

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, 2016 and June 30, 2015





**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, 2016 AND JUNE 30, 2015**

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

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Chief Actuary

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









**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK**  
55 Water Street, New York, NY 10041 • www.trsnyc.org • 1 (888) 8-NYC-TRS

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December 22, 2016

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, 2016.

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 more than 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, 2016, there were approximately 119,000 in-service members and approximately 84,000 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 continued our multiyear initiative to modernize our operations, enhancing our pension administration technology and improving our business processes as well. During the fiscal year ended June 30, 2016, we successfully implemented the first two phases of our modernization initiative. First, we introduced a fully redesigned TRS website that is mobile-friendly, allowing our members to manage their retirement benefits using the device of their choice. We also introduced a back-end pension administration system that is now handling all demographic aspects of membership, including address and name changes and beneficiary designations. In late 2016, the back-end system was enhanced to handle new member enrollments and to allow employer partners to interface directly with our system.

The progress continues as we plan to roll out enhancements regularly over the next several years. More and more of TRS' operations will move to our new system, as we gradually decommission our legacy system. During this transition period, we are moving to steadily increase the number of self-service transactions and information available to our members. In so doing, we will transform the way TRS does business and the way our members do business with us.

### **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, 2016. Since markets are dynamic and fluid, any judgment of the financial statements should also consider current market conditions.

### **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 55.7%. Please refer to the report's Actuarial Section for a detailed discussion of the Plan's measures of funded status.

Under Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans*, a defined-benefit pension plan is also required to report fiduciary net position as a percentage of the plan's total pension liability. This method reports assets at current fair value and, as such, is more sensitive to market volatility. As of June 30, 2016, the Qualified Pension Plan's fiduciary net position represents 62.3% 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 and GASB pronouncements. Management is responsible for the integrity and fairness of the information presented in the financial statements, including data that, out of necessity, is based on estimates and judgments. Management is also responsible for establishing and maintaining an effective internal control structure. A system of internal controls provides reasonable, but not absolute, assurance that assets are properly safeguarded and that financial statements are reliable. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived, and second, the valuation of the cost and benefits requires estimates and judgments by management. We believe that the internal controls currently in place support this purpose, and that the financial statements, accompanying schedules, and statistical tables are fairly presented in all material respects.

## 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 2016 follows:

Rate of Return by Fund—Fiscal Year 2016		
Fund	ROR	Gross vs. Net Returns
Pension	1.66%	Net of Fees
Variable Fund	ROR	Gross vs. Net Returns
Diversified Equity Fund	-0.62%	Net of Fees
Bond Fund	2.83%	Net of Fees
International Equity Fund	-6.65%	Net of Fees
Inflation Protection Fund	0.50%	Net of Fees
Socially Responsive Equity Fund	0.93%	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 2016 and 2015 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 2016 and 2015		
Variable Fund	Unit Value July 2016	Unit Value July 2015
Diversified Equity Fund	\$78.102	\$81.738
Bond Fund	\$17.418	\$17.616
International Equity Fund	\$9.128	\$10.170
Inflation Protection Fund	\$10.443	\$10.807
Socially Responsive Equity Fund	\$14.323	\$14.760

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 are 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, Marks Paneth 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, 2015. This was the 28th 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

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of the City of New York**

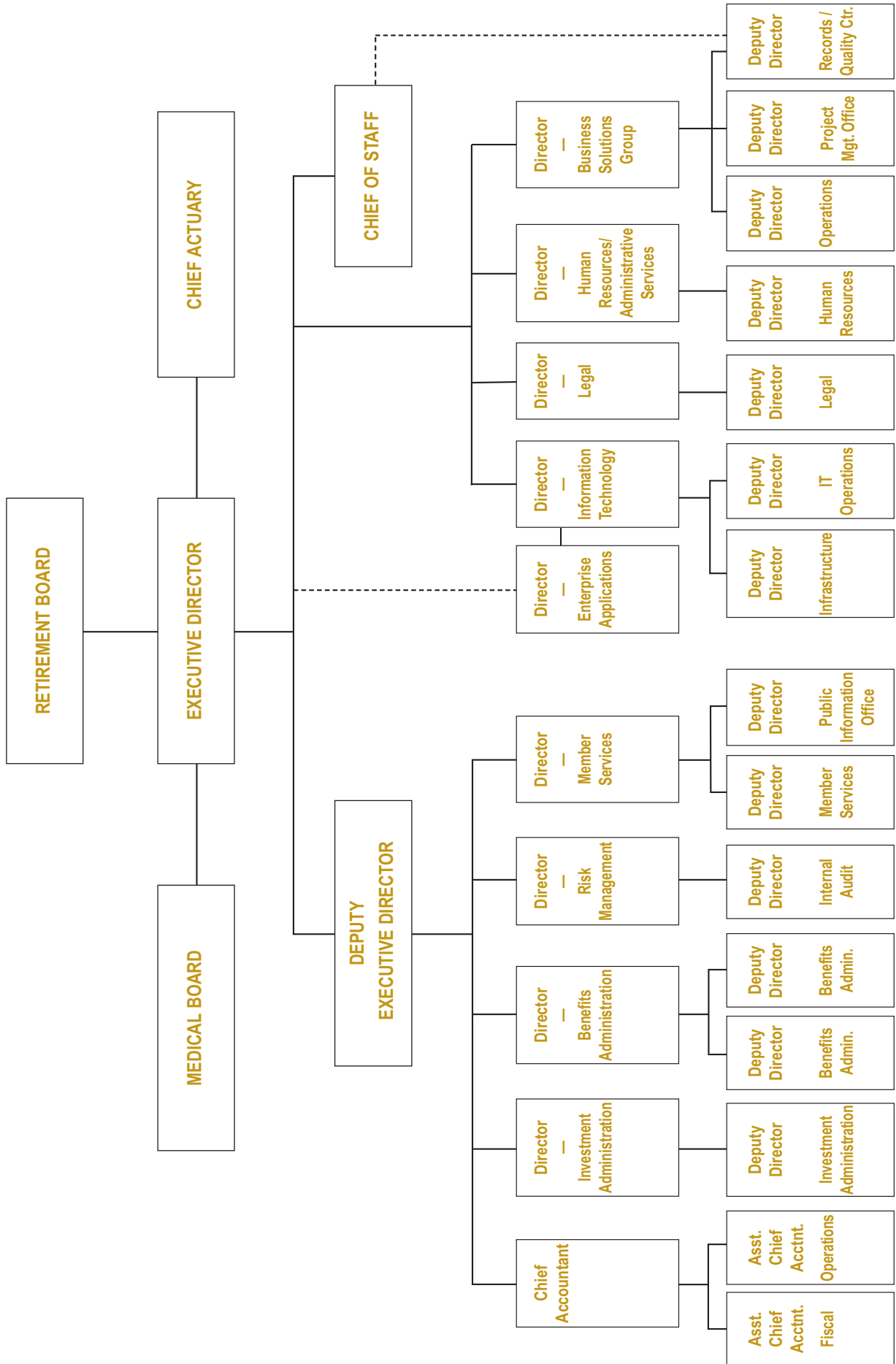
For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2015**

Executive Director/CEO

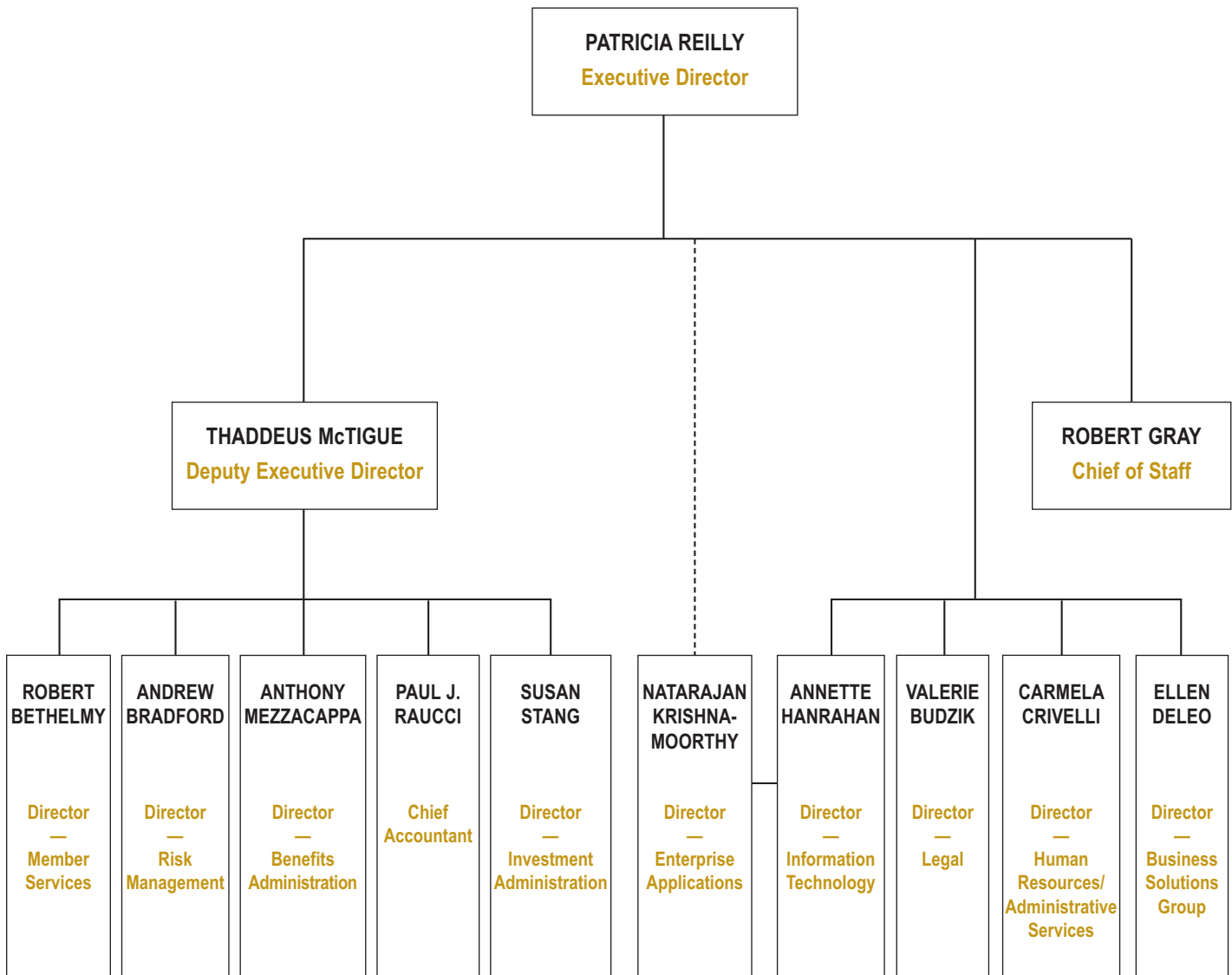
# ORGANIZATION CHART

as of June 30, 2016



# PRINCIPAL OFFICIALS

as of June 30, 2016







# FINANCIAL





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**M A R K S P A N E T H**  
ACCOUNTANTS & ADVISORS

## 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 "Systems"), a fiduciary fund of The City of New York, as of June 30, 2016, and the related combining statements of changes in fiduciary net position for the year 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 audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the 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 Systems as of June 30, 2016, and the changes in combining fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America

***Prior Period Combining Financial Statements***

The combining financial statements of the Systems as of June 30, 2015, were audited by other auditors whose report dated October 29, 2015, expressed unmodified opinions on those combining financial statements.

***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 audit was 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 present for the purpose of additional analysis and are not a required part of the basic combining financial statements.

The Additional Supplementary Information, Schedule 4 and Schedule 5, as listed in the table of contents, 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 audit 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. In our opinion the Additional Supplementary Information is fairly stated, in all material respects, in relation to the 2016 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.

*Marks Paneth LLP*

October 31, 2016  
(except for the Other Supplementary Information,  
as to which the date is December 20, 2016)

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

This narrative discussion and analysis of the Teachers' Retirement System of The City of New York's ("TRS" or the "System") financial performance provides an overview of the System's combining financial activities for the Fiscal Years ended June 30, 2016 and 2015. It is meant to assist the reader in understanding TRS' combining financial statements by providing an overall review of the combining financial activities during the 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 combining financial statements. TRS administers the TRS Qualified Pension Plan ("QPP") and the TRS Tax-Deferred Annuity ("TDA") Program. The QPP is a cost-sharing, multiple-employer defined-benefit pension plan. The QPP provides pension benefits to City public school teachers and certain other personnel, participating Charter Schools and participating City University of New York ("CUNY") teachers and other personnel. The TDA Program is a tax-deferred annuity program described in Internal Revenue Code section 403(b) and is available as a supplemental savings option to QPP members.

**OVERVIEW OF 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 of accounting.
- **The Combining Statements of Changes in Fiduciary Net Position** — presents the results of activities during the fiscal year. All changes affecting the assets/deferred outflow and liabilities/deferred inflow of the System are reflected on an accrual basis when the activity occurred, regardless of the timing of the related cash flows. In that regard, changes in the fair values of investments are included in the year's activity as net appreciation (depreciation) in fair value of investments.
- **The Notes to Combining Financial Statements** — provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes present information about the System's accounting policies, significant account balances and activities, material risks, obligations, contingencies, and subsequent events, if any.
- **Required Supplementary Information ("RSI")** — as required by GASB, the RSI includes the management discussion and analysis (this section) and information presented following the notes to the combining financial statements.

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

**HIGHLIGHTS AND RECENT DEVELOPMENTS****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 New York City Charter Schools that elect to participate. All employers may participate in the QPP and the TDA Program.

The following schedule provides the 2016 QPP summary information of the employer groups.

	<b>Members Active</b>	<b>Contribution Employer</b>	<b>Contribution Member</b>	<b>Members Retired</b>	<b>Pension Payments</b>
DOE	112,000	\$ 3.6 billion	\$ 164 million	81,250	\$ 3.9 billion
CUNY	6,900	\$ 142 million	\$ 9 million	2,800	\$ 125 million
Charter Schools	650	\$ 5.4 million	\$ 1 million	less than 50	\$ 1.2 million

**UFT Contract/Tier Legislation**

On June 30, 2014, the United Federation of Teachers ("UFT"), the primary union for the DOE's employees, ratified its new collective bargaining agreement. The contract is retroactive to 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.

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.

**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 \$43.6 billion, \$44.3 billion and \$44.5 billion, as of June 30, 2016, 2015 and 2014, respectively. The System's employer contributions amounted to \$3.8 billion, \$3.3 billion and \$3.0 billion, for Fiscal Years 2016, 2015 and 2014, respectively. The QPP's benefit payments totaled \$4.1 billion, \$4.0 billion and \$3.8 billion, for Fiscal Years 2016, 2015 and 2014, respectively.

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

**QPP Fiduciary Net Position**  
**June 30, 2016, 2015 and 2014**  
**(In thousands)**

	2016	2015	2014
Cash	\$ 5,157	\$ 22,674	\$ 74,829
Receivables for investments sold	1,772,521	2,766,976	2,907,019
Receivables for accrued interest and dividends	151,330	145,968	134,559
Member loan receivables	275,704	257,043	240,266
Investments, at fair value	64,406,187	64,756,689	63,327,076
Collateral from securities lending	1,858,682	1,863,922	5,401,513
Other assets	<u>49,873</u>	<u>27,855</u>	<u>32,391</u>
<b>Total assets</b>	<b><u>68,519,454</u></b>	<b><u>69,841,127</u></b>	<b><u>72,117,653</u></b>
Accounts payable	417,408	391,945	353,908
Payable for investments purchased	2,308,523	4,616,284	4,623,463
Accrued benefits payable	12,563	14,979	11,226
Investments due to TDA Program	20,292,733	18,699,332	17,236,032
Payable for securities lending	<u>1,858,682</u>	<u>1,863,923</u>	<u>5,403,085</u>
<b>Total liabilities</b>	<b><u>24,889,909</u></b>	<b><u>25,586,463</u></b>	<b><u>27,627,714</u></b>
<b>Net position restricted for benefits</b>	<b><u>\$ 43,629,545</u></b>	<b><u>\$ 44,254,664</u></b>	<b><u>\$ 44,489,939</u></b>

Cash balances amounted to \$5.2 million at June 30, 2016, a decrease of \$17.5 million (-77.3%) from June 30, 2015. Cash balances at June 30, 2015 amounted to \$22.7 million, 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. The decreases of cash balances at years ended June 30, 2016 and 2015 relate to the cash balances of various pooled NYC Pension Fund investment managers.

Receivables for investment securities sold amounted to \$1.8 billion at June 30, 2016, a decrease of \$994.5 million (-35.9%) from June 30, 2015. 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. 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 decreases 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 \$151.3 million as of June 30, 2016, an increase of \$5.4 million (3.7%) from June 30, 2015. 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. 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.

At June 30, 2016, member loan receivables amounted to \$275.7 million, an increase of \$18.7 million (7.3%) from the previous year. 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 increases primarily reflect the 7% interest accrued on loans receivables for Tiers III, IV, and VI members as new loans have kept pace with loan repayments.

