

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

# Comprehensive Annual Financial Report

Fiscal Years Ended  
June 30, 2015 and June 30, 2014





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

**COMPREHENSIVE ANNUAL FINANCIAL REPORT**  
**FOR FISCAL YEARS ENDED JUNE 30, 2015 AND JUNE 30, 2014**

Prepared by Accounting Units for the  
**QUALIFIED PENSION PLAN**  
and  
**TAX-DEFERRED ANNUITY PROGRAM**

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Teachers' Retirement System

**MR. PAUL J. RAUCCI**

Chief Accountant  
Teachers' Retirement System

**MS. SHERRY S. CHAN**

Chief Actuary

**TEACHERS' RETIREMENT SYSTEM**  
**OF THE CITY OF NEW YORK**  
55 Water Street  
New York, NY 10041

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# Introduction









December 23, 2015

Dear Members of the Board of Trustees:

We are pleased to present the Comprehensive Annual Financial Report of the Teachers' Retirement System of the City of New York (TRS) for the fiscal year ended June 30, 2015.

TRS was established as of 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 now 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 all the teachers and administrative personnel employed by the Department of Education and certain employees of 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 almost 200,000 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, over 40% of them have retired. As of June 30, 2015, there were approximately 114,000 in-service members and more than 83,000 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**

TRS has begun a multiyear initiative to modernize our operations—to enhance our pension administration technology and improve our business processes as well. Over the next several years, this initiative will transform the way we do business and the way our members do business with us.

An important milestone in our efforts is the fully redesigned TRS website scheduled for release in January 2016. The new site will be easier to navigate, will have more streamlined content, and will be mobile-friendly so that our members can manage their retirement benefits using the device of their choice. During this multiyear initiative, we plan to steadily increase the number of self-service transactions and information available to our members.

## **Financial Statements**

The financial statements and notes along with Management's Discussion and Analysis in this report present and analyze the changes in TRS fiduciary net assets for the fiscal year ended June 30, 2015. Since markets are dynamic and fluid, any judgment of the financial statements should also consider current market conditions.

### **GASB 72**

The Governmental Accounting Standards Board (GASB) recently established a new standard intended to improve transparency regarding the valuation of investment assets. Statement No. 72, *Fair Value Measurement and Application*, requires an additional note disclosure to the financial statements. TRS' Financial Section in this report follows the standard.

### **Funding**

The Qualified Pension Plan's (QPP) funding objective is to meet long-term benefit promises through employer and member contributions. 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 Entry Age Actuarial Accrued Liability, determined as of June 30, 2014, is 57.7%. Please refer to the report's Actuarial Section for a detailed discussion of the Plan's measures of funded status.

Under the new Accounting Standard, 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 value and, as such, is more sensitive to market volatility. As of June 30, 2015, the Qualified Pension Plan's fiduciary net position represents 68.04% of the QPP's total pension liability.

Funds needed to finance the QPP's long-term benefit promises 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. 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.

## 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 Bond Fund, the International Equity Fund, the Inflation Protection Fund, and the Socially Responsive Equity Fund. The performance summary for Fiscal Year 2015 follows:

Rate of Return by Fund—Fiscal Year 2015		
Fund	ROR	Gross vs. Net Returns
Pension	2.78%	Net of Fees
Variable Fund	ROR	Gross vs. Net Returns
Diversified Equity Fund	4.85%	Net of Fees
Bond Fund	1.10%	Net of Fees
International Equity Fund	-3.94%	Net of Fees
Inflation Protection Fund	-4.82%	Net of Fees
Socially Responsive Equity Fund	6.09%	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 2015 and 2014 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 2015 and 2014		
Variable Fund	Unit Value July 2015	Unit Value July 2014
Diversified Equity Fund	\$81.738	\$81.078
Bond Fund	\$17.616	\$18.122
International Equity Fund	\$10.170	\$11.011
Inflation Protection Fund	\$10.807	\$11.806
Socially Responsive Equity Fund	\$14.760	\$14.469

The Administrative Code of the City of New York authorizes the investments of plan assets subject to the terms, conditions, limitations, and restrictions imposed by law for investments by savings banks and domestic life insurance companies. The New York State Retirement and Social Security 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 is contained in this section. The section includes tables that reflect the net assets 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, Deloitte & Touche LLP, provides an Independent Auditor's Report on the financial statements and schedules in the Financial Section of this Report.

Consultants are appointed by the Teachers' Retirement Board to perform professional services that are essential to the effective and efficient operation of TRS. The Office of the Comptroller also provides investment services for the pension portfolio through independent advisors.

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 Comprehensive Annual Financial Report for the Fiscal Year ended June 30, 2014. This was the 27th 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 Comprehensive Annual 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 comprehensive annual 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



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 Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

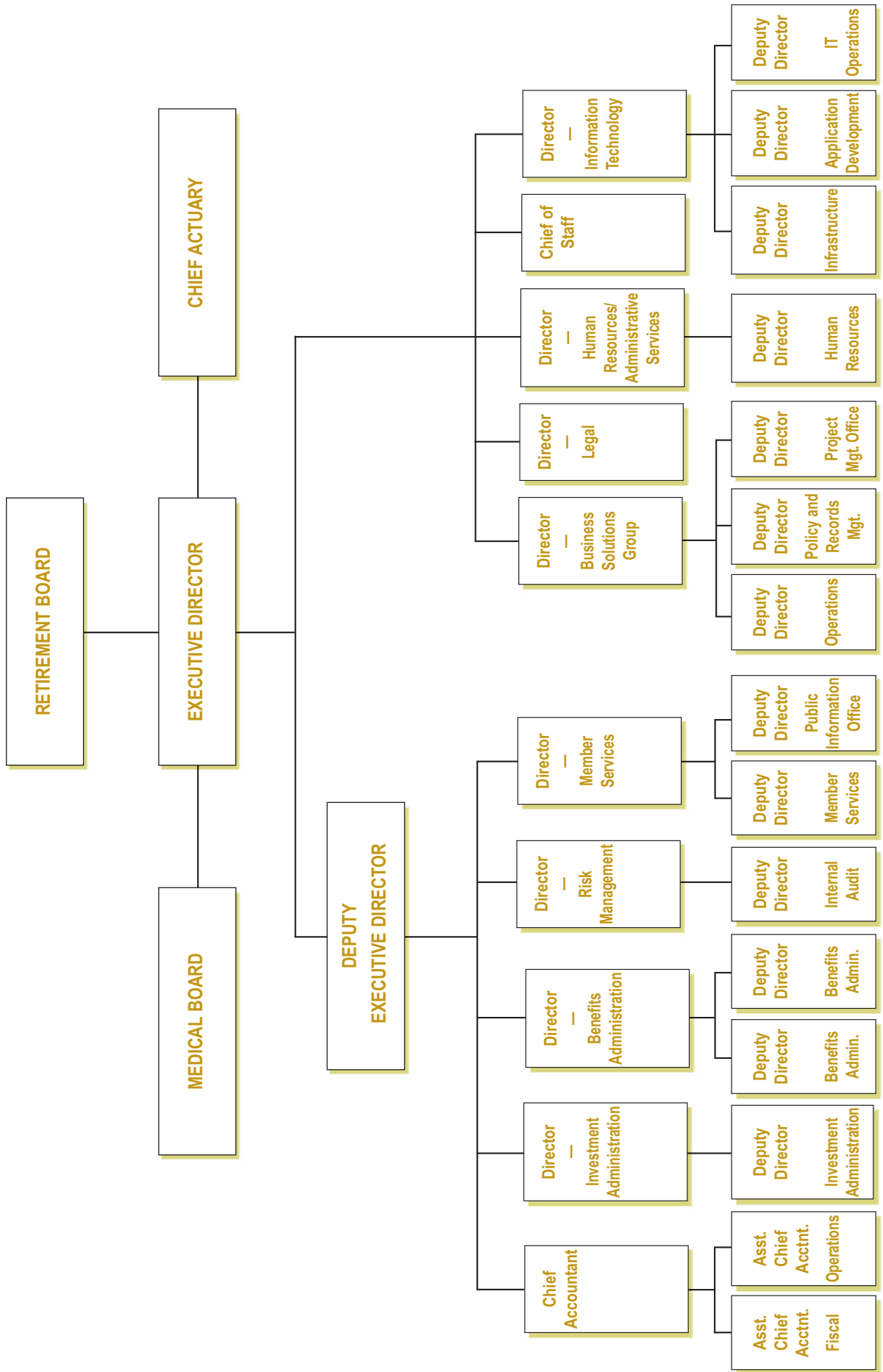
**June 30, 2014**

A handwritten signature in black ink, reading "Jeffrey R. Emswiler". The signature is written in a cursive, flowing style.

Executive Director/CEO

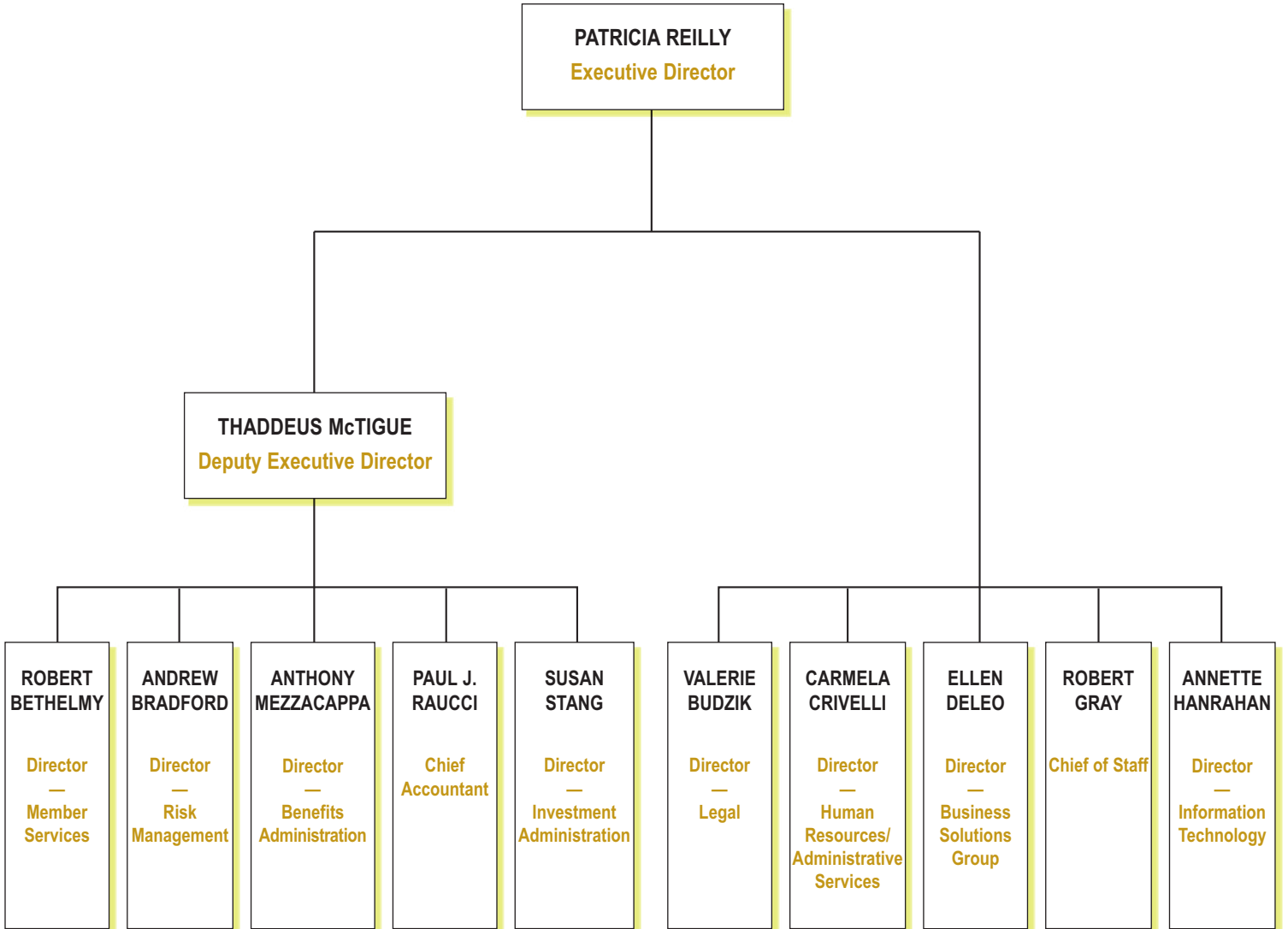
# ORGANIZATION CHART

as of June 30, 2015



# PRINCIPAL OFFICIALS

as of June 30, 2015







# Financial





## INDEPENDENT AUDITORS' REPORT

To the Retirement Board of the  
Teachers' Retirement System of The City of New York:

### Report on the Combining Financial Statements

We have audited the accompanying combining statements of fiduciary net position of the Teachers' Retirement System of The City of New York Qualified Pension Plan ("QPP") and the Teachers' Retirement System of The City of New York Tax-Deferred Annuity ("TDA") Program, which collectively comprise the Teachers' Retirement System of The City of New York, (the "System"), a fiduciary fund of the City of New York, as of June 30, 2015 and 2014, and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to the combining financial statements, which collectively comprise the Systems' basic combining financial statements as listed in the table of contents.

### Management's Responsibility for the Combining Financial Statements

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

### Auditors' Responsibility

Our responsibility is to express opinions on these combining financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the combining financial statements are free from material misstatement.

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

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

## Opinions

In our opinion, the combining financial statements referred to above present fairly, in all material respects, the combining fiduciary net position of the System as of June 30, 2015 and 2014, and the changes in combining fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

## Other Matters

### *Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, Schedule 1, Schedule 2, and Schedule 3, as listed in the table of contents, be presented to supplement the basic combining financial statements. Such information, although not a part of the basic combining financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the 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 auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic 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.

### *Other Supplementary Information*

Our audits were conducted for the purpose of forming an opinion on the basic combining financial statements. The Introductory Section, Additional Supplementary Information, Investment Section, Actuarial Section, and Statistical Section, as listed in the foregoing table of contents, are presented for the purpose of additional analysis and are not a required part of the basic combining financial statements.

The Additional 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. Such information has been subjected to the auditing procedures applied in the audits of the basic combining financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic combining financial statements or to the basic combining financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America by us and the other auditors. 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.

The Introductory Section, Investment Section, Actuarial Section, and Statistical Section have not been subjected to the auditing procedures applied in the audit of the basic combining financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

*Deloitte & Touche LLP*

October 29, 2015

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

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
JUNE 30, 2015 AND 2014

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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 financial activities for the Fiscal Years ended June 30, 2015 and 2014. It is meant to assist the reader in understanding TRS' financial statements by providing an overall review of the financial activities during the two 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 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 City public school teachers and certain personnel, participating Charter Schools and participating CUNY teachers and 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 BASIC COMBINING FINANCIAL STATEMENTS**

The following discussion and analysis is intended to serve as an introduction to the System's basic combining financial statements. The basic combining financial statements, which are prepared in accordance with Governmental Accounting Standards Board ("GASB") pronouncements and include the financial statements of the QPP and the TDA Programs, 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.
- **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 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** — as required by GASB, includes the management discussion and analysis and information presented after the notes to the combining financial statements.

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

In 2015, the System adopted GASB Statement No. 72, *Fair Value Measurement and Application*. Implementation of GASB Statement No. 72 did not impact the combining fiduciary net position of the System; however, an additional note disclosure has been incorporated to comply with the new standard.

### RECENT DEVELOPMENTS

#### UFT Contract

On June 30, 2014, the United Federation of Teachers ("UFT"), the primary union for Department of Education's employees, ratified its new collective bargaining agreement. The contract is retroactive to November 2009 and, following a February 13, 2015 arbitration decision, runs through November 2018. The contract provides for retroactive and future wage increases. The wage increases impact employer and member contributions, as well as annual retirement payments to retirees.

#### Employer Information

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

The following schedule provides the 2015 QPP summary information of the employer groups.

	Members Active	Contribution Employer	Contribution Member	Members Retired	Pension Payments
DOE	107,000	\$ 3.2 billion	\$ 150 million	80,500	\$ 3.7 billion
CUNY	6,000	\$ 113 million	\$ 8 million	2,500	\$ 125 million
Charter Schools	600	\$ 6.1 million	\$ 1 million	less than 50	\$ 885,000

### 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 \$44.3 billion, \$44.5 billion and \$36.9 billion, as of June 30, 2015, 2014 and 2013, respectively. The Plan's employer contributions amounted to \$3.3 billion, \$3.0 billion and \$2.9 billion, for Fiscal Years 2015, 2014 and 2013, respectively. The QPP's benefit payments totaled \$4.0 billion, \$3.8 billion and \$3.6 billion, for Fiscal Years 2015, 2014 and 2013, respectively.

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

**QPP Fiduciary Net Position**  
**June 30, 2015, 2014 and 2013**  
(In thousands)

	2015	2014	2013 *
Cash	\$ 22,674	\$ 74,829	\$ 12,752
Receivables for investments sold	2,766,976	2,907,019	1,909,897
Receivables for accrued interest and dividends	145,968	134,559	128,162
Member loan receivables	257,043	240,266	218,813
Investments, at fair value	64,756,689	63,327,076	54,043,878
Collateral from securities lending	1,863,922	5,401,513	5,194,111
Other assets	<u>27,855</u>	<u>32,391</u>	<u>444,981</u>
 Total assets	 <u>69,841,127</u>	 <u>72,117,653</u>	 <u>61,952,594</u>
 Accounts payable	 391,945	 353,908	 589,437
Payable for investments purchased	4,616,284	4,623,463	3,533,790
Accrued benefits payable	14,979	11,226	16,684
Investments due to TDA Program	18,699,332	17,236,032	15,753,693
Payable for securities lending	<u>1,863,923</u>	<u>5,403,085</u>	<u>5,202,534</u>
 Total liabilities	 <u>25,586,463</u>	 <u>27,627,714</u>	 <u>25,096,138</u>
 Net position restricted for benefits	 <u>\$ 44,254,664</u>	 <u>\$ 44,489,939</u>	 <u>\$ 36,856,456</u>

\*Certain amounts have been reclassified to conform to the 2015 and 2014 financial statement presentation.

Cash balances amounted to \$22.7 million at June 30, 2015, a decrease of \$52.2 million (-69.7%) from June 30, 2014. Cash balances are typically small and consist of accounts used for advance funding of the System's 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. Cash balances at June 30, 2014 amounted to \$74.8 million, an increase of \$62.1 million (486.8%) from June 30, 2013. The \$62.1 million increase was primarily due to a \$60.0 million increase in cash as of June 30, 2014 subsequently invested by various pooled NYC Pension Fund investment managers.

Receivables for investment securities sold amounted to \$2.8 billion at June 30, 2015, a decrease of \$140.0 million (-4.8%) from June 30, 2014. Receivables for investment securities sold amounted to \$2.9 billion at June 30, 2014, an increase of \$997.1 million (52.2%) from June 30, 2013. 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 increase resulted primarily from timing differences in settlement dates. Trades typically do not settle until a few days after the trade date.

Receivables for accrued interest and dividends amounted to \$146.0 million as of June 30, 2015, an increase of \$11.4 million (8.5%) from June 30, 2014. Receivables for accrued interest and dividends amounted to \$134.6 million as of June 30, 2014, an increase of \$6.4 million (5.0%) from June 30, 2013. 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

At June 30, 2015, member loan receivables amounted to \$257.0 million, an increase of \$16.8 million (7.0%) from the previous year. The increase primarily reflects new loans issued to Tiers III, IV and VI members. There were 17,657 new loans issued to Tiers III, IV and VI members in Fiscal Year 2015, an increase of 47 (0.27%) from Fiscal Year 2014. Also, the average loan amount in Fiscal Year 2015 was \$7,547 or \$127 (1.7%) more than in Fiscal Year 2014. At June 30, 2014, member loan receivables amounted to \$240.3 million, an increase of \$21.5 million (9.8%) from the previous year. The increase primarily reflects additional new loans issued to Tiers III, IV and VI members. There were 17,610 new loans issued to Tiers III, IV and VI members in Fiscal Year 2014, an increase of 918 (5.5%) from Fiscal Year 2013. Also, the average loan amount in Fiscal Year 2014 was \$7,420 or \$245 (3.4%) more than in Fiscal Year 2013.

Investments at June 30, 2015, were \$64.8 billion compared to \$63.3 billion at June 30, 2014, an increase of \$1.5 billion (2.3%) from June 30, 2014. Investment assets as of June 30, 2015, reflect gains in equity markets, with equity investments being over 65% of the QPP's total investment portfolio and the balance primarily being fixed income investments. For the twelve month period ended June 30, 2015, the Russell 3000 Index, a broad measure of U.S. equity markets, returned 7.3%. The Morgan Stanley Capital International Index for Europe, Australasia, and Far East ("MSCI EAFE") Small Cap Index returned -3.8%. Conversely, for the twelve month period ended June 30, 2015, the NYC Core + 5, a composite index maintained by New York City's Office of the Comptroller and a broad measure of the U.S. fixed income markets, returned 2.1%. Investments at June 30, 2014 were \$63.3 billion compared to \$54.0 billion at June 30, 2013, an increase of \$9.3 billion (17.2%) from June 30, 2013. The \$9.3 billion increase primarily reflects the QPP's \$7.6 billion increase in fair value of investments for Fiscal Year 2014. Additionally, the remaining \$1.7 billion is a result of an increase in the year over year amounts for receivables for investments sold and other assets less payables of investment purchases, as well as an increase in the TDA Program's Fixed Return Fund's assets and other payables. Investment assets as of June 30, 2014, also reflect large gains in equity markets, with equity investments being approximately 70% of the QPP's total investment portfolio and the balance primarily being fixed income investments. For the twelve month period ended June 30, 2014, the Russell 3000 Index, a broad measure of U.S. equity markets, returned 25.2%. The Morgan Stanley Capital International Index for Europe, Australasia, and Far East ("MSCI EAFE") Small Cap Index returned 24.1%. Conversely, for the twelve month period ended June 30, 2014, the NYC Core + 5, a composite index maintained by New York City's Office of the Comptroller and a broad measure of the U.S. fixed income markets, returned 5.5%.

Other assets at June 30, 2015, totaled \$27.9 million, a \$4.5 million (-14.0%) decrease from June 30, 2014. The year over year changes in other assets was primarily due to a \$7.4 million decrease in funds due from the TDA program less \$2.1 million June 30, 2015 supplemental employer contribution received on July 1, 2015. Other assets at June 30, 2014, totaled \$32.4 million, a \$412.6 million (-92.7%) decrease from June 30, 2013. Balances due from the NYC Department of Education and the City University of New York at June 30, 2013 of \$394.4 million and \$34.8 million, respectively, were received during July 2013 and August 2013, respectively.

Accounts payable at June 30, 2015, amounted to \$391.9 million, a \$38.0 million (10.7%) increase from June 30, 2014. The QPP's practice is to fully invest its day-end cash balances in a pooled short term fund. A typical benefit payment account would show an overdrawn balance due to depositories, since funds are deposited as outstanding benefit checks are presented to the bank for payment each day. These balances due to depositories are a main component (35.1%) of accounts payable. Other main components of accounts payable include accrued investment expenses (29.5%), reserve for expenses (24.3%), unclaimed funds (7.8%), and other payables (3.2%). The increase in accounts payable was due to a \$20.5 million net increase in balances due to depositories, a \$25.6 million increase in accrued investment expenses, and a \$6.1 million decrease in reserve for expenses. Accounts payable at June 30, 2014, amounted to \$353.9 million, a \$235.5 million (-40.0%) decrease from June 30, 2013. The decrease in accounts payable was due to a



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\$220.9 million net decrease in balances due to depositories (related to the timing of funding EFT payments to retirees), a \$6.3 million decrease in accrued investment expenses, and a \$7.0 million decrease in other payables.

Payables for investments purchased at June 30, 2015, amounted to \$4.6 billion, a \$7.2 million (-0.2%) decrease from June 30, 2014. Payables for investments purchased at June 30, 2014, amounted to \$4.6 billion, a \$1.1 billion (30.8%) increase from June 30, 2013. Investments purchased are accounted for on a trade-date basis. The increase resulted from timing differences in settlement dates, similar to receivables for investments sold discussed earlier.

Accrued benefits payable at June 30, 2015, amounted to \$15.0 million, a \$3.8 million (33.4%) increase from June 30, 2014. The \$3.8 million accrued benefits payable increase during Fiscal Year 2015 is primarily attributed to an increase of pending survivor benefits payable to beneficiaries at year end. Accrued benefits payable at June 30, 2014, amounted to \$11.2 million, a \$5.5 million (-32.7%) decrease from June 30, 2013. The \$5.5 million accrued benefits payable decrease during Fiscal Year 2013 is primarily attributed to a decrease of pending survivor benefits payable to beneficiaries at year end.

Investments due to the TDA Program reflect the TDA Program's share of assets of the pooled NYC 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 NYC 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's passport funds, and earnings applied in accordance with statutory interest rates (7% for members of the UFT and 8.25% for certain other participants. See note 1 for a full description of the TDA Fixed Return Fund investment program.)

**QPP Changes in Fiduciary Net Position  
Years Ended June 30, 2015, 2014, and 2013  
(In thousands)**

	2015	2014	2013 *
Additions:			
Member contributions	\$ 158,590	\$ 154,962	\$ 154,698
Employer contributions	3,325,528	3,054,424	2,912,844
Payment of statutory-interest to TDA Program	(1,248,988)	(1,147,923)	(1,047,979)
Net receipts from (payments to) other retirement systems	329	404	(44)
Securities lending income	20,300	6,405	32,338
Net investment income	<u>1,591,629</u>	<u>9,429,501</u>	<u>5,688,774</u>
 Total	 <u>3,847,388</u>	 <u>11,497,773</u>	 <u>7,740,631</u>
Deductions:			
Administrative expenses	58,391	46,042	39,682
Benefits payments	<u>4,024,272</u>	<u>3,818,248</u>	<u>3,619,254</u>
 Total deductions	 <u>4,082,663</u>	 <u>3,864,290</u>	 <u>3,658,936</u>
Net (decrease) increase in net position	<u>\$ (235,275)</u>	<u>\$ 7,633,483</u>	<u>\$ 4,081,695</u>
Net position restricted for benefits			
Beginning of year	<u>44,489,939</u>	<u>36,856,456</u>	<u>32,774,761</u>
End of year	<u>\$ 44,254,664</u>	<u>\$ 44,489,939</u>	<u>\$ 36,856,456</u>

\*Certain amounts have been reclassified to conform to the 2015 and 2014 financial statement presentation.

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TRS received \$158.6 million and \$155.0 million in member contributions during Fiscal Years 2015 and 2014, respectively. The \$158.6 million in Fiscal Year 2015 member contributions represents a \$3.6 million (2.3%) increase from Fiscal Year 2014 and primarily reflects the increase of member contributions resulting from the two one percent salary rate increases agreed to in the new collective bargaining agreement between the United Federation of Teachers' ("UFT") and the City of New York. The \$155.0 million in Fiscal Year 2014 member contributions represents a \$264.0 thousand (0.2%) increase from Fiscal Year 2013.

Employer contributions during Fiscal Year 2015 were \$3.3 billion, a \$271.1 million (8.9%) increase from Fiscal Year 2014. Employer contributions during Fiscal Year 2014 were \$3.1 billion, a \$141.6 million (4.9%) increase from Fiscal Year 2013. The June 30, 2013 (Lag) actuarial valuation and June 30, 2012 (Lag) actuarial valuation was used to determine Fiscal Year 2015 and 2014 employer contributions, respectively.

The QPP's net investment income for Fiscal Year 2015 was \$1.6 billion, a \$7.8 billion (-83.1%) decrease from Fiscal Year 2014. The QPP's net investment income of \$1.6 billion consisted of \$1.6 billion in dividend and interest income plus an aggregate gain of \$146.8 million on the appreciation in fair value of the QPP's investments offset by \$203.0 million in investment expenses. Net investment income for the QPP portion of the pooled NYC Pension Fund, the QPP portion of the variable Diversified Equity Fund, the QPP portion of the Bond Fund, the QPP portion of the International Equity Fund, the QPP portion of the Inflation Protection Fund, and the QPP portion of the Socially Responsive Equity Fund totaled \$1.4 billion, \$152.0 million, \$1.4 million, -\$316.1 thousand, -\$129.1 thousand, and \$621.8 thousand, respectively. The QPP's net investment income for Fiscal Year 2014 was \$9.4 billion, a \$3.7 billion (64.9%) increase from Fiscal Year 2013. The QPP's net investment income of \$9.4 billion consisted of \$1.6 billion in dividend and interest income plus an aggregate gain of \$8.0 billion on the appreciation in fair value of the QPP's investments offset by \$162.2 million in investment expenses. Net investment income for the QPP portion of the pooled NYC Pension Fund, the QPP portion of the variable Diversified Equity Fund, the QPP portion of the Bond Fund, the QPP portion of the International Equity Fund, the QPP portion of the Inflation Protection Fund, and the QPP portion of the Socially Responsive Equity Fund totaled \$8.7 billion, \$691.4 million, \$1.9 million, \$2.7 million, \$740.3 thousand and \$1.6 million, respectively.

Payments of statutory-interest due to the TDA from its investment in the pooled NYC Pension Fund Assets (Fixed Return Fund) during Fiscal Year 2015 were \$1.2 billion, an increase of \$101.1 million (8.8%) from Fiscal Year 2014. Payments of statutory-interest due to the TDA from its investment in the pooled NYC Pension Fund Assets (Fixed Return Fund) during Fiscal Year 2014 were \$1.1 billion, an increase of \$99.9 million (9.5%) from Fiscal Year 2013.

For Fiscal Year 2015 the QPP's effective net investment income for the QPP portion of the pooled NYC Pension Fund decreased due to investment returns attributable to the TDA Program's pooled NYC Pension Fund assets. The TDA Fixed Return Fund program resulted in approximately \$818.8 million less assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of TDA Program's investment returns being below the Statutory Rates. Conversely, For Fiscal Year 2014, the TDA Fixed Return Fund program resulted in approximately \$1.5 billion of additional assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of the TDA Program's investment returns exceeding the Statutory Rates. The schedule below displays the TDA Program's impact on the QPP's Contingent Reserve Fund of Employer's Contributions for Fiscal Years 2015, 2014, and 2013.

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

**Pooled NYC Pension Fund Assets (QPP)\***

**Years Ended 2015, 2014 and 2013**

**(in Thousands)**

	<b>2015</b>	<b>2014</b>	<b>2013</b>
Net Investment Income	\$1,457,153	\$8,736,896	\$5,138,644
TDA percent of Fixed Assets as of June 30	30.26%	28.78%	31.08%
TDA percent of Fixed Assets 6/30/12:			31.60%
TDA percent of Fixed Assets (average)	29.52%	29.93%	31.34%
Investment Income on account of TDA Investment	430,152	2,615,209	1,610,472
Less Statutory Interest to TDA	<u>(1,248,988)</u>	<u>(1,147,923)</u>	<u>(1,047,979)</u>
Revenue (Expense) to QPP Contingent Reserve	<u>\$ (818,836)</u>	<u>\$1,467,286</u>	<u>\$ 562,493</u>

\*Includes security-lending income

Administrative expenses during Fiscal Year 2015 were \$58.4 million, an increase of \$12.3 million (26.8%) from Fiscal Year 2014. The \$12.3 million increase primarily reflects the System's beginning efforts to modernize its pension database. As mentioned in Fiscal Year 2014, the System has begun work in replacing its outdated IBM A/S 400 computer system. Sagitec, an outside vendor and a provider of Pension Database Systems and Cognizant, a software testing company, have begun assisting with this multi-year project. As of June 30, 2015, the majority of spending has been for planning, personnel training and data readiness issues and system development is at an early stage. The change in administrative expenses also reflects the annual update in the System's administrative expenses attributed to the QPP. (See Note 7) The QPP's total administrative expenses for Fiscal Year 2015 accounted for 69.2% of the System's administrative expenditures. The balance of \$26.0 million (30.8%) includes \$25.8 million expensed to the TDA Program and also \$250.4 thousand charged against incoming loan service charge revenues. Administrative expenses during Fiscal Year 2014 were \$46.0 million, an increase of \$6.4 million (16.0%) from Fiscal Year 2013. The QPP's total administrative expenses for Fiscal Year 2014 accounted for 75.7% of the System's administrative expenditures. The balance of \$14.7 million (24.3%) includes \$17.2 million expensed to the TDA Program and also includes a \$2.5 million credit to loan service charge reserves. The \$2.5 million credit includes \$4.7 million rebalancing of Fiscal Years 2012 and 2013 due to inadequate reserves of loan service charge revenues during those years, offset by \$2.2 million administrative expenses (\$1.6 million Fiscal Year 2014 and \$0.6 million Fiscal Year 2015) to be covered by service charge revenues. The System's administrative expenditures have been \$84.4, \$60.1 million, and \$52.3 million, for Fiscal Years 2015, 2014, and 2013, respectively.

Benefit payments during Fiscal Year 2015 were \$4.0 billion, a \$206.0 million (5.4%) increase from Fiscal Year 2014. The \$206.0 million increase in benefit payments and withdrawals was primarily due to a \$207.9 million (5.6%) increase in payments to retirees. In total, benefit payments and withdrawals distributed during Fiscal Year 2015 were composed of 97.8% retirement benefits and 2.2% in refund/withdrawals and survivor benefits. Also, benefit payments and withdrawals account for the funds disbursed to members from the System's Passport Funds. Fiscal Year 2015 disbursements are composed of 85.1% from the Pension Fund, 14.5% from the Diversified Equity Fund, 0.4% from the Bond Fund, the International Equity, Inflation Protection, and Socially Responsive Equity Funds. Benefits payments during Fiscal Year 2014 were \$3.8 billion, a \$199.0 million (5.5%) increase from Fiscal Year 2013. The \$199.0 million increase in benefit payments and withdrawals was primarily due to a \$187.6 million (5.3%) increase in payments to retirees. In total, benefits payments and withdrawals distributed during Fiscal Year 2014 were composed of 97.6% retirement benefits and 2.4% in refund/withdrawals and survivor benefits. Also, benefit payments and withdrawals account for the funds disbursed to members from the System's Passport Funds. Fiscal Year 2014 disbursements are composed of 85.1% from the Pension Fund, 14.4%

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from the Diversified Equity Fund, 0.4% from the Bond Fund and 0.1% from the International Equity, Inflation Protection, and Socially Responsive Equity Funds.

**TDA Program Financial Highlights** — The TDA Program's net position restricted for benefits was \$27.3 billion, \$25.9 billion and \$23.2 billion, as of June 30, 2015, 2014 and 2013, respectively. Member contributions amounted to \$662.6 million, \$639.0 million, and \$633.9 million for Fiscal Years 2015, 2014 and 2013, respectively. Benefit payments and withdrawals totaled \$861.3 million, \$757.3 million and \$600.9 million, for Fiscal Years 2015, 2014 and 2013, 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, 2015, 2014 and 2013

(in Thousands)

	2015	2014	2013 *
Cash	\$ 3,316	\$ 2,520	\$ 1,063
Receivables for investments sold	89,541	86,689	116,547
Receivables for accrued interest and dividends	12,471	11,411	10,544
Member loan receivables	361,073	348,935	335,562
Investments, at fair value	8,470,979	8,471,925	7,360,323
Investment in pooled NYC Pension Fund	18,699,332	17,236,032	15,753,693
Collateral from securities lending	574,835	338,062	2,825
Other assets	3,725	2,390	1,133
Total assets	<u>28,215,272</u>	<u>26,497,964</u>	<u>23,581,690</u>
Accounts payable	117,700	137,352	121,882
Payable for investment securities purchased	93,595	87,612	124,508
Accrued benefits payable	95,560	61,449	102,799
Payable for securities lending transactions	574,835	338,062	2,825
Total liabilities	<u>881,690</u>	<u>624,475</u>	<u>352,014</u>
Net position held in trust for benefits	<u>\$27,333,582</u>	<u>\$25,873,489</u>	<u>\$23,229,676</u>

\*Certain amounts have been reclassified to conform to the 2015 and 2014 financial statement presentation.

Cash balances amounted to \$3.3 million at June 30, 2015, an increase of \$796 thousand (31.6%) from June 30, 2014. Cash balances consist of accounts used to reimburse the funds of the Variable-Annuity Program or accounts used for advance funding of the variable-return funds' investment managers.

Receivables for investment securities sold at June 30, 2015 amounted to \$89.5 million, an increase of \$2.9 million (3.3%) from June 30, 2014. Receivables for investment securities sold at June 30, 2014 amounted to \$86.7 million, a decrease of \$29.9 million (-25.6%) from June 30, 2013. 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, 2015 were \$12.5 million, an increase of \$1.1 million (9.3%) from June 30, 2014. Receivables for accrued earnings at June 30, 2014 were \$11.4 million, an increase of \$867 thousand (8.2%) from June 30, 2013. Changes in accrued earnings are impacted by the cumulative value of the interest or dividend bearing securities, discount rates, and interest payable dates.

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Member loan receivables at June 30, 2015 amounted to \$361.1 million, an increase of \$12.1 million (3.5%) from June 30, 2014. For Fiscal Year 2015, loan disbursements amounted to \$176.6 million and principal and interest payments amounted to \$178.7 million. Member loan receivables at June 30, 2014 amounted to \$348.9 million, an increase of \$13.4 million (4.0%) from June 30, 2013. For Fiscal Year 2014, loan disbursements amounted to \$180.1 million and principal and interest payments amounted to \$172.3 million.

The variable-return funds' investments at June 30, 2015, including collateral received for securities lending, were \$9.0 billion, an increase of \$235.8 million (2.7%) from June 30, 2014. The variable-return funds' investments at June 30, 2014, including collateral received for securities lending, were \$8.8 billion, an increase of \$1.4 billion (19.7%) from June 30, 2013.

Investments in pooled NYC Pension Fund Assets at June 30, 2015 were \$18.7 billion, an increase of \$1.5 billion (8.5%) from June 30, 2014. In addition to the 7% statutory return, for Fiscal Year 2015, contributions, withdrawals and investment transfers to (from) the Fixed Return Fund totaled \$446.6 million, -\$618.1 million and \$369.3 million, respectively. Investments in pooled NYC Pension Fund Assets at June 30, 2014 were \$17.2 billion, an increase of \$1.5 billion (9.4%) from June 30, 2013.

Other assets at June 30, 2015 were \$3.7 million, an increase of \$1.3 million (55.9%) over June 30, 2014. Other assets at June 30, 2014 were \$2.4 million, an increase of \$1.3 million (110.9%) over June 30, 2013. Other assets primarily represent assets already reserved for future administrative expenses.

Accounts payable at June 30, 2015 amounted to \$117.7 million, compared to \$137.4 million at June 30, 2014, a decrease of -14.3%. Accounts payable at June 30, 2014 amounted to \$137.4 million, compared to \$121.9 million at June 30, 2013, an increase of 12.7%. The TDA Program's accounts payable balance primarily represents a reserve fund to pay the TDA Program's future investment and administrative expenses.

Payables for investment securities purchased at June 30, 2015 amounted to \$93.6 million, an increase of \$6.0 million (6.8%) from June 30, 2014. Payables for investment securities purchased at June 30, 2014 amounted to \$87.6 million, a decrease of \$36.9 million (-29.6%) from June 30, 2013. Investments purchased are accounted for on a trade-date basis. The changes resulted from timing differences in settlement dates, similar to receivables for investments sold discussed earlier.

Accrued benefits payable at June 30, 2015 amounted to \$95.6 million, an increase of \$34.1 million (55.5%) from June 30, 2014. Accrued benefits payable at June 30, 2014 amounted to \$61.4 million, a decrease of \$41.4 million (-40.2%) from June 30, 2013. The changes in accrued benefits payables are attributed to changes in TDA withdrawal amounts processed in July and August (an estimate is used for August) after year end.

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

**Changes in TDA Program's Fiduciary Net Position  
Years Ended June 30, 2015, 2014, and 2013  
(In Thousands)**

	<b>2015</b>	<b>2014</b>	<b>2013 *</b>
<b>Additions:</b>			
Member contributions	\$ 662,601	\$ 638,979	\$ 633,900
Receipt of statutory-interest for portion of investment in pooled NYC Pension Fund	1,248,988	1,147,923	1,047,979
Net investment income	432,200	1,629,701	1,216,244
Net securities lending income	3,432	1,710	549
<b>Total</b>	<u>2,347,221</u>	<u>3,418,313</u>	<u>2,898,672</u>
<b>Deductions:</b>			
Administrative expenses	25,783	17,188	10,195
Benefits payments	861,345	757,312	600,898
<b>Total deductions</b>	<u>887,128</u>	<u>774,500</u>	<u>611,093</u>
<b>Net increase in net position</b>	1,460,093	2,643,813	2,287,579
<b>Net position restricted for benefits</b>			
Beginning of year	<u>25,873,489</u>	<u>23,229,676</u>	<u>20,942,097</u>
End of year	<u>\$27,333,582</u>	<u>\$ 25,873,489</u>	<u>\$ 23,229,676</u>

\*Certain amounts have been reclassified to conform to the 2014 and 2015 financial statement presentation.

TRS received \$662.6 million in member contributions during Fiscal Year 2015, an increase of \$23.6 million (3.7%) from Fiscal Year 2014. TRS received \$639.0 million in member contributions during Fiscal Year 2014, an increase of \$5.1 million (0.8%) from Fiscal Year 2013.

Receipts of statutory interest for the TDA Program's Fixed Return Fund portion in investments in the pooled NYC Pension Fund assets for Fiscal Year 2015 was \$1.2 billion, an increase of \$101.1 million (8.8%) from Fiscal Year 2014. Receipts of statutory interest for the TDA Program's Fixed Return Fund portion in investments in the pooled NYC Pension Fund assets for Fiscal Year 2014 was \$1.1 billion, an increase of \$99.9 million (9.5%) from Fiscal Year 2013. Annual amounts of receipts of statutory-interest to the Fixed Return Fund exceed a 7% rate (of prior year end TDA Program's Fixed Return Fund value) when contributions and net investment transfers exceed withdrawals; see above "Investments in the pooled NYC Pension Fund."

Net investment income for the TDA Program's variable-return funds for Fiscal Year 2015 decreased \$1.2 billion (-73.5%) from Fiscal Year 2014. Net investment income for Fiscal Year 2014 increased \$413 million (34.0%) from Fiscal Year 2013. Net investment income primarily reflects the appreciation in fair value of the TDA Program's variable-return fund investments, including both realized and unrealized gains.

