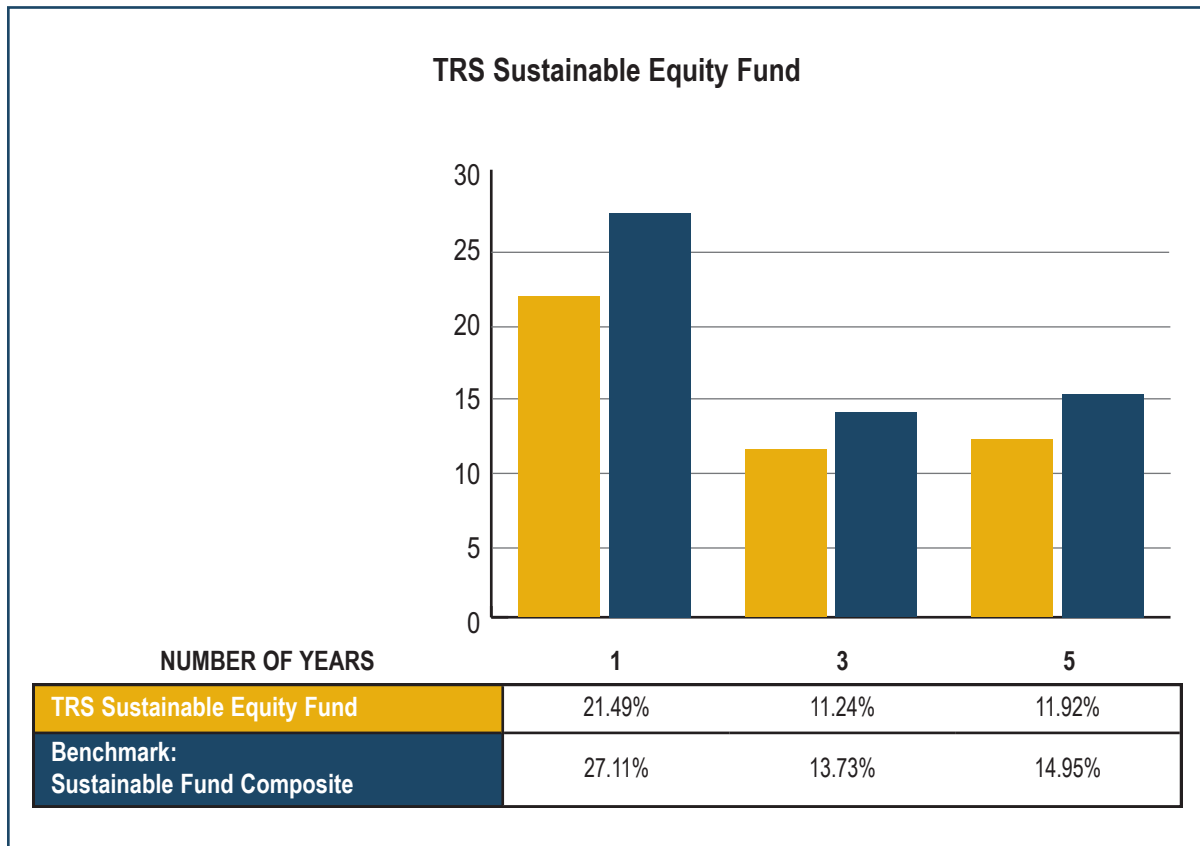
**ANNUALIZED INVESTMENT RESULTS (Continued)**

As of June 30, 2023



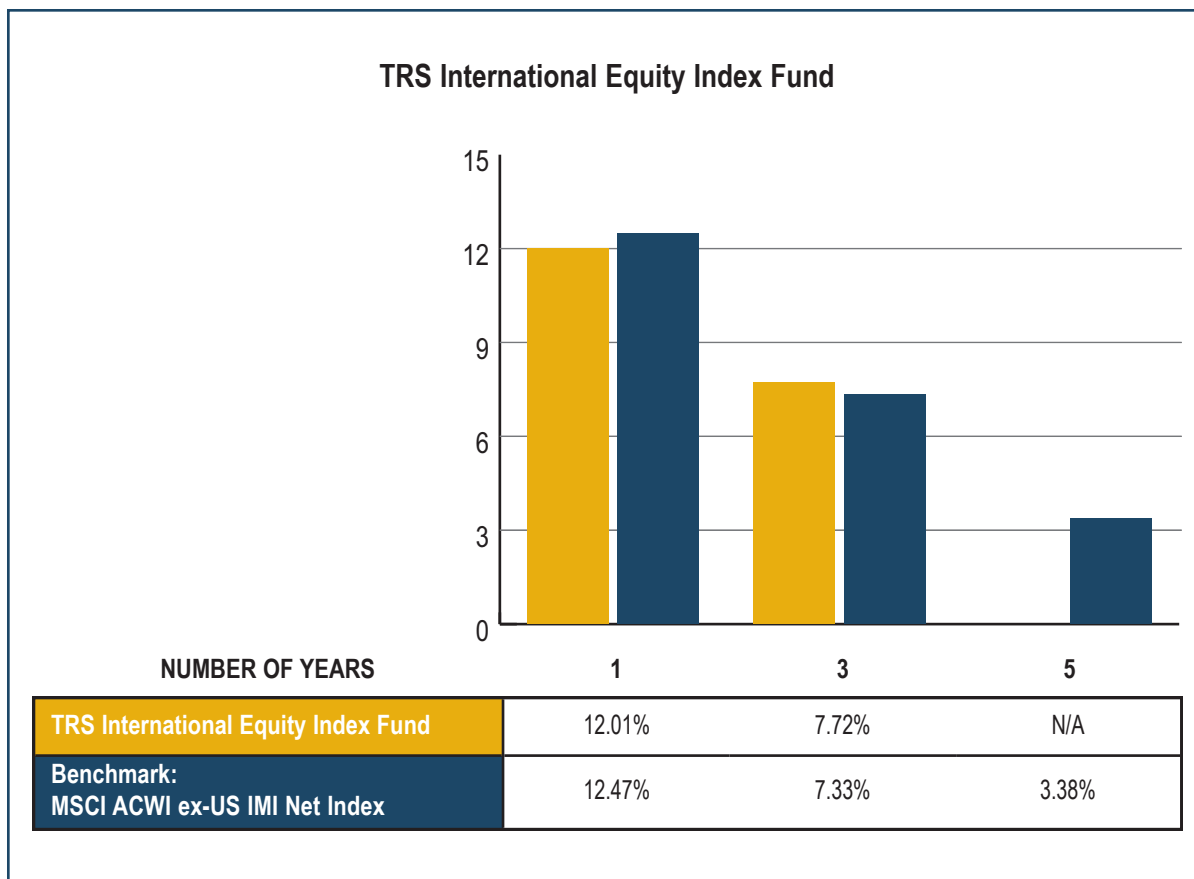
## ANNUALIZED INVESTMENT RESULTS

As of June 30, 2023



## ANNUALIZED INVESTMENT RESULTS

As of June 30, 2023



**INVESTMENT SUMMARY (QPP & TDA)**  
As of June 30, 2023

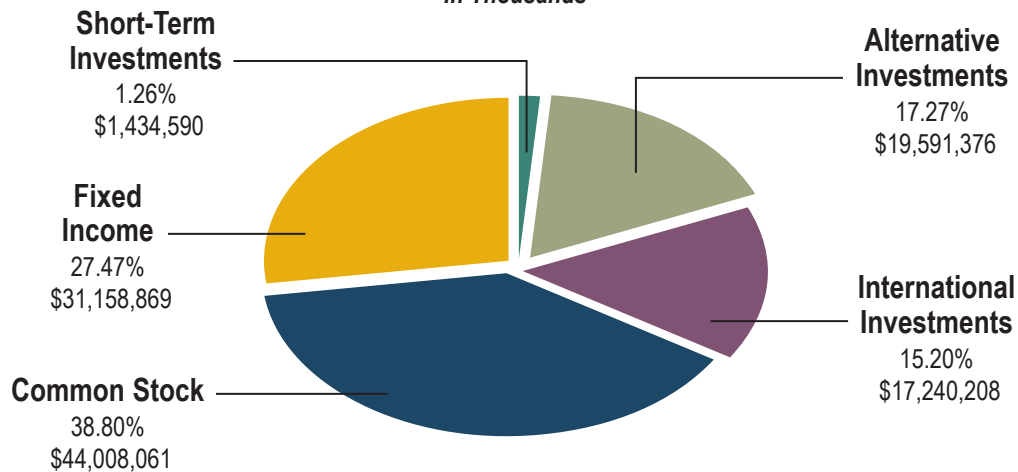
Type of Investment	Fair Value in Thousands	Percent of Total Fair Value
Fixed Income:		
Government Bonds	\$13,194,373	11.63%
Corporate and Other	14,822,382	13.07%
TIPS	3,142,114	2.77%
<b>Total Fixed Income</b>	<b>\$31,158,869</b>	<b>27.47%</b>
Common Stock:		
Financial & Utility	\$7,819,021	6.89%
Basic Industry	9,359,564	8.25%
Consumer & Service	15,311,632	13.50%
Technological	7,121,684	6.28%
Miscellaneous	4,396,160	3.88%
<b>Total Common Stock</b>	<b>\$44,008,061</b>	<b>38.80%</b>
<b>International Investments</b>	<b>\$17,240,208</b>	<b>15.20%</b>
<b>Alternative/ Private-Equity Investments</b>	<b>\$19,591,376</b>	<b>17.27%</b>
<b>Short-Term Investments</b>	<b>\$1,434,590</b>	<b>1.26%</b>
<b>Total Investments</b>	<b>\$113,433,104*</b>	<b>100.00%</b>

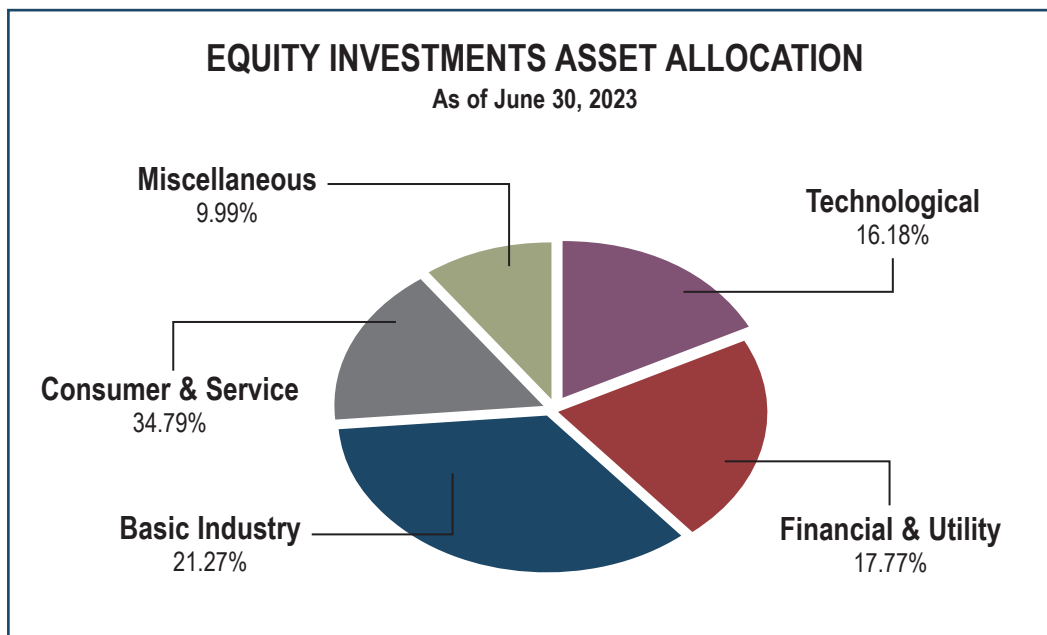
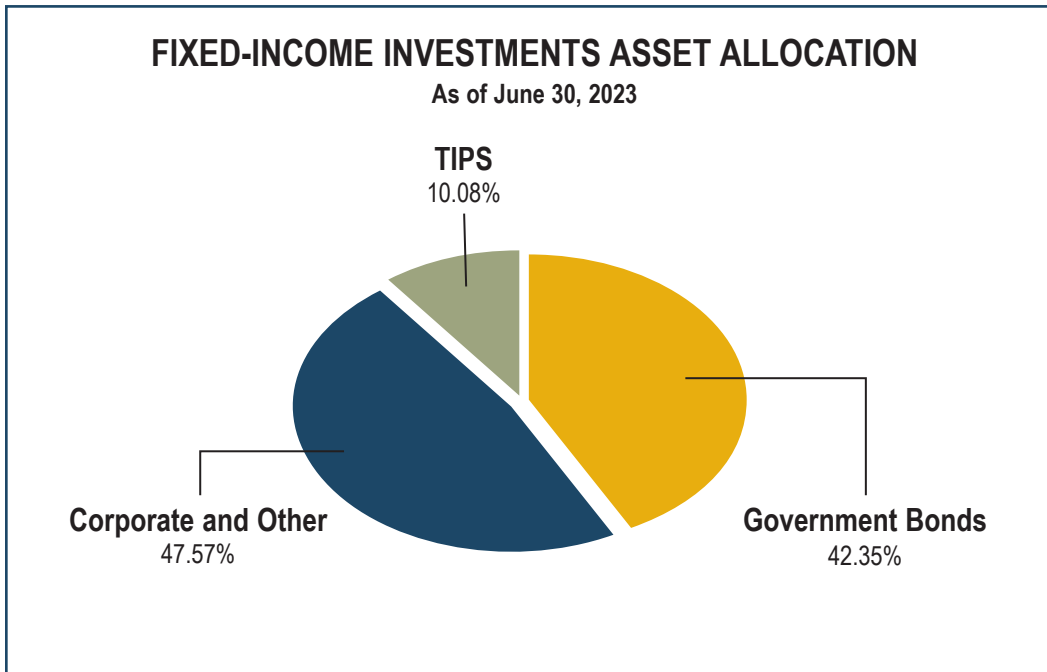
\* Excludes \$5,052,139 in securities lending

**TOTAL INVESTMENTS ASSET ALLOCATION**

As of June 30, 2023

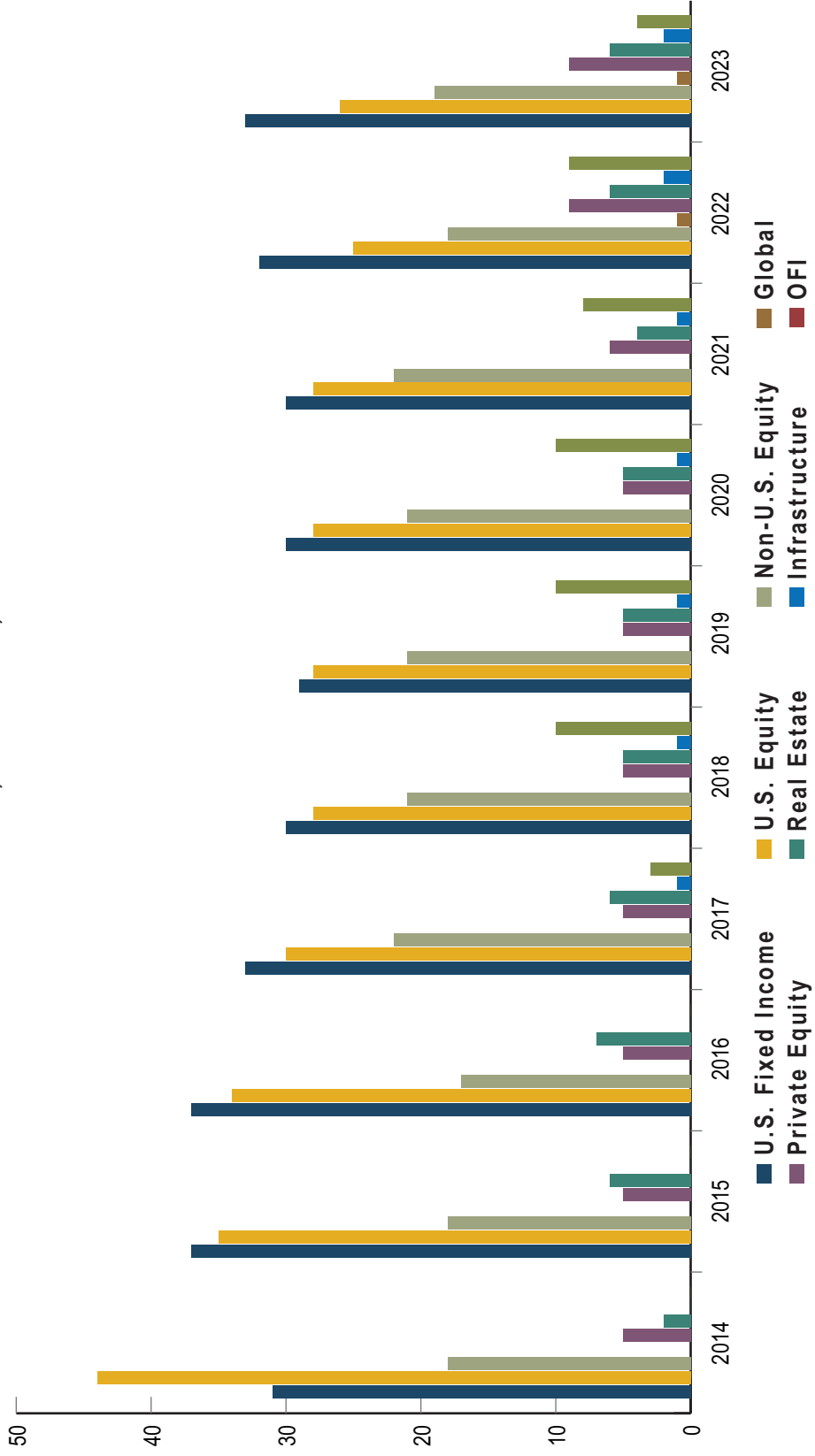
*In Thousands*





**CHANGES IN ASSET ALLOCATION BY PERCENTAGE  
FOR TRS PENSION FUND OVER 10-YEAR PERIOD**

June 30, 2014 – June 30, 2023



TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**LIST OF LARGEST BOND ASSETS HELD  
(BY FAIR VALUE)**

As of June 30, 2023

Par Value	Security Name	Interest Rate	Maturity Date	Market Value
\$167,500,000	United States Treasury Notes	0.750%	11/15/24	\$157,542,125
155,270,279	United States Treasury Notes	2.250	11/15/24	149,107,602
165,000,000	United States Treasury Notes	0.375	11/30/25	148,938,900
153,000,000	United States Treasury Notes	0.625	10/15/24	144,148,950
152,000,000	United States Treasury Notes	2.500	02/28/26	144,073,200
153,050,000	United States Treasury Notes	2.125	05/31/26	143,143,074
146,625,000	United States Treasury Notes	3.000	10/31/25	141,023,925
147,700,000	United States Treasury Notes	2.625	01/31/26	140,563,136
151,000,000	United States Treasury Notes	1.625	05/15/26	139,327,700
153,850,000	United States Treasury Notes	0.500	02/28/26	138,200,378
150,000,000	United States Treasury Notes	1.625	09/30/26	137,407,500
145,000,000	United States Treasury Notes	1.375	01/31/25	136,748,050
150,850,000	United States Treasury Notes	1.500	01/31/27	136,642,947
139,500,000	United States Treasury Notes	0.375	09/15/24	131,484,330
137,000,000	United States Treasury Notes	2.875	11/30/25	131,306,280

**LIST OF LARGEST EQUITY ASSETS HELD  
(BY FAIR VALUE)**

As of June 30, 2023

Company Name	Shares	Fair Value
Apple Inc	12,147,572	\$2,356,264,581
Microsoft Corp	6,362,715	2,166,759,126
Amazon	7,937,761	1,034,766,524
Nvidia Corp	2,087,132	882,898,504
Alphabet Inc - CL A	5,506,622	659,142,636
Tesla Inc	2,210,973	578,766,320
Berkshire Hathaway Inc	1,603,372	546,749,739
Meta Platforms Inc	1,888,190	541,872,624
Alphabet Inc - CL C	4,317,211	522,252,971
Taiwan Semiconductor Manufacturing Co	26,004,698	480,942,255
UnitedHealth Group Inc	871,940	419,089,286
Visa Inc	1,643,131	390,210,841
Johnson & Johnson	2,132,234	352,927,290
JPMorgan Chase & Co	2,351,898	342,060,100
Eli Lilly & Co	715,411	335,513,671
Mastercard Inc	805,859	316,944,176
Tencent Holdings Ltd	7,282,477	308,152,690
Broadcom Inc	321,377	278,772,351
Samsung Electronics Co	5,040,936	276,215,671
Home Depot Inc	881,450	273,813,641
The Procter & Gamble Inc	1,773,075	269,046,393
Merck & Co Inc	2,255,821	260,299,136
Pepsico Inc	1,287,483	238,467,599
Alibaba Group	21,076,216	218,384,087
Adobe Inc	426,535	208,571,247

**Note:** The above tables reflect assets of both the Qualified Pension Plan (QPP) and the Tax-Deferred Annuity (TDA) Program. The complete list of assets held by TRS' six investment programs is included in the publication Investment Portfolios.