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
JUNE 30, 2016 AND 2015**

Investments at June 30, 2016 were \$64.4 billion compared to \$64.8 billion at June 30, 2015, a decrease of \$350.5 million (-0.5%) from June 30, 2015. The \$350.5 million decrease is the result of a \$1.3 billion net decrease in the year-over-year amounts of payables for investment securities purchased and investment receivables sold less \$942.3 million from net investment income. More generally, investments as of June 30, 2016, in comparison with investment values as of June 30, 2015 reflect the annual movement in equity and fixed income markets. Equity investments account for close to 65% of the QPP's total investment portfolio, the balance primarily being fixed income investments. For the twelve month period ended June 30, 2016, the Russell 3000 Index, a broad measure of U.S. equity markets, returned 2.1%. The Morgan Stanley Capital International Index for Europe, Australasia, and Far East ("MSCI EAFE") Small Cap Index returned -3.3%. 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 7.2%. 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. The \$1.5 billion increase was the result of \$1.5 billion of net investment income in Fiscal Year 2015. 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% and the NYC Core + 5 returned 2.1%.

Other assets at June 30, 2016 totaled \$49.9 million, a \$22.0 million (79.0%) increase from June 30, 2015. The year over year changes in other assets was primarily due to a \$21.7 million balance due from the City University of New York (CUNY) subsequently paid in September 2016. 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 a \$2.1 million June 30, 2015 supplemental employer contribution received on July 1, 2015.

Accounts payable at June 30, 2016 amounted to \$417.4 million, a \$25.5 million (6.5%) increase from June 30, 2015. 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 (32.0%) of accounts payable. Other main components of accounts payable include investment expense payables (35.0%), reserve for expenses (21.2%), unclaimed funds (7.1%), and other payables (4.7%). The \$25.5 million increase in accounts payable was primarily due to a \$30.1 million increase in investment payables and a \$4.0 million net decrease in balances due to depositories. Accounts payable at June 30, 2015 amounted to \$391.9 million, a \$38.0 million (10.7%) increase from June 30, 2014. 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 \$38.0 million 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.

Payables for investments purchased at June 30, 2016 amounted to \$2.3 billion, a \$2.3 billion (-50.0%) decrease from June 30, 2015. Payables for investments purchased at June 30, 2015 amounted to \$4.6 billion, a \$7.2 million (-0.2%) decrease from June 30, 2014. Investments purchased are accounted for on a trade-date basis. The increase resulted from timing differences between settlement dates and trade dates, similar to receivables for investments sold discussed earlier.

Accrued benefits payable at June 30, 2016 amounted to \$12.6 million, a \$2.4 million (-16.1%) decrease from June 30, 2015. The \$2.4 million decrease is primarily attributed to a decrease of pending survivor benefits payable to beneficiaries at year end. 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 increase is primarily attributed to an increase of pending survivor benefits payable to beneficiaries at year-end.



**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

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 2 for a full description of the TDA Fixed Return Fund investment program.

**QPP Changes in Fiduciary Net Position**  
**Years Ended June 30, 2016, 2015, and 2014**  
**(In thousands)**

	2016	2015	2014
Additions:			
Member contributions	\$ 173,696	\$ 158,590	\$ 154,962
Employer contributions	3,760,714	3,325,528	3,054,424
Net receipts from other retirement systems	1,233	329	404
Net securities lending income	17,347	20,300	6,405
Net investment income	942,920	1,591,629	9,429,501
Payment of statutory-interest to TDA Program	<u>(1,354,207)</u>	<u>(1,248,988)</u>	<u>(1,147,923)</u>
Total additions	<u>3,541,703</u>	<u>3,847,388</u>	<u>11,497,773</u>
Deductions:			
Administrative expenses	59,367	58,391	46,042
Benefits payments and withdrawals	<u>4,107,455</u>	<u>4,024,272</u>	<u>3,818,248</u>
Total deductions	<u>4,166,822</u>	<u>4,082,663</u>	<u>3,864,290</u>
Net (decrease) increase in net position	<u>\$ (625,119)</u>	<u>\$ (235,275)</u>	<u>\$ 7,633,483</u>
Net position restricted for benefits			
Beginning of year	<u>44,254,664</u>	<u>44,489,939</u>	<u>36,856,456</u>
End of year	<u>\$ 43,629,545</u>	<u>\$ 44,254,664</u>	<u>\$ 44,489,939</u>

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

TRS received \$173.7 million in member contributions in Fiscal Year 2016, a \$15.1 million (9.5%) increase from Fiscal Year 2015. The \$15.1 million increase was primarily due to salary increases resulting from the 2014 UFT contract, increased active membership as a five-year hiring freeze ended in June 2014, and a \$2.6 million increase in prior service purchases. 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 1% salary rate increases agreed to in the new collective bargaining agreement between the UFT and the City of New York.

Employer contributions during Fiscal Year 2016 were \$3.8 billion, a \$435.2 million (13.1%) increase from Fiscal Year 2015. This is primarily due to a change in the post-retirement mortality rates and increases in the amortization payments for the 2010 initial unfunded liability and a net actuarial loss. Employer contributions during Fiscal Year 2015 were \$3.3 billion, a \$271.1 million (8.9%) increase from Fiscal Year 2014. The June 30, 2014 (Lag) actuarial valuation and June 30, 2013 (Lag) actuarial valuation were used to determine Fiscal Year 2016 and 2015 employer contributions, respectively.

The QPP's net investment income for Fiscal Year 2016 was \$942.9 million, a \$648.7 million (-40.8%) decrease from Fiscal Year 2015. The QPP's net investment income of \$942.9 million consisted of \$1.8 billion in dividend and interest income less a net loss of \$598.4 million on the depreciation in fair value of the QPP's investments less \$215.1 million in net investment expenses. Net investment income for the QPP portion of the pooled NYC Pension Fund, QPP portion of the Diversified Equity Fund, QPP portion of the Bond Fund, QPP portion of the International Equity Fund, QPP portion of the Inflation Protection Fund, and QPP portion of the Socially Responsive Fund totaled \$964.8 million, -\$23.2 million, \$1.6 million, -\$523.4 thousand, \$99.5 thousand, and \$197.2 thousand, respectively. The QPP portion of 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, QPP portion of the Diversified Equity Fund, QPP portion of the Bond Fund, QPP portion of the International Equity Fund, QPP portion of the Inflation Protection Fund, and QPP portion of the Socially Responsive Fund, totaled \$1.4 billion, \$152.0 million, \$1.4 million, -\$316.1 thousand, -\$129.1 thousand and \$621.8 thousand, 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 2016 were \$1.4 billion, an increase of \$105.2 million (8.4%) from Fiscal Year 2015. 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.

For Fiscal Year 2016 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 \$1.0 billion less assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of the TDA Program's investment returns being below the Statutory Rates. For Fiscal Year 2015 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 the TDA Program's investment returns being below the Statutory Rates. The table below displays the TDA Program's impact on the QPP's Contingent Reserve Fund of Employer's Contributions for Fiscal Years 2016, 2015, and 2014.

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

**Revenue (Expense) to Contingent Reserve Fund**  
**Pooled NYC Pension Fund Assets (QPP)\***  
**Years Ended 2016, 2015 and 2014**

(in Thousands)	2016	2015	2014
Net Investment Income	\$ 981,061	\$ 1,457,153	\$ 8,736,896
TDA percent of Fixed Assets as of June 30	32.69%	30.26%	28.78%
TDA percent of Fixed Assets 6/30/13:			31.08%
TDA percent of Fixed Assets (average)	31.47%	29.52%	29.93%
Investment Income on account of TDA Investment	308,775	430,152	2,615,209
Less Statutory Interest to TDA	(1,354,207)	(1,248,988)	(1,147,923)
Revenue (Expense) to QPP Contingent Reserve	<u>\$ (1,045,432)</u>	<u>\$ (818,836)</u>	<u>\$ 1,467,286</u>

\*Includes security-lending income

Administrative expenses during Fiscal Year 2016 were \$59.4 million, an increase of \$976.0 thousand (1.7%) and \$13.3 million (28.9%) from Fiscal Years 2015 and 2014, respectively. The increase in administrative expenses since 2014 reflects the System's continued efforts to modernize its pension database. Since Fiscal Year 2014, the System has begun a phased implementation to replace its outdated IBM A/S 400 computer system with a system based on Microsoft's .NET programming framework. Sagitec, an outside vendor and a provider of Pension Database Systems, and Cognizant, a software testing company, have been assisting with this multi-year project. As of June 30, 2016, the System has updated its person demographics, customer relationship management, enterprise content management, and member website platforms. The change in administrative expenses also reflects the annual update in the System's administrative expenses attributed to the QPP. (See Note 8.) The QPP's total administrative expenses for Fiscal Year 2016 accounted for 64.2% of the System's administrative expenditures. The balance of \$33.0 million (35.8%) includes \$32.6 million expensed to the TDA Program and also \$420.5 thousand charged against incoming loan service charge revenues. 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 mentioned earlier. 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. The System's administrative expenditures have been \$92.4 million, \$84.4 million, and \$60.1 million, for Fiscal Years 2016, 2015, and 2014, respectively.

Benefit payments and withdrawals during Fiscal Year 2016 were \$4.1 billion, a \$83.2 million (2.1%) increase from Fiscal Year 2015. The \$83.2 million increase in benefit payments and withdrawals was primarily due to a \$103.9 million (2.6%) increase in payments to retirees. In total, benefit payments and withdrawals distributed during Fiscal Year 2016 were composed of 98.3% retirement benefits and 1.7% in refund/withdrawals and survivor benefits. 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.

**TDA Program Financial Highlights** — The TDA Program's net position restricted for benefits was \$28.4 billion, \$27.3 billion and \$25.9 billion, as of June 30, 2016, 2015, and 2014, respectively. Member contributions amounted to \$717.6 million, \$662.6 million, and \$639.0 million for Fiscal Years 2016, 2015 and 2014, respectively. Benefit payments and withdrawals totaled \$917.2 million, \$861.3 million and \$757.3 million, for Fiscal Years 2016, 2015, and 2014, respectively. Below is a summary of the TDA program's net position and changes in net position.

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

**TDA Program's Fiduciary Net Position**  
**June 30, 2016, 2015 and 2014**

(In thousands)	2016	2015	2014
Cash	\$ 4,699	\$ 3,316	\$ 2,520
Receivables for investments sold	29,686	89,541	86,689
Receivables for accrued interest and dividends	13,282	12,471	11,411
Member loan receivables	367,864	361,073	348,935
Investments, at fair value	7,946,654	8,470,979	8,471,925
Investment in pooled NYC Pension Fund	20,292,733	18,699,332	17,236,032
Collateral from securities lending	282,602	574,835	338,062
Other assets	13,429	3,725	2,390
Total assets	<u>28,950,949</u>	<u>28,215,272</u>	<u>26,497,964</u>
Accounts payable	103,283	117,700	137,352
Payable for investment securities purchased	29,597	93,595	87,612
Accrued benefits payable	91,127	95,560	61,449
Payable for securities lending transactions	282,602	574,835	338,062
Total liabilities	<u>506,609</u>	<u>881,690</u>	<u>624,475</u>
Net position held in trust for benefits	<u>\$ 28,444,340</u>	<u>\$ 27,333,582</u>	<u>\$ 25,873,489</u>

Cash balances amounted to \$4.7 million at June 30, 2016, an increase of \$1.4 million (41.7%) from June 30, 2015. 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, 2016 amounted to \$29.7 million, a decrease of \$59.9 million (-66.9%) from June 30, 2015. 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. 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, 2016 were \$13.3 million, an increase of \$811 thousand (6.5%) from June 30, 2015. Receivables for accrued earnings at June 30, 2015 were \$12.5 million, an increase of \$1.1 million (9.3%) from June 30, 2014. Changes in accrued earnings are impacted by the cumulative value of the interest or dividend bearing securities, discount rates, and interest payable dates at fiscal year ended.

Member loan receivables at June 30, 2016 amounted to \$367.9 million, an increase of \$6.8 million (1.9%) from June 30, 2015. For Fiscal Year 2016, loan disbursements amounted to \$176.4 million and principal and interest payments amounted to \$186.8 million. 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.

The variable-return funds' investments at June 30, 2016, including collateral received for securities lending, were \$8.2 billion, a decrease of \$816.6 million (-9.0%) from June 30, 2015. 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.

Assets of the TDA Program's Fixed Return Fund invested in the pooled NYC Pension Fund at June 30, 2016 were \$20.3 billion, an increase of \$1.6 billion (8.5%) from June 30, 2015. In addition to the 7% statutory return for Fiscal Year 2016, contributions, withdrawals and investment transfers to (from) the Fixed Return

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

Fund totaled \$484.5 million, -\$677.6 million and \$402.0 million, respectively. 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.

Other assets at June 30, 2016 were \$13.4 million, an increase of \$9.7 million (260.5%) over June 30, 2015. Other assets at June 30, 2015 were \$3.7 million, an increase of \$1.3 million (55.9%) over June 30, 2014. Other assets primarily represent assets already allocated for future administrative expenses.

Accounts payable at June 30, 2016 amounted to \$103.3 million, compared to \$117.7 million at June 30, 2015, a decrease of -12.3%. 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%. The TDA Program's accounts payable balance primarily represents a reserve fund to pay the TDA Program's investment and administrative expenses.

Payables for investment securities purchased at June 30, 2016 amounted to \$29.6 million, a decrease of \$64.0 million (-68.4%) from June 30, 2015. 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. Investments purchased are accounted for on a trade-date basis. The changes resulted from timing differences in settlement dates and trade dates, similar to receivables for investments sold discussed earlier.

Accrued benefits payable at June 30, 2016 amounted to \$91.1 million, a decrease of \$4.4 million (-4.6%) from June 30, 2015. Accrued benefits payable at June 30, 2015 amounted to \$95.6 million, an increase of \$34.1 million (55.5%) from June 30, 2014. 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.

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

**Changes in TDA Program's Fiduciary Net Position**  
**Years Ended June 30, 2016, 2015, and 2014**  
**(In Thousands)**

	2016	2015	2014
<b>Additions:</b>			
Member contributions	\$ 717,566	\$ 662,601	\$ 638,979
Receipt of statutory-interest for portion of investment in pooled NYC Pension Fund	1,354,207	1,248,988	1,147,923
Net investment income	(14,858)	432,200	1,629,701
Net securities lending income	3,664	3,432	1,710
Total additions	<u>2,060,579</u>	<u>2,347,221</u>	<u>3,418,313</u>
<b>Deductions:</b>			
Administrative expenses	32,632	25,783	17,188
Benefits payments	917,189	861,345	757,312
Total deductions	<u>949,821</u>	<u>887,128</u>	<u>774,500</u>
Net increase in net position	<u>1,110,758</u>	<u>1,460,093</u>	<u>2,643,813</u>
<b>Net position restricted for benefits</b>			
Beginning of year	<u>27,333,582</u>	<u>25,873,489</u>	<u>23,229,676</u>
End of year	<u>\$ 28,444,340</u>	<u>\$ 27,333,582</u>	<u>\$ 25,873,489</u>

TRS's TDA Program received \$717.6 million in member contributions during Fiscal Year 2016, an increase of \$55.0 million (8.3%) from Fiscal Year 2015. The primary increase is due to growth in contributing memberships. TRS's TDA Program received \$662.6 million in member contributions during Fiscal Year 2015, an increase of \$23.6 million (3.7%) 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 2016 were \$1.4 billion, an increase of \$105.2 million (8.4%) from Fiscal Year 2015. 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 were \$1.2 billion, an increase of \$101.1 million (8.8%) from Fiscal Year 2014. Annual statutory-interest paid 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 2016 decreased \$447.1 million (-103.4%) from Fiscal Year 2015. 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 losses primarily reflect the depreciation in fair value of the TDA Program's variable-return fund investments, including both realized and unrealized gains and losses.