Administrative expenses for the Fiscal Year ended June 30, 2015 totaled \$25.8 million, an increase of \$8.6 million (50.0%) from Fiscal Year 2014. Similar to the QPP administrative expenses, the increase primarily reflects the System's beginning efforts to modernize its pension database. Administrative expenses for the Fiscal Year ended June 30, 2014 totaled \$17.2 million, an increase of \$7.0 million (68.6%)

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from Fiscal Year 2013. The TDA Program accounted for a portion of the System's total administrative expenses; see QPP administrative expenses above.

Benefit payments and withdrawals for the Fiscal Year ended June 30, 2015 totaled \$861.3 million, an increase of \$104.0 million (13.7%) from Fiscal Year 2014. Benefit payments and withdrawals for the Fiscal Year ended June 30, 2014 totaled \$757.3 million, an increase of \$156.4 million (26.0%) from Fiscal Year 2013. Benefit payments and withdrawals consist primarily of total and partial withdrawals.

### 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.

Cash Flow Review	June 30, 2015		June 30, 2014		June 30, 2013	
	QPP	TDA	QPP	TDA	QPP	TDA
Contributions	\$ 3,484,118	\$ 662,601	\$ 3,209,386	\$ 638,979	\$ 3,067,542	\$ 633,900
Contributions- Loan adj.	-	(118)	-	(31)	-	(50)
Loan repayments	114,940	177,613	109,414	171,349	101,133	163,092
401(a) receipts/(payments)	329	-	404	-	(44)	-
Interest income	758,526	32,627	709,594	33,367	660,118	48,715
Interest income- Loan adj.	(17,743)	(25,070)	(16,510)	(24,278)	(14,905)	(23,249)
Dividend income	889,231	126,867	854,701	116,160	811,982	131,153
Investment expenses	(202,961)	(2,758)	(162,208)	(7,528)	(139,154)	(12,248)
Benefits/withdrawals	(4,024,272)	(861,345)	(3,818,248)	(757,312)	(3,619,254)	(600,898)
Withdrawals- Loan adj.	28,250	12,058	7,193	19,700	8,899	13,560
New loans	(141,771)	(176,125)	(138,587)	(179,612)	(129,522)	(168,021)
Administrative expenses	(58,391)	(25,783)	(46,042)	(17,188)	(39,682)	(10,195)
	<u>\$ 830,256</u>	<u>\$ (79,433)</u>	<u>\$ 709,097</u>	<u>\$ (6,394)</u>	<u>\$ 707,113</u>	<u>\$ 175,759</u>

### 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, 2015		June 30, 2014		June 30, 2013	
	QPP	TDA	QPP	TDA	QPP	TDA
Pooled NYC Pension Fund	69.7%	30.3%	71.2%	28.8%	68.9%	31.1%
Variable-Return Funds:						
Diversified equity*	25.2%	70.6%	28.2%	67.9%	30.6%	65.7%
Bond	10.9%	89.1%	14.7%	85.3%	18.1%	81.9%
International equity	10.2%	89.8%	12.1%	87.9%	14.7%	85.3%
Inflation protection	11.1%	88.9%	13.8%	86.2%	17.4%	82.6%
Socially responsive	7.5%	92.5%	9.7%	90.3%	13.1%	86.9%

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

To rate investment performance, both the pooled NYC Pension Fund Assets and variable-return fund investments are monitored with extensive benchmarks.

In addition to other indices, the "policy index" is used to monitor the complete NYC Pension Fund. As of June 30, 2015, the policy index includes the following:

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

**NYC Pension Fund Policy Index as of June 30, 2015\*:**

<u>Investment Type</u>	<u>Benchmark</u>	<u>Percent</u>
U.S. Equity	Russell 3000	34.52%
International Developed (EAFE) Markets	MSCI EAFE	9.00%
Emerging Markets	MSCI Emerging Markets	8.75%
REITs	Dow Jones Real Estate Securities	3.00%
Private Equity	Russell 3000 + 300 b.p per annum	4.56%
Private Real Estate	NFI - ODCE Net + 100BPS	2.58%
Infrastructure	CPI+ 4%* 19.52%	0.38%
Domestic Fixed Income	NYC Core = 5	19.52%
TIPS	Lehman U.S. TIPS	4.00%
Enhanced Yield	Citigroup BB&B	5.19%
Bank Loans	Credit Suisse Leveraged Loan	2.53%
Convertible Bonds	BofAML All Convertibles Ex Mandatory	3.00%
Opportunistic Fixed	10% Annualized Return	2.23%
Cash	BofA ML 91 Day T-Bill	0.74%
		<u>100.00%</u>

\* Source: Teachers' Retirement System of New York City Performance Overview as of June 30, 2015 prepared by State Street.

Variable return funds are monitored using the Russell 3000, Standard & Poor's 500, MSCI EAFE, Barclays 1-5 Year Government/Credit, Barclays Capital US TIPS 1-10 Year Index, and CPI (SA) + 5% indices, 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, 2015, net securities lending income amounted to \$23.7 million compared with \$8.1 million for Fiscal Year 2014. For the Fiscal Year ended June 30, 2014, net securities lending income amounted to \$8.1 million compared with \$32.8 million for Fiscal Year 2013. (See Note 2).

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

<b>Investment Summary (in thousands)</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
Short-term investments	\$ 3,945,043	\$ 2,744,926	\$ 1,561,360
Debt securities	15,495,329	12,963,886	11,829,882
Equity securities	44,328,798	47,368,373	40,870,391
Private equity	6,002,260	5,353,828	4,372,185
Fixed income	3,456,238	3,367,988	2,760,449
Promissory notes	-	-	9,934
Collateral from securities lending	<u>2,438,757</u>	<u>5,739,575</u>	<u>5,196,936</u>
Total	<u>\$ 75,666,425</u>	<u>\$ 77,538,576</u>	<u>\$ 66,601,137</u>



# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## 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, NY 10041.

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

**NEW YORK CITY TEACHERS' RETIREMENT SYSTEM**

**COMBINING STATEMENTS OF FIDUCIARY NET POSITION**

**JUNE 30, 2015**

**(In thousands)**

	2015 QPP	2015 TDA	2015 ELIM	2015 Total
<b>ASSETS:</b>				
Cash	\$ 22,674	\$ 3,316	\$ -	\$ 25,990
Receivables:				
Investment securities sold	2,766,976	89,541	-	2,856,517
Accrued interest and dividends	145,968	12,471	-	158,439
Member loans (Note 6)	257,043	361,073	-	618,116
Total receivables	<u>3,169,987</u>	<u>463,085</u>	<u>-</u>	<u>3,633,072</u>
Investments—at fair value (Notes 2 and 3):				
Fixed Funds (Pooled NYC Pension Fund Assets):				
Short term investments:				
U.S. treasury bills and agencies	24,960	-	-	24,960
Commercial paper	1,557,628	-	-	1,557,628
Short-term investment fund	1,240,601	-	-	1,240,601
Discount notes	980,831	-	-	980,831
Debt securities:				
U.S. Government	6,932,469	-	-	6,932,469
Corporate and Other	8,003,971	-	-	8,003,971
Equity securities	21,988,143	-	-	21,988,143
Alternative Investments	6,002,260	-	-	6,002,260
Collective Trust Funds:				
International equity	11,615,671	-	-	11,615,671
Mortgage debt security	406,054	-	-	406,054
Treasury inflation protected securities	1,393,516	-	-	1,393,516
Fixed income	1,656,668	-	-	1,656,668
Collateral from securities lending (Fixed Funds)	1,663,710	-	-	1,663,710
Diversified Equity Fund:				
Short term investments	33,499	93,888	-	127,387
Equity securities	2,798,742	7,674,654	-	10,473,396
Corporate bonds	62,026	173,843	-	235,869
Bond Fund:				
Short term investments	673	5,515	-	6,188
Corporate bonds	35,113	287,907	-	323,020
International Equity Fund:				
Short term investments	124	1,094	-	1,218
International equity	10,669	93,916	-	104,585
Inflation Protection Fund:				
Short term investments	10	76	-	86
Equity securities	4,791	38,191	-	42,982
Socially Responsive Equity Fund:				
Short term investments	461	5,683	-	6,144
Equity securities	7,576	93,337	-	100,913
International equity	233	2,875	-	3,108
Collateral from securities lending (Variable-Return Funds)	200,212	574,835	-	775,047
Total investments	<u>66,620,611</u>	<u>9,045,814</u>	<u>-</u>	<u>75,666,425</u>
TDA Investment in Pooled NYC Pension Fund	<u>-</u>	<u>18,699,332</u>	<u>(18,699,332)</u>	<u>-</u>
Other assets	27,855	3,725	(27,899)	3,681
Total assets	<u>69,841,127</u>	<u>28,215,272</u>	<u>(18,727,231)</u>	<u>79,329,168</u>
<b>LIABILITIES:</b>				
Accounts payable	391,945	117,700	(27,899)	481,746
Payable for investment securities purchased	4,616,284	93,595	-	4,709,879
Accrued benefits payable	14,979	95,560	-	110,539
Due to TDA Program's Fixed Return Fund	18,699,332	-	(18,699,332)	-
Securities lending (Note 2)	1,863,923	574,835	-	2,438,758
Total liabilities	<u>25,586,463</u>	<u>881,690</u>	<u>(18,727,231)</u>	<u>7,740,922</u>
<b>NET POSITION RESTRICTED FOR BENEFITS</b>				
Benefits to be provided by QPP	44,254,664	-	-	44,254,664
Benefits to be provided by TDA Program	-	27,333,582	-	27,333,582
<b>TOTAL NET POSITION RESTRICTED FOR BENEFITS</b>	<u>\$44,254,664</u>	<u>\$27,333,582</u>	<u>\$ -</u>	<u>\$71,588,246</u>

See notes to combining financial statements.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM

COMBINING STATEMENTS OF FIDUCIARY NET POSITION

JUNE 30, 2014

(In thousands)

	2014 QPP	2014 TDA	2014 ELIM	2014 Total
<b>ASSETS:</b>				
Cash	\$ 74,829	\$ 2,520	\$ -	\$ 77,349
Receivables:				
Investment securities sold	2,907,019	86,689	-	2,993,708
Accrued interest and dividends	134,559	11,411	-	145,970
Member loans (Note 6)	240,266	348,935	-	589,201
Total receivables	3,281,844	447,035	-	3,728,879
Investments—at fair value (Notes 2 and 3):				
Fixed Funds (Pooled NYC Pension Fund Assets):				
Short term investments:				
U.S. treasury bills and agencies	1,147,563	-	-	1,147,563
Commercial paper	563,976	-	-	563,976
Short-term investment fund	892,289	-	-	892,289
Discount notes	-	-	-	-
Debt securities:				
U.S. Government	4,829,426	-	-	4,829,426
Corporate and Other	7,543,799	-	-	7,543,799
Promissory notes	-	-	-	-
Equity securities	24,690,600	-	-	24,690,600
Alternative Investments	5,353,828	-	-	5,353,828
Collective Trust Funds:				
International equity	11,492,097	-	-	11,492,097
Mortgage debt security	351,908	-	-	351,908
Treasury inflation protected securities	1,599,809	-	-	1,599,809
Fixed income	1,416,271	-	-	1,416,271
Collateral from securities lending (Fixed Funds)	5,262,907	-	-	5,262,907
Diversified Equity Fund:				
Short term investments	37,417	90,053	-	127,470
Equity securities	3,257,181	7,702,256	-	10,959,437
Corporate bonds	72,911	175,478	-	248,389
Bond Fund:				
Short term investments	1,011	5,875	-	6,886
Corporate bonds	50,232	292,040	-	342,272
International Equity Fund:				
Short term investments	139	1,016	-	1,155
International equity	12,639	92,116	-	104,755
Inflation Protection Fund:				
Short term investments	11	67	-	78
Equity securities	5,723	35,828	-	41,551
Socially Responsive Equity Fund:				
Short term investments	532	4,977	-	5,509
Equity securities	7,413	69,404	-	76,817
International equity	301	2,815	-	3,116
Collateral from securities lending (Variable-Return Funds)	138,606	338,062	-	476,668
Total investments	68,728,589	8,809,987	-	77,538,576
TDA Investment in Pooled NYC Pension Fund	-	17,236,032	(17,236,032)	-
Other assets	32,391	2,390	(21,880)	12,901
Total assets	72,117,653	26,497,964	(17,257,912)	81,357,705
<b>LIABILITIES:</b>				
Accounts payable	353,908	137,352	(21,880)	469,380
Payable for investment securities purchased	4,623,463	87,612	-	4,711,075
Accrued benefits payable	11,226	61,449	-	72,675
Due to TDA Program's Fixed Return Fund	17,236,032	-	(17,236,032)	-
Securities lending (Note 2)	5,403,085	338,062	-	5,741,147
Total liabilities	27,627,714	624,475	(17,257,912)	10,994,277
<b>NET POSITION RESTRICTED FOR BENEFITS</b>				
Benefits to be provided by QPP	44,489,939	-	-	44,489,939
Benefits to be provided by TDA Program	-	25,873,489	-	25,873,489
<b>TOTAL NET POSITION RESTRICTED FOR BENEFITS</b>	<b>\$44,489,939</b>	<b>\$25,873,489</b>	<b>\$ -</b>	<b>\$70,363,428</b>

See notes to combining financial statements.

## NEW YORK CITY TEACHERS' RETIREMENT SYSTEM

COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION  
YEAR ENDED JUNE 30, 2015

(In thousands)

	2015 QPP	2015 TDA	2015 Total
<b>ADDITIONS:</b>			
Contributions:			
Member contributions (Note 4)	\$ 158,590	\$ 662,601	\$ 821,191
Employer contributions	3,270,007	-	3,270,007
Other employer contributions	55,521	-	55,521
Total contributions	3,484,118	662,601	4,146,719
Investment income (Note 2):			
Interest income	758,526	32,627	791,153
Dividend income	889,231	126,867	1,016,098
Net appreciation in fair value of investments	146,833	275,464	422,297
Total investment income	1,794,590	434,958	2,229,548
Less:			
Investment expenses	202,961	2,758	205,719
Net investment income	1,591,629	432,200	2,023,829
Securities lending transactions:			
Securities lending income	21,713	3,811	25,524
Less—securities lending fees	(1,413)	(379)	(1,792)
Net securities lending income	20,300	3,432	23,732
Other:			
Interest (to) from TDA Program's Fixed Return Fund	(1,248,988)	1,248,988	-
Net receipts (to) from other retirement systems	329	-	329
Total additions	3,847,388	2,347,221	6,194,609
<b>DEDUCTIONS:</b>			
Benefit payments and withdrawals	4,024,272	861,345	4,885,617
Administrative expenses (Note 8)	58,391	25,783	84,174
Total deductions	4,082,663	887,128	4,969,791
NET (DECREASE) INCREASE IN NET POSITION	(235,275)	1,460,093	1,224,818
<b>NET POSITION RESTRICTED FOR BENEFITS:</b>			
Beginning of year	44,489,939	25,873,489	70,363,428
End of year	\$ 44,254,664	\$ 27,333,582	\$ 71,588,246

See notes to combining financial statements.

## NEW YORK CITY TEACHERS' RETIREMENT SYSTEM

COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION  
YEAR ENDED JUNE 30, 2014

(In thousands)

	2014 QPP	2014 TDA	2014 Total
ADDITIONS:			
Contributions:			
Member contributions (Note 4)	\$ 154,962	\$ 638,979	\$ 793,941
Employer contributions	2,998,694	-	2,998,694
Other employer contributions	55,730	-	55,730
Total contributions	<u>3,209,386</u>	<u>638,979</u>	<u>3,848,365</u>
Investment income (Note 2):			
Interest income	709,594	33,367	742,961
Dividend income	854,701	116,160	970,861
Net appreciation in fair value of investments	8,027,414	1,487,702	9,515,116
Total investment income	<u>9,591,709</u>	<u>1,637,229</u>	<u>11,228,938</u>
Less:			
Investment expenses	<u>162,208</u>	<u>7,528</u>	<u>169,736</u>
Net investment income	<u>9,429,501</u>	<u>1,629,701</u>	<u>11,059,202</u>
Securities lending transactions:			
Securities lending income	7,699	1,895	9,594
Less—securities lending fees	<u>(1,294)</u>	<u>(185)</u>	<u>(1,479)</u>
Net securities lending income	<u>6,405</u>	<u>1,710</u>	<u>8,115</u>
Other:			
Interest (to) from TDA Program's Fixed Return Fund	(1,147,923)	1,147,923	-
Net receipts (to) from other retirement systems	<u>404</u>	<u>-</u>	<u>404</u>
Total additions	<u>11,497,773</u>	<u>3,418,313</u>	<u>14,916,086</u>
DEDUCTIONS:			
Benefit payments and withdrawals	3,818,248	757,312	4,575,560
Administrative expenses (Note 8)	<u>46,042</u>	<u>17,188</u>	<u>63,230</u>
Total deductions	<u>3,864,290</u>	<u>774,500</u>	<u>4,638,790</u>
NET INCREASE IN NET POSITION	7,633,483	2,643,813	10,277,296
NET POSITION RESTRICTED FOR BENEFITS:			
Beginning of year	<u>36,856,456</u>	<u>23,229,676</u>	<u>60,086,132</u>
End of year	<u>\$44,489,939</u>	<u>\$25,873,489</u>	<u>\$70,363,428</u>

See notes to combining financial statements.

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

NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2015 AND 2014

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**1. PLAN DESCRIPTION**

The City of New York ("The 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 Fund ("POLICE"), and the New York Fire Department Pension Fund ("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 certain City public school teachers and certain other school and college teachers. The primary employers, in addition to The City, are The City University of New York ("CUNY") and twelve Charter Schools (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 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 considered 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 NYC Administrative Code 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 member's 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. No benefits are provided by employer contributions. The TDA Program is considered 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 Comprehensive Annual Financial Report ("CAFR").

**Board of Trustees**—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 City Comptroller and the Chair of the Panel for Education 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

**Membership Data**—At June 30, 2013 and June 30, 2012, the dates of the QPP's most recent completed actuarial valuations, the QPP's membership consisted of:

	<b>2013</b>	<b>2012</b>
Retirees and beneficiaries receiving benefits	78,177	76,539
Terminated vested members not yet receiving benefits	10,867	9,868
Other inactives*	6,683	9,689
Active members receiving salaries	<u>112,481</u>	<u>112,460</u>
 Total	 <u>208,208</u>	 <u>208,556</u>

\* Represents members who are no longer on payroll but not otherwise classified.

At June 30, 2013 and June 30, 2012, member participation of the TDA Program consisted of:

	<b>2013</b>	<b>2012</b>
Retirees receiving a TDA annuity	3,055	3,184
Members with TDA deferral	44,225	42,707
Active members contributing to TDA	<u>77,773</u>	<u>77,244</u>
 Total	 <u>125,053</u>	 <u>123,135</u>

### 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 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 twentieth 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.

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

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 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 ("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, 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 percent for Tier I and Tier II contributions and 7.0 percent for UFT members and 8.25 percent 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 members' Excess of Contributions, net of all Deficiencies of Contributions, is \$77.6 million and \$84.4 million, for the years ended June 30, 2015 and 2014 respectively. Actuarial estimates of the impact of Excesses and Deficiencies are incorporated into 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



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

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 ten-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 experience 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 tenth anniversary of their membership date or completion of ten 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 for 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.

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 join 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.
- 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. The monthly supplemental contribution of \$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.

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

Subject to certain conditions, members become fully vested and eligible for benefits upon the completion of five years of service. After December 10, 2009, new members who belong to the UFT, and all Tier VI members, become fully vested upon the completion of ten 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 5 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 5 or more years and beneficiaries receiving accidental death benefits who have been receiving them for at least 5 years. COLA is one-half of the increase in the 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 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 (within the maximum allowed by the IRS) of compensation 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 his/her account prior to or at the time of retirement. As of January 1, 1989, the tax laws restrict withdrawals of tax-deferred annuity contributions and accumulated earnings thereon for reasons other than retirement or termination. Contributions made after December 31, 1988 and investment earnings credited after December 31, 1988, may only be withdrawn upon attainment of age 59 ½ or for reasons of hardship (as defined by IRS regulations). However, hardship withdrawals are limited to contributions only.

An in-service member may withdraw all or part of the contributions made before January 1, 1989 and the earnings credited to accounts before January 1, 1989. If the withdrawal is prior to retirement, the member may not contribute to the TDA Program for the rest of the calendar year.

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 (s)he does not withdraw his/her account from the QPP. If a member resigns after attaining vested rights under the QPP, (s)he may leave his/her account in the TDA Program, provided the member does not withdraw his/her 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.

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.

## 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. Benefits and refunds are recognized when due and payable in accordance with the terms of the QPP and the TDA Program.

**Investment Valuation**—Investments are reported at fair value. Securities purchased pursuant to agreements to resell are carried at the contract price, exclusive of interest, at which the securities will be resold. Fair value is defined as the quoted market value on the last trading day of the period, except for the Short-Term Investment Fund ("STIF") (a money market fund), International Investment Funds (the "IIF"), and Alternative Investment Funds (the "ALTINVF"). The IIF are private funds of publicly traded securities that are managed by various investment managers on behalf of the QPP and the TDA Program. Fair value is determined by TRS management based on information provided by the various investment managers. The investment managers determine fair value using the last available quoted price for each security owned adjusted by any contributions to or withdrawals from the fund during the period. The ALTINVF are investments for which exchange quotations are not readily available and are valued at estimated fair value as determined in good faith by the General Partner ("GP"). These investments are initially valued at cost with subsequent adjustments that reflect third party transactions, financial operating results and other factors deemed relevant by the GP. Fair value is determined by the New York City Office of the Comptroller or TRS management based on information provided by the various GPs after review by an independent consultant and the custodial bank, State Street for the System's pooled NYC Pension Fund assets.

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.

**Investment Programs**—Prior to July 1, 2008, investments were composed of the assets of the following investment programs: the pooled New York City Pension Fund (which includes a component, 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. As of January 1, 2012, the Stable-Value Fund became the Bond Fund. The Bond Fund objective is to seek current income by investing primarily in a portfolio of high quality bonds. The six investment programs are collectively referred to as the TRS Passport Funds.

All investment programs excluding the pooled New York City Pension Fund are referred to as the Variable Return Funds. The pooled New York City 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.

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

- 7% for TDA investments by members who are serving in (or resigned/retired from) titles represented by the United Federation of Teachers. The crediting rate of 7% has been in effect since December 11, 2009. The prior crediting rate of 8.25% was in effect from July 1, 1988 through December 10, 2009.
- 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 Funds ("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 of interest ("Statutory Rates") received by funds invested in the QPP Plan's and the TDA Plan's Annuity Savings Fund ("Fixed Return Fund") are set, respectively, by NYC Administrative Code 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 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. 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 share of Diversified Equity Fund investments and the related activity.

**Investment Presentation**—The TDA Program Fixed Return Fund's portion of pooled NYC Pension fund assets are shown as commingled with the QPP's portion of pooled NYC Pension Fund assets and an offsetting liability is used to show the TDA Program's share of the funds.

**Investment Expenses**—The Variable Return Funds maintain a reserve for administrative and investment expenses. The reserve is currently \$95,284,901 for QPP and \$96,773,118 for TDA. The expense reserve as well as investment expenses for 2015 were reduced by \$6,396,397 for QPP and \$10,363,898 for TDA. Similarly, in 2014 the expense reserve as well as investment expenses were reduced by \$1,346,199 for QPP and \$1,743,008 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 for overdrawn bank balances due to depositories, unclaimed funds, reserves for investment and administrative expenses for the variable-return funds, and investment expenses accrued to the QPP and

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

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 an overdrawn balance, since funds are only deposited as outstanding benefit checks are presented to the banks for payment each day.

**Payment of Statutory-Interest on TDA Program Fixed Return Funds**—The fixed interest, credited on TDA Program member account balances invested in the Fixed Return Funds (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), owed and transferred to the TDA Program is reported as a transfer payment (or receipt) of interest on TDA Program Fixed Return Funds in the QPP and TDA Program.

**Intercompany Eliminations**—Included on the Combining Statements of Fiduciary Net Position and the Combining Changes in Fiduciary Net Position is an elimination column, the purpose of which is to remove from the statement any transactions involving dealings between the entities being reported. The eliminations include offsetting payables and receivables associated with the TDA Program's investment in the pooled NYC 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 its 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, 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 and 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, 2015 and 2014, management believes that the Funds had no credit risk exposure to borrowers because the amounts the Funds owed the borrowers equaled or exceeded the amounts the borrowers owed the Funds. The contracts with the Fund's Custodian require the Securities Lending Agent to Indemnify the Funds. 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 54.22 days. The securities lending program in which the Funds participate only allows pledging or selling securities in the case of borrower default.

During Fiscal Year 2014, net earnings from the security lending programs was \$6.4 million. The earnings included \$21.2 million in security-lending income and a \$6.9 million recovery. Offsets against these earnings include a \$16.5 million negative adjustment related to NPF XII securities and \$5.2 million negative adjustment related to prior security lending exposure to Lehman Brothers bonds.

During Fiscal Year 2015, net earnings from the security lending programs were \$23.7 million. Earnings from the NYC Pension Fund security-lending program was \$19.0 million and earnings from the Variable-Return Fund Security Lending Programs were \$4.7 million. The \$19.0 million NYC Pension Fund security-lending program earnings included a \$1.6 million adjustment to the carrying amount of the security lending collateral reported in the QPP's Statements of Fiduciary Net Position for Fiscal Year 2015, the balance of the 2003 \$25 million NPF XII securities impairment.

During Fiscal Year 2003, the value of certain securities, NPF XII securities purchased in 1999 by Citibank and held in the collateral reinvestment account, became impaired due to the credit failure of the issuer. Accordingly, the carrying amount of the collateral reported in the QPP's Statements of Fiduciary Net Position for Fiscal Year 2003 was reduced by \$25 million to reflect this impairment and the net realizable

value of the securities purchased with collateral from securities lending transactions. Following incremental recoveries, as of June 30, 2013, the impairment was \$8.4 million. During Fiscal Year 2014 an additional \$6.9 million was received, leaving a final \$1.6 million loss from the NPF impairment. In Fiscal Year 2015, the carrying amount of the security-lending liability was reduced by \$1.6 million to again match the carrying amount of the security-lending collateral and conclude the reporting of the 2003 NPF XII securities impairment.

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 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 30 days. 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, 2015 and 2014, the values on loan by the pooled NYC Pension Fund were \$1.7 billion and \$5.1 billion, respectively, and the values on loan by the Variable-Return Funds were \$754.2 million and \$438.2 million, respectively. Cash collateral received related to securities lending as of June 30, 2015 and 2014 was \$1.7 billion and \$5.3 billion, respectively for the pooled NYC Pension Fund, and \$775.0 million and \$476.7 million, respectively for the Variable-Return Funds.

**New Accounting Standards Adopted**—In Fiscal Year 2015, the System adopted Government Accounting Standards Board (“GASB”) Statement No. 72, *Fair Value Measurement and Application*. GASB 72 requires the System to use valuation techniques which are appropriate under the circumstances and are either a market approach, a cost approach or income approach. GASB 72 establishes a hierarchy of inputs used to measure fair value consisting of three levels. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are asset values, 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 was used for the fair value measurements. There was no material impact on the System’s financial statements as a result of the implementation of GASB 72.

### 3. INVESTMENTS AND DEPOSITS

The Comptroller of The City of New York (the “Comptroller”) acts as an investment advisor to TRS and employs an independent consultant for the pooled NYC Pension Fund. In addition, TRS employs an independent investment consultant as an investment advisor for its variable-return funds. TRS utilizes several 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.

The State Retirement and Social Security Law (“RSSL”) and Administrative Code of the City of New York (“NYCAC”) authorizes the investments 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 25% of total assets of the QPP and TDA Program may be made in instruments not expressly permitted by the State RSSL.

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

QPP and TDA Program assets are diversified over a range of investments, and multiple strategies are used 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 and targeted for Fiscal Year 2015 and 2014 included securities in the following categories. It is worth noting that the pooled NYC Pension Fund primarily holds QPP assets, and the returns from this fund impacts the funding of the QPP, a defined-benefit plan. The variable-return funds primarily relate to the TDA Program, a defined-contribution plan.

**NYC Pension Fund (Pooled Investments)  
Target Asset Allocations**

<b>Investment Type</b>	<b>Asset Allocation Percentages</b>	
	<b>2015</b>	<b>2014</b>
Common Stock	34.5 %	34.8 %
International Investments—Non U.S.	9.0	9.0
International Investments—Emerging Markets	8.8	8.8
Common Stock—REITS	3.0	3.0
Alternative Investments—Real Estate	3.0	2.4
Alternative Investments—Private Equity	4.6	4.5
International Investments—Emerging Markets Debt	-	-
Fixed Income	34.8	35.4
Alternative Investments—Opportunistic Fixed Income	2.3	2.1
<b>Total</b>	<b>100.0 %</b>	<b>100.0 %</b>

**Variable-Return Funds  
Target Asset Allocations**

<b>Investment Type</b>	<b>Asset Allocation Percentages</b>	
	<b>2015</b>	<b>2014</b>
Diversified Equity (Variable A):		
Common stock- Passive	50 %	50 %
Common stock—Active	20	20
Common stock—Defensive	15	15
International investments	15	15
Bond Fund (Variable B):		
Fixed income	100	100
International Equity (Variable C):		
International investments	100	100
Inflation Protection Equity (Variable D):		
Inflation Protection PIMCO Mutual Fund	100	100
Socially Responsible (Variable E):		
Socially Responsible NB Mutual Fund	100	100

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

Beginning October 2013, State Street is the primary custodian for significantly all securities of the pooled NYC Pension Fund. Beginning July 2013, JPMorgan Chase is the primary custodian for significantly all securities of the variable-return programs.

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

**Concentrations**—The System's investment programs do not have any investments in any one entity that represent 5% or more of the assets in the QPP or TDA Program's net position.

**Credit Risk**—Portfolios other than U.S. Government and related portfolios have credit rating limitations. Investment Grade portfolios are limited to mostly ratings of BBB and above except that they are also permitted a 10% maximum exposure to BB & B rated securities. While non-investment grade managers are primarily invested in BB & B rated securities, they can also invest up to 7% of their portfolio in securities rated CCC or lower. Not-rated securities, excluding short-term securities, are considered to be non-investment grade. The quality ratings of the pooled NYC Pension Fund, by percentage of the rated portfolio, as described by nationally recognized statistical rating organizations, at June 30, 2015 and 2014 are as follows:

Investment Type* Pension Fund June 30, 2015	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
U.S. Government	- %	- %	- %	- %	- %	- %	- %	- %	- %
Corporate bonds	1.07	1.70	10.89	21.53	10.75	11.55	2.83	7.23	67.55
Short-term:									
Commercial paper	-	-	-	-	-	-	-	13.25	13.25
Pooled funds	-	-	-	-	-	-	-	9.12	9.12
U.S. Agencies	-	-	-	-	-	-	-	10.08	10.08
Percent of rated portfolio	<u>1.07 %</u>	<u>1.70 %</u>	<u>10.89 %</u>	<u>21.53 %</u>	<u>10.75 %</u>	<u>11.55 %</u>	<u>2.83 %</u>	<u>39.68 %</u>	<u>100.00 %</u>

Investment Type* Pension Fund June 30, 2014	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
U.S. Government	- %	- %	- %	- %	- %	- %	- %	- %	- %
Corporate bonds	2.31	2.12	9.56	22.06	9.85	12.96	4.02	12.30	75.18
Short-term:									
Commercial paper	-	-	-	-	-	-	-	5.62	5.62
Pooled funds	-	-	-	-	-	-	-	7.76	7.76
U.S. Agencies	-	-	-	-	-	-	-	11.44	11.44
Percent of rated portfolio	<u>2.31 %</u>	<u>2.12 %</u>	<u>9.56 %</u>	<u>22.06 %</u>	<u>9.85 %</u>	<u>12.96 %</u>	<u>4.02 %</u>	<u>37.12 %</u>	<u>100.00 %</u>

\* U.S. Treasury Bonds, Notes and Treasury-inflation protected securities are obligations of the U.S. government or explicitly guaranteed by the U.S. government and therefore not considered to have credit risk and are not included above.



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

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, 2015 and 2014 are as follows:

Investment Type Variable Funds June 30, 2015	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
Government	- %	- %	- %	- %	- %	- %	- %	- %	- %
Corporate bonds	1.83	1.95	10.93	12.57	5.69	2.66	0.32	15.67	51.62
Yankee bonds	-	0.45	-	0.06	-	-	-	-	0.51
Municipal bonds	-	0.03	0.20	-	-	-	-	-	0.23
U.S. Agencies	-	0.50	-	-	-	-	-	-	0.50
Short-term: Money Market Funds	-	-	-	-	-	-	-	47.14	47.14
Percent of rated portfolio	<u>1.83 %</u>	<u>2.93 %</u>	<u>11.13 %</u>	<u>12.63 %</u>	<u>5.69 %</u>	<u>2.66 %</u>	<u>0.32 %</u>	<u>62.81 %</u>	<u>100.00 %</u>

Investment Type Variable Funds June 30, 2014	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
Government	0.11 %	1.28 %	- %	0.29 %	- %	- %	- %	- %	1.68 %
Corporate bonds	-	2.15	11.42	14.21	4.24	4.01	0.83	14.33	51.19
Yankee bonds	-	0.04	0.19	-	-	-	-	-	0.23
Short-term: Money Market Funds	-	-	-	-	-	-	-	46.90	46.90
Percent of rated portfolio	<u>0.11 %</u>	<u>3.47 %</u>	<u>11.61 %</u>	<u>14.50 %</u>	<u>4.24 %</u>	<u>4.01 %</u>	<u>0.83 %</u>	<u>61.23 %</u>	<u>100.00 %</u>

**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, the QPP and TDA Program will not be able to recover the value of their 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 uninsured, are not registered in the name of the System or QPP and TDA Program, and are held by either the counterparty or the counterparty's trust department or agent, but not in the System's name.

Investments are held by the pooled NYC Pension Fund and variable-return funds custodians and registered in the System's or QPP and TDA Program's name.

All of the System's deposits are insured by the Federal Deposit Insurance Corporation or collateralized by securities held by a financial institution separate from their respective depository financial institution.

**Interest Rate Risk**—Interest rate risk is the risk that the fair value of investments could be adversely affected by the change in interest rates. Duration limits are used to control the portfolios' exposure to interest rate changes. In the investment grade core Fixed Income portfolios, duration is limited to a range of one year shorter than the benchmark duration to 0.75 years longer than the duration of the benchmark indices. Duration range is a measure of the overall portfolio, while statements of the stated maturity reflect the specific maturities of the individual securities held. TRS possesses investment policy statements for its QPP and TDA Program and investment risk management is an inherent function of the asset allocation process.

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

The lengths of investment maturities (in years) of pooled NYC Pension Fund investments, both QPP and TDA, as shown by the percent of the rated portfolio, at June 30, 2015 and 2014, are as follows:

<b>June 30, 2015</b>	<b>Years to Maturity</b>				
	<b>Fair Value</b>	<b>Less than One Year</b>	<b>One to Five Years</b>	<b>Six to Ten Years</b>	<b>More than Ten Years</b>
<b>Investment Type</b>					
<b>Pension Fund</b>					
U.S. Government	37.68 %	0.32 %	8.65 %	3.95 %	24.76 %
Corporate	42.74	1.50	12.52	18.07	10.65
Short term:					
Commercial paper	8.39	8.39	-	-	-
Pooled funds	5.77	5.77	-	-	-
U.S. Agencies	3.47	3.47	-	-	-
U.S. Treasuries	1.95	1.95	-	-	-
Percent of rated portfolio	<u>100.00 %</u>	<u>21.40 %</u>	<u>21.17 %</u>	<u>22.02 %</u>	<u>35.41 %</u>
<b>June 30, 2014</b>					
<b>Investment Type</b>					
<b>Pension Fund</b>					
U.S. Government	32.49 %	0.14 %	2.33 %	5.72 %	24.30 %
Corporate	50.76	2.23	13.74	23.13	11.66
Short term:					
Commercial paper	3.79	3.79	-	-	-
Pooled funds	5.24	5.24	-	-	-
U.S. Agencies	7.72	7.72	-	-	-
Percent of rated portfolio	<u>100.00 %</u>	<u>19.12 %</u>	<u>16.07 %</u>	<u>28.85 %</u>	<u>35.96 %</u>

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

The lengths of investment maturities (in years) of the variable-return funds, both QPP and TDA investments, as shown by the percent of the rated portfolio, at June 30, 2015 and 2014 are as follows:

<b>June 30, 2015</b>	<b>Years to Maturity</b>				
	<b>Fair Value</b>	<b>Less than One Year</b>	<b>One to Five Years</b>	<b>Six to Ten Years</b>	<b>More than Ten Years</b>
<b>Investment Type</b>					
<b>Variable Funds</b>					
U.S. Government	20.22 %	0.22 %	19.93 %	0.07 %	- %
Corporate	41.12	2.49	25.56	7.07	6.00
Yankee bonds	0.41	-	0.26	0.15	-
Municipal bonds	0.18	-	0.18	-	-
U.S. Agencies	0.51	0.13	0.38	-	-
Short term:					
Money market	<u>37.56</u>	<u>37.56</u>	<u>-</u>	<u>-</u>	<u>-</u>
Percent of rated portfolio	<u>100.00 %</u>	<u>40.40 %</u>	<u>46.31 %</u>	<u>7.29 %</u>	<u>6.00 %</u>
<b>June 30, 2014</b>	<b>Investment Maturities</b>				
	<b>Fair Value</b>	<b>Less than One Year</b>	<b>One to Five Years</b>	<b>Six to Ten Years</b>	<b>More than Ten Years</b>
<b>Investment Type</b>					
<b>Variable Funds</b>					
U.S. Government	21.67 %	0.24 %	21.11 %	0.33 %	- %
Corporate	40.84	5.19	22.28	6.20	7.18
Yankee bonds	0.18	-	0.15	0.03	-
Short term:					
Money market	<u>37.30</u>	<u>37.30</u>	<u>-</u>	<u>-</u>	<u>-</u>
Percent of rated portfolio	<u>100.00 %</u>	<u>42.72 %</u>	<u>43.54 %</u>	<u>6.55 %</u>	<u>7.18 %</u>

**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 stock and/or bonds. The currency markets have proven to be good diversifiers in a total portfolio context; therefore, the pooled NYC 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.