**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2023**

INVESTMENT MANAGERS		QPP	TOTAL
<b>FIXED ANNUITY PROGRAM</b>			
<b>Fixed Income</b>			
AFL-CIO Housing Investment	Investment Manager	\$944,812	\$944,812
Barksdale Investment Management	Investment Manager	33,083	33,083
BlackRock	Investment Manager	1,504,574	1,504,574
Brigade Capital Management	Investment Manager	2,230,798	2,230,798
Ducenta Squared Asset Management	Investment Manager	40,978	40,978
Eaton Vance Management	Investment Manager	2,259,130	2,259,130
GIA Partners	Investment Manager	195,727	195,727
HGK Asset Management	Investment Manager	49,014	49,014
Integrity Fixed Income Management	Investment Manager	41,665	41,665
LM Capital Group	Investment Manager	170,431	170,431
Mackay Shields	Investment Manager	2,148,115	2,148,115
Neuberger Berman Group	Investment Manager	3,866,851	3,866,851
New Century Advisors	Investment Manager	49,106	49,106
Nomura Corporate Research and Asset Mgmt.	Investment Manager	1,956,868	1,956,868
Oaktree Capital Management	Investment Manager	1,616,859	1,616,859
Pacific Investment Management Company	Investment Manager	1,291,857	1,291,857
Pinebridge Investments	Investment Manager	592,150	592,150
Pugh Capital Management	Investment Manager	114,065	114,065
Ramirez Asset Management	Investment Manager	57,373	57,373
RBC Global Asset Management	Investment Manager	265,105	265,105
Semper Capital Management	Investment Manager	58,000	58,000
State Street Global Advisors	Investment Manager	1,423,375	1,423,375
T Rowe Price Associates	Investment Manager	3,552,210	3,552,210
Voya Investment Management	Investment Manager	171,585	171,585
Wellington Management Company	Investment Manager	417,613	417,613
<b>Domestic Equity</b>			
Altravue Capital	Investment Manager	163,347	163,347
BlackRock	Investment Manager	380,807	380,807
Bridge City Capital	Investment Manager	113,350	113,350
Brown Asset Management	Investment Manager	4,222,071	4,222,071
Cooke and Bieler	Investment Manager	892,939	892,939
Dean Capital Management	Investment Manager	175,230	175,230
Earnest Partners	Investment Manager	719,197	719,197
Essex Investment Management Company	Investment Manager	114,705	114,705
Lisanti Capital Growth	Investment Manager	118,600	118,600
MFS Institutional Advisors	Investment Manager	389,611	389,611
Nicholas Investment Partners	Investment Manager	74,914	74,914
PanAgora Asset Management	Investment Manager	1,482,281	1,482,281
QSV Equity Investors	Investment Manager	131,831	131,831
State Street Global Advisors	Investment Manager	127,474	127,474
T Rowe Price Associates	Investment Manager	766,903	766,903
Victory Capital Management	Investment Manager	1,119,873	1,119,873
Wellington Management Company	Investment Manager	751,645	751,645
Westfield Capital Management	Investment Manager	824,505	824,505

*Continued on page 108*

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2023 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
<b>EAFE, Emerging markets, Global and World ex U.S.</b>			
Acadian Asset Management	Investment Manager	\$6,162,416	\$6,162,416
Algert Global	Investment Manager	430,289	430,289
AQR Capital Management	Investment Manager	2,727,266	2,727,266
ARGA Investment Management	Investment Manager	530,439	530,439
Ativo Capital Management	Investment Manager	243,997	243,997
Aubrey Capital Management	Investment Manager	163,589	163,589
Baillie Gifford	Investment Manager	13,023,789	13,023,789
Bivium Capital Partners	Investment Manager	133,835	133,835
Blackcrane Capital	Investment Manager	17,665	17,665
BlackRock	Investment Manager	354,672	354,672
Causeway Capital Management	Investment Manager	5,100,559	5,100,559
Cedar Street Asset Management	Investment Manager	63,229	63,229
Channing Capital Management	Investment Manager	30,747	30,747
Dimensional Fund Advisors	Investment Manager	5,435,486	5,435,486
Dundas Global Investors	Investment Manager	423,703	423,703
Fidelity Institutional Asset Management	Investment Manager	1,762,843	1,762,843
Fiera Capital Corporation	Investment Manager	2,041,284	2,041,284
Foresight Global Investors	Investment Manager	188,510	188,510
Global Alpha Capital Management	Investment Manager	84,667	84,667
Haven Global Partners	Investment Manager	300,455	300,455
Henry James International Management	Investment Manager	232,078	232,078
Leading Edge Investment Advisors	Investment Manager	146	146
Martin Investment Management	Investment Manager	153,188	153,188
Morgan Stanley Investment Management	Investment Manager	756,572	756,572
Nordea Investment Management	Investment Manager	819,788	819,788
North of South Capital	Investment Manager	158,007	158,007
Osmosis Investment Management	Investment Manager	188,886	188,886
Pictet Asset Management	Investment Manager	694,968	694,968
Promethos Capital	Investment Manager	531,336	531,336
Radin Capital Partners	Investment Manager	14,216	14,216
RBC Global Asset Management	Investment Manager	5,233,306	5,233,306
Redwood Investments	Investment Manager	427,508	427,508
RVX Asset Management	Investment Manager	78,452	78,452
Sands Capital	Investment Manager	2,625,165	2,625,165
Smith Asset Management Group	Investment Manager	269,914	269,914
Solstein Capital	Investment Manager	201,455	201,455
Sprucegrove Investment Management	Investment Manager	3,122,425	3,122,425
State Street Global Advisors	Investment Manager	293,136	293,136
UBS Asset Management	Investment Manager	2,864,392	2,864,392
Walter Scott & Partners	Investment Manager	4,946,985	4,946,985
Xponance	Investment Manager	5,550	5,550
<b>Alternative Investment</b>			
400 Capital Management	Investment Manager	544,366	544,366
ACON Investments	Investment Manager	751	751
Actis	Investment Manager	8,585,037	8,585,037
Aermont Capital	Investment Manager	19,083,066	19,083,066
Aisling Capital	Investment Manager	5,833	5,833
Almanac Realty Investors	Investment Manager	2,432,308	2,432,308
Altaris Capital Partners	Investment Manager	416,553	416,553
American Security Partners	Investment Manager	221,279	221,279

Continued on page 109

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2023 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
Ampersand Capital	Investment Manager	\$7,262	\$7,262
Angelo Gordon	Investment Manager	1,817,836	1,817,836
Apax Partners	Investment Manager	6,638,827	6,638,827
Apollo Global Management	Investment Manager	10,878,702	10,878,702
Ardian	Investment Manager	4,920,588	4,920,588
Ares Management	Investment Manager	6,438,241	6,438,241
Artemis Real Estate Partners	Investment Manager	6,163,270	6,163,270
Avista Capital Partners	Investment Manager	11,760	11,760
Axiom Infrastructure	Investment Manager	1,389,997	1,389,997
Barings	Investment Manager	461,803	461,803
Basalt Infrastructure Partners	Investment Manager	2,505,025	2,505,025
Basis Management Group	Investment Manager	922,074	922,074
BC Partners	Investment Manager	6,131,166	6,131,166
Bentall GreenOak	Investment Manager	1,583,628	1,583,628
Black Diamond Capital Partners	Investment Manager	22,541	22,541
BlackRock	Investment Manager	5,448,997	5,448,997
Blue Wolf Capital	Investment Manager	41,722	41,722
Bridgepoint Capital	Investment Manager	8,190,596	8,190,596
Brightwood Capital Advisers	Investment Manager	3,456,678	3,456,678
Brookfield Asset Management	Investment Manager	21,340,318	21,340,318
Canyon Johnson	Investment Manager	697	697
Carlyle Group	Investment Manager	7,454,401	7,454,401
CarVal Partners	Investment Manager	154,126	154,126
Catterton Partners	Investment Manager	60,461	60,461
Centerbridge Partners	Investment Manager	1,148,862	1,148,862
Cerberus Capital Management	Investment Manager	6,117,474	6,117,474
City Investment Fund Associates	Investment Manager	13,572	13,572
Clarion Partners	Investment Manager	2,424,535	2,424,535
Clearlake Capital Group	Investment Manager	1,642,656	1,642,656
Constellation Growth Capital	Investment Manager	5,123	5,123
Contrarian Capital Management	Investment Manager	798,965	798,965
Cortland Partners	Investment Manager	754,655	754,655
Crestline Investors	Investment Manager	301,074	301,074
Crestview Partners	Investment Manager	2,505,829	2,505,829
CVC Capital Partners	Investment Manager	19,021,008	19,021,008
Deutsche Bank	Investment Manager	2,729,541	2,729,541
DIF Capital Partners	Investment Manager	1,098,336	1,098,336
DivcoWest Real Estate Investments	Investment Manager	5,839,432	5,839,432
DRA Advisors	Investment Manager	2,252,488	2,252,488
EIG Credit Management	Investment Manager	532,249	532,249
Elmtree Funds	Investment Manager	940,930	940,930
EQT Partners	Investment Manager	14,995,767	14,995,767
Exeter Property Group	Investment Manager	2,471,141	2,471,141
Fairview Capital Partners	Investment Manager	64,476	64,476
Fortress Investment Group	Investment Manager	10,294,852	10,294,852
Freeman Spogli	Investment Manager	37,130	37,130
FTV Capital	Investment Manager	2,282,812	2,282,812
GCM Grosvenor	Investment Manager	3,086,739	3,086,739
GF Capital Management	Investment Manager	16,066	16,066
GI Partners	Investment Manager	5,654	5,654
Global Infrastructure Management	Investment Manager	13,436,538	13,436,538
Goldentree Asset Management	Investment Manager	1,383,790	1,383,790

*Continued on page 110*

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2023 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
Grain Management	Investment Manager	\$817,690	\$817,690
GSO Capital Partners	Investment Manager	10,360	10,360
H/2 Capital Partners	Investment Manager	1,332,983	1,332,983
Halyard Capital	Investment Manager	18,845	18,845
HarbourVest Partners	Investment Manager	525,473	525,473
Harrison Street Real Estate Capital	Investment Manager	3,396,409	3,396,409
Heartwood Partners	Investment Manager	374,153	374,153
Heitman Capital Management	Investment Manager	1,808,070	1,808,070
Hg Capital	Investment Manager	2,582,345	2,582,345
ICG Strategic Equity	Investment Manager	3,117,250	3,117,250
ICV Partners	Investment Manager	453,279	453,279
Industry Funds Management	Investment Manager	2,046,451	2,046,451
Infravia Capital Partners	Investment Manager	300,312	300,312
Insight Partners	Investment Manager	4,153,427	4,153,427
Integrum Holdings	Investment Manager	1,558,814	1,558,814
Intermediate Capital Group	Investment Manager	987,139	987,139
Jamestown	Investment Manager	338,970	338,970
JP Morgan Chase Bank	Investment Manager	1,583,487	1,583,487
Kennedy Lewis Investment Management	Investment Manager	2,105,829	2,105,829
KKR	Investment Manager	16,067,655	16,067,655
Landmark Partners	Investment Manager	2,561,466	2,561,466
Lasalle Investment Management	Investment Manager	1,207,588	1,207,588
LBA Realty	Investment Manager	1,365,625	1,365,625
Leeds Equity Partners	Investment Manager	70,660	70,660
Leonard Green & Partners	Investment Manager	6,441,888	6,441,888
Levine Leichtman Capital Partners	Investment Manager	657	657
Lexington Partners	Investment Manager	5,189,331	5,189,331
Lightbay Capital	Investment Manager	851,046	851,046
Lincolnshire Management	Investment Manager	28,304	28,304
Lindsay Goldberg	Investment Manager	2,142,096	2,142,096
Lone Star	Investment Manager	4,517,583	4,517,583
Maranon Capital	Investment Manager	4,737,085	4,737,085
Marathon Asset Management	Investment Manager	2,713,541	2,713,541
Metlife	Investment Manager	664,727	664,727
MidOcean Partners	Investment Manager	192,122	192,122
Mill City Capital	Investment Manager	48,988	48,988
Montreux Equity Partners	Investment Manager	391,111	391,111
Nautic Partners	Investment Manager	729,759	729,759
Neuberger Berman Group	Investment Manager	784,558	784,558
New 2ND Capital Advisors	Investment Manager	2,799,423	2,799,423
New Mainstream Capital	Investment Manager	284,178	284,178
New Mountain Capital	Investment Manager	63,634	63,634
NGN	Investment Manager	23,525	23,525
Oak Hill Advisors	Investment Manager	2,845,352	2,845,352
Oaktree Capital Management	Investment Manager	742,944	742,944
Olympus Growth	Investment Manager	380,043	380,043
One Rock Capital Partners	Investment Manager	1,388,904	1,388,904
Onex Credit Partners	Investment Manager	99,848	99,848
Paladin	Investment Manager	67,394	67,394
Palladium Equity Partners	Investment Manager	525,389	525,389
Patriot Financial Partners	Investment Manager	274,745	274,745

Continued on page 111

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2023 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
Pegasus Capital Advisors	Investment Manager	\$248,860	\$248,860
Permira Advisors	Investment Manager	2,350,146	2,350,146
Phoenix Realty Group	Investment Manager	2,757	2,757
Pine Brook Capital Partners	Investment Manager	253,221	253,221
Platinum Equity	Investment Manager	11,699,255	11,699,255
Prologis	Investment Manager	219,055	219,055
Prudential Financial	Investment Manager	2,647,344	2,647,344
Related Fund Management	Investment Manager	1,296,387	1,296,387
Reverence Capital Partners	Investment Manager	1,213,391	1,213,391
Rialto Capital Management	Investment Manager	2,033,681	2,033,681
RLJ Equity Partners	Investment Manager	22,824	22,824
RRE Ventures	Investment Manager	23,894	23,894
SCP Partners	Investment Manager	61,579	61,579
Silverpeak Legacy Partners	Investment Manager	27,626	27,626
Siris Capital Group	Investment Manager	1,227,472	1,227,472
Snow Phipps	Investment Manager	7,279	7,279
Starvest Partners	Investment Manager	157,890	157,890
Stellex Capital Management	Investment Manager	4,053,142	4,053,142
Stockbridge Capital Group	Investment Manager	43,845	43,845
Stone Point Capital	Investment Manager	1,572,647	1,572,647
Stonepeak Infrastructure Partners	Investment Manager	1,500,128	1,500,128
Taconic Investment Partners	Investment Manager	56,591	56,591
The Blackstone Group	Investment Manager	8,002,989	8,002,989
The Hudson Companies	Investment Manager	1,312,103	1,312,103
The Jordan Company	Investment Manager	1,387,469	1,387,469
The Raine Group	Investment Manager	2,594,462	2,594,462
The Vistria Group	Investment Manager	1,902,773	1,902,773
The Yucaipa Group	Investment Manager	1,217,686	1,217,686
Thoma Bravo	Investment Manager	1,944,045	1,944,045
Thomas McNerney & Partners	Investment Manager	2,952	2,952
Thor Equities Group	Investment Manager	1,639	1,639
Tikehau Investment Management	Investment Manager	855,093	855,093
Torchlight Investors	Investment Manager	1,614,236	1,614,236
TPG Capital	Investment Manager	3,235,392	3,235,392
Trilantic Capital Partners	Investment Manager	2,904,805	2,904,805
Tristan Capital Partners	Investment Manager	1,069,512	1,069,512
UBS Asset Management	Investment Manager	455,207	455,207
USAA Real Estate	Investment Manager	706,752	706,752
Valor Equity Partners	Investment Manager	2,409,729	2,409,729
Vanbarton Group	Investment Manager	1,024,206	1,024,206
Vista Equity Partners	Investment Manager	18,449,355	18,449,355
Warburg Pincus	Investment Manager	7,233,343	7,233,343
Webster Capital	Investment Manager	60,647	60,647
Welsh Carson Anderson & Stowe	Investment Manager	12,175,037	12,175,037
Westbrook Partners	Investment Manager	2,358,881	2,358,881
NYC Office of Comptroller – BAM	Investment Support	4,431,253	4,431,253
American Value Partners	Fee Refund	(4,988)	(4,988)
Arsenal Capital Partners	Fee Refund	(2,112)	(2,112)
Avanath Capital	Fee Refund	(8,339)	(8,339)
Capri Capital Partners	Fee Refund	(165,975)	(165,975)
Grey Mountain Partners	Fee Refund	(7,459)	(7,459)

*Continued on page 112*



TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

<b>SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP &amp; TDA)</b>				
<b>YEAR ENDED JUNE 30, 2023 (Continued)</b>				
<b>INVESTMENT MANAGERS</b>		<b>QPP</b>	<b>TDA</b>	<b>TOTAL</b>
Incline Equity Partners	Fee Refund	(\$4,967)		(\$4,967)
Mesirow Financial	Fee Refund	(12,973)		(12,973)
Quaker Bioventures	Fee Refund	(5,275)		(5,275)
Riverstone Carlyle Global Ener	Fee Refund	(14,869)		(14,869)
Terra Firma Investments	Fee Refund	(5,688)		(5,688)
Cox Castle Nicholson	Legal Fees	9,636		9,636
Day Pitney	Legal Fees	59,327		59,327
Foley & Lardner	Legal Fees	85,372		85,372
Foster Garvey	Legal Fees	53,751		53,751
Hitchcock Law Firm	Legal Fees	2,125		2,125
Lowenstein Sandler	Legal Fees	194,307		194,307
Morgan Lewis Bockius	Legal Fees	207,700		207,700
Pillsbury Winthrop Shaw Pittman	Legal Fees	195,964		195,964
Reinhart Boerner Van Dueren	Legal Fees	228,365		228,365
Seward Kissel	Legal Fees	31,189		31,189
Hamilton Lane Advisors	Consultant Fees	900,000		900,000
HSBC Bank	Consultant Fees	1,703		1,703
MSCI	Consultant Fees	65,244		65,244
MSCI Barra	Consultant Fees	357,216		357,216
MSCI ESG Research	Consultant Fees	32,023		32,023
Rocaton Investment	Consultant Fees	547,083		547,083
S&P Global Market Intelligence	Consultant Fees	56,181		56,181
Shareholder Research Services	Consultant Fees	161,975		161,975
Stepstone Group	Consultant Fees	780,684		780,684
The Burgiss Group	Consultant Fees	36,489		36,489
State Street	Custodian Bank	922,911		922,911
State Street - FX Service Fees	Custodian Bank	781,117		781,117
State Street - Hard Dollar Compensation	Custodian Bank	188,621		188,621
State Street - Miscellaneous	Custodian Bank	95,266		95,266
<b>DIVERSIFIED EQUITY FUND</b>				
Acadian Asset Management	Investment Manager	342,521	627,303	969,824
Amalgamated Bank	Investment Manager	2,122	3,885	6,007
Analytic Investors	Investment Manager	14,697	26,917	41,614
Baillie Gifford	Investment Manager	471,280	863,115	1,334,395
BlackRock	Investment Manager	109,654	200,824	310,478
Brown Advisory	Investment Manager	253,368	464,025	717,393
Brown Capital	Investment Manager	624,917	1,144,490	1,769,407
Diamond Hill Management	Investment Manager	659,149	1,207,183	1,866,332
Franklin Templeton	Investment Manager	450,905	825,799	1,276,704
Jennison	Investment Manager	223,475	409,278	632,753
Mellon Russell 3000 - Broad Market	Investment Manager	119,220	218,342	337,562
MFS Investment Advisors Intl Equity	Investment Manager	405,536	742,710	1,148,246
Pyramis Global	Investment Manager	382,576	700,660	1,083,236
Sands Capital	Investment Manager	229,307	419,959	649,266
Shapiro Capital Management	Investment Manager	594,094	1,088,039	1,682,133
Sound Shore Management	Investment Manager	296,052	542,198	838,250
Sprucegrove Investment Management	Investment Manager	212,144	388,525	600,669
T Rowe Price Associates	Investment Manager	252,253	461,982	714,235
Walter Scott & Partners	Investment Manager	350,977	642,789	993,766
Wasatch Advisors	Investment Manager	414,129	758,447	1,172,576

*Continued on page 113*

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2023 (Continued)**

INVESTMENT MANAGERS		QPP	TDA	TOTAL
Wellington Management Company	Investment Manager	\$349,083	\$639,320	\$988,403
Westwood Global Investments	Investment Manager	862,832	1,580,213	2,443,045
NYC TRS	Investment Support	347,507	626,686	974,193
Groom Law Group	Legal Fees	4,294	7,779	12,073
Amaces	Consultant Fees	12,930	23,611	36,541
Ernst & Young US	Consultant Fees	5,930	10,542	16,472
Esquire	Consultant Fees	5,794	10,430	16,224
PRI Association	Consultant Fees	3,713	6,815	10,528
Rocaton Investment Advisors	Consultant Fees	169,968	306,081	476,049
Bloomberg	Data Services	12,587	22,712	35,299
Broadridge Financial Solutions	Data Services	24,156	40,417	64,573
eVestment Alliance	Data Services	7,582	13,478	21,060
JP Morgan Chase Bank	Custodian Bank	262,160	480,127	742,287
<b>BALANCED FUND</b>				
Vanguard Mutual Fund	Mutual Fund			
NYC TRS	Investment Support	2,624	33,159	35,783
Groom Law Group	Legal Fees	32	410	442
Amaces	Consultant Fees	94	1,241	1,335
Ernst & Young US	Consultant Fees	48	586	634
Esquire	Consultant Fees	44	549	593
PRI Association	Consultant Fees	27	360	387
Rocaton Investment Advisors	Consultant Fees	1,285	16,185	17,470
Bloomberg	Data Services	96	1,222	1,318
Broadridge Financial Solutions	Data Services	178	1,730	1,908
eVestment Alliance	Data Services	62	750	812
JPMorgan Chase Bank	Custodian Bank	32	425	457
<b>INTERNATIONAL EQUITY FUND</b>				
Acadian Asset Management	Investment Manager	1,917	51,517	53,434
Baillie Gifford	Investment Manager	2,632	70,734	73,366
BlackRock	Investment Manager	591	15,888	16,479
Brown Capital	Investment Manager	4,877	131,068	135,945
Franklin Templeton	Investment Manager	3,154	84,779	87,933
MFS Investment Advisors Intl Equity	Investment Manager	2,834	76,176	79,010
Pyramis Global	Investment Manager	2,918	78,435	81,353
Sprucegrove Investment Management	Investment Manager	1,585	42,594	44,179
Walter Scott & Partners	Investment Manager	2,251	60,512	62,763
Wellington Management Company	Investment Manager	2,357	63,340	65,697
Westwood Global Investments	Investment Manager	4,447	119,520	123,967
NYC TRS	Investment Support	554	15,525	16,079
Groom Law Group	Legal Fees	7	172	179
Amaces	Consultant Fees	21	543	564
Ernst & Young US	Consultant Fees	9	219	228
Esquire	Consultant Fees	9	228	237
PRI Association	Consultant Fees	6	161	167
Rocaton Investment Advisors	Consultant Fees	271	6,708	6,979
Bloomberg	Data Services	20	503	523
Broadridge Financial Solutions	Data Services	35	768	803
eVestment Alliance	Data Services	12	280	292
JP Morgan Chase Bank	Custodian Bank	4,373	117,531	121,904

*Continued on page 114*

<b>SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP &amp; TDA)</b>				
<b>YEAR ENDED JUNE 30, 2023 (Continued)</b>				
INVESTMENT MANAGERS		QPP	TDA	TOTAL
<b>SUSTAINABLE EQUITY FUND</b>				
Brown Advisory	Investment Manager	\$47,418	\$1,667,532	\$1,714,950
NYC TRS	Investment Support	899	30,750	31,649
Groom Law Group	Legal Fees	11	387	398
Amaces	Consultant Fees	34	1,181	1,215
Ernst & Young US	Consultant Fees	15	506	521
Esquire	Consultant Fees	15	512	527
PRI Association	Consultant Fees	10	344	354
Rocaton Investment Advisors	Consultant Fees	437	14,934	15,371
Bloomberg	Data Services	32	1,112	1,144
Broadridge Financial Solutions	Data Services	54	1,579	1,633
eVestment Alliance	Data Services	19	647	666
JP Morgan Chase Bank	Custodian Bank	44	1,550	1,594
<b>U.S. EQUITY INDEX FUND</b>				
Fidelity Mutual Fund	Mutual Fund			
NYC TRS	Investment Support	370	6,319	6,689
Groom Law Group	Legal Fees	5	88	93
Amaces	Consultant Fees	16	279	295
Ernst & Young US	Consultant Fees	6	110	116
Esquire	Consultant Fees	6	114	120
PRI Association	Consultant Fees	5	83	88
Rocaton Investment Advisors	Consultant Fees	180	3,360	3,540
Bloomberg	Data Services	13	254	267
Broadridge Financial Solutions	Data Services	17	211	228
eVestment Alliance	Data Services	8	141	149
JP Morgan Chase Bank	Custodian Bank	85	1,629	1,714
<b>INTERNATIONAL EQUITY INDEX FUND</b>				
Fidelity Mutual Fund	Mutual Fund			
NYC TRS	Investment Support	31	1,078	1,109
Groom Law Group	Legal Fees	—	15	15
Amaces	Consultant Fees	1	50	51
Ernst & Young US	Consultant Fees	—	18	18
Esquire	Consultant Fees	—	20	20
PRI Association	Consultant Fees	—	15	15
Rocaton Investment Advisors	Consultant Fees	14	577	591
Bloomberg	Data Services	1	44	45
Broadridge Financial Solutions	Data Services	—	38	38
eVestment Alliance	Data Services	1	22	23
JP Morgan Chase Bank	Custodian Bank	8	442	450
<b>Investment Expenses</b>	<b>Subtotal:</b>	<b>\$534,097,851</b>	<b>\$18,234,439</b>	<b>\$552,332,290</b>
Provision for Administrative Expenses	Administrative Fees	4,434,569	9,466,371	13,900,940
Reserve Transfer to Administrative Expenses	Fund Transfer	(19,665,964)	(16,470,677)	(36,136,641)
<b>Net (decrease) in variable expense provision</b>	<b>Subtotal:</b>	<b>(\$15,231,395)</b>	<b>(\$7,004,306)</b>	<b>(\$22,235,701)</b>
<b>Total Investment Expenses</b>		<b>\$518,866,456</b>	<b>\$11,230,133</b>	<b>\$530,096,589</b>