Administrative expenses for the fiscal year ended June 30, 2016 totaled \$32.6 million, an increase of \$6.8 million (26.6%) from Fiscal Year 2015. Similar to the QPP administrative expenses, the increase primarily reflects the System's continued efforts to modernize its pension database. 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. 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, 2016 totaled \$917.2 million, an increase of \$55.8 million (6.5%) from Fiscal Year 2015. Benefit payments and withdrawals for the fiscal

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

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 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 (In thousands)	June 30, 2016	June 30, 2016	June 30, 2015	June 30, 2015	June 30, 2014	June 30, 2014
	QPP	TDA	QPP	TDA	QPP	TDA
Contributions	\$ 3,934,410	\$ 717,566	\$ 3,484,118	\$ 662,601	\$ 3,209,386	\$ 638,979
Contributions — Loan adj.	-	(195)	-	(118)	-	(31)
Loan repayments (cash)	122,050	186,774	114,940	177,613	109,414	171,349
401(a) receipts/(payments)	1,233	-	329	-	404	-
Interest income	860,223	33,469	758,526	32,627	709,594	33,367
Interest income — Loan adj.	(19,857)	(25,701)	(17,743)	(25,070)	(16,510)	(24,278)
Dividend income	896,208	128,383	889,231	126,867	854,701	116,160
Investment expenses (net)	(215,068)	5,645	(202,961)	(2,758)	(162,208)	(7,528)
Benefits/withdrawals	(4,107,455)	(917,189)	(4,024,272)	(861,345)	(3,818,248)	(757,312)
Withdrawals — Loan adj.	19,639	9,221	28,250	12,058	7,193	19,700
New loans	(140,000)	(176,403)	(141,771)	(176,125)	(138,587)	(179,612)
Administrative expenses	(59,367)	(32,632)	(58,391)	(25,783)	(46,042)	(17,188)
	<u>\$ 1,292,016</u>	<u>\$ (71,062)</u>	<u>\$ 830,256</u>	<u>\$ (79,433)</u>	<u>\$ 709,097</u>	<u>\$ (6,394)</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, 2016	June 30, 2016	June 30, 2015	June 30, 2015	June 30, 2014	June 30, 2014
	QPP	TDA	QPP	TDA	QPP	TDA
Pooled NYC Pension Fund	67.3%	32.7%	69.7%	30.3%	71.2%	28.8%
Variable-Return Funds:						
Diversified equity*	22.1%	73.4%	25.2%	70.6%	28.2%	67.9%
Bond	7.5%	92.5%	10.9%	89.1%	14.7%	85.3%
International equity	8.0%	92.0%	10.2%	89.8%	12.1%	87.9%
Inflation protection	8.9%	91.1%	11.1%	88.9%	13.8%	86.2%
Socially responsive	6.5%	93.5%	7.5%	92.5%	9.7%	90.3%

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

To rate investment performance, both the pooled NYC Pension Fund Assets and variable-return funds' 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, 2016, the policy index includes the following:

**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)**  
**JUNE 30, 2016 AND 2015**

**NYC Pension Fund Policy Index as of June 30, 2016\*:**

<u>Investment Type</u>	<u>Benchmark</u>	<u>Percent</u>
U.S. Equity	Russell 3000	33.67%
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	5.00%
Private Real Estate	NFI - ODCE Net + 100BPS	3.19%
Infrastructure	CPI+ 4%	0.51%
Domestic Fixed Income	NYC Core +5	19.15%
TIPS	Lehman U.S. TIPS	4.00%
Enhanced Yield	Citigroup BB&B	4.98%
Bank Loans	Credit Suisse Leveraged Loan	2.59%
Convertible Bonds	BofAML All Convertibles Ex Mandatory	3.00%
Opportunistic Fixed	10% Annualized Return	2.41%
Cash	BofA ML 91 Day T-Bill	0.75%
		<u>100.00%</u>

\* Source: Teachers' Retirement System of New York City Performance Overview as of June 30, 2016, 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, 2016, net securities lending income amounted to \$21.0 million compared with \$23.7 million for Fiscal Year 2015. 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. (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>2016</b>	<b>2015</b>	<b>2014</b>
Short-term investments	\$ 2,314,459	\$ 3,945,043	\$ 2,744,926
Debt securities	15,196,888	15,495,329	12,963,886
Equity securities	43,392,606	44,328,798	47,368,373
Private equity	6,872,850	6,002,260	5,353,828
Fixed income	4,576,038	3,456,238	3,367,988
Collateral from securities lending	<u>2,141,284</u>	<u>2,438,757</u>	<u>5,739,575</u>
Total	<u>\$ 74,494,125</u>	<u>\$ 75,666,425</u>	<u>\$ 77,538,576</u>



**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)  
JUNE 30, 2016 AND 2015**

**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.

\* \* \* \* \*

# TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

## COMBINING STATEMENTS OF FIDUCIARY NET POSITION June 30, 2016 (In Thousands)

	2016 QPP	2016 TDA	2016 Eliminations	2016 Total
<b>ASSETS:</b>				
Cash	\$ 5,157	\$ 4,699	\$ -	\$ 9,856
Receivables:			-	
Investment securities sold	1,772,521	29,686	-	1,802,207
Accrued interest and dividends	151,330	13,282	-	164,612
Member loans (Note 6)	275,704	367,864	-	643,568
Total receivables	<u>2,199,555</u>	<u>410,832</u>	<u>-</u>	<u>2,610,387</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	-	-	-	-
Commercial paper	1,070,574	-	-	1,070,574
Short term investment fund	1,025,446	-	-	1,025,446
Discount notes	83,294	-	-	83,294
Debt securities:				
U.S. Government	5,924,318	-	-	5,924,318
Corporate and Other	8,730,691	-	-	8,730,691
Equity securities	22,284,584	-	-	22,284,584
Alternative Investments	6,872,850	-	-	6,872,850
Collective Trust Funds:				
International equity	11,507,149	-	-	11,507,149
Mortgage debt security	485,191	-	-	485,191
Treasury inflation protected securities	2,399,270	-	-	2,399,270
Fixed income	1,691,577	-	-	1,691,577
Collateral from securities lending (Fixed Funds)	1,774,456	-	-	1,774,456
Diversified Equity Fund:				
Short-term investments	29,570	98,420	-	127,990
Equity securities	2,206,416	7,129,279	-	9,335,695
Debt securities	50,541	168,221	-	218,762
Bond Fund:				
Short-term investments	432	5,291	-	5,723
Debt securities	24,393	298,724	-	323,117
International Equity Fund:				
Short-term investments	75	859	-	934
International equity	8,012	91,945	-	99,957
Inflation Protection Fund:				
Short-term investments	12	119	-	131
Equity securities	3,960	40,403	-	44,363
Socially Responsive Equity Fund:				
Short-term investments	24	343	-	367
Equity securities	7,650	110,765	-	118,415
International equity	158	2,285	-	2,443
Collateral from securities lending (Variable-Return Funds)	84,226	282,602	-	366,828
Total investments	<u>66,264,869</u>	<u>8,229,256</u>	<u>-</u>	<u>74,494,125</u>
TDA Investment in pooled NYC Pension Fund	-	20,292,733	(20,292,733)	-
Other assets	49,873	13,429	(21,022)	42,280
Total assets	<u>68,519,454</u>	<u>28,950,949</u>	<u>(20,313,755)</u>	<u>77,156,648</u>
<b>LIABILITIES:</b>				
Accounts payable	417,408	103,283	(21,022)	499,669
Payable for investment securities purchased	2,308,523	29,597	-	2,338,120
Accrued benefits payable	12,563	91,127	-	103,690
Due to TDA Program's Fixed Return Fund	20,292,733	-	(20,292,733)	-
Securities lending (Note 2)	1,858,682	282,602	-	2,141,284
Total liabilities	<u>24,889,909</u>	<u>506,609</u>	<u>(20,313,755)</u>	<u>5,082,763</u>
<b>NET POSITION RESTRICTED FOR BENEFITS</b>				
Benefits to be provided by QPP	43,629,545		-	43,629,545
Benefits to be provided by TDA Program		28,444,340	-	28,444,340
Total net position restricted for benefits	<u>\$ 43,629,545</u>	<u>\$ 28,444,340</u>	<u>\$ -</u>	<u>\$ 72,073,885</u>

The accompanying notes are an integral part of these combining financial statements.

COMBINING STATEMENTS OF FIDUCIARY NET POSITION  
June 30, 2015  
(In Thousands)

	2015 QPP	2015 TDA	2015 Eliminations	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	3,169,987	463,085	-	3,633,072
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
Debt securities	62,026	173,843	-	235,869
Bond Fund:				
Short-term investments	673	5,515	-	6,188
Debt securities	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	66,620,611	9,045,814	-	75,666,425
TDA Investment in pooled NYC Pension Fund	-	18,699,332	(18,699,332)	-
Other assets	27,855	3,725	(27,899)	3,681
Total assets	69,841,127	28,215,272	(18,727,231)	79,329,168
<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	25,586,463	881,690	(18,727,231)	7,740,922
<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
Total net position restricted for benefits	44,254,664	27,333,582	-	71,588,246

The accompanying notes are an integral part of these combining financial statements.

COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION  
 YEAR ENDED JUNE 30, 2016  
 (In Thousands)

	2016 QPP	2016 TDA	2016 Total
ADDITIONS:			
Contributions:			
Member contributions (Note 4)	\$ 173,696	\$ 717,566	\$ 891,262
Employer contributions	3,702,569	-	3,702,569
Other employer contributions	58,145	-	58,145
Total contributions	<u>3,934,410</u>	<u>717,566</u>	<u>4,651,976</u>
Investment income (Note 2):			
Interest income	860,223	33,469	893,692
Dividend income	896,208	128,383	1,024,591
Net (depreciation) in fair value of investments	(598,443)	(182,355)	(780,798)
Total investment income	<u>1,157,988</u>	<u>(20,503)</u>	<u>1,137,485</u>
Less:			
Investment expenses	222,163	12,062	234,225
Net (decrease) in variable expense provision	<u>(7,095)</u>	<u>(17,707)</u>	<u>(24,802)</u>
Net investment income	<u>942,920</u>	<u>(14,858)</u>	<u>928,062</u>
Securities lending transactions:			
Securities lending income	18,742	4,054	22,796
Less securities lending fees	<u>(1,395)</u>	<u>(390)</u>	<u>(1,785)</u>
Net securities lending income	<u>17,347</u>	<u>3,664</u>	<u>21,011</u>
Net receipts from other retirement systems	<u>1,233</u>	<u>-</u>	<u>1,233</u>
Total additions	<u>4,895,910</u>	<u>706,372</u>	<u>5,602,282</u>
DEDUCTIONS:			
Benefit payments and withdrawals	4,107,455	917,189	5,024,644
Administrative expenses (Note 8)	59,367	32,632	91,999
Statutory-interest for TDA Program's Fixed Return Fund	<u>1,354,207</u>	<u>(1,354,207)</u>	<u>-</u>
Total deductions	<u>5,521,029</u>	<u>(404,386)</u>	<u>5,116,643</u>
NET INCREASE (DECREASE) IN NET POSITION	(625,119)	1,110,758	485,639
NET POSITION RESTRICTED FOR BENEFITS:			
Beginning of year	<u>44,254,664</u>	<u>27,333,582</u>	<u>71,588,246</u>
End of year	<u>\$ 43,629,545</u>	<u>\$ 28,444,340</u>	<u>\$ 72,073,885</u>

The accompanying notes are an integral part of these combining financial statements.

COMBINING STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION  
YEAR ENDED JUNE 30, 2015  
(In Thousands)

	2015 QPP	2015 TDA	2015 Total
ADDITIONS:			
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	<u>3,484,118</u>	<u>662,601</u>	<u>4,146,719</u>
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	<u>1,794,590</u>	<u>434,958</u>	<u>2,229,548</u>
Less:			
Investment expenses	209,321	13,049	222,370
Net (decrease) in variable expense provision	<u>(6,360)</u>	<u>(10,291)</u>	<u>(16,651)</u>
Net investment income	<u>1,591,629</u>	<u>432,200</u>	<u>2,023,829</u>
Securities lending transactions:			
Securities lending income	21,713	3,811	25,524
Less securities lending fees	<u>(1,413)</u>	<u>(379)</u>	<u>(1,792)</u>
Net securities lending income	<u>20,300</u>	<u>3,432</u>	<u>23,732</u>
Net receipts from other retirement systems	<u>329</u>	<u>-</u>	<u>329</u>
Total additions	<u>5,096,376</u>	<u>1,098,233</u>	<u>6,194,609</u>
DEDUCTIONS:			
Benefit payments and withdrawals	4,024,272	861,345	4,885,617
Administrative expenses (Note 8)	58,391	25,783	84,174
Statutory-interest for TDA Program's Fixed Return Fund	<u>1,248,988</u>	<u>(1,248,988)</u>	<u>-</u>
Total deductions	<u>5,331,651</u>	<u>(361,860)</u>	<u>4,969,791</u>
NET (DECREASE) INCREASE IN NET POSITION	(235,275)	1,460,093	1,224,818
NET POSITION RESTRICTED FOR BENEFITS:			
Beginning of year	<u>44,489,939</u>	<u>25,873,489</u>	<u>70,363,428</u>
End of year	<u>\$ 44,254,664</u>	<u>\$ 27,333,582</u>	<u>\$ 71,588,246</u>

The accompanying notes are an integral part of these combining financial statements.

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015****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 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 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 members' voluntary contributions until after retirement or upon withdrawal of contributions. Contributions to the TDA Program are made by the members only and are voluntary. Benefits provided under the TDA Program are derived from members' accumulated contributions and earnings thereon. The TDA Program is a defined-contribution pension plan for financial reporting purposes.

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

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

**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.

**Membership Data**

At June 30, 2014 and June 30, 2013, the dates of the QPP's most recent completed actuarial valuations, the QPP's membership consisted of:

	2014	2013
Retirees and beneficiaries receiving benefits	80,419	78,177
Terminated vested members not yet receiving benefits	12,349	10,867
Other inactives*	8,702	6,683
Active members receiving salaries	<u>111,726</u>	<u>112,481</u>
Total	<u>213,196</u>	<u>208,208</u>

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

At June 30, 2014 and June 30, 2013, member participation of the TDA Program consisted of:

	2014	2013
Retirees receiving a TDA annuity	3,036	3,055
Retirees or Inactive members with TDA deferral	49,594	44,225
Active members contributing to TDA	<u>77,705</u>	<u>77,773</u>
Total	<u>130,335</u>	<u>125,053</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:

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

- 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.

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

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

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

Certain members of Tier I and Tier II have the right to make voluntary member contributions ("Voluntary Contributions") in excess of their required member contributions ("Required Contributions"). Both the investment of the Voluntary Contributions and the Required Contributions are directed by each member. A member may invest in: (1) the QPP's Fixed Return Fund in which it is credited with interest at the Statutory-Interest Rate (currently 8.25% for Tier I and Tier II contributions and 7.0% for UFT members and 8.25% for non-UFT members for TDA Contributions) and/or (2) in one or more of the QPP's variable-return funds (see note 2—Investment Programs). At the time of retirement or refund of contributions, a member's aggregate balance of actual Required Contributions and Voluntary Contributions, including the actual accumulated earnings thereon, less the outstanding balance of any member loans ("Net Actual Contributions"), may exceed ("Excess of Contributions") or fall short of ("Deficiency of Contributions") the member's Expected Balance. The Expected Balance is the sum of the Required Contributions which a member should have made during his or her credited service, plus the earnings that would have accumulated thereon at the Statutory Interest rate. The amount of the member's retirement annuity or the refund of contributions that he or she is entitled to is



**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

increased by any Excess of Contributions or reduced by any Deficiency of Contributions. The total value of active members' Excess of Contributions, net of all Deficiencies of Contributions, is \$ 68.0 and \$77.6 million, for the years ended June 30, 2016 and 2015, 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 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 are subject to an age-reduction factor in their retirement allowance.
- Members who joined the QPP on or after September 1, 1983 ("Tier IV") were required to make contributions of 3.0% of salary until termination of service. As of October 1, 2000, these members are not required to make contributions after the 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.

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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.

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 59½ 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.

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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.

**NOTES TO COMBINING FINANCIAL STATEMENTS  
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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.

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-Interest Rates"). Payment of the Statutory-Interest is an obligation of The City (NYC Admin. Code section 13-533). The Statutory-Interest Rates are as follows:

- 7% for TDA investments by members who are serving in (or resigned/retired from) titles represented by the United Federation of Teachers. The crediting rate of 7% has been in effect since December 11, 2009. The prior crediting rate of 8.25% had been in effect since July 1, 1988 to December 11, 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 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 adjusted for withdrawals and transfers to or from variable funds. This receivable is reported by the TDA Program as an Investment in the Fixed Return Fund and the corresponding liability is reported by the QPP as Fixed Return Funds Due to TDA.

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

**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.

**Other Employer Contributions** — Include amounts for Contingent Reserve Funds for half (or member's portion) of Additional Member Contributions (Chapter 19 1.85%), outside and military service, and DOE supplemental contributions for the ASAF and ASF funds. These funds are not part of the employer's appropriation amount and also not recoverable by member upon member's resignation.

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**Investment Expenses** — The variable-return funds maintain a reserve for administrative and investment expenses. The reserve is currently \$88,345,953 for QPP and \$78,789,567 for TDA. The expense reserve, as well as investment expenses for 2016, were reduced by \$7,095,378 for QPP and \$17,706,802 for TDA. Similarly, in 2015 the reserve for administrative and investment expenses totaled \$95,284,901 for QPP and \$96,773,118 for TDA. The expense reserve, as well as investment expenses, was reduced by \$6,360,177 for QPP and \$10,290,983 for TDA. Also in 2015, an additional investment fee reduction for QPP and TDA related to Groom and Rocaton fees for the variable-return funds amounted to \$36,220 and \$72,915, respectively. This last sentence is noted to assist with comparison to 2015 CAFR.

**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 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.

**Intra-fund Payables** — The QPP and TDA Program assets are reflected as of year-end and intra-fund payables are excluded. The Administrative Code of the City of New York (ACNY) Sections 13-577 and 13-582 provide for certain internal transfers of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets. The System anticipates a substantial rebalancing to commence in Fiscal Year 2017 to transfer in excess of \$3.5 billion from the pooled NYC Pension Fund to the Variable Program funds.

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

**Inter-Plan 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 their investments to broker-dealers and other entities for collateral, for the same securities in the future with a simultaneous agreement to return the collateral in the form of cash, 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, 2016 and 2015, 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 Funds' 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

**NOTES TO COMBINING FINANCIAL STATEMENTS  
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lending agent using approved Lender's Investment guidelines. The weighted average maturity is 105.6 days for State Street's pooled NYC Pension Fund investments and 3.6 days for JP Morgan Chase's Variable-Return Fund investments. The securities-lending program in which the Funds participate only allows pledging or selling securities in the case of borrower default.