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

In addition, the pooled NYC Pension Fund and Variable Return Funds have investments in foreign stocks and/or bonds denominated in foreign currencies. Foreign currency exposures as of June 30, 2015 and 2014 are as follows (amounts in thousands of U.S. dollars):

<b>Trade Currency</b>	<b>Pension Fund June 30, 2015</b>	<b>Variable-Return Funds June 30, 2015</b>	<b>Pension Fund June 30, 2014</b>	<b>Variable-Return Funds June 30, 2014</b>
Euro Currency	\$ 1,838,548	\$ 244,202	\$ 1,820,335	\$ 251,793
British Pnd Sterling	1,181,607	170,882	1,162,723	174,406
Japanese Yen	1,148,968	153,005	1,093,513	159,949
South Korean Won	890,803	-	895,093	-
New Taiwan Dollar	816,117	-	735,353	-
Indian Rupee	653,241	-	590,828	-
Swiss Franc	562,471	82,758	541,274	83,546
South African Rand	513,578	5,996	423,944	7,471
Brazilian Real	368,240	-	411,228	1,168
Hong Kong Dollar	351,187	32,624	315,651	31,157
Mexican Nuevo Peso	247,231	-	258,881	-
Australian Dollar	173,633	23,821	250,013	27,096
Swedish Krona	175,219	14,850	209,543	13,486
Malaysian Ringgit	185,909	-	208,401	-
Singapore Dollar	127,495	21,326	161,219	22,472
Thai Baht	142,312	-	140,798	598
Indonesian Rupiah	137,825	-	137,530	-
Turkish Lira	108,505	-	124,527	-
Polish Zloty	121,857	-	117,742	-
Canadian Dollar	102,126	27,498	112,309	28,319
Danish Krone	108,706	5,653	97,771	5,241
Chilean Peso	83,243	-	82,967	-
Philippines Peso	99,375	-	66,014	-
Colombian Peso	42,029	-	53,363	-
Norwegian Krone	55,071	11,420	51,930	11,794
Egyptian Pound	46,792	-	44,494	-
Hungarian Forint	32,984	537	36,274	1,112
Czech Koruna	27,710	-	35,128	-
UAE Dirham	36,464	-	27,818	-
Nuevo Sol	9,426	-	13,064	-
Israeli Shekel	5,885	5,571	6,919	4,047
Qatari Rial	19,906	-	6,286	-
New Zealand Dollar	10,003	-	2,194	-
<b>Total</b>	<b><u>\$ 10,424,466</u></b>	<b><u>\$ 800,143</u></b>	<b><u>\$ 10,235,127</u></b>	<b><u>\$ 823,655</u></b>

## Securities Lending Transactions

*Credit Risk*—The quality ratings of investments held as collateral for Securities Lending by the pooled NYC Pension Fund at June 30, 2015 and 2014, are as follows (in thousands):

Investment Type and Fair Value of Securities Lending Transactions (In thousands) June 30, 2015	S&P Quality Ratings								Total
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	
Government	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-	-	-	-	-
Short-term:									
Repurchase agreements	-	-	-	-	-	-	-	-	-
Reverse repurchase agreements	-	-	-	-	-	-	-	422,948	422,948
Certificates of deposit	-	-	-	-	-	-	-	-	-
Commercial paper	-	-	-	-	-	-	-	-	-
Money market	320,251	-	-	-	-	-	-	-	320,251
Bank notes	-	-	-	-	-	-	-	754,107	754,107
U.S. agency	-	-	-	-	-	-	-	-	-
Time deposit	-	-	-	-	-	-	-	-	-
Cash	-	-	-	-	-	-	-	164,830	164,830
Uninvested	-	-	-	-	-	-	-	1,574	1,574
<b>Total</b>	<b>\$ 320,251</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,343,459</b>	<b>\$ 1,663,710</b>
Percent of Securities Lending Portfolio	19.25 %	- %	- %	- %	- %	- %	- %	80.75 %	100.00 %
	S&P Quality Ratings								
June 30, 2014	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
Government	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-	-	-	-	-
Short-term:									
Repurchase agreements	-	-	-	-	-	-	-	-	-
Reverse repurchase agreements	-	-	-	-	-	-	-	29,369	29,369
Certificates of deposit	-	-	-	-	-	-	-	-	-
Commercial paper	-	-	-	-	-	-	-	-	-
Money market	2,855,709	-	-	-	-	-	-	-	2,855,709
Bank notes	-	-	-	-	-	-	-	1,852,049	1,852,049
U.S. agency	-	-	-	-	-	-	-	-	-
Time deposit	-	-	-	-	-	-	-	-	-
Cash	-	-	525,780	-	-	-	-	-	525,780
Uninvested	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$ 2,855,709</b>	<b>\$ -</b>	<b>\$ 525,780</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,881,418</b>	<b>\$ 5,262,907</b>
Percent of Securities Lending Portfolio	54.26 %	- %	9.99 %	- %	- %	- %	- %	35.75 %	100.00 %

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

The quality ratings of investments held as collateral for Securities Lending under the variable-return funds at June 30, 2015 and 2014 are as follows (in thousands):

Investment Type and Fair Value of Securities Lending Transactions (In thousands) June 30, 2015	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
Government	\$ -	\$356,197	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$356,197
Corporate	-	-	-	-	-	-	-	-	-
Short-term:									
Repurchase agreements	206,349	182,461	-	-	-	-	-	-	388,810
Reversal purchase agreements	-	-	-	-	-	-	-	-	-
Certificates of deposit	-	-	-	-	-	-	-	-	-
Commercial paper	-	-	-	-	-	-	-	-	-
Variable rate demand notes	-	-	-	-	-	-	-	-	-
U.S. treasury	-	31,027	-	-	-	-	-	-	31,027
U.S. agency	-	-	-	-	-	-	-	-	-
Time deposit	-	-	-	-	-	-	-	-	-
Uninvested	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>206,349</b>	<b>569,685</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>776,034</b>
Adjustment to custodial report	(974)	(13)	-	-	-	-	-	-	(987)
<b>VRF portion of systems securities</b>	<b>\$205,375</b>	<b>\$569,672</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$775,047</b>
Percent of securities lending portfolio	26.50 %	73.50 %	- %	- %	- %	- %	- %	- %	100.00 %

June 30, 2014	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
Government	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-	-	-	-	-
Short-term:									
Repurchase agreements	338,719	-	-	-	-	-	-	24,040	362,759
Reversal purchase agreements	-	-	-	-	-	-	-	-	-
Certificates of deposit	-	-	-	-	-	-	-	-	-
Commercial paper	-	-	-	-	-	-	-	-	-
Variable rate demand notes	-	-	-	-	-	-	-	512	512
U.S. treasury	-	-	-	-	-	-	-	-	-
U.S. agency	-	-	-	-	-	-	-	-	-
Time deposit	86,545	-	-	-	-	-	-	-	86,545
Uninvested	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>425,264</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24,552</b>	<b>449,816</b>
Adjustment to custodial report	-	-	-	-	-	-	-	26,852	26,852
<b>VRF portion of systems securities</b>	<b>\$425,264</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$51,404</b>	<b>\$476,668</b>
Percent of securities lending portfolio	89.22 %	- %	- %	- %	- %	- %	- %	10.78 %	100.00 %

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

*Interest Rate Risk*—The lengths of investment maturities (in years) of the collateral for Securities Lending held by the pooled NYC Pension Fund are as follows (in thousands):

Investment Type June 30, 2015	Years to Maturity				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-
Short-term:					
Repurchase agreements	-	-	-	-	-
Reverse repurchase agreements	422,948	422,948	-	-	-
Certificates of deposit	-	-	-	-	-
Commercial paper	-	-	-	-	-
Money market	320,251	320,251	-	-	-
Bank notes	754,107	754,107	-	-	-
U.S. agency	-	-	-	-	-
Time deposit	-	-	-	-	-
Cash	164,830	164,830	-	-	-
Uninvested	1,574	1,574	-	-	-
<b>Total</b>	<b>\$ 1,663,710</b>	<b>\$ 1,663,710</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Percent of Securities Lending Portfolio	100.00 %	100.00 %	- %	- %	- %

Investment Type June 30, 2014	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-
Short-term:					
Repurchase agreements	-	-	-	-	-
Reverse repurchase agreements	29,369	29,369	-	-	-
Certificates of deposit	-	-	-	-	-
Commercial paper	-	-	-	-	-
Money market	2,855,709	2,855,709	-	-	-
Bank notes	1,852,049	1,113,660	738,389	-	-
U.S. agency	-	-	-	-	-
Time deposit	-	-	-	-	-
Cash	525,780	525,780	-	-	-
Uninvested	-	-	-	-	-
<b>Total</b>	<b>\$ 5,262,907</b>	<b>\$ 4,524,518</b>	<b>\$ 738,389</b>	<b>\$ -</b>	<b>\$ -</b>
Percent of Securities Lending Portfolio	100.00 %	85.97 %	14.03 %	- %	- %

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

The lengths of investment maturities (in years) of the collateral for Securities Lending held under the variable-return fund at June 30, 2015 and 2014 are as follows (in thousands):

<b>Investment Type (In thousands) June 30, 2015</b>	<b>Years to Maturity</b>				
	<b>Fair Value</b>	<b>Less Than One Year</b>	<b>One to Five Years</b>	<b>Six to Ten Years</b>	<b>More Than Ten Years</b>
Government	\$ 356,197	\$ -	\$ 149,522	\$ 122,883	\$ 83,792
Corporate	-	-	-	-	-
Short-term:					
Repurchase agreements	388,810	388,810	-	-	-
Reversal purchase agreements	-	-	-	-	-
Certificates of deposit	-	-	-	-	-
Commercial paper	-	-	-	-	-
Variable rate demand notes	-	-	-	-	-
U.S. treasury	31,027	31,027	-	-	-
U.S. agency	-	-	-	-	-
Time deposit	-	-	-	-	-
Uninvested	-	-	-	-	-
<b>Totals</b>	<b>776,034</b>	<b>419,837</b>	<b>149,522</b>	<b>122,883</b>	<b>83,792</b>
Adjustment to Custodial Report	(987)	(987)	-	-	-
<b>VRF Portion of Systems Securities</b>	<b>\$ 775,047</b>	<b>\$ 418,850</b>	<b>\$ 149,522</b>	<b>\$ 122,883</b>	<b>\$ 83,792</b>
Percent of securities lending portfolio	<u>100.00 %</u>	<u>54.04 %</u>	<u>19.29 %</u>	<u>15.86 %</u>	<u>10.81 %</u>
<b>Investment Type (In thousands) June 30, 2014</b>	<b>Investment Maturities</b>				
	<b>Fair Value</b>	<b>Less Than One Year</b>	<b>One to Five Years</b>	<b>Six to Ten Years</b>	<b>More Than Ten Years</b>
Government	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-
Short-term:					
Repurchase agreements	362,759	362,759	-	-	-
Reversal purchase agreements	-	-	-	-	-
Certificates of deposit	-	-	-	-	-
Commercial paper	-	-	-	-	-
Variable rate demand notes	512	512	-	-	-
U.S. treasury	-	-	-	-	-
U.S. agency	-	-	-	-	-
Time deposit	86,545	86,545	-	-	-
Uninvested	-	-	-	-	-
<b>Totals</b>	<b>449,816</b>	<b>449,816</b>	<b>-</b>	<b>-</b>	<b>-</b>
Adjustment to Custodial Report	26,852	26,852	-	-	-
<b>VRF Portion of Systems Securities</b>	<b>\$ 476,668</b>	<b>\$ 476,668</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Percent of securities lending portfolio	<u>100.00 %</u>	<u>100.00 %</u>	<u>- %</u>	<u>- %</u>	<u>- %</u>



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

**Rate of Return**—For the years ended June 30, 2015 and 2014, the annual money-weighted rate of return on the pooled NYC Pension Fund, was 2.81% and 17.55%. 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 Statement No. 72 (“GASB 72”), *Fair Value Measurement and Application*. 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. The System has the following recurring fair value measurements as of June 30, 2015 and June 30, 2014:

<b>GASB 72 Disclosure (Pooled Funds) (In thousands)</b>	<b>2015</b>			
	<b>Level One</b>	<b>Level Two</b>	<b>Level Three</b>	<b>Total</b>
Investments—at fair value				
Short-term investments:				
Commercial paper	\$ -	\$ 1,557,628	\$ -	\$ 1,557,628
Short-term investment fund	-	1,240,601	-	1,240,601
U.S. treasury bills and agencies	-	24,960	-	24,960
Discount notes	-	980,831	-	980,831
Debt securities:	-	-	-	-
U.S. government and agency	-	6,932,469	-	6,932,469
Corporate and other	-	7,845,026	158,945	8,003,971
Equity securities	21,500,930	744	486,469	21,988,143
Alternative investments	-	-	6,002,260	6,002,260
Collective trust funds:				
International equity	11,610,227	1,570	3,874	11,615,671
Fixed income	-	55,656	1,601,012	1,656,668
Domestic equity	-	-	-	-
Mortgage debt security	-	406,054	-	406,054
Treasury inflation protected securities	-	1,393,516	-	1,393,516
Collateral from securities lending	-	1,663,710	-	1,663,710
<b>Total investments</b>	<b><u>\$33,111,157</u></b>	<b><u>\$22,102,765</u></b>	<b><u>\$8,252,560</u></b>	<b><u>\$63,466,482</u></b>

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

GASB 72 Disclosure (Pooled Funds) (In thousands)	2014			
	Level One	Level Two	Level Three	Total
Investments—at fair value				
Short-term investments:				
Commercial paper	\$ -	\$ 563,976	\$ -	\$ 563,976
Short-term investment fund	-	892,289	-	892,289
U.S. treasury bills and agencies	-	1,147,563	-	1,147,563
Discount notes	-	-	-	-
Debt securities:				
U.S. government and agency	-	4,829,426	-	4,829,426
Corporate and other	-	7,339,532	204,267	7,543,799
Equity securities	24,679,526	11,074	-	24,690,600
Alternative investments	-	-	5,353,828	5,353,828
Collective trust funds:				
International equity	11,489,058	2,961	78	11,492,097
Fixed income	-	285,210	1,131,061	1,416,271
Domestic equity	-	-	-	-
Mortgage debt security	-	351,908	-	351,908
Treasury inflation protected securities	-	1,599,809	-	1,599,809
Collateral from securities lending	-	5,262,907	-	5,262,907
Total investments	<u>\$ 36,168,584</u>	<u>\$ 22,286,655</u>	<u>\$ 6,689,234</u>	<u>\$ 65,144,473</u>

**Equity and Fixed Income Securities**—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 and equity securities 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 are securities whose stated market price is unobservable by the market place, 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 our custodian bank. Debt and equity securities held in Collective Trust Funds are held in those funds on behalf of the pension system and there is no restriction on the use and or liquidation of those assets for the exclusive benefit of the funds participants.

**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, as determined in good faith by the General Partner ("GP"). These investments are initially valued at cost with subsequent adjustments that reflect third party transactions, financial operating results and other factors deemed relevant by the GP. The assets in our alternative investment program are classified as Level 3 assets. A more detailed explanation of the Level 3 valuation methodologies follows:

Investments in non-public equity securities are valued by the GP using one or more valuation methodologies outlined in ASC 820, depending upon the availability of data required by each methodology. In some cases, the GP may use multiple approaches to estimate a valuation range. For the immediate time period following a transaction, the determination of fair value for equity securities, in which no liquid trading market exists, can generally be approximated based on the transaction price (absent any significant developments). Thereafter, or in the interim, if significant developments relating to such portfolio company or industry occur which may suggest a material change in value, the GP should value each investment by applying generally accepted valuation methods including: (1) the market approach (such as market transaction and comparable public company multiples, which are based on a measurement of the company's historical and projected financial performance with typical metrics including enterprise value/latest 12 months EBITDA or projected fiscal year EBITDA) or (2) the income or discounted cash flow approach.

In the market approach, valuation multiples that are relevant to the industry and company in the investments held should be considered and relied upon. Valuation multiples should be assessed and may be adjusted on a go-forward basis based on the business risk associated with the subject company in which the investment is held. In addition, the implied entry multiples should be considered as benchmarks in valuing unlisted equity. In circumstances where no financial performance metrics are available, the GP should rely on other non-financial related metrics applicable to relevant progress from the original investment date to the valuation date. In the income or discounted cash flow approach, forecasted cash flows that may be generated by the subject company are discounted to present value at an appropriate discount rate. These methodologies can be utilized to determine an enterprise value ("Enterprise Valuation Methodologies") from which net debt is subtracted to estimate equity value.

The determination of fair value using these methodologies should take into consideration a range of factors, including but not limited to, the price at which the investment was acquired, the nature of the investment, local market conditions, trading values on public exchanges for comparable securities, current and projected operating performance and financing transactions subsequent to the acquisition of the investment. 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. These financial instruments have been classified as Level 3 in the fair value hierarchy.

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

**Variable-Return Funds**

**GASB 72 Disclosure**

**As of June 30, 2015**

**(In thousands)**

	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 127,387	\$ -	\$ 127,387
Equity securities	8,881,918	1,591,478	-	10,473,396
Corporate bonds	-	235,869	-	235,869
Bond Fund:				
Short-term investments	-	6,188	-	6,188
Corporate bonds	-	323,020	-	323,020
International Equity Fund:				
Short-term investments	-	1,218	-	1,218
International equity	90,289	14,296	-	104,585
Inflation Protection Fund:				
Short-term investments	-	86	-	86
Equity securities	42,982	-	-	42,982
Socially Responsive Equity Fund:				
Short-term investments	-	6,144	-	6,144
Equity securities	100,913	-	-	100,913
International equity	3,108	-	-	3,108
Collateral from securities lending (Variable-Return Funds)	-	775,047	-	775,047
	<u>\$ 9,119,210</u>	<u>\$ 3,080,733</u>	<u>\$ -</u>	<u>\$ 12,199,943</u>

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

Equity Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices.

Equity securities classified in Level 3 of the fair value hierarchy are valued using discounted cash flow techniques.

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

**Variable-Return Funds  
GASB 72 Disclosure  
As of June 30, 2014  
(In thousands)**

	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 127,470	\$ -	\$ 127,470
Equity securities	9,111,306	1,848,131	-	10,959,437
Corporate bonds	-	248,389	-	248,389
Bond Fund:				
Short-term investments	-	6,886	-	6,886
Corporate bonds	-	342,272	-	342,272
International Equity Fund:				
Short-term investments	-	1,155	-	1,155
International equity	88,740	16,015	-	104,755
Inflation Protection Fund:				
Short-term investments	-	78	-	78
Equity securities	-	41,551	-	41,551
Socially Responsive Equity Fund:				
Short-term investments	-	5,509	-	5,509
Equity securities	76,817	-	-	76,817
International equity	3,116	-	-	3,116
Collateral from securities lending (Variable-Return Funds)	-	476,668	-	476,668
	<u>\$ 9,279,979</u>	<u>\$ 3,114,124</u>	<u>\$ -</u>	<u>\$ 12,394,103</u>

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

Equity Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices.

Equity securities classified in Level 3 of the fair value hierarchy are valued using discounted cash flow techniques.

**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%.

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

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 tenth anniversary of their membership date or completion of ten 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.

Also, under Chapter 504/09, all members represented by the UFT who join the QPP on and after December 10, 2009 will become vested after ten years of credited service.

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 City's Chief Actuary of the Office of the Actuary (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 QPP members and actual investment earnings on such funds. The Statutory Contribution for the year ended June 30, 2015, based on an actuarial valuation as of June 30, 2013 was \$3,270 million and the Statutory Contribution for the year ended June 30, 2014, based on an actuarial valuation as of June 30, 2012 was \$2,999 million. The Statutory Contributions for Fiscal Years 2015 and 2014 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.

### 5. QPP NET PENSION LIABILITY

The components of the net pension liability of the Employers at June 30, 2015 and 2014 were as follows (in millions):

	2015	2014
Total pension liability	\$ 65,040	\$ 62,306
Fiduciary net position*	44,254	44,490
Employers' net pension liability	20,786	17,816
Fiduciary net position as a percentage of the total pension liability	68.0 %	71.4 %

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

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

**Actuarial Methods and Assumptions**—The total pension liability as of June 30, 2015 and 2014 were determined by actuarial valuations as of June 30, 2013 and June 30, 2012, 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 Auto COLA. 2.5% per annum for Escalation.

\* Developed assuming a long-term Consumer Price Inflation assumption of 2.5% per annum.

Mortality tables for Service and Disability pensioners were developed from an experience study of the QPP and the predecessor QPP's pensioners. The mortality tables for beneficiaries were developed from an experience review.

Pursuant to Section 96 of the New York City Charter, a study of the actuarial assumptions used to value liabilities of the QPP is conducted every two years.

The most recently completed study was published by Gabriel Roeder Smith & Company ("GRS") dated October 2015 and analyzed experience for Fiscal Years 2010 through 2013. GRS made recommendations with respect to the actuarial assumptions and methods based on their analysis.

The two previously completed studies were published by The Hay Group ("Hay") dated December 2011 and by The Segal Company ("Segal"), dated November 2006. Hay analyzed experience for Fiscal Years 2006 through 2009 and made recommendations with respect to the actuarial assumptions and methods based on their analysis. Segal analyzed experience for Fiscal Years 2002 through 2005 and made recommendations with respect to the actuarial assumptions and methods based on their analysis.

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

**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:

<b>Asset Class</b>	<b>Target Asset Allocation</b>	<b>Long-Term Expected Real Rate of Return</b>
U.S. Public Markets Equities	34.00 %	6.60 %
International Public Market Equities	9.00	7.00
Emerging Public Market Equities	8.00	7.90
Private Market Equities	6.00	9.90
Fixed Income (Core, TIPS, HY, Opportunistic, Convertibles)	37.00	2.70
Alternatives (Real Assets)	<u>6.00</u>	4.00
 Total	 <u>100.00 %</u>	

**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 1-percentage point lower (6.0%) or 1-percentage point higher (8.0%) than the current rate (in thousands):

	<b>1% Decrease (6.0%)</b>	<b>Current Discount Rate (7.0)%</b>	<b>1% Increase (8.0%)</b>
Employers' net pension liability— June 30, 2015	<u>\$ 27,195,331</u>	<u>\$ 20,785,704</u>	<u>\$ 15,487,562</u>

**6. MEMBER LOANS**

The balance of member loans receivable for the QPP at June 30, 2015 and 2014 is \$257.0 million and \$240.3 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 7.0% APR with a 0.2% ("APR") 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, 2015 and 2014 is \$361.1 million and \$348.9 million, respectively. Members of the TDA Program are permitted to borrow up to 75% of their own contributions, including accumulated interest. Outstanding loan balances are insured in order to protect member balances in case of death. In return for the insurance coverage, TDA Program members supplement their interest payments (7.0% for UFT, 8.25% for all other member) with a 0.3% ("APR") insurance fee. Upon termination of employment before retirement, members are entitled to refunds of their own contributions, including accumulated interest, less any loans outstanding.

## 7. RELATED PARTIES

The Comptroller has been appointed by law as custodian for the assets of the QPP and TDA Program with discretionary authority. Securities are held by certain banks under custodial agreements with the Comptroller. The Comptroller, Financial Information Services Agency ("FISA") and Office of Payroll Administration ("OPA") provide cash receipt and cash disbursement services and financial services, 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 \$13.2 million and \$8.7 million in Fiscal Years 2015 and 2014. In addition, Actuarial services are provided to TRS by the New York City Office of the Actuary. The City also provides other administrative services.

## 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, net of loan service charge revenues reserves, is 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. TRS' administrative expenses have been \$84.4 million and \$60.1 million for Fiscal Years 2015 and 2014, respectively. In addition to these TRS administrative expenses, other City agencies attribute the cost for services rendered by them during the fiscal year.

## 9. CONTINGENT LIABILITIES AND OTHER MATTERS

**Contingent Liabilities**—In August 2002, a lawsuit was instituted on behalf of retired QPP members seeking service credit for work performed as "per session employment." In January 2004, Plaintiffs' request to proceed as a class action was granted by the lower court. Subsequently, the parties reached an initial settlement in September 2007 and a final agreement in February 2010. In December 2010 the settlement was implemented resulting in substantial costs to the Employers.

In March 2005, the President of the UFT and three retired teachers commenced two related lawsuits alleging miscalculation of the retirement formula applicable to QPP members who retire under the 20-Year Pension Plan. Subsequently, the parties have settled with the Employers, agreeing to pay a sum of \$160 million allocated to the plaintiffs according to a negotiated algorithm. In February 2010, the settlement was implemented.

The QPP and TDA Program also have certain other 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.

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

**Other Matters**—During Fiscal Years 2015 and 2014, certain events described below took place that, in the opinion of TRS management, could have the effect of increasing benefits to members and/or their beneficiaries, and therefore, would increase the obligations of the QPP and TDA Program. The effect of such events has not been fully quantified. However, it is the opinion of TRS management that such developments would not have a material effect on fiduciary net position restricted for benefits or cause changes in fiduciary net position restricted for benefits.

**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 New York City Retirement Systems (“NYCRS”) 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 NYCRS are to periodically review and adopt actuarial assumptions as proposed by the Actuary for use in the determination of Employer Contributions.

Based, in part, upon a review of the Segal and Hay studies, the Actuary issued a February 10, 2012 Report entitled “Proposed Changes in Actuarial Assumptions and Methods for Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2011 for the New York City Teachers’ Retirement System” (“February 2012 Report”).

The results of the GRS study are under review by the Actuary.

The TRS Retirement Board adopted those changes to actuarial assumptions that require Board approval. The State Legislature and the Governor enacted Chapter 3/13 to provide for those changes to the actuarial assumptions and methods that require legislation, including the AIR assumption of 7.0% per annum, net of investment expenses.

### **New York State Legislation (only Significant Laws Included)**—

Chapter 19 of the Laws of 2008 (“Chapter 19/08”) established retirement programs to permit Tier II and Tier IV current members of TRS to elect to retire between ages 55 and 62 without reduction provided they have 25 years of service, by paying an additional contribution of 1.85% of future pay. New members after February 27, 2008, are mandated into this plan and are required to have 27 years of service.

Chapter 504 of the Laws of 2009 provided that individuals joining TRS 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.

Also, under Chapter 504/09, these members of TRS who are represented by the UFT will become vested after ten years of credited service. In addition all members represented by the UFT who participate in the Tax-Deferred Annuity Program (“TDA”), will receive an interest rate of 7.0% per annum credited to their TDA Fixed Return Funds accounts beginning December 10, 2009.

Chapter 105 of the Laws of 2010 (“Chapter 105/10”) provided an Early Retirement Incentive (“ERI”) program for certain members.

Chapter 18 of the Laws of 2012 amended portions of the Retirement and Social Security Law and Administrative Code of the City of New York that affect the contributions and benefits of members who join a New York State public retirement system (including TRS) on or after April 1, 2012. These changes are sometimes referred to as Tier VI.

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

Chapter 3 of the Laws of 2013 ("Chapter 3/13") 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 investment expenses, continued it and other interest rates until June 20, 2016 and defined the amortization of Unfunded Actuarial Accrued Liabilities ("UAAL").

Chapter 489 of the Laws of 2013 ("Chapter 489/13") extended the WTC Disability Laws to vested members.

Chapter 510 of 2015 amended RSSL Section 613, for the purpose of calculating wages used to determine contribution rates for Tier VI members, by changing the definition of Plan Year from period April 1 to March 31 to the Calendar Year (i.e. January 1 to December 31).

\* \* \* \* \*

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

## REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)

## QUALIFIED PENSION PLAN

## SCHEDULE OF CHANGES IN THE EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS

(In thousands)

	2015	2014
Total pension liability:		
Service cost	\$ 1,223,158	\$ 1,205,662
Interest	4,027,138	4,407,702
Change of benefit terms	-	-
Differences between expected and actual experience	1,507,964	-
Changes of assumptions	-	-
Benefit payments/withdrawals	<u>(4,024,272)</u>	<u>(3,818,248)</u>
Net change in total pension liability	2,733,989	1,795,117
Total pension liability—beginning	<u>62,306,379</u>	<u>60,511,262</u>
Total pension liability—ending (a)	<u>65,040,368</u>	<u>62,306,379</u>
Plan fiduciary net position:		
Contributions—employer	3,325,528	3,054,424
Contributions—employee	158,590	154,962
Net investment income	1,611,929	9,435,906
Benefit payments/withdrawals	(4,024,272)	(3,818,248)
Payment of interest on TDA fixed funds	(1,248,988)	(1,147,923)
Administrative expenses	(58,391)	(46,042)
Other changes	<u>329</u>	<u>404</u>
Net change in plan fiduciary net position	(235,275)	7,633,483
Plan fiduciary net position—beginning	<u>44,489,939</u>	<u>36,856,456</u>
Plan fiduciary net position—ending (b)*	<u>44,254,664</u>	<u>44,489,939</u>
Employer's net pension liability—ending (a)-(b)	<u>\$ 20,785,704</u>	<u>\$ 17,816,440</u>
Plan fiduciary net position as a percentage of the total pension liability	<u>68.04 %</u>	<u>71.41 %</u>
Covered employee payroll	<u>\$ 8,074,522</u>	<u>\$ 7,996,942</u>
TRS' net pension liability as a percentage of covered-employee payroll	<u>257.42 %</u>	<u>222.79 %</u>

Additionally, in accordance with GASB No. 67, paragraph 50, such information was not readily available for periods prior to 2013.

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

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULE OF EMPLOYERS' CONTRIBUTIONS  
 (In thousands)

	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Actuarially determined contribution	\$3,270,007	\$2,998,694	\$2,855,640	\$2,673,078	\$2,468,973	\$2,484,074	\$2,223,644	\$1,916,520	\$1,600,904	\$1,316,611
Contributions in relation to the actuarially determined contribution	<u>3,270,007</u>	<u>2,998,694</u>	<u>2,855,640</u>	<u>2,673,078</u>	<u>2,468,973</u>	<u>2,484,074</u>	<u>2,223,644</u>	<u>1,916,520</u>	<u>1,600,904</u>	<u>1,316,611</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered-employee payroll	<u>\$8,074,522</u>	<u>\$7,996,942</u>	<u>\$7,833,329</u>	<u>\$7,920,935</u>	<u>\$7,935,248</u>	<u>\$7,859,999</u>	<u>\$7,221,499</u>	<u>\$6,998,174</u>	<u>\$6,285,203</u>	<u>\$6,183,304</u>
Contributions as a percentage of covered-employee payroll <sup>1</sup>	<u>40.498 %</u>	<u>37.498 %</u>	<u>36.455 %</u>	<u>33.747 %</u>	<u>31.114 %</u>	<u>31.604 %</u>	<u>30.792 %</u>	<u>27.386 %</u>	<u>25.471 %</u>	<u>21.293 %</u>

<sup>1</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.

(Continued)

SCHEDULE 2 (CONTINUED)

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULE OF EMPLOYERS' CONTRIBUTIONS  
 NOTES TO SCHEDULE  
 (In thousands)

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 2015 contributions were determined using an actuarial valuation as of June 30, 2013). The methods and assumptions used to determine the actuarially determined contributions are as follows:

Valuation Dates	June 30, 2013	June 30, 2012	June 30, 2011	June 30, 2010	June 30, 2009– June 30, 2004
Actuarial cost method	Entry age	Entry age	Entry age	Entry age	Frozen initial liability <sup>1</sup>
Amortization method for unfunded actuarial accrued liabilities:					
Initial unfunded	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar	NA <sup>2</sup>
Post-2010 unfunded	Level dollar	Level dollar	Level dollar	Level dollar	NA <sup>2</sup>
Remaining amortization period:					
Initial unfunded	19 years (closed)	20 years (closed)	21 years (closed)	22 years (closed)	NA <sup>2</sup>
2010 ERI	3 years (closed)	4 years (closed)	5 years (closed)	NA	
2011 Actuarial gain/loss	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA <sup>2</sup>
2012 Actuarial gain/loss	14 years (closed)	15 years (closed)	NA	NA	NA <sup>2</sup>
2013 Actuarial gain/loss	15 years (closed)	NA	NA	NA	NA <sup>2</sup>
Actuarial Asset Valuation (AAV) method	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AAV is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AAV is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AAV is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AAV is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with "Market Value Restart" as of June 30, 1999.

(Continued)

## Schedule 2 (continued)

Valuation Dates	June 30, 2013	June 30, 2012	June 30, 2011	June 30, 2010	June 30, 2009– June 30, 2004
Actuarial assumptions:					
Assumed rate of return	7.0% per annum, net of investment expenses <sup>3</sup>	7.0% per annum, net of investment expenses <sup>3</sup>	7.0% per annum, net of investment expenses <sup>3</sup>	8.0% per annum, net of investment expenses <sup>3</sup>	8.0% per annum, gross of investment expenses <sup>3</sup>
Post-retirement mortality	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
Active service: withdrawal, death, disability, service retirement	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 2006	Tables adopted by Retirement Board during Fiscal Year 2000
Salary increases	In general, merit and promotion increases plus assumed general wage increase of 3.0% per year. <sup>3</sup>	In general, merit and promotion increases plus assumed general wage increase of 3.0% per year. <sup>3</sup>	In general, merit and promotion increases plus assumed general wage increase of 3.0% per year. <sup>3</sup>	In general, merit and promotion increases plus assumed general wage increase of 3.0% per year. <sup>3</sup>	In general, merit and promotion increases plus assumed general wage increase of 3.0% per year. <sup>3</sup>
Cost-of-living adjustments <sup>3</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.	1.3% per annum <sup>3</sup>

<sup>1</sup>Under this actuarial cost method, the Initial Liability was reestablished as of June 30, 1999, by the Entry Age Actuarial Cost Method but with the unfunded actuarial accrued liability (UAAL) not less than \$0. The financial results using this Frozen Initial Liability Actuarial Cost Method are the same as those that would be produced using the Aggregate Actuarial Cost Method.

<sup>2</sup>In conjunction with Chapter 85 of the Laws of 2000, there is an amortization method. However, the June 30, 1999 UAAL for the QPP equaled \$0 and no amortization period was required.

<sup>3</sup>Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

<sup>4</sup>In the June 30, 2009 actuarial valuation the tables adopted by the Retirement Board during Fiscal Year 2006 were supplemented by additional assumptions adopted by the Retirement Board during Fiscal Year 2011 for valuing benefits payable to Tier III active members.

(Concluded)

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

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)  
 QUALIFIED PENSION PLAN  
 SCHEDULE OF INVESTMENT RETURNS

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

Fiscal Year Ended	Money-Weighted Rate of Return
June 30, 2015	2.81 %
June 30, 2014	17.60

Note: In accordance with GASB No. 67, paragraph 50, such information was not readily available for periods prior to 2013.



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

## SCHEDULE 4

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

**ADDITIONAL SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF ADMINISTRATIVE EXPENSES**  
**Year Ended June 30, 2015 (Unaudited)**

	Total	QPP	TDA	Expense Reserve****
<b>PERSONNEL SERVICES</b>				
Staff Salaries	\$30,713,803	\$24,349,104	\$6,228,299	\$136,400
Social Security	1,765,513	1,399,653	358,020	7,841
Insurance (Health)	4,386,165	3,477,238	889,449	19,479
Welfare Benefit Fund	1,119,713	887,679	227,061	4,973
<b>TOTAL PERSONNEL SERVICES</b>	<b>37,985,194</b>	<b>30,113,674</b>	<b>7,702,828</b>	<b>168,692</b>
<b>PROFESSIONAL SERVICES</b>				
Data Processing Support and Licenses	5,108,900	4,050,203	1,036,008	22,689
Temporary and Consultant Staffing	787,937	624,656	159,782	3,499
Outside Professional Services	1,333,643	1,057,278	270,443	5,923
<b>TOTAL PROFESSIONAL SERVICES</b>	<b>7,230,481</b>	<b>5,732,137</b>	<b>1,466,233</b>	<b>32,111</b>
<b>MODERNIZATION INITIATION</b>				
Consultants and Temporary Costs	12,700,292	6,199,812	6,500,479	-
IT Vendor Development Costs	11,027,795	5,383,362	5,644,434	-
QA Vendor Non-IT Costs	1,505,612	734,984	770,628	-
Equipment Costs	2,585,434	1,262,113	1,323,321	-
Other Expenses	211,326	103,161	108,164	-
<b>TOTAL MODERNIZATION INITIATION</b>	<b>28,030,459</b>	<b>13,683,433</b>	<b>14,347,026</b>	<b>-</b>
<b>RENTALS</b>				
Office Space	7,809,447	6,191,127	1,583,639	34,682
Equipment Leasing	313,380	248,440	63,549	1,392
<b>TOTAL RENTALS</b>	<b>8,122,827</b>	<b>6,439,566</b>	<b>1,647,188</b>	<b>36,073</b>
<b>COMMUNICATION</b>				
Telephone	146,919	116,474	29,793	652
Postage	536,604	425,406	108,815	2,383
Local Traveling Expenses*	35,348	28,023	7,168	157
Non-Local Traveling Expenses**	46,852	37,143	9,501	208
<b>TOTAL COMMUNICATION</b>	<b>765,724</b>	<b>607,046</b>	<b>155,277</b>	<b>3,401</b>
<b>OTHER OPERATING EXPENSES</b>				
Utilities	306,328	242,849	62,119	1,360
Supplies and Materials	75,839	60,123	15,379	337
Maintenance, Repairs, and Services	552,218	437,784	111,982	2,452
Office Equipment and Furniture	119,146	94,456	24,161	529
Advertising Expenses	24,460	19,391	4,960	109
Storage	136,655	108,336	27,711	607
Printing	657,256	521,055	133,282	2,919
Training Programs	383,244	303,826	77,716	1,702
Books	11,858	9,400	2,405	53
Miscellaneous	22,313	17,689	4,525	99
<b>TOTAL MISCELLANEOUS</b>	<b>2,289,315</b>	<b>1,814,910</b>	<b>464,239</b>	<b>10,167</b>
<b>TOTAL ADMINISTRATIVE EXPENSES***</b>	<b>\$84,424,000</b>	<b>\$58,390,766</b>	<b>\$25,782,790</b>	<b>\$250,444</b>

\* Total TRS Local Traveling Expenses includes Local Travel Fare \$15,416, Courier \$1,009, and Meals & Refreshments \$18,923.

\*\* Total TRS Non-Local Traveling Expenses includes Hotels & Meals \$20,441, Travel Fare \$13,581, and Conferences \$12,830.

\*\*\* The schedule shows total expenses paid by TRS. Other administrative expenses of \$13,226,700 were paid on TRS' behalf by other City agencies under Regulation 85 of the New York State Superintendent of Insurance Regulations.

\*\*\*\* Expense Reserve is funded by QPP & TDA loan service charge revenues. QPP and TDA funding amounts for FY 2015 were \$176,286 and \$74,158 respectively.

See Notes of Financial Statements No. 7 for the Corpus Expenses.

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

ADDITIONAL SUPPLEMENTAL INFORMATION  
 SCHEDULE OF INVESTMENT EXPENSES AND SERVICES (QPP & TDA)  
 Year Ended June 30, 2015

	Assets Under Management	Investment Expenses
<b>INVESTMENT CATEGORY</b>		
Pension Fund	\$61,802,770,904	\$197,103,040
Diversified Equity and Int'l Equity Funds	10,942,455,550	18,930,426
Bond Fund	329,207,226	555,404
Inflation Protection Fund	43,066,479	193
Socially Responsive Equity Fund	110,166,121	380,631
<b>Other Investment Services</b>		
Consultant		5,064,501
Legal		445,617
<b>Provision for Expense Reduction</b>		(16,760,295)
	<b>\$73,227,666,280*</b>	<b>\$205,719,517</b>

\* Excludes \$2,438,757,241 in securities lending.

# Investment





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

The below report on investment activity was prepared by Rocaton 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 Rocaton Investment Advisors, LLC, Investment Consultant to the Teachers' Retirement System of the City of New York**

As of June 30, 2015, TRS offered six investment program options to its membership: the Fixed Return Fund, the Diversified Equity Fund, the Bond Fund, the International Equity Fund, the Inflation Protection Fund, and the Socially Responsive Equity 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 six 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 and 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 61.8 billion as of June 30, 2015. The overall Pension Fund had a net of fee return of 2.8% for the fiscal year ending June 30, 2015. As of June 30, 2015, the Fund had 35% U.S. equity investments, 18% non-U.S. equity investments, 5% private equity investments, 3% private real estate, 3% REITs, 36% fixed-income investments and short-term investments (due to rounding, percentages may not add to 100%). 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, 2015, approximately 96% 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 more effectively control costs. The Fund's fixed-income holdings are primarily high-quality U.S. securities with smaller allocations to sectors such as enhanced yield and convertibles securities.

The Diversified Equity Fund's objective is to provide participants with a diversified equity investment portfolio. As of June 30, 2015, the Diversified Equity Fund, including both QPP and TDA assets, had \$10.8 billion in assets and had a net of fee return of 4.9% for the fiscal year ending June 30, 2015. This portfolio's target structure is a mixture of U.S. equities (70%), non-U.S. equities (15%), and defensive strategies (15%). The defensive sector is made up of convertible bond strategies, conservatively oriented equity strategies and a tactical asset allocation strategy. Tactical asset allocation strategies shift allocations to and within asset classes such as stocks, bonds and cash depending upon the managers' analysis of market conditions. The diversification of this portfolio beyond U.S. equities is intended to broaden diversification and help protect participants against significant market downturns within a single asset class (*i.e.*, U.S. stocks). Again, risk control and cost-effectiveness are a very important focus of the investment structure. For example, as of June 30, 2015, 51% of the assets within the Diversified Equity Fund were invested in indexed strategies.

The Bond Fund invests primarily in a portfolio or portfolios of high-quality bonds that provide for participant transactions at market value. These bonds include Treasuries, Agencies, Corporates, Mortgages, and other types of fixed-income instruments. As of June 30, 2015, the combined QPP and TDA Bond Funds' assets totaled \$329.2 million, and the Fund earned a net of fee return of 1.1% for the fiscal year ending June 30, 2015.

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, 2015, the combined QPP and TDA International Equity Funds' assets totaled \$105.8 million. For the fiscal year ending June 30, 2015, the International Equity Fund returned -3.9%, net of fees.

The Inflation Protection Fund seeks exposure to multiple asset classes and markets. The objective of this fund is to provide a rate of return that exceeds inflation over a full market cycle. As of June 30, 2015, the combined TDA and

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

QPP Inflation Protection Funds' assets totaled \$43.1 million. For the fiscal year ending June 30, 2015, the Inflation Protection Fund returned -4.8%, net of fees.

The Socially Responsive Equity Fund invests primarily in stocks of large and mid-cap U.S. and non-U.S. companies that meet certain financial and social criteria. The objective of this fund is to provide a rate of return comparable to the broad equity market while reflecting social priorities. As of June 30, 2015, the combined QPP and TDA Socially Responsive Equity Funds' assets totaled \$110.2 million. For the fiscal year ending June 30, 2015, the Socially Responsive Equity Fund returned 6.1%, net of fees.

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

### ECONOMIC REVIEW

Interest rates continued to fall in the U.S. during the one-year period ending June 30, 2015, with the 10-year Treasury note yielding 2.35% at the end of June, a decrease of 18 basis points from June 30, 2014, but an increase of 42 basis points since the end of the first quarter of 2015. Most investment-grade fixed-income sectors generated positive returns over the trailing one-year period, with longer duration fixed income outperforming shorter-duration bonds. Developed and emerging market equity markets moved lower during the one-year period ending June 30, 2015 given the U.S. dollar's strength relative to other developed market and emerging market currencies. U.S. equities (proxied by the S&P 500) gained 7.4% during the trailing one-year period, outperforming non-U.S. developed markets (proxied by the MSCI EAFE Index), which returned -3.8% for the period. Additionally, emerging market equities (proxied by the MSCI Emerging Markets Index) posted a return of -4.8% for the one-year period ending June 30, 2015. The broad fixed income market provided a positive return during the trailing one-year period, gaining 1.9%. Other fixed-income asset classes, such as high-yield (below investment grade bonds) and emerging markets debt, lagged higher-quality domestic fixed income during the one-year period ending June 30, 2015, returning -0.6% and 0.5%, respectively.

### U.S. MARKETS REVIEW

Most major domestic equity indices rose during the one-year period ending June 30, 2015 with larger market capitalization companies, as represented by the Russell 1000 Index, generally faring better than their smaller counterparts, as represented by the Russell 2000 Index. The Russell 1000 Index returned 7.4% during the one-year period ending June 30, 2015 versus the Russell 2000 Index return of 6.5% for the same period. The Russell 3000 Index, a broad measure of the U.S. equity markets, returned 7.3% for the one-year period ending June 30, 2015. For the 12 months ending June 30, 2015, growth stocks outperformed value stocks, as the Russell 3000 Value Index returned 3.9% versus the Russell 3000 Growth Index's return of 10.7% over the same period.

For the year ending June 30, 2015, the Barclays Capital Aggregate Bond Index, a broad index of U.S. investment grade bonds, returned 1.9%.

### INTERNATIONAL MARKETS REVIEW

The return for the MSCI EAFE Index, a measure of the developed international equity markets, was -3.8% in U.S. dollar terms for the one-year period ending June 30, 2015. Of the following four regions: Japan, Pacific ex-Japan, U.K. and Europe ex-U.K., Japan had the strongest performance for the one-year period, with a return of 8.5%. Pacific ex-Japan followed with a return of -4.7% for the one-year period while the Europe ex-U.K. and U.K. markets returned -6.7%. International small-cap stocks outperformed foreign large-cap companies for the 12-month period ending June 30, 2015, as the MSCI EAFE Index returned -3.8% versus the MSCI EAFE Small Cap Index's return of -0.5% over the same period. The MSCI Emerging Markets Index returned -4.8% for the one-year period ending June 30, 2015. All of the performance information regarding non-U.S. markets is provided from the perspective of U.S.-based investors and, as such, were translated at year-end and reviewed as U.S. dollar denominations.

*Rocaton Investment Advisors, LLC*

601 Merritt 7

Norwalk, Connecticut 06851

**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 75-79 for detailed descriptions of the investment programs.

<b>PENSION FUND</b>	<b>DIVERSIFIED EQUITY FUND</b>	<b>BOND FUND</b>
(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 + All Tiers III/IV/VI QPP Funds + All Tiers' TDA funds in the Fixed Return Fund	Tiers I/II QPP funds in the Diversified Equity Fund + All Tiers' TDA funds in the Diversified Equity Fund	Tiers I/II QPP funds in the Bond Fund + All Tiers' TDA funds in the Bond Fund
<b>INTERNATIONAL EQUITY FUND</b>	<b>INFLATION PROTECTION FUND</b>	<b>SOCIALLY RESPONSIVE EQUITY FUND</b>
(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)
Tiers I/II QPP funds in the International Equity Fund + All Tiers' TDA funds in the International Equity Fund	Tiers I/II QPP funds in the Inflation Protection Fund + All Tiers' TDA funds in the Inflation Protection Fund	Tiers I/II QPP funds in the Socially Responsive Equity Fund + All Tiers' TDA funds in the Socially Responsive Equity 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 six investment programs.*

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

The table below compares accumulations as of June 30, 2015, based on assumed contributions of \$100.00 per month into each of the Fixed Return, Diversified Equity, Bond, International Equity, Inflation Protection, and Socially Responsive Equity Funds.