**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Abel Noser	342,130	\$0.05	\$16,965
ABG Securities As (Stockholm)	2,300	0.02	42
ABG Sundal Coller ASA	5,800	0.01	61
ABN Amro Clearing Bank NV	1,670,345	0.01	11,893
Academy Securities Inc	102,264	0.03	3,087
Andisa Securities (PTY) Limited	7,456	0.49	3,671
Apex Clearing Corporation	3,500	0.04	123
Arqam Capital Limited	1,343,472	0.01	7,352
Arqam Securities LLC	7,178,719	0.00	12,592
Autrepat-Div Re	1,479	0.12	174
Baader Bank Ag	8,104	0.02	166
Banc of Santander - Chile	17,511,976	0.00	1,689
Banco Itau SA	246,200	0.01	1,274
Banco Mexico SA	447,650	0.00	916
Banco Pactual SA	4,159,922	0.00	10,156
Banco Santander Central Hispano	1,759,973	0.00	6,337
Bancroft Capital LLC	15,000	0.01	120
Bank of America Corporation	3,874,394	0.01	28,444
Bank of America Intl NY United States	6,000	0.00	22
Bank of Nova Scotia - Scusa	220,037	0.00	958
Bank of Santander - Brazil	751,200	0.00	2,845
Barclays Capital Inc	6,794,016	0.01	57,008
Barclays Capital Inc/Le	3,650,469	0.01	29,225
Barclays Capital Le	4,623,229	0.01	28,968
Barrenjoey Markets PTY Limited	3,500	0.01	29
Berenberg Capital Markets LLC	25,552	0.04	991
Bernsteinautonomous LLP	55,628,010	0.00	116,759
Blaylock Robert Van LLC	35,064	0.02	702
BMO Capital Markets	617,050	0.02	14,101
BMO Nesbitt Burns Inc	10,562	0.02	232
BNP Paribas	380,890	0.00	788
BNP Paribas Arbitrage	45,442	0.02	824
BNP Paribas Prime Brokerage Inc	17,597,218	0.00	22,851
BNP Paribas Securities (Asia) LTD	26,217,487	0.00	7,109
BNP Paribas Securities Co Ltd	1,431	1.14	1,635
BNP Paribas Securities Corporation	1,000	0.01	8
BNP Paribas Securities India Private Lim	16,277	0.01	84
BNP Paribas Securities Services	27,590,840	0.00	25,205
BNY Mellon/HSBC Bank PLC	3,500	0.03	92
BOFA Securities Inc	34,721,096	0.01	250,583
Bradesco SA Ctvn	10,012,753	0.00	17,973
BRiley & Co, LLC	49,685	0.03	1,244
BTG Pactual Casa De Bolsa	756,582	0.00	1,067
BTG Pactual Chile SA Corredores De Bol	89,656,258	0.00	7,890
BTIG, LLC	1,063,475	0.02	26,006
Cabrera Capital Markets LLC	794,757	0.04	31,034
Caceis Bank	320,153	0.03	8,622
Canaccord Genuity Inc	193,464	0.04	8,545
Canadian Imperial Bank of Commerce	31,790	0.01	258

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Cantor Fitzgerald & Co	984,681	\$0.01	\$11,095
Cantor Fitzgerald Europe	664,702	0.00	2,174
CAP Guardian Broker	28,762	0.02	502
Capital Institutional Svcs Inc Equities	51,387	0.03	1,798
Capital Securities Corp	1,000	0.05	48
Carnegie AS	918,586	0.01	11,620
Carnegie Investment Bank Ab	587,224	0.02	11,558
Carnegie Securities Finland	123,130	0.01	1,034
Carr WI (Overseas) Ltd	188,478	0.01	1,891
Castleoak Securities	54,338	0.01	550
CGS-CIMB Securities (Hong Kong) LTD	1,386,900	0.00	1,378
China International Capital Co	2,197,420	0.00	8,516
CIBC Mellon	2,100	0.01	23
CIBC World Mkts Inc	567,499	0.01	4,080
CIMB Securities (Korea) LTD	17,820	0.03	522
CIMB Securities (Thailand) Co, LTD	61,200	0.01	578
CIMB-Gk Securities Pte LTD	9,884,100	0.00	1,400
Citibank Ag	228,808	0.02	5,112
Citibank Canada	9,527	0.02	217
Citibank Europe Plc	40,686	0.04	1,446
Citibank Europe Plc Austria Branch	5,492	0.03	191
Citibank International	362,083	0.03	10,364
Citibank Mexico	19,420	0.00	77
Citibank NA	19,600,148	0.00	47,829
Citibank of Colombia	722,227	0.00	3,436
Citigroup Global Markets Australia PTY	661,923	0.00	387
Citigroup Global Markets Europe AG	6,470,036	0.01	69,262
Citigroup Global Markets Inc	428,823,024	0.00	105,537
Citigroup Markets India	11,763,510	0.00	46,456
Citigroup Markets Limited	33,036,830	0.00	133,817
Citigroup Markets Taiwan	3,876,276	0.00	7,133
Citigroup Marktet Koera Secs Ltd	2,236,935	0.01	17,576
CL Kingand Associates	19,280	0.03	482
CL Securities Taiwan Company Limited	20,078,242	0.00	33,165
CLSA Americas	18,600	0.04	651
CLSA Australia Pty LTD	6,049,485	0.00	4,529
CLSA Securities Korea LTD	4,064,791	0.01	44,495
CLSA Securities Malaysia Sdn Bhd	16,175,800	0.00	4,366
CLSA Singapore Pte LTD	19,708,672	0.00	53,435
CLSA UK	7,426,506	0.00	4,956
Commercial Bank of Qatar, LTD	1,591,533	0.00	2,283
Compass Point	51,341	0.04	1,895
Conaccord Genuity (Australia) Limited	47,663	0.00	119
Conaccord Genuity Corp	105,760	0.02	2,005
Convencaos/A Corretora de Valores	236,417	0.01	1,727
Cowen And Company LLC	874,381	0.01	11,898
Cowen and Company, LLC	3,700,700	0.01	42,132
Craig - Hallum	155,112	0.05	7,237
Credit Industriel et Commercial	29,242	0.01	408

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Credit Lyonnais Securities (Asia)	516,749,946	\$0.00	\$222,071
Credit Lyonnais Securities (India)	38,501,736	0.00	93,156
Credit Mutuel-Cic Banques	5,310	0.06	329
Credit Suisse First Boston	52,729,844	0.00	41,647
Credit Suisse First Boston (Europe)	2,810,413	0.01	14,844
Credit Suisse First Boston SA Ctvm	8,848,143	0.00	8,295
Credit Suisse International	18,175,093	0.00	23,623
Credit Suisse Secs India Private LTD	717,109	0.01	4,693
Credit Suisse Securities (USA) LLC	570,089,811	0.00	77,414
Credit Suisse Securities Canada Inc	3,094	0.03	91
CS First Boston (Hong Kong) Limited	7,700,414	0.00	11,926
CSFB Australia Equities LTD	3,808,827	0.00	1,867
Daiwa Capital Markets America Inc	1,333,617	0.02	27,243
Daiwa Sbcm Europe	716,000	0.02	13,922
Daiwa Securities (HK) LTD	3,569,424	0.00	15,315
Daiwa Securities Company LTD	7,461	0.09	703
Daiwa Securities PR (India)	91,730	0.01	943
Daiwa Securities Sb Capital Markets	1,530,232	0.00	6,421
Daiwa Securities Smbc Cathy Co	100,593	0.01	1,121
Danske Bank AS	1,988,713	0.00	5,376
Davidson DA & Company Inc	52,907	0.03	1,497
DBS Vickers (Hong Kong) Limited	311,800	0.00	873
DBS Vickers Securities (Singapore)	5,197,700	0.00	17,890
DBS Vickers Securities (Thailand)	20,200	0.02	332
Dnb Bank Asa	840	0.05	45
DNB Markets Custody	3,582	0.01	35
Drexel Hamilton LLC	40,972	0.02	819
DriveWealth Institutional LLC	6,678	0.01	67
DSP Merrill Lynch LTD	67,435,298	0.00	94,615
E Trade Securities Co Ltd	11,100	0.02	270
EFG Hermes Brokerage UAE	88,710	0.00	63
Equirus Securities Private Limited	81,868	0.03	2,451
Erste Group Bank Ag	1,160	0.05	54
Euroclear Bank	87	0.79	69
Euromobiliare Sim SPA	267,705	0.02	5,999
Evercore Group LLC	80,722	0.02	1,830
Evercore Isi	296,584	0.02	6,557
Exane SA	7,115,859	0.01	46,324
Fidelity Capital Markets	632,745	0.02	9,947
Fidelity Clearing Canada ULC	93,437	0.05	4,827
Financial Brokerage Group (FBG)	25,436,403	0.00	52,834
Flow Corretora De Mercadorias LTDA	4,856,747	0.00	8,454
Fubon Securities Co LTD	233,910	0.01	2,617
Gk Goh Ometraco Pt	1,371,400	0.00	1,933
Goldman Sachs & Co LLC	388,004,386	0.00	383,325
Goldman Sachs (Asia) LLC	29,215,436	0.00	20,524
Goldman Sachs (India)	66,801,940	0.00	67,183
Goldman Sachs Australia Pty LTD	972,334	0.00	2,200
Goldman Sachs Do Brasil Corretora	1,218,940	0.01	7,139

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Goldman Sachs International	12,253,001	\$0.01	\$77,861
Goldman Sachs Intl Finance London	3,601	0.04	148
Goodbody Stockbrokers	295,974	0.00	418
Gordon Haskett Capital Corp	9,787	0.03	246
Guggenheim Capital Markets LLC	8,949	0.04	337
Guzman And Company	601,757	0.02	10,972
Haitong Intl Secs Company LTD	792,040	0.01	7,683
Hanwha Securities Seoul	11,152	0.17	1,948
HSBC Bank PLC	10,672,213	0.00	46,609
HSBC Brokerage (USA) Inc	90,544	0.01	873
HSBC Securities (USA) Inc	186,783,337	0.00	74,805
HSBC Securities India Holdings	1,847,864	0.00	3,937
Hyundai Securities	312,916	0.06	18,356
ICBCFS LLC	23,633	0.03	784
Ichiyoshi Securities Co Ltd	135,300	0.00	318
ICICI Securities Limited	34,417,092	0.00	47,286
IM Trust SA Corredores De Bolsa	5,728,007	0.00	380
India Infoline LTD	33,804	0.04	1,246
Instinet Australia Clearing Srvc Pty LTD	20,277,674	0.00	21,059
Instinet Europe LTD	9,436	0.02	229
Instinet LLC	50,590,975	0.00	102,090
Instinet Pacific Limited	1,119,893,960	0.00	265,498
Instinet Singapore Services Pt	10,561,242	0.00	10,267
Instinet UK LTD	112,459,335	0.00	377,009
Intesa Sanpaolo SPA	1,220	0.03	34
Intl Trading Inc	1,151	0.02	23
Investec Bank PLC	31,381	0.00	116
Investec Markets(Proprietary)Limited	2,131,392	0.00	2,236
ITG Australia LTD	4,482,900	0.00	10,544
ITG Canada	263,025	0.01	1,343
ITG Inc	5,153	0.01	60
Jane Street Execution Services LLC	16,901	0.01	212
Janney Montgomery, Scott Inc	29,694	0.02	729
Jarden Securities Limited	304,726	0.00	106
Jefferies Australia PTY Limited	43,271	0.01	248
Jefferies Hong Kong Limited	5,414,867	0.00	6,225
Jefferies India Private Limited	13,615,663	0.00	49,243
Jefferies International Ltd	64,238,390	0.00	107,571
Jefferies LLC	26,925,441	0.01	161,261
JMP Securities	4,716	0.03	127
Joh Berenberg, Gossler & Co KG	1,540,372	0.03	39,884
Jonestrading Institutional Services LLC	657,010	0.02	10,489
JP Morgan Broking HK Limited	2,160,300	0.00	7,198
JP Morgan Clearing Corp	100	0.05	5
JP Morgan India Private LTD	5,507,437	0.00	14,655
JP Morgan Securities (Asia Pacific) LTD	145,073,523	0.00	89,216
JP Morgan Securities (Far East) LTD Seoul	995,278	0.01	8,294
JP Morgan Securities (Taiwan) LTD	4,027,000	0.00	1,687
JP Morgan Securities Australia Ltd	13,316,189	0.00	10,451

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
JP Morgan Securities Inc	16,140,431	\$0.00	\$52,592
JP Morgan Securities Limited	807,501	0.01	5,752
JP Morgan Securities LLC	7,315,925	0.01	86,168
JP Morgan Securities PLC	28,020,437	0.00	123,437
JP Morgan Securities Singapore	14,636,409	0.00	26,548
KB Securities N V	731	0.01	6
Keefe Bruyette & Woods Inc	206,412	0.03	6,514
Kempen & Co NV	291	0.01	2
Kepler CA Pital Markets LLC	10,421	0.04	365
Kepler Cheuvreux	581,786	0.03	15,718
Keybanc Capital Markets Inc	411,645	0.04	16,618
Kim Eng Securities (Hk) LTD	700,700	0.00	403
Korea Investment And Securities Co, LTD	41,746	0.04	1,672
Kotak Securities LTD	12,377	0.07	815
Larrain Vial	11,308,546	0.00	905
Leerink Partners LLC	71,869	0.03	2,430
Liberum Capital Inc	41,200	0.00	145
Liquidnet Canada Inc	13,600	0.01	178
Liquidnet Europe Limited	874,601	0.02	20,674
Liquidnet Inc	1,735,224	0.02	33,241
Loop Capital Markets LLC	4,595,179	0.03	125,355
Luminex Trading and Analytics LLC	269,949	0.01	3,860
Macquarie Bank Limited	5,230,227	0.00	7,523
Macquarie Capital (Europe) LTD	491,054	0.01	2,952
Macquarie Capital (USA) Inc	812,633	0.00	2,139
Macquarie Capital Securities	18,501,351	0.00	25,336
Macquarie Sec (NZ) LTD	624,470	0.00	405
Macquarie Securities (India) PVT LTD	2,415,792	0.00	4,536
Macquarie Securities (Korea) Limited	326,734	0.06	19,813
Macquarie Securities (Singapore)	622,000	0.00	357
Macquarie Securities (USA) Inc	6,027	0.02	113
Macquarie Securities Limited	3,031,300	0.00	2,466
Maybank Kim Eng Securities PTE LTD	104,470	0.00	396
Mediobanca Spa	204	0.03	6
Merrill Lynch Canada Inc	22,025	0.03	658
Merrill Lynch Equities (Australia)	1,545,578	0.01	16,784
Merrill Lynch International	302,215,359	0.00	308,192
Merrill Lynch Pierce Fenner & Smith	456	0.03	12
Merrill Lynch Professional Clearing Corp	26,560	0.02	521
Merrill Lynch, Pierce Fenner Smith	977,620	0.06	57,892
Mirabaud Securities LLP	9,285	0.16	1,504
Mirae Asset Securities Co Ltd	1,300	0.06	76
Mischler Financial Group, Inc-Equities	466,227	0.02	11,508
Mitsubishi UFJ Securities (USA)	82,201	0.01	1,182
Mitsubishi UFJ Securities Int PLC	700	0.25	175
Mizuho Securities Asia Limited	64,800	0.01	913
Mizuho Securities USA Inc	178,781	0.08	13,643
MKM Partners LLC	35,971	0.03	1,065
Morgan Stanley and Co International	55,587,707	0.00	106,376

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Morgan Stanley Australia Securities Ltd	1,330,471	\$0.00	\$1,395
Morgan Stanley Co Incorporated	199,978,179	0.00	268,441
Morgan Stanley India Company Pvt LTD	4,908,124	0.00	18,801
Morgan Stanley Taiwan Limited	19,310,359	0.00	22,692
Motilal Oswal Securities Limited	200,009	0.00	930
National Bank Financial Inc	19,746	0.01	148
National Financial Services Corporation	107,368	0.02	2,178
National Financial Services LLC	2,491,361	0.00	8,635
NBCN Clearing Inc	17,723	0.01	133
Needham and Company LLC	467,230	0.04	19,364
Nesbitt Burns	2,619	0.03	79
NH Investment and Securities Co LTD	113,030	0.03	2,919
Nomura Financial Advisory & Sec India	3,674,679	0.00	10,696
Nomura Financial Investment Korea Co LTD	16,083	0.03	436
Nomura Securities Co LTD	2,861,034	0.00	2,082
Nordea Bank ABP	1,200	0.01	15
North South Capital LLC	97,994	0.04	3,793
Northern Trust Brokerage Institution	3,056	0.03	80
Northern Trust Securities LLP	504,866	0.01	3,498
Northland Securities Inc	3,325	0.04	133
Numis Securities Inc	9,793	0.01	77
Numis Securities Limited	3,041,022	0.00	1,286
ODDO Et Cie	50,531	0.08	4,262
Okasan International (Asia) LTD	600	0.14	85
Oppenheimer & Co Inc	246,139	0.04	8,888
Optiver VOF	117,256	0.00	148
Panmure Gordon (UK) Limited	100,337	0.00	358
Parel	303,958	0.05	16,180
Peel Hunt LLP	42,888	0.01	389
Penserra Securities LLC	2,854,479	0.00	9,611
Pershing LLC	22,084,908	0.01	191,583
Pershing Securities Canada Limited	80,571	0.02	1,790
Pershing Securities Limited	9,921,261	0.01	93,624
PGM Global Inc	709,031	0.02	13,328
Philippine National Bank	196,400	0.00	425
Piper Jaffray & Co	4,290,795	0.01	46,511
Raymond James and Associates Inc	535,257	0.04	21,318
Raymond James LTD	20,115	0.03	521
RBC Capital Markets, LLC	3,199,612	0.02	58,625
RBC Dominion Securities Corporation	633,950	0.01	3,531
Redburn (Europe) Limited	331,791	0.01	3,881
Redburn (USA) LLC	484	0.04	17
Robert W Baird Co Incorporated	2,892,960	0.03	73,456
Roth Capital Partners LLC	47,130	0.05	2,361
Royal Bank Of Canada Europe LTD	2,474,985	0.01	16,605
Samsung Securities Co LTD	541,638	0.02	13,198
Samuel A Ramirez & Company Inc	2,836	0.03	72
Sanford C Bernstein (India) Private LIM	392,633	0.01	2,461
Sanford C Bernstein LTD	15,977,266	0.00	57,392

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Santander Investment Securities Inc	568,199	\$0.01	\$3,214
Santander Securities Services, SA	197,797	0.00	732
SB Equities Incorporated	87,100	0.00	113
Scotia Capital Inc	2,131,101	0.01	11,237
Scotia McLeod (USA) Inc	121,403	0.00	484
Security Capital Brokerage Inc	31,355	0.02	627
SG Americas Securities LLC	16,580	0.01	135
SG Asia Securities (Inoia) Pvt LTD	10,104,936	0.00	25,528
SG Securities (HK) LTD	36,592,245	0.00	23,030
SG Securities (London) LTD	26,498,780	0.00	11,365
Shenwan Hongyuan Securities (HK) Limited	78,000	0.00	144
Shinhan Investment Corp	3,535	0.25	897
Sidco/Virtu Americas	14,257	0.03	460
Sinopac Securities Corporation	512,000	0.00	1,639
Skandinaviska Enskilda Banken	8,783	0.02	172
Smbc Nikko Capital Markets Limited	3,200	0.21	668
Smbc Nikko Securities (Honk Kong) LTD	41,000	0.02	701
SMBC Securities Inc	80,337	0.01	1,014
Societe Generale	20,548,728	0.00	15,785
Standard Chartered Bank	680,000	0.00	565
State Street Global Markets, LLC	787,770	0.02	19,641
Stephens, Inc	332,150	0.04	14,373
Stifel Nicolaus & Co Inc	1,034,290	0.04	37,585
Stifel Nicolaus Europe Limited	315,930	0.01	1,737
Stifel, Nicolaus And Company, Incorporated	25,610	0.02	639
Strategas Securities LLC	91,917	0.04	3,387
Stuart Frankel and Co Inc	8,058	0.01	80
Suntrust Capital Markets, Inc	292,438	0.03	10,165
Svenska Handelsbanken	26,454	0.01	372
Telsey Advisory Group	326,707	0.05	14,956
The Bank of New York Mellon	907,922	0.00	2,578
The Benchmark Company LLC	54,886	0.05	2,672
The Hongkong and Shanghai Bank	77,659	0.11	8,277
The Northern Trust Company	530,310	0.01	3,145
Themis Trading LLC	762	0.02	18
Toronto Dominion Securities Inc	1,041,500	0.01	5,496
UBS Ag	106,281,175	0.00	249,408
UBS Ag London	190,602	0.04	6,993
UBS Securities Asia LTD	176,156,226	0.00	41,566
UBS Securities Canada Inc	166,452	0.01	932
UBS Securities Hong Kong Limited	525,000	0.00	186
UBS Securities India Private LTD	1,579,962	0.01	17,551
UBS Securities LLC	16,806,972	0.00	44,403
UBS Securities Pte LTD	6,197,800	0.00	13,648
UBS Securities Pte LTD, Seoul	428,691	0.02	10,435
UBS Switzerland AG	433,449	0.00	1,553
UBS Warburg Australia Equities	615,363	0.00	884
UOB Kay Hian Pte Limited	742,000	0.00	1,035
Vietcap Securities Joint Stock Company	126,098	0.00	477

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TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2023**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Virtu Americas LLC	1,115,909	\$0.03	\$30,563
Virtu ITG Europe Limited	2,206,441	0.01	13,848
Virtu ITG Hong Kong Limited	1,132,019	0.00	1,247
Wedbush Morgan Securities Inc	2,000	0.03	50
Wedbush Securities Inc	25,850	0.04	1,035
Wells Fargo Securities LLC	2,671,081	0.01	31,846
William Blair & Company LLC	715,862	0.04	28,528
Williams Capital Group Lp (The)	158,559	0.03	4,145
Wood and Company	257,282	0.00	551
Wood Gundy Inc	54,885	0.01	477
XP Investimentos Cctvm SA	6,439,276	0.00	8,623
Yuanta Securities Co, LTD	759,000	0.01	4,052