During Fiscal Year 2016, net earnings from the securities-lending program were \$21.0 million. Earnings from the NYC Pension Fund securities-lending program were \$16.3 million, and earnings from the variable-return funds securities-lending program were \$ 4.7 million.

During Fiscal Year 2015, net earnings from the securities-lending program were \$23.7 million. Earnings from the NYC Pension Fund securities-lending program were \$19.0 million and earnings from the variable-return funds securities-lending program were \$4.7 million. The \$19.0 million NYC Pension Fund securities-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 a 2003 \$25 million 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 1.2 days for State Street's pooled NYC Pension Fund investments and 2.6 days for JP Morgan Chase's Variable-Return Fund investments. Securities received as collateral are also reported as assets if the government entity has the ability to pledge or sell them with a borrower default. Accordingly, the System records the investments purchased with the cash collateral from securities lending with a corresponding liability for securities lending. Securities on loan are carried at fair value; as of June 30, 2016 and 2015, the values on loan by the pooled NYC Pension Fund were \$1.8 billion and \$1.7 billion, respectively, and the values on loan by the variable-return funds were \$357.0 million and \$754.2 million, respectively. Cash collateral received related to securities lending as of June 30, 2016 and 2015 was \$1.8 billion and \$1.7 billion, respectively, for the pooled NYC Pension Fund, and \$366.8 million and \$775.0 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*, which 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 inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, and typically reflect management's estimates of assumptions that market participants would use in pricing the asset or liability. GASB 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that were used for the fair value measurements.

### **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.

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The State Retirement and Social Security Law ("RSSL") and Administrative Code of the City of New York ("NYCAC") authorize 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 the TDA Program may be made in instruments not expressly permitted by the State RSSL.

QPP and TDA Program assets are diversified over a range of investments, and multiple strategies are used 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 2016 and 2015 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 impact 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>2016</b>	<b>2015</b>
Common stock	33.7%	34.5%
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	3.6%	3.0%
Alternative investments – Private Equity	5.0%	4.6%
Fixed income	34.5%	34.8%
Alternative investments – Opportunistic Fixed Income	2.4%	2.3%
Total	100.0%	100.0%

**NOTES TO COMBINING FINANCIAL STATEMENTS  
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**Variable-Return Funds  
Target Asset Allocations**

<b>Investment Type</b>	<b>Asset Allocation Percentages</b>	
	<b>2016</b>	<b>2015</b>
Diversified Equity (Variable A):		
Common stock – Passive	50.0%	50.0%
Common stock – Active	20.0%	20.0%
Common stock – Defensive	15.0%	15.0%
International investments	15.0%	15.0%
Bond Fund (Variable B):		
Fixed Income	100.0%	100.0%
International Equity (Variable C):		
International investments	100.0%	100.0%
Inflation Protection Equity (Variable D):		
Inflation Protection Fidelity Strategic Real Return Mutual Fund	100.0%	100.0%
Socially Responsible (Variable E):		
Socially Responsible NB SRF	100.0%	100.0%

State Street is currently the custodian for essentially all securities of the pooled NYC Pension Fund. JPMorgan Chase is currently the custodian for essentially all securities of the variable-return programs.

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

**Concentrations** — 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 portfolios in securities rated CCC or lower. Unrated 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, 2016 and 2015, are as follows:



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Investment Type <sup>a</sup> Pension Fund June 30, 2016	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
U.S. Government	- %	- %	- %	- %	- %	- %	- %	- %	- %
Corporate bonds	1.61	2.36	11.85	27.25	14.22	12.76	4.07	7.43	81.56
Short-term:									
Commercial paper	-	-	-	-	-	-	-	10.10	10.10
Pooled funds	-	-	-	-	-	-	-	8.19	8.19
Discount Notes and Treasury-Bills	-	-	-	-	-	-	-	0.15	0.15
Percent of rated portfolio	<u>1.61 %</u>	<u>2.36 %</u>	<u>11.85 %</u>	<u>27.25 %</u>	<u>14.22 %</u>	<u>12.76 %</u>	<u>4.07 %</u>	<u>25.87 %</u>	<u>100.00 %</u>
Investment Type <sup>a</sup> 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>

\* 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.

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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, 2016 and 2015 are as follows:

Investment Type Variable Funds June 30, 2016	S&P Quality Ratings								
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated	Total
Government	-	-	-	-	-	-	-	-	-
Corporate bonds	2.35 %	1.37 %	6.82 %	12.40 %	5.94 %	2.81 %	- %	19.43 %	51.12 %
Yankee bonds	-	-	-	-	-	-	-	0.06	0.06
Municipal Bonds	-	0.24	-	-	-	-	-	-	0.24
U.S. Agencies	-	1.37	-	-	-	-	-	-	1.37
Short-term: Money Market Funds	-	-	-	-	-	-	-	47.21	47.21
Percent of rated portfolio	<u>2.35 %</u>	<u>2.98 %</u>	<u>6.82 %</u>	<u>12.40 %</u>	<u>5.94 %</u>	<u>2.81 %</u>	<u>- %</u>	<u>66.70 %</u>	<u>100.00 %</u>

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 %	5.67 %	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>

\* 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.

**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.

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

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, 2016 and 2015, are as follows:

<b>June 30, 2016</b> <b>Investment Type</b> <b>Pension Fund</b>	<b>Years to Maturity</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>
U.S. Government	36.44 %	2.31 %	4.41 %	4.66 %	25.06 %
Corporate	51.84	1.01	17.37	20.62	12.84
Short-term:					
Commercial paper	6.42	6.42	-	-	-
Pooled funds	5.21	5.21	-	-	-
Discount Notes and Treasury Bills	0.10	0.10	-	-	-
Percent of rated portfolio	<u>100.00 %</u>	<u>15.05 %</u>	<u>21.78 %</u>	<u>25.28 %</u>	<u>37.90 %</u>
<b>June 30, 2015</b> <b>Investment Type</b> <b>Pension Fund</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>
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>

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

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, 2016 and 2015, are as follows:

June 30, 2016 Investment Type Variable Funds	Years to Maturity				
	Fair Value	Less than One Year	One to Five Years	Six to Ten Years	More than Ten Years
Government	24.27 %	0.14 %	23.53 %	0.60 %	- %
Corporate	38.71	2.23	26.60	5.14	4.74
Yankee bonds	0.05	-	0.05	-	-
Municipal bonds	0.18	0.16	0.02	-	-
US Agency	1.04	-	1.04	-	-
Short term:					
Money market	<u>35.75</u>	<u>35.75</u>	<u>-</u>	<u>-</u>	<u>-</u>
Percent of rated portfolio	<u>100.00 %</u>	<u>38.28 %</u>	<u>51.24 %</u>	<u>5.74 %</u>	<u>4.74 %</u>
June 30, 2015 Investment Type Variable Funds	Investment Maturities				
	Fair Value	Less than One Year	One to Five Years	Six to Ten Years	More than Ten Years
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	-	-
US Agency	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>

**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.

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, 2016 and 2015 are as follows (amounts in thousands of U.S. dollars):

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

Trade Currency	Pension Fund June 30, 2016	Variable-Return Funds June 30, 2016	Pension Fund June 30, 2015	Variable-Return Funds June 30, 2015
Euro Currency	\$ 1,751,683	\$ 171,952	\$ 1,838,548	\$ 244,202
Japanese Yen	1,211,772	101,422	1,148,968	153,005
British Pnd Sterling	1,047,296	103,393	1,181,607	170,882
South Korean Won	986,412	78,366	890,803	-
New Taiwan Dollar	827,942	50,026	816,117	-
Indian Rupee	762,247	51,387	653,241	-
Swiss Franc	542,480	59,634	562,471	82,758
South African Rand	531,048	26,115	513,578	5,996
Brazilian Real	381,188	20,695	368,240	-
Hong Kong Dollar	347,719	20,397	351,187	32,624
Mexican Nuevo Peso	259,357	9,085	247,231	-
Australian Dollar	197,137	20,122	173,633	23,821
Malaysian Ringgit	195,511	10,561	185,909	-
Indonesian Rupiah	171,225		137,825	-
Thai Baht	168,968	6,499	142,312	-
Swedish Krona	160,037	7,659	175,219	14,850
Danish Krone	127,833	3,778	108,706	5,653
Philippines Peso	126,656	1,607	99,375	-
Turkish Lira	113,853	9,708	108,505	-
Polish Zloty	108,411	3,371	121,857	-
Singapore Dollar	103,043	16,518	127,495	21,326
Canadian Dollar	97,285	22,110	102,126	27,498
Chilean Peso	85,709	29	83,243	-
Norwegian Krone	50,548	5,433	55,071	11,420
Colombian Peso	40,404		42,029	-
UAE Dirham	39,394	2,555	36,464	-
Hungarian Forint	34,102		32,984	537
Czech Koruna	25,097	6	27,710	-
Egyptian Pound	24,020	137	46,792	-
Qatari Rial	22,834		19,906	-
New Zealand Dollar	12,438	309	10,003	-
Peruvian Nuevo Sol	10,324		9,426	-
Israeli Shekel	6,328	3,495	5,885	5,571
<b>Total</b>	<b>\$ 10,570,301</b>	<b>\$ 806,369</b>	<b>\$10,424,466</b>	<b>\$ 800,143</b>

NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015

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, 2016 and 2015 are as follows (in thousands):

Investment Type and Fair Value of Securities Lending Transactions (In thousands) June 30, 2016	S&P Quality Ratings							CCC & Below	Not Rated	Total
	AAA	AA	A	BBB	BB	B				
Government	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-	-	-	-	-	-
Short-term:	-	-	-	-	-	-	-	-	-	-
Repurchase agreements	-	-	-	-	-	-	-	-	-	-
Reverse repurchase agreements	-	-	-	-	-	-	-	-	-	-
Certificates of deposit	-	-	-	-	-	-	-	-	1,243,960	1,243,960
Commercial paper	-	-	-	-	-	-	-	-	-	-
Money market	-	-	-	-	-	-	-	-	-	-
Bank notes	70,361	-	-	-	-	-	-	-	-	70,361
U.S. agency	-	-	-	-	-	-	-	-	280,470	280,470
Time deposit	-	-	-	-	-	-	-	-	-	-
Cash	-	-	-	-	-	-	-	-	176,681	176,681
Uninvested	-	-	-	-	-	-	-	-	2,984	2,984
<b>Total</b>	<b>\$ 70,361</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,704,095</b>	<b>\$ 1,774,456</b>
Percent of Securities Lending Portfolio	3.97 %	- %	- %	- %	- %	- %	- %	- %	96.03 %	100.00 %

Investment Type and Fair Value of Securities Lending Transactions (In thousands) June 30, 2015	S&P Quality Ratings							CCC & Below	Not Rated	Total
	AAA	AA	A	BBB	BB	B				
Government	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate	-	-	-	-	-	-	-	-	-	-
Short-term:	-	-	-	-	-	-	-	-	-	-
Repurchase agreements	-	-	-	-	-	-	-	-	-	-
Reverse repurchase agreements	-	-	-	-	-	-	-	-	-	-
Certificates of deposit	-	-	-	-	-	-	-	-	422,948	422,948
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>\$ -</b>	<b>\$ 1,343,459</b>	<b>\$ 1,663,710</b>
Percent of Securities Lending Portfolio	19.25 %	- %	- %	- %	- %	- %	- %	- %	80.75 %	100.00 %

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

The quality ratings of investments held as collateral for Securities Lending under the variable-return funds at June 30, 2016 and 2015 are as follows (in thousands):

Investment Type and Fair Value of Securities Lending Transactions (in thousands)	S&P Quality Ratings										Total	
	AAA	AA	A	BBB	BB	B	CCC & Below	Not Rated				
Government Corporate Short-term:												
Repurchase agreements	201,775	62,078	-	-	-	-	-	-	-	-	-	263,853
Reversal purchase agreements	-	-	-	-	-	-	-	-	-	-	-	-
Certificates of deposit	-	-	-	-	-	-	-	-	-	-	-	-
Commercial paper	-	-	-	-	-	-	-	-	-	-	-	-
Variable rate demand notes	-	-	-	-	-	-	-	-	-	-	-	-
U.S. treasury	-	-	-	-	-	-	-	-	-	-	-	-
U.S. agency	-	-	-	-	-	-	-	-	-	-	-	-
Time deposit	-	-	-	-	-	-	-	-	-	-	-	-
Uninvested	-	-	-	-	-	-	-	-	-	47	-	47
<b>Total</b>	<b>\$ 201,775</b>	<b>\$ 165,006</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 47</b>	<b>\$ -</b>	<b>\$ 366,828</b>
Percent of securities lending portfolio	55.01 %	44.98 %	- %	- %	- %	- %	- %	- %	- %	0.01 %	- %	100.00 %
<b>June 30, 2015</b>												
Government 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>\$ -</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>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 775,047</b>
Percent of securities lending portfolio	26.50 %	73.50 %	- %	- %	- %	- %	- %	- %	- %	- %	- %	100.00 %

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

*Interest Rate Risk* — The lengths of investment maturities (in years) of the collateral for Securities Lending held by the pooled NYC Pension Fund at June 30, 2016 and 2015 are as follows (in thousands):

Investment Type June 30, 2016	Years to Maturity 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	1,243,960	1,243,960	-	-	-
Certificates of deposit	-	-	-	-	-
Commercial paper	-	-	-	-	-
Money market	70,361	70,361	-	-	-
Bank notes	280,470	280,470	-	-	-
U.S. agency	-	-	-	-	-
Time deposit	-	-	-	-	-
Cash	176,681	176,681	-	-	-
Uninvested	2,984	2,984	-	-	-
Total	<u>\$ 1,774,456</u>	<u>\$ 1,774,456</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Percent of Securities Lending Portfolio	<u>100.00 %</u>	<u>100.00 %</u>	<u>- %</u>	<u>- %</u>	<u>- %</u>

Investment Type June 30, 2015	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	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	-	-	-
Total	<u>\$ 1,663,710</u>	<u>\$ 1,663,710</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Percent of Securities Lending Portfolio	<u>100.00 %</u>	<u>100.00 %</u>	<u>- %</u>	<u>- %</u>	<u>- %</u>



**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

The lengths of investment maturities (in years) of the collateral for Securities Lending held under the variable-return funds at June 30, 2016 and 2015 are as follows (in thousands):

Investment Type (in thousands) June 30, 2016	Years to Maturity				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ 102,928	\$ 26,913	\$ 33,418	\$ 23,393	\$ 19,204
Corporate	-	-	-	-	-
Short-term:					
Repurchase agreements	263,853	263,853	-	-	-
Reversal purchase agreements	-	-	-	-	-
Certificates of deposit	-	-	-	-	-
Commercial paper	-	-	-	-	-
Variable rate demand notes	-	-	-	-	-
U.S. treasury	-	-	-	-	-
U.S. agency	-	-	-	-	-
Time deposit	-	-	-	-	-
Uninvested	47	47	-	-	-
Totals	\$ 366,828	\$ 290,813	\$ 33,418	\$ 23,393	\$ 19,204
Percent of securities lending portfolio	100.00 %	79.28 %	9.11 %	6.38 %	5.23 %

Investment Type (in thousands) June 30, 2015	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
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	-	-	-	-	-
Totals	\$ 776,034	\$ 419,837	\$ 149,522	\$ 122,883	\$ 83,792
Adjustment to Custodial Report	(987)	(987)	-	-	-
VRF Portion of Systems Securities	775,047	418,850	149,522	122,883	83,792
Percent of securities lending portfolio	100.00 %	54.04 %	19.29 %	15.86 %	10.81 %

**Rate of Return** — For the years ended June 30, 2016 and 2015, the annual money-weighted rate of return on the pooled NYC Pension Fund was 1.66% and 2.81%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense adjusted for the changing amounts actually invested.

In Fiscal Year 2015, the System adopted GASB 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.



**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

**GASB 72 Disclosure (Pension Fund)**  
(In thousands)

	2015			
	Level One	Level Two	Level Three	Total
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
	<u>\$ 33,111,157</u>	<u>\$ 22,102,765</u>	<u>\$ 8,252,560</u>	<u>\$ 63,466,482</u>
Total Pension Fund investments	<u>\$ 33,111,157</u>	<u>\$ 22,102,765</u>	<u>\$ 8,252,560</u>	<u>\$ 63,466,482</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 marketplace; many of these securities are priced by the issuers or industry groups for these securities. Fair value is defined as the quoted market value on the last trading day of the period. These prices are obtained from various pricing sources by 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.

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

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.