**10-YEAR COMPARISON OF ACCUMULATIONS  
IN TRS' INVESTMENT PROGRAMS  
As of June 30, 2015**

MONTHS OF PARTICIPATION	12	24	36	48	60	72	84	96	108	120
<b>Fixed Return Fund (TDA/UFT)<sup>1</sup></b>	\$ 1,239	\$ 2,564	\$ 3,982	\$ 5,499	\$ 7,124	\$ 8,861	\$ 10,739	\$ 12,773	\$ 14,975	\$ 17,356
<b>Fixed Return Fund (All others)<sup>1</sup></b>	\$ 1,245	\$ 2,594	\$ 4,053	\$ 5,633	\$ 7,342	\$ 9,193	\$ 11,175	\$ 13,328	\$ 15,661	\$ 18,187
<b>Diversified Equity Fund<sup>2</sup></b>	\$ 1,231	\$ 2,626	\$ 4,335	\$ 6,296	\$ 8,393	\$ 10,812	\$ 13,589	\$ 15,467	\$ 17,457	\$ 19,719
<b>Bond Fund<sup>3</sup></b>	\$ 1,206	\$ 2,429	\$ 3,655	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>International Equity Fund<sup>4</sup></b>	\$ 1,203	\$ 2,455	\$ 3,931	\$ 5,537	\$ 7,111	\$ 8,857	\$ 11,015	N/A	N/A	N/A
<b>Inflation Protection Fund<sup>5</sup></b>	\$ 1,173	\$ 2,394	\$ 3,646	\$ 5,026	\$ 6,475	\$ 8,128	\$ 10,043	N/A	N/A	N/A
<b>Socially Responsive Equity Fund<sup>6</sup></b>	\$ 1,229	\$ 2,634	\$ 4,418	\$ 6,399	\$ 8,491	\$ 10,999	\$ 13,832	N/A	N/A	N/A

**1 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.*

**2** Based on July 2015 unit value of \$81.738

**3** Based on July 2015 unit value of \$17.616

**4** Based on July 2015 unit value of \$10.170

**5** Based on July 2015 unit value of \$10.807

**6** Based on July 2015 unit value of \$14.760



**PENSION FUND**  
**Fund Summary**  
 Fiscal Year 2015

**Return: 2.78%**

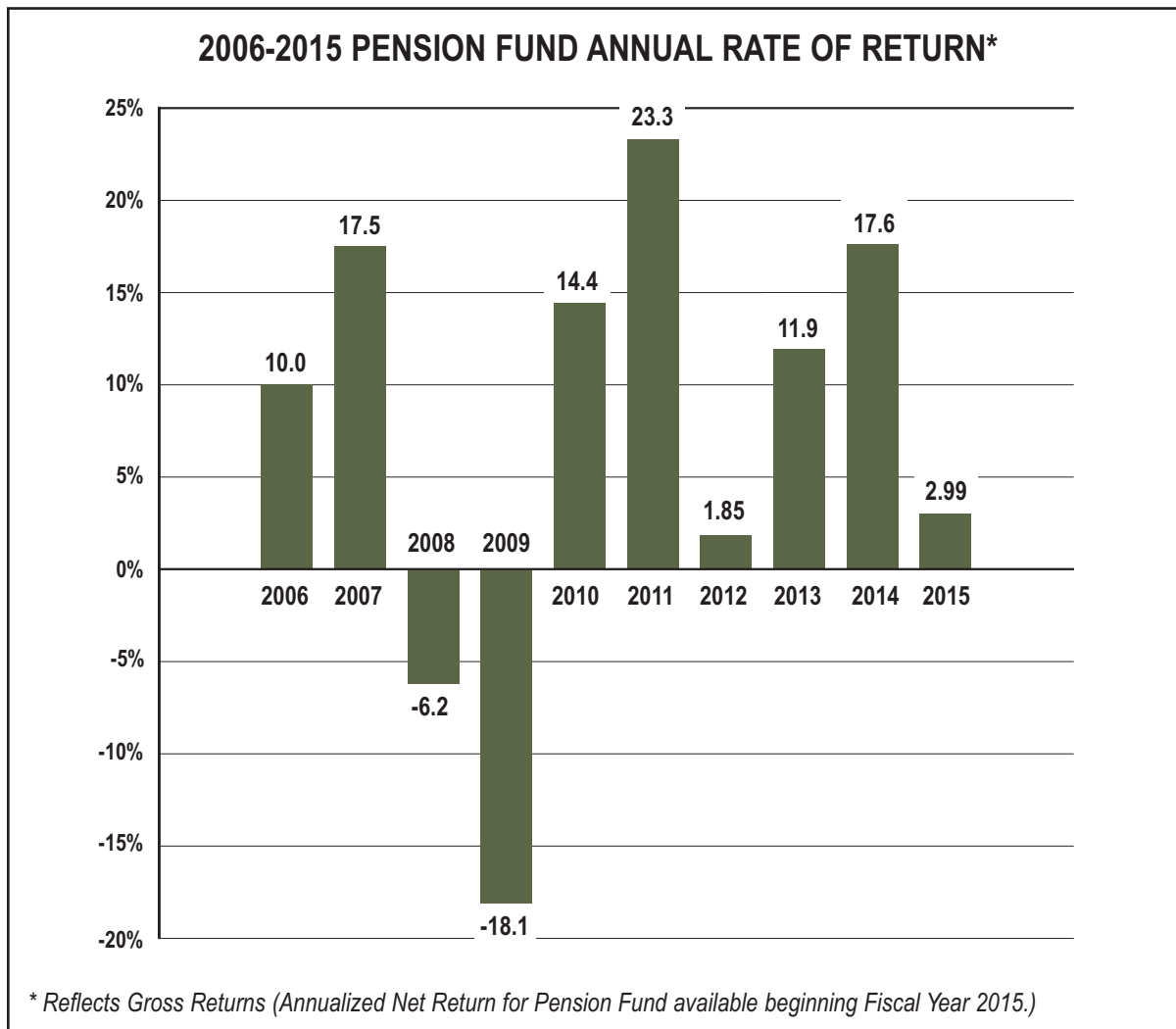
**Total Investments: \$61.803 Billion**

During Fiscal Year 2015, the Pension Fund's portfolio, consisting primarily of equities and fixed-income investments, yielded a net return of 2.78% and a gross return of 2.99%. The 2.99% gross return was a decrease from the 17.62% return for Fiscal Year 2014.

The pooled New York City 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 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 \$61.803 billion as of June 30, 2015.

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 2015

**Return: 4.85%**

**Total Investments: \$10.837 Billion**

For the 12-month period ending June 30, 2015, the U.S. equity market, as measured by the Russell 3000 Index, returned 7.29%. The Russell 3000 Index includes no fees and provides a passive representation of the overall U.S. stock market. For the same 12-month period ending June 30, 2015, the Diversified Equity Fund returned 4.85%, 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, domestic fixed-income securities, and international equities. The Hybrid Benchmark is 70% Russell 3000 Index, 15% MSCI EAFE Index and 15% Defensive Strategies benchmark. Over the 12-month period ending June 30, 2015, the Diversified Equity Fund underperformed the Hybrid Benchmark's return of 5.25%.

For the three-year period ending June 30, 2015, the Diversified Equity Fund returned 15.86% on an annualized basis after fees, trailing the Russell 3000 Index's annualized return of 17.73% and the Hybrid Benchmark's annualized returns of 16.16% over the same period. For the five-year period ending June 30, 2015, the Diversified Equity Fund returned 15.53%, annualized after fees, behind the Russell 3000 Index's annualized return of 17.53% and the Hybrid Benchmark's annualized returns of 16.03%. Due to its diversified structure, the Diversified Equity Fund has exhibited less performance volatility than the Russell 3000 Index over the same five-year period.

As of June 30, 2015, approximately 80% 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 13% in international stocks and approximately 7% in fixed income, cash-equivalents and other securities as of the fiscal year-end. The international stock and the fixed-income allocations contribute to portfolio diversification.

The Diversified Equity Fund utilizes a number of different investment strategies managed by professional money management firms. These strategies are classified into the component sectors described here. Returns after fees for all of the Diversified Equity Fund's component sectors for the one-year period ending June 30, 2015 are as follows:

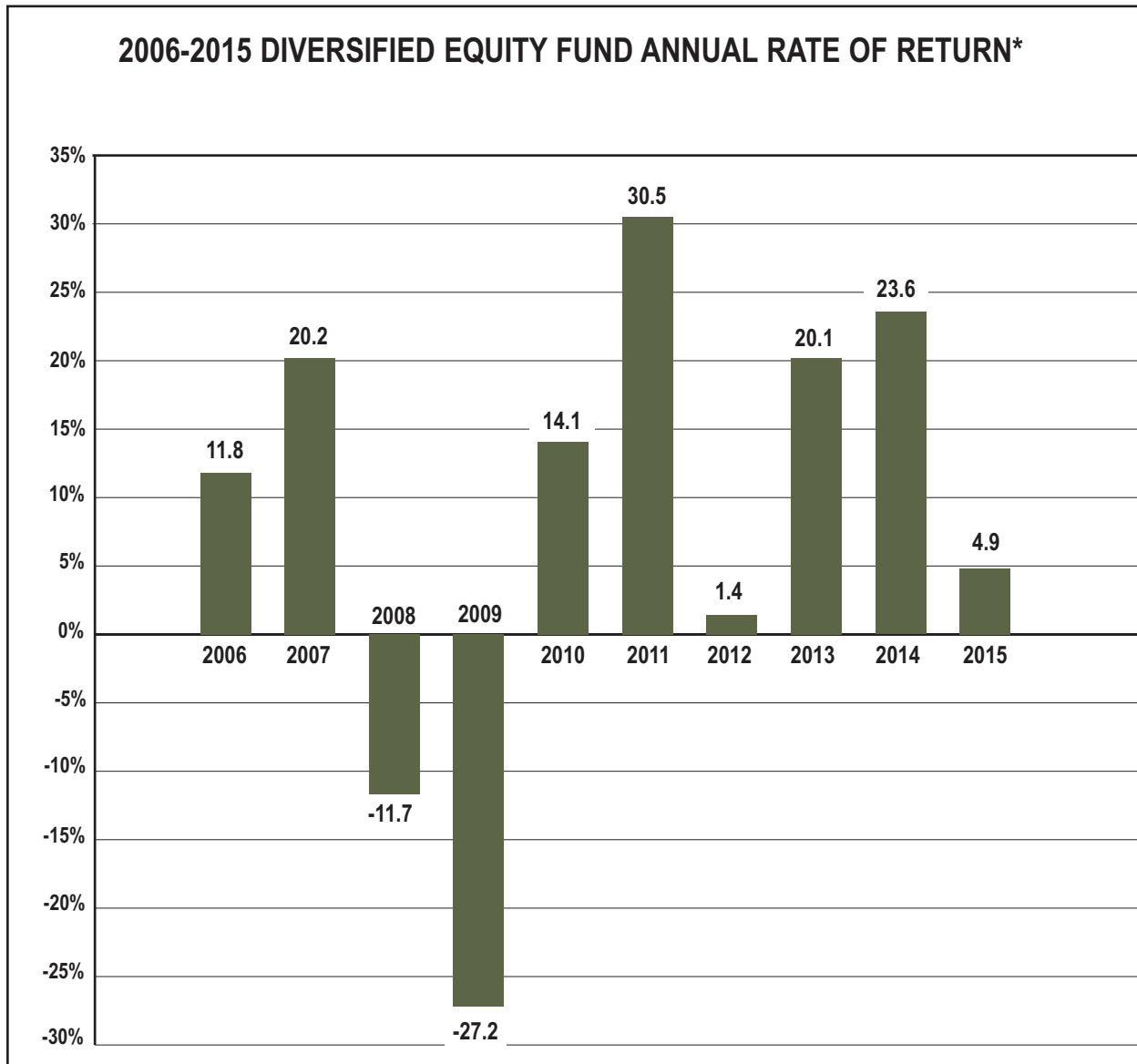
- The Passive Core (or index) sector earned a return of 7.13%, modestly trailing the Russell 3000 Index's return of 7.29%.
- The Active Domestic Equity sector is comprised of strategies focused on particular market capitalization ranges and investment styles. For the one-year period ending June 30, 2015, the Active Domestic Equity composite returned 8.25%, outperforming the Russell 3000 Index return of 7.29%.
- The Defensive Strategies sector returned 3.16%, underperforming the Defensive Strategies benchmark (currently 30% Russell 1000 Index/24.8% Russell 3000 Index/15.2% Citigroup WGBI/8.9% BofAML Convertibles Yield Index/8.9% BofAML All Convertibles/8.7% MSCI EAFE/ 3.5% Barclays Gov't/Credit), which returned 4.88%. The Defensive Strategies sector is designed to provide a diversification benefit to the overall fund

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

and has generally been beneficial to the fund during periods of market decline. The Tactical Asset Allocation manager within this sector, which can modify its mix of equity, bonds and cash equivalents, was positioned with approximately 54% equity exposure, and approximately 43% fixed income exposure and 3% other in their portfolio as of June 30, 2015. In early 2011, two low expected volatility equity strategies were added to the Defensive Strategies sector. These strategies invest primarily in lower beta stocks with the objective of offering equity-like performance with lower

volatility over market cycles. During the first half of 2013, a defensively-oriented mutual fund was added to the Defensive Strategies sector. The convertible bond portfolios within this sector provide exposure that has a hybrid of equity and fixed-income characteristics. The fixed-income exposure of the overall Diversified Equity Fund comes from the Defensive Equity Fund comes from the Defensive Strategies sector.

- The International Equity sector earned -3.35%, while its benchmark, the MSCI EAFE Index, returned -3.82%.



\* After expenses

**BOND FUND**  
**Fund Summary**  
Fiscal Year 2015

**Return: 1.10%**

**Total Investments: \$329.208 Million**

The Bond Fund invests primarily in a portfolio of high-quality bonds that will provide for participant transactions at market value. These bonds may include Treasuries, Agencies, Corporates, Mortgages, and other types of fixed-income instruments.

During the one-year period ending June 30, 2015, the Bond Fund returned

1.10%, underperforming its benchmark, the Barclays 1-5 Year Government/Credit Index, which returned 1.31% over the same time period. For the three-year period ending June 30, 2015, the Bond Fund returned 0.99%, trailing the benchmark return of 1.25%. Please note that the total return of this option includes the impact of the transition from a book valued option to a market valued option.

**INTERNATIONAL EQUITY FUND**  
**Fund Summary**  
Fiscal Year 2015

**Return: -3.94%**

**Total Investments: \$105.803 Million**

As of June 30, 2015, the International Equity Fund was primarily comprised of a mix of active and passive management, implemented by 1 passive and 5 active non-U.S. equity managers which invest primarily in the stocks of non-U.S. companies located in developed markets. The International Equity Fund began on July 1, 2008. For the one-year period ending June 30, 2015, the International Equity

Fund returned -3.94%, after fees, versus its benchmark, the MSCI EAFE Index, which returned -3.82%. For the three-year period ending June 30, 2015, the International Equity Fund returned 10.98% versus the benchmark return of 12.45%. Over the longer five-year period ending June 30, 2015, the International Equity Fund has returned 9.29%, trailing the benchmark return of 10.03%. 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.

**INFLATION PROTECTION FUND****Fund Summary**

Fiscal Year 2015

**Return: -4.82%****Total Investments: \$43.068 Million**

The Inflation Protection Fund primarily invests in an actively managed mutual fund that seeks exposure to multiple asset classes including, but not limited to, various real return strategies with a goal of providing, over a full market cycle, a real rate of return that exceeds inflation. The Inflation Protection Fund began on July 1, 2008. In December of 2014, the Fund switched its investment from the PIMCO All Asset Fund to the Fidelity Strategic Real Return Fund. For the one-year period ending June 30, 2015, the Inflation Protection Fund returned -4.82%, after fees, versus the Inflation Protection Fund Benchmark's return of -3.73%. The Inflation Protection Fund Benchmark reflects a composition of 25% Bloomberg Commodity Index, 25% S&P/LSTA Leveraged Loan Index,

30% Barclays US TIPS Index, 12% Dow Jones Wilshire Real Estate Securities Index, and 8% BofA ML US Real Estate Corporate Bond Index beginning December 2014. Prior to December 2014, the Inflation Protection Fund Benchmark reflects the Barclays Capital US TIPS 1-10 Year Index. The Consumer Price Index for all Urban Consumers (CPI-U) is a secondary benchmark for the Fund and is included for comparative purposes. For the three-year period ending June 30, 2015, the Inflation Protection Fund returned 3.79%, outperforming the benchmark return of -1.15%. Over the longer five-year period ending June 30, 2015, the Inflation Protection Fund has outperformed the benchmark by 340 basis points, returning 5.38%. 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.

**SOCIALLY RESPONSIVE EQUITY FUND****Fund Summary**

Fiscal Year 2015

**Return: 6.09%****Total Investments: \$110.165 Million**

The Socially Responsive Equity Fund primarily invests in an actively managed separate account with the goal of providing a return comparable to the large capitalization U.S. equity market over a full market cycle while reflecting social priorities. The Socially Responsive Equity Fund was inceptioned on July 1, 2008. For the one-year period ending June 30, 2015, the Socially Responsive Equity Fund returned 6.09%, after fees, versus the

S&P 500 Index's return of 7.42%. For the three-year period ending June 30, 2015, the Socially Responsive Equity Fund returned 17.95%, outperforming the S&P 500 Index return of 17.31% for the same period. Over the longer five-year period ending June 30, 2015, the Socially Responsive Equity Fund has trailed the benchmark by 203 basis points with a return of 15.31%. 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.

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

**ANNUALIZED INVESTMENT RESULTS<sup>11</sup>**

As of June 30, 2015

	Current Year 2015	3 Year	Annualized 5 Year	10 Year
<b>TRS Pension Fund<sup>1</sup></b>	2.99%	10.67%	11.22%	6.81%
Benchmark: Policy Index <sup>2</sup>	3.31%	10.72%	11.74%	6.82%
<b>TRS Diversified Equity Fund<sup>3</sup></b>	4.85%	15.86%	15.53%	7.33%
Hybrid Benchmark <sup>4</sup>	5.25%	16.16%	16.03%	7.85%
Benchmark: Russell 3000 <sup>5</sup>	7.29%	17.73%	17.53%	8.15%
<b>TRS Bond Fund<sup>6</sup></b>	1.10%	0.99%	N/A	N/A
Benchmark: Barclays 1-5 Year Government/Credit Index	1.31%	1.25%	1.81%	3.36%
<b>TRS International Equity Fund<sup>3</sup></b>	-3.94%	10.98%	9.29%	N/A
Benchmark: MSCI EAFE <sup>7</sup>	-3.82%	12.45%	10.03%	5.60%
<b>TRS Inflation Protection Fund<sup>3</sup></b>	-4.82%	3.79%	5.38%	N/A
Benchmark A: Inflation Protection Fund Benchmark <sup>8</sup>	-3.73%	-1.15%	1.98%	3.51%
Benchmark B: CPI-U <sup>9</sup>	0.04%	1.31%	1.81%	1.27%
<b>TRS Socially Responsive Equity Fund<sup>3</sup></b>	6.09%	17.95%	15.31%	N/A
Benchmark: Standard & Poor's 500 <sup>10</sup>	7.42%	17.31%	17.34%	7.89%

1 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. 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. Chart reflects TRS Pension Fund's Gross Returns.

2 The "Policy Index" is a custom benchmark representing the weighted average return of the weighted benchmark indexes for each major investment program within the total fund and is calculated monthly based on adjusted policy weights at the beginning of each month.

3 Includes income; performance net of operational fees (advisory and custody) and administrative expenses.

4 The Hybrid Benchmark is rebalanced monthly to Variable A's target weights of 70% Russell 3000/15% MSCI EAFE/15% Defensive Strategies' Composite Benchmark. No fees reflected.

5 Includes income; unmanaged index representing approximately 98% of investable domestic common stocks. No fees reflected.

6 As of January 1, 2012, the Stable Value Fund became the Bond Fund, a market valued option. A majority of the Fund transition from a book valued stable value option to a market valued option occurred at the start of 2012 and further transitioning occurred during the first half of 2012. The Fund is expected to continue such a transition for remaining stable value assets over the next several years.

7 Morgan Stanley Capital International Europe-Australasia-Far East unmanaged Index is a capitalization weighted index of publicly traded corporations in developed non-U.S. markets. No fees reflected.

8 The Inflation Protection Fund Benchmark is currently comprised of 25% Bloomberg Commodity Index, 25% S&P/LSTA Leveraged Loan Index, 30% Barclays US TIPS Index, 12% Dow Jones Wilshire Real Estate Securities Index, and 8% BofAML US Real Estate Corporate Bond Index since December 2014. Prior to December 2014, Inflation Protection Fund Benchmark was Barclays US TIPS 1-10yr.

9 The Consumer Price Index for all Urban Consumers (CPI-U) is a secondary benchmark for the Fund and is included for comparative purposes.

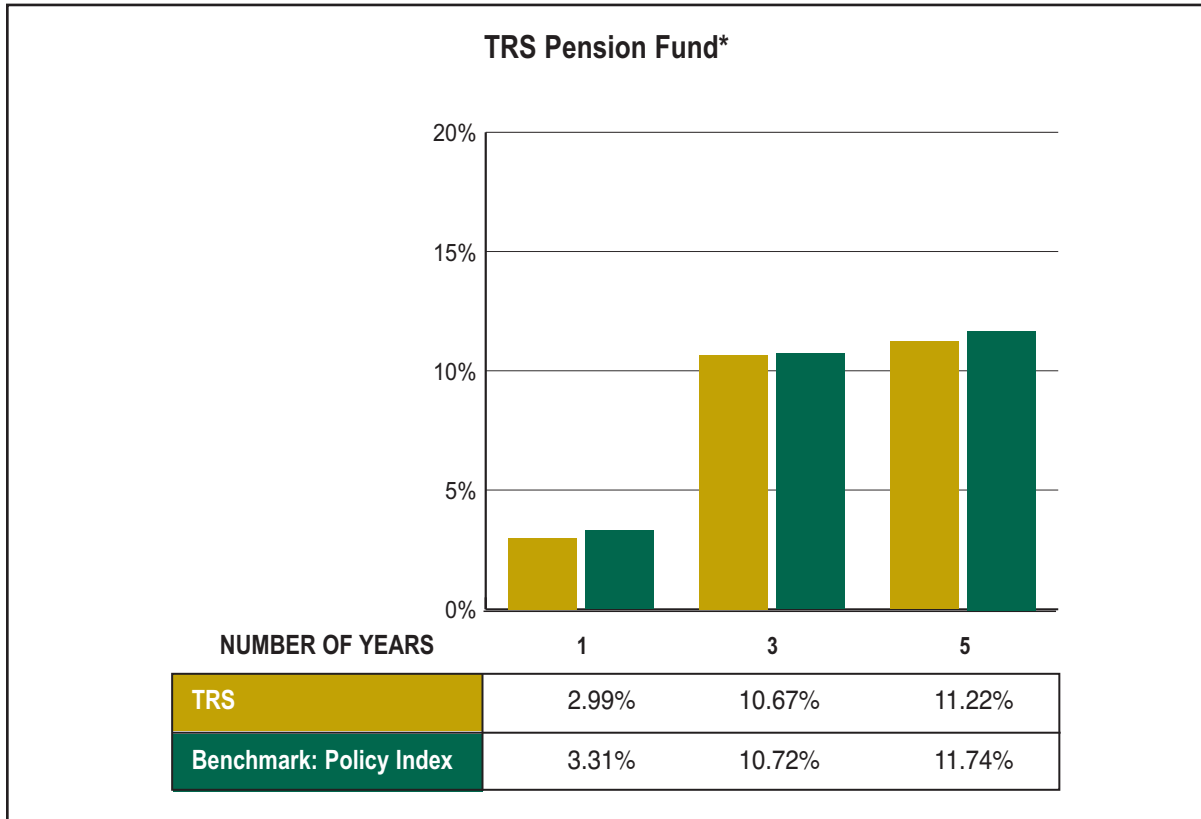
10 Includes income; unmanaged index based on the common stock of 500 large capitalization U.S. companies. No fees reflected.

11 Performance calculations reflect time-weighted compound returns.

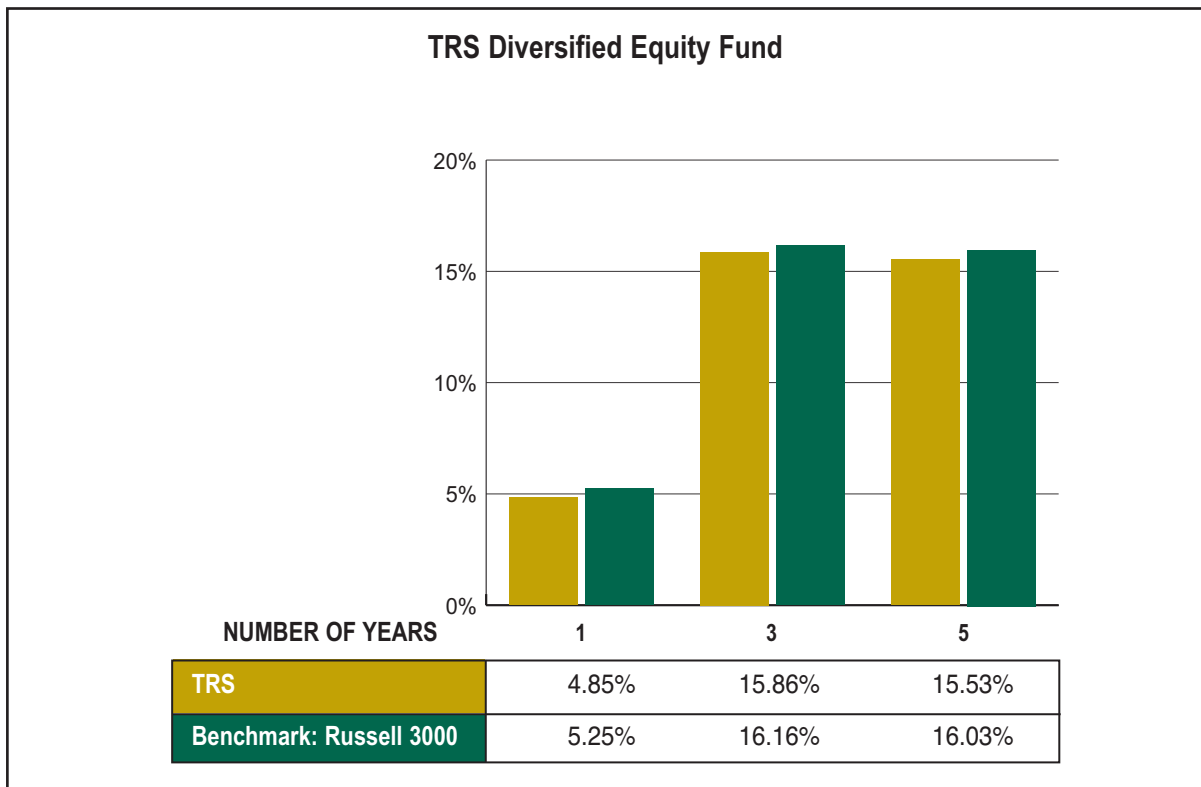
The above information has been gathered from reliable sources, but TRS can only take responsibility for the accuracy of the information concerning its own investment programs.

**ANNUALIZED INVESTMENT RESULTS**

As of June 30, 2015

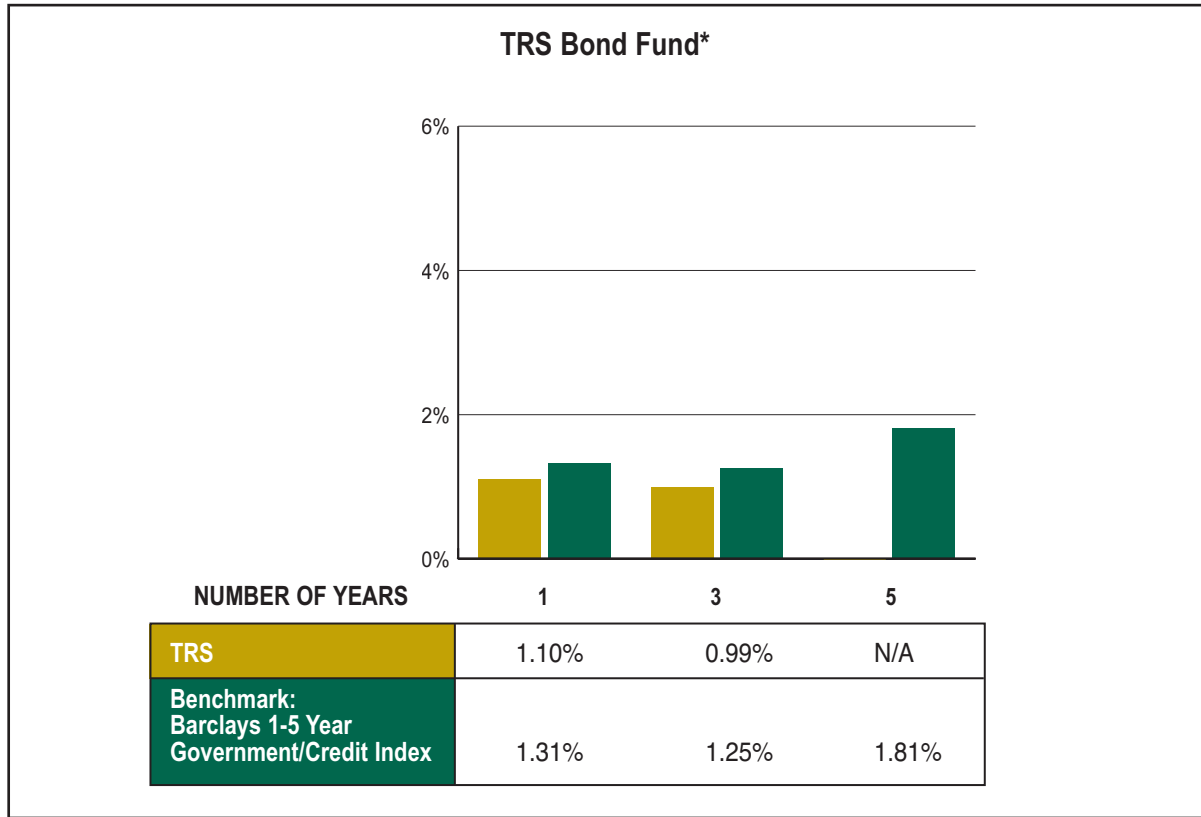


\* Reflects TRS Pension Fund's Gross Return.

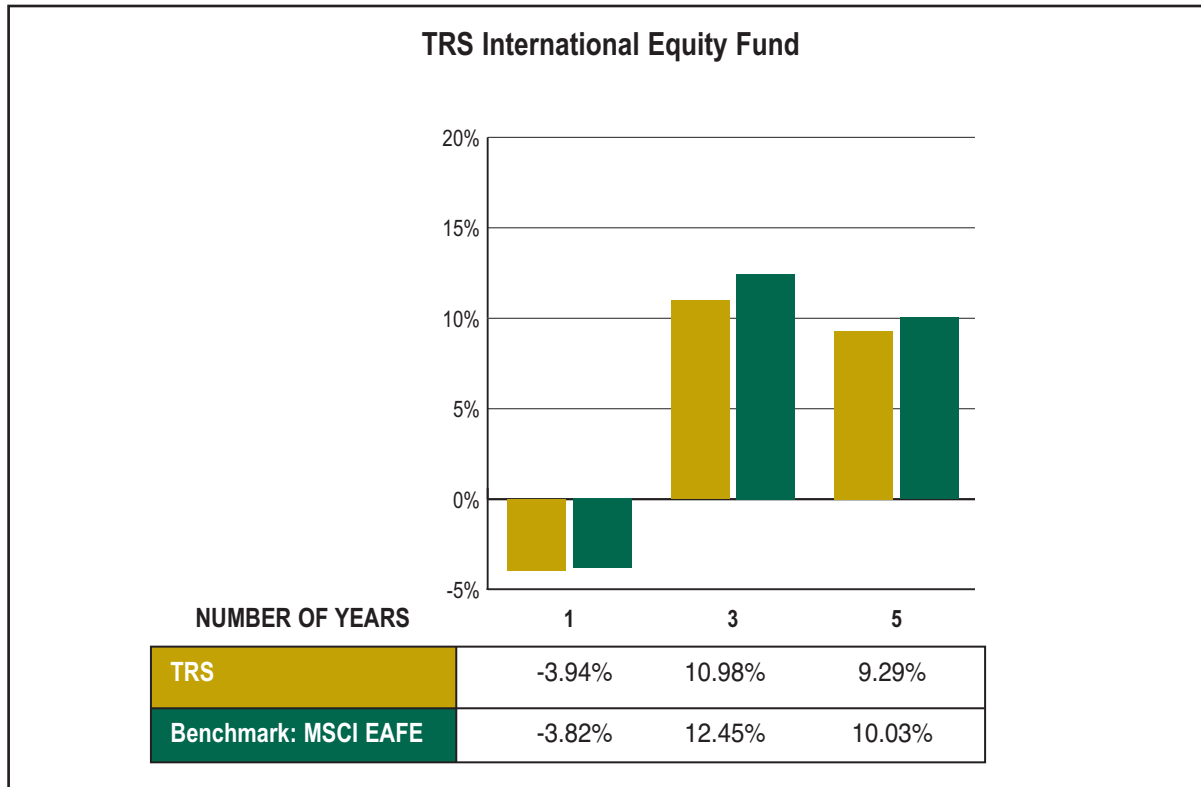


**ANNUALIZED INVESTMENT RESULTS (Continued)**

As of June 30, 2015



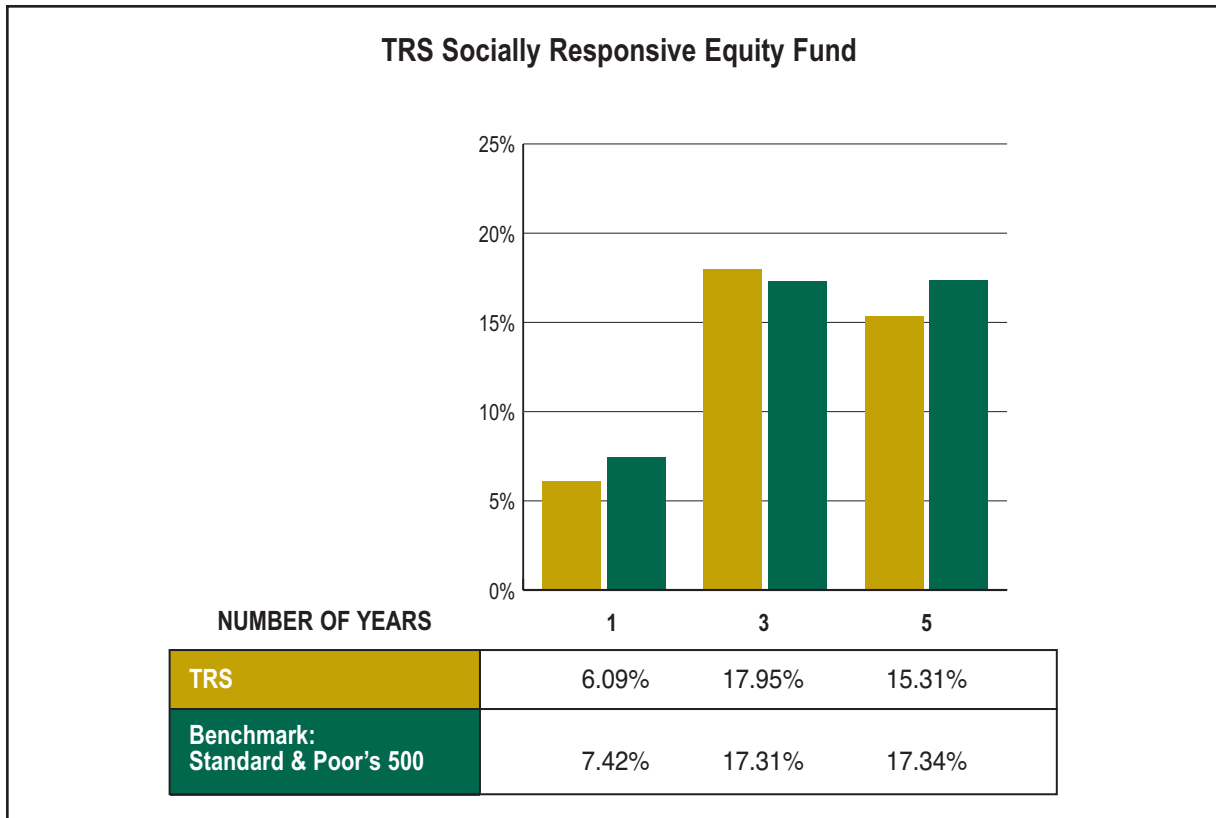
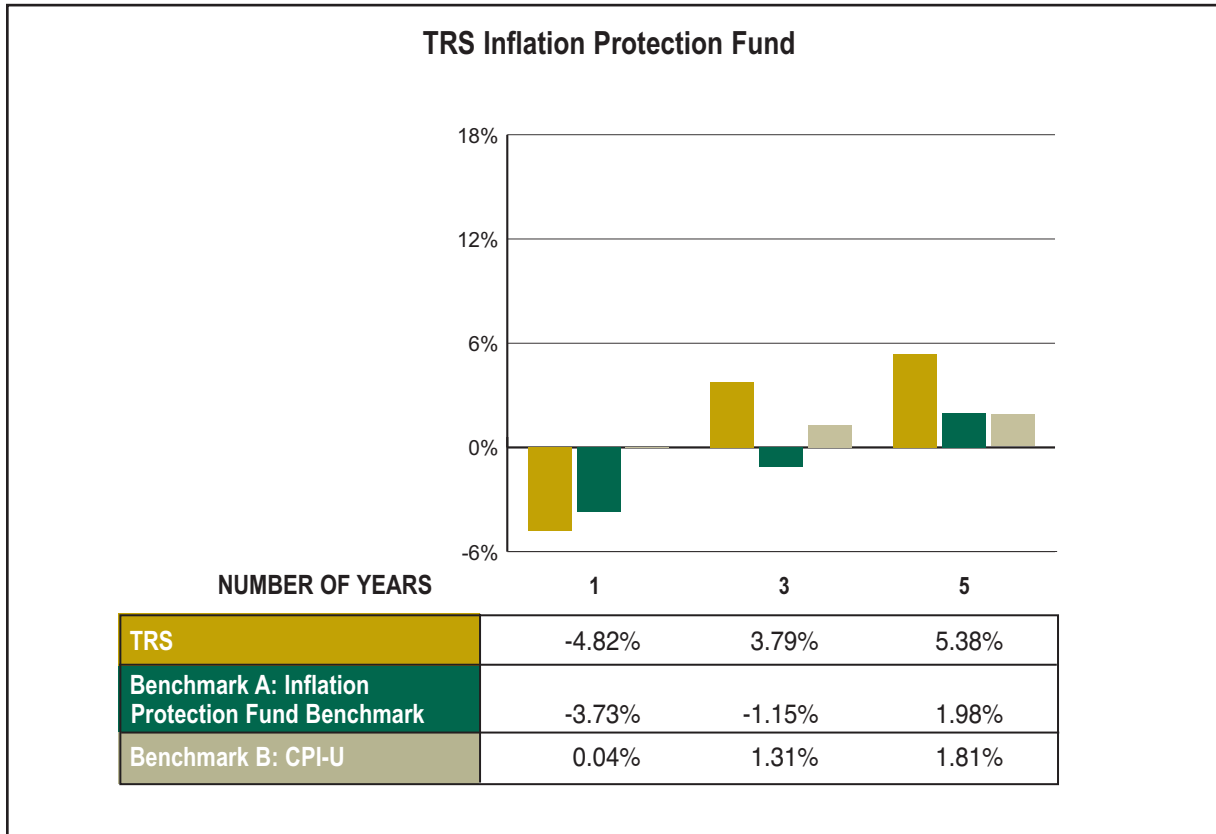
\*Reflects annualized performance beginning July 1, 2012. (As of January 1, 2012, the Stable-Value Fund became the Bond Fund.)





**ANNUALIZED INVESTMENT RESULTS (Continued)**

As of June 30, 2015



TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**INVESTMENT SUMMARY (QPP & TDA)**

As of June 30, 2015

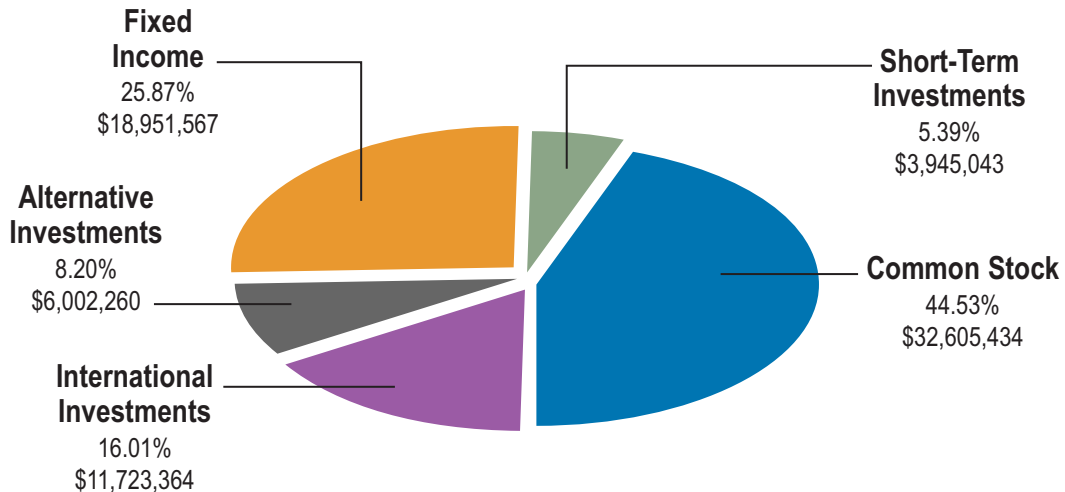
Type of Investment	Market Value <i>In Thousands</i>	Percent of Total Market Value
Fixed Income:		
Government Bonds	\$ 6,932,469	9.47%
Corporate Bonds	8,562,860	11.69
TIPS	1,393,516	1.90
Mortgages	406,054	0.55
Misc. Fixed Income	1,656,668	2.26
<b>Total Fixed Income</b>	<b>\$18,951,567</b>	<b>25.87%</b>
Common Stock:		
Financial & Utility	\$7,578,540	10.35%
Basic Industry	7,503,574	10.25
Consumer & Service	12,768,133	17.44
Technological	3,947,757	5.39
Other	807,430	1.10
<b>Total Common Stock</b>	<b>\$32,605,434</b>	<b>44.53%</b>
<b>International Investments</b>	<b>\$11,723,364</b>	<b>16.01%</b>
<b>Alternative/Private-Equity Investments</b>	<b>\$6,002,260</b>	<b>8.20%</b>
<b>Short-Term Investments</b>	<b>\$3,945,043</b>	<b>5.39%</b>
<b>Total Investments</b>	<b>\$73,227,668*</b>	<b>100.00%</b>

\* Excludes \$2,438,757 in securities lending.