**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)**  
**FISCAL YEAR ENDED JUNE 30, 2023**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Abel Noser	6,154,561	\$0.03	\$184,679
ABG Securities, Oslo	90,003	0.01	756
ABN Amro Clearing Bank N.V.	94,735	0.01	848
Allen and Company LLC	14,220	0.04	527
Banco JPMorgan Chase SA	442,500	0.00	210
Banco Pactual SA Rio De Janeiro	158,100	0.00	328
Bank Of America Merrill Lynch Securities	6,540,480	0.00	3,888
Bank Of Americas Securities Inc	2,628,958	0.02	41,510
Banque Nationale Du Canada	1,299,450	0.00	4,863
Banque Nationale Du Canada Montreal	848,370	0.00	4,026
Barclays Bank London	1,921,624	0.00	8,171
Barclays Capital Inc	10,677	0.00	37
Barclays Capital Inc/Le	30,111	0.03	807
Barclays Capital Le	1,227,576	0.02	21,411
Baypoint Trading LLC	343,377	0.02	6,850
Berenberg Bank Hamburg	805,220	0.02	17,431
BMO Capital Markets	11,549	0.01	99
BNP Paribas Arbitrage	285,674	0.00	1,428
BNP Paribas Prime Brokerage Inc	4,132	0.01	43
BNP Paribas Sec Services Zurich	1,360	0.08	112
BNP Paribas Securities (Asia) LTD	211,594	0.01	1,099
BNP Paribas Securities Services	1,327,208	0.01	9,918
BNP Paribas Securities Services SA	241,175	0.01	3,351
BNP Paribas Security Svcs London	242,173	0.00	622
BNY Convergenx Execution Solutions	417,596	0.00	1,593
Bofa Securities Inc	84,793	0.02	1,500
Bradesco SA	6,980,327	0.00	6,372
Brockhouse & Cooper Inc Montreal	90,600	0.02	1,820
Cabrera Capital Markets (Pershing)	1,100	0.03	28
Canaccord Capital Corp Vancouver	103,464	0.01	1,191
Cantor Fitzgerald & Co Inc	138,798	0.01	1,529
Cantor Fitzgerald Europe	1,500	0.01	12
Carnegie AS	76,312	0.02	1,209
Carnegie Secs Helsinki	253,519	0.01	2,114
Celfin Capital Sa Corredores De Bolsa	3,162	0.01	29
China Intl Capital Corp Hk Secs LTD	279,900	0.01	1,508
CIBC World Markets Toronto	39,599	0.01	372
CIMB-GK Securities Pte LTD	181,279	0.00	498
Citibank NA	363,993	0.01	2,707
Citibank NA London	439	0.16	70
Citigroup Global Markets Europe AG	2,170,065	0.01	19,109
Citigroup Global Markets Inc	11,559,550	0.00	35,013
Citigroup Global Markets Limited	8,624,487	0.00	23,644
Citigroup Global Mkt Ind Pvt LTD	410,591	0.01	2,538
Citigroup Global Mkt Secs LTD	137,061	0.03	4,735
Citigroup Global Mkts Australia Pty	45,910	0.00	117
CLKing & Associates Inc	1,200	0.03	31
CLSA Australia Pty LTD	98,358	0.01	922
CLSA India LTD	26,602	0.01	354
CLSA LTD Hong Kong	36,110,481	0.00	14,769
CLSA Singapore Pte LTD	5,452,853	0.00	6,117
Collins Stewart LLC	258,253	0.02	5,178
Convergenx LLC	23,497	0.03	773
Cowen And Company LLC	3,064,979	0.03	89,256

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Craig - Hallum	2,588	\$0.02	\$51
Credit Agricole Investor Service BK	52,694	0.04	1,919
Credit Lyonnais Sec Seoul	94,618	0.05	4,366
Credit Lyonnais Secs (Asia) Taipei	318,000	0.01	1,865
Credit Lyonnais Secs Singapore	1,145,793	0.01	6,105
Credit Mutuel-Cic Banques	2,185	0.07	152
Credit Suisse Equities (Australia)	26,740	0.01	167
Credit Suisse First Boston	1,324,514	0.01	6,891
Credit Suisse First Boston HK	355,692	0.00	1,535
Credit Suisse First Boston SA	18,600	0.00	5
Credit Suisse Securities (CRSUSA)	68,174	0.01	726
Credit Suisse Securities (USA) LLC	421,150	0.00	1,620
CSFB (Europe) LTD Seoul Secs Brnch	30,422	0.02	563
CSFB India (Secs) Pvt LTD Mumbai	7,636	0.00	32
CSFB Taipei	179,000	0.02	3,358
D Carnegie AB Stockholm	710,831	0.01	9,106
DADavidson & Co	9,693	0.02	192
Daiwa Capital Markets America Inc	393,267	0.02	8,221
Daiwa Capital Markets Hong Kong	98,279	0.02	1,622
Daiwa Secs SB Capital Markets, Singapore	393,221	0.01	2,817
Daiwa Secs Seoul	20,563	0.01	275
Danske Bank A/S Copenhagen	73,797	0.00	102
Davy Stockbrokers	92,638	0.01	926
DBS Vickers Secs (Sing) Pte LTD	604,500	0.00	2,944
Den Norske Bank ASA	35,445	0.01	249
Deutsche Bank Securities Inc NY	6,295	0.03	196
Direct Trading Institutional Inc	389,329	0.01	5,799
Dowling and Partners	4,124	0.04	153
DSP Merrill Lynch LTD Mumbai	37,472	0.00	24
E-trade Secs Co LTD Tokyo	11,106	0.01	99
Exane SA	1,592,868	0.00	7,568
Fidelity Capital Markets	347,442	0.02	6,763
Financial Brokerage Group	146,914	0.01	1,363
First Union Capital Markets	253,851	0.03	6,595
Flow Corretora De Mercadorias LTDa	463,000	0.00	1,316
French American Banking Corporation	26,256	0.01	262
Friedman Billings & Ramsey	3,861	0.02	77
Goldman Sachs	2,296,798	0.02	42,825
Goldman Sachs (Asia) LLC Seoul	932,624	0.00	3,454
Goldman Sachs (Asia) Taipei	2,095,644	0.00	1,662
Goldman Sachs (India) Securities	7,854,731	0.00	7,299
Goldman Sachs Australia Pty LTD	189,188	0.01	1,534
Goldman Sachs Bank London	2,876,561	0.01	16,824
Goldman Sachs New York	58,799,210	0.00	32,265
Goodbody Stockbrokers Dublin	21,585	0.07	1,490
Guggenheim Capital Markets LLC	3,912	0.03	117
Haitong Intl Securities Co Limited	206,108	0.00	489
Hongkong & Shanghai Bnking Corp LTD	10,871	0.01	114
HSBC Bank PLC	51,879	0.01	279
HSBC Bank PLC London	4,931,798	0.00	6,636
HSBC Brokerage (USA) Inc	137,788	0.00	392
HSBC Secs & Cap Mkts India Privt LTD	1,138,194	0.00	2,198
HSBC Securities Brokers (Asia) LTD	2,241,948	0.00	2,077
HSBC Securities USA	27,288,461	0.00	15,391

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Hyundai Securities	91,665	\$0.04	\$3,320
Ichiyoshi Securities	1,949	0.02	31
ICICI Brokerage Services Mumbai	1,232,735	0.00	3,584
IM Trust SA Corredores De Bolsa	21,926	0.01	154
Instinet	1,730,038	0.02	27,638
Instinet Australia Clearing Svcs	440,512	0.00	1,152
Instinet Clearing Services Inc	42,048	0.04	1,675
Instinet Corp New York	4,745,298	0.00	5,584
Instinet Europe Limited	6,394,170	0.00	23,684
Instinet Pacific LTD Hong Kong	28,919,530	0.00	7,488
Instinet Singapore Services Pte LTD	534,900	0.00	472
Intermonte Sim S.P.A.	122,334	0.00	253
International Advisory Services Group	221,506	0.01	1,323
Investec Henderson Crosthwaite Secs	33,144	0.03	1,109
ISI Group Inc	1,819,937	0.02	40,130
Island Trader Securities Inc	400	0.03	11
ITG Australia Limited Melbourne	1,706,356	0.00	2,710
ITG Canada Corp Toronto	198,603	0.01	1,832
ITG London	2,501,624	0.00	8,098
Janney Montgomery Scott Inc	2,689	0.02	54
Jarden Australia PTY LTD	270,946	0.00	1,104
Jefferies & Company	2,363,828	0.02	57,144
Jefferies & Company Inc NY	858,294	0.01	6,156
Jefferies Australia Pty LTD	97,834	0.00	241
Jefferies Hong Kong Limited	400,500	0.00	200
Jefferies India Private Limited	4,739,644	0.00	2,459
Jefferies International	4,286,010	0.00	17,548
JM Morgan Stanley Secs Pvt LTD	16,861,776	0.00	13,217
JMP Securities	75,117	0.02	1,444
Jones Trading Institutional Services	189,508	0.02	3,575
JP Morgan Broking HK LTD	343,900	0.00	1,429
JP Morgan Chase Bank	1,168,383	0.03	29,283
JP Morgan India Private LTD	5,407,677	0.00	14,142
JP Morgan Secs Inc NY	5,762,384	0.00	19,110
JP Morgan Secs London	256,826	0.01	2,084
JP Morgan Securities	5,259	0.02	131
JP Morgan Securities (Asia Pacific)	35,387,938	0.00	23,545
JP Morgan Securities (Far East) LTD	251,497	0.01	2,247
JP Morgan Securities Australia Limited	1,299,927	0.00	1,151
JP Morgan Securities Limited	3,253,623	0.01	26,467
JP Morgan Securities LLC	284,576	0.02	5,004
JP Morgan Securities Singapore	9,699,800	0.00	2,989
JP MorganChase / CustJPMCC	183,247	0.02	4,034
JPM Securities	12,575	0.02	253
KBC Peel Hunt	112,031	0.01	897
Keefe Bruyette & Woods Inc	62,622	0.04	2,420
Kempen And Co	17,725	0.03	503
Kepler Capital Markets	83,604	0.01	450
Keybanc Capital Markets Inc	81,648	0.03	2,158
KM Partners LLC	1,107	0.03	31
Knight Equity Markets Lp	645	0.01	5
Knight Securities LP, Jersey City	77,174	0.00	203
Korea Investment And Securities Co	17,978	0.02	342
Kotak Securities Mumbai	542,800	0.00	2,175

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Larrain Vial Chile	1,804,220	\$0.00	\$136
Leerink Swann And Company	6,901	0.02	157
Liquidnet Canada Inc	16,900	0.02	268
Liquidnet Europe LTD London	471,311	0.00	2,242
Liquidnet Inc	315,600	0.01	4,312
Loop Capital Markets	13	0.00	0
Luminex Trading And Analytics LLC	825	0.00	4
Macquarie Bank Limited	2,552,891	0.00	6,592
Macquarie Capital (Aust) LTD	44,413,365	0.00	13,998
Macquarie Securities (USA) Inc	96,351	0.01	1,430
Macquarie Securities Indian Pvt LTD	4,576,925	0.00	3,075
Macquarie Securities LTD Seoul	12,281	0.12	1,436
Macquarie Securities New Zealand	36,526	0.00	53
Merrill Lynch & Co Inc (Atlas Gbl) NY	131,702	0.01	1,144
Merrill Lynch And Co Inc	120,598	0.01	1,592
Merrill Lynch International London	10,070,120	0.01	58,666
Merrill Lynch Pierce Fenner & Smith	1,306	0.02	26
Mirae Asset Securities	4,442	0.12	514
Mirae Asset Securities (USA) Inc	2,498	0.04	100
Mitsubishi UFJ Securities (USA)	57,162	0.01	468
Mizuho Securities Asia LTD	13,276	0.01	193
Mizuho Securities Inc	83,000	0.04	3,209
Mizuho Securities USA Inc	1,082	0.04	40
Monness, Crespi, Hardt & Co	294	0.04	11
Morgan Stanley & Co	63,961,313	0.00	59,954
Morgan Stanley And Co Intl Taipei	5,090,361	0.00	5,673
Morgan Stanley Dean Witter Sydney	710	0.01	9
Morgan Stanley Intl Seoul	510,724	0.01	3,177
National Finl Svcs Corp	12,058,078	0.01	62,054
NBC Clearing Services Inc	42,020	0.01	416
Needham And Company LLC	33,943	0.02	671
Nesbitt Burns Toronto	1,028,611	0.01	8,486
Nomura Financial Advisory And Securities	446,649	0.00	1,030
Nordea Bank Finland PLC	59,278	0.01	484
Northern Trust Securities Inc	1,662	0.02	41
Numis Securities London	17,450	0.01	226
Numis Securities, New York	117,456	0.02	2,098
Oddo Et Cie Paris	34,639	0.14	4,698
Oppenheimer & Co Inc	23,482	0.02	366
Optiver VOF	2,095	0.04	81
Parel	76,429	0.03	2,326
Parel Paris	9,375	0.09	806
Penserra Securities	153,824	0.02	3,741
Pershing LLC	844,386	0.03	25,121
Pershing Securities	1,401,756	0.01	12,304
Piper Jaffray & Co	1,118,004	0.02	20,144
Raymond James & Associates Inc	117,343	0.03	4,023
Raymond James LTD Toronto	58,227	0.01	428
RBC Capital Markets Corporation	388,172	0.01	5,130
RBC Capital Markets, LLC	90,592	0.01	1,244
RBC Dominion Secs Toronto	331,891	0.01	2,699
Redburn (Usa) LLC	920	0.03	26
Redburn Partners LLP London	8,610	0.08	665
Robert W Baird & Co	53,351	0.03	1,697

Continued on page 127

**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)**  
**FISCAL YEAR ENDED JUNE 30, 2023 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Roth Capital Partners, LLC	61,620	\$0.02	\$1,234
Royal Bank Of Canada	58,529	0.01	641
Royal Bank Of Canada Europe Limited	597,149	0.00	2,467
Salomon Smith Barney Taipei Brch	154,300	0.00	147
Samsung Securities	34,796	0.03	1,114
Sanford C Bernstein & Co Inc	2,348,011	0.01	23,856
Sanford C Bernstein LTD London	6,453,606	0.00	9,087
Santander Investment Securities Inc	584,070	0.00	1,084
Scotia Capital (USA) Inc	940	0.00	4
Scotia Capital Mkts Toronto	328,704	0.01	2,272
Scotia Capital USA Inc	115,700	0.00	460
Seb (Enskilda Securities) London	46,119	0.01	477
SG Americas Securities LLC (Sgas)	6,052	0.00	0
SG Securities (Hk) LTD Hong Kong	75,428	0.00	36
Siebert Williams Shank & Co	13,112	0.02	268
Skandinaviska Enskilda Banken	2,269	0.08	179
SMBC Nikko Securities (Hong Kong)	72,960	0.01	890
SMBC Securities Inc	30,300	0.02	526
Societe Generale	162,326	0.01	993
State Street Global Markets, LLC	6,031	0.01	61
Stephens Inc	296	0.02	7
Stifel Nicolaus & Co Inc	428,491	0.02	9,648
Stifel Nicolaus Europe Limited	2,611	0.02	42
Suntrust Capital Markets Inc	271,754	0.03	8,067
TD Waterhouse Investor Services Inc	740	0.00	3
Telsey Advisory Group	480	0.04	18
Tokay Tokyo Securities Co LTD	1,600	0.03	42
Toronto Dominion Secs Toronto	142,380	0.01	886
UBS AG London	11,910,957	0.00	44,512
UBS AG London Branch	44,869	0.02	1,043
UBS AG Stamford CT	1,899,098	0.00	1,930
UBS Securities Asia LTD	18,833,652	0.00	13,377
UBS Securities Australia LTD	29,275	0.00	75
UBS Securities Canada Inc	2,679	0.01	15
UBS Securities LLC (Warburg)	310,884	0.01	3,086
UBS Warburg LLC	3,475,019	0.00	244
UBS Warburg Secs India Pvt Mumbai	1,023,583	0.01	14,526
UBS Warburg Securities LTD Seoul	106,075	0.02	1,658
UBS Warburg Securities Taiwan	851,000	0.00	2,054
UBS-AG Zurich	9,161	0.06	528
Unpublished	8,775,782	0.00	23,816
Wedbush Morgan Securities Inc	11,522	0.02	231
Wells Fargo Securities LLC	39,357	0.04	1,528
William Blair & Company	91,799	0.03	2,335
Winterflood Securities Limited	147,650	0.01	1,480
Wood & Company	35,774	0.01	361
Woori Investment And Securities	96,479	0.01	1,013
XP Investments Cctvm SA	19,700	0.01	135





# Actuarial Section







## OFFICE OF THE ACTUARY

255 GREENWICH STREET • 9<sup>TH</sup> FLOOR  
 NEW YORK, NY 10007  
 (212) 442-5775 • FAX: (212) 442-5777

MAREK TYSZKIEWICZ  
 CHIEF ACTUARY

December 1, 2023

Board of Trustees  
 Teachers' Retirement System of the City of New York  
 55 Water Street, 16<sup>th</sup> Floor  
 New York, NY 10041

Re: Actuarial Information for the Annual Comprehensive Financial Report (ACFR) for the  
 Fiscal Year Ended June 30, 2023

Dear Members of the Board of Trustees:

The financial objective of the Teachers' Retirement System of the City of New York - Qualified Pension Plan (TRS-QPP or the Plan) is to fund members' retirement benefits during their active service by establishing employer normal contribution rates that, expressed as a percentage of active member annualized covered payroll, would remain approximately level over the future working lifetimes of those active members and, together with member contributions and investment income, are intended to ultimately be sufficient to accumulate assets to pay benefits when due.

An actuarial valuation of the Plan is performed annually as of the second June 30 preceding each fiscal year to determine the Employer Contributions to be paid for that fiscal year (i.e., the June 30, 2021 actuarial valuation is used to determine Fiscal Year 2023 Employer Contributions (Actuarial Contributions)).

The funding policy of the City of New York (the City) is to contribute statutorily-required contributions (Statutory Contributions) and these contributions are generally funded by the City within the appropriate fiscal year.

For Fiscal Year 2023, the Actuarial Contributions to TRS, are equal to those recommended by the Actuary of the New York City Retirement Systems and Pension Funds (the Actuary) and represent the Statutory Contributions.

Pursuant to the Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB67) and Statement No. 68 (GASB68), on September 22, 2023, the Office of the Actuary (OA) published the "Fiscal Year 2023 GASB 67/68 Report for the City of New York and the New York City Retirement Systems" (the Fiscal Year 2023 GASB67/68 Report). Appendix B of the Fiscal Year 2023 GASB67/68 Report contains information developed in accordance with GASB67 for TRS.

Board of Trustees  
Teachers' Retirement System of the City of New York  
December 1, 2023  
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### **Actuarial Assumptions and Methods**

The assumptions and methods used for the June 30, 2021 valuation were presented in the memorandum titled "Proposed Changes to Actuarial Assumptions and Methods (Revised 2021 A&M)" dated July 23, 2021 and were adopted by the Retirement Board at the September 20, 2021 Board meeting. These actuarial assumptions and methods used for funding purposes meet the parameters set forth by the Actuarial Standards of Practice (ASOPs).

### **Benefits, Financial Information, and Census Data**

The June 30, 2021 and June 30, 2020 actuarial valuations are based upon the census data as of those dates submitted by the Plan's administrative staff and the employer's payroll facilities. A summary of the census data used in the June 30, 2021 actuarial valuation is included in this ACFR. A summary of the census data used in the June 30, 2020 actuarial valuation of the Plan is available in the Fiscal Year 2022 Annual Comprehensive Financial Report.

Consistent with the Actuarial Standards of Practice, the Office of the Actuary has reviewed the census data and financial information for consistency and reasonability but has not audited it. The accuracy of the results and calculations presented are dependent on the accuracy of this census data and financial information. To the extent any such data or information provided is materially inaccurate or incomplete, the results contained herein will require revision.

A summary of the benefits available under the terms of the Plan is shown in the Introductory Section of this ACFR. The benefits under the Plan have changed from the prior valuation and reflect the enactment of Chapter 56 of the Laws of 2022 which reduces the Tier 6 vesting requirement from ten years to five years. All other benefits under the Plan are unchanged from the prior valuation. Continued compliance has been presumed for the Older Workers Benefit Protection Act (OWBPA).

Note that this valuation does not reflect unknown potential future claims from *Gulino vs. Department of Education*, 96 Civ. 8414(KMW). Also, pension payments that exceed the Internal Revenue Code Section 415 Limit which have been or are expected to be made from the Excess Benefit Plan are excluded from this valuation.

### **Funded Status**

The funded status of the Plan is usually expressed by the relationship of assets to liabilities.

Board of Trustees  
Teachers' Retirement System of the City of New York  
December 1, 2023  
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With respect to the funded status of the Plan, included in the Actuarial Section of the ACFR is a schedule of funded status based on the Entry Age Normal cost method (Table 11).

Also included in the Actuarial Section of the ACFR is a Solvency Test (i.e., Comparative Summary of Accrued Liabilities Funded by Actuarial Value of Assets) (Table 12), as prescribed by the Government Finance Officers Association (GFOA). This Solvency Test represents an alternative approach to describing progress toward funding objectives.

### **Presentation Style and Sources of Information**

The actuarial information herein is believed to be presented in a manner consistent with the requirements of the GFOA and, where applicable, with GASB67.

The following items in the Actuarial Section of the ACFR were prepared by the OA:

- Summary of Actuarial Assumptions and Methods in Effect for the June 30, 2021 Actuarial Valuation.
- Summary of Active Member Valuation Data.
- Summary of Plan Membership Data.
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls.
- Actuarial and Statutory Contribution History.
- Funded Status Based on Entry Age Normal Cost Method.
- Comparative Summary of Accrued Liabilities Funded by Actuarial Value of Assets - Solvency Test.
- Contributions.

The following items in the Financial Section of the ACFR were also prepared by the OA:

- Membership Data.
- Net Pension Liability.
- Actuarial Assumptions and Methods.
- Schedule of Changes in Employers' Net Pension Liability and Related Ratios.
- Schedule of Employer Contributions.

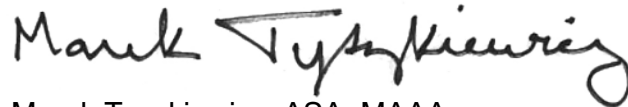
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Teachers' Retirement System of the City of New York  
December 1, 2023  
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If you have any questions about the information in this Actuarial Section or the actuarial information presented elsewhere in this ACFR, please do not hesitate to contact Dolores Capone, Edward Hue, or me.

### Acknowledgement of Qualification

I, Marek Tyszkiewicz, am the Chief Actuary for, and independent of, the New York City Retirement Systems and Pension Funds. I am an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. To the best of my knowledge, the results contained herein have been prepared in accordance with generally accepted actuarial principles and procedures and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Respectfully submitted,



Marek Tyszkiewicz, ASA, MAAA  
Chief Actuary

MT/eh

Att.

cc: Dolores Capone, ASA, EA – New York City Office of the Actuary  
Edward Hue, EA – New York City Office of the Actuary  
Thad McTigue – New York City Teachers' Retirement System  
Paul Raucci - New York City Teachers' Retirement System  
Patricia Reilly – New York City Teachers' Retirement System  
Keith Snow, Esq. – New York City Office of the Actuary

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION

1. Pursuant to Section 96 of the New York City Charter, studies of the actuarial assumptions used to value liabilities of the five actuarially-funded New York City Retirement Systems (NYCRS) are conducted every two years.