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

**Variable-Return Funds****GASB 72 Disclosure**

As of June 30, 2016

(in thousands)

	2016			
	Level One	Level Two	Level Three	Total
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 127,990	\$ -	\$ 127,990
Equity securities	8,238,607	1,096,641	447	9,335,695
Debt Securities	-	218,762	-	218,762
Bond Fund:				
Short-term investments	-	5,723	-	5,723
Debt Securities	-	323,117	-	323,117
International Equity Fund:				
Short-term investments	-	934	-	934
International equity	89,751	10,201	5	99,957
Inflation Protection Fund:				
Short-term investments	-	131	-	131
Equity securities	44,363	-	-	44,363
Socially Responsive Equity Fund:				
Short-term investments	-	367	-	367
Equity securities	118,415	-	-	118,415
International equity	2,443	-	-	2,443
Collateral from securities lending (Variable- Return Funds)	-	366,828	-	366,828
<b>Total Variable-Return Funds Investments</b>	<b>\$ 8,493,579</b>	<b>\$ 2,150,694</b>	<b>\$ 452</b>	<b>\$ 10,644,725</b>

**NOTES TO COMBINING FINANCIAL STATEMENTS**  
**YEARS ENDED JUNE 30, 2016 AND 2015**

**Variable-Return Funds****GASB 72 Disclosure****As of June 30, 2015****(in thousands)**

	2015			
	Level One	Level Two	Level Three	Total
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
<b>Total Variable-Return Funds Investments</b>	<b>\$ 9,119,210</b>	<b>\$ 3,080,733</b>	<b>\$ -</b>	<b>\$ 12,199,943</b>

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

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

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

**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.

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

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

Members who joined on or after July 27, 1976 are mandated to contribute 3% of salary. Effective October 1, 2000, these members are not required to make contributions after the 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 credited to QPP members and actual investment earnings on such funds. The Statutory Contribution for the year ended June 30, 2016, based on an actuarial valuation as of June 30, 2014, was \$3,703 million and the Statutory Contribution for the year ended June 30, 2015, based on an actuarial valuation as of June 30, 2013, was \$3,270 million. The Statutory Contributions for Fiscal Years 2016 and 2015 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.

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

**5. QPP NET PENSION LIABILITY**

The components of the net pension liability of the Employers at June 30, 2016 and 2015 were as follows:

	(in millions)	
	2016	2015
Total pension liability	\$70,001	\$65,040
Fiduciary net position *	\$43,630	\$44,254
Employers' net pension liability	\$26,371	\$20,786
Fiduciary net position as a percentage of the total pension liability	62.3%	68.0%

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

**Actuarial Methods and Assumptions**

The total pension liability as of June 30, 2016 and 2015 were determined by actuarial valuations as of June 30, 2014 and June 30, 2013, 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 <sup>*</sup>	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per annum.
Investment Rate of Return <sup>*</sup>	7.0% per annum, net of Investment Expenses.
COLAs <sup>*</sup>	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.

<sup>\*</sup> 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.

In October 2015 the independent actuarial auditor, Gabriel, Roeder, Smith & Company (GRS), issued a report on its NYC Charter-mandated actuarial experience studies for the four-year and ten-year periods ended June 30, 2013 (the GRS Report).

Based, in part, on the GRS Report, on published studies of mortality improvement, and on input from the City's outside consultants and auditors, the Actuary proposed, and the Board of Trustees of the System adopted, new post-retirement mortality tables for use in determining employer contributions beginning in Fiscal Year 2016. The new tables of post-retirement mortality are based primarily on the



**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

experience of the System (the Base Tables) and the application of Mortality Improvement Scale MP-2015, published by the Society of Actuaries in October 2015 (the Valuation Tables). Scale MP-2015 replaced Mortality Improvement Scale AA.

In addition, beginning in Fiscal Year 2016, the Actuary revised the Actuarial Asset Valuation Method to constrain the Actuarial Asset Value to be within a 20% corridor of the Market Value of Assets.

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.

**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:

Asset Class	Target Asset Allocation	Long-Term Expected Real Rate of Return
U.S. Public Market 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, Hedge Funds)	<u>6.00%</u>	4.00%
Total	<u>100.0%</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

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

discount rate that is one-percentage point lower (6.0%) or one-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, 2016	\$33,701,230	\$26,371,232	\$20,244,352

**6. MEMBER LOANS**

The balance of member loans receivable for the QPP at June 30, 2016 and 2015 is \$275.7 million and \$257.0 million, respectively. QPP members are permitted to borrow up to 75% of their own contributions, including accumulated interest. Outstanding loan balances are insured in order to protect members' balances in case of death. In return for insurance coverage, Tiers III, IV and VI members supplement their loan interest payments of 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, 2016 and 2015 is \$367.9 million and \$361.1 million, respectively. Members of the TDA Program are permitted to borrow up to 75% of their own contributions, including accumulated interest. TDA Program members supplement their member loans' interest payments (7.0% for UFT, 8.25% for all other members) with a 0.3% ("APR") insurance fee. This fee funds a reserve, which is used to repay members' loan balances outstanding in case of death. Upon termination of employment before retirement, members are entitled to refunds of their own contributions, including accumulated interest, less any loans outstanding.

**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, the Financial Information Services Agency ("FISA"), and the Office of Payroll Administration ("OPA") provide cash receipt and cash disbursement services and financial services; the Office of Management and Budget ("OMB") provides budget review services; and the City's Corporation Counsel provides legal services to TRS. The cost of providing such services amounted to \$7.7 million and \$13.2 million in Fiscal Years 2016 and 2015, respectively. Fiscal Year 2015 included additional charges incurred at the Comptroller. 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 revenue 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. Total TRS' administrative expenses have been \$92.4 million and \$84.4 million for Fiscal Years 2016 and 2015, respectively. In addition to TRS' administrative expenses, other City agencies attribute the cost for services rendered by them during the fiscal year; see note 7 above.

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

**9. CONTINGENT LIABILITIES AND OTHER MATTERS**

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

**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 System’s 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.

In October 2015 the independent actuarial auditor, Gabriel, Roeder, Smith & Company (GRS), issued a report on its NYC Charter-mandated actuarial experience studies for the four-year and ten-year periods ended June 30, 2013 (the GRS Report).

Based, in part, on the GRS Report, on published studies of mortality improvement, and on input from the City’s outside consultants and auditors, the Actuary proposed, and the Board of Trustees of the System adopted, new post-retirement mortality tables for use in determining employer contributions beginning in Fiscal Year 2016. The new tables of post-retirement mortality are based primarily on the experience of the TRS (the Base Tables) and the application of Mortality Improvement Scale MP-2015, published by the Society of Actuaries in October 2015 (the Valuation Tables). Scale MP-2015 replaced Mortality Improvement Scale AA.

In addition, beginning in Fiscal Year 2016, the Actuary revised the Actuarial Asset Valuation Method to constrain the Actuarial Asset Value to be within a 20% corridor of the Market Value of Assets.

**New York State Legislation** (only significant laws included) —

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 expenses, continued it and other interest rates until June 30, 2016 and defined the amortization of Unfunded Actuarial Accrued Liabilities (“UAAL”).

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

**NOTES TO COMBINING FINANCIAL STATEMENTS  
YEARS ENDED JUNE 30, 2016 AND 2015**

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).

Chapter 326 of the Laws of 2016 extended the deadline for eligible members to file a notice with TRS of their participation in the World Trade Center rescue, recovery or clean-up efforts to September 11, 2018.

Chapter 41 of the Laws of 2016 amends Retirement and Social Security Law Section 1000 by removing existing requirements for military service to be performed during specified periods of war and certain hostilities.

\* \* \* \* \*

**REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)**  
**QUALIFIED PENSION PLAN**  
**SCHEDULE OF CHANGES IN THE EMPLOYERS' NET PENSION LIABILITY AND RELATED RATIOS**  
(In Thousands)

## SCHEDULE 1

	2016	2015	2014
Total pension liability:			
Service cost	\$ 1,274,308	\$ 1,223,158	\$ 1,205,662
Interest	4,131,177	4,027,138	4,407,702
Changes of benefit terms	-	-	-
Differences between expected and actual experience	1,229,502	1,507,964	-
Changes of assumptions	2,432,878	-	-
Benefit payments/withdrawals	(4,107,455)	(4,024,272)	(3,818,248)
Net change in total pension liability	4,960,410	2,733,989	1,795,116
Total pension liability – beginning	65,040,368	62,306,379	60,511,262
Total pension liability – ending (a)	70,000,778	65,040,368	62,306,378
Plan fiduciary net position:			
Contributions - Employer	3,760,714	3,325,528	3,054,424
Contributions - Employee	173,696	158,590	154,962
Net investment income	960,267	1,611,929	9,435,906
Benefit payments/withdrawals	(4,107,455)	(4,024,272)	(3,818,248)
Payment of Interest on TDA Fixed Funds	(1,354,207)	(1,248,988)	(1,147,923)
Administrative expenses	(59,367)	(58,391)	(46,042)
Other Changes	1,233	329	404
Net change in plan fiduciary net position	(625,119)	(235,275)	7,633,483
Plan fiduciary net position – beginning	44,254,664	44,489,939	36,856,456
Plan fiduciary net position – ending (b)*	43,629,545	44,254,664	44,489,939
Employer's net pension liability – ending (a)-(b)	\$ 26,371,233	\$ 20,785,704	\$ 17,816,440
Plan fiduciary net position as a percentage of the total pension liability	62.30%	68.04%	71.41%
Covered Employee Payroll	\$ 8,256,100	\$ 8,074,522	\$ 7,996,942
TRS' Net Pension Liability as a Percentage of covered-employee payroll	319.42%	257.42%	222.79%

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.

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

**SCHEDULE 2**

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Actuarially determined contribution	\$ 3,702,569	\$ 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
Contributions in relation to the actuarially determined contribution	3,702,569	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
Contribution deficiency (excess)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Covered-employee payroll	\$ 8,256,100	\$ 8,074,522	\$ 7,996,942	\$ 7,833,329	\$ 7,920,935	\$ 7,935,248	\$ 7,859,999	\$ 7,221,499	\$ 6,998,174	\$ 6,285,203
Contributions as a percentage of covered-employee payroll <sup>1</sup>	44.846%	40.488%	37.498%	36.455%	33.747%	31.114%	31.604%	30.792%	27.386%	25.471%

<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.

See Independent Auditors' report.

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

**SCHEDULE 2 (CONTINUED)**

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 2016 contributions were determined using an actuarial valuation as of June 30, 2014). The methods and assumptions used to determine the actuarially determined contributions are as follows:

Valuation Dates	June 30, 2014	June 30, 2013	June 30, 2012	June 30, 2011	June 30, 2010	June 30, 2009- June 30, 2005
Actuarial cost method	Entry Age	Entry Age	Entry Age	Entry Age	Entry Age	Frozen Initial Liability <sup>3</sup>
Amortization method for Unfunded Actuarial Accrued Liabilities:						
Initial Unfunded Post-2010 Unfunded	Increasing Dollar Level Dollar	Increasing Dollar Level Dollar	Increasing Dollar Level Dollar	Increasing Dollar Level Dollar	Increasing Dollar Level Dollar	NA <sup>2</sup> NA <sup>2</sup>
Remaining amortization period:						
Initial Unfunded	18 years (closed)	19 years (closed)	20 years (closed)	21 years (closed)	22 years (closed)	NA <sup>2</sup>
2010 ERI	2 years (closed)	3 years (closed)	4 years (closed)	5 years (closed)	NA	NA <sup>2</sup>
2011 Actuarial Gain/Loss	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA <sup>2</sup>
2012 Actuarial Gain/Loss	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA	NA <sup>2</sup>
2013 Actuarial Gain/Loss	14 years (closed)	15 years (closed)	NA	NA	NA	NA <sup>2</sup>
2014 Actuarial Gain/Loss	15 years (closed)	NA	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. <sup>5</sup>	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 a "Market Value Restart" as of June 30, 1999.

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

**SCHEDULE 2 (CONTINUED)**

Valuation Dates	June 30, 2014	June 30, 2013	June 30, 2012	June 30, 2011	June 30, 2010	June 30, 2009 - June 30, 2005
Actuarial assumptions: Assumed rate of return <sup>3</sup>	7.0% per annum, net of investment expenses	7.0% per annum, net of investment expenses	7.0% per annum, net of investment expenses	7.0% per annum, net of investment expenses	8.0% per annum, gross of investment expenses	8.0% per annum, gross of investment expenses <sup>3</sup>
Post-retirement mortality	Tables adopted by Retirement Board during Fiscal Year 2016	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	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 2012	Tables adopted by Retirement Board during Fiscal Year 2006	Tables adopted by Retirement Board during Fiscal Year 2000
Salary increases <sup>3</sup>	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases 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.	1.5% 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 (UAAAL) 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>

<sup>2</sup> In conjunction with Chapter 85 of the Laws of 2000, there is an amortization method. However, the June 30, 1999 UAAAL 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.

<sup>5</sup> As of the June 30, 2014 (Lag) valuation, the AAV is constrained to be no more than 20% from Market Value.



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

**SCHEDULE 3**

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 three fiscal years:

<b><u>Fiscal Year Ended</u></b>	<b><u>Money-weighted Rate of Return</u></b>
June 30, 2016	1.66%
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.

**ADDITIONAL SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF ADMINISTRATIVE EXPENSES (UNAUDITED)**  
**Year Ended June 30, 2016**

## SCHEDULE 4

	Total	QPP	TDA	Expense Reserve****
<b>PERSONNEL SERVICES</b>				
Staff Salaries	\$ 30,130,820	\$ 22,716,318	\$ 7,190,600	\$ 223,902
Social Security	1,649,743	1,243,779	393,705	12,259
Insurance (Health)	4,473,216	3,372,461	1,067,515	33,240
Welfare Benefit Fund	1,170,341	882,347	279,297	8,697
<b>TOTAL PERSONAL SERVICES</b>	<b>37,424,120</b>	<b>28,214,905</b>	<b>8,931,117</b>	<b>278,098</b>
<b>PROFESSIONAL SERVICES</b>				
Data Processing Support and Licenses	4,719,273	3,557,968	1,126,236	35,069
Temporary and Consultant Staffing	1,399,335	1,054,991	333,946	10,398
Outside Professional Services	718,494	541,689	171,466	5,339
<b>TOTAL PROFESSIONAL SERVICES</b>	<b>6,837,102</b>	<b>5,154,648</b>	<b>1,631,648</b>	<b>50,806</b>
<b>MODERNIZATION INITIATION</b>				
Personnel Services	23,290	10,857	12,433	-
Consultants and Temporary Costs	17,959,359	8,371,863	9,587,496	-
IT Vendor Development Costs	12,182,091	5,678,755	6,503,336	-
QA Vendor Non-IT Costs	3,587,563	1,672,364	1,915,199	-
Equipment Costs	1,968,021	917,405	1,050,616	-
Other Expenses	107,262	50,001	57,261	-
<b>TOTAL MODERNIZATION INITIATION</b>	<b>35,827,586</b>	<b>16,701,245</b>	<b>19,126,341</b>	<b>-</b>
<b>RENTALS</b>				
Office Space	7,701,373	5,806,242	1,837,902	57,229
Equipment Leasing	176,250	132,879	42,061	1,310
<b>TOTAL RENTALS</b>	<b>7,877,623</b>	<b>5,939,121</b>	<b>1,879,963</b>	<b>58,539</b>
<b>COMMUNICATION</b>				
Telephone	176,713	133,228	42,172	1,313
Postage	447,549	337,417	106,806	3,326
Local Traveling Expenses *	38,995	29,399	9,306	290
Non-Local Traveling Expenses **	63,182	47,635	15,078	469
<b>TOTAL COMMUNICATION</b>	<b>726,439</b>	<b>547,679</b>	<b>173,362</b>	<b>5,398</b>
<b>OTHER OPERATING EXPENSES</b>				
Utilities	404,496	304,959	96,531	3,006
Supplies and Materials	87,444	65,926	20,868	650
Maintenance, Repairs, and Services	512,368	386,286	122,275	3,807
Office Equipment and Furniture	241,267	181,897	57,577	1,793
Advertising Expenses	74,097	55,863	17,683	551
Storage	115,566	87,128	27,579	859
Printing	733,362	552,898	175,014	5,450
Training Programs	387,309	292,001	92,430	2,878
Dues and Subscriptions	24,543	18,504	5,857	182
Office Renovation	1,122,830	846,527	267,959	8,344
Miscellaneous	23,316	17,579	5,564	173
<b>TOTAL OTHER EXPENSES</b>	<b>3,726,598</b>	<b>2,809,568</b>	<b>889,337</b>	<b>27,693</b>
<b>TOTAL ADMINISTRATIVE EXPENSES ***</b>	<b>\$92,419,468</b>	<b>\$59,367,166</b>	<b>\$32,631,768</b>	<b>\$ 420,534</b>

\* Total TRS Local Traveling Expenses includes Local Travel Fare \$25,582, Courier \$880, and Meals & Refreshments \$12,533.

\*\* Total TRS Non-Local Traveling Expenses includes Hotels & Meals \$12,759, Travel Fare \$18,819, and Conferences \$31,604.

\*\*\* The schedule shows total expenses paid by TRS. Other administrative expenses of \$7,677,625 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 loan service charge revenues. QPP and TDA loan service charge revenues for FY 2016 were 191,111 and 229,423, respectively.

See Note 8 of Financial Statements for the Administrative Expenses

See Independent Auditors' report.