**TOTAL INVESTMENTS ASSET ALLOCATION\***

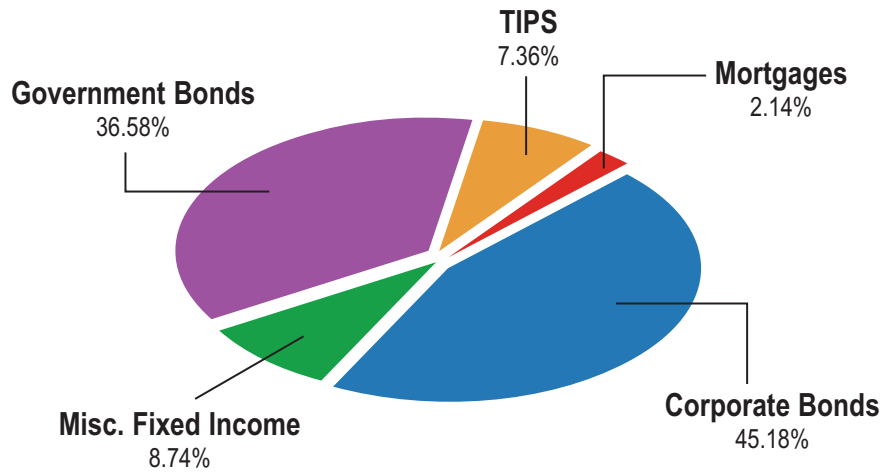
As of June 30, 2015

*In Thousands*



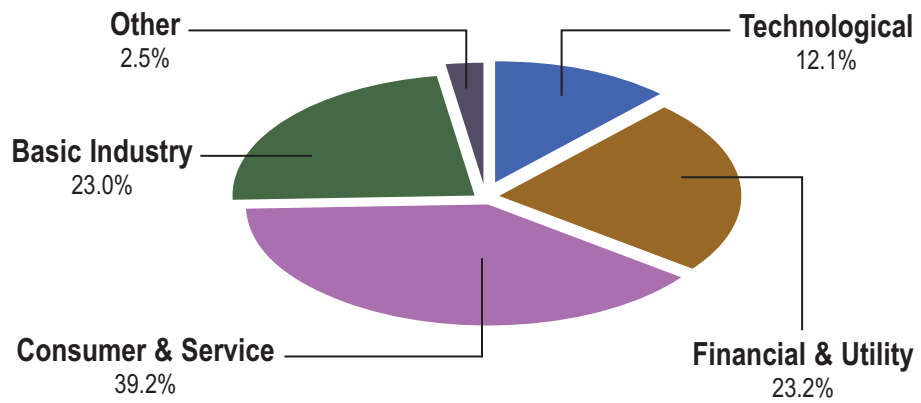
### FIXED-INCOME INVESTMENTS ASSET ALLOCATION

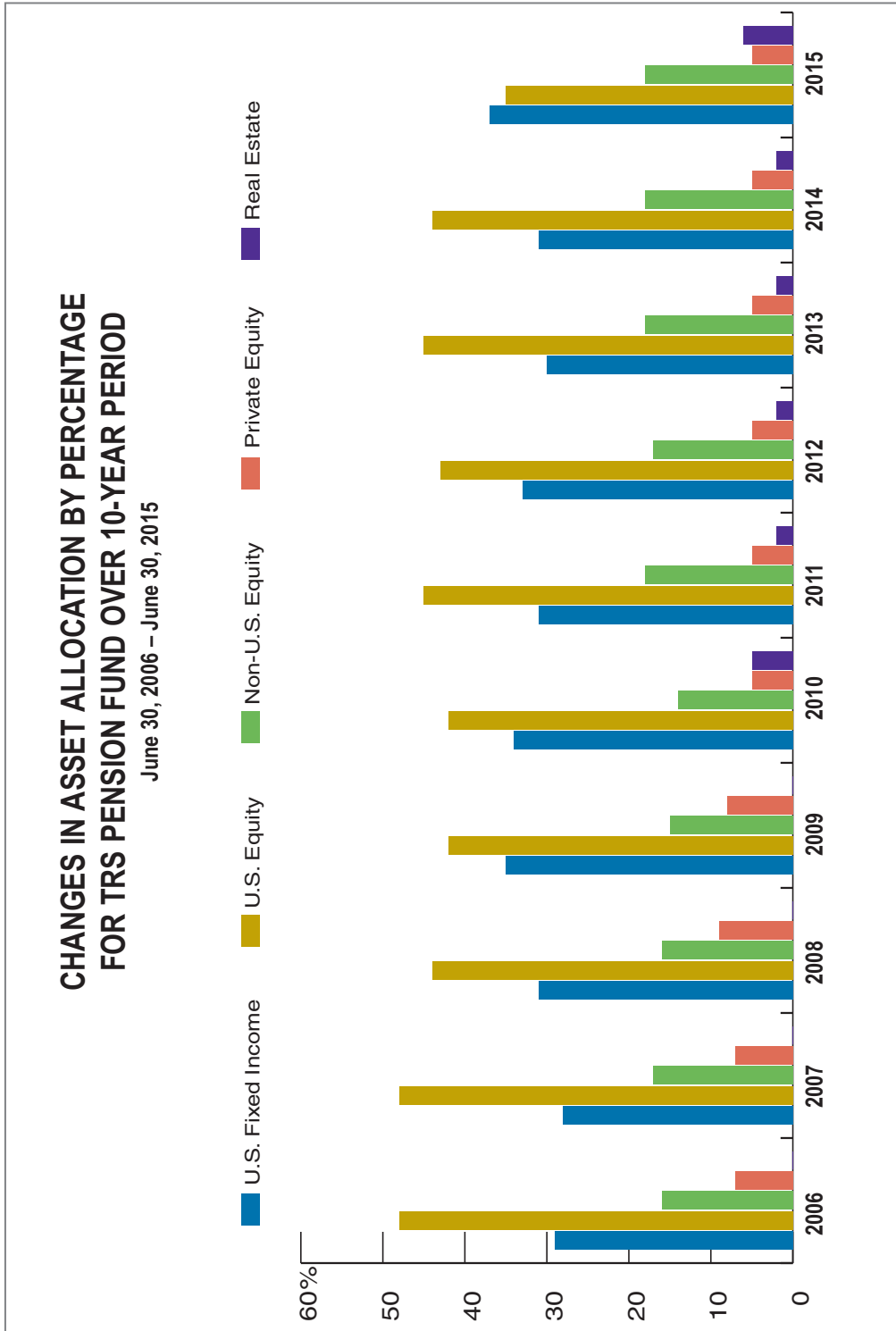
As of June 30, 2015



### EQUITY INVESTMENTS ASSET ALLOCATION

As of June 30, 2015





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

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)  
YEAR ENDED JUNE 30, 2015**

INVESTMENT MANAGERS		QPP	TOTAL
<b>FIXED ANNUITY PROGRAM</b>			
<b>Fixed Income</b>			
Advent	Investment Manager	\$2,416,869	\$2,416,869
Victory Conv Bonds	Investment Manager	879,329	879,329
Ambassador	Investment Manager	14	14
Babson BL	Investment Manager	1,195,262	1,195,262
Blackrock	Investment Manager	1,215,459	1,215,459
Barrow Hanley - Credit	Investment Manager	638,445	638,445
Credit Suisse BL	Investment Manager	755,072	755,072
Fort Washington	Investment Manager	272,295	272,295
GIA	Investment Manager	80,244	80,244
Goldman Sachs - Mortgage	Investment Manager	112,729	112,729
Guggenheimbl	Investment Manager	1,429,630	1,429,630
Hillswick	Investment Manager	39,054	39,054
Looms & Sayles Co., L.P.	Investment Manager	1,054,321	1,054,321
Neuberger Berman - Mortgage	Investment Manager	2,190,358	2,190,358
New Century	Investment Manager	99,536	99,536
Oaktree	Investment Manager	1,194,317	1,194,317
Penn	Investment Manager	476,124	476,124
Prudential - Credit	Investment Manager	451,826	451,826
Pugh Cap	Investment Manager	78,815	78,815
Ramirez Asset	Investment Manager	96,875	96,875
Shenkman Cap.	Investment Manager	781,919	781,919
Smith Breeden - Mortgage	Investment Manager	187,842	187,842
State Street - Govnt	Investment Manager	177,991	177,991
Stone Harbor	Investment Manager	2,087,879	2,087,879
T. Rowe Price Associates Inc.	Investment Manager	2,898,305	2,898,305
Taplin, Canida, Habacht	Investment Manager	875,556	875,556
Voya BL	Investment Manager	784,808	784,808
Wells BL	Investment Manager	683,645	683,645
Wellington - Mortgage	Investment Manager	400,962	400,962
<b>Domestic Equity</b>			
Adelante Cap. Management	Investment Manager	1,084,450	1,084,450
Sec Capital	Investment Manager	1,020,259	1,020,259
Attucks Asset Management - AF	Investment Manager	480,617	480,617
Capital Prospects - CP	Investment Manager	427,436	427,436
Cohen & Steers - REITS	Investment Manager	966,373	966,373
FIS Equity Russ 3000	Investment Manager	983,644	983,644
Progress Asset Management - PIM	Investment Manager	887,092	887,092
Brown AM	Investment Manager	2,663,439	2,663,439
Seizert Cap	Investment Manager	639,693	639,693
Profit Inv. Mgmt	Investment Manager	744,514	744,514
State Street R3000	Investment Manager	615,807	615,807
State St GA S&P 400	Investment Manager	129,790	129,790
Urdang - REIT	Investment Manager	970,063	970,063
Walden Asset Mgmt	Investment Manager	322,385	322,385
Blackrock R2000 Growth	Investment Manager	127	127
Blackrock R2000 Value	Investment Manager	60	60
Blackrock R1000 Growth	Investment Manager	406	406
Blackrock R1000 Value	Investment Manager	189,629	189,629

*Continued on page 88*

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

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2015 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
<b>International Fund</b>			
Acadian	Investment Manager	\$1,021,633	\$1,021,633
Ballie Gifford EM EQ	Investment Manager	9,954,663	9,954,663
Blackrock	Investment Manager	829,135	829,135
Causeway	Investment Manager	3,614,640	3,614,640
CONY Baillie MTA	Investment Manager	3,590,583	3,590,583
CONY GT Blackrock MTA	Investment Manager	5,146,640	5,146,640
CONY Walter Scott MTA	Investment Manager	3,777,325	3,777,325
CONY Sprucegrove MTA	Investment Manager	627,664	627,664
DFA Em Reit MTA	Investment Manager	10,008,326	10,008,326
Eaton Vance Em MTA	Investment Manager	10,779,720	10,779,720
European Reit MTA	Investment Manager	120,541	120,541
MS Reit	Investment Manager	2,735,104	2,735,104
MSCI World SSGA MTA	Investment Manager	16,640	16,640
Pyramis	Investment Manager	1,860,627	1,860,627
Sprucegrove Invest	Investment Manager	2,448,247	2,448,247
SSGA Eafe Small Cap	Investment Manager	110,565	110,565
SSGA MTA	Investment Manager	546,032	546,032
F & C MTA	Investment Manager	869,919	869,919
<b>TIPS MTA Fund</b>			
Blackrock TIPS MTA	Investment Manager	162,049	162,049
Pimco TIPS MTA	Investment Manager	297,109	297,109
State Street TIPS MTA	Investment Manager	17,572	17,572
<b>Alternative Investment</b>			
ACS (CONY ETI)	Investment Manager	253,646	253,646
AFL - CIO Housing Investment	Investment Manager	923,833	923,833
Acon Equity Partners	Investment Manager	74,483	74,483
Aisling Capital Partners	Investment Manager	165,101	165,101
Almanac Realty Sec.	Investment Manager	993,959	993,959
Altaris Health Parts Fund	Investment Manager	150,759	150,759
American Sec Ptn VI	Investment Manager	985,273	985,273
Angelo Gordon Ct St Ptn LP	Investment Manager	1,062,937	1,062,937
Apollo Centre St Ptn	Investment Manager	676,640	676,640
Apollo Investment Fund	Investment Manager	1,870,048	1,870,048
Apollo Real Estate	Investment Manager	38,593	38,593
ARES Corp. Opp Fund	Investment Manager	2,473,829	2,473,829
Ardian Secondary	Investment Manager	280,000	280,000
Arsenal Capital Partners, II	Investment Manager	91,232	91,232
Aurora Eq	Investment Manager	4,607	4,607
AVE Special Situations FD V	Investment Manager	968,296	968,296
Avista Capital Partners, L.P.	Investment Manager	221,780	221,780
AXA Secondary Fd	Investment Manager	400,000	400,000
BC Eur Cap.	Investment Manager	1,029,309	1,029,309
BDCM Opp Fund	Investment Manager	260,138	260,138
Blackstone Group	Investment Manager	697,008	697,008
Blackstone Mezz Partners	Investment Manager	17,461	17,461
Bridgepoint Europe	Investment Manager	523	523
Brightwood Capital	Investment Manager	1,183,654	1,183,654
Capital Partners PE	Investment Manager	157,357	157,357
Carlyle Group	Investment Manager	1,421,694	1,421,694

Continued on page 89

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

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)  
YEAR ENDED JUNE 30, 2015 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
Catterton Partners VI , L.P.	Investment Manager	\$203,750	\$203,750
CCMP Capital Investors II	Investment Manager	106,692	106,692
Centerbridge Capital	Investment Manager	42,282	42,282
City Invest. Fund	Investment Manager	288,277	288,277
CO Invest Prtnr Eur	Investment Manager	127,670	127,670
Constellation Ventures III	Investment Manager	66,874	66,874
Contrarian CA	Investment Manager	502,313	502,313
Craton Equity Investors	Investment Manager	636,586	636,586
Credit Suisse Emergind Mgn Co	Investment Manager	109,100	109,100
Credit Suisse Emergind Mgn Fd	Investment Manager	593,840	593,840
Crestview Prtnr	Investment Manager	1,290,828	1,290,828
CVC Capital Partners	Investment Manager	1,534,410	1,534,410
Divco West Fd	Investment Manager	1,124,663	1,124,663
DRA Growth & Income Fd	Investment Manager	36,887	36,887
EQT VI LP	Investment Manager	1,138,846	1,138,846
Fairview Capital Partners	Investment Manager	174,473	174,473
Fairview Emerg Mgrs Fd LP	Investment Manager	138,744	138,744
FDG Capital Partners L.L.C.	Investment Manager	469,771	469,771
First Reserve Fund	Investment Manager	1,413,942	1,413,942
Freeman Spogli & Co., Inc.	Investment Manager	71,072	71,072
Fortress Ctr St	Investment Manager	1,337,049	1,337,049
Fourth Cinven Fund	Investment Manager	900,500	900,500
FTV Capital	Investment Manager	348,250	348,250
GI Partners Fund II L.P.	Investment Manager	559,193	559,193
GSC Recovery III	Investment Manager	42,349	42,349
GSO Cap. Opp	Investment Manager	2,393,142	2,393,142
Goldentree OD MTA	Investment Manager	1,242,991	1,242,991
Green Eq Inv	Investment Manager	285,206	285,206
Grey Mt Partners Fund	Investment Manager	128,511	128,511
Halyard Capital II	Investment Manager	190,042	190,042
ICV Partners	Investment Manager	248,644	248,644
Incline Equity Partners	Investment Manager	112,142	112,142
InterMedia Partners VII, L.P.	Investment Manager	420,265	420,265
ING Clarion	Investment Manager	98,392	98,392
J.P. Morgan Inversment Management Inc.	Investment Manager	416,204	416,204
KTR Ind Fund	Investment Manager	4,979,523	4,979,523
Landmark Equity Partners	Investment Manager	796	796
Lee Equity Partners	Investment Manager	251,303	251,303
Leeds Eq Partners V	Investment Manager	211,681	211,681
Levine Leichtman Cap	Investment Manager	151,893	151,893
Lincolnshire Management, Inc.	Investment Manager	559,977	559,977
Lone Star Fund	Investment Manager	9,593,676	9,593,676
Marathon Ctr St Partners	Investment Manager	3,303,234	3,303,234
Midocean Partners III	Investment Manager	545,269	545,269
Mill City Cap.	Investment Manager	420,131	420,131
Nautic Partners VI	Investment Manager	108,395	108,395
New Mainstream	Investment Manager	333,042	333,042
New Mountain Investments	Investment Manager	88,600	88,600
ONEX Partners III	Investment Manager	173,759	173,759
Oak Hill Ctr St Partners	Investment Manager	1,553,172	1,553,172
Oaktree Opp Fund	Investment Manager	1,599,763	1,599,763

*Continued on page 90*

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

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)  
YEAR ENDED JUNE 30, 2015 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
Olympus Growth Fund	Investment Manager	\$1,519,927	\$1,519,927
Paladin Homeland Security	Investment Manager	508,369	508,369
Palladium Equity Partners III	Investment Manager	99,933	99,933
PCGAM Clean Energy & Tech Fund	Investment Manager	66,839	66,839
Pegasus Partners	Investment Manager	1,598,734	1,598,734
Perseus Partners VII	Investment Manager	48,020	48,020
Pine Brook Cap Partners	Investment Manager	213,222	213,222
Platinum Equity Cap Partners	Investment Manager	483,476	483,476
PRE Almanac Realty	Investment Manager	340,543	340,543
PRE Amer Value	Investment Manager	194,247	194,247
PRE Blackstone Pre Ptn Eur	Investment Manager	40,705	40,705
PRE Blackstone RE	Investment Manager	6,844,535	6,844,535
PRE Brookfield St RE Partners	Investment Manager	4,054,576	4,054,576
PRE Canyon Johnson UBN III	Investment Manager	1,447,437	1,447,437
PRE Capri Urban Investors, L.P.	Investment Manager	536,063	536,063
PRE Carlyle	Investment Manager	171,612	171,612
PRE Carlyle Realty Fd	Investment Manager	211,209	211,209
PRE Emmes Am Co	Investment Manager	1,036,596	1,036,596
PRE Hudson Sep	Investment Manager	607,511	607,511
PRE H/2 SP OPP FD	Investment Manager	1,318,521	1,318,521
PRE Heitman America Fund	Investment Manager	232,403	232,403
PRE JPMC Strategic Property Fund	Investment Manager	1,351,589	1,351,589
PRE JPMC Special Situations Fund	Investment Manager	246,335	246,335
PRE Lasalle US Prty Fd	Investment Manager	321,049	321,049
PRE Prologis Targeted US	Investment Manager	174,147	174,147
PRE RFM NYCRC Sandy	Investment Manager	2,327,511	2,327,511
PRE RREEF America	Investment Manager	451,714	451,714
PRE Westbrook RE Fd	Investment Manager	426,668	426,668
PRE Silverpeak RE Partners	Investment Manager	75,242	75,242
PRE Stockbridge RE III	Investment Manager	224,336	224,336
PRE Taconic NY	Investment Manager	416,808	416,808
PRE Urban Amercs	Investment Manager	60,891	60,891
PRE Ventures	Investment Manager	603,943	603,943
Prisa	Investment Manager	654,770	654,770
Prudential Privest	Investment Manager	85,968	85,968
Quadrangle Capital Partners II	Investment Manager	214,565	214,565
Quaker BioVentures II	Investment Manager	328,253	328,253
Raine Partners	Investment Manager	243,153	243,153
Relativity Fund	Investment Manager	90,102	90,102
Riverstone/Carlyne GLB	Investment Manager	97,501	97,501
RLJ Equity Partners Fd	Investment Manager	66,841	66,841
SCP Private Equity Partners	Investment Manager	39,905	39,905
SCP Vitalife Partners II	Investment Manager	108,655	108,655
Siris Capital Group	Investment Manager	82,087	82,087
Snow Phipps & Guggenheim	Investment Manager	206,220	206,220
Solera Capital, L.L.C.	Investment Manager	94,781	94,781
Starvest Prtnrs II	Investment Manager	269,682	269,682
Terra Firma Cap III	Investment Manager	143,163	143,163
Thomas McNerney Ptn	Investment Manager	47,312	47,312
Thor Urban Propty FD II	Investment Manager	1,198,562	1,198,562
Torchlight Investors	Investment Manager	963,968	963,968

*Continued on page 91*



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

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)  
YEAR ENDED JUNE 30, 2015 (Continued)**

<b>INVESTMENT MANAGERS</b>		<b>QPP</b>	<b>TOTAL</b>	
UBS Real Estate Separate Account	Investment Manager	\$1,327,042	\$1,327,042	
Vista Equity Partners	Investment Manager	3,689,411	3,689,411	
Vista Foundation Fd	Investment Manager	370,605	370,605	
VSS Communication Partners IV	Investment Manager	159,199	159,199	
Warburg Pincus Pe	Investment Manager	1,721,415	1,721,415	
Webster Capital	Investment Manager	307,705	307,705	
Yucaipa American Alliance Fund	Investment Manager	611,034	611,034	
Yucaipa Corporation Initiatives II	Investment Manager	171,536	171,536	
Trident V. LP	Fee Refund	(193,193)	(193,193)	
Trilantic Cap Ptnrs	Fee Refund	(107,796)	(107,796)	
Hamilton Lane	Consultant	1,000,000	1,000,000	
The Townsend Group	Consultant	462,495	462,495	
Rocaton - Pension Fund	Consultant	439,167	439,167	
Aksia	Consultant	3,045	3,045	
Courtland Partners	Consultant	137,385	137,385	
Stepstone - Infrastructure	Consultant	106,471	106,471	
Ernst & Young	Consultant	22,983	22,983	
Comptroller	Consultant	2,839,460	2,839,460	
Colon & Peguero	Legal Fees	8,588	8,588	
Corporation Svs Co	Legal Fees	619	619	
Cox, Castle & Nicholson	Legal Fees	25,689	25,689	
European Commercial RE Loans				
General Partners	Legal Fees	150,000	150,000	
Foster, Pepper	Legal Fees	24,268	24,268	
Morgan, Lewis & Bockius	Legal Fees	98,765	98,765	
Nixon Peabody	Legal Fees	37,014	37,014	
Pillsbury Winthrop Shaw Pittman	Legal Fees	13,233	13,233	
Orrick, Herrington & Sutcliffe	Legal Fees	3,604	3,604	
Reinhart Boerner Van Deuren	Legal Fees	17,344	17,344	
Seward & Kissel	Legal Fees	10,854	10,854	
State Street	Custodial Bank	2,569,603	2,569,603	
<b>DIVERSIFIED EQUITY FUND AND INTERNATIONAL EQUITY FUND</b>		<b>TDA</b>		
Advent Conv Bond	Investment Manager	\$319,357	\$581,721	\$901,078
Amalgamated - S&P 1500	Investment Manager	15,131	27,563	42,694
Analytic Investors	Investment Manager	192,625	350,873	543,498
Aronson Johnson Ortiz (Ajo)	Investment Manager	264,434	481,677	746,111
Blackrock Intl Eafe Iidx	Investment Manager	96,553	175,874	272,427
Cardinal Sm Cap Val	Investment Manager	176,963	322,344	499,307
Clearbridge All Cap-Aggr. Gwth	Investment Manager	500,819	912,262	1,413,081
Crm-Mid Value	Investment Manager	130,739	238,147	368,886
Delaware Inv Mgmt Mid-Cap Gwth	Investment Manager	821,646	1,496,661	2,318,307
Diamond Hill Capital Magt Inc	Investment Manager	391,020	712,257	1,103,277
Gmo-Global Asset Alloc	Investment Manager	8,515	15,510	24,025
Intech-Super Fund	Investment Manager	305,100	555,752	860,852
Mcm - Russ 3000	Investment Manager	62,556	113,948	176,504
Mfs Investment Advisors Intl Equity	Investment Manager	279,821	509,705	789,526
New South Capital Magt Inc	Investment Manager	454,138	827,234	1,281,372
Pyramis Global	Investment Manager	285,527	520,098	805,625

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TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)  
YEAR ENDED JUNE 30, 2015**

<b>INVESTMENT MANAGERS</b>		<b>QPP</b>	<b>TDA</b>	<b>TOTAL</b>
Shapiro - Small Cap	Investment Manager	\$230,920	\$420,629	\$651,549
Sound Shore-Value	Investment Manager	196,300	357,568	553,868
Sprucegrove Inv't Mgt Ltd	Investment Manager	203,703	371,054	574,757
Walter Scott - Int'l	Investment Manager	231,658	421,973	653,631
Wasatch Advisors Inc	Investment Manager	337,948	615,585	953,533
Wellington Mgt Co, Llp Iep	Investment Manager	665,012	1,211,344	1,876,356
Zazove Conv Bond	Investment Manager	454,143	827,239	1,281,382
JPMorgan Chase Bank	Custodial Bank	84,628	154,152	238,780
<b>BOND FUND</b>				
NISA Investment Advisors	Investment Manager	70,164	481,389	551,553
JPMorgan Chase Bank	Custodial Bank	490	3,362	3,852
<b>INFLATION PROTECTION FUND</b>				
Fidelity Strategic R.Fund	Mutual Fund			
JPMorgan Chase Bank	Custodial Bank	26	167	193
<b>SOCIALLY RESPONSIVE EQUITY FUND</b>				
Neuberger Berman SRF	Investment Manager	37,263	341,412	378,675
JPMorgan Chase Bank	Custodial Bank	192	1,764	1,956
Groom Law Group - Variable**	Legal Fees	17,261	38,380	55,641
Rocaton - Variable**	Consultant	18,959	34,535	53,495
<b>Total Investment Expenses*</b>		<b>\$209,357,634</b>	<b>\$13,122,178</b>	<b>\$222,479,812</b>

\* Total Investment Fees do not include \$6,396,397 and \$10,363,898 reductions in the QPP's and the TDA Program's variable-return funds' provision for expenses.

\*\* Prior CAFRs included in provision for expenses figure.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)  
FISCAL YEAR ENDED JUNE 30, 2015**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Abel Noser Corporation	73,770	\$0.02	\$1,544
Able Noser	29,188	0.01	338
Abn Amro Clearing Bank N.V.	10,139	0.04	441
Academy Securities Inc	181,949	0.02	3,640
American Portfolios Finial	2,783	0.05	139
Aros Securities Ab	15,953	0.01	102
Autrepat-Div Re	520	0.10	50
Avondale Partners LLC	55,038	0.04	1,960
B.Riley &Co., LLC	38,352	0.03	1,028
Baader Bank Ag	128,162	0.04	4,820
Banco Santander Central Hispano	10,463,100	0.01	84,419
Bank J.Vontobel Und Co. Ag	13,445	0.86	11,518
Bank Of New York	10,900	0.04	436
Barclays Capital	4,179,066	0.01	56,165
Barclays Capital Inc	11,590	0.03	292
Barclays Capital Inc.	130,894	0.03	4,126
Barclays Capital Inc./LE	3,653,566	0.01	19,162
Barclays Capital Le	1,456,639	0.03	47,712
Barrington Research Associates Inc.	18,064	0.03	556
Bb&T Securities, LLC	41,528	0.04	1,593
Blaylock Robert Van LLC	572,002	0.03	15,033
Bloombergtradebook LLC	267,511	0.01	3,997
Bmo Capital Markets	391,012	0.02	8,520
Bnp Paribas Peregrine Securities	10,837	0.15	1,670
Bnp Paribas Securities (Asia) LTD.	1,427,007	0.01	9,183
Bnp Paribas Securities India Private Lim	593,226	0.03	16,945
Bnp Paribas Securities Service	145,313	0.03	3,666
Bnp Paribas Securities Services	345,727	0.01	4,296
Bny Brokerage	275,600	0.03	8,221
Bny Convergen Execution Solutions LLC	54,504,624	0.00	131,305
Bny Convergen Ljr	1,589	0.02	32
Bradesco S.A Ctm	89,440	0.01	969
Brean Capital LLC	259,365	0.01	3,773
Btig, LLC	219,992	0.03	5,668
Buckingham Research Group Inc	30,703	0.04	1,254
Cabrera Capital Markets	1,251,903	0.02	24,182
Cabrera Capital Markets LLC	8,109,000	0.00	15,381
Caceis Bank Deutschland Gmbh	12,796	1.61	20,620
Canaccordgenuity Inc.	64,919	0.04	2,619
Canadian Imperial Bank Of Commerce	44,024	0.06	2,438
Cantor Fitzgerald & Co/Castleoak Sec	56,161	0.03	1,685
Cantor Fitzgerald & Co.	1,112,866	0.02	23,438
Cantor Fitzgerald/Cantor Clearing Serv	23,468,858	0.01	130,089
Capital Institutional Svcs Inc Equities	410,586	0.03	13,255
Celfin Capital Sa Corredores De Bolsa	1,821,625	0.00	3,419
Ceska Sportelna	337,990	0.02	7,473
Cheevers & Co. Inc.	726,958	0.03	22,882

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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, 2015 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Cibc World Mkts Inc	42,900	\$0.04	\$1,572
Cimb Securities (HK) LTD.	1,495,951	0.00	3,603
Citation Group	597,866	0.04	23,942
Citibank Of Colombia	151,567	0.01	1,336
Citigroupgbl Marktet Koera Secs LTD	5,170	0.00	16
Citigroupglobal Markets Australia Pty	944	0.03	31
Citigroupglobal Markets Inc	4,056,683	0.02	86,603
Citigroupglobal Markets Inc Salomon Bro	9,900	0.04	396
Citigroupglobal Markets Inc.	24,755,105	0.00	41,285
Citigroupglobal Markets India	286,227	0.05	14,229
Citigroupglobal Markets Limited	22,150,048	0.01	126,945
Clsa Australia Pty LTD	2,724,602	0.01	14,235
Clsa Securities Korea LTD.	2,789	0.08	229
Clsa Singapore Pte LTD.	8,620,759	0.00	20,271
Compass Point Research & Trading, LLC	212,632	0.04	7,913
Convergexexecution Solutions LLC	2,253,882	0.03	68,854
Cornerstone Macro LLC	4,930	0.05	247
Correval S.A.	19,500	0.01	259
Cowen Andcompany, LLC	148,506	0.03	4,934
Craig - Hallum	306,833	0.03	8,343
Credibolsa Sociedad Agente	454,024	0.01	2,310
Credit Agricole Securities (USA) Inc	104,437	0.02	2,588
Credit Lyonnais Securities (Asia)	14,680,000	0.00	21,744
Credit Lyonnais Securities India	1,225,230	0.03	31,738
Credit Lyonnais Securities(Asia)	7,603,750	0.00	6,068
Credit Research & Trading LLC	41,212	0.04	1,520
Credit Suisse First Boston	26,826,636	0.00	15,371
Credit Suisse First Boston (Europe)	20,260	0.62	12,643
Credit Suisse Secs India Private LTD	1,577,685	0.00	4,025
Credit Suisse Securities (Europe) LTD	9,984,300	0.00	49,532
Credit Suisse Securities (USA) LLC	67,063,225	0.00	132,537
Cs First Boston (Hong Kong) Limited	193,100	0.01	1,780
Csfb Australia Equities LTD	149,220	0.01	925
Cuttone &Co.	11,375	0.02	228
Cuttone & Co, Inc	15,150	0.02	303
D Carnegie Ag	31,700	0.01	299
Daewoo Securities Co LTD	31,528	0.05	1,699
Daiwa Sbcm Europe	185,300	0.03	4,898
Daiwa Securities (HK) LTD.	735,001	0.01	4,990
Daiwa Securities America Inc	1,275,259	0.03	35,921
Daiwa Securities Sb Capital Markets	47,477	0.03	1,366
Danske Bank A.S.	95,764	0.04	4,260
Davidson D.A. & Company Inc.	62,831	0.03	1,995
Davy Stockbrokers	34,051,700	0.00	14,838
Dbs Vickers Securities (Singapore)	1,111,815	0.01	10,235
Deutsche Bank Ag London	1,658,571	0.01	19,611
Deutsche Bank Alex Brown	300	0.05	15

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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, 2015 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Deutsche Bank Securities Inc	18,871,863	\$0.00	\$51,627
Deutsche Eq In Prvt Lim Db	227,856	0.04	9,573
Deutsche Morgan Grenfell Secs	240,430	0.01	1,307
Deutsche Securities Asia Limited	107,500	0.00	328
Doughertycompany	109,135	0.03	3,089
Drexel Hamilton LLC	90,853	0.03	2,635
Dsp Merrill Lynch LTD	3,035,244	0.02	49,127
Evercore Group LLC	15,220	0.04	679
Exane S.A.	242,003	0.03	8,431
Exchange Offer (Non Cash)	704	0.04	25
Fbn Securities Inc	3,637	0.04	145
Fidelity Capital Markets	13,560	0.03	369
Fidelity Clearing Canada Ulc	63,000	0.02	1,260
Fig Partners LLC	33,223	0.02	664
Financialbrokerage Group (Fbg)	96,700	0.00	320
First Analysis Securities Corp	10,470	0.02	259
Flow Corretora De Mercadorias LTDA.	134,561	0.01	1,509
Fokus Bank Asa	81,659	0.00	176
Friedman Billings & Ramsey	21,329	0.05	984
G Trade Services LTD	23,047,021	0.00	55,459
Gabelli &Company	6,742	0.03	211
Global Hunter Securities	52,130	0.02	995
Goldman Sachs (India)	4,557,666	0.01	24,780
Goldman Sachs & Co	43,980,257	0.01	238,082
Goldman Sachs & Co Intl.	35,000	0.00	119
Goldman Sachs International	2,328,905	0.01	34,049
Goodbody Stockbrokers	208,177	0.03	6,407
Green Street Advisors	2,157,919	0.04	78,065
Green Street Advisors (UK) LTD	503,653	0.02	8,720
Guggenheim Capital Markets LLC	208,940	0.03	6,886
Hanover Nominees Limited	55,300	0.00	67
Hanwha Securities Seoul	12,843	0.02	221
Hibernia Southcoast Capital Inc	14,781	0.04	591
Hongkong And Shanghai Banking Corp	198,500	0.00	823
Hsbc Bankbrasil Sa Banco Multiplo	92,000	0.01	549
Hsbc Bankplc	16,076,150	0.00	77,024
Hsbc Securities	587,000	0.00	1,012
Hsbc Securities (USA) Inc.	5,774,778	0.00	11,207
Hsbc Securities India Holdings	2,619,007	0.00	9,742
Icap Do Brasil Dtvn LTDA	5,493,232	0.00	21,264
Icbc Fincl Svcs, Equity Clearance	6,960	0.02	156
Im Trust S.A. Corredores De Bolsa	3,550,346	0.00	1,829
Imperial Capital LLC	14,977	0.03	511
Industrial And Commercial Bank	6,943	0.03	206
Ing Bank N V	360,575	0.15	54,981
Instinet	3,654,654	0.01	31,307
Instinet Australia Clearing Srvs Pty LTD	768,748	0.01	4,952

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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, 2015 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Instinet LLC	15,781,786	\$0.00	\$40,366
Instinet Pacific Limited	63,092,386	0.00	24,647
Instinet Singapore Services Pt	1,274,400	0.00	4,484
Instinet U.K. LTD	9,296,939	0.01	115,522
Investec Bank Plc	849,478	0.01	7,283
Investec Securities LTD	134,753	0.01	1,994
Investment Technology Group Inc.	8,476,088	0.01	92,872
Investment Technology Group LTD	4,115,562	0.01	28,257
Isi Groupinc	759,442	0.04	29,939
ITG Australia LTD.	3,051,882	0.00	10,038
ITG Canada	246,677	0.01	2,014
ITG Inc	4,774	0.00	16
ITG Inc.	189,697	0.01	1,479
ITG Securities (HK) LTD	49,137,199	0.00	24,926
Ivy Securities, Inc.	2,779,582	0.04	113,527
J P Morgan India Private LTD	300,175	0.00	853
J P Morgan Securities Inc	21,811,417	0.00	8,974
J.P. Morgan Clearing Corp.	8,438,741	0.01	106,544
J.P. Morgan Securities (Taiwan) LTD	4,174,000	0.00	12,872
J.P. Morgan Securities Inc.	2,013,187	0.03	58,524
J.P. Morgan Securities Limited	2,611,896	0.00	12,784
J.P. Morgan Securities(Far East)LTD Seoul	43,389	0.03	1,502
Janney Montgomery, Scott Inc	120,495	0.02	2,913
Jefferies & Company Inc	39,354,909	0.00	162,790
Jefferiesindia Private Limited	236,347	0.01	1,193
Jefferiesinternational LTD	150,575,113	0.00	47,755
Jmp Securities	222,335	0.04	8,520
Jnk Securities Inc	4,577	0.03	152
Joh Berenberg Gossler And Co	603,291	0.04	24,164
Johnson Rice & Co	97,920	0.03	2,838
Jonestrading Institutional Services LLC	1,751,170	0.06	96,583
JP Morgansecurities Australia LTD	790,292	0.00	2,184
JP Morgansecurities Plc	5,271,354	0.01	51,909
JP Morgansecurities Singapore	395,859	0.00	940
JP Morgan Securities(Asia Pacific)LTD	4,755,893	0.00	8,261
Keefe Bruyette & Woods Inc	212,686	0.03	7,135
Kempen & Co N.V.	13,100	0.01	118
Kepler Equities Paris	95,288	0.03	2,601
Keybanc Capital Markets Inc	396,330	0.04	14,466
King, Cl,& Associates, Inc	565,264	0.03	16,465
Knight Clearing Services LLC	883,016	0.01	9,850
Knight Direct LLC	13,602	0.01	69
Knight Equity Markets L.P.	281,467	0.02	5,640
Korea Investment And Securities Co., LTD	89,744	0.02	1,444
Kotak Securities LTD	1,111,327	0.02	20,252
Ladenburghthalman & Co	14,948	0.02	345
Lazard Freres And Co LLC	16,430	0.05	822

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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, 2015 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Leerink Swann And Company	34,420	\$0.04	\$1,263
Lek Securities Corp	254	0.02	5
Liberum Capital Limited	261,721	0.01	2,611
Liquidnetinc	2,428,440	0.02	60,430
Longbow Securities LLC	12,826	0.03	426
Loop Capital Markets	20,335,126	0.02	323,896
Loop Capital Markets LLC	1,983,008	0.01	19,830
M Ramsey King Securities Inc	18,866	0.03	474
M Ramsey King Securities, Inc.	2,542,706	0.02	49,525
Macquariebank Limited	17,310,657	0.00	50,550
Macquariecapital (Europe) LTD	13,512	0.14	1,929
Macquariecapital (USA) Inc	217,770	0.01	3,076
Macquariecapital (USA) Inc.	243,668	0.02	6,062
Macquariesecurities (India) Pvt LTD	2,145,240	0.01	19,117
Macquariesecurities (USA) Inc	227,420	0.03	7,728
Macquariesecurities LTD Seoul	123,284	0.30	36,777
Mainfirstbank De	248,271	0.04	10,920
Maxim Group	45,729	0.03	1,558
Merrill Lynch	15,749	0.04	576
Merrill Lynch And Co Inc	2,832,634	0.00	10,279
Merrill Lynch Corredores De Bolsa S.A.	24,609,122	0.00	4,731
Merrill Lynch International	108,722,529	0.00	333,270
Merrill Lynch Pierce Fenner & Smith Inc	31,003,261	0.01	232,465
Merrill Lynch Pierce Fenner And S	15,878,536	0.00	51,470
Midwood Securities	10,642	0.04	426
Miller Tabak & Company, LLC	521	0.02	10
Mirae Asset Securities	96,588	0.08	7,913
Mischler Financial Group, Inc-Equities	58,461	0.02	1,072
Mitsubishi Ufj Securities (USA)	209,100	0.01	2,148
Mizuho International Plc	518,000	0.03	13,684
Mizuho Securities Asia Limited	56,600	0.01	671
Mizuho Securities USA Inc	151,800	0.04	5,588
Mkm Partners LLC	99,394	0.04	3,922
Morgan Stanley And Co International	1,049,721	0.04	37,281
Morgan Stanley And Co Intl Taipei Metro	16,279,050	0.00	23,061
Morgan Stanley And Co. International	7,210,645	0.01	40,877
Morgan Stanley Co Incorporated	28,639,297	0.01	213,826
Morgan Stanley India Company Pvt LTD	19,512,074	0.00	11,921
Morgan Stanley Securities Limited	376,273	0.01	5,241
National Financial Services Corp.	1,006,498	0.01	10,467
National Financial Services LLC	655	0.02	13
Needham &Company	239,814	0.04	8,947
Noble International Investments Inc.	8,074	0.03	237
Nomura Financial Advisory & Sec India	2,169,903	0.00	6,608
Nomura Financial And Investment	6,841	0.00	15
Nordea Bank Finland Plc	363,298	0.00	709
North South Capital LLC	13,437	0.04	500