Also, in accordance with the Administrative Code of the City of New York (ACCNYS), the Boards of Trustees of the five actuarially-funded NYCRS are to periodically review and adopt actuarial assumptions as proposed by the Actuary for use in the determination of Employer Contributions.

The Actuary issued a memorandum titled, "Proposed Changes to Actuarial Assumptions and Methods (Revised 2021 A&M)" dated July 23, 2021. The actuarial assumptions and methods described in that memorandum were adopted by the Board of Trustees at the September 20, 2021 Board meeting and are referred to as the "Revised 2021 A&M." These actuarial assumptions and methods are effective beginning with Fiscal Year 2021.

2. The Actuarial Interest Rate (AIR) assumption is 7.0% per annum, net of investment expenses (4.0% per annum for benefits payable under the Variable Annuity Program).
3. Active service tables are used to estimate various withdrawals from active service. Probabilities are shown in Table 1 for members withdrawing from active service for service retirement, Table 2 for members terminating from active service, and Tables 3 and 4 for members withdrawing from active service due to disability or death, respectively. Mortality improvement scale MP-2020, published by the Society of Actuaries, is applied to probabilities of ordinary death for actives and pre-commencement mortality for deferred vesteds.
4. The service retiree mortality, disabled retiree mortality, and beneficiary mortality base tables are projected from 2012 using mortality improvement scale MP-2020. The base tables are also multiplied by adjustment factors to convert from lives-weighted to amounts-weighted tables to reflect socioeconomic effects on mortality. Base table probabilities for service and disability pensioners are shown in Tables 5a and 5b respectively, and for beneficiaries in Table 5c.
5. A salary scale is used to estimate salaries at termination, retirement, or death. Percentage increases are shown in Table 6. The salary scale includes a General Wage Increase (GWI) assumption of 3.0% per annum.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)

6. The economic assumptions (i.e., the assumed investment return rate, GWI rate, and Cost-of-Living Adjustments (COLA)) were developed assuming a long-term Consumer Price Inflation (CPI) assumption of 2.5% per annum. The assumption is 1.5% per annum for AutoCOLA and 2.5% per annum for escalation.
7. The valuation assumes a closed group of members.
8. The Actuary reset the Actuarial Value of Assets (AVA) to the Market Value of Assets (MVA) as of June 30, 2019.

Beginning with the June 30, 2020 actuarial valuation, the asset smoothing method recognizes investment returns greater or less than expected over a period of five years, phasing these gains and losses in AVA at a rate of 20% per year.

The expected investment return is derived using the AIR of 7%, beginning-of-fiscal-year MVA, and net cash flows which are assumed to occur midyear.

The AVA is further constrained to be within a corridor of 80% to 120% of the Market Value of Assets.

Beginning with the June 30, 2018 actuarial valuation, the Actuarial Value of Assets is determined by re-characterizing the interest credited on TDA Fixed Fund account balances as investment income instead of as a cash disbursement.

9. The Entry Age Normal (EAN) cost method of funding is used by the Actuary to calculate Employer Contributions.

Under this method, the Present Value (PV) of Future Benefits (PVFB) of each individual included in the actuarial valuation is allocated on a level basis over the expected earnings (or service) of the individual between entry age and the assumed exit age(s). The employer portion of this PVFB allocated to a valuation year is the Normal Cost. The portion of this PVFB not provided for at a valuation date by the PV of Future Normal Costs or future member contributions is the Accrued Liability (AL).

The excess, if any, of the AL over the AVA is the Unfunded Accrued Liability (UAL).

Under this method, actuarial gains and losses, as they occur, reduce and increase the UAL, respectively, and are explicitly identified and amortized. Increases or decreases in obligations due to benefit changes, actuarial assumption changes, and actuarial method changes are also explicitly identified and amortized.

The explicit UALs that are developed under EAN each year are financed over fixed periods.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)

Under EAN, the Normal Cost as a percentage of pay remains stable by individual and changes gradually over time for the entire plan as the characteristics of the group changes (e.g., more Tier 6 active members decrease the average Normal Cost as a percentage of pay).

10. The Employer Contribution for a fiscal year is increased by the interest-adjusted amount of administrative expenses paid from TRS during the second prior fiscal year.
11. Obligations attributable to the World Trade Center (WTC) Disability Benefits Law and to the WTC Death Benefits Law are determined through estimation techniques for post-retirement reclassifications.
12. The One-Year Lag Methodology (OYLM) uses a June 30, XX valuation date to determine Fiscal Year XX+2 employer contributions as follows:
  - a. Normal Cost

The normal cost as of July 1, XX (calculated in the June 30, XX valuation) is rolled forward with the assumed AIR of 7.0% to the mid-point of Fiscal Year XX+2 (i.e., December 31, XX+1).

- b. Administrative Expenses

A reimbursement for administrative expenses deducted from plan assets during the year ending June 30, XX is rolled forward with the assumed AIR of 7.0% to the mid-point of Fiscal Year XX+2.

- c. UAL Payments

New amortization bases for gains and losses, method and assumption changes, and any benefit improvements are established each year XX such that the UAL as of June 30, XX is equal to the sum of the:

- (1) Outstanding prior amortization bases;
- (2) Unpaid prior year normal cost with interest;
- (3) Unreimbursed administrative expenses with interest, and
- (4) New amortization bases.

The UAL payment is the sum of the payments on the amortization bases scheduled for Fiscal Year XX+2.



**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)**

13. Excess Benefit Plan: The valuation excludes liabilities and costs, if any, associated with benefits in excess of the Internal Revenue Code Section 415 limitation.
14. TDA Fixed Fund Normal Cost: A cost is added to each year's Normal Cost for providing a guaranteed 8.25% return on the TDA Fixed Fund for non-UFT members.
15. Additional Assumptions used for the TDA fixed fund:
  - a. Active TDA members would contribute 8.0% of compensation to the TDA fixed fund and 3.5% of compensation to the TDA variable fund.
  - b. TDA members would transfer 25% of their TDA variable fund to the TDA fixed fund.
  - c. Active members in the QPP who have not joined the TDA would join and contribute 2.0% of pay to the TDA fixed fund and approximately 0.9% to the variable fund.
  - d. The probability that a member elects 4% per year withdrawals from the TDA fixed fund starting from the later of age 60 and the age at termination is 25%.
  - e. The probability that a member elects required minimum distributions from the TDA fixed fund starting from the later of age 72 and the age at termination is 75%.
  - f. Estimate techniques have been used to account for the difference in liabilities due to future annuitization of TDA funds.



**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)**

<b>Table 1</b>					
PROBABILITIES OF SERVICE RETIREMENT					
Age	Reduced Service Retirement	Unreduced Service Retirement Probabilities For Members Who Did Not Elect an Improved Retirement Program		Unreduced Service Retirement Probabilities For Members Who Elected an Improved Retirement Program	
		Year 1	Ultimate	Year 1	Ultimate
55	2.50%	18.00%	0.00%	37.50%	0.00%
56	2.50%	18.00%	20.00%	37.50%	22.00%
57	2.50%	18.00%	20.00%	37.50%	22.00%
58	2.50%	18.00%	20.00%	37.50%	22.00%
59	3.75%	18.00%	20.00%	37.50%	22.00%
60	5.00%	18.00%	20.00%	37.50%	22.00%
61	6.25%	18.00%	20.00%	37.50%	22.00%
62	7.50% <sup>1</sup>	27.00%/18.00% <sup>2</sup>	20.00%	50.00%	33.00%
63	0.00%	18.00%/27.00% <sup>3</sup>	20.00%	37.50%	22.00%
64	0.00%	18.00%	20.00%	37.50%	22.00%
65	0.00%	27.00%	20.00%	50.00%	33.00%
66	0.00%	18.00%	20.00%	37.50%	22.00%
67	0.00%	18.00%	20.00%	37.50%	22.00%
68	0.00%	18.00%	20.00%	37.50%	22.00%
69	0.00%	18.00%	20.00%	37.50%	22.00%
70	0.00%	20.00%	20.00%	37.50%	22.00%
71	0.00%	20.00%	20.00%	37.50%	22.00%
72	0.00%	20.00%	20.00%	37.50%	22.00%
73	0.00%	20.00%	20.00%	37.50%	22.00%
74	0.00%	20.00%	20.00%	37.50%	22.00%
75	0.00%	20.00%	20.00%	37.50%	22.00%
76	0.00%	20.00%	20.00%	37.50%	22.00%
77	0.00%	20.00%	20.00%	37.50%	22.00%
78	0.00%	20.00%	20.00%	37.50%	22.00%
79	0.00%	20.00%	20.00%	37.50%	22.00%
80+	N/A	100.00%	100.00%	100.00%	100.00%

<sup>1</sup> 7.50% only applies to Tier 6 members; 0.00% otherwise.

<sup>2</sup> 27.00% for Tier 1, 2, & 4 members and 18.00% for Tier 6 members.

<sup>3</sup> 18.00% for Tier 1, 2, & 4 members and 27.00% for Tier 6 members.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)**

<b>Table 2</b>	
PROBABILITIES OF TERMINATION	
<b>Years of Service</b>	<b>Probability of Termination</b>
0	9.00%
1	8.00%
2	7.00%
3	6.00%
4	5.00%
5	4.00%
6	3.50%
7	3.05%
8	2.65%
9	2.30%
10	2.00%
11	1.75%
12	1.55%
13	1.40%
14	1.30%
15	1.25%
16	1.20%
17	1.15%
18	1.10%
19	1.05%
20	1.00%
21	0.90%
22	0.80%
23	0.70%
24	0.60%
25+	0.50%

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)**

Table 3 PROBABILITIES OF DISABILITY RETIREMENT				
	Ordinary Disability		Accidental Disability	
Age	Males	Females	Males	Females
15	0.01%	0.01%	0.00%	0.00%
16	0.01%	0.01%	0.00%	0.00%
17	0.01%	0.01%	0.00%	0.00%
18	0.01%	0.01%	0.00%	0.00%
19	0.01%	0.01%	0.00%	0.00%
20	0.01%	0.01%	0.00%	0.00%
21	0.01%	0.01%	0.00%	0.00%
22	0.01%	0.01%	0.00%	0.00%
23	0.01%	0.01%	0.00%	0.00%
24	0.01%	0.01%	0.00%	0.00%
25	0.01%	0.01%	0.00%	0.00%
26	0.01%	0.01%	0.00%	0.00%
27	0.01%	0.01%	0.00%	0.00%
28	0.01%	0.01%	0.00%	0.00%
29	0.01%	0.01%	0.00%	0.00%
30	0.01%	0.01%	0.00%	0.00%
31	0.02%	0.01%	0.00%	0.00%
32	0.03%	0.02%	0.00%	0.00%
33	0.04%	0.03%	0.01%	0.00%
34	0.05%	0.04%	0.01%	0.00%
35	0.06%	0.05%	0.01%	0.01%
36	0.07%	0.06%	0.01%	0.01%
37	0.08%	0.07%	0.01%	0.01%
38	0.08%	0.08%	0.02%	0.01%
39	0.09%	0.09%	0.02%	0.01%
40	0.10%	0.10%	0.02%	0.01%
41	0.11%	0.11%	0.02%	0.01%
42	0.12%	0.12%	0.02%	0.01%
43	0.13%	0.13%	0.02%	0.02%
44	0.14%	0.14%	0.02%	0.02%
45	0.15%	0.15%	0.03%	0.02%
46	0.15%	0.16%	0.03%	0.02%
47	0.15%	0.17%	0.03%	0.02%
48	0.15%	0.18%	0.03%	0.03%
49	0.15%	0.19%	0.03%	0.03%
50	0.15%	0.20%	0.03%	0.03%
51	0.15%	0.20%	0.03%	0.03%
52	0.15%	0.20%	0.03%	0.03%
53	0.15%	0.20%	0.03%	0.03%
54	0.15%	0.20%	0.03%	0.03%
55	0.15%	0.20%	0.04%	0.04%
56	0.15%	0.20%	0.04%	0.04%
57	0.15%	0.20%	0.04%	0.04%
58	0.15%	0.20%	0.04%	0.04%
59	0.15%	0.20%	0.04%	0.04%
60	0.15%	0.20%	0.04%	0.04%
61	0.15%	0.20%	0.04%	0.04%
62	0.15%	0.20%	0.04%	0.04%
63	0.15%	0.20%	0.04%	0.04%
64	0.15%	0.20%	0.04%	0.04%
65	0.15%	0.20%	0.04%	0.04%
66	0.15%	0.20%	0.04%	0.04%
67	0.15%	0.20%	0.04%	0.04%
68	0.15%	0.20%	0.04%	0.04%
69	0.15%	0.20%	0.04%	0.04%
70	0.15%	0.20%	0.04%	0.04%
71	0.15%	0.20%	0.04%	0.04%
72	0.15%	0.20%	0.04%	0.04%
73	0.15%	0.20%	0.04%	0.04%
74	0.15%	0.20%	0.04%	0.04%
75	0.15%	0.20%	0.04%	0.04%
76	0.15%	0.20%	0.04%	0.04%
77	0.15%	0.20%	0.04%	0.04%
78	0.15%	0.20%	0.04%	0.04%
79	0.15%	0.20%	0.04%	0.04%
80+	N/A	N/A	N/A	N/A

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)

<b>Table 4</b>			
PROBABILITIES OF MORTALITY FOR ACTIVE MEMBERS BASE RATES			
Age	Ordinary Death		Accidental Death
	Males	Females	
15	0.040%	0.025%	0.000%
16	0.040%	0.025%	0.000%
17	0.040%	0.025%	0.000%
18	0.040%	0.025%	0.000%
19	0.040%	0.025%	0.000%
20	0.040%	0.025%	0.000%
21	0.040%	0.025%	0.000%
22	0.040%	0.025%	0.000%
23	0.040%	0.025%	0.000%
24	0.040%	0.025%	0.000%
25	0.040%	0.025%	0.000%
26	0.040%	0.025%	0.000%
27	0.040%	0.025%	0.000%
28	0.040%	0.025%	0.000%
29	0.040%	0.025%	0.000%
30	0.040%	0.025%	0.000%
31	0.042%	0.026%	0.000%
32	0.044%	0.028%	0.000%
33	0.046%	0.029%	0.000%
34	0.048%	0.030%	0.000%
35	0.050%	0.031%	0.000%
36	0.052%	0.033%	0.000%
37	0.054%	0.034%	0.000%
38	0.056%	0.035%	0.000%
39	0.058%	0.036%	0.000%
40	0.060%	0.038%	0.000%
41	0.070%	0.044%	0.000%
42	0.080%	0.050%	0.000%
43	0.090%	0.056%	0.000%
44	0.100%	0.063%	0.000%
45	0.110%	0.069%	0.000%
46	0.120%	0.075%	0.000%
47	0.130%	0.081%	0.000%
48	0.140%	0.088%	0.000%
49	0.150%	0.094%	0.000%
50	0.160%	0.100%	0.000%
51	0.170%	0.106%	0.000%
52	0.180%	0.113%	0.000%
53	0.190%	0.119%	0.000%
54	0.200%	0.125%	0.000%
55	0.210%	0.131%	0.000%
56	0.220%	0.138%	0.000%
57	0.230%	0.144%	0.000%
58	0.240%	0.150%	0.000%
59	0.250%	0.156%	0.000%
60	0.260%	0.163%	0.000%
61	0.270%	0.169%	0.000%
62	0.280%	0.175%	0.000%
63	0.290%	0.181%	0.000%
64	0.300%	0.188%	0.000%
65	0.320%	0.200%	0.000%
66	0.350%	0.219%	0.000%
67	0.390%	0.244%	0.000%
68	0.440%	0.275%	0.000%
69	0.500%	0.313%	0.000%
70	0.540%	0.350%	0.000%
71	0.600%	0.388%	0.000%
72	0.650%	0.425%	0.000%
73	0.700%	0.463%	0.000%
74	0.750%	0.525%	0.000%
75	0.800%	0.588%	0.000%
76	0.890%	0.650%	0.000%
77	0.980%	0.713%	0.000%
78	1.070%	0.775%	0.000%
79	1.160%	0.925%	0.000%
80+	N/A	N/A	N/A

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)

<b>Table 6a</b>					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0108%	0.0105%	68	1.3827%	0.8399%
16	0.0146%	0.0128%	69	1.5070%	0.8992%
17	0.0197%	0.0140%	70	1.6306%	0.9855%
18	0.0222%	0.0145%	71	1.7953%	1.1072%
19	0.0235%	0.0151%	72	1.9579%	1.2311%
20	0.0246%	0.0153%	73	2.1191%	1.3549%
21	0.0263%	0.0162%	74	2.2784%	1.4775%
22	0.0278%	0.0171%	75	2.4370%	1.5961%
23	0.0295%	0.0181%	76	2.7233%	1.8356%
24	0.0309%	0.0193%	77	3.0074%	2.0765%
25	0.0320%	0.0206%	78	3.2885%	2.3162%
26	0.0335%	0.0220%	79	3.5677%	2.5533%
27	0.0347%	0.0234%	80	3.8824%	2.7842%
28	0.0364%	0.0249%	81	4.4474%	3.3221%
29	0.0386%	0.0267%	82	5.0193%	3.8708%
30	0.0418%	0.0286%	83	5.5977%	4.4089%
31	0.0476%	0.0348%	84	6.1798%	5.0027%
32	0.0532%	0.0401%	85	6.7676%	5.5878%
33	0.0583%	0.0449%	86	7.7139%	6.2981%
34	0.0629%	0.0489%	87	8.6843%	6.9333%
35	0.0673%	0.0527%	88	9.6857%	7.5758%
36	0.0698%	0.0557%	89	10.7135%	8.5620%
37	0.0720%	0.0591%	90	11.7744%	9.6778%
38	0.0745%	0.0626%	91	13.6049%	10.8390%
39	0.0782%	0.0672%	92	15.5105%	11.9717%
40	0.0837%	0.0726%	93	17.4679%	13.1425%
41	0.0941%	0.0775%	94	19.5105%	15.1670%
42	0.1051%	0.0838%	95	21.6689%	17.3761%
43	0.1167%	0.0918%	96	23.7343%	19.5275%
44	0.1294%	0.1013%	97	25.7571%	21.6213%
45	0.1432%	0.1132%	98	27.8633%	23.3643%
46	0.1582%	0.1271%	99	29.8272%	23.8705%
47	0.1744%	0.1429%	100	31.5152%	23.9898%
48	0.1918%	0.1597%	101	33.0771%	24.9134%
49	0.2102%	0.1774%	102	34.4234%	26.0067%
50	0.2317%	0.1950%	103	35.6398%	27.2992%
51	0.2657%	0.2130%	104	36.6357%	28.7614%
52	0.3011%	0.2304%	105	37.3430%	30.3385%
53	0.3373%	0.2472%	106	37.7004%	31.9944%
54	0.3744%	0.2638%	107	37.8599%	33.6898%
55	0.4112%	0.2806%	108	38.0314%	35.3785%
56	0.4578%	0.3034%	109	38.1998%	37.0129%
57	0.5025%	0.3264%	110	50.0000%	50.0000%
58	0.5448%	0.3498%	111	50.0000%	50.0000%
59	0.5843%	0.3732%	112	50.0000%	50.0000%
60	0.6211%	0.3973%	113	50.0000%	50.0000%
61	0.7018%	0.4321%	114	50.0000%	50.0000%
62	0.7804%	0.4686%	115	50.0000%	50.0000%
63	0.8588%	0.5072%	116	50.0000%	50.0000%
64	0.9371%	0.5479%	117	50.0000%	50.0000%
65	0.9994%	0.5912%	118	50.0000%	50.0000%
66	1.1295%	0.6619%	119	50.0000%	50.0000%
67	1.2509%	0.7367%	120	100.0000%	100.0000%

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)

Table 5b					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.3819%	0.3483%	68	2.8007%	2.0012%
16	0.5167%	0.4712%	69	2.8946%	2.0043%
17	0.6964%	0.5141%	70	3.0268%	2.0073%
18	0.7863%	0.5351%	71	3.1148%	2.0103%
19	0.8312%	0.5569%	72	3.2684%	2.1811%
20	0.8353%	0.5649%	73	3.3926%	2.3760%
21	0.8659%	0.5961%	74	3.5875%	2.5968%
22	0.8978%	0.6295%	75	3.7271%	2.8417%
23	0.9464%	0.6597%	76	3.9657%	3.0808%
24	0.9977%	0.6908%	77	4.2691%	3.3373%
25	1.0424%	0.7150%	78	4.5349%	3.6085%
26	1.0960%	0.7387%	79	4.8252%	3.8944%
27	1.1348%	0.7520%	80	5.1378%	4.1909%
28	1.1774%	0.7625%	81	5.6917%	4.6921%
29	1.2163%	0.7686%	82	6.2841%	5.1536%
30	1.2878%	0.7763%	83	6.8835%	5.5061%
31	1.3554%	0.9885%	84	7.7954%	6.1180%
32	1.3755%	1.1922%	85	8.8286%	6.7342%
33	1.3953%	1.3874%	86	9.9032%	7.3088%
34	1.4153%	1.3942%	87	10.8837%	8.2536%
35	1.4357%	1.4012%	88	11.9567%	9.3264%
36	1.4563%	1.4082%	89	13.8059%	10.3734%
37	1.4772%	1.4152%	90	15.7270%	11.4459%
38	1.4985%	1.4223%	91	17.7012%	12.6271%
39	1.5200%	1.4294%	92	19.6428%	14.1350%
40	1.5418%	1.4366%	93	21.9234%	15.4424%
41	1.5640%	1.4436%	94	24.0761%	16.9560%
42	1.5865%	1.4509%	95	26.0577%	18.4261%
43	1.6093%	1.4581%	96	28.3614%	20.1727%
44	1.6324%	1.4654%	97	30.3483%	21.6213%
45	1.6559%	1.5299%	98	31.8739%	23.3643%
46	1.6797%	1.6016%	99	33.6652%	23.8705%
47	1.7038%	1.6623%	100	35.0392%	23.9898%
48	1.7283%	1.7238%	101	36.0496%	24.9134%
49	1.7531%	1.7485%	102	37.0460%	26.0067%
50	1.7783%	1.7736%	103	37.7767%	27.2992%
51	1.8039%	1.7991%	104	38.1460%	28.7614%
52	1.9408%	1.8530%	105	38.3076%	30.3385%
53	2.0713%	1.8909%	106	38.4698%	31.9944%
54	2.2040%	1.9173%	107	38.6325%	33.6898%
55	2.3207%	1.9622%	108	38.8076%	35.3785%
56	2.4304%	1.9652%	109	38.9794%	37.0129%
57	2.4937%	1.9681%	110	50.0000%	50.0000%
58	2.5070%	1.9711%	111	50.0000%	50.0000%
59	2.5245%	1.9741%	112	50.0000%	50.0000%
60	2.5362%	1.9770%	113	50.0000%	50.0000%
61	2.5394%	1.9801%	114	50.0000%	50.0000%
62	2.5426%	1.9831%	115	50.0000%	50.0000%
63	2.5480%	1.9861%	116	50.0000%	50.0000%
64	2.5797%	1.9891%	117	50.0000%	50.0000%
65	2.6258%	1.9921%	118	50.0000%	50.0000%
66	2.6510%	1.9951%	119	50.0000%	50.0000%
67	2.7083%	1.9982%	120	100.0000%	100.0000%