**ADDITIONAL SUPPLEMENTARY INFORMATION**  
**SCHEDULE OF INVESTMENT EXPENSES AND SERVICES (QPP & TDA)**  
Year Ended June 30, 2016

## SCHEDULE 5

INVESTMENT CATEGORY	ASSETS UNDER MANAGEMENT	INVESTMENT EXPENSES
Pension Fund	\$ 62,074,945,071	\$ 210,800,990
Diversified Equity and Int'l Equity Funds	9,783,337,521	16,808,399
Bond Value Fund	328,839,927	450,136
Inflation Protection Fund	44,493,300	433
Socially Responsive Equity Fund	121,224,215	725,898
Other Investment Services		
Consultant		5,656,336
Legal		359,938
Due to Provision for Expense		(577,706)
Provision for Expense Reduction		(24,802,180)
	<b>\$ 72,352,840,034 *</b>	<b>\$ 209,422,244</b>

\*Excludes \$2,141,283,940 in securities lending



# INVESTMENT





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, 2016, 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 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 \$62.1 billion as of June 30, 2016. The overall Pension Fund had a net of fee return of 1.7% for the fiscal year ending June 30, 2016. As of June 30, 2016, the Fund had 34% U.S. equity investments, 17% non-U.S. equity investments, 5% private equity investments, 3% private real estate, 1% private infrastructure, 4% REITs, 37% fixed income investments and short-term investments (due to rounding, percentages do 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, 2016, 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, 2016, the Diversified Equity Fund, including both QPP and TDA assets, had \$9.7 billion in assets and had a net of fee return of -0.6% for the fiscal year ending June 30, 2016. 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, 2016, 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, 2016, the combined QPP and TDA Bond Funds' assets totaled \$328.8 million, and the Fund earned a net of fee return of 2.8% for the fiscal year ending June 30, 2016.

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, 2016, the combined QPP and TDA International Equity Funds' assets totaled \$100.9 million. For the fiscal year ending June 30, 2016, the International Equity Fund returned -6.7%, 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, 2016, the combined TDA and

QPP Inflation Protection Funds' assets totaled \$44.5 million. For the fiscal year ending June 30, 2016, the Inflation Protection Fund returned 0.5%, 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, 2016, the combined QPP and TDA Socially Responsive Equity Funds' assets totaled \$121.2 million. For the fiscal year ending June 30, 2016, the Socially Responsive Equity Fund returned 0.9%, 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, 2016, with the 10-year Treasury note yielding 1.45% at the end of June, a decrease of 90 basis points from June 30, 2015, and a decrease of 39 basis points since the end of the first quarter of 2016. 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 markets had mixed performance during the one-year period ending June 30, 2016. U.S. equities (proxied by the S&P 500) gained 4.0% during the trailing one-year period, outperforming non-U.S. developed markets (proxied by the MSCI EAFE Index), which returned -9.7%. Additionally, emerging market equities (proxied by the MSCI Emerging Markets Index) posted a return of -11.7% for the one-year period ending June 30, 2016. The broad fixed-income market provided a positive return during the trailing one-year period, gaining 6.0%. High-yield fixed income (below investment grade bonds) lagged higher-quality domestic fixed income during the one-year period ending June 30, 2016, returning 1.6%, while emerging markets debt outperformed, returning 10.3%.

### U.S. MARKETS REVIEW

Most major domestic equity indices rose during the one-year period ending June 30, 2016, with larger market capitalization companies, as represented by the Russell 1000 Index, outperforming their smaller counterparts, as represented by the Russell 2000 Index, as the Russell 1000 Index returned 2.9% during the one-year period ending June 30, 2016 versus the Russell 2000 Index return of -6.7% for the same period. The Russell 3000 Index, a broad measure of the U.S. equity markets, returned 2.1% for the one-year period ending June 30, 2016. For the 12 months ending June 30, 2016, growth stocks outperformed value stocks as the Russell 3000 Value Index returned 2.4% versus the Russell 3000 Growth Index's return of 1.9% over the same period.

For the year ending June 30, 2016, the Barclays Capital Aggregate Bond Index, a broad index of U.S. investment grade bonds, returned 6.0%.

### INTERNATIONAL MARKETS REVIEW

The return for the MSCI EAFE Index, a measure of the developed international equity markets, was -9.7% in U.S. dollar terms for the one-year period ending June 30, 2016. Of the following four regions: Japan, Pacific ex-Japan, U.K. and Europe ex-U.K., Pacific ex-Japan had the strongest performance for the one-year period, with a return of -6.62%. Japan followed with a return of -8.64% for the one-year period while the Europe ex-U.K. and U.K. markets returned -10.0% and -12.1%, respectively. International small-cap stocks outperformed foreign large-cap companies for the 12-month period ending June 30, 2016 as the MSCI EAFE Index returned -9.7% versus the MSCI EAFE Small Cap Index's return of -3.3% over the same period. The MSCI Emerging Markets Index returned -11.7% for the one-year period ending June 30, 2016. 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*

20 Glover Avenue  
Norwalk, Connecticut 06850



## 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 77-81 for detailed descriptions of the investment programs.

PENSION FUND	DIVERSIFIED EQUITY FUND	BOND FUND
(Member Contributions, Pension Reserve Funds & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)
Tiers I/II QPP funds in the Fixed Return Fund + 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
INTERNATIONAL EQUITY FUND	INFLATION PROTECTION FUND	SOCIALLY RESPONSIVE EQUITY FUND
(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.*

The table below compares accumulations as of June 30, 2016, 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, 2016*

MONTHS OF PARTICIPATION	12	24	36	48	60	72	84	96	108	120
Fixed Return Fund (TDA/UFT) <sup>1</sup>	\$ 1,239	\$ 2,564	\$ 3,982	\$ 5,499	\$ 7,122	\$ 8,861	\$ 10,720	\$ 12,729	\$ 14,906	\$ 17,262
Fixed Return Fund (All others) <sup>1</sup>	\$ 1,245	\$ 2,594	\$ 4,053	\$ 5,633	\$ 7,343	\$ 9,193	\$ 11,197	\$ 13,342	\$ 15,673	\$ 18,198
Diversified Equity Fund <sup>2</sup>	\$ 1,233	\$ 2,456	\$ 3,843	\$ 5,541	\$ 7,490	\$ 9,574	\$ 11,978	\$ 14,737	\$ 16,603	\$ 18,581
Bond Fund <sup>3</sup>	\$ 1,225	\$ 2,465	\$ 3,723	\$ 4,983	N/A	N/A	N/A	N/A	N/A	N/A
International Equity Fund <sup>4</sup>	\$ 1,190	\$ 2,314	\$ 3,482	\$ 4,860	\$ 6,359	\$ 7,828	\$ 9,458	\$ 11,472	N/A	N/A
Inflation Protection Fund <sup>5</sup>	\$ 1,260	\$ 2,438	\$ 3,666	\$ 4,924	\$ 6,311	\$ 7,767	\$ 9,428	\$ 11,353	N/A	N/A
Socially Responsive Equity Fund <sup>6</sup>	\$ 1,232	\$ 2,473	\$ 3,891	\$ 5,691	\$ 7,690	\$ 9,802	\$ 12,333	\$ 15,192	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 2016 unit value of \$78.102

**3** Based on July 2016 unit value of \$17.418

**4** Based on July 2016 unit value of \$9.128

**5** Based on July 2016 unit value of \$10.443

**6** Based on July 2016 unit value of \$14.323

## PENSION FUND Fund Summary Fiscal Year 2016

**Return: 1.66%**

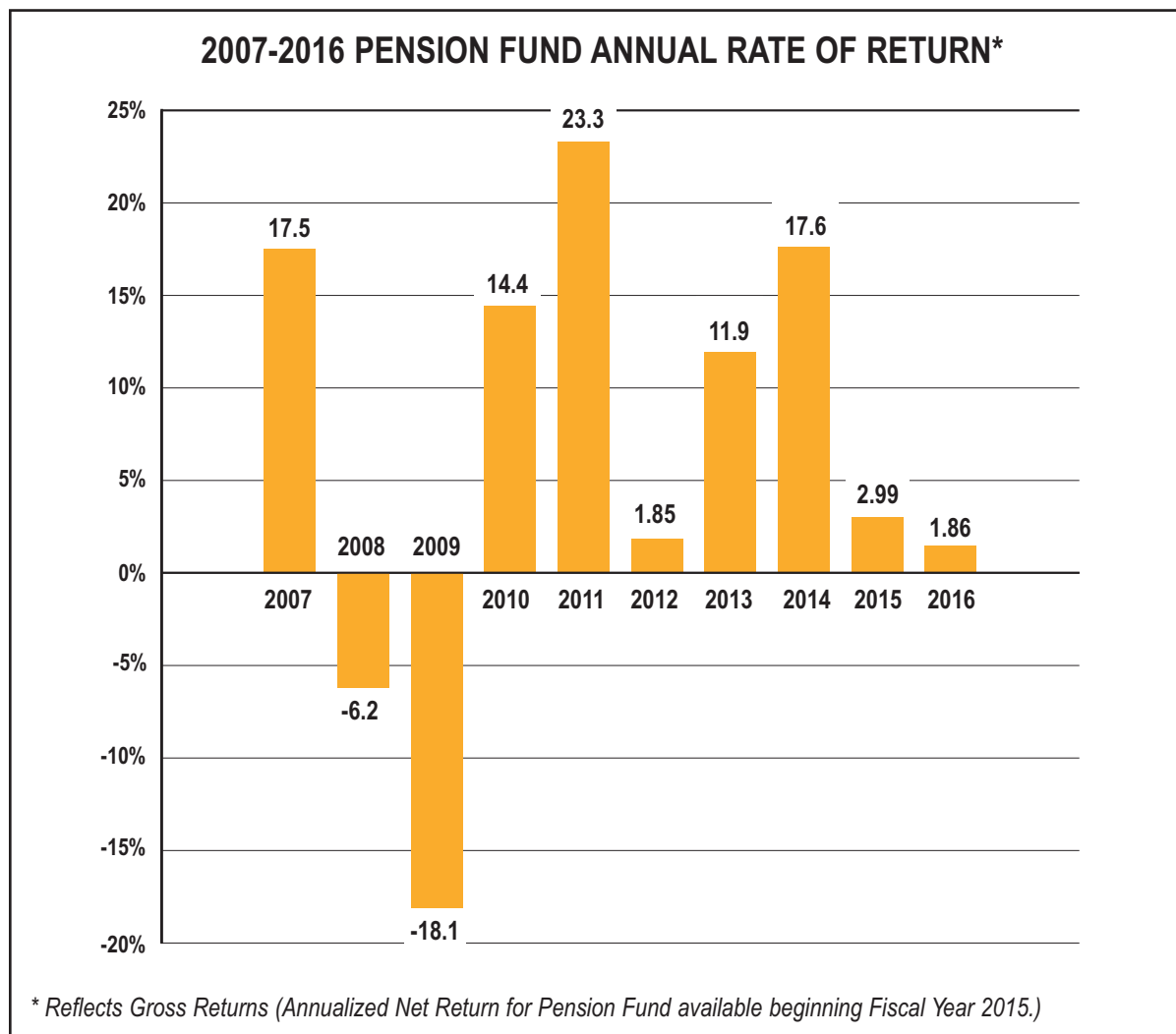
**Total Investments: \$62.075 Billion**

During Fiscal Year 2016, the Pension Fund’s portfolio, consisting primarily of equities and fixed-income investments, yielded a net return of 1.66% and a gross return of 1.86%. The 1.86% gross return was a decrease from the 2.99% return for Fiscal Year 2015.

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 \$62.075 billion as of June 30, 2016.

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 2016

**Return: -0.62%**

**Total Investments: \$9.682 Billion**

For the 12-month period ending June 30, 2016, the U.S. equity market, as measured by the Russell 3000 Index, returned 2.14%. 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, 2016, the Diversified Equity Fund returned -0.62%, 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, international and emerging market equities. The Hybrid Benchmark is 70% Russell 3000 Index, 15% International Composite Benchmark, and 15% Defensive Strategies benchmark. Over the 12-month period ending June 30, 2016, the Diversified Equity Fund underperformed the Hybrid Benchmark's return of 0.77%.

For the three-year period ending June 30, 2016, the Diversified Equity Fund returned 8.79% on an annualized basis after fees, trailing the Russell 3000 Index's annualized return of 11.13% and the Hybrid Benchmark's annualized return of 9.63% over the same period. For the five-year period ending June 30, 2016, the Diversified Equity Fund returned 9.41%, annualized after fees, behind the Russell 3000 Index's annualized return of 11.60% and the Hybrid Benchmark's annualized return of 10.21%. 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, 2016, 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 and emerging market 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.

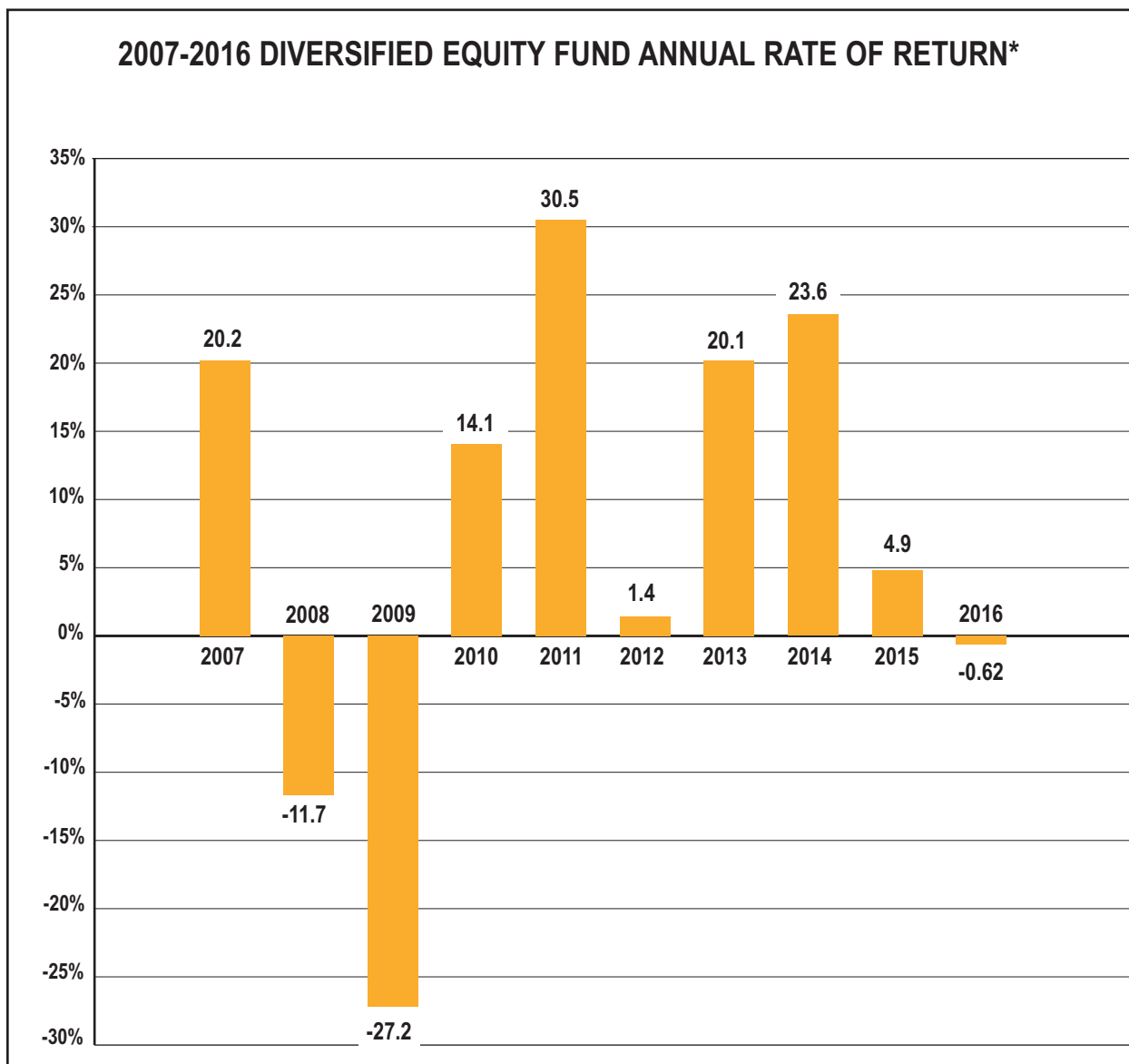
The Diversified Equity Fund utilizes a number of different investment strategies managed by professional money management firms. These strategies are classified into the component sectors described below. Returns after fees for all of the Diversified Equity Fund's component sectors for the one-year period ending June 30, 2016 are as follows:

- The Passive Core (or index) sector earned a return of 2.42%, outperforming the Russell 3000 Index's return of 2.14%.
- 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, 2016, the Active Domestic Equity composite returned -4.24%, underperforming the Russell 3000 Index return of 2.14%.
- The Defensive Strategies sector returned 1.42%, underperforming the Defensive Strategies benchmark (currently 30% Russell 1000/24.8% Russell 3000/15.2% Citigroup WGBI/8.9% BofAML Convertibles Yield Index/8.9% BofAML All Convertibles/8.7% MSCI EAFE/3.5% Barclays Gov/Credit), which returned 1.95%. The Defensive Strategies sector is designed to provide a diversification benefit to the overall fund 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 57% equity exposure and approximately 43% fixed income

exposure in their portfolio as of June 30, 2016. 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 Strategies sector.

- The International Equity sector earned -6.14%, while its benchmark, the International Composite Benchmark, returned -6.91%. During the year, two emerging market managers were added. The International Benchmark Composite consists of 74% MSCI EAFE/6% S&P Developed ex US Small Cap Index/20% Custom MSCI Emerging Markets Index. Prior to January 2016, it was the MSCI EAFE Index.



\* After expenses

**BOND FUND**  
**Fund Summary**  
Fiscal Year 2016

**Return: 2.83%**

**Total Investments: \$328.840 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, 2016, the Bond Fund returned 2.83%, outperforming its benchmark, the Barclays 1-5 Year Government/Credit Index, which returned 2.63% over the same time period. For the three-year period ending June 30, 2016, the Bond Fund returned 1.84%, trailing the benchmark return of 1.92%.