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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, 2015 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Northlandsecurities Inc.	80,330	\$0.04	\$2,846
Oppenheimer & Co. Inc.	135,451	0.04	4,939
Pacific Crest Securities	132,491	0.04	5,020
Parel	127,441	0.08	10,726
Patersonssecurities LTD	19,825	0.00	87
Pavilion Global Markets LTD	2,727,679	0.00	7,039
Peel Huntllp	8,318	0.01	88
Penserra Securities	1,164,978	0.03	35,282
Pershing LLC	282,161,180	0.00	114,911
Pershing Securities Limited	1,091,402	0.01	16,137
Piper Jaffray	126,049	0.04	4,786
Rafferty Capital Markets LLC	28,395	0.04	994
Raymond James And Associates Inc	580,610	0.04	21,751
Rbc Capital Markets	618,962	0.04	21,741
Rbc Dominion Securities	215,437	0.03	6,084
Rbc Dominion Securities Inc.	193,530	0.04	7,450
Redburn Partners Llp	3,586,204	0.01	23,166
Robert W.Baird Co.Incorporate	844,417	0.04	31,326
Rosenblatt Securities LLC	46,187	0.04	1,678
Roth Capital Partners LLC	74,881	0.04	2,936
Royal Bank Of Canada (Australia)	35,786	0.00	98
Royal Bank Of Canada Europe LTD	4,376,559	0.00	21,778
Samsung Securities Co LTD	595,777	0.05	32,187
Samuel A Ramirez & Company Inc	184,437	0.01	1,495
Sandler Oneill & Part Lp	16,075	0.03	493
Sanford C. Bernstein And Co. LLC	6,010,256	0.00	16,955
Sanford C. Bernstein LTD	2,189,300	0.02	40,403
Sanford Cbernstein Co LLC	184,279	0.02	3,329
Santandercentral Hispano Bolsa	223,529	0.02	5,273
Sbcwor Ubs Limited (Or)	6,144	0.01	72
Scotia Capital (USA) Inc	31,209	0.04	1,176
Scotia Capital USA Inc	1,946,768	0.00	2,987
Seaport Group Securities, LLC	84,533	0.02	1,719
Sg Americas Securities LLC	70,515	0.01	396
Sg Asia Securities (Inoia) Pvt LTD	19,845,032	0.00	44,324
Sg Securities (London) LTD.	11,567,597	0.00	3,555
Sg Securities HK	57,093,251	0.00	25,408
Sidoti & Company LLC	296,836	0.04	10,481
Six Sis Ag	46,213	0.03	1,580
Skandinaviska Enskilda Banken London	213,768	0.00	135
Smbc Nikko Securities (Honk Kong) LTD	71,400	0.02	1,230
Societe Generale London Branch	7,105,156	0.01	72,333
Societe Generale Paris Zurich Bra	70,738	0.04	2,925
Spear, Leeds And Kellogg	6,043	0.01	42
Standard Chartered Securities Korea	592	0.04	24
State Street Bank And Trust Co	4,100	0.01	54
State Street Global Markets	6,138	0.03	176

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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, 2015 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
State Street Global Markets, LLC	96,746	\$0.01	\$1,365
Stephens, Inc.	262,787	0.04	10,528
Sterne Agee & Leach Inc.	211,563	0.04	8,810
Stifel Nicolaus & Co Inc	1,815,318	0.03	59,801
Stuart Frankel & Co Inc	1,021	0.04	41
Sturdivant And Co., Inc.	27,330	0.05	1,350
Suntrust Capital Markets Inc	1,489	0.05	74
Suntrust Capital Markets, Inc.	104,418	0.04	3,765
Taiwan Depository And Clearing Corp.	278,000	0.02	5,769
Taiwan Depository Clearing Corporation	1,313,000	0.02	30,010
Telsey Advisory Group LLC	883,360	0.04	32,624
Tera Menkul Degerler A.S.	2,514,359	0.00	2,688
The Benchmark Company, LLC	8,587	0.03	243
The Hongkong And Shanghai Bank	360,442	0.01	3,234
Topeka Capital Markets Inc	464,522	0.03	13,406
Topeka Capital Markets Inc.	31,994	0.03	960
Toronto Dominion Bank	138,000	0.01	1,253
Ubs Ag	10,822,522	0.01	134,928
Ubs Limited	28,709,547	0.01	154,814
Ubs Securities Asia LTD	3,829,985	0.00	11,170
Ubs Securities Canada Inc	319,184	0.01	2,269
Ubs Securities India Private LTD	1,777,498	0.08	136,270
Ubs Securities LLC	4,545,353	0.02	97,410
Ubs Securities Pte.LTD., Seoul	3,200	0.35	1,105
Ubs Warburg Australia Equities	1,030,230	0.00	1,343
Vandham Securities Corp	15,028	0.03	451
Warburg Dillon Read Securities Co	161,389	0.00	24
Wedbush Morgan Securities Inc	208,482	0.03	6,219
Weeden & Co.	3,300,669	0.03	96,925
Wells Fargo Prime Services, LLC	790,416	0.01	5,927
Wells Fargo Securities LLC	228,916	0.03	6,417
Wells Fargo Securities, LLC	1,764,163	0.03	45,369
Westminster Res Asoc/ Broadcort Capt Cl	1,907	0.02	38
William Blair & Company L.L.C	421,430	0.04	15,714
Williams Capital Group Lp (The)	11,838,593	0.01	87,490
Woori Investment Securities	212,087	0.01	1,625
Wunderlich Securities Inc.	30,754	0.03	1,056
Yamner & Co Inc (Cls Thru 443)	231,673	0.01	2,317
Zannex Securities	14,300	0.01	181

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

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

As of June 30, 2015

Par Value		Interest Rate	Due Date	Market Value
\$219,125,000	Federal Nat Mtg Assn TBA 30YR SFM	4.000%	07/14/2045	\$232,158,555
164,174,000	Federal Nat Mtg Assn TBA 30YRS SFM	3.500	07/14/2045	169,189,516
159,725,000	Federal Home Ln Mtg Corp TBA 30YR Gold SFM	3.500	07/14/2045	164,317,094
152,745,000	Govt Nat Mtg Assn II TBA JUMBOS 30YR	3.500	07/20/2045	158,526,398
151,593,563	Govt Nat Mtg Assn II Pool MA2826 G2	3.500	05/20/2045	158,146,953
119,550,000	Govt Nat Mtg Assn II TBA JUMBOS 30YR	4.000	07/20/2045	126,693,113
105,462,000	Federal Home Ln Mtg Corp TBA 30YR Gold SFM	4.000	07/14/2045	111,528,174
105,770,000	Govt Nat Mtg Assn II TBA JUMBOS 30YR	3.000	07/20/2045	106,769,527
100,660,000	Federal Home Ln Mtg Corp TBA 30YR Gold SFM	3.000	07/14/2045	100,058,053
94,632,000	Federal Nat Mtg Assn TBA 30YRS SFM	3.000	07/14/2045	94,279,023
72,115,000	United States Treasury Notes	3.375	05/15/2044	75,748,875

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

As of June 30, 2015

Company Name	Shares	Market Value
Apple Inc	1,468,208	\$184,149,988
Microsoft Corp	2,449,129	108,129,045
Exxon Mobil Corp	1,047,033	87,113,146
Biogen Inc	202,319	81,724,737
Johnson & Johnson	797,781	77,751,736
Allergan Plc	249,082	75,586,424
General Electric Co	2,727,986	72,482,588
JP Morgan Chase & Co	1,033,932	70,059,232
Unitedhealth Group Inc	563,993	68,807,146
Procter & Gamble Co/The	857,886	67,121,001
Wells Fargo & Co	1,185,102	66,650,136
Berkshire Hathaway Inc	476,900	64,910,859
Pfizer Inc	1,889,491	63,354,633
Merck & Co Inc	1,008,138	57,393,296
Amgen Inc	370,802	56,925,523
Citigroup Inc	1,024,444	56,590,287
Verizon Communications Inc	1,205,901	56,207,046
AT&T Inc	1,578,965	56,084,837
Walt Disney Co/The	478,193	54,580,949
Facebook Inc	632,466	54,243,446
Bank Of America Corp	3,053,388	51,968,664
Google Inc Cla	95,288	51,459,332
International Business Machines Corp	311,073	50,599,134
Qualcomm Inc	782,285	48,994,510
Chevron Corp	484,746	46,763,447

**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.

# Actuarial







OFFICE OF THE ACTUARY

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NEW YORK, NY 10007  
(212) 442-5775 • FAX: (212) 442-5777

SHERRY S. CHAN  
CHIEF ACTUARY

December 15, 2015

Retirement Board  
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 Comprehensive Annual Financial Report (CAFR) for the Fiscal  
Year Ended June 30, 2015

Dear Members:

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 and to establish 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.*, June 30, 2013 (Lag) actuarial valuation to determine Fiscal Year 2015 Employer Contributions (the Actuarial Contributions)).

Employers are required to contribute statutorily-required contributions (Statutory Contributions) and these contributions are generally funded by Employers within the appropriate fiscal year.

For Fiscal Year 2015, the Actuarial Contributions to TRS, are equal to those recommended by the Actuary for the New York City Retirement Systems (the Actuary) and represent the Statutory Contributions.

During June 2012 the Governmental Accounting Standards Board (GASB) released two new accounting standards for public pension plans, Statement No. 67 (GASB67) and Statement No. 68 (GASB68), collectively GASB 67/68.

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

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GASB 67, *Financial Reporting for Pension Plans*, amends GASB Statement No. 25 (GASB25) and is effective for financial statements for fiscal years beginning after June 15, 2013 (*i.e.*, Fiscal Year 2014 for TRS).

GASB68, *Accounting and Financial Reporting for Pensions*, amends GASB Statement No. 27 (GASB27) and is effective for financial statements for fiscal years beginning after June 15, 2014 (*i.e.*, Fiscal Year 2015 for the City of New York (the City)).

On October 2, 2015 the Actuary published the "Second Annual GASB67/68 Report for the City of New York and the New York City Retirement Systems For Fiscal Year Ended June 30, 2015" (the Second GASB67/68 Report). Appendix B of the Second GASB67/68 Report contains information developed in accordance with GASB67 for TRS.

### Actuarial Assumptions and Methods

Provided in this Actuarial Section of the CAFR is a "Summary of Actuarial Assumptions and Methods in Effect for the June 30, 2012 (Lag) Actuarial Valuation." These actuarial assumptions and methods (the 2012 A&M) were first employed in the June 30, 2010 (Lag) actuarial valuation that was used to determine Fiscal Year 2012 Employer Contributions to the Plan.

These actuarial assumptions and methods are generally unchanged from those employed in the June 30, 2012 (Lag) actuarial valuation that was used to determine Fiscal Year 2014 Employer Contributions to the Plan.

Those 2012 A&M were developed after reviewing the results of independent actuarial studies dated December 2011 by The Hay Group (Hay) and November 2006 by The Segal Company (Segal) in accordance with Section 96 of the New York City Charter, after which the Actuary issued a February 10, 2012 Report entitled "Proposed Changes in Actuarial Assumptions and Methods for Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2011 for the New York City Teachers' Retirement System" (February 2012 Report).

The Retirement Board of the Plan adopted those changes in actuarial assumptions that require Board approval. The State Legislature and the Governor enacted Chapter 3 of the Laws of 2013 (Chapter 3/13) to provide for those changes to the actuarial assumptions and methods that require legislation, including the Actuarial Interest Rate (AIR) assumption of 7.0% per annum, net of investment expenses.

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#### Benefits and Census Data

A summary of the benefits applicable to Plan members included in the June 30, 2013 (Lag) actuarial valuation is shown later in this Actuarial Section of the CAFR.

Included in the summary of benefits are benefit provisions that have been passed by the New York State Legislature and enacted as Chapter 504 of the Laws of 2009. These benefit provisions became applicable to certain members who join the Plan on and after December 10, 2009. Also included are the benefit provisions enacted as Chapter 18 of the Laws of 2012 (*i.e.*, Tier VI). These benefit provisions become applicable to members who join the Plan on and after April 1, 2012.

Census data are submitted by the Plan's administrative staff and by the employers' payroll facilities and are reviewed by the Office of the Actuary (OA) for consistency and reasonability.

A summary of the census data used in the June 30, 2013 (Lag) actuarial valuation is included in this CAFR. A summary of the census data used in the June 30, 2012 (Lag) actuarial valuation of the Plan is available in the June 30, 2014 CAFR.

#### Funded Status

The Funded Status of the Plan is usually expressed in various relationships of Assets to Liabilities.

With respect to the Funded Status of the Plan, included in the Financial Section of the CAFR is a Schedule of Funding Progress.

Included in the Actuarial Section of the CAFR is a Solvency Test (*i.e.*, Comparative Summary of Actuarial Values and Percentages Covered by Actuarial Value of Assets) as prescribed by the Government Finance Officers Association (GFOA). This Solvency Test represents an alternative approach to describing progress toward funding objectives.

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Presentation Style and Sources of Information

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

The following schedules in the Actuarial Section of the CAFR were prepared by the OA:

- Summary of Actuarial Assumptions and Methods in Effect for the June 30, 2013 (Lag) Actuarial Valuation.
- Active Member Valuation Data.
- Retirants and Beneficiaries Added to and Removed from Rolls.
- Funded Status based on Entry Age Actuarial Cost Method.
- Comparative Summary of Actuarial Values and Percentages Covered by Actuarial Value of Assets – Solvency Test.
- Statutory vs. Actuarial Contributions.
- Summary of Plan Provisions.
- Schedule of Funding Progress.
- Schedule of Employer Contributions.
- Schedule of Actuarial Assumptions and Methods.



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The following information and schedules in other sections of the CAFR were also prepared by the  
OA:

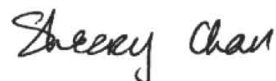
- Summary of Plan Membership.
- Schedule of Participating Employers.

If you have any questions about any of the information in this Actuarial Section or any of the actuarial information elsewhere presented in this CAFR, please do not hesitate to contact Mr. John R. Gibney, Jr., Mr. Edward Hue or me.

Acknowledgement of Qualification

I, Sherry S. Chan, am the Chief Actuary for the New York City Retirement Systems. I am an Associate of the Society of Actuaries, a Fellow of the Conference of Consulting 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,



Sherry S. Chan, ASA, FCA, MAAA  
Chief Actuary

SSC/srh

Att.

cc: Mr. John Gibney - New York City Office of the Actuary  
Mr. Edward Hue - New York City Office of the Actuary  
Ms. Michelle Levine - New York City Office of the Comptroller  
Mr. Thad McTigue - New York City Teachers' Retirement System  
Mr. Paul Raucci - New York City Teachers' Retirement System  
Ms. Patricia Reilly - New York City Teachers' Retirement System  
Mr. Sam Rumley - New York City Office of the Actuary  
Mr. Michael Samet - New York City Office of the Actuary

567L&R:srh

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

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2013 (LAG) 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.

The most recently completed study was published by Gabriel Roder Smith & Company (GRS) dated October 2015 and analyzed experience for Fiscal Years 2010 through 2013. GRS made recommendations with respect to the actuarial assumptions and methods based on their analysis.

The results of the GRS study are under review by The Actuary.

The previously completed studies were published by The Hay Group (Hay), dated December 2011 and by The Segal Company (Segal), dated November 2006. Hay analyzed experience for Fiscal Years 2006 through 2009 and made recommendations with respect to the actuarial assumptions and methods based on their analysis. Segal analyzed experience for Fiscal Years 2002 through 2005 and made recommendations with respect to the actuarial assumptions and methods based on their analysis.

In accordance with the Administrative Code of the City of New York (ACNY) and with appropriate practice, 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.

Based, in part, upon a review of the Segal and Hay studies, the Actuary issued a February 10, 2012 Report entitled "Proposed Changes in Actuarial Assumptions and Methods for Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2011 for the New York City Teachers' Retirement System" (February 2012 Report).

The Retirement Board of the Plan adopted those changes to actuarial assumptions that require Board approval. The State Legislature and the Governor have enacted Chapter 3 of the Laws of 2013 (Chapter 3/13) to provide for those changes to the actuarial assumptions and methods that require legislation, including the Actuarial Interest Rate (AIR) assumption of 7.0% per annum, net of investment expenses, the Entry Age Actuarial Cost Method and the amortization of Unfunded Actuarial Accrued Liabilities.

- (2) The investment rate of return assumption is 7.0% per annum, net of investment expenses (4.0% per annum for benefits payable under the Variable Annuity Programs).
- (3) The mortality tables for service and disability pensioners were developed from an experience study of the Plan's pensioners. Sample probabilities are shown in Table 1A. Mortality tables for beneficiaries were developed from experience review. Sample probabilities are shown in Table 1B.
- (4) Active Service tables are used to estimate various withdrawals from Active Service. Sample probabilities are shown in Table 2 for members withdrawing from Active Service due to Death or Disability, in Table 3 for members withdrawing for Other Than Death or Disability or Retirement and in Tables 4A and 4B for members withdrawing from Active Service after eligibility for Service Retirement.

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

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION (Cont'd)

- (5) A Salary Scale is used to estimate salaries at termination, retirement or death. Sample percentage increases are shown in Table 5. The Salary Scale includes a General Wage Increase (GWI) assumption of 3.0% per annum.
- (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 COLA assumption is 1.5% per annum.
- (7) The valuation assumes a closed group of members. Salaries of members on the valuation date are assumed to increase in accordance with the Salary Scale.
- (8) Beginning with the June 30, 2010 (Lag) actuarial valuation, the Entry Age Actuarial Cost Method (EAACM) of funding is utilized by the Plan's Actuary to calculate the contribution required of the Employer.

Under this method, the Actuarial Present Value (APV) of Benefits (APVB) 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 APV allocated to a valuation year is the Employer Normal Cost. The portion of this APV not provided for at a valuation date by the APV of Future Employer Normal Costs or future member contributions is the Actuarial Accrued Liability (AAL).

The excess, if any, of the AAL over the Actuarial Asset Value (AAV) is the Unfunded Actuarial Accrued Liability (UAAL).

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

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

Chapter 105 of the Laws of 2010 established, as of June 30, 2011, an Early Retirement Incentive (ERI) for certain TRS members. The UAAL attributable to the ERI is amortized on a level basis over a period of five years (4 payments under the One-Year Lag Methodology).

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

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION (Cont'd)

- (9) One-Year Lag Methodology (Lag or OYLM) uses a June 30, 2013 valuation date to determine Fiscal Year 2015 Employer Contributions.

This methodology requires technical adjustments to certain components used to determine Fiscal Year 2015 Employer Contributions as follows:

- Present Value of Future Salary (PVFS).

The PVFS at June 30, 2013 is reduced by the value of salary projected to be paid during Fiscal Year 2014.

- Salary for Determining Employer Contributions.

Salary used to determine the employer normal contribution is the salary projected to be paid during Fiscal Year 2015 to members on payroll at June 30, 2013.

- UAAL payments.

For determining the UAAL payments for Fiscal Year 2015, and to be consistent with OYLM, the UAAL as of June 30, 2013 is adjusted by the discounted value of employer normal contributions paid during Fiscal Year 2014 and the discounted value of the administrative expenses reimbursed during Fiscal Years 2014 and 2015.

- (10) Beginning with the June 30, 2004 (Lag) actuarial valuation, the Actuarial Asset Valuation Method (AAVM) was changed to a method that reset the AAV to Market Value (*i.e.*, Market Value Restart) as of June 30, 1999. As of each June 30 thereafter the AAVM recognizes investment returns greater or less than expected over a period of six years.

Under this revised AAVM, any Unexpected Investment Returns (UIR) for Fiscal Years 2000 and later are phased into the AAV beginning the following June 30 at a rate of 15%, 15%, 15%, 15%, 20% and 20% per year (or cumulative rates of 15%, 30%, 45%, 60%, 80% and 100% over a period of six years).

These revised averaging factors were applied against the UIR computed under the prior five-year AAVM used for Fiscal Years 2000 to 2004.

The revised AAVM was utilized for the first time in the June 30, 2004 (Lag) actuarial valuation to determine the Fiscal Year 2006 Employer Contributions in conjunction with the One-Year Lag Methodology and the revised economic and noneconomic assumptions.

The AAVM in effect for the June 30, 2009 (Lag) actuarial valuation was unchanged from the AAVM used in the June 30, 2008 (Lag) actuarial valuation.

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

### SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION (Cont'd)

Note that beginning with the June 30, 2008 (Lag) actuarial valuation, the AAV was recomputed retroactive to June 30, 1999, by re-characterizing amounts credited as interest on TDA Fixed Fund account balances as payouts instead of investment losses.

The concept in use for the AAVM for actuarial valuations on and after June 30, 2012 is the same as that in use for the June 30, 2009 (Lag) actuarial valuation.

In accordance with this AAVM, actual Unexpected Investment Returns (UIR) for Fiscal Years 2012, 2013, etc. are phased into the Actuarial Asset Value (AAV) beginning June 30, 2012, 2013, etc. at rates of 15%, 15%, 15%, 15%, 20% and 20% per year (i.e., cumulative rates of 15%, 30%, 45%, 60%, 80% and 100% over a period of six years).

The Actuary reset the Actuarial Asset Value to the Market Value of Assets (MVA) as of June 30, 2011 (i.e., Market Value Restart).

For the June 30, 2010 (Lag) actuarial valuation, the AAV is defined to recognize Fiscal Year 2011 investment performance. The June 30, 2010 AAV is derived as equal to the June 30, 2011 MVA, discounted by the AIR assumption (adjusted for cash flow) to June 30, 2010.

- (11) The Actuarial Present Value of Future Benefits (APVB) as of June 30, 2013, used to determine Fiscal Year 2015 Employer Contributions, includes estimates of liabilities for:
  - a. World Trade Center Disability Benefits
  - b. World Trade Center Death Benefits
  - c. Proposed Litigation Settlements
  
- (12) As discussed herein, the actuarial assumptions and methods are generally unchanged from those used in the June 30, 2012 (Lag) actuarial valuation.

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

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION  
(Cont'd)

**TABLE 1A**

**Deaths among Service and Disability Pensioners**

*Percentage of Pensioners Dying within Next Year*

<b>Age</b>	<b><u>Service Pensioners</u></b>		<b><u>Disability Pensioners</u></b>	
	<b><u>Males</u></b>	<b><u>Females</u></b>	<b><u>Males</u></b>	<b><u>Females</u></b>
<b>40</b>	0.0875%	0.0564%	1.3258%	1.3024%
<b>45</b>	0.1364	0.0842	1.3688	1.3484
<b>50</b>	0.1815	0.1292	1.4168	1.3964
<b>55</b>	0.2923	0.2176	1.6168	1.4494
<b>60</b>	0.4875	0.3722	1.9511	1.6659
<b>65</b>	0.8897	0.5921	2.2907	1.7289
<b>70</b>	1.4650	0.9723	2.6651	1.9096
<b>75</b>	02.2299	1.4425	3.3423	2.6669
<b>80</b>	03.7991	2.5246	5.0785	3.8879
<b>85</b>	06.8955	5.0785	8.9495	6.3260
<b>90</b>	12.4543	8.9495	16.5497	11.1587
<b>95</b>	23.1217	16.5497	27.2485	18.5008
<b>100</b>	33.6045	23.1885	37.1685	23.1885
<b>105</b>	39.7886	29.3116	40.0000	29.3116
<b>110</b>	100.0000	100.0000	100.0000	100.0000

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

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION  
(Cont'd)**

**TABLE 1B**

**Deaths among Beneficiaries**

*Percentage of Beneficiaries Dying within Next Year*

<b><u>Age</u></b>	<b><u>Males</u></b>	<b><u>Females</u></b>
40	0.0875%	0.0564%
45	0.1364	0.0842
50	0.1815	0.1292
55	0.2923	0.2176
60	0.4875	0.3722
65	0.8897	0.5921
70	1.4650	0.9723
75	2.2299	1.4425
80	3.7991	2.5246
85	6.8955	5.0785
90	12.4543	8.9495
95	23.1217	16.5497
100	33.6045	23.1885
105	39.7886	29.3116
110	100.0000	100.0000

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

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION  
(Cont'd)**

**TABLE 2**

**Withdrawals from Active Service (Due to Death or Disability)**

*Percentage of Active Members Separating within Next Year*

<b>Age</b>	<b><u>Accidental Disability</u></b>		<b><u>Ordinary Disability</u></b>		<b><u>Ordinary Death</u></b>	
	<b><u>Males</u></b>	<b><u>Females</u></b>	<b><u>Males</u></b>	<b><u>Females</u></b>	<b><u>Males</u></b>	<b><u>Females</u></b>
<b>20</b>	0.00%	0.00%	0.01%	0.01%	0.040%	0.020%
<b>25</b>	0.00	0.00	0.01	0.01	0.040	0.020
<b>30</b>	0.00	0.00	0.01	0.01	0.040	0.020
<b>35</b>	0.01	0.01	0.06	0.05	0.050	0.025
<b>40</b>	0.02	0.01	0.10	0.10	0.060	0.030
<b>45</b>	0.03	0.02	0.15	0.15	0.110	0.055
<b>50</b>	0.03	0.03	0.15	0.20	0.160	0.080
<b>55</b>	0.04	0.04	0.15	0.20	0.210	0.105
<b>60</b>	0.04	0.04	0.15	0.20	0.260	0.130
<b>65</b>	0.04	0.04	0.15	0.20	0.320	0.160
<b>70</b>	NA	NA	NA	NA	NA	NA



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

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION  
(Cont'd)

**TABLE 3**

**Withdrawals for Other Than Death or Disability or Retirement**

*Percentage of Active Members Withdrawing within Next Year*

<b><u>Years of Service</u></b>	<b><u>Probability of Withdrawal</u></b>
0	9.00%
5	4.00
10	2.00
15	1.25
20	1.00

**TABLE 4A**

**Withdrawals from Active Service (After Eligibility for Service Retirement)**  
**Members Not Electing an Optional Retirement Plan\***

*Percentage of Eligible Active Members Retiring within Next Year*

<b><u>Age</u></b>	<b><u>Males</u></b>				<b><u>Females</u></b>				
	<b><u>With Reduced Benefits</u></b>	<b><u>With Unreduced Benefits</u></b>			<b><u>With Reduced Benefits</u></b>	<b><u>With Unreduced Benefits</u></b>			
		<b><u>Years of Service Since First Elig.</u></b>	<b><u>Years of Service Since First Elig.</u></b>	<b><u>Years of Service Since First Elig.</u></b>		<b><u>Years of Service Since First Elig.</u></b>	<b><u>Years of Service Since First Elig.</u></b>	<b><u>Years of Service Since First Elig.</u></b>	
		<b><u>0-1</u></b>	<b><u>1-2</u></b>	<b><u>2+</u></b>			<b><u>0-1</u></b>	<b><u>1-2</u></b>	<b><u>2+</u></b>
<b>50</b>	0.00%	0.00%	0.00%	0.00%	<b>50</b>	0.00%	0.00%	0.00%	0.00%
<b>55</b>	2.00	20.00	0.00	0.00	<b>55</b>	2.00	20.00	0.00	0.00
<b>60</b>	4.00	20.00	15.00	15.00	<b>60</b>	4.00	20.00	15.00	15.00
<b>65</b>	0.00	30.00	20.00	20.00	<b>65</b>	0.00	30.00	20.00	20.00
<b>70</b>	NA	100.00	100.00	100.00	<b>70</b>	NA	100.00	100.00	100.00

\* Applies to members who did not voluntarily elect to participate in the 55/25 plan enacted under Chapter 19 of the Laws of 2008 and to members mandated into the 55/27 plan and into the Tier VI plans.

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

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2013 (LAG) ACTUARIAL VALUATION  
(Cont'd)

**TABLE 4B**

**Withdrawals from Active Service (After Eligibility for Service Retirement)  
Members Electing an Optional Retirement Plan\***

*Percentage of Eligible Active Members Retiring within Next Year*

<u>Age</u>	<u>With Reduced Benefits</u>	<u>Males</u>			<u>Age</u>	<u>With Reduced Benefits</u>	<u>Females</u>		
		<u>With Unreduced Benefits</u>					<u>With Unreduced Benefits</u>		
		<u>Years of Service Since First Elig.</u>					<u>Years of Service Since First Elig.</u>		
		<u>0-1</u>	<u>1-2</u>	<u>2+</u>			<u>0-1</u>	<u>1-2</u>	<u>2+</u>
<b>50</b>	0.00%	0.00%	0.00%	0.00%	<b>50</b>	0.00%	0.00%	0.00%	0.00%
<b>55</b>	2.00	30.00	0.00	0.00	<b>55</b>	2.00	30.00	0.00	0.00
<b>60</b>	4.00	30.00	20.00	20.00	<b>60</b>	4.00	30.00	20.00	20.00
<b>65</b>	0.00	40.00	30.00	30.00	<b>65</b>	0.00	40.00	30.00	30.00
<b>70</b>	NA	100.00	100.00	100.00	<b>70</b>	NA	100.00	100.00	100.00

\* Applies to members who voluntarily elected to participate in the 55/25 plan enacted under Chapter 19 of the Laws of 2008.

**TABLE 5**

**Salary Scale**

<u>Years of Service</u>	<u>Assumed Annual Percentage Increases Within Next Year*</u>
0	13.00%
5	8.00
10	4.00
15	4.00
20	4.00
25	4.00
30	4.00
35	4.00
40	4.00

\* Salary Scale includes a General Wage Increase assumption of 3.0% per annum.

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

**ACTIVE MEMBER VALUATION DATA**

<u>As of June 30</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>Annual Average Salary</u>	<u>Percentage Increase (Decrease) in Average Salary</u>
1999	86,682	\$4,217,560,016	\$48,656	5.4%
2000	91,494	4,721,526,309	51,605	6.1
2001	95,381	5,015,449,141	52,583	1.9
2002	95,678	5,469,239,283	57,163	8.7
2003	97,986	5,828,756,503	59,486	4.1
2004	105,391	6,219,808,501	59,017	(0.8)
2004 (Lag)	105,391	6,175,939,608 <sup>(1)</sup>	58,600	(1.5) <sup>(2)</sup>
2005 (Lag)	104,850	6,273,909,925	59,837	2.1
2006 (Lag)	109,992	6,978,725,642	63,448	6.0
2007 (Lag)	109,868	7,222,471,073	65,738	3.6
2008 (Lag)	112,472	7,926,647,584	70,477	7.2
2009 (Lag)	113,132	8,016,635,700	70,861	0.5
2010 (Lag) <sup>(3)</sup>	111,647	7,979,671,378	71,472	0.9
2011 (Lag)	109,636	7,888,203,642	71,949	0.7
2012 (Lag)	112,460	8,013,395,184	71,256	(1.0)
2013 (Lag)	112,481	8,128,378,071	72,264	1.4
2014 (Lag) <sup>(4)</sup>	111,726	8,274,685,657	74,062	2.5

<sup>(1)</sup> The annualized covered payroll under the One-Year Lag Methodology as of June 30, 2004 used for the Fiscal Year 2006 Employer Contributions differs from that used to compute Fiscal Year 2005 Employer Contributions due to changes in actuarial assumptions and methods and updated information on labor contract settlements.

<sup>(2)</sup> Decrease from June 30, 2003.

<sup>(3)</sup> Beginning with the June 30, 2010 (Lag) actuarial valuation, the annualized covered payroll is based on revised actuarial assumptions.

<sup>(4)</sup> Preliminary.

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

**RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS**

<b>Year Ended June 30</b>	<b><u>Added to Rolls</u></b>		<b><u>Removed from Rolls</u></b>		<b><u>Rolls End of Year</u></b>		<b>% Increase In Annual Allowances</b>	<b>Average Annual Allowances</b>
	<b>Number</b>	<b>Annual Allowances<sup>(2)</sup></b>	<b>Number</b>	<b>Annual Allowances</b>	<b>Number</b>	<b>Annual Allowances<sup>(1)</sup></b>		
1999	1,794	\$ 147,046,596	1,537	\$ 36,719,223	50,525	\$ 1,604,299,434	7.4%	\$31,753
2000	1,989	97,255,275	1,545	41,436,595	50,969	1,660,118,114	3.5	32,571
2001	2,723	171,487,630	1,712	83,599,498	51,980	1,748,006,246	5.3	33,628
2002	4,309	194,808,813	1,727	120,082,520	54,562	1,822,732,539	4.3	33,407
2003	5,014	258,523,666	1,443	50,572,541	58,133	2,030,683,664	11.4	34,932
2004	6,264	415,127,840	1,669	53,234,112	62,728	2,392,577,392	17.8	38,142
2005	4,423	255,085,446	1,983	59,626,485	65,168	2,588,036,353	8.2	39,713
2006	4,207	231,094,649	1,799	55,372,752	67,576	2,763,758,250	6.8	40,899
2007	3,078	234,183,351	2,162	66,646,428	68,492	2,931,295,173	6.1	42,798
2008	3,252	75,074,813	1,969	64,757,835	69,775	2,941,612,151	0.4	42,159
2009	3,115	6,288,013	2,065	73,586,895	70,825	2,874,313,269	(2.3)	40,583
2010	3,534	207,981,284	2,003	64,538,942	72,356	3,017,755,611	5.0	41,707
2011	3,849	278,652,149	2,141	67,488,320	74,064	3,228,919,440	7.0	43,596
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

<sup>(1)</sup> Allowances shown in table are those used in the actuarial valuation as of the Year Ended date and are not adjusted for anticipated changes due to finalization of benefit calculation or contract settlements.

<sup>(2)</sup> Balancing Item Amounts shown include changes due to benefit finalization, changes in benefit type (e.g. Service to Accidental Disability), COLA increases and other changes.

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

**FUNDED STATUS BASED ON ENTRY AGE ACTUARIAL COST METHOD**

(Dollar Amounts in Thousands)

This Schedule is being provided by the Actuary for the Plan to improve the transparency and decision usefulness of this financial report.

Prior to the June 30, 2010 (Lag) Actuarial Valuation, the Actuarial Cost Method (ACM) used to develop the funding requirements for the Plan was the Frozen Initial Liability (FIL) ACM. Under this ACM, following establishment of any Initial Unfunded Actuarial Accrued Liabilities (UAAL), actuarial gains and losses are financed over the working lifetimes of active participants and are not identified as separate UAAL.

The funding status and funding progress information provided in this Schedule has been prepared using the Entry Age ACM where the Actuarial Present Value (APV) of any obligations of the Plan not provided by the APV of Future Contributions (Employer and Employee), as determined under the Entry Age ACM, equals the Actuarial Accrued Liability (AAL). Under the Entry Age ACM, the UAAL equals the AAL minus the Actuarial Value of Assets.

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) - Entry Age (b)</b>	<b>Unfunded AAL (UAAL) - Entry Age (b-a)</b>	<b>Funded Ratio (a/b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll ((b-a)/c)</b>
June 30, 2014 (Lag) <sup>1,2</sup>	\$37,521,424	\$64,986,437	\$27,465,013	57.7%	\$8,274,686	331.9%
June 30, 2013 (Lag) <sup>1</sup>	35,186,072	61,988,934	26,802,862	56.8%	8,128,378	329.7%
June 30, 2012 (Lag) <sup>1</sup>	33,871,180	58,783,399	24,912,219	57.6%	8,013,395	310.9%
June 30, 2011 (Lag) <sup>1</sup>	33,601,537	57,702,731	24,101,194	58.2%	7,888,204	305.5%
June 30, 2010 (Lag) <sup>1</sup>	32,477,527	55,138,366	22,660,839	58.9%	7,979,671	284.0%
June 30, 2009 (Lag)	30,774,981	47,988,459	17,213,478	64.1%	8,016,636	214.7%
June 30, 2008 (Lag)	32,227,375	49,400,762	17,173,387	65.2%	7,926,648	216.7%
June 30, 2007 (Lag)	33,854,152	48,625,202	14,771,050	69.6%	7,222,471	204.5%
June 30, 2006 (Lag)	32,405,645	45,138,925	12,733,403	71.8%	6,978,726	182.5%

Note: This schedule is based on actuarial assumptions used for determining Employer Contributions.

<sup>1</sup> Reflects revised actuarial assumptions and methods based on experience review, including an AIR assumption of 7.0% per annum, net of investment expenses.

<sup>2</sup> Preliminary

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

COMPARATIVE SUMMARY OF ACTUARIAL VALUES AND PERCENTAGES COVERED BY ACTUARIAL  
VALUE OF ASSETS

SOLVENCY TEST (Dollar Amounts in  
Thousands)

Aggregate Accrued Liabilities for

As of <u>June 30</u>	<u>Accumulated Member Contributions</u>	<u>Current Retirants and Beneficiaries</u>	<u>Active Members' Employer <u>Financed Portion</u></u>	<u>Actuarial Value of Assets</u>	<u>Percentage of Actuarial Values Covered by Actuarial Value of Assets</u>		
					(A)	(B)	(C)
1999	\$3,111,019	\$15,748,859	\$12,447,411 <sup>1</sup>	\$34,626,062	100%	100%	100%
2000	3,354,746	17,446,520	14,340,434 <sup>1</sup>	36,142,435	100	100	100
2001	3,077,510	17,254,058	14,114,923 <sup>1</sup>	35,410,230	100	100	100
2002	2,931,464	18,189,124	13,623,528 <sup>1</sup>	34,177,750	100	100	96
2003	2,752,562	20,489,777	12,561,516	33,169,210	100	100	79
2004	2,628,369	24,460,479	11,465,947	32,817,102	100	100	50
2004 (Lag)	2,628,369	24,636,479	11,682,625	33,149,251	100	100	50
2005 (Lag)	2,624,824	26,590,313	11,418,808	32,865,126 <sup>2</sup>	100	100	32
2006 (Lag)	2,724,814	27,934,371	11,960,437	32,405,645	100	100	15
2007 (Lag)	2,927,133	29,528,062	13,957,521	33,854,152	100	100	10
2008 (Lag)	2,898,027	29,182,084	14,743,596	32,227,375	100	100	1
2009 (Lag)	2,823,873	27,862,679	14,620,140	30,774,981	100	100	1
2010 (Lag)	2,962,696	32,264,333	17,529,345	32,477,527	100	91	1
2011 (Lag)	3,167,737	34,317,270	17,770,140	33,601,537	100	89	1
2012 (Lag)	3,122,720	35,575,735	17,558,791	33,871,180	100	86	0
2013 (Lag)	3,330,541	37,451,527	18,565,932	35,186,072	100	85	0

<sup>1</sup> Amounts shown were revised in the Fiscal Year 2004 CAFR from amounts published earlier to include annuitization of Variable Funds.

<sup>2</sup> Revised in the Fiscal Year 2008 CAFR to reflect updated information.

Also, see following "SOLVENCY TEST – NOTES."

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## COMPARATIVE SUMMARY OF ACTUARIAL VALUES AND PERCENTAGES COVERED BY ACTUARIAL VALUE OF ASSETS

### 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 Aggregate Accrued Liabilities for:

- (A) Accumulated Member Contributions;
- (B) Current Retirants and Beneficiaries; and
- (C) Active Members' Employer Financed Portion.

The Aggregate Accrued Liabilities are the APV of projected benefits produced by the projected benefit attribution approach prorated on service. The Aggregate Accrued Liabilities were calculated in accordance with Governmental Accounting Standards Board Statement No. 5 (GASB 5).

This comparative summary allocated assets as if they were priority groups, somewhat similar to (but not identical to) the priority categories of Section 4044 of the Employee Retirement Income Security Act of 1974 (ERISA).

The values in the Table are dependent upon census data, benefit levels (which have changed on occasion over the past years), and the actuarial assumptions and methods employed at each valuation date. The two most recent changes in assumptions and methods occurred in the June 30, 2004 (Lag) valuation used to compute the Employer Contributions of Fiscal Year 2006 and in the June 30, 2010 (Lag) valuation used to compute the Employer Contributions for Fiscal Year 2012. These underlying bases can be found within the Comprehensive Annual Financial Report for each respective year.

Beginning with the June 30, 2008 (Lag) actuarial valuation the AAV was recomputed retroactive to June 30, 1999, by re-characterizing amounts credited as interest on TDA Fixed Fund account balances as payouts instead of investment losses.

To fully evaluate trends in financial soundness, changes in assumptions need to be evaluated. For the valuation dates appearing in the table, the Actuarial Interest Rate and the General Wage Increase assumptions were all equal to 8.0% per annum, gross of expenses, and 3.0% per annum, respectively, through the June 30, 2009 (Lag) actuarial valuation. Beginning with the June 30, 2010 (Lag) actuarial valuation, the Actuarial Interest Rate (AIR) assumption equals 7.0% per annum, net of investment expenses, and the General Wage Increase (GWI) assumption equals 3.0% per annum.

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

**STATUTORY VS. ACTUARIAL CONTRIBUTIONS**

<b><u>Fiscal Year Ended June 30</u></b>	<b><u>Statutory Contribution</u></b> <sup>(1)</sup>	<b><u>Actuarial Contribution</u></b>	<b><u>Employer Rate of Contribution</u></b> <sup>(2)</sup>
2000	\$ 181,769,965	\$ 181,769,965	4.310%
2001	444,965,372	571,955,543	9.424
2002	509,931,588	607,762,939	10.167
2003	639,617,910	805,782,222	11.695
2004	920,264,167	1,015,331,185	15.788
2005	1,228,275,356	1,304,032,623	19.748
2006	1,316,610,517	1,316,610,517	21.293
2007	1,600,904,278	1,600,904,278	25.471
2008	1,916,519,629	1,916,519,629	27.386
2009	2,223,643,770	2,223,643,770	30.792
2010	2,484,073,500	2,484,073,500	31.604
2011	2,468,973,357	2,468,973,357	31.114
2012	2,673,078,096	2,673,078,096	33.747
2013	2,855,639,947	2,855,639,947	36.455
2014	2,998,693,727	2,998,693,727	37.652
2015	3,270,006,920	3,270,006,920	40.498

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

The Statutory Contributions for Fiscal Years 2001 and 2002 were computed in accordance with Chapter 125/00 which provided for a five-year phase-in of the additional actuarial liabilities attributable to Chapter 125/00.

The Statutory Contributions for Fiscal Years 2003 through 2005 were computed in accordance with Chapter 278/02 which extended from five to ten years the phase-in period for the funding of the additional actuarial liabilities attributable to Chapter 125/00.

Beginning Fiscal Year 2006, the Statutory Contributions were computed using a One-Year Lag Actuarial Valuation Methodology in accordance with Chapter 152/06 which also eliminated the use of ten-year phase-in of Chapter 278/02 for funding the additional actuarial liabilities attributed to Chapter 125/00.

Beginning Fiscal Year 2012, the Statutory Contributions were computed in accordance with Chapter 3/13.

<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.



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

### CHRONOLOGY OF PLAN

TRS was established as of August 1, 1917 and, at the outset, the Teachers' Retirement Board adopted the mortality tables, service tables, and other tables necessary for calculating contribution rates and for preparing valuation figures. Periodic comparisons of the actual experience with the expected experience, as obtained by calculations from the latest adopted tables, have been made since August 1, 1917.

### SUMMARY OF KEY PLAN BENEFIT AND FUNDING CHANGES

**2013** Chapter 3 of the Laws of 2013 (Chapter 3/13) implemented changes in the actuarial procedures for determining Employer Contributions beginning Fiscal Year 2012. In particular, Chapter 3/13 continued the OYLM, employed the Entry Age Actuarial Cost Method (EAACM), an Actuarial Interest Rate (AIR) assumption of 7.0% per annum, net of investment expenses and defined the amortization of Unfunded Actuarial Accrued Liabilities (UAAL).

Chapter 489 of the Laws of 2013 extends WTC Disability Law benefits to vested members.