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)**

<b>Table 5c</b>					
PROBABILITIES OF MORTALITY FOR BENEFICIARIES BASE RATES					
<b>Age</b>	<b>Males</b>	<b>Females</b>	<b>Age</b>	<b>Males</b>	<b>Females</b>
15	0.0105%	0.0092%	68	1.8256%	1.3605%
16	0.0142%	0.0112%	69	1.9386%	1.4332%
17	0.0191%	0.0122%	70	2.0542%	1.5007%
18	0.0222%	0.0133%	71	2.2359%	1.6745%
19	0.0240%	0.0143%	72	2.4230%	1.8463%
20	0.0251%	0.0145%	73	2.6165%	2.0157%
21	0.0268%	0.0153%	74	2.8157%	2.1838%
22	0.0284%	0.0161%	75	3.0220%	2.3492%
23	0.0301%	0.0171%	76	3.4928%	2.6652%
24	0.0315%	0.0183%	77	3.9787%	2.9831%
25	0.0327%	0.0195%	78	4.4792%	3.3011%
26	0.0342%	0.0208%	79	4.9963%	3.6207%
27	0.0354%	0.0221%	80	5.5282%	3.9391%
28	0.0371%	0.0236%	81	6.1051%	4.4386%
29	0.0394%	0.0252%	82	6.6894%	4.9473%
30	0.0427%	0.0270%	83	7.2805%	5.4665%
31	0.0495%	0.0330%	84	7.8749%	5.9942%
32	0.0562%	0.0384%	85	8.4753%	6.5354%
33	0.0625%	0.0431%	86	9.6136%	7.4659%
34	0.0682%	0.0471%	87	10.8005%	8.3995%
35	0.0743%	0.0511%	88	12.0443%	9.3428%
36	0.0780%	0.0542%	89	13.3397%	10.2918%
37	0.0818%	0.0579%	90	14.6958%	11.2477%
38	0.0861%	0.0618%	91	16.4185%	12.8868%
39	0.0917%	0.0666%	92	18.1416%	14.4887%
40	0.0997%	0.0719%	93	19.8574%	16.0801%
41	0.1394%	0.0775%	94	21.6187%	17.5854%
42	0.1774%	0.0859%	95	23.5884%	19.0626%
43	0.2143%	0.0968%	96	25.4266%	20.2474%
44	0.2507%	0.1111%	97	27.2119%	21.2937%
45	0.2875%	0.1287%	98	29.0202%	22.0663%
46	0.3207%	0.1501%	99	30.6654%	22.5443%
47	0.3534%	0.1748%	100	32.1584%	22.6473%
48	0.3849%	0.2022%	101	33.7521%	23.5294%
49	0.4150%	0.2319%	102	35.1259%	24.5619%
50	0.4431%	0.2633%	103	36.3671%	25.7825%
51	0.5156%	0.2999%	104	37.3834%	27.1635%
52	0.5928%	0.3376%	105	38.1051%	28.6530%
53	0.6740%	0.3762%	106	38.4698%	30.2169%
54	0.7583%	0.4151%	107	38.6325%	31.8182%
55	0.8440%	0.4540%	108	38.8076%	33.4131%
56	0.9048%	0.5132%	109	38.9794%	34.9566%
57	0.9604%	0.5735%	110	50.0000%	50.0000%
58	1.0101%	0.6353%	111	50.0000%	50.0000%
59	1.0536%	0.6981%	112	50.0000%	50.0000%
60	1.0919%	0.7631%	113	50.0000%	50.0000%
61	1.1835%	0.8329%	114	50.0000%	50.0000%
62	1.2676%	0.8908%	115	50.0000%	50.0000%
63	1.3473%	0.9493%	116	50.0000%	50.0000%
64	1.4238%	1.0146%	117	50.0000%	50.0000%
65	1.4985%	1.0876%	118	50.0000%	50.0000%
66	1.6059%	1.1681%	119	50.0000%	50.0000%
67	1.7146%	1.2609%	120	100.0000%	100.0000%

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2021 ACTUARIAL VALUATION (Cont'd)**

<b>Table 6</b>		
ANNUAL RATES OF MERIT AND SALARY INCREASE		
<b>Years of Service</b>	<b>Merit Increase</b>	<b>Salary Increase<sup>1</sup></b>
0	10.00%	13.00%
1	8.00%	11.00%
2	6.00%	9.00%
3	5.00%	8.00%
4	6.00%	9.00%
5	5.00%	8.00%
6	5.00%	8.00%
7	4.00%	7.00%
8	2.00%	5.00%
9	5.00%	8.00%
10	1.00%	4.00%
11	1.00%	4.00%
12	3.00%	6.00%
13	1.00%	4.00%
14	5.00%	8.00%
15	1.00%	4.00%
16	1.00%	4.00%
17	2.00%	5.00%
18	1.00%	4.00%
19	9.00%	12.00%
20	1.00%	4.00%
21	5.00%	8.00%
22+	1.00%	4.00%

<sup>1</sup>Salary Increase is the General Wage Increase of 3.00% plus the Merit Increase.



**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTIVE MEMBER VALUATION DATA**

<b>Table 7</b>				
ACTIVE MEMBER VALUATION DATA				
<b>June 30 Actuarial Valuation</b>	<b>Number</b>	<b>Annual Salary</b>	<b>Average Annual Salary</b>	<b>Percentage Increase/ (Decrease) In Avg. Salary</b>
2012	112,460	8,013,395,184	71,256	(1.0%)
2013	112,481	8,128,378,071	72,264	1.4%
2014	111,726	8,274,685,657	74,062	2.5%
2015	114,652	8,844,650,633	77,143	4.2%
2016	118,201	9,224,267,647	78,039	1.2%
2017	120,826	9,848,899,232	81,513	4.5%
2018	121,764	10,404,403,684	85,447	4.8%
2019	123,336	10,903,755,059	88,407	3.5%
2020	124,276	11,203,878,026	90,153	2.0%
2021	123,211	11,469,452,986	93,088	3.3%

Salaries reflect the impact of recent labor contract settlements and certain non-union salary increases with retroactive effective dates, if any.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**SUMMARY OF PLAN MEMBERSHIP DATA**

As of the June 30, 2021 and June 30, 2020 actuarial valuations, the Plan's Membership consisted of:

<b>Table 8</b>		
SUMMARY OF PLAN MEMBERSHIP		
<b>Group</b>	<b>June 30, 2021</b>	<b>June 30, 2020</b>
Active members	123,211	124,276
Terminated Nonvested Members	4,574	5,604
Deferred vested members not yet receiving benefits	15,128	15,502
Retirees and beneficiaries currently receiving benefits	<u>89,997</u>	<u>89,536</u>
Total	232,910	234,918

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
 QUALIFIED PENSION PLAN

SCHEDULE OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS

Table 9									
SCHEDULE OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS									
June 30 Actuarial Valuation	Added to Rolls		Removed from Rolls		End of Year Rolls		% Increase in Annual Allowances	Average Annual Allowances	
	Number	Annual Allowances <sup>1</sup>	Number	Annual Allowances	Number	Annual Allowances <sup>2</sup>			
2012	4,684	200,786,572	2,209	62,805,438	76,539	3,366,900,574	4.3%	43,989	
2013	4,078	248,087,233	2,440	77,107,240	78,177	3,537,880,567	5.1%	45,255	
2014	4,356	275,947,759	2,114	67,585,789	80,419	3,746,242,537	5.9%	46,584	
2015	4,728	219,769,491	2,370	81,986,287	82,777	3,884,025,741	3.7%	46,922	
2016	3,808	157,518,432	2,492	86,890,450	84,093	3,954,653,723	1.8%	47,027	
2017	3,519	254,567,439	2,842	111,573,800	84,770	4,097,647,362	3.6%	48,338	
2018	4,107	240,586,776	2,582	103,957,220	86,295	4,234,276,918	3.3%	49,067	
2019	4,921	249,898,766	2,709	113,559,733	88,507	4,370,615,951	3.2%	49,382	
2020	4,144	201,792,665	3,115	135,202,307	89,536	4,437,206,309	1.5%	49,558	
2021	3,780	405,781,026	3,319	151,854,871	89,997	4,691,132,464	5.7%	52,125	

<sup>1</sup> Amounts shown include changes due to benefit finalization, changes in benefit type (e.g. Service to Accidental Disability), COLA increases and other changes.

<sup>2</sup> Allowances shown are those used in the actuarial valuation as of the Year End date and are not adjusted for anticipated changes due to the finalization of benefit calculations or contract settlements.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### ACTUARIAL AND STATUTORY CONTRIBUTION HISTORY

<b>Table 10</b>			
ACTUARIAL AND STATUTORY CONTRIBUTION HISTORY			
<b>Fiscal Year Ended June 30</b>	<b>Actuarial Contribution Certified</b>	<b>Statutory Contribution Contributed <sup>1</sup></b>	<b>Employer Rate of Contribution <sup>2,3,4</sup></b>
2014	2,998,693,727	2,998,693,727	37.7%
2015	3,270,006,920	3,270,006,920	40.5%
2016	3,702,569,102	3,702,569,102	44.8%
2017	3,888,399,470	3,888,399,470	44.1%
2018	3,889,709,927	3,889,709,927	42.3%
2019	3,696,685,559	3,696,685,559	37.7%
2020	3,590,801,261	3,590,801,261	34.6%
2021	3,131,606,535	3,131,606,535	28.8%
2022	3,303,797,557	3,303,797,557	29.6%
2023	3,086,081,819	3,086,081,819	27.0%

<sup>1</sup>Represents total employer contributions accrued for fiscal year.

<sup>2</sup>The Employer Rate of Contribution equals the Statutory Contribution as a percentage of the salaries of members who were on payroll or projected to be on payroll (under One-Year Lag Methodology) as of the preceding June 30 adjusted, where applicable, to be consistent with collective bargaining agreements estimated to be achieved.

<sup>3</sup>Starting with the Fiscal Year ended June 30, 2019, the Employer Rate of Contribution is calculated before offsetting for Annuity Savings Accumulation Fund (ASAF).

<sup>4</sup> For Fiscal Year ended June 30, 2020, the Employer Rate of Contribution is calculated before offsetting for the Pre-Payment credit as well as the ASAF credit.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
 QUALIFIED PENSION PLAN

FUNDED STATUS BASED ON ENTRY AGE NORMAL COST METHOD

**Table 11**  
 FUNDED STATUS BASED ON ENTRY AGE NORMAL COST METHOD  
 (\$ Thousands)

June 30 Valuation Date	(1) Actuarial Value of Assets (AVA)	(2) Accrued Liability (AL)	(3) Unfunded AL (UAL) (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Covered Payroll <sup>1</sup>	(6) UAL as a % of Covered Payroll (3) / (5)
2012	33,871,180	58,783,399	24,912,219	57.6%	8,013,395	310.9%
2013	35,186,072	61,988,933	26,802,861	56.8%	8,128,378	329.7%
2014	37,521,424	67,309,977	29,788,553	55.7%	8,274,686	360.0%
2015	39,290,072	69,625,608	30,335,536	56.4%	8,844,651	343.0%
2016	41,015,087	69,964,412	28,949,325	58.6%	9,224,268	313.8%
2017	44,381,706	69,552,380	25,170,674	63.8%	9,848,899	255.6%
2018	50,012,149	72,205,318	22,193,169	69.3%	10,404,404	213.3%
2019	57,990,211	73,938,547	15,948,336	78.4%	10,903,755	146.3%
2020	60,693,821	75,452,987	14,759,166	80.4%	11,203,878	131.7%
2021	66,328,295	79,153,122	12,824,827	83.8%	11,469,453	111.8%

<sup>1</sup> Salaries reflect the impact of recent labor contract settlements and certain non-union salary increases with retroactive effective dates, if any.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK  
QUALIFIED PENSION PLAN**

**COMPARATIVE SUMMARY OF ACCRUED LIABILITIES FUNDED BY ACTUARIAL VALUE OF ASSETS**

**Table 12**

COMPARATIVE SUMMARY OF ACCRUED LIABILITIES FUNDED BY ACTUARIAL VALUE OF ASSETS  
SOLVENCY TEST  
(\$ Thousands)

June 30 Valuation Date	Accrued Liabilities for			Actuarial Value of Assets (D)	Percentage of Accrued Liabilities Funded by Actuarial Value of Assets		
	Accumulated Member Contributions (A)	Current Retirees and Beneficiaries (B)	Active Members' Employer-Financed Portion (C)		(A)	(B)	(C)
2012	3,122,720	35,575,735	17,558,791	33,871,180	100	86	0
2013	3,330,541	37,451,527	18,565,932	35,186,072	100	85	0
2014	3,547,779	40,753,340	20,193,955	37,521,424	100	83	0
2015	3,646,765	42,095,109	20,888,473	39,290,072	100	85	0
2016	3,765,740	41,651,524	21,465,314	41,015,087	100	89	0
2017	3,291,234	42,149,684	23,681,032	44,381,706	100	97	0
2018	3,431,852	43,150,865	25,230,752	50,012,149	100	100	14
2019	3,617,468	43,741,267	26,579,812	57,990,211	100	100	40
2020	3,829,592	44,132,285	27,491,110	60,693,821	100	100	46
2021	4,083,490	46,175,315	28,894,317	66,328,295	100	100	56

See following "SOLVENCY TEST – NOTES."

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### COMPARATIVE SUMMARY OF ACCRUED LIABILITIES FUNDED BY ACTUARIAL VALUE OF ASSETS (Cont'd)

#### SOLVENCY TEST - NOTES

The ultimate test of financial soundness in a retirement system is its ability to pay all of its promised benefits when due. The retirement system's progress in accumulating assets to pay all promised benefits can be measured by comparing the Actuarial Value of Assets of the retirement system with the Accrued Liabilities for:

- a. Accumulated Member Contributions;
- b. Current Retirees and Beneficiaries; and
- c. Active Members' Employer-Financed Portion.

Prior to the June 30, 2019 valuation, the Accrued Liabilities were calculated under the Projected Unit Credit actuarial cost method. Beginning with the June 30, 2019 actuarial valuation, the Accrued Liabilities are calculated based on the Entry Age Normal (EAN) actuarial cost method.

The values in the table are dependent upon census data, benefit levels, and the actuarial assumptions and methods employed at each valuation date.

To fully evaluate trends in financial soundness, changes in assumptions need to be evaluated. The Actuarial Interest Rate assumption has been 7.0% per annum, net of investment expenses, throughout the period shown. However, other actuarial assumptions and methods have been revised. The two most recent changes in assumptions and methods occurred in the June 30, 2020 valuation used to compute the Employer Contributions for Fiscal Year 2022 and in the June 30, 2019 valuation used to compute the Employer Contributions for Fiscal Year 2021.

## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### CONTRIBUTIONS

The benefits of the System are financed by member and employer contributions and from investment earnings of the System.

#### A. MEMBER CONTRIBUTIONS

##### 1. Coordinated Retirement Plan (Article 15):

A Tier III/IV member of this Plan is mandated to contribute 3% of annual wages during all the years of coverage. If a member resigns or is otherwise terminated from City Service prior to eligibility for a benefit, all of his or her contributions with 5% interest will be refunded upon request.

Beginning October 1, 2000, Tier III and IV members are not required to make basic required contributions after the 10th anniversary of their membership date or completion of 10 years of City Service, whichever is earlier. Effective February 27, 2008, active members were eligible to enroll in a 55/25 plan (age 55 with 25 years of service). Those that chose the 55/25 plan were required to contribute an additional 1.85% of pay from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of service, whichever is later. New members joining after February 27, 2008 are automatically enrolled in a 55/27 plan (age 55 with 27 years of service). These members are required to pay an additional 1.85% of pay for the first 27 years of service. New members after December 10, 2009 who are represented by the UFT are required to contribute 4.85% of salary for the first 27 years of service and 1.85% of salary thereafter.

A Tier VI member is mandated to contribute between 3.0% and 6.0% of salary until the later of separation from service or retirement.

##### 2. Twenty-Year Pension Plan:

A member of this Plan is required to contribute a percentage of salary which, if paid from the date of entry until the date of completion of 20 years of City Service, would provide at the payability date, an annuity of approximately one-eighth of the member's final salary as of the completion of 20 years of City Service. Tier II members who elected to join the 55/25 plan pay an additional 1.85% of pay.



## TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

### CONTRIBUTIONS (Cont'd)

#### 3. Age-55-Increased-Benefits Pension Plan:

A member of this Plan is required to contribute a percentage of salary, which if paid to the age for service retirement under the law in effect prior to July 1, 1970, would provide an annuity equal to approximately 1% of the average annual compensation during the last five years of service multiplied by years of service. Tier II members who elected to join the 55/25 plan pay an additional 1.85% of pay.

Member contributions are accumulated with interest in individually maintained accounts. Except under Article 15, upon retirement, the amount to the member's credit (i.e., Accumulated Deductions) is used to purchase an annuity on the basis of the tables adopted by the Teachers' Retirement Board. Upon death in service, the death benefits, including the Accumulated Deductions, are paid to the beneficiary and, on termination of employment other than by death or retirement, the Accumulated Deductions are returned to the member.

Beginning July 1, 1960, on a year-to-year basis, the required contributions of members were reduced by an Increased-Take-Home-Pay rate initially equal to 2.5% of salary. The following table shows effective periods and Increased-Take-Home-Pay rate.

PERIOD	INCREASED-TAKE-HOME-PAY RATE
<b>Board of Education Employees</b>	
07/01/60 – 06/30/61	2.5%
07/01/61 – 08/31/67	5.0%
09/01/67 – 08/31/68	8.0%
<b>Board of Higher Education Employees</b>	
09/01/67 – 08/31/68	5.0%
<b>Twenty-Year and Age-55-Increased-Benefits Pension Plan Members</b>	
09/01/68 – 06/30/70	8.0%
07/01/70 – 12/31/75	5.0%
01/01/76 and later	2.5%
<b>Article 15 Members</b>	
All	0.0%





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# Statistical Section



## STATISTICAL SECTION OVERVIEW

This part of the Annual Comprehensive Financial Report presents detailed information as a context for understanding how the information in the Financial Section relates to the Teachers' Retirement System's overall condition. The following are the categories of the various schedules that are included in this Section:

### **QPP Financial Trend Information**

Schedules 1 through 3 contain trend information to help the reader understand how the QPP's financial performance and condition have changed over time.

### **QPP Demographic and Economic Information of In-Service Members**

Schedules 4 through 7 offer demographic and economic information of in-service members to help the reader understand this segment of the QPP membership population.

### **QPP Benefit Payment, and Demographic and Economic Information of Retired Members**

Schedules 8 through 17 present information to help the reader assess the QPP's current and future benefit payment obligations based on financial and demographic information of retired members.

### **QPP and TDA Operating Expense Information**

Schedule 18 contains trend information as it relates to investment and administrative expenses of the System.

### **TDA Financial Trend Information**

Schedules 19 through 21 contain trend information to help the reader understand how the TDA Program's financial performance and condition have changed over time.

### **TDA Membership Information of In-Service and Retired Members**

Schedules 22 through 26 present membership information to help the reader assess the TDA Program's demographics and financial activity.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 1: NET POSITION AND CHANGES IN NET POSITION—QPP**

*In Thousands*

Year Ended	Pension Fund	Diversified Equity	Balanced Fund*	International Equity	Inflation Protection **	Sustainable Equity ***	U.S. Equity Index ****	International Equity Index ****	Net Position	Changes in Net Position
2014	\$41,199,953	\$3,210,248	\$48,507	\$17,082	\$5,662	\$8,487	\$—	\$—	\$44,489,939	\$7,633,483
2015	41,452,046	2,740,658	34,034	15,071	4,747	8,108	—	—	44,254,664	(235,275)
2016	41,440,456	2,142,217	22,786	12,262	3,930	7,894	—	—	43,629,545	(625,119)
2017	43,920,339	6,058,218	83,594	16,685	4,760	12,127	—	—	50,095,723	6,466,178
2018	48,172,801	6,256,312	69,477	16,458	4,553	12,875	—	—	54,532,476	4,436,753
2019	51,949,650	5,947,790	61,152	15,470	3,904	12,245	—	—	57,990,211	3,457,735
2020	53,732,776	5,499,519	57,166	13,813	—	12,791	2,795	90	59,318,950	1,328,739
2021	71,185,752	7,070,829	54,015	15,200	—	16,554	4,825	123	78,347,298	19,028,348
2022	58,724,228	5,213,617	40,692	12,835	—	13,532	4,081	443	64,009,428	(14,337,870)
2023	62,344,218	5,517,287	36,135	11,934	—	15,579	8,826	277	67,934,256	3,924,828

\* Bond Fund prior to January 1, 2018

\*\* Fund discontinued as of April 1, 2020

\*\*\* Socially Responsive Equity Fund prior to October 1, 2019

\*\*\*\* New funds established as of January 1, 2020

**SCHEDULE 2: 2023 CHANGES IN NET POSITION—QPP**

*In Thousands*

	Pension Fund	Diversified Equity	Balanced Fund	International Equity	Sustainable Equity	U.S. Equity Index	International Equity Index	TOTAL
2022 Net Position	\$58,724,228	\$5,213,617	\$40,692	\$12,835	\$ 13,532	\$ 4,081	\$443	\$64,009,428
Member Contributions	292,463	1	9	—	—	—	—	292,473
Employer Contributions	3,143,797	5	1	—	—	—	—	3,143,803
Interest & Misc Income	1,482,984	3,132	3	5	11	—	—	1,486,135
Dividend Income	1,017,188	98,331	—	205	92	—	—	1,115,816
Realized Profit/Loss	76,332	107,630	825	(42)	419	242	(10)	185,396
Unrealized Profit/Loss	4,878,812	691,726	1,115	1,112	2,301	785	53	5,575,904
Benefit Payments	(4,347,700)	(565,126)	(5,354)	(1,246)	(1,471)	(949)	(39)	(4,921,885)
Refunds & Withdrawals	(25,321)	(496)	—	—	—	—	—	(25,817)
Interest Paid to TDA Funds	(2,261,718)	—	—	—	—	—	—	(2,261,718)
Transfer to other Systems	(6,564)	—	—	—	—	—	—	(6,564)
Interfund Transfer	15,431	(18,679)	(1,121)	(892)	757	4,673	(169)	—
TDA Rebalance	(66,064)	—	—	—	—	—	—	(66,064)
Provision for Expenses*	(579,650)	(12,854)	(35)	(43)	(62)	(6)	(1)	(592,651)
<b>2023 Net changes</b>	<b>\$3,619,990</b>	<b>\$303,670</b>	<b>(\$4,557)</b>	<b>(\$901)</b>	<b>\$2,047</b>	<b>\$4,745</b>	<b>(\$166)</b>	<b>\$3,924,828</b>
<b>2023 Net Position</b>	<b>\$62,344,218</b>	<b>\$5,517,287</b>	<b>\$36,135</b>	<b>\$11,934</b>	<b>\$15,579</b>	<b>\$8,826</b>	<b>\$277</b>	<b>\$67,934,256</b>