**INTERNATIONAL EQUITY FUND**  
**Fund Summary**  
Fiscal Year 2016

**Return: -6.65%**

**Total Investments: \$100.891 Million**

As of June 30, 2016, the International Equity Fund was comprised primarily of a mix of active and passive management, implemented by one passive manager, five active non-U.S. equity managers which invest primarily in the stocks of non-U.S. companies located in developed markets, and two active emerging market equity managers. The International Equity Fund began on July 1, 2008. For the one-year period ending June 30, 2016, the International Equity Fund returned -6.65%,

after fees, versus its benchmark, the International Composite Benchmark, which returned -6.91%. For the three-year period ending June 30, 2016, the International Equity Fund returned 2.98% versus the benchmark return of 3.57%. Over the longer five-year period ending June 30, 2016, the International Equity Fund has returned 2.23%, trailing the benchmark return of 2.77%. 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 2016

**Return: 0.50%**

**Total Investments: \$44.494 Million**

The Inflation Protection Fund invests primarily in an actively managed mutual fund that seeks exposure to multiple asset classes, including various real return strategies with a goal of providing a real rate of return that exceeds inflation over a full market cycle. The Inflation Protection Fund began on July 1, 2008. For the one-year period ending June 30, 2016, the Inflation Protection Fund returned 0.50%, after fees, versus the Inflation Protection Fund Benchmark's return of 1.65%. 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% BofAML 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. For the three-year period ending June 30, 2016, the Inflation Protection Fund returned 2.11%, outperforming the benchmark return of 0.46%. Over the longer five-year period ending June 30, 2016, the Inflation Protection Fund has outperformed the benchmark by 211 basis points, returning 2.96%. 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 2016

**Return: 0.93%**

**Total Investments: \$121.225 Million**

The Socially Responsive Equity Fund invests primarily 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, 2016, the Socially Responsive Equity Fund returned 0.93%, after fees, versus the

S&P 500 Index's return of 3.99%. For the three-year period ending June 30, 2016, the Socially Responsive Equity Fund returned 9.65%, underperforming the S&P 500 Index return of 11.66% for the same period. Over the longer five-year period ending June 30, 2016, the Socially Responsive Equity Fund trailed the benchmark by 260 basis points with a return of 9.50%. 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.

<b>ANNUALIZED INVESTMENT RESULTS<sup>1</sup></b>				
As of June 30, 2016				
	Current Year 2016	3 Year	Annualized 5 Year	10 Year
<b>TRS Pension Fund<sup>2</sup></b>	1.86%	7.26%	7.06%	5.99%
Benchmark: Policy Index <sup>3</sup>	2.19%	7.35%	7.42%	6.06%
<b>TRS Diversified Equity Fund</b>	-0.62%	8.79%	9.41%	6.07%
Hybrid Benchmark <sup>4</sup>	0.77%	9.63%	10.21%	6.82%
Benchmark: Russell 3000	2.14%	11.13%	11.60%	7.40%
<b>TRS Bond Fund</b>	2.83%	1.84%	N/A	N/A
Benchmark: Barclays 1-5 Year Government/Credit Index	2.63%	1.92%	1.77%	3.51%
<b>TRS International Equity Fund</b>	-6.65%	2.98%	2.23%	N/A
Benchmark: International Equity Composite Benchmark <sup>5</sup>	-6.91%	3.57%	2.77%	2.37%
<b>TRS Inflation Protection Fund</b>	0.50%	2.11%	2.96%	N/A
Benchmark: Inflation Protection Fund Benchmark <sup>6</sup>	1.65%	0.46%	0.85%	3.66%
<b>TRS Socially Responsive Equity Fund</b>	0.93%	9.65%	9.50%	N/A
Benchmark: Standard & Poor's 500	3.99%	11.66%	12.10%	7.42%

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

2 Members' accounts crediting 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.

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

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

5 The International Equity Composite Benchmark is 74% MSCI EAFE/6% S&P Developed ex US Small Cap Index/20% Custom MSCI Emerging Markets Index. Prior to January 2016, it was the MSCI EAFE Index. No fees reflected.

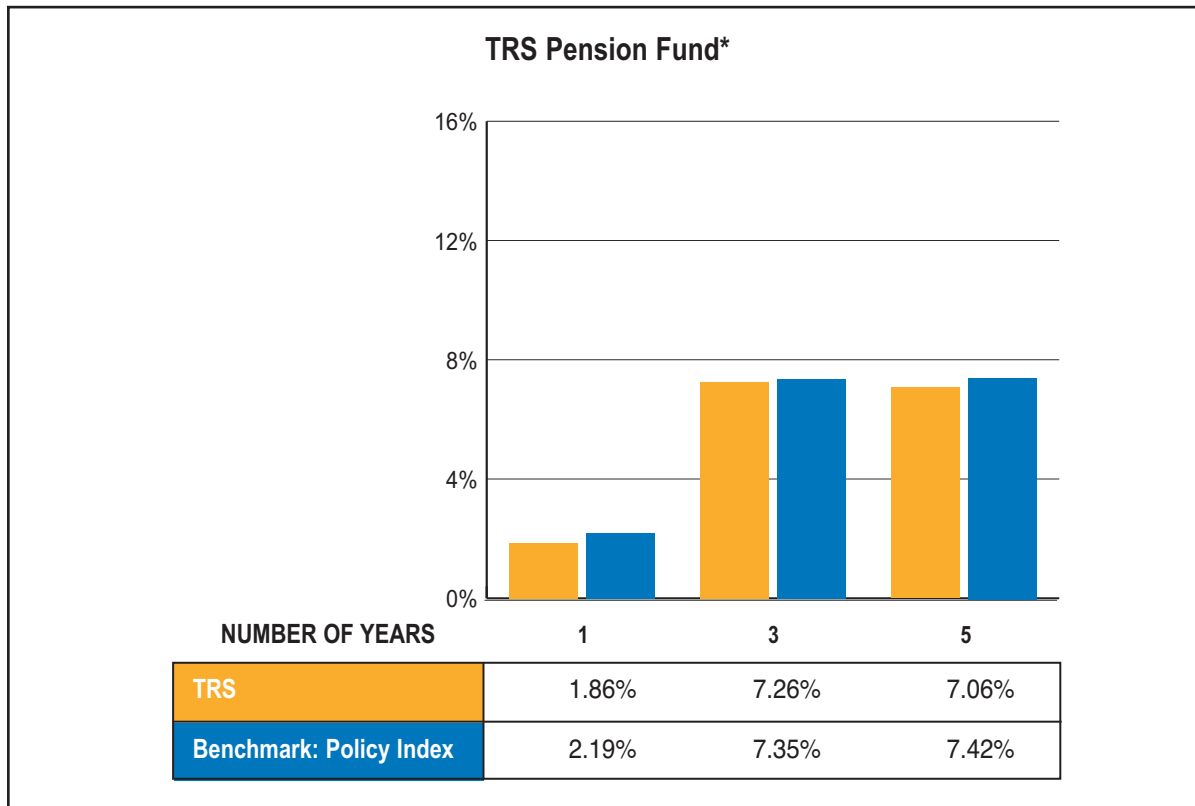
6 The Inflation Protection Fund Benchmark is currently comprised of 25% Bloomberg Commodity Index, 25% S&P/LSTA Leveraged Loan Index, 30% Barclays US TIPS Index, 12% Dow Jones Wilshire Real Estate Securities Index, and 8% BofAML US Real Estate Corporate Bond Index since December 2014. Prior to December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

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.

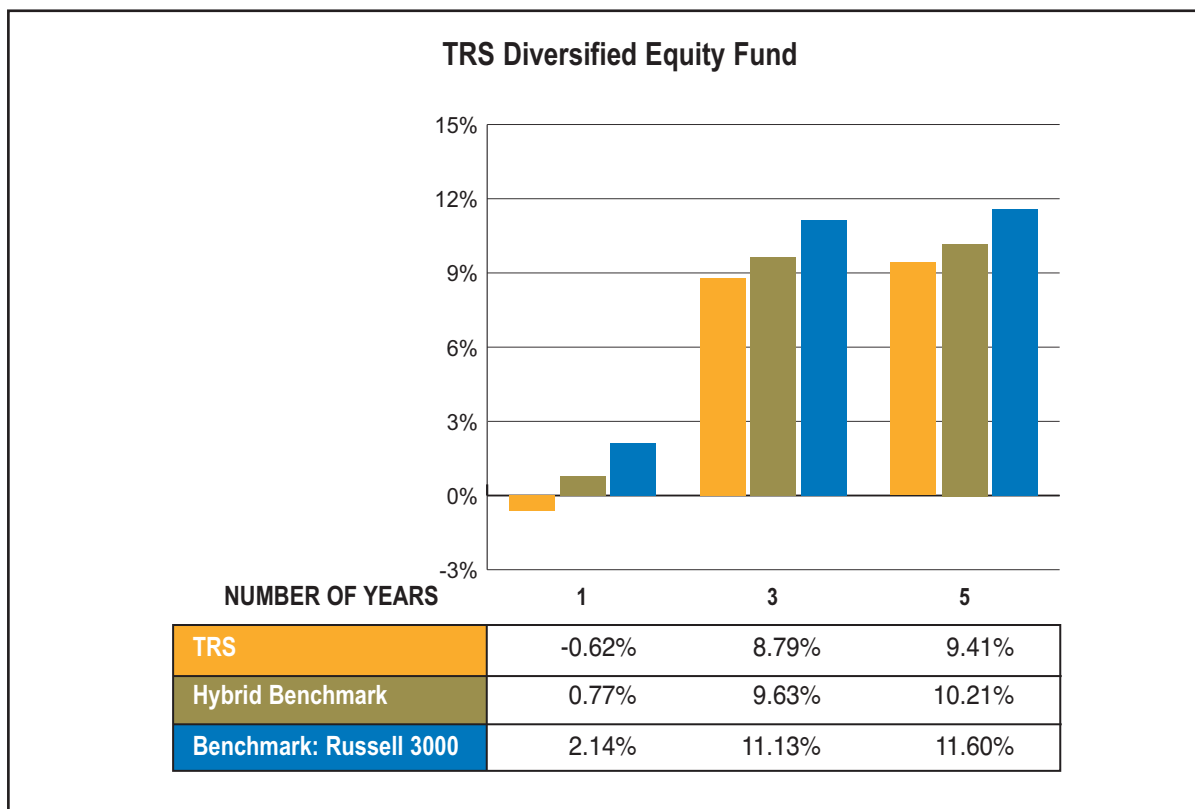


## ANNUALIZED INVESTMENT RESULTS

As of June 30, 2016

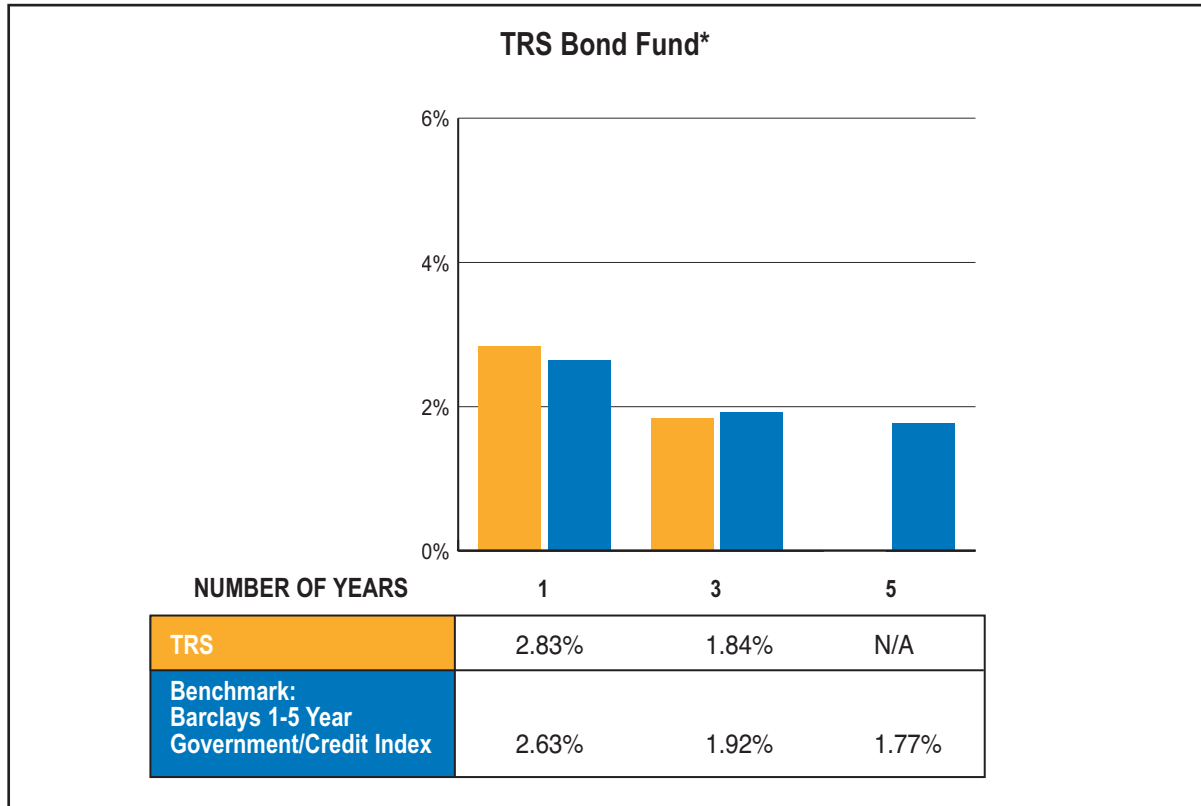


\* Reflects TRS Pension Fund's Gross Return.