**2012** 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.

**2010** Chapter 105 of the Laws of 2010 (Chapter 105/10) provided an Early Retirement Incentive (ERI) program for certain members.

Chapter 286 of the Laws of 2010 (Chapter 286/10) refined the method used to compute the Final 3-year Average Salary for members who have extended breaks in service and who would be impacted by Kingston Limits on the older salaries.

**2009** Chapter 504 of the Laws of 2009 (Chapter 504/09) provides that individuals joining TRS 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.

Also, under Chapter 504/09, all members represented by the United Federation of Teachers (UFT) will become vested after ten years of credited service. In addition, all members represented by the UFT who participate in the Tax-Deferred Annuity Program (TDA), will receive an interest rate of 7.0% per annum credited to their TDA Fixed Funds accounts beginning December 10, 2009.

**2008** Chapter 19 of the Laws of 2008 (Chapter 19/08) established retirement programs to permit Tier II and Tier IV current members of TRS to elect to retire between ages 55 and 62 without reduction provided they have 25 years of service, by paying an additional contribution of 1.85% of future pay. New members after February 27, 2008 are mandated into this plan and are required to have 27 years of service.

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

Chapter 489 of the Laws of 2008 expanded and redefined the eligibility provisions of the accidental disability and accidental death benefits that arise in connection with the World Trade Center attacks on September 11, 2001.

**2007** Chapter 5 of the Laws of 2007 amended Chapter 445/06 to clarify the World Trade Center accidental disability benefits payable to retirees who die in the first 25 years of retirement. It also amended Chapter 445/06 to include World Trade Center deaths as presumptive accidental death benefits in the Line-of-Duty.

**2006** Chapter 152 of the Laws of 2006 provided for the changes in actuarial assumptions and methods that require legislation, including the continuation of the AIR assumption of 8.0% per annum and continuation of the current Frozen Initial Liability (FIL) Actuarial Cost Method and the existing Unfunded Actuarial Accrued Liability (UAAL). In addition, Chapter 152/06 provided for elimination of the use of the ten-year phase-in of Chapter 278/02 for funding the additional actuarial liabilities created by the benefits provided by Chapter 125/00.

Chapter 445 of the Laws of 2006 (Chapter 445/06) created a presumptive eligibility for accidental death benefits in connection with the World Trade Center attack on September 11, 2001.

**2005** Chapter 104 of the Laws of 2005 as amended by Chapter 93 of the Laws of 2005 creates a presumptive eligibility for accidental disability in connection with the World Trade Center attack on September 11, 2001.

Chapter 105 of the Laws of 2005 states that a member killed in the U.S. Armed Forces on and after June 14, 2005 is deemed a Line-of-Duty death while on active payroll.

Chapter 133 of the Laws of 2005 provided a similar extension of the interest rates as did Chapter 133 of the Laws of 2004, for Fiscal Year 2006. The investment rate of return assumption for determining Employer contributions for Fiscal Year 2006 remains at 8.0% per annum until and unless changed following the proposals of the Actuary and the actions by the Retirement Board, the State Legislature and the Governor.

**2004** Chapter 133 of the Laws of 2004 extended certain provision of Chapter 85/00 through Fiscal Year 2005. Thus, for Fiscal Year 2005, the interest rate used for Tier I and Tier II member contributions and ITHP Reserves remained at 8.25% per annum. The investment rate of return assumption for determining Employer Contributions for Fiscal Year 2005 remains at 8.0% per annum until and unless changed following the proposal of the Actuary and the actions by the Retirement Board, the State Legislature and the Governor.

Chapter 623 of the Laws of 2004 provided for an Excess Benefit Plan to be established which would provide benefits to those pensioners whose annual retirement benefits are limited because those benefits exceed the limitations set by IRC Section 415(b). The law is retroactive to July 1, 2000.

**2003** Chapter 136 of the Laws of 2003 permitted certain Tier II members who are reemployed after retirement for other than disability and who received at least two years of service credit to be eligible for a recalculation of their retirement allowance.

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

Chapter 661 of the Laws of 2003 permitted members to change their option up to thirty days after the initial date of payability of their retirement allowance (for disability, up to the later of thirty days after approval of the disability retirement or the date of such retirement).

- 2002** Chapter 69 of the Laws of 2002 authorized an Early Retirement Incentive (ERI) for certain members in eligible titles.

Chapter 106 of the Laws of 2002 expanded and reopened provisions for certain substitute teacher tier reinstatements.

Chapter 215 of the Laws of 2002 increased Tier IV Accidental Disability Retirement to 2/3 of Final Average Salary.

Chapter 278 of the Laws of 2002 revised the phase-in schedule of Chapter 125 of the Laws of 2000 for Fiscal Years 2003 and later.

Chapter 381 of the Laws of 2002 extended Chapter 558 of the Laws of 2001 provisions to age 55 increased service fraction members.

- 2001** Chapter 470 of the Laws of 2001 allowed members who received service credit for seniority and length of service purposes while on layoff due to the New York City fiscal crisis of the 1970's to also receive credit for such service for all pension purposes.

Chapter 532 of the Laws of 2001 allowed Tier I members to purchase up to 15 years of service that would have been creditable in another New York State Public Retirement System.

Chapter 558 of the Laws of 2001 allowed certain members on deferred retirement under the Career Pension Plan of the New York City Employees' Retirement System (NYCERS) or the New York City Board of Education Retirement System (BERS) to transfer membership into TRS. If such member has started receiving a pension, such pension must be returned without interest to NYCERS or BERS.

- 2000** Chapter 85 of the Laws of 2000 amended the Administrative Code of the City of New York to implement changes in actuarial assumptions and methods that require legislation.

Chapter 86 of the Laws of 2000 authorized an ERI for certain members in eligible titles.

Chapter 110 of the Laws of 2000 amended the language of legislation that later became Chapter 126 of the Laws of 2000, which provided for benefit enhancements for certain members of the City of New York retirement systems.

Chapter 125 of the Laws of 2000 provided eligible retirees with automatic annual Cost-of-Living Adjustments.

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

Chapter 126 of the Laws of 2000 provided for benefit enhancements (*i.e.*, elimination of member contributions for Tier III/IV members with more than 10 years of membership, additional pension credit for Tier I/II members of up to a maximum of 24 months of additional service retirement credit, and allowed Tier III/IV members to retire at age 55 with reduced benefits under the same formula as used for Tier II members) for certain members of the City of New York retirement systems.

Chapter 548 of the Laws of 2000 permitted certain members to purchase up to 3 years of credit for certain U.S. Military Service by paying 3% of imputed salary.

Chapter 552 of the Laws of 2000 permitted Tiers II/III/IV members with at least 2 years of credited service to receive credit for certain previous service in a New York State Public Retirement System (NYSPRS).

Chapter 553 of the Laws of 2000 lowered the reduction factors for Tier IV members who retire before age 62 with less than 30 years of service.

Chapter 554 of the Laws of 2000 provided that Tiers II/III/IV members who joined prior to January 1, 2001 and who elected Death Benefit 1 will receive the greater of Death Benefit 1 or Death Benefit 2 coverage. New members on and after January 1, 2001 will only receive coverage under Death Benefit 2.

**1999** Chapter 70 of the Laws of 1999 authorized an Early Retirement Incentive for certain members in eligible titles.

Chapter 409 of the Laws of 1999 amended Chapter 616 of the Laws of 1998 to include the death gamble benefit of Tier I.

Chapter 575 of the Laws of 1999 re-opened Chapter 666 of the Laws of 1990, which allows a retroactive transfer of pension credit under certain circumstances.

Chapter 581 of the Laws of 1999 allowed Tier II members to receive service credit while under a leave of absence for union activities.

Chapter 628 of the Laws of 1999 provided Tier I and Tier II members the opportunity to switch their retirement plans.

Chapter 646 of the Laws of 1999 provided active and future members the right to reinstate earlier membership by repaying prior member contributions with 5% interest.

Chapter 659 of the Laws of 1999 reduced the amount of service credit needed for Tier III/IV vested members to receive benefits at age 55 to 5 years.

**1998** Chapter 7 (as amended by Chapter 47) of the Laws of 1998 authorized a retirement incentive for certain members in eligible titles.

Chapter 266 of the Laws of 1998 reduced the service required for Tier IV normal retirement benefits from 25 years to 20 years and permitted certain Tier III retirees to receive Tier IV benefits.

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

Chapter 366 of the Laws of 1998 increased the period of absence before loss of membership from 5 years to 7 years, provided member contributions are not withdrawn.

Chapter 388 of the Laws of 1998 provided a pre-retirement death benefit for certain vested members of the Plan.

Chapter 389 of the Laws of 1998 allowed members of the Plan to become vested after five years of service.

Chapter 390 of the Laws of 1998 (Chapter 390/98) provided additional benefits for cost-of-living increases for certain retirees of the Plan. An initial increase for members who retired on or before Calendar Year 1992 is effective as of September 1998 as enacted by the City Council on August 27, 1998. A subsequent increase for members who retired on or before Calendar Year 1993 is effective as of September 1999 as enacted by the City Council on August 27, 1998.

Chapter 616 of the Laws of 1998 allowed Plan members who are terminally ill and eligible for disability retirement to elect advance payment of ordinary death benefit.

**1997** Chapter 41 of the Laws of 1997 authorized a retirement incentive for certain persons in eligible titles who are public employees and who are members of the Plan.

Chapter 601 of the Laws of 1997 amended the Administrative Code of the City of New York and the Retirement and Social Security Law (RSSL) to bring the Plan into compliance with the requirement of the Federal Older Workers' Benefit Protection Act of 1990 (OWBPA).

**1996** Chapter 30 of the Laws of 1996 established an ERI for certain members and was enacted by a Board Resolution.

Chapter 249 of the Laws of 1996 amended the schedules of payments toward the Unfunded Actuarial Accrued Liability (UAAL) and Balance Sheet Liability (BSL) to provide that the UAAL and BSL as of June 30, 1995 be amortized over a period of 15 years beginning Fiscal Year 1996, where the amount of each annual payment after the first is to equal 103% of the preceding annual payment.

Chapter 592 of the Laws of 1996 permitted excess earnings of the annuity fund to reduce employer contribution to the Plan.

Chapter 593 of the Laws of 1996 permitted corpus funding of administrative expenses after July 1, 1996.

Chapter 712 of the Laws of 1996 permitted the increase in investment of Plan assets in equities to 70%.

**1995** Chapter 12 of the Laws of 1995 established an ERI for certain CUNY employees and was enacted by a resolution of CUNY's Board.

Chapter 74 of the Laws of 1995 amended Chapter 12 to offer the ERI to certain Board of Education employees.

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

Chapter 119 of the Laws of 1995 amended the General Municipal Law and the Administrative Code of the City of New York and provides for Supplemental Retirement Allowances for certain retirees.

Chapter 642 of the Laws of 1995 amended the Administrative Code of the City of New York in relation to the rate of regular interest used in calculating contributions to TRS, as well as to the crediting of special and additional interest to members and the allowance of supplementary interest on TRS funds.

- 1994** Chapter 633 of the Laws of 1994 amended the schedules of payments toward the UAAL and BSL to provide that the UAAL and BSL of June 30, 1993 be amortized over a period of 17 years beginning Fiscal Year 1994, where the amount of each annual payment after the first is to equal 103% of the preceding annual payment.

Chapter 675 of the Laws of 1994 amended the RSSL in relation to the maximum amount of compensation that may be used in the determination of pension benefits. The annual compensation of each employee taken into account under the plan for any year may not exceed \$150,000 for plan years beginning after June 30, 1996. This figure is subject to cost-of-living adjustment. The State legislation grandfathers those who become members prior to July 1, 1996. This new law brings the New York City Retirement Systems into compliance with certain portions of the Tax Reform Act of 1986 and Internal Revenue Service regulations issued thereunder.

- 1992** Chapter 221 of the Laws of 1992 amended the Administrative Code of the City of New York, in relation to treatment of surplus, deficits and investment earnings of TRS' Tax-Deferred Annuity (TDA) Program.

Chapter 494 of the Laws of 1992 provided an ERI for certain City University professional staff members of TRS.

- 1991** Chapter 178 of the Laws of 1991 became law on June 17, 1991. This law provided for an ERI for eligible employees of the Board of Education; this incentive granted up to three years of retirement credit.

Chapter 607 of the Laws of 1991 amended the funding provisions effective June 30, 1990. This law provided that the Consolidated UAAL and BSL as of June 30, 1990 be amortized over 20 years with non-level payments for the first five years. The schedule of payments for the combined UAAL and BSL components for the first five years is to be comparable in pattern to the schedule of payments that was in effect under the amortization schedules immediately prior to the change in funding provisions. The balance of the combined UAAL and BSL components at the end of five years is to be amortized using level payments over the remaining 15 years. The BSL component is to be amortized using level payments over 20 years from June 30, 1990.

- 1990** Chapter 210 became a law on June 6, 1990. This law provided for a ERI for eligible employees of CUNY, effective September 1, 1991.

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Chapter 357 became a law on July 12, 1990. This law amended Chapter 835 of the Laws of 1987 in relation to medical review as provided by §13-522.1 of the Administrative Code of the City of New York. These provisions, which had been scheduled to expire on June 30, 1989, were made permanent.

Chapter 483 became a law on July 18, 1990. This law amended Chapter 296 of the Laws of 1984 by extending the elimination of mandatory retirement to tenured employees of CUNY.

Chapter 666 became a law on July 22, 1990. This law amended §13-503 of the Administrative Code of the City of New York in relation to the availability of additional pension benefits to certain retirees of other New York City retirement systems as the result of their joining TRS for an extended second public employment.

Chapter 878 became a law on July 25, 1990. This law amended the Administrative Code of the City of New York in relation to the rate and method of payment of regular interest, special interest, additional interest and supplementary interest to be credited by TRS.

Chapter 919 became a law on July 30, 1990, with an effective date of July 1, 1991. This law amended §§517 and 613 of the RSSL by permitting Tier III/IV members to borrow up to 75% of their accumulated contributions.

Chapter 948 of the Laws of 1990 became law on December 26, 1990. This law amended the funding provisions of the Retirement System effective June 30, 1990. The funding provisions were amended in relation to the interest rates used in the actuarial valuation of liabilities and amortization payments, for the purpose of calculating employer contributions. This law provided that an actuarial interest rate assumption of 9% per annum for TRS (4% per annum for benefits payable under the variable annuity programs) would be in effect for that purpose with respect to employer contributions due for Fiscal Years 1991-1995. However, this law was superseded by Chapter 607 of the Laws of 1991 before it was scheduled to take effect on June 30, 1990.

**1989** Chapter 580 of the Laws of 1989 amended the funding provisions of the New York City Retirement Systems effective June 30, 1988 in relation to eliminating the deferred charge account.

Chapter 581 of the Laws of 1989 amended the funding provisions of the New York City Retirement Systems effective June 30, 1988 in relation to the interest rate used in the actuarial valuation of liabilities for the purpose of calculating employer contributions. The law provided that an 8.25% interest rate will be in effect for that purpose with respect to employer contributions due for Fiscal Years 1989 and 1990.

**1988** Chapter 8 became a law on February 29, 1988. This law superseded many provisions of §13-680 of the Administrative Code of the City of New York in relation to the payment of supplemental retirement allowances to certain retirees.

Chapter 182 became a law in June 1988. This law amended §13-582 of the Administrative Code of the City of New York in relation to permitting deferral of the distribution of a member's TDA account to the latest date allowable by the Internal Revenue Code.

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Chapter 273 became a law on July 19, 1988. This law amended §§13-568, 571, 581, and 582 of the Administrative Code of the City of New York in relation to the extent and frequency of participation in elections made by members and beneficiaries with respect to the Variable Annuity and TDA Programs.

Chapter 454 became a law on August 1, 1988, effective immediately, providing for the payment of monthly supplemental retirement allowances to certain spouses of deceased members or retirees. Generally, spouses of deceased members or retirees who are designated annuitants (*i.e.*, beneficiaries covered under Option I or Option IV-b, who, upon the death of the members or retirees, elect a monthly form of payment of the death benefit, rather than a lump sum) will be eligible to collect an extra \$50 per month as supplemental retirement allowance, provided the member or retiree died prior to January 1, 1980. However, any spouse who may become eligible to receive, or who is already receiving, a supplemental retirement allowance is not eligible for this benefit. Payments to an eligible spouse will be effective on the later of either [a] the month following the one in which the member's or retiree's death occurred, or [b] July 1, 1983.

Chapter 522 became a law on August 2, 1988. This law amended the RSSL in relation to TRS membership. Generally, any Tier III/IV member who was employed by the Board of Education as a regular substitute for at least one term during one of the three school years immediately prior to July 27, 1976 would have the same rights and privileges as a Tier II member, provided (s)he filed the appropriate application prior to July 1, 1989.

Chapter 523 became a law on August 2, 1988. This law amended the RSSL in relation to TRS membership. Generally, any Tier II member who was employed by the Board of Education as a regular substitute for at least one term during one of the three school years immediately prior to July 1, 1973 would have the same rights and privileges as a Tier I member, provided (s)he filed the appropriate application prior to July 1, 1989.

Chapter 548 became a law on August 11, 1988. This law provided that pension service credit be granted to Tier III/IV members on leave of absence without pay for the purpose of conducting labor relations activity.

Chapter 768 became a law on December 26, 1988 to become effective January 1, 1990. This law amended the RSSL to include a new Article 15-A (§620) which provides that all TRS members and those who join TRS after this date will receive benefits payable subject to certain limitations of §415 of the Internal Revenue Code. The benefits payable will be subject to the greater of either [a] the limitations of §415 of the Internal Revenue Code, or [b] the accrued benefit of the member without regard to any benefit increases in accordance with plan amendments adopted after October 14, 1987.

Chapter 773 became a law on December 29, 1988. This law amended §13-521 of the Administrative Code of the City of New York in relation to providing certain benefits involving supplemental annuity contributions on behalf of certain Tier III/IV members.

Chapter 782 became a law on December 29, 1988. This law amended §§517 and 613 of the RSSL in relation to the treatment of Tier III/IV member contributions for income tax purposes under the provisions of the Internal Revenue Code.



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Chapter 783 became a law on December 29, 1988. This law made certain technical changes to Chapter 782 of the Laws of 1988.

- 1986** Chapter 617 of the Laws of 1986 amended the RSSL by repealing the Article 14 and the Article 15 Ordinary Death Benefits provisions and replacing them with provisions nearly identical to the Death Benefits applicable to Article 11 TRS members.

Chapter 630 of the Laws of 1986, which amended §B20-37.0 and §13-540 of the Administrative Code of the City of New York, increased the insurance for loans taken by TRS members from \$2,000 to \$10,000, effective July 1, 1986.

Chapter 683 of the Laws of 1986 amends §4402-§4406, §4408, §3030, §3202, §3602 and §3635 of the Education Law and §236 of the Family Court Act to provide additional educational opportunity in the months of July and August in and after Fiscal Year 1988 for severely handicapped children. In addition, this law established the "Additional Employer Specific Skills Training Grant Program" to conduct summer employer-specific skill training in coordination with participating employers. Also, the bill covers allocations of costs and educational services required of youths incarcerated in a correctional facility.

Chapter 793 of the Laws of 1986 amended §6214 of the Education Law and §13-630 of the Administrative Code of the City of New York in relation to the new members of the instructional staff at community colleges within the City University of New York, who will be eligible to become TRS members. In addition, present members of the New York City Employees' Retirement System who are employed on the instructional staff at community colleges within the City University of New York will have the right, until June 30, 1987, to transfer to TRS.

- 1985** Chapter 910 of the Laws of 1985 made it possible for TRS to use modernized actuarial tables in computing pension benefits. The Teachers' Retirement Board approved a resolution adopting new mortality tables for the purpose of determining certain benefits. The implementation of such a resolution was contingent upon the enactment of legislation increasing regular interest from 4% to 7%. Chapter 910 was signed into law on August 19, 1985.

Chapter 911 of the Laws of 1985 authorized TRS to continue to assume an 8.0% rate of return on investments. The Teachers' Retirement Board approved a resolution adopting new actuarial assumptions for the purpose of determining employer contributions to TRS for Fiscal Year 1986. The implementation of such a resolution was contingent upon the enactment of State legislation which would maintain the assumed rate of return on investments at 8.0%. Chapter 911 of the Laws of 1985 was signed into law on August 19, 1985. As a result, the new actuarial assumptions were utilized to determine pension expenses for Fiscal Year 1986 and thereafter.

- 1984** Chapter 371 of the Laws of 1984 amended the Administrative Code of the City of New York in relation to the payment of supplemental retirement allowances to spouses of certain deceased retirees.

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Chapter 658 of the Laws of 1984 amended §D49-40.0 of the Administrative Code of the City of New York, increasing the amount of Supplemental Retirement Allowance (SRA) payable to every eligible retiree from 3% of the retiree's maximum fixed retirement allowance (*i.e.*, the "base amount") for post-1971 retirees to 42% for pre-1959 retirees. In addition, the retirement allowance ceiling on which SRA is based was raised from \$8,000 to \$10,500. These benefit increases began in September 1986, and the increase in percentages occurred over a two-year period.

- 1983** Chapter 414 of the Laws of 1983 amended the RSSL by adding a new article—Article 15. This Law established a new state-wide pension plan, the Coordinated Retirement Plan, effective September 1, 1983, covering most employees joining on or after July 27, 1976. This Plan, which sets a normal retirement age of 62 and mandates 3% contributions by members, superseded the Plan (CO-ESC) enacted as Chapter 890 of the Laws of 1976. However, members who joined from July 27, 1976 through August 31, 1983 may elect to receive a benefit from CO-ESC or the Coordinated Plan, whichever provides greater benefits.
- 1982** Chapter 914 of the Laws of 1982 amended the Administrative Code of the City of New York in relation to employer contributions, the actuarial valuation, the determination and appraisal of the liabilities, the disposition of TRS' investment earnings, the crediting of special interest and additional interest to members, and the allowance of supplementary interest on TRS' funds. It further provided for the determining of obligations of the State, the City University of New York, and TRS in relation to certain employer contributions payable to TRS on account of employees of the senior colleges of the City University of New York.
- 1981** Chapter 422 of the Laws of 1981 provided new or additional supplemental pensions for certain pensioners and made the funding of these benefits the obligation of TRS.
- 1977** Chapter 976 of the Laws of 1977 amended TRS' funding provisions, effective July 1, 1977.
- 1973** Chapter 1046 of the Laws of 1973 established Article 11 of the RSSL, which imposed certain limitations on the benefits available to members joining TRS after June 30, 1973 and created Plans C and D, which are modifications of Plans A and B.
- 1970** Legislation in 1970 substantially revised TRS provisions. Chapter 274 established two new retirement plans effective July 1, 1970. Members who joined TRS on or after the effective date were required to choose either [1] The Twenty-Year Pension Plan (Plan A), or [2] The Age-55-Increased-Benefits Pension Plan (Plan B).

A member who joined TRS prior to the effective date could continue under his/her existing plan, or could elect one of these new plans, providing such election was made before the member had rendered two years of service after June 30, 1970.

Chapter 581 of the Laws of 1970 made it possible for the Teachers' Retirement Board to adopt Rules and Regulations establishing a Group Term Life Insurance Plan. In accordance with these Rules and Regulations, the first \$50,000 of benefits on account of each death in active service will be payable from the funds of the Group Term Life Insurance Plan rather than from those of TRS. With respect to the Group Term Life Insurance Plan, the Teachers' Retirement Board adopted premium rates computed to be necessary to fund the benefits payable.

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### SUMMARY OF PLAN PROVISIONS

This section summarizes TRS' principal benefit provisions. The benefits available under the Coordinated Retirement Plan are provided by Article 15 of the RSSL. The benefits available under the Twenty-Year Pension Plan and Age-55-Increased-Benefits Pension Plan are provided by Chapter 274 of the Laws of 1970 as well as the restrictions prescribed by Article 11 of the Retirement and Social Security Law.

This Summary of Plan Provisions is applicable to Plan members included in the June 30, 2013 (Lag) actuarial valuation and include the provisions of Chapter 18 of the Laws of 2012 (*i.e.*, Tier VI).

### COORDINATED RETIREMENT PLAN

A member whose date of membership is July 27, 1976 or later belongs to the Coordinated Retirement Plan.

### SERVICE RETIREMENTS

#### **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 (10 or more years of service for Tier VI), subsequent to the date of membership.

Current members as of February 27, 2008 were provided a one hundred eighty 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.

After February 27, 2008, new members 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.

After December 10, 2009, new members 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.

Note: In the Coordinated Retirement Plan, Final Average Salary (FAS) is the average salary 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 exceed that of the average of the previous two years by more than 10%, the amount in excess of 10% will be excluded from the computation of FAS. Salary is defined as the regular compensation earned by, and paid to, a member.

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- Benefits:**
- {1} For a member with fewer than 20 years of service, the benefit is  $1/60$  times FAS (see note above) multiplied by years of service.
  - {2} For a member with at least 20 (Tier VI) but fewer than 30 years of service (Tier IV), the benefit is  $1/50$  times FAS multiplied by years of service (Tier 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  $1/50$  times FAS for each of the first 30 years of service plus  $3/200$  times FAS for each additional year (Tier 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 (10 or more years for Tier VI), subsequent to the date of membership.

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

- {1} For a Tier IV member who 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.

After February 27, 2008, new Tier IV members are eligible to retire at age 55 and later without reduction after 27 years of service and are required to pay an additional  $1.85\%$  of future pay.

Current Tier IV members as of February 27, 2008 were provided a one hundred eighty day period during which they were allowed to join a plan that permitted them to retire at age 55 and later without reduction after 25 years of service, provided they pay an additional  $1.85\%$  of future pay.

- {2} A Tier 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 (ten years if hired after December 10, 2009), is entitled to a deferred vested benefit payable at age 55 or later. A member who elects payability before age 62 (age 63 for Tier VI) will receive a reduced benefit.

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

**Benefits:** The benefit formulas are the same as those set forth under a Normal Service Retirement and an Early Service Retirement. Should a member who elected to receive a vested deferred retirement allowance die before the attainment of payability age and had at least 10 years of service, the death benefit is 1/2 of the Ordinary Death Benefit in force on the last day of active service.

### DISABILITY RETIREMENTS

**Eligibility:** A member is eligible for Ordinary Disability Retirement benefits if (s)he 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)  $\frac{1}{3}$  of FAS ( $\frac{2}{3}$  of FAS for a member if the disability is judged to be the result of an accident in the performance of duty); or (b)  $\frac{1}{60}$  times FAS multiplied by the credited service.

### ORDINARY DEATH BENEFITS

**Benefits:** Upon joining TRS, a member must elect one of the following death benefits:

#### **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 his/her 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 his/her death, 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.

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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 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.

Members who joined TRS on or after July 27, 1976 and before September 1, 1983 are entitled to the following RSSL Article 14 Death Benefits, if greater (by ruling of the Court of Appeals in Public Employees' Federation v. Cuomo, dated June 29, 1984).

**The Death Benefits under RSSL Article 14 are as Follows:**

<b>If Death Occurs Before Age 60 and Service is:</b>			<b>Maximum Benefits Effective</b>	
<b><u>At Least</u></b>	<b><u>But Not More Than</u></b>	<b><u>Lump Sum Benefit</u></b>	<b><u>4/01/12 – 3/31/13</u></b>	<b><u>4/01/13 – 3/31/14</u></b>
1 Year	2 Years	One x Final Rate of Pay, But Not in Excess of:	\$ 48,900	\$ 49,800
2 Years	3 Years	Two x Final Rate of Pay, But Not in Excess of:	\$ 97,800	\$ 99,500
3 Years	Or More	Three x Final Rate of Pay, But Not in Excess of:	\$122,200	\$124,300

If death occurs at age 60, the benefits determined shall be reduced by 5%. If death occurs after age 60, there is an additional 5% reduction for each year that death occurs thereafter to a maximum of a 50% reduction.

The maximum lump-sum death benefit is subject to increase each April 1st at a maximum rate of 3% per annum based on the Consumer Price Index as of the previous December 31st.

**Beneficiaries:** The latest named beneficiary, duly designated on a TRS Form filed with TRS, will receive the death benefits. If none is designated, the benefits will be paid to the member's estate.

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

### 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:** The beneficiary receives a pension equal to 50% of the wages the member earned during the last year of actual service, but the application must be filed within 60 days of the member's death.
- Other:**
- {1} If the eligible beneficiary becomes ineligible to continue to receive the benefits, the pension shall be continued for all other members of the next eligible class of beneficiaries, and if none, to each successive class.
  - {2} If the benefits paid do not exceed the amount of the ordinary lump-sum death benefit because of the absence of eligible beneficiaries, the difference is to be paid to the last eligible beneficiary, or if none, to the member's estate.
- Beneficiaries:** Beneficiaries are prescribed in the following order:
- {1} A surviving spouse who has not renounced survivorship rights in a separation agreement, or has not remarried;
  - {2} Surviving children until age 25;
  - {3} Dependent parents whose eligibility shall be determined in accordance with regulations promulgated by the Teachers' Retirement Board;
  - {4} Any other person who qualifies as a dependent on the final income tax return the member filed in the year preceding his/her year of death, until such person reaches 21 years of age.

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### THE TWENTY-YEAR PENSION PLAN AND AGE-55-INCREASED-BENEFITS PENSION PLAN

A member who elects the Twenty-Year Pension Plan may cancel such election at any time, in which case (s)he will become eligible for the benefits provided by the Age-55-Increased-Benefits Pension Plan and vice versa.

See the end of this section for Definitions of terms used in these plan descriptions.

#### SERVICE RETIREMENT

##### Twenty-Year Pension Plan

- Eligibility:**
- {1} A member who joined TRS prior to July 1, 1973 and who elects the Twenty-Year Pension Plan is eligible to retire after having completed 20 years of service, with benefits to begin on the payability date. 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 his/her 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 after June 30, 1973 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 member who joined prior to July 1, 1973, is the sum of the following:
- {1} 50% of the average salary, reduced by an annuity which is the actuarial equivalent of the minimum accumulation;
  - {2} an annuity which is the actuarial equivalent of the accumulated deductions; and
  - {3} for service in excess of 20 years, (a) a pension for Increased-Take-Home-Pay which is the actuarial equivalent of the Reserve for Increased-Take-Home-Pay credited in such years, and (b) 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.



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If a member who joined TRS after June 30, 1973 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 members as of February 27, 2008 were provided a one hundred and eighty 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 member who joined TRS prior to July 1, 1973 and who either elects the Age-55-Increased-Benefits Pension Plan or who cancels his/her election of the Twenty-Year Pension Plan may retire after having attained age 55 with benefits payable immediately upon retirement.
  - {2} A member who joined TRS after June 30, 1973 must also have rendered five years of continuous service immediately prior to retiring and must have attained age 55.

**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 member who joined TRS after June 30, 1973 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 members as of February 27, 2008 were provided a one hundred eighty 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.

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### 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.

### 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 three-fourths of the average salary in the last five 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. The pensions are subject to reduction for Workers' Compensation benefits granted on account of the accident.

### VESTED DEFERRED RETIREMENT ALLOWANCE

**Eligibility:** A member who either resigns or is dismissed from service would receive a benefit equal to his/her 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 1/2 of the Ordinary Death Benefit in force on the last day of service.

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

### ORDINARY DEATH BENEFITS

**Benefits:** Upon the death of a member in active service, a benefit is paid to his/her estate or to such person(s) as (s)he shall have nominated.

#### **Members who joined TRS before July 1, 1973**

- \* If a member completed less than 10 years of City Service, the benefit is equal to the compensation earnable by the member in the six 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 his/her 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 his/her death, whichever is larger.

**Members who joined TRS between July 1, 1973 and July 27, 1976** 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 his/her 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 his/her death, if greater.

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

**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 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.

### 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 one-half 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, if the member joined TRS prior to July 1, 1973, the beneficiary 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. The pension is subject to reduction because of Workers' Compensation benefits granted on account of the accidental death.

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

### AUTOMATIC ANNUAL COST-OF-LIVING ADJUSTMENTS (COLA)

**Eligibility:** 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 CPI-U based on the year ending March 31, rounded to the next higher .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. One half 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 thirty days after the effective date of the retirement of such member.

### DEFINITIONS

**Accumulated Deductions**—The total contributions the member made to his/her Annuity Savings Account, with regular and special interest thereon.

**Average Salary**—{1} For a member who joined prior to July 1, 1973, salary earnable in the last year of the most recent three-year period during which (s)he held no more than one position, or the average annual salary earnable in any five consecutive years designated by the member. {2} For a member who joined after June 30, 1973, the average salary earned during any three consecutive years which provides the highest average salary. However, if the salary earned during any year included in this three-year period exceeds the average of the previous two years by more than 20%, the amount in excess of 20% is excluded from the computation.

**City Service**—All service as an employee of the City.

**Minimum Accumulation**—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.

**New Entrant**—With minor exceptions, a teacher appointed to the public schools after August 1, 1917.

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

**Payability Date**—For members who elected the Twenty-Year Pension Plan, the date on which the Service Retirement allowance begins, which is the latest of {1} the date when the member retires, or {2} the date when (s)he attains age 55, or {3} the date when the member could have completed 25 years of City Service had (s)he remained active. For all other members, the retirement allowance begins on the date of retirement.

**Present Teacher**—A teacher in the public schools on August 1, 1917 and certain other specified school and college members.

**Prior Service**—All City Service and all teaching and supervisory service in schools maintained by the City prior to September 16, 1917, for the present teachers and, in the case of a New Entrant, prior to the date of appointment.

**Reserve For Increased-Take-Home-Pay**—A reserve of 2.5%, 5%, or 8% of the member's salary pursuant to the provisions of §13-546 of the Administrative Code of the City of New York, accumulated with regular and additional interest.

### **OPTIONS ON RETIREMENT OR DEATH**

A member, upon retirement, may receive his/her 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.

#### **Members who joined prior to July 27, 1976:**

- {1} For members who joined prior to July 1, 1973, 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 date of retirement, the balance shall be paid to the designated beneficiary or estate in a lump sum. For members who joined after June 30, 1973, this option is only available with regard to the annuity.
- {2} 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.
- {3} A joint-and-survivor allowance under which reduced payments will be made during life with a provision that upon the member's death, the same payments or one-half of such payments shall be continued throughout the life of such other person(s) as the member shall have designated.
- {4} Such other actuarial equivalent optional forms as may be certified by the Actuary and approved by the Teachers' Retirement Board. By resolution, the Teachers' Retirement Board has approved an option under which reduced payments will be made during life with a provision that, upon the member's death, a sum specified by the member at the time of retirement shall be paid to the designated beneficiary or estate.

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

Upon a member's death, the beneficiary may elect to receive the actuarial equivalent of the lump-sum otherwise payable in one of the following forms: 1) An annual amount payable for life in monthly installments, all payments ending at death; 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. This is only available to the beneficiary of a member who joined prior to July 1, 1973.

### **Members who joined on or after July 27, 1976:**

- {1} The same five-year or ten-year certain and life allowance as described in #2 above.
- {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%, 75%, 50% or 25% of such payments shall be continued throughout the life of such other person(s) as the member shall have designated.

### **CONTRIBUTIONS**

TRS benefits are financed by employee and employer contributions and from earnings on TRS' invested funds.

### **MEMBER CONTRIBUTIONS**

#### **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/her contributions with 5% interest will be refunded upon request.

Beginning October 1, 2000, Tier III and IV members will not be required to make basic required contributions after the 10<sup>th</sup> anniversary of their membership date or completion of ten years of City Service, whichever is earlier. New members after February 27, 2008 and members who elected to join the 55/25 plan pay an additional 1.85% of pay for all 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.

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

### **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.

### **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 his/her 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.

**Loans:** Subject to certain limitations, a member not covered under Article 15 may borrow an amount not exceeding 75% of the member's Accumulated Deductions. Effective July 1, 1991, subject to certain limitations, a member covered under Article 15 may borrow an amount not exceeding 75% of the member's Accumulated Deductions, provided it can be repaid with interest within five years by payroll deductions. Beginning 30 days after the inception of the loan, the amount of the unpaid portion of the loan is insured in full. Should the borrower subject to Article 15 retire before the loan is repaid, the actuarial equivalent of the outstanding loan is deducted from his/her retirement allowance.

**ITHP:** In general, the retirement and death benefits payable to or on account of members are supplemented by the Reserve For Increased-Take-Home-Pay, accumulated from City contributions at a rate equal to the Increased-Take-Home-Pay factor times salary. In general, the total benefit is equal to the benefit that would have been paid if the members' rates of contributions had not been reduced by the Increased-Take-Home-Pay rate. However, the Reserve For Increased-Take-Home-Pay is not payable upon the death of a member who joined after June 30, 1973.



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

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

<b>PERIOD</b>	<b>INCREASED-TAKE-HOME-PAY FACTOR</b>
<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%

### EMPLOYER CONTRIBUTIONS

The Entry Age Actuarial Cost Method is utilized by the Plan's Actuary to calculate the contributions due from the participating employers.

The Employer Contributions are accrued by the Plan and are funded by the participating employers on a current basis. The Employer Contributions amounted to \$3,270,006,920 for the Fiscal Year ended June 30, 2015.

In addition to the Employer Contributions, the employers make payments for the benefit of certain members of the Plan who have attained the maximum grade of their salary schedule, in accordance with amendments to the Administrative Code of the City of New York. Teachers at maximum grade have \$400 per annum paid on a monthly basis to their accounts, while \$550 per annum is paid on a monthly basis to the accounts of supervisory personnel at maximum grade.

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

### VARIABLE ANNUITY PROGRAMS

**Diversified Equity:** Beginning January 1, 1968, members were given the option to participate in a variable annuity program now known as the Diversified Equity (Variable A) Fund, thereby providing a means which can reasonably be expected to protect a portion of their retirement income against the effect of increases in the cost of living. The monthly Variable Annuity payment is a fixed number of units, the value of which varies each month to reflect the financial experience of the investments which are almost entirely in common stocks.

On January 1, 1968, the effective date of the Diversified Equity Fund, a unit was assigned an arbitrary value of \$10. Each month thereafter, the unit value changed, reflecting the investment experience of the common stock fund during the preceding month. Since January 1, 1968, the value of a unit of the Diversified Equity Fund varied between a high of \$83.661 during March 2015 and a low of \$5.453 during October 1974. The monthly unit value of the Diversified Equity Fund was \$81.738 during July 2015.

**Bond Fund:** Beginning July 1, 1983, members were given the option to participate in a second variable annuity program, now designated the Bond (Variable B) Fund (Formerly the Stable-Value Fund). The Bond Fund is income-oriented and is intended to be less volatile than the Diversified Equity Fund. The monthly Variable Annuity payment is a fixed number of units, the value of which varies each month to reflect the financial experience of the investments, which may include Treasuries, Agencies, Corporates, Mortgages and other types of fixed-income instruments.

On July 1, 1983, the effective date of the Bond Fund, a unit was assigned an arbitrary value of \$10. Each month thereafter, the unit value changed, reflecting the investment experience of the changes in market value and income received from the investments in the fund during the preceding month. Since July 1, 1983, the value of a unit of the Bond Fund varied between a high of \$19.750 during September 2002 and a low of \$10 at inception on July 1, 1983. The monthly unit value of the Bond Fund was \$17.616 during July 2015.

**International Equity:** Beginning July 1, 2008, members were given the option to participate in a third variable annuity program, designated the International Equity (Variable C) Fund. The International Equity Fund is capital growth oriented. The monthly Variable Annuity payment is a fixed number of units, the value of which varies each month to reflect the financial experience of the investments, which invests in non-U.S. equities as compared with the Diversified Equity Fund which invests primarily in U.S. equities.

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

On July 1, 2008, the effective date of the International Equity Fund, a unit was assigned an arbitrary value of \$10. Each month thereafter, the unit value changed, reflecting the investment experience of the changes in market value and income received from the investments in the fund during the preceding month. Since July 1, 2008, the value of a unit of the International Equity Fund varied between a high of \$ 11.011 during July 2014 and a low of \$6.048 during March 2009. The monthly unit value of the International Equity Fund was \$10.170 during July 2015.

### **Inflation Protection:**

Beginning July 1, 2008, members were given the option to participate in a fourth variable annuity program, designated the Inflation Protection (Variable D) Fund. The Inflation Protection Fund seeks to provide a rate of return that exceeds inflation. The monthly Variable Annuity payment is a fixed number of units, the value of which varies each month to reflect the financial experience of the investments, which may include fixed income investments, bonds, real estate commodities, etc.

On July 1, 2008, the effective date of the Inflation Protection Fund, a unit was assigned an arbitrary value of \$10. Each month thereafter, the unit value changed, reflecting the investment experience of the changes in market value and income received from the investments in the fund during the preceding month. Since July 1, 2008, the value of a unit of the Inflation Protection Fund varied between a high of \$11.819 during May 2013 and a low of \$8.012 during March 2009. The monthly unit value of the Inflation Protection Fund was \$10.807 during July 2015.

### **Socially Responsive Equity:**

Beginning July 1, 2008, members were given the option to participate in a fifth variable annuity program, designated the Socially Responsive Equity (Variable E) Fund. The Socially Responsive Equity Fund is capital growth oriented while investing in equities from socially responsible companies. The monthly Variable Annuity payment is a fixed number of units, the value of which varies each month to reflect the financial experience of the investments, which is a mutual fund that attempts to avoid investing in companies that do not reflect social priorities.

On July 1, 2008, the effective date of the Socially Responsive Equity Fund, a unit was assigned an arbitrary value of \$10. Each month thereafter, the unit value changed, reflecting the investment experience of the changes in market value and income received from the investments in the fund during the preceding month. Since July 1, 2008, the value of a unit of the Socially Responsive Equity Fund varied between a high of \$14.566 during November 2014 and a low of \$6.844 during March 2009. The monthly unit value of the Socially Responsive Equity Fund was \$14.760 during July 2015.

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

A member may elect to place part or all of his/her contributions and the City's contributions for Increased-Take-Home-Pay in either variable annuity program. The normal pension for service which is provided by the City will be paid in fixed dollars. Subject to certain prescribed limitations, a member may periodically elect either to participate in the variable annuity programs or to revoke a previous election.

Individual accounts of the members' own contributions are maintained in each variable annuity savings fund. Individual accounts, based on the City's contribution for Increased-Take-Home-Pay, are maintained in the Variable Pension Accumulation Funds. Deposits in these accounts are credited in terms of units, the value of which is determined at the beginning of each month and remains unchanged during that month.

# Statistical





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

This part of the Comprehensive Annual 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 16 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 17 contains trend information as it relates to investment and administrative expenses of the System.