\* Includes Administrative and Investment Expenses

**SCHEDULE 3: CHANGES IN NET POSITION—QPP**  
In Thousands

Year Ended June 30*	1	2	3	4a	4b	5	6	7	8	9	10	11
Net Member Contributions	Employer Contributions	Net Investment Income	Transfer from / to Other Systems	TDA Rebalance	TDA Fixed Interest Payments	Total Retirement Benefits	Loan Liquidation	Withdrawals	Other** Benefits	Administrative Expenses	Change in Net Position	
2014	\$154,962	\$3,054,424	\$9,435,906	\$404	—	(\$1,047,923)	(\$3,740,243)	(\$24,866)	(\$18,813)	(\$134,326)	(\$46,042)	\$7,633,483
2015	158,590	3,325,528	1,611,929	329	—	(1,248,988)	(3,884,026)	(28,775)	(14,312)	(97,159)	(58,391)	(235,275)
2016	173,696	3,760,714	960,267	1,233	—	(1,354,207)	(3,954,654)	(20,126)	(13,639)	(119,036)	(59,367)	(625,119)
2017	180,076	3,945,768	8,133,280	(2,291)	(43,938)	(1,466,615)	(4,097,646)	(16,958)	(13,493)	(91,215)	(60,790)	6,466,178
2018	195,241	3,949,689	6,275,115	(3,534)	32,704	(1,595,462)	(4,234,277)	(17,935)	(17,262)	(82,450)	(65,076)	4,436,753
2019	217,205	3,759,199	5,721,310	1,222	27,449	(1,716,679)	(4,370,616)	(12,800)	(16,580)	(87,684)	(64,291)	3,457,735
2020	226,920	3,652,570	3,911,187	(2,798)	42,651	(1,846,173)	(4,437,206)	(14,476)	(15,033)	(124,371)	(64,532)	1,328,739
2021	247,751	3,193,270	22,362,988	(5,550)	(4,175)	(1,998,388)	(4,691,132)	(10,305)	(18,021)	20,010	(68,100)	19,028,348
2022	273,686	3,364,379	(10,853,862)	(2,993)	2,537	(2,140,639)	(4,684,780)	(23,305)	(22,332)	(179,071)	(71,490)	(14,337,870)
2023	292,473	3,143,803	7,844,384	(6,564)	(66,064)	(2,261,718)	(4,377,109)	(18,846)	(25,817)	(525,930)	(73,784)	3,924,828

**Total Retirement Benefits By Type**

Year Ended June 30th	6a		6b		6c		6d	
	Service Retirement Allowances	Ordinary Disability Retirement Allowances	Accident Disability Retirement Allowances	Death Benefits To Beneficiaries	Total Retirement Benefits	Death Benefits To Beneficiaries	Total Retirement Benefits	
2014	(\$3,531,071)	(\$51,484)	(\$23,087)	(\$134,601)	(\$3,740,243)	(\$134,601)	(\$3,740,243)	
2015	(3,660,115)	(54,633)	(30,276)	(139,002)	(3,884,026)	(139,002)	(3,884,026)	
2016	(3,721,783)	(56,624)	(30,912)	(145,335)	(3,954,654)	(145,335)	(3,954,654)	
2017	(3,855,232)	(58,447)	(31,470)	(152,497)	(4,097,646)	(152,497)	(4,097,646)	
2018	(3,979,655)	(61,606)	(32,700)	(160,316)	(4,234,277)	(160,316)	(4,234,277)	
2019	(4,094,412)	(64,061)	(33,510)	(178,633)	(4,370,616)	(178,633)	(4,370,616)	
2020	(4,151,269)	(65,477)	(32,766)	(187,694)***	(4,437,206)	(187,694)***	(4,437,206)	
2021	(4,378,692)	(65,481)	(34,123)	(212,836)***	(4,691,132)	(212,836)***	(4,691,132)	
2022	(4,375,276)	(65,648)	(33,529)	(210,327)***	(4,684,780)	(210,327)***	(4,684,780)	
2023	(4,483,517)	(67,998)	(35,449)	209,855	(4,377,109)	209,855	(4,377,109)	

\* Benefit Payment categories for 2014-2022 take into account retirement valuation reports.

\*\* Other Benefits consists of Retiree Advances, delayed interest payments, Active Death Payments, Accidental Death, and excluding Fiscal Year 2023, adjustment of retirement benefits is based on retirement valuation reports.

\*\*\* Death Benefits for 2020 include \$1,469 of Accidental Death benefits; Death Benefits for 2021 include \$1,644 of Accidental Death benefits; Death Benefits for 2022 include \$1,721 of Accidental Death benefits (see schedule 17).

Note: Benefit payments and withdrawals include columns 6, 7, 8, and 9.

**SCHEDULE 4: PARTICIPATING EMPLOYERS—QPP***As of June 30, 2021 (Lag)*

Employer			Number of In-Service Members*	Annual Payroll*
NYC Department of Education and City University of New York			116,197	\$10,945,271,093
City University of New York				
Senior Colleges & Community Colleges			6,473	474,428,415
Charter Schools**	Start Date	Type		
Future Leaders Institute	09/2005	DOE Conversion - UFT	34	3,175,901
Harriet Tubman	09/2005	DOE Conversion - Non Union	56	3,907,487
Imagine Me Leadership	09/2017	Non Conversion - Non Union	12	903,464
Kipp Academy	09/2000	DOE Conversion - UFT	78	7,107,489
Kipp NYC	07/2016	Non Conversion - Non Union	32	4,065,236
Opportunity	09/2004	Non Conversion - UFT	63	5,952,553
Renaissance	09/2000	DOE Conversion - UFT	52	5,369,594
South Bronx	09/2015	Non Conversion - UFT	36	2,828,691
University Prep	09/2008	Non Conversion - UFT	78	7,132,895
Voice	09/2008	Non Conversion - Non Union	79	6,947,616
Wildcat	09/2000	DOE Conversion - UFT	21	2,362,552
SUBTOTAL			541	\$49,753,478
<b>TOTAL</b>			<b>123,211</b>	<b>\$11,469,452,986</b>

\* The number of in service employees and their corresponding Annual Payroll include only current active members receiving salary as of each June 30.

\*\* Charter Schools that were converted from the NYC Department of Education Schools became participating employers when they were first converted to Charter Schools. Unless restricted by a collective bargaining agreement, a non-conversion Charter School decision to participate is voluntary and at the discretion of the individual school.

**SCHEDULE 5: ACTIVE MEMBERSHIP SUMMARY—QPP**

Year	As of July 1	Contributors Registered	Payroll Updates	Contributors Withdrawn	As of June 30th
2013	112,460	7,101	(3,744)	(3,336)	112,481
2014	112,481	7,915	(4,032)	(4,638)	111,726
2015	111,726	8,727	(2,499)	(3,302)	114,652
2016	114,652	10,239	(2,519)	(4,171)	118,201
2017	118,201	9,466	(2,894)	(3,947)	120,826
2018	120,826	8,797	(3,619)	(4,240)	121,764
2019	121,764	7,357	(1,844)	(3,941)	123,336
2020	123,336	7,074	(1,438)	(4,696)	124,276
2021	124,276	3,630	(837)	(3,858)	123,211
2022	123,211	11,920	(1,446)	(10,011)	123,674

Active membership summary based on latest valuation reports. Estimated active memberships of 125,000 for 2023.

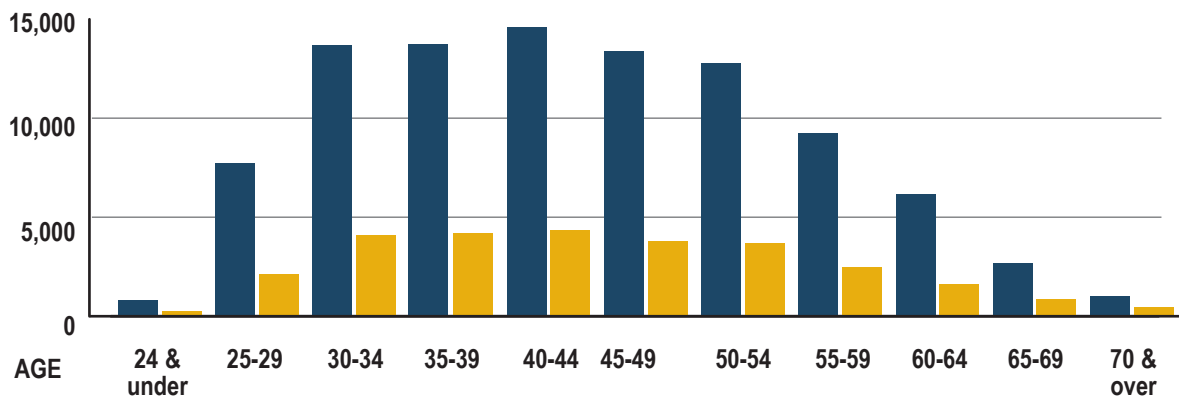


**SCHEDULE 6: TABLE OF AVERAGE SALARIES OF IN-SERVICE MEMBERS—QPP**  
As of June 30, 2022

MEN			WOMEN		
Age	Number of In-Service Members*	Average Salaries*	Age	Number of In-Service Members*	Average Salaries*
24 & under	296	\$49,327	24 & under	806	\$54,517
25-29	2,124	67,450	25-29	7,721	71,262
30-34	4,100	81,658	30-34	13,679	83,426
35-39	4,187	95,121	35-39	13,710	92,938
40-44	4,317	105,745	40-44	14,564	100,302
45-49	3,803	114,510	45-49	13,398	104,693
50-54	3,695	117,851	50-54	12,789	105,248
55-59	2,469	114,689	55-59	9,255	97,457
60-64	1,608	108,112	60-64	6,157	92,148
65-69	846	101,504	65-69	2,665	91,158
70 & over	461	88,793	70 & over	1,024	89,521
<b>TOTAL</b>	<b>27,906</b>	<b>\$100,415</b>	<b>TOTAL</b>	<b>95,768</b>	<b>\$94,217</b>
TOTAL ANNUAL SALARIES		\$2,802,192,922	TOTAL ANNUAL SALARIES		\$9,022,930,996

\* The member count and the annual payroll include only those who were on the June 30 payroll.

**IN-SERVICE MEMBERS ON PAYROLL—DISTRIBUTION BY AGE**  
As of June 30, 2022



<b>WOMEN</b>	806	7,721	13,679	13,710	14,564	13,398	12,789	9,255	6,157	2,665	1,024
<b>MEN</b>	296	2,124	4,100	4,187	4,317	3,803	3,695	2,469	1,608	846	461

**SCHEDULE 7: IN-SERVICE MEMBERSHIP BY TIER AND BY TITLE—QPP**

Year	Average Age	IN-SERVICE MEMBERSHIP BY TIER					IN-SERVICE MEMBERSHIP BY TITLE					
		Tier I	Tier II	Tier III	Tier IV	Tier VI	Teachers	Para-professionals	Principals and Administrators	Full-Time CUNY Faculty	Adjunct CUNY Instructors	Others
2014	44.8	0.5%	0.2%	1.0%	86.3%	12.1%	64.7%	16.6%	5.7%	3.0%	2.4%	7.6%
2015	44.8	0.4%	0.2%	0.7%	81.3%	17.4%	64.5%	16.8%	5.4%	3.3%	2.3%	7.7%
2016	44.7	0.3%	0.2%	0.6%	81.0%	17.9%	63.6%	17.3%	5.6%	3.4%	2.3%	7.8%
2017	44.6	0.2%	0.1%	0.5%	71.6%	27.6%	62.9%	17.7%	5.6%	3.7%	2.3%	7.8%
2018	44.7	0.2%	0.1%	0.4%	67.7%	31.6%	62.9%	17.6%	5.6%	3.9%	2.3%	7.7%
2019	44.8	0.1%	0.1%	0.3%	64.5%	35.0%	62.5%	17.8%	5.6%	4.2%	2.3%	7.6%
2020	44.9	0.1%	0.1%	0.2%	61.3%	38.3%	62.3%	17.8%	5.4%	4.2%	2.4%	7.9%
2021	45.3	0.1%	0.1%	0.2%	59.4%	40.2%	62.4%	17.8%	5.4%	4.2%	2.4%	7.8%
2022	45.1	0.1%	0.0%	0.1%	54.3%	45.5%	61.1%	18.6%	5.4%	4.3%	2.3%	8.3%
2023	45.2	0.1%	0.0%	0.1%	51.1%	48.7%	60.7%	18.9%	5.4%	4.4%	2.2%	8.4%

**SCHEDULE 8: RETIREE SUMMARY—QPP**

Year	As of July 1	Retirees Registered	Payroll Status Changes	Retirees Withdrawn	As of June 30th
2013	76,539	3,541	(451)	(1,452)	78,177
2014	78,177	3,791	(186)	(1,363)	80,419
2015	80,419	4,171	(308)	(1,505)	82,777
2016	82,777	3,267	(16)	(1,935)	84,093
2017	84,093	3,030	(153)	(2,200)	84,770
2018	84,770	3,578	(21)	(2,032)	86,295
2019	86,295	4,122	198	(2,108)	88,507
2020	88,507	3,477	19	(2,467)	89,536
2021	89,536	2,921	8	(2,468)	89,997
2022	89,997	4,706	19	(2,440)	92,282

*Retiree membership summary is based on latest valuation reports. Estimated retiree memberships of 95,000 for 2023.*

**SCHEDULE 9: AVERAGE YEARS OF SERVICE OF NEW RETIREES—QPP**

*Average Years of Service*

Year	Men	Women	Men and Women	Total Number of Retirees*
2013	25.1	24.8	24.9	3,541
2014	24.2	24.7	24.6	3,791
2015	24.9	24.0	24.2	4,171
2016	24.5	24.3	24.4	3,267
2017	25.6	25.0	25.1	3,030
2018	25.6	25.1	25.2	3,578
2019	25.6	25.0	25.1	4,122
2020	26.1	25.4	25.5	3,477
2021	26.1	25.0	25.3	2,921
2022	26.2	25.6	25.7	4,706

*\*Total number of new retirees is based on the latest valuation reports.*

**SCHEDULE 10: PAYMENT OPTIONS CHOSEN AT RETIREMENT—QPP**

Year	Average Age	OPTIONS CHOSEN BY TIER I/II MEMBERS					OPTIONS CHOSEN BY TIER III/IV/VI MEMBERS			
		Maximum Payout	Pop-UP Payments	Continuing Payments	Lump-Sum Payment	Guaranteed Number of Payments	Maximum Payout	Pop-UP Payments	Continuing Payments	Guaranteed Number of Payments
2014	60.8	62.1%	25.2%	10.7%	1.1%	0.9%	69.2%	19.5%	9.6%	1.7%
2015	60.8	50.8%	25.4%	20.0%	1.5%	2.3%	68.5%	18.1%	10.6%	2.8%
2016	60.9	59.4%	20.3%	17.6%	0.7%	2.0%	68.2%	19.6%	10.7%	1.5%
2017	60.9	62.4%	23.7%	11.9%	0.0%	2.0%	67.8%	19.4%	10.9%	1.9%
2018	61.0	56.1%	27.1%	15.0%	0.9%	0.9%	66.6%	20.3%	11.6%	1.5%
2019	61.0	56.4%	15.4%	25.6%	1.3%	1.3%	66.7%	20.5%	11.4%	1.4%
2020	61.0	59.1%	18.2%	16.6%	6.1%	0.0%	66.3%	20.4%	12.0%	1.3%
2021	61.1	58.7%	10.9%	26.1%	2.1%	2.2%	65.6%	18.6%	13.4%	2.4%
2022	61.2	54.9%	21.6%	19.6%	3.9%	0.0%	66.5%	16.5%	14.4%	2.6%
2023	62.0	66.7%	9.5%	19.0%	0.0%	4.8%	68.4%	16.5%	13.1%	2.0%

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 11: RETIREES' AVERAGE MONTHLY BENEFIT PAYMENTS AND FINAL AVERAGE SALARY ORGANIZED BY YEARS OF CREDITED SERVICE—QPP**

Year*	Survivor	Other	Under 5 Yrs**	5 - 9 Yrs	10 - 14 Yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 35 Yrs	35 & up Yrs	Total
Retirees	4,257	8,208	65	1,377	5,054	6,011	9,600	16,671	18,140	11,036	80,419
Retirees	4,403	4,620	68	1,481	5,543	6,374	10,588	18,260	19,649	11,791	82,777
Retirees	4,564	4,989	67	1,516	5,794	6,535	10,854	18,568	19,536	11,670	84,093
Retirees	4,635	3,879	69	1,566	5,975	6,713	11,266	19,106	19,912	11,649	84,770
Retirees	4,651	3,264	67	1,679	6,290	6,909	11,720	19,784	20,279	11,652	86,295
Retirees	4,734	7,064	65	1,722	6,245	6,757	11,661	19,027	19,839	11,393	88,507
Retirees	4,798	8,839	64	1,790	6,235	6,615	11,655	18,807	19,576	11,157	89,536
Retirees	5,067	11,166	66	1,832	6,083	6,340	11,398	18,137	19,068	10,840	89,997
Retirees	5,169	10,711	64	1,857	6,377	6,637	12,232	18,857	19,596	10,782	92,282
Retirees	5,295	2,308	274	2,134	7,487	7,868	14,603	21,816	21,928	11,287	95,000
Year*	Under 5 Yrs**			5 - 9 Yrs	10 - 14 yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 34 Yrs	35 & up Yrs	Total
Avg Monthly Benefit	\$1,322	\$614	\$1,005	\$1,531	\$2,451	\$3,897	\$5,100	\$6,764	\$7,350	\$8,895	\$10,419
Avg Monthly Benefit	\$1,324	\$606	\$1,046	\$1,541	\$2,609	\$4,054	\$5,279	\$6,895	\$7,061	\$7,240	\$7,232
Avg Monthly Benefit	\$1,290	\$681	\$1,118	\$1,555	\$2,601	\$4,198	\$5,481	\$7,285	\$7,873	\$7,734	\$7,753
Avg Monthly Benefit	\$1,360	\$648	\$1,112	\$1,626	\$2,693	\$4,266	\$5,475	\$7,265	\$7,867	\$7,734	\$7,753
Avg Monthly Benefit	\$1,442	\$995	\$1,219	\$1,714	\$2,792	\$4,276	\$5,541	\$7,285	\$7,873	\$7,734	\$7,753
Avg Monthly Benefit	\$1,506	\$906	\$1,153	\$1,620	\$2,741	\$4,319	\$5,867	\$7,734	\$7,753	\$7,753	\$7,753
Avg Monthly Benefit	\$1,562	\$688	\$1,189	\$1,649	\$2,790	\$4,493	\$5,822	\$7,734	\$7,753	\$7,753	\$7,753
Avg Monthly Benefit	\$1,670	\$643	\$1,139	\$1,740	\$2,877	\$4,510	\$5,844	\$7,734	\$7,753	\$7,753	\$7,753
Avg Monthly Benefit	\$1,611	\$672	\$1,164	\$1,743	\$2,962	\$4,586	\$5,844	\$7,734	\$7,753	\$7,753	\$7,753
Avg Monthly Benefit	\$2,456	\$808	\$1,210	\$1,855	\$3,011	\$4,586	\$5,844	\$7,734	\$7,753	\$7,753	\$7,753
Year*	Under 5 Yrs**			5 - 9 Yrs	10 - 14 yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 34 Yrs	35 & up Yrs	Total
Final Average Salary	\$30,646	\$43,911	\$47,700	\$48,561	\$60,661	\$70,338	\$75,376	\$83,206	\$84,692	\$85,340	\$86,726
Final Average Salary	\$30,946	\$44,441	\$49,831	\$50,645	\$63,802	\$73,796	\$77,860	\$84,692	\$85,340	\$86,726	\$87,830
Final Average Salary	\$30,465	\$44,767	\$51,350	\$52,142	\$65,096	\$75,755	\$78,660	\$85,340	\$86,726	\$87,830	\$88,424
Final Average Salary	\$30,945	\$45,569	\$52,882	\$54,286	\$67,606	\$78,798	\$80,914	\$86,726	\$87,830	\$88,424	\$89,319
Final Average Salary	\$32,029	\$45,696	\$53,990	\$55,783	\$69,233	\$80,890	\$82,536	\$88,424	\$89,319	\$90,222	\$91,222
Final Average Salary	\$32,819	\$45,373	\$53,449	\$55,695	\$69,782	\$81,534	\$83,186	\$88,424	\$89,319	\$90,222	\$91,222
Final Average Salary	\$34,330	\$45,396	\$53,968	\$56,659	\$70,950	\$82,503	\$84,193	\$89,319	\$90,222	\$91,222	\$92,282
Final Average Salary	\$33,943	\$45,370	\$53,757	\$56,937	\$71,560	\$83,173	\$84,663	\$89,319	\$90,222	\$91,222	\$92,282
Final Average Salary	\$34,667	\$45,446	\$54,828	\$59,023	\$73,283	\$85,716	\$86,718	\$91,222	\$92,282	\$93,811	\$95,000
Final Average Salary	\$35,259	\$45,751	\$56,661	\$62,277	\$76,642	\$89,679	\$90,623	\$93,811	\$95,000	\$96,233	\$97,753

\* Retiree figures for 2014-2022 take into account retirement valuation reports.  
 \*\* Retirees include Service Retirement, Accidental Disability and Ordinary Disability. The majority of retirees with under 5 Yrs. of service are Accidental Disability.  
 \*\*\* Retiree figures for 2023 include Service or FAS retirement revision cases previously categorized as "Other".  
 Note: If elected, total monthly benefits for tier I and tier II members depend on current unit value.