### **TDA Financial Trend Information**

Schedules 18 through 20 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 21 through 25 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**

Year Ended	Pension Fund	Diversified Equity	Bond Fund*	International Equity	Inflation Protection	Socially Responsive Equity	Net Position	Changes in Net Position
2006	\$26,025,602	\$5,958,485	\$222,630	N/A	N/A	N/A	\$32,206,717	\$1,714,547
2007	30,513,823	6,431,897	197,071	N/A	N/A	N/A	37,142,791	4,936,074
2008	27,054,108	5,072,017	171,739	N/A	N/A	N/A	32,297,864	(4,844,927)
2009	19,795,757	3,113,828	148,256	\$14,667	\$2,715	\$2,266	23,077,489	(9,220,375)
2010	23,140,827	3,107,689	129,595	13,803	3,754	2,742	26,398,410	3,320,921
2011	29,942,258	3,523,126	112,117	15,626	4,527	3,883	33,601,537	7,203,127
2012	29,611,995	3,053,466	80,952	16,802	5,937	5,609	32,774,761	(826,776)
2013	33,654,166	3,110,127	63,719	16,320	5,882	6,242	36,856,456	4,081,695
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)

\* Stable-Value Fund prior to January 1, 2012.

**SCHEDULE 2: 2015 CHANGES IN NET POSITION—QPP**

*In Thousands*

	Pension Fund	Diversified Equity	Bond Fund	International Equity	Inflation Protection	Socially Responsive Equity	Net Position
2014 Net Position	\$41,199,953	\$3,210,248	\$48,507	\$17,082	\$5,662	\$8,487	\$44,489,939
Member Contributions	158,124	417	44	3	-	2	158,590
Employer Contributions	3,325,474	53	1	-	-	-	3,325,528
Interest & Misc Income	774,677	3,461	678	6	4	-	778,826
Dividend Income	820,415	68,459	-	122	80	155	889,231
Realized Profit/Loss	3,971,313	291,465	(76)	518	233	190	4,263,643
Unrealized Profit/Loss	(3,906,747)	(208,605)	21	(1,128)	(567)	216	(4,116,810)
Benefit Payments	(3,410,602)	(582,151)	(14,017)	(1,688)	(576)	(926)	(4,009,960)
Refunds & Withdrawals	(13,213)	(1,099)	-	-	-	-	(14,312)
Interest Paid to TDA Funds	(1,248,988)	-	-	-	-	-	(1,248,988)
Transfer to other Systems	329	-	-	-	-	-	329
Interfund Transfer	30,059	(29,235)	(971)	189	(79)	37	-
Provision for Expenses*	(248,748)	(12,355)	(153)	(33)	(10)	(53)	(261,352)
<b>2015 Net changes</b>	<b>\$252,093</b>	<b>\$(469,590)</b>	<b>\$(14,473)</b>	<b>\$(2,011)</b>	<b>\$(915)</b>	<b>\$(379)</b>	<b>\$(235,275)</b>
<b>2015 Net Position</b>	<b>\$41,452,046</b>	<b>\$2,740,658</b>	<b>\$34,034</b>	<b>\$15,071</b>	<b>\$4,747</b>	<b>\$8,108</b>	<b>\$44,254,664</b>

\* Includes Administrative and Investment Expenses.



**SCHEDULE 3: CHANGES IN NET POSITION—QPP**  
In Thousands

Year Ended June 30*	1	2	3	4	5	6	7	8	9	10	11
Net Member Contributions	Net Contributions	Employer Contributions	Net Investment Income	Transfer from/to Other Systems	TDA Fixed Interest Payments	Total Retirement Benefits	Loans Closed at Retirement	Withdrawals	Other Benefits**	Administrative Expenses	Change in Net Position
2006	\$141,056	\$1,338,338	\$3,609,769	(\$401)	(\$451,631)	(\$2,763,758)	(\$56,817)	(\$14,917)	(\$53,154)	(\$33,938)	\$1,714,547
2007	143,786	1,622,743	6,787,568	(453)	(547,396)	(2,931,296)	(82,811)	(16,869)	(1,633)	(37,565)	4,936,074
2008	142,308	1,944,097	(3,109,764)	799	(648,015)	(3,065,092)	(55,832)	(17,194)	4,155	(40,389)	(4,844,927)
2009	143,281	2,297,789	(7,838,259)	1,035	(767,007)	(2,874,313)	(33,042)	(12,592)	(99,628)	(37,639)	(9,220,375)
2010	138,075	2,566,288	4,778,159	(2,109)	(816,557)	(3,017,755)	(30,338)	(12,782)	(240,595)	(41,465)	3,320,921
2011	158,829	2,525,111	8,888,669	737	(854,073)	(3,228,940)	(39,998)	(10,593)	(197,066)	(39,549)	7,203,127
2012	164,361	2,732,263	803,007	853	(945,967)	(3,366,901)	(28,031)	(17,273)	(129,375)	(39,713)	(826,776)
2013	154,698	2,912,844	5,721,112	(44)	(1,047,979)	(3,513,188)	(24,006)	(12,690)	(69,370)	(39,682)	4,081,695
2014	154,962	3,054,424	9,435,906	404	(1,047,923)	(3,706,037)	(24,866)	(18,813)	(168,532)	(46,042)	7,633,483
2015	158,590	3,325,528	1,611,929	329	(1,248,988)	(3,903,337)	(28,775)	(14,312)	(77,848)	(58,391)	(235,275)

**Total Retirement Benefits By Type**

Year Ended June 30*	6a Service Retirement Allowances	6b Ordinary Disability Retirement Allowances	6c Accident Disability Retirement Allowances	6d Survivors' Benefits	6 Total Retirement Benefits
2006	(\$2,619,238)	(\$37,816)	(\$18,324)	(\$88,380)	(\$2,763,758)
2007	(2,776,467)	(39,190)	(19,942)	(95,697)	(2,931,296)
2008	(2,888,552)	(42,663)	(22,621)	(111,256)	(3,065,092)
2009	(2,714,932)	(38,990)	(21,200)	(99,191)	(2,874,313)
2010	(2,851,639)	(40,327)	(22,809)	(102,980)	(3,017,755)
2011	(3,046,583)	(43,348)	(25,596)	(113,413)	(3,228,940)
2012	(3,178,074)	(46,071)	(27,811)	(114,945)	(3,366,901)
2013	(3,337,405)	(48,492)	(28,487)	(123,497)	(3,513,188)
2014	(3,493,623)	(51,325)	(29,527)	(131,562)	(3,706,037)
2015	(3,678,649)	(54,803)	(30,905)	(138,980)	(3,903,337)

\* Benefit Payment categories for 2006-2014 take into account retirement valuation reports.

\*\* Other Benefits consists of Retiree Advances, delayed interest payments, Active Death Payments, and excluding Fiscal Year 2015, adjustment of retirement benefits based on retirement valuation reports. Also, Fiscal Year 2011 includes \$112,462 in Nager II benefit payments, Fiscal Year 2010 includes \$149,406 minimum accumulation settlement.

Note: Benefit payments and withdrawals include columns 5, 6, 7, 8 and 9.

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

**SCHEDULE 4: PARTICIPATING EMPLOYERS—QPP**

*As of June 30, 2013 (Lag)*

<b>Employer</b>	<b>Number of In-Service Members*</b>	<b>Annual Payroll*</b>
NYC Department of Education and City University of New York	106,519	\$7,807,877,768
City University of New York Senior Colleges & Community Colleges	5,354	277,731,963
Charter Schools**	<u>Start Date</u>	<u>Type</u>
Beginning with Children	09/2001	DOE Conversion - UFT
Future Leaders Institute	09/2005	DOE Conversion - UFT
Harriet Tubman	09/2005	DOE Conversion - Non Union
Kipp Academy	09/2000	DOE Conversion - UFT
Kipp AMP	09/2005	Non Conversion - Non Union
Kipp Infinity	09/2005	Non Conversion - Non Union
Opportunity	09/2004	Non Conversion - UFT
Renaissance	09/2000	DOE Conversion - UFT
UFT Elementary	09/2005	Non Conversion - UFT
University Prep (formally UFT Green Dot)	09/2008	Non Conversion - UFT
Voice	09/2008	Non Conversion - Non Union
Wildcat	09/2000	DOE Conversion - UFT
<b>SUBTOTAL</b>		<b>\$42,768,340</b>
<b>TOTAL</b>	<b>112,481</b>	<b>\$8,128,378,071</b>

\* The number of in service employees and their corresponding Annual Payroll include only current active members receiving salary as of each June 30<sup>th</sup>.

\*\* 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.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 5: ACTIVE MEMBERSHIP SUMMARY—QPP**

	As of July 1	Contributors Registered	Payroll Updates	Contributors Withdrawn	As of June 30th
2005	105,391	10,601	(5,676)	(5,466)	104,850
2006	104,850	11,477	(2,706)	(3,629)	109,992
2007	109,992	8,776	(3,928)	(4,972)	109,868
2008	109,868	11,234	(5,183)	(3,447)	112,472
2009	112,472	7,526	(4,015)*	(2,851)	113,132
2010	113,132	4,617	(3,378)	(2,724)	111,647
2011	111,647	4,779	(3,717)	(3,073)	109,636
2012	109,636	9,519	(3,135)	(3,560)	112,460
2013	112,460	7,101	(3,744)	(3,336)	112,481
2014	112,481	7,915	(4,032)	(4,638)	111,726

\*Revised for FY 2010.

Active membership summary based on latest active valuation reports. Estimated active memberships of 114,000 for 2015.

**SCHEDULE 6: TABLE OF AVERAGE SALARIES OF IN-SERVICE MEMBERS—QPP**

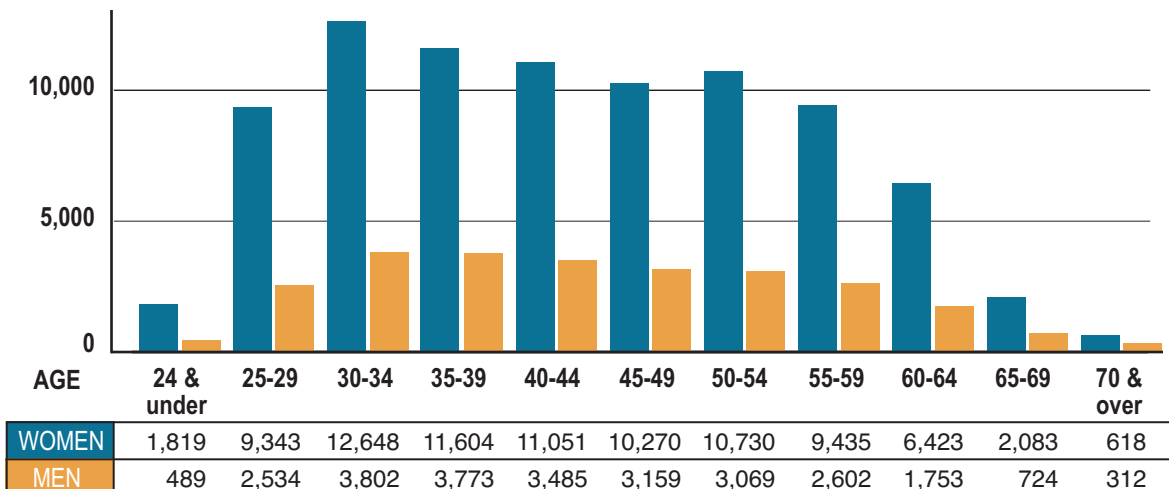
As of June 30, 2014

MEN			WOMEN		
Age	Number of In-Service Members*	Average Salaries*	Age	Number of In-Service Members*	Average Salaries*
24 & under	489	\$45,127	24 & under	1,819	\$48,378
25-29	2,534	57,676	25-29	9,343	59,187
30-34	3,802	70,801	30-34	12,648	70,628
35-39	3,773	79,000	35-39	11,604	74,969
40-44	3,485	83,163	40-44	11,051	76,600
45-49	3,159	85,635	45-49	10,270	75,284
50-54	3,069	87,998	50-54	10,730	76,767
55-59	2,602	87,252	55-59	9,435	75,768
60-64	1,753	85,002	60-64	6,423	76,871
65-69	724	79,530	65-69	2,083	73,837
70 & over	312	77,666	70 & over	618	66,435
<b>TOTAL</b>	<b>25,702</b>	<b>\$78,738</b>	<b>TOTAL</b>	<b>86,024</b>	<b>\$72,665</b>
<b>TOTAL ANNUAL SALARIES</b>		<b>\$2,023,730</b>	<b>TOTAL ANNUAL SALARIES</b>		<b>\$6,250,955</b>

\* The member count and the annual payroll include only those who were on the June 30<sup>th</sup> payroll.

**IN-SERVICE MEMBERS ON PAYROLL—DISTRIBUTION BY AGE**

As of June 30, 2014



**SCHEDULE 7: IN-SERVICE MEMBERSHIP BY TIER AND BY TITLE—QPP**

**IN-SERVICE MEMBERSHIP BY TIER**

Year	Average Age	IN-SERVICE MEMBERSHIP BY TIER						IN-SERVICE MEMBERSHIP BY TITLE					
		Tier I	Tier II	Tier III	Tier IV	Tier VI	Teachers	Paraprofessionals	Principals and Administrators	Full-Time CUNY Faculty	Adjunct CUNY Instructors	Others	
2006	36.3	4.1%	1.8%	3.9%	90.2%	0.0%	71.6%	14.4%	4.2%	0.8%	1.0%	8.0%	
2007	44.6	3.2%	1.5%	3.7%	91.6%	0.0%	72.1%	14.4%	3.8%	1.0%	1.0%	7.7%	
2008	44.3	2.4%	1.2%	3.4%	93.0%	0.0%	73.4%	13.2%	3.7%	1.1%	1.1%	7.5%	
2009	44.8	2.1%	1.0%	3.0%	93.9%	0.0%	68.9%	14.6%	5.3%	1.6%	1.1%	8.5%	
2010	45.2	1.6%	0.8%	2.7%	94.9%	0.0%	67.9%	15.2%	5.4%	1.9%	1.1%	8.5%	
2011	45.5	1.2%	0.6%	2.3%	95.9%	0.0%	67.2%	15.6%	5.5%	2.1%	1.3%	8.3%	
2012	45.4	0.9%	0.5%	1.8%	96.6%	0.2%	65.1%	16.7%	5.4%	2.4%	2.4%	8.0%	
2013	45.3	0.7%	0.4%	1.4%	91.4%	6.1%	64.9%	16.9%	5.5%	2.7%	2.4%	7.6%	
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%	

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 8: RETIREE SUMMARY—QPP**

	As of July 1	Retirees Registered	Retirees Withdrawn	As of June 30th
2005	62,728	4,423	(1,983)	65,168
2006	65,168	4,209	(1,801)	67,576
2007	67,576	3,078	(2,162)	68,492
2008	68,492	3,253	(1,970)	69,775
2009	69,775	3,118	(2,068)	70,825
2010	70,825	3,545	(2,014)	72,356
2011	72,356	3,852	(2,143)	74,065
2012	74,064	4,685	(2,210)	76,539
2013	76,539	4,079	(2,441)	78,177
2014	78,177	4,356	(2,114)	80,419

Retiree membership summary based on latest retirement valuation reports. Estimated retiree memberships of 83,000 for 2015.

**SCHEDULE 9: AVERAGE YEARS OF SERVICE OF NEW RETIREES—QPP**

*Average Years of Service*

Year Ended June 30	Men	Women	Men and Women	Total Number of Retirees
2005	30.9	27.5	28.3	4,104
2006	29.7	25.9	26.8	3,997
2007	28.7	26.3	26.9	2,715
2008	28.3	25.8	26.4	2,838
2009	26.7	25.1	25.5	2,699
2010	26.6	25.8	26.0	3,173
2011	26.5	25.3	25.6	3,423
2012	25.8	25.2	25.3	4,212
2013	25.1	24.8	24.9	3,583
2014	24.2	24.7	24.6	3,911

**SCHEDULE 10: PAYMENT OPTIONS CHOSEN AT RETIREMENT—QPP**

Year	Average Age	OPTIONS CHOSEN BY TIER I/II MEMBERS					OPTIONS CHOSEN BY TIER III/IV 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
2006	60.3	59.1%	28.1%	11.1%	1.2%	0.5%	72.2%	14.3%	10.3%	3.2%
2007	60.5	67.3%	19.3%	11.5%	0.9%	1.0%	74.1%	12.3%	10.8%	2.8%
2008	60.4	68.1%	17.6%	12.3%	1.3%	0.7%	75.6%	11.8%	9.8%	2.8%
2009	60.4	62.8%	20.8%	14.5%	0.8%	1.1%	73.2%	14.3%	10.2%	2.3%
2010	60.5	65.2%	20.3%	12.5%	0.8%	1.2%	71.4%	17.1%	9.3%	2.2%
2011	60.5	59.2%	24.5%	12.1%	2.8%	1.4%	71.0%	16.4%	10.5%	2.1%
2012	60.6	61.1%	24.8%	11.3%	1.1%	1.7%	71.4%	17.2%	9.7%	1.7%
2013	60.7	64.1%	21.5%	11.5%	1.3%	1.6%	68.9%	19.1%	10.3%	1.7%
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%

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 - 34 Yrs	35 & up Yrs	Total
Retirees 2006	3,615	12,447	38	439	2,623	4,337	6,033	12,706	15,745	9,593	67,576
Retirees 2007	3,666	8,672	47	641	3,081	4,799	6,685	13,334	17,030	10,537	68,492
Retirees 2008	3,777	8,011	51	739	3,313	4,995	7,092	13,514	17,415	10,874	69,781
Retirees 2009	3,878	7,546	54	832	3,476	5,121	7,390	13,933	17,609	10,986	70,825
Retirees 2010	3,935	6,493	59	934	3,709	5,310	7,829	14,557	18,139	11,391	72,356
Retirees 2011	3,989	6,423	60	1,040	3,937	5,466	8,163	15,057	18,401	11,529	74,065
Retirees 2012	4,071	5,882	63	1,165	4,382	5,720	8,786	15,942	18,786	11,742	76,539
Retirees 2013	4,118	5,386	64	1,270	4,704	5,862	9,371	16,634	19,064	11,727	78,177
Retirees 2014	4,257	8,208	65	1,377	5,054	6,011	9,600	16,671	18,140	11,036	80,419
Retirees 2015****	4,403	4,843	68	1,481	5,543	6,374	10,588	18,260	19,649	11,791	83,000
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			
Avg Monthly Benefit 2006	\$610	\$368	\$773	\$1,319	\$2,061	\$3,327	\$4,590	\$6,001			
Avg Monthly Benefit 2007	\$896	\$524	\$816	\$1,367	\$2,155	\$3,500	\$4,776	\$6,210			
Avg Monthly Benefit 2008	\$996	\$506	\$839	\$1,387	\$2,152	\$3,452	\$4,717	\$6,151			
Avg Monthly Benefit 2009	\$998	\$519	\$855	\$1,379	\$2,095	\$3,348	\$4,451	\$5,774			
Avg Monthly Benefit 2010	\$1,073	\$609	\$872	\$1,336	\$2,172	\$3,466	\$4,592	\$5,976			
Avg Monthly Benefit 2011	\$1,194	\$568	\$951	\$1,459	\$2,394	\$4,004	\$5,451	\$7,556			
Avg Monthly Benefit 2012	\$1,265	\$588	\$987	\$1,504	\$2,331	\$3,682	\$4,798	\$6,286			
Avg Monthly Benefit 2013	\$1,292	\$597	\$993	\$1,478	\$2,417	\$3,822	\$4,969	\$6,532			
Avg Monthly Benefit 2014	\$1,322	\$614	\$1,005	\$1,531	\$2,451	\$3,897	\$5,100	\$6,764			
Avg Monthly Benefit 2015****	\$1,324	\$606	\$1,046	\$1,541	\$2,609	\$4,054	\$5,279	\$7,350			
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			
Final Average Salary 2006	\$22,914	\$32,765	\$36,498	\$38,207	\$46,592	\$53,196	\$65,820	\$74,640			
Final Average Salary 2007	\$26,668	\$36,178	\$38,348	\$40,419	\$48,902	\$55,302	\$67,802	\$76,827			
Final Average Salary 2008	\$27,614	\$36,927	\$39,399	\$41,535	\$50,662	\$56,679	\$68,899	\$78,148			
Final Average Salary 2009	\$27,306	\$38,280	\$40,348	\$42,379	\$51,881	\$58,811	\$69,802	\$79,190			
Final Average Salary 2010	\$28,056	\$39,632	\$41,401	\$43,566	\$53,567	\$61,429	\$71,226	\$80,400			
Final Average Salary 2011	\$28,895	\$40,803	\$42,607	\$44,701	\$55,226	\$63,830	\$72,377	\$81,273			
Final Average Salary 2012	\$30,270	\$42,741	\$44,943	\$46,367	\$57,724	\$66,782	\$73,787	\$82,267			
Final Average Salary 2013	\$31,076	\$43,539	\$46,381	\$47,698	\$59,738	\$69,113	\$74,985	\$82,940			
Final Average Salary 2014	\$31,076	\$43,539	\$46,381	\$47,698	\$59,738	\$69,113	\$74,985	\$82,940			
Final Average Salary 2015****	\$30,946	\$44,441	\$49,831	\$50,645	\$63,802	\$73,796	\$77,860	\$84,692			

\* Retiree figures for 2006-2014 take into account retirement valuation reports.

\*\* Refers to retirees with a payment setup processed by a previous database system. The current payment system was initiated in 1998.

\*\*\* 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 2015 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.

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

<b>SCHEDULE 12: AVERAGE ANNUAL BENEFIT PAYMENT AMOUNTS—QPP</b>								
Year Ended June 30	SERVICE RETIREMENT BENEFITS		ORDINARY (NON-DUTY) DISABILITY BENEFITS		ACCIDENTAL (DUTY) DISABILITY BENEFITS		SURVIVORS' BENEFITS	
	Number	Average Annual Allowance	Number	Average Annual Allowance	Number	Average Annual Allowance	Number	Average Annual Benefit
2005	59,275	\$41,384	1,876	\$18,912	479	\$34,888	3,538	\$23,402
2006	61,457	42,619	1,988	19,022	516	35,512	3,615	24,448
2007	62,235	44,613	1,993	19,664	545	36,590	3,719	25,732
2008	63,343	45,603	2,043	20,883	573	39,478	3,822	29,109
2009	64,281	42,235	2,037	19,141	589	35,993	3,918	25,317
2010	65,734	43,381	2,068	19,500	619	36,849	3,935	26,170
2011	67,253	45,300	2,153	20,134	670	38,202	3,989	28,432
2012	69,515	45,718	2,242	20,549	711	39,116	4,071	28,235
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

**SCHEDULE 13: SERVICE RETIREMENT ALLOWANCES—QPP**  
*As of June 30, 2014*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	0	0	under 30	0	0
30-34	0	0	30-34	0	0
35-39	0	0	35-39	0	0
40-44	0	0	40-44	0	0
45-49	0	0	45-49	0	0
50-54	0	0	50-54	0	0
55-59	700	\$49,777	55-59	2,236	\$48,596
60-64	2,337	54,904	60-64	7,469	51,275
65-69	6,736	62,837	65-69	13,095	51,932
70-74	4,535	57,471	70-74	10,136	44,760
75-79	3,003	53,944	75-79	6,694	38,771
80-84	2,224	53,106	80-84	5,185	36,803
85-89	1,478	48,379	85-89	3,827	35,723
90 & over	736	46,399	90 & over	2,678	32,048
<b>TOTAL</b>	<b>21,749</b>	<b>\$56,683</b>	<b>TOTAL</b>	<b>51,320</b>	<b>\$44,783</b>

**TOTAL ANNUAL ALLOWANCES PAID \$1,232,807,271**

**TOTAL ANNUAL ALLOWANCES PAID \$2,298,263,302**

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 14: ORDINARY DISABILITY RETIREMENT ALLOWANCES—QPP**

*As of June 30, 2014*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	0	-	under 30	0	-
30-34	0	-	30-34	0	-
35-39	2	\$31,477	35-39	8	\$20,954
40-44	8	24,631	40-44	29	22,516
45-49	12	20,642	45-49	66	23,431
50-54	47	27,424	50-54	154	24,007
55-59	74	24,781	55-59	299	22,511
60-64	113	23,185	60-64	392	21,977
65-69	135	25,118	65-69	382	21,076
70-74	82	23,835	70-74	219	17,455
75-79	36	21,021	75-79	114	16,437
80-84	13	24,098	80-84	68	15,023
85-89	12	21,125	85-89	41	17,179
90 & over	9	31,853	90 & over	64	21,792
<b>TOTAL</b>	<b>543</b>	<b>\$24,320</b>	<b>TOTAL</b>	<b>1,836</b>	<b>\$20,849</b>

TOTAL ANNUAL ALLOWANCES PAID \$13,205,962

TOTAL ANNUAL ALLOWANCES PAID \$38,277,870

**SCHEDULE 15: ACCIDENT DISABILITY RETIREMENT ALLOWANCES—QPP**

*As of June 30, 2014*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
Under 30	0	-	under 30	1	\$38,810
30-34	0	-	30-34	0	-
35-39	2	\$51,517	35-39	7	41,744
40-44	4	46,543	40-44	11	44,138
45-49	3	47,445	45-49	11	37,689
50-54	7	33,101	50-54	34	39,909
55-59	14	51,521	55-59	63	37,134
60-64	28	48,673	60-64	104	40,165
65-69	71	44,237	65-69	113	38,842
70-74	38	48,432	70-74	64	42,151
75-79	20	43,368	75-79	41	31,107
80-84	11	39,077	80-84	31	35,251
85-89	7	42,849	85-89	10	43,079
90 & over	4	40,899	90 & over	15	40,487
<b>TOTAL</b>	<b>209</b>	<b>\$45,404</b>	<b>TOTAL</b>	<b>505</b>	<b>\$38,807</b>

TOTAL ANNUAL ALLOWANCES PAID \$9,489,360

TOTAL ANNUAL ALLOWANCES PAID \$19,597,687



TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 16: SURVIVORS' BENEFITS—QPP**

*As of June 30, 2014*

MEN			WOMEN		
Age	Number of Beneficiaries	Average Annual Benefit	Age	Number of Beneficiaries	Average Annual Benefit
under 30	7	\$17,109	under 30	5	\$26,592
30-34	3	28,092	30-34	9	24,366
35-39	8	27,072	35-39	14	18,642
40-44	11	21,173	40-44	12	25,587
45-49	18	10,481	45-49	29	15,534
50-54	23	13,387	50-54	61	19,834
55-59	31	19,678	55-59	78	23,789
60-64	65	20,429	60-64	179	37,679
65-69	127	31,512	65-69	284	38,811
70-74	164	31,215	70-74	401	37,873
75-79	136	25,763	75-79	400	38,021
80-84	165	27,163	80-84	518	35,263
85-89	201	26,441	85-89	507	32,414
90 & over	237	26,998	90 & over	504	27,295
<b>TOTAL</b>	<b>1,196</b>	<b>\$26,679</b>	<b>TOTAL</b>	<b>3,061</b>	<b>\$33,549</b>
<b>TOTAL ANNUAL BENEFITS PAID</b>		<b>\$31,908,114</b>	<b>TOTAL ANNUAL BENEFITS PAID</b>		<b>\$102,692,271</b>

**SCHEDULE 17: NUMBER AND COST OF INVESTMENT AND ADMINISTRATIVE SERVICES (QPP & TDA)**

Year Ended	Investment Agent Count	Investment Expenses	TRS Employees Count*	Administrative Expenses
2006	114	\$80,370,285	364	\$42,827,260
2007	144	\$96,956,626	367	\$48,420,388
2008	170	\$110,210,842	375	\$52,524,702
2009	200	\$111,203,770	374	\$51,090,690
2010	206	\$139,101,694	365	\$51,929,857
2011	188	\$136,300,683	364	\$49,428,933
2012	221	\$122,647,913	368	\$50,064,502
2013	227	\$151,401,872	373	\$49,877,929
2014	230	\$169,736,553	376	\$63,230,181
2015	228**	\$205,719,517**	370	\$84,173,556

\* Employee count does not include Consultants, Temporary Employees, and Summer Interns.

\*\* 2015 details are found in the schedule: Summary of Investment Managers and Fees of the Investment Section.

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

**SCHEDULE 18: NET POSITION AND CHANGES IN NET POSITION—TDA PROGRAM**

*In Thousands*

Year Ended	Pension Fund	Diversified Equity	Bond Fund*	International Equity	Inflation Protection	Socially Responsive Equity	Net Assets	Changes in Net Assets
2006	\$6,339,767	\$7,515,108	\$265,363	NA	NA	NA	\$14,120,238	\$1,510,060
2007	7,607,028	8,499,546	273,423	NA	NA	NA	16,379,997	2,259,759
2008	8,896,613	7,096,600	274,660	NA	NA	NA	16,267,873	(112,124)
2009	10,605,577	4,499,663	278,335	\$39,046	\$7,644	\$7,457	15,437,722	(830,151)
2010	11,884,377	4,999,750	293,448	51,831	11,978	12,441	17,253,825	1,816,103
2011	13,118,153	6,293,322	308,666	71,674	19,833	22,145	19,833,793	2,579,968
2012	14,554,722	5,975,066	301,727	57,905	22,590	30,087	20,942,097	1,108,304
2013	16,021,066	6,762,476	304,675	71,621	28,001	41,837	23,229,676	2,287,579
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

\* Stable-Value Fund prior to January 1, 2012.

**SCHEDULE 19: CHANGES IN NET POSITION—TDA PROGRAM**

*In Thousands*

Year Ended June 30	1 Net Member Contributions	2 Fixed Interest from Pooled Pension Fund	3 Net Investment Income	6 Withdrawals	7 Other Benefits*	4 Annuitized Payments	8 Administrative Expenses	9 Change in Net Position
2006	\$556,813	\$451,631	\$842,530	(\$250,616)	(\$42,588)	(\$38,821)	(\$8,889)	\$1,510,060
2007	579,381	547,396	1,499,838	(274,074)	(40,997)	(40,930)	(10,855)	2,259,759
2008	602,749	648,015	(921,703)	(331,142)	(58,985)	(38,923)	(12,135)	(112,124)
2009	639,170	767,007	(1,849,614)	(263,692)	(80,563)	(29,008)	(13,451)	(830,151)
2010	640,370	816,557	683,726	(212,307)	(72,051)	(29,727)	(10,465)	1,816,103
2011	631,840	854,073	1,585,111	(369,370)	(80,565)	(31,241)	(9,880)	2,579,968
2012	627,159	945,967	109,651	(431,412)	(98,606)	(34,103)	(10,352)	1,108,304
2013	633,900	1,047,979	1,216,793	(460,659)	(104,402)	(35,837)	(10,195)	2,287,579
2014	638,979	1,147,923	1,631,411	(577,102)	(139,759)	(40,451)	(17,188)	2,643,813
2015	662,601	1,248,988	435,632	(658,504)	(157,994)	(44,847)	(25,783)	1,460,093

\* Other Benefits consists of active death payments and delayed interest payments.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

**SCHEDULE 20: 2015 CHANGES IN NET POSITION—TDA PROGRAM**

*In Thousands*

	Pension Fund	Diversified Equity	Bond Fund	International Equity	Inflation Protection	Socially Responsive Equity	Net Position
2014 Net Position	\$17,450,769	\$7,909,321	\$304,788	\$96,028	\$37,488	\$75,095	\$25,873,489
Member Contributions	446,609	170,266	17,809	10,649	4,944	12,324	662,601
Payment of interest on TDA fixed return funds	1,248,988	-	-	-	-	-	1,248,988
Interest & Misc Income	25,070	6,296	4,650	20	23	-	36,059
Dividend Income	-	124,531	-	392	520	1,424	126,867
Realized Profit/Loss	-	530,188	(518)	1,670	1,506	1,738	534,584
Unrealized Profit/Loss	-	(251,886)	143	(5,514)	(3,838)	1,975	(259,120)
Benefit Payments	(142,955)	(66,724)	(3,818)	(506)	(556)	(340)	(214,899)
Refunds & Withdrawals	(475,188)	(157,752)	(8,321)	(2,232)	(1,258)	(1,695)	(646,446)
Interfund Transfer	369,309	(367,614)	(10,883)	(2,355)	677	10,866	-
Provision for Expenses*	-	(26,730)	(1,034)	(210)	(69)	(498)	(28,541)
<b>2015 Net changes</b>	<b>\$1,471,833</b>	<b>(\$39,425)</b>	<b>(\$1,972)</b>	<b>\$1,914</b>	<b>\$1,949</b>	<b>\$25,794</b>	<b>\$1,460,093</b>
<b>2015 Net Position</b>	<b>\$18,922,602</b>	<b>\$7,869,896</b>	<b>\$302,816</b>	<b>\$97,942</b>	<b>\$39,437</b>	<b>\$100,889</b>	<b>\$27,333,582</b>

\* Includes Administrative and Investment Expenses.

**SCHEDULE 21: TDA PROGRAM SUMMARY (EXCLUDES ANNUITANTS)**

	As of July 1	Contributors Registered	Payroll Updates	Contributors Withdrawn	As of June 30th
2005	67,534	1,449	1,806	(4,112)	66,677
2006	66,677	1,888	3,908	(3,216)	69,257
2007	69,257	1,642	3,362	(3,148)	71,113
2008	71,113	1,841	3,023	(3,079)	72,898
2009	72,898	1,121	3,768	(2,638)	75,149
2010	75,149	458	3,041	(2,731)	75,917
2011	75,917	845	2,617	(3,022)	76,357
2012	76,357	1,435	2,965	(3,513)	77,244
2013	77,244	1,834	2,095	(3,400)	77,773
2014	77,773	1,914	1,587	(3,569)	77,705

Active membership summary based on latest active valuation reports.

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

**SCHEDULE 22: TDA PROGRAM ANNUITANTS SUMMARY**

<b>Year</b>	<b>As of July 1</b>	<b>Annuitants Registered</b>	<b>Annuitants Withdrawn</b>	<b>As of June 30th</b>
2005	4,914	157	(464)	4,607
2006	4,607	163	(397)	4,373
2007	4,373	215	(448)	4,140
2008	4,140	163	(446)	3,857
2009	3,857	151	(404)	3,604
2010	3,604	137	(322)	3,419
2011	3,419	177	(345)	3,251
2012	3,251	234	(301)	3,184
2013	3,184	162	(291)	3,055
2014	3,055	195	(214)	3,036

*Annuitant membership summary based on latest retirement valuation reports.*

**SCHEDULE 23: MEMBERSHIP BY AGE (ACTIVE, DEFERRAL & BENEFICIARY ACCOUNTS AS OF JUNE 30, 2015)—TDA PROGRAM**

<b>Age</b>	<b>Contributing</b>		<b>Non-Contributing</b>		<b>Deferred*</b>		<b>Beneficiary</b>		<b>Loans**</b>	
	<b>Count</b>	<b>Fund Balance</b>	<b>Count</b>	<b>Fund Balance</b>	<b>Count</b>	<b>Fund Balance</b>	<b>Count</b>	<b>Fund Balance</b>	<b>Count</b>	<b>Loan Balance</b>
=<25	3,861	\$27,265,864	330	\$582,651	1	\$45,593	16	\$956,377	149	\$506,915
30	9,003	188,106,283	857	14,036,561	47	1,285,627	13	1,132,022	1,636	9,024,515
35	11,364	496,466,408	1,662	58,335,169	168	6,894,550	17	3,332,877	5,231	33,908,498
40	10,684	741,112,297	1,367	58,259,117	273	16,260,971	23	5,350,700	7,382	49,816,023
45	10,592	1,026,790,343	1,027	51,893,558	396	28,822,933	57	12,153,622	8,295	55,594,991
50	9,779	1,248,732,949	946	57,167,310	505	46,721,212	63	12,091,184	8,168	55,336,065
55	9,586	1,556,177,355	790	59,306,200	1,693	378,557,232	89	15,630,179	7,617	52,897,233
60	7,841	1,425,050,080	551	41,776,070	5,506	1,558,636,274	84	15,131,772	6,000	45,465,335
65	3,591	755,576,135	258	18,631,297	13,472	4,904,977,812	109	31,568,546	4,294	38,557,439
70	863	219,800,704	94	7,096,080	14,060	5,871,208,752	113	47,680,320	2,387	22,597,735
75	183	70,490,537	40	4,064,158	7,542	3,059,718,489	103	35,051,960	895	8,219,054
80	33	14,505,936	21	3,109,789	4,305	1,642,779,041	71	23,012,393	341	3,042,781
85	11	6,893,368	7	494,540	2,251	747,464,270	55	11,838,533	115	1,010,842
90	4	1,998,719	-	-	617	153,297,153	20	5,381,659	6	77,029
=>91	1	13,220	1	116,401	18	2,938,600	5	528,420	-	-

Source: TRS query reports

\* Includes inactive memberships.

\*\* Loan balances include interest and insurance receivable amounts.

**SCHEDULE 24: WITHDRAWALS BY AGE (FROM ACTIVE, DEFERRAL & BENEFICIARY ACCOUNTS, FISCAL YEAR 2015)—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	6	125,700	0	-	12	11,768	16	118,920	3	15,743
30	17	172,066	14	41,755	9	8,961	121	1,317,531	3	15,126
35	63	973,151	34	77,521	7	19,694	212	3,824,158	7	153,535
40	138	1,539,988	73	198,290	17	114,541	186	4,263,334	17	595,934
45	230	3,912,181	134	509,684	35	204,910	145	4,731,807	9	221,669
50	265	3,456,061	145	649,131	39	190,165	106	3,013,918	16	827,012
55	427	9,153,328	198	967,570	73	461,742	108	5,608,530	37	2,868,252
60	1,964	35,290,154	193	816,086	59	357,608	137	7,193,247	67	5,897,587
65	3,925	62,480,831	158	621,515	48	418,043	195	11,226,889	111	17,134,863
70	3,095	57,004,691	35	163,796	1,250	17,714,681	128	12,204,726	158	35,830,794
75	1,831	32,273,070	7	25,320	8,520	132,300,912	64	7,615,207	276	39,134,778
80	652	12,927,928	1	21,713	4,836	90,816,508	37	2,410,413	309	34,821,048
85	281	6,579,512	1	6,540	2,676	57,545,193	16	3,145,651	240	28,545,416
90	52	1,519,560	0	-	995	21,602,611	13	2,154,993	152	10,937,910
=>91	2	160,000	0	-	100	1,953,060	1	11,129	18	962,309

Source: TRS query reports

\* Includes 87 Partial Withdrawals to Beneficiaries.

\*\* Includes 379 RMD Withdrawals to Beneficiaries.

\*\*\* Includes 23 Total Withdrawals to Beneficiaries.

\*\*\*\* Includes the establishment of 166 (\$31 million) new Beneficiary accounts.

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

**SCHEDULE 25: FUND CONVERSION OF INVESTMENT BALANCES BY AGE  
(FISCAL YEAR 2015)—TDA PROGRAM**

<b>From</b>	<b>To</b>	<b>=&lt;25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>	<b>50</b>	<b>55</b>	<b>60</b>	<b>65</b>	<b>70</b>	<b>75</b>	<b>80</b>	<b>85</b>	<b>90+</b>
FX	VA	32.6%	23.6%	15.5%	13.8%	8.4%	4.6%	4.7%	4.1%	4.1%	2.7%	9.7%	15.0%	7.3%	4.1%
FX	VB	0.6%	0.6%	0.9%	0.2%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FX	VC	8.0%	4.2%	1.7%	2.6%	1.1%	0.7%	0.1%	0.4%	0.0%	0.1%	0.1%	0.6%	0.0%	0.0%
FX	VD	0.5%	0.7%	0.9%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%
FX	VE	10.8%	11.9%	6.2%	8.8%	3.2%	2.6%	1.0%	1.5%	1.2%	1.4%	2.1%	1.9%	0.0%	0.0%
VA	FX	21.1%	29.6%	53.7%	59.3%	70.5%	81.8%	84.6%	87.3%	88.0%	89.1%	86.1%	77.6%	86.5%	93.4%
VA	VB	0.1%	0.1%	0.0%	0.4%	0.0%	0.1%	0.1%	0.0%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%
VA	VC	0.3%	0.4%	0.6%	1.2%	1.0%	0.1%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
VA	VD	0.1%	0.3%	0.0%	0.2%	0.4%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VA	VE	0.4%	1.2%	1.2%	1.8%	3.2%	2.0%	0.9%	1.0%	0.8%	0.1%	0.0%	0.2%	0.0%	0.0%
VB	FX	3.7%	3.6%	4.3%	3.1%	2.2%	3.1%	3.5%	3.1%	1.6%	1.3%	0.6%	4.0%	0.0%	2.5%
VB	VA	0.3%	2.1%	2.3%	0.7%	1.0%	0.6%	0.3%	0.2%	0.0%	0.3%	0.5%	0.0%	0.0%	0.0%
VB	VC	0.1%	1.6%	0.4%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	VD	0.0%	0.0%	0.1%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VB	VE	0.2%	1.2%	0.3%	0.6%	0.3%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
VC	VD	0.3%	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%
VC	VE	0.2%	1.1%	1.6%	1.0%	0.4%	0.3%	0.2%	0.0%	0.2%	0.3%	0.0%	0.0%	3.4%	0.0%
VC	FX	5.4%	5.7%	3.8%	1.7%	1.8%	1.2%	1.0%	0.8%	1.0%	0.4%	0.1%	0.5%	2.7%	0.0%
VC	VA	2.1%	1.7%	1.5%	0.9%	1.7%	0.2%	0.3%	0.1%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%
VC	VB	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%	0.0%
VD	VE	3.4%	0.8%	0.3%	0.3%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
VD	FX	2.6%	2.4%	1.1%	0.4%	0.7%	0.3%	0.8%	0.2%	0.6%	0.2%	0.0%	0.1%	0.0%	0.0%
VD	VA	0.4%	1.2%	0.8%	0.2%	0.0%	0.1%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
VD	VB	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%	0.0%
VD	VC	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	FX	5.8%	4.7%	1.7%	0.9%	2.0%	1.4%	0.8%	0.6%	0.8%	2.1%	0.5%	0.0%	0.0%	0.0%
VE	VA	1.0%	1.1%	0.9%	0.9%	0.8%	0.1%	0.0%	0.1%	0.6%	1.3%	0.0%	0.0%	0.0%	0.0%
VE	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%
VE	VC	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	VD	0.0%	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%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: TRS query reports

- FX** refers to the Fixed Return Fund
- VA** refers to the Diversified Equity Fund
- VB** refers to the Bond Fund
- VC** refers to the International Equity Fund
- VD** refers to the Inflation Protection Fund
- VE** refers to the Socially Responsive Equity Fund



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