**SCHEDULE 12: AVERAGE ANNUAL BENEFIT PAYMENT AMOUNTS—QPP**

Year	SERVICE RETIREMENT BENEFITS		ORDINARY DISABILITY BENEFITS (NON-DUTY)		ACCIDENTAL DISABILITY BENEFITS (DUTY)		SURVIVORS' BENEFITS	
	Number	Average Annual Allowance	Number	Average Annual Allowance	Number	Average Annual Allowance	Number	Average Annual Allowance
2013	71,017	\$46,994	2,299	\$21,093	713	\$39,954	4,148	\$29,773
2014	73,069	48,325	2,379	21,641	714	40,738	4,257	31,619
2015	75,251	48,639	2,481	22,020	732	41,360	4,313	32,229
2016	76,346	48,749	2,541	22,284	745	41,492	4,461	32,579
2017	76,973	50,086	2,549	22,929	744	42,299	4,504	33,858
2018	78,364	50,784	2,640	23,336	757	43,197	4,534	35,359
2019	80,048	51,149	2,728	23,483	776	43,183	4,955	36,051
2020	80,915	51,304	2,731	23,975	750	43,689	5,140	36,516*
2021	81,213	53,916	2,655	24,663	758	45,017	5,371	39,627**
2022	83,363	52,485	2,654	24,735	749	44,764	5,516	38,131***

*\*Survivors' benefits for 2020 include 30 Accidental Deaths with average annual benefit of \$48,956.  
\*\*Survivors' benefits for 2021 include 35 Accidental Deaths with an average annual benefits of \$46,967.  
\*\*\*Survivors' benefits for 2022 include 37 Accidental Deaths with an average annual benefits of \$46,519 (see Schedule 17).*

**SCHEDULE 13: SERVICE RETIREMENT ALLOWANCES—QPP**

*As of June 30, 2022*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	—	—	under 30	—	—
30-34	—	—	30-34	—	—
35-39	—	—	35-39	—	—
40-44	—	—	40-44	—	—
45-49	—	—	45-49	—	—
50-54	—	—	50-54	—	—
55-59	679	\$64,055	55-59	2,213	\$58,953
60-64	1,700	56,359	60-64	5,528	51,292
65-69	2,733	50,884	65-69	10,342	46,236
70-74	4,534	58,058	70-74	14,497	51,626
75-79	6,381	66,836	75-79	12,708	53,651
80-84	3,206	62,680	80-84	7,821	47,212
85-89	1,751	61,400	85-89	4,398	42,359
90 & over	1,170	58,760	90 & over	3,702	41,073
<b>TOTAL</b>	<b>22,154</b>	<b>\$60,725</b>	<b>TOTAL</b>	<b>61,209</b>	<b>\$49,502</b>
<b>Total Annual Allowances Paid</b>		<b>\$1,345,295,861</b>	<b>Total Annual Allowances Paid</b>		<b>\$3,029,980,561</b>

**SCHEDULE 14: ORDINARY DISABILITY RETIREMENT ALLOWANCES—QPP***As of June 30, 2022*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	—	—	under 30	—	—
30-34	—	—	30-34	—	—
35-39	1	\$27,658	35-39	2	\$23,832
40-44	7	25,540	40-44	26	30,761
45-49	17	27,166	45-49	70	25,724
50-54	36	32,912	50-54	152	28,432
55-59	45	29,373	55-59	258	27,152
60-64	79	27,420	60-64	365	24,313
65-69	93	24,727	65-69	374	23,106
70-74	107	27,365	70-74	407	23,699
75-79	98	28,517	75-79	253	23,025
80-84	32	25,040	80-84	133	18,728
85-89	8	25,170	85-89	57	19,504
90 & over	6	21,776	90 & over	28	20,980
<b>TOTAL</b>	<b>529</b>	<b>\$27,404</b>	<b>TOTAL</b>	<b>2,125</b>	<b>\$24,071</b>
<b>Total Annual Allowances Paid</b>		<b>\$14,496,604</b>	<b>Total Annual Allowances Paid</b>		<b>\$51,151,147</b>

**SCHEDULE 15: ACCIDENT DISABILITY RETIREMENT ALLOWANCES—QPP***As of June 30, 2022*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	—	—	under 30	—	—
30-34	—	—	30-34	—	—
35-39	2	\$52,317	35-39	3	\$38,725
40-44	1	60,161	40-44	8	52,150
45-49	9	48,012	45-49	11	46,810
50-54	9	61,552	50-54	22	43,754
55-59	5	55,780	55-59	51	43,943
60-64	13	49,394	60-64	78	45,798
65-69	23	55,617	65-69	98	41,242
70-74	37	46,851	70-74	118	43,645
75-79	55	50,283	75-79	98	40,495
80-84	15	51,908	80-84	38	47,971
85-89	10	47,611	85-89	28	31,714
90 & over	4	39,914	90 & over	13	43,741
<b>TOTAL</b>	<b>183</b>	<b>\$50,626</b>	<b>TOTAL</b>	<b>566</b>	<b>\$42,869</b>
<b>Total Annual Allowances Paid</b>		<b>\$9,264,535</b>	<b>Total Annual Allowances Paid</b>		<b>\$24,264,004</b>

**SCHEDULE 16: SURVIVORS' BENEFITS—QPP**

*As of June 30, 2022*

MEN			WOMEN		
Age	Number of Beneficiaries	Average Annual Allowance	Age	Number of Beneficiaries	Average Annual Allowance
under 30	7	\$25,889	under 30	13	\$21,646
30-34	8	31,492	30-34	12	22,326
35-39	13	15,807	35-39	15	22,054
40-44	24	27,721	40-44	24	27,827
45-49	23	30,635	45-49	32	25,280
50-54	38	22,207	50-54	43	22,819
55-59	51	17,308	55-59	77	19,425
60-64	78	27,024	60-64	174	26,697
65-69	113	32,429	65-69	223	36,607
70-74	219	33,275	70-74	500	43,986
75-79	300	36,070	75-79	692	46,377
80-84	297	34,185	80-84	727	44,727
85-89	208	29,829	85-89	570	43,915
90 & over	300	28,899	90 & over	698	38,235
<b>TOTAL</b>	<b>1,679</b>	<b>\$31,353</b>	<b>TOTAL</b>	<b>3,800</b>	<b>\$41,043</b>
<b>Total Annual Benefits Paid</b>		<b>\$52,642,416</b>	<b>Total Annual Benefits Paid</b>		<b>\$155,963,830</b>

**SCHEDULE 17: ACCIDENTAL DEATH BENEFITS—QPP**

*As of June 30, 2022*

MEN			WOMEN		
Age	Number of Beneficiaries	Average Annual Allowance	Age	Number of Beneficiaries	Average Annual Allowance
under 30	1	\$22,601	under 30	3	\$31,442
30-34	1	21,346	30-34	—	—
35-39	—	—	35-39	1	48,176
40-44	1	58,442	40-44	1	60,031
45-49	0	—	45-49	1	48,435
50-54	3	55,699	50-54	3	60,543
55-59	1	53,607	55-59	4	59,987
60-64	6	43,375	60-64	8	43,165
65-69	1	54,416	65-69	1	26,564
70-74	—	—	70-74	1	39,000
75-79	—	—	75-79	—	—
80-84	—	—	80-84	—	—
85-89	—	—	85-89	—	—
90 & over	—	—	90 & over	—	—
<b>TOTAL</b>	<b>14</b>	<b>\$45,554</b>	<b>TOTAL</b>	<b>23</b>	<b>\$47,106</b>
<b>Total Annual Benefits Paid</b>		<b>\$637,759</b>	<b>Total Annual Benefits Paid</b>		<b>\$1,083,428</b>

### SCHEDULE 18: NUMBER AND COST OF INVESTMENT AND ADMINISTRATIVE SERVICES (QPP & TDA)

Year Ended	Investment Agent Count	Investment Expenses	TRS Employees Count*	Administrative Expenses
2014	230	\$169,736,553	376	\$63,230,181
2015	228	205,719,517	370	84,173,556
2016	230	209,422,244	365	91,998,934
2017	221	308,283,033	351	93,821,614
2018	227	352,816,375	347	87,532,002
2019	228	299,613,733	350	88,255,115
2020	230	291,433,988	338	88,488,346
2021	238	419,445,615	336	86,389,714
2022	246	559,477,326	338	91,362,734
2023	245	530,096,589**	361	91,781,807

\*Employee count does not include Consultants, Temporary Employees, and Summer Interns.

\*\*2023 details are found in the schedule: Summary of Investment Managers and Fees of the Investment Section.

### SCHEDULE 19: NET POSITION AND CHANGES IN NET POSITION—TDA PROGRAM In Thousands

Year Ended	Pension Fund	Diversified Equity	Balanced Fund*	International Equity	Inflation Protection**	Sustainable Equity***	U.S. Equity Index****	International Equity Index****	Net Position	Changes in Net Position
2014	\$17,450,769	\$7,909,321	\$304,788	\$96,028	\$37,488	\$75,095	\$—	\$—	\$25,873,489	\$2,643,813
2015	18,922,602	7,869,896	302,816	97,942	39,437	100,889	—	—	27,333,582	1,460,093
2016	20,511,536	7,365,430	312,613	96,081	41,444	117,236	—	—	28,444,340	1,110,758
2017	22,223,301	8,194,607	310,195	120,211	50,138	153,641	—	—	31,052,093	2,607,753
2018	23,963,722	8,704,088	316,507	143,858	60,281	192,526	—	—	33,380,982	2,328,889
2019	25,745,844	8,804,658	340,687	156,367	67,024	218,815	—	—	35,333,395	1,952,413
2020	27,638,167	8,481,059	432,171	162,175	—	290,399	16,492	3,062	37,023,525	1,690,130
2021	29,976,852	11,670,982	527,697	235,938	—	476,762	60,581	10,663	42,959,475	5,935,950
2022	31,779,391	9,197,288	495,935	197,309	—	432,814	86,396	14,936	42,204,069	(755,406)
2023	33,573,229	10,349,400	531,232	240,339	—	550,203	135,450	23,593	45,403,446	3,199,377

\* Bond Fund prior to January 1, 2018

\*\* Fund discontinued as of April 1, 2020

\*\*\* Socially Responsive Equity Fund prior to October 1, 2019

\*\*\*\*New fund established as of January 1, 2020



**SCHEDULE 20: CHANGES IN NET POSITION—TDA PROGRAM**

*In Thousands*

Year Ended	Net Member Contributions	Fixed Interest from TRSNYC Pension Fund	Net Investment Income	TDA Rebalance	Refunds and Withdrawals	Loan Liquidation	Other Benefits*	Annuitized Payments	Administrative Expenses	Change in Net Position
2014	\$638,979	\$1,147,923	\$1,631,411	—	(\$557,402)	(\$19,700)	(\$139,759)	(\$40,451)	(\$17,188)	\$2,643,813
2015	662,601	1,248,988	435,632	—	(646,446)	(12,058)	(157,994)	(44,847)	(25,783)	1,460,093
2016	717,566	1,354,207	(11,194)	—	(699,250)	(9,221)	(164,384)	(44,334)	(32,632)	1,110,758
2017	743,663	1,466,615	1,398,500	43,938	(768,207)	(13,069)	(183,628)	(47,027)	(33,032)	2,607,753
2018	856,294	1,595,462	1,055,191	(32,704)	(874,483)	(8,511)	(188,227)	(51,677)	(22,456)	2,328,889
2019	995,035	1,716,679	669,540	(27,449)	(985,941)	(10,889)	(328,641)	(51,957)	(23,964)	1,952,413
2020	1,029,758	1,846,173	327,613	(42,651)	(964,232)	(7,946)	(422,068)	(52,560)**	(23,957)	1,690,130
2021	1,060,833	1,998,388	3,910,934	4,175	(567,119)	(7,828)	(390,990)	(54,153)	(18,290)	5,935,950
2022	1,088,219	2,140,639	(2,087,044)	(2,537)	(1,318,714)	(11,145)	(486,852)	(58,100)	(19,872)	(755,406)
2023	1,061,225	2,261,718	1,852,551	66,064	(1,434,357)	(16,056)	(515,452)	(58,318)	(17,998)	3,199,377

\* Other Benefits consists of active death payments and delayed interest payments.

\*\* Adjusted for \$40,525 of TDAB annuity under Other Benefits (originally classified under Annuitized Payments).

**SCHEDULE 21: 2023 CHANGES IN NET POSITION—TDA PROGRAM**

*In Thousands*

	Pension Fund	Diversified Equity	Balanced Fund	International Equity	Sustainable Equity	U.S. Equity Index	International Equity Index	Total
2022 Net Position	\$31,779,391	\$9,197,288	\$495,935	\$197,309	\$432,814	\$86,396	\$14,936	\$42,204,069
Member Contributions	716,041	212,460	37,133	20,965	45,663	23,218	5,745	1,061,225
Payment of interest on TDA fixed return funds	2,261,718	—	—	—	—	—	—	2,261,718
Interest & Misc Income	31,232	5,737	1,046	124	373	4	2	38,518
Dividend Income	—	180,086	—	5,507	3,216	—	—	188,809
Realized Profit/Loss	—	197,116	11,036	(1,128)	14,743	4,668	(562)	225,873
Unrealized Profit/Loss	—	1,266,846	14,903	29,876	80,909	15,147	2,900	1,410,581
Benefit Payments	(567,171)	(21,772)	(445)	(92)	(242)	(97)	(8)	(589,827)
Refunds & Withdrawals	(1,125,940)	(275,373)	(15,974)	(4,587)	(9,310)	(2,741)	(431)	(1,434,356)
Interfund Transfer	459,558	(426,289)	(14,234)	(7,494)	(21,103)	8,620	942	—
TDA Rebalance	18,400	37,672	3,202	1,002	5,326	370	92	66,064
Provision for Expenses*	—	(24,371)	(1,370)	(1,143)	(2,186)	(135)	(23)	(29,228)
<b>2023 Net changes</b>	<b>\$1,793,838</b>	<b>\$1,152,112</b>	<b>\$35,297</b>	<b>\$43,030</b>	<b>\$117,389</b>	<b>\$49,054</b>	<b>\$8,657</b>	<b>\$3,199,377</b>
<b>2023 Net Position</b>	<b>\$33,573,229</b>	<b>\$10,349,400</b>	<b>\$531,232</b>	<b>\$240,339</b>	<b>\$550,203</b>	<b>\$135,450</b>	<b>\$23,593</b>	<b>\$45,403,446</b>

\* Includes Administrative and Investment Expenses

**SCHEDULE 22: TDA PROGRAM SUMMARY (EXCLUDES ANNUITANTS)**

Year	As of July 1	Contributors Registered	Payroll Status Changes	Contributors Withdrawn	As of June 30th
2013	77,244	1,834	2,095	(3,400)	77,773
2014	77,773	1,914	1,587	(3,569)	77,705
2015	77,705	2,751	3,168	(2,440)	81,184
2016	81,184	3,367	3,464	(3,108)	84,907
2017	84,907	2,851	3,037	(3,101)	87,694
2018	87,694	2,774	3,436	(3,256)	90,648
2019	90,648	2,179	3,934	(3,161)	93,600
2020	93,600	1,948	3,389	(3,826)	95,111
2021	95,111	1,049	3,840	(3,210)	96,790
2022	96,790	3,180	2,348	(8,321)	93,997

*Active membership summary is based on latest valuation reports.*

**SCHEDULE 23: TDA PROGRAM ANNUITANTS SUMMARY**

Annuitants Year	Payroll As of July 1	Annuitants Registered	Payroll Status Changes	Annuitants Withdrawn	As of June 30th
2013	3,184	97	(50)	(176)	3,055
2014	3,055	120	(5)	(134)	3,036
2015	3,036	105	(18)	(132)	2,991
2016	2,991	86	16	(163)	2,930
2017	2,930	97	3	(164)	2,866
2018	2,866	91	28	(174)	2,811
2019	2,811	64	74	(122)	2,827
2020	2,827	51	26	(149)	2,755
2021	2,755	107	21	(159)	2,724
2022	2,724	109	22	(125)	2,730

*Annuitant membership summary is based on latest valuation reports.*

**SCHEDULE 24: MEMBERSHIP BY AGE (ACTIVE, DEFERRAL & BENEFICIARY ACCOUNTS AS OF JUNE 30, 2023)—TDA PROGRAM**

Age	Contributing		Non-Contributing		Deferred*		Beneficiary		Loans**	
	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance
=<25	6,215	\$105,142,832	301	\$3,916,469	4	\$80,239	13	\$2,621,980	728	\$2,618,969
30	11,510	447,550,419	1,269	43,986,988	28	1,583,375	25	3,727,469	3,892	19,552,271
35	13,176	895,423,893	1,701	94,781,368	144	11,270,922	27	5,078,564	7,430	43,584,034
40	14,682	1,739,666,261	1,298	110,812,933	451	41,777,937	27	8,437,688	10,710	70,825,868
45	14,119	2,366,023,603	783	74,520,491	514	57,499,614	59	20,889,614	12,169	82,057,942
50	13,457	3,030,415,081	686	83,659,879	710	108,973,063	73	23,336,981	11,934	83,170,912
55	9,012	2,059,967,233	532	64,996,454	3,586	1,311,742,436	118	29,078,423	8,881	66,876,961
60	5,468	1,245,043,702	333	39,187,028	6,773	2,550,220,412	154	39,223,422	6,146	45,983,099
65	2,212	590,219,176	171	18,637,216	10,625	4,253,656,735	143	38,176,085	3,952	32,353,074
70	561	182,975,888	72	6,905,699	14,298	7,285,832,641	177	65,967,698	2,838	24,104,664
75	134	67,871,813	33	5,416,760	14,207	7,989,547,821	186	74,918,845	1,503	13,256,973
80	28	27,574,691	9	632,519	7,728	3,904,121,258	181	66,926,637	634	5,225,646
85	8	4,074,244	2	84,059	3,744	1,606,324,852	115	39,088,467	188	1,554,067
90	3	4,876,237	2	703,486	2,018	565,790,283	74	13,161,065	42	543,499

Source: TRS query reports

\* Includes inactive memberships

\*\* Loan balances include interest and insurance receivable amounts.

**SCHEDULE 25: WITHDRAWALS BY AGE (FROM ACTIVE, DEFERRAL, & BENEFICIARY ACCOUNTS, FISCAL YEAR 2023)—TDA PROGRAM**

Age	Partial Withdrawals*		401(a) Service Purchase		RMD Withdrawals**		Total Withdrawals***		Survivors' Payments	
	Count	Distribution	Count	Distribution	Count	Distribution	Count	Distribution	Count	Distribution
=<25	21	\$246,303	10	\$33,816	12	\$39,610	171	\$2,133,676	—	\$—
30	72	1,040,306	15	70,675	21	66,727	419	8,912,327	12	102,378
35	168	2,297,675	21	111,431	25	129,875	390	14,240,500	1	57,898
40	303	6,133,191	30	128,748	25	175,055	327	19,016,509	21	716,038
45	362	8,133,550	49	274,693	49	474,698	226	13,894,808	36	2,946,525
50	500	10,631,918	63	442,874	69	750,190	125	5,836,266	38	1,875,279
55	2,288	55,222,296	78	439,698	109	1,057,479	162	13,339,412	59	2,733,550
60	5,736	97,494,339	55	388,671	145	1,463,732	258	16,115,348	95	13,180,266
65	4,569	70,845,467	31	230,741	118	1,589,691	142	13,264,375	98	16,337,873
70	4,270	75,065,304	7	55,260	8,551	182,103,842	144	16,616,596	139	43,866,560
75	2,993	55,212,957	1	672	12,658	320,957,883	78	10,720,858	266	75,989,806
80	928	20,431,357	—	—	6,705	197,996,780	33	6,018,689	280	89,311,952
85	376	8,725,757	—	—	3,168	109,010,412	26	9,607,425	198	56,054,726
90	178	5,439,419	—	—	1,419	52,978,084	9	564,863	199	51,381,952

Source: TRS query reports.

\* Category includes 137 Partial Withdrawals to Beneficiaries.

\*\* Category includes 1,244 RMD Withdrawals to Beneficiaries.

\*\*\* Category includes 35 Total Withdrawals to Beneficiaries.

**SCHEDULE 26: FUND CONVERSION OF INVESTMENT BALANCES BY AGE  
(FISCAL YEAR 2023)—TDA PROGRAM**

From	To	=<25	30	35	40	45	50	55	60	65	70	75	80	85	90+
FX	VA	10.3%	19.6%	12.1%	13.6%	10.0%	4.0%	4.3%	2.7%	5.3%	2.3%	2.2%	3.5%	0.0%	0.0%
FX	VB	0.4%	0.4%	0.5%	0.6%	0.2%	0.3%	0.3%	0.2%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%
FX	VC	2.0%	0.7%	0.5%	0.3%	0.2%	0.2%	0.3%	0.4%	0.2%	0.2%	0.2%	0.3%	0.0%	0.0%
FX	VE	3.9%	3.6%	8.2%	4.8%	6.2%	1.6%	1.4%	0.7%	2.1%	0.9%	1.8%	0.7%	0.0%	0.0%
FX	VF	17.5%	10.9%	8.4%	6.4%	3.2%	1.7%	1.7%	0.4%	0.2%	0.3%	0.9%	0.5%	0.0%	0.0%
FX	VG	2.9%	2.0%	1.4%	1.1%	0.4%	0.1%	0.2%	0.3%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%
VA	FX	16.0%	27.9%	33.0%	42.2%	59.7%	78.8%	80.9%	76.4%	73.2%	82.3%	77.4%	87.2%	67.4%	98.3%
VA	VB	0.1%	0.0%	0.0%	0.1%	0.2%	0.0%	0.2%	1.0%	0.1%	1.2%	0.0%	0.0%	0.0%	0.0%
VA	VC	0.4%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VA	VE	0.9%	1.2%	0.7%	0.3%	0.7%	0.7%	0.1%	1.0%	0.1%	1.5%	0.5%	0.0%	0.0%	0.1%
VA	VF	4.5%	5.3%	3.8%	1.4%	2.6%	0.7%	0.5%	0.6%	0.1%	0.4%	0.0%	0.3%	11.0%	0.0%
VA	VG	0.3%	1.0%	0.5%	0.2%	0.6%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	FX	6.8%	3.9%	4.9%	3.2%	2.9%	2.1%	2.7%	4.2%	2.7%	2.4%	0.8%	0.0%	0.1%	0.0%
VB	VA	2.0%	0.1%	0.3%	0.4%	0.6%	0.3%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	VC	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	VE	0.9%	0.1%	0.1%	0.4%	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	VF	3.4%	0.3%	0.5%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	VG	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VC	FX	3.5%	2.3%	5.3%	2.4%	2.5%	1.5%	1.4%	1.0%	1.0%	0.7%	1.5%	0.9%	6.2%	1.6%
VC	VA	0.8%	0.2%	0.6%	0.5%	0.3%	0.0%	0.0%	0.0%	0.2%	0.0%	0.4%	0.3%	1.0%	0.0%
VC	VB	0.1%	0.0%	0.2%	0.4%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VC	VE	0.0%	0.3%	0.2%	0.4%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	1.3%	1.0%	0.0%	0.0%
VC	VF	0.2%	0.8%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
VC	VG	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	FX	8.9%	5.7%	13.2%	15.9%	5.4%	5.3%	4.8%	8.3%	11.4%	6.2%	1.5%	0.7%	5.9%	0.0%
VE	VA	1.5%	0.4%	0.4%	0.7%	0.8%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	3.9%	4.3%	0.0%
VE	VB	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	VC	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
VE	VF	3.3%	1.1%	0.5%	1.3%	1.1%	0.6%	0.0%	0.1%	0.0%	0.0%	9.8%	0.1%	0.0%	0.0%
VE	VG	1.6%	1.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
VF	FX	4.6%	7.4%	3.6%	1.8%	1.1%	1.1%	0.7%	0.8%	3.1%	0.8%	1.5%	0.0%	4.1%	0.0%
VF	VA	0.1%	0.5%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VF	VB	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%
VF	VC	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%
VF	VE	0.1%	0.5%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VF	VG	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%
VG	FX	2.1%	0.4%	0.4%	0.1%	0.1%	0.2%	0.0%	0.6%	0.2%	0.4%	0.0%	0.1%	0.0%	0.0%
VG	VA	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%
VG	VB	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%
VG	VC	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	VE	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	VF	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: TRS query reports

**FX** refers to the Fixed Return Fund

**VA** refers to the Diversified Equity Fund

**VB** refers to the Balanced Fund

**VC** refers to the International Equity Fund

**VE** refers to the Sustainable Equity Fund

**VF** refers to the U.S. Equity Index Fund

**VG** refers to the International Equity Index Fund





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