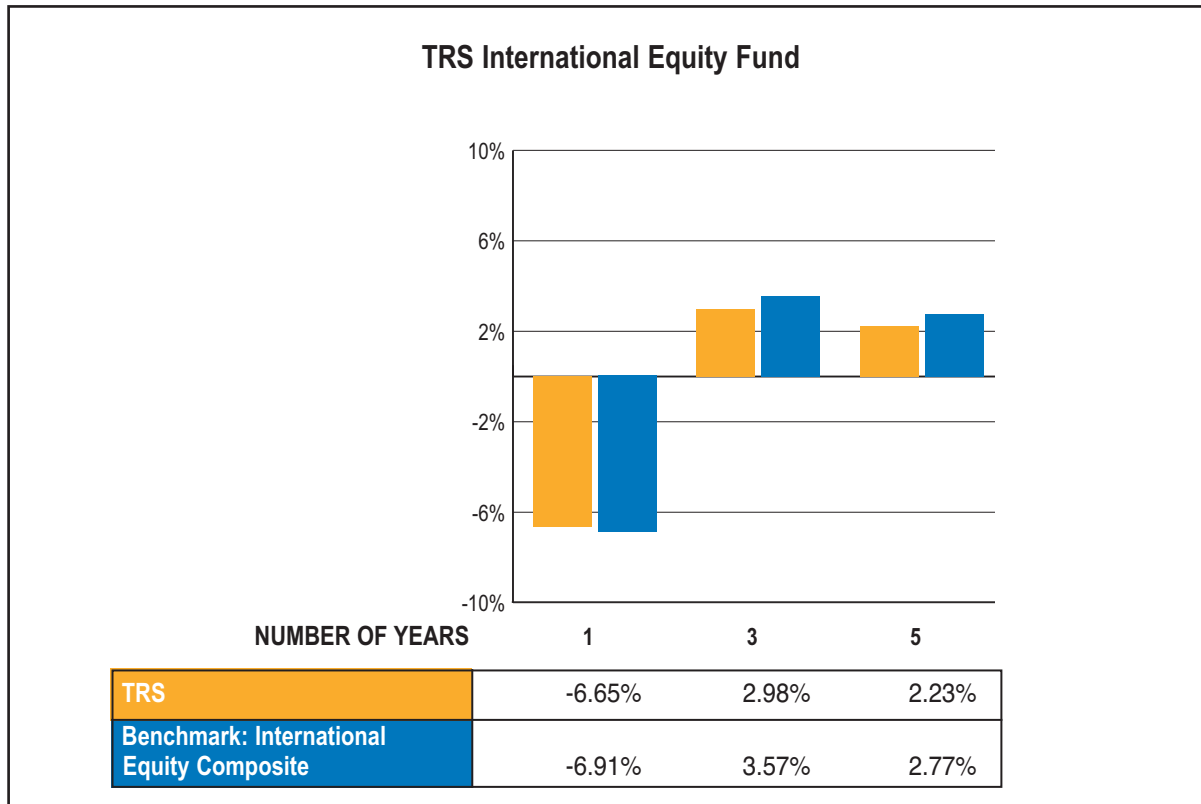


**ANNUALIZED INVESTMENT RESULTS (Continued)**

As of June 30, 2016

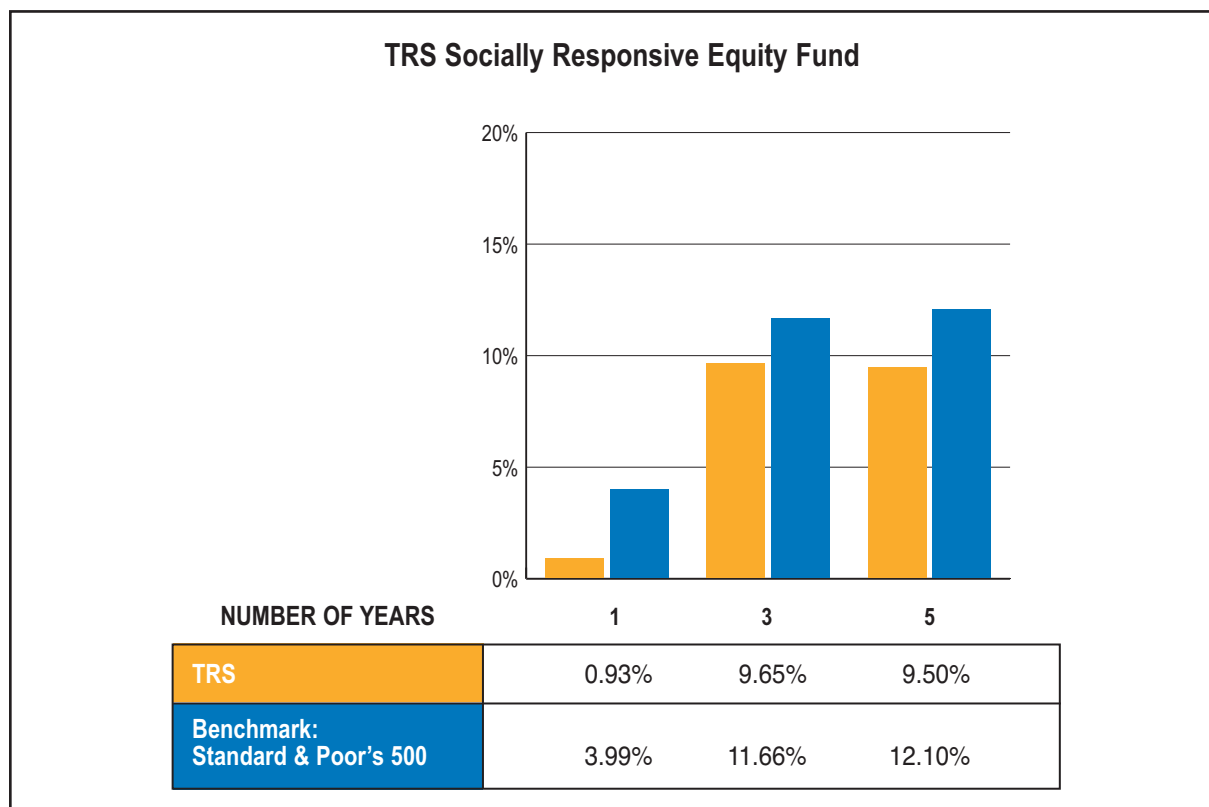
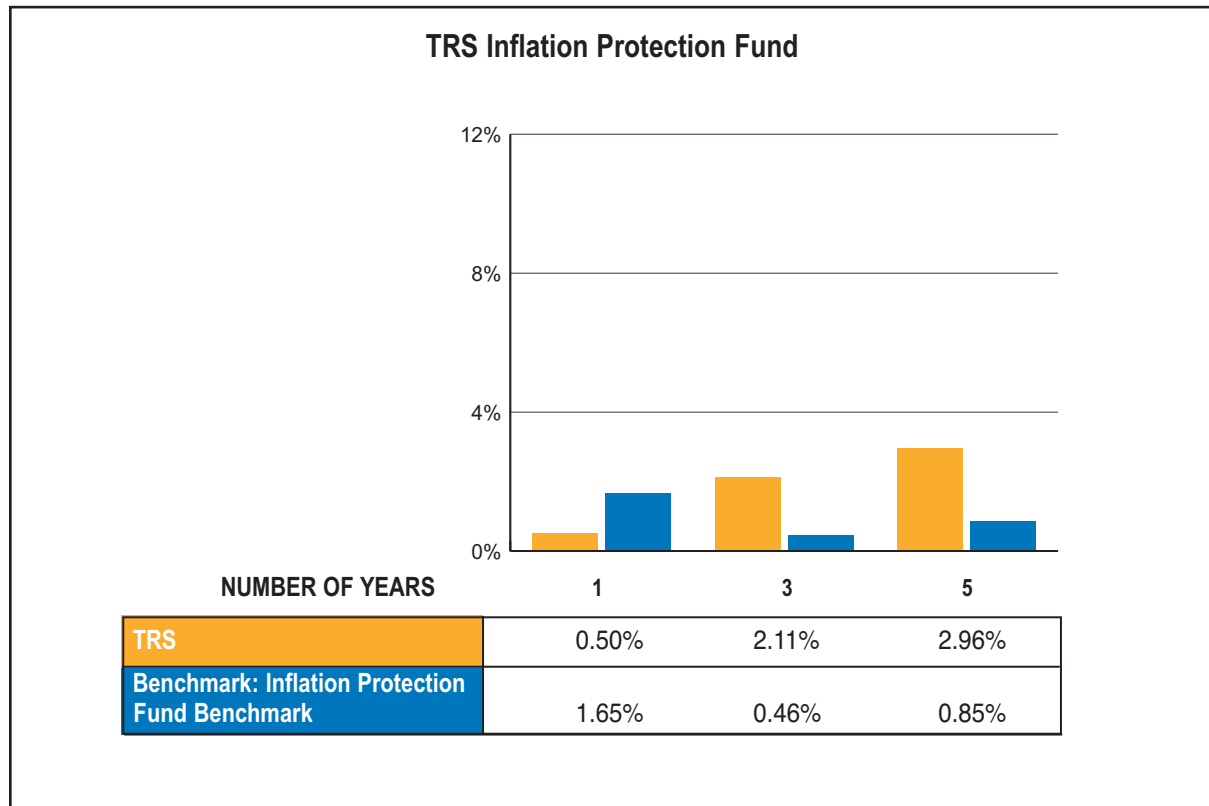


\*Reflects annualized performance beginning July 1, 2012. (As of January 1, 2012, the Stable-Value Fund became the Bond Fund.)



## ANNUALIZED INVESTMENT RESULTS (Continued)

As of June 30, 2016



### INVESTMENT SUMMARY (QPP & TDA)

As of June 30, 2016

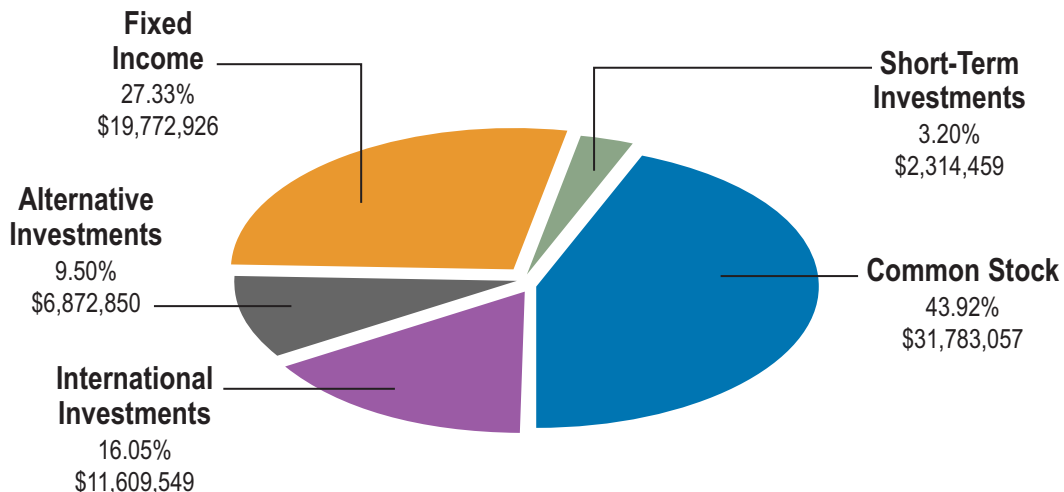
Type of Investment	Fair Value <i>In Thousands</i>	Percent of Total Fair Value
Fixed Income:		
Government Bonds	\$ 5,924,318	8.19%
Corporate Bonds	9,272,570	12.81
TIPS	2,399,270	3.32
Mortgages	485,191	0.67
Misc. Fixed Income	1,691,577	2.34
<b>Total Fixed Income</b>	<b>\$19,772,926</b>	<b>27.33%</b>
Common Stock:		
Financial & Utility	\$ 5,501,079	7.60%
Basic Industry	8,388,932	11.59
Consumer & Service	11,577,025	16.00
Technological	6,190,274	8.56
Other	125,747	0.17
<b>Total Common Stock</b>	<b>\$31,783,057</b>	<b>43.92%</b>
<b>International Investments</b>	<b>\$11,609,549</b>	<b>16.05%</b>
<b>Alternative/Private-Equity Investments</b>	<b>\$6,872,850</b>	<b>9.50%</b>
<b>Short-Term Investments</b>	<b>\$2,314,459</b>	<b>3.20%</b>
<b>Total Investments</b>	<b>\$72,352,841*</b>	<b>100.00%</b>

\* Excludes \$2,141,284 in securities lending.

### TOTAL INVESTMENTS ASSET ALLOCATION\*

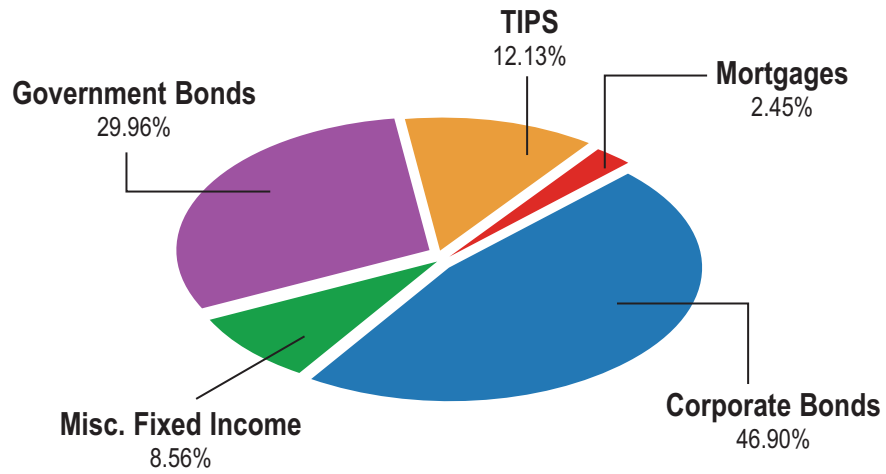
As of June 30, 2016

*In Thousands*



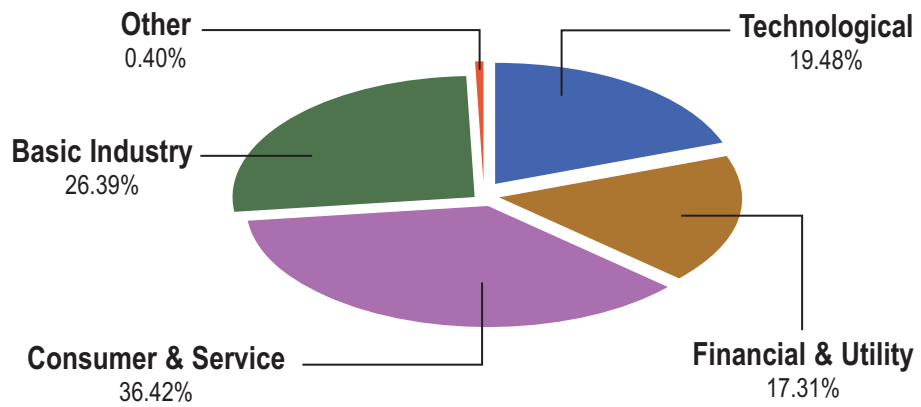
### FIXED-INCOME INVESTMENTS ASSET ALLOCATION

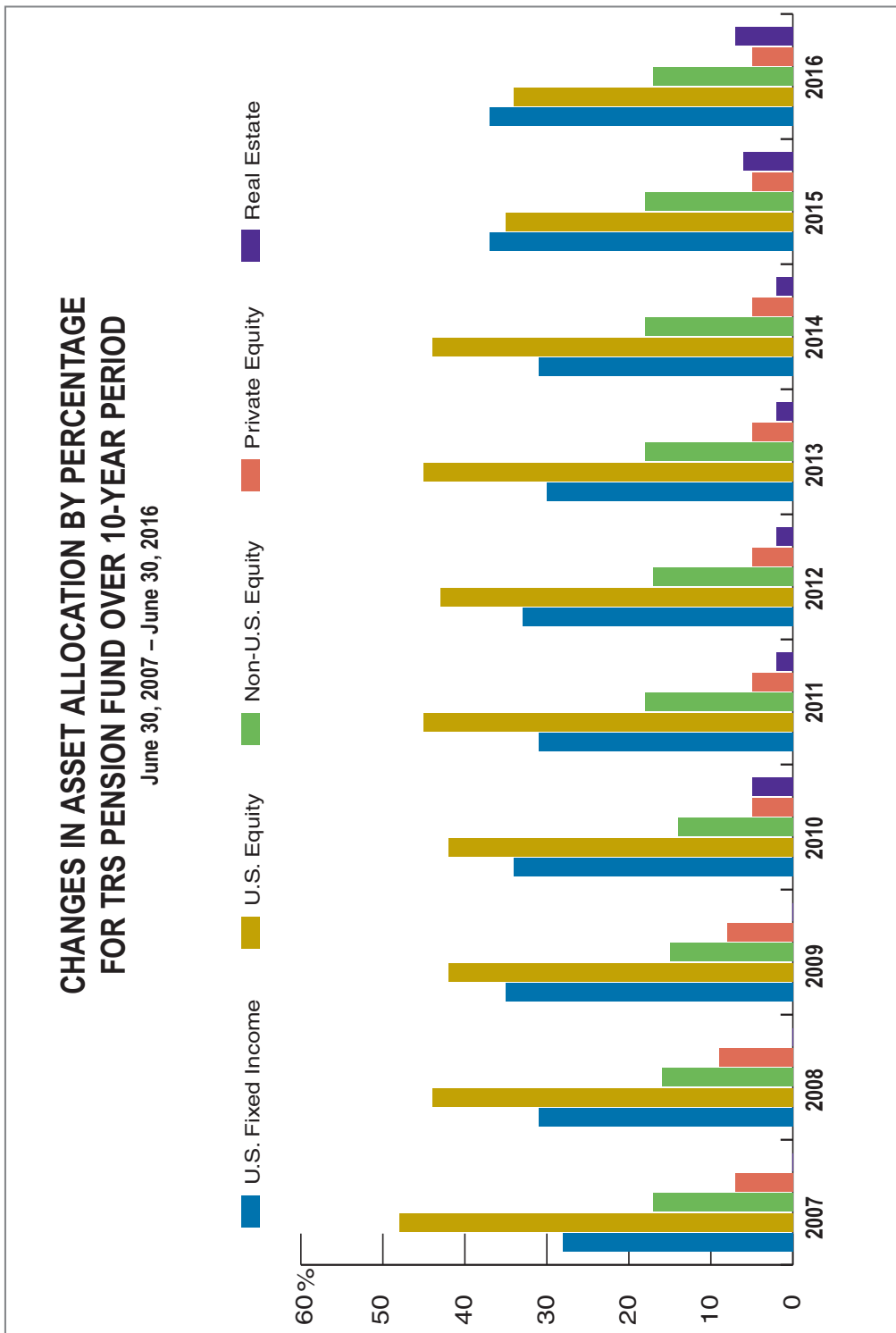
As of June 30, 2016



### EQUITY INVESTMENTS ASSET ALLOCATION

As of June 30, 2016





**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)  
YEAR ENDED JUNE 30, 2016**

INVESTMENT MANAGERS		QPP	TOTAL
<b>FIXED ANNUITY PROGRAM</b>			
<b>Fixed Income</b>			
Advent	Investment Manager	\$2,371,113	\$2,371,113
Babson BL	Investment Manager	1,307,724	1,307,724
Barrow Hanley - Credit	Investment Manager	716,188	716,188
Blackrock	Investment Manager	1,370,108	1,370,108
Credit Suisse BL	Investment Manager	874,517	874,517
Fort Washington	Investment Manager	313,575	313,575
GIA	Investment Manager	121,738	121,738
Goldman Sachs - Mortgage	Investment Manager	641,038	641,038
Guggenheimbl	Investment Manager	1,575,257	1,575,257
Looms & Sayles Co., L.P.	Investment Manager	1,110,765	1,110,765
Neuberger Berman - Mortgage	Investment Manager	2,549,620	2,549,620
Oaktree	Investment Manager	1,163,325	1,163,325
Penn	Investment Manager	546,454	546,454
PIM Hillswick	Investment Manager	40,070	40,070
PIM New Century	Investment Manager	139,254	139,254
PIM Pugh Cap	Investment Manager	121,982	121,982
PIM Ramirez Asset	Investment Manager	99,255	99,255
Pimco Advisor- Mortgage	Investment Manager	55	55
Prudential - Credit	Investment Manager	547,003	547,003
Security Lending	Investment Manager	11,805	11,805
Shenkman Cap.	Investment Manager	892,758	892,758
Smith Breeden - Mortgage	Investment Manager	302,927	302,927
State Street - Govnt	Investment Manager	345,364	345,364
Stone Harbor	Investment Manager	1,615,078	1,615,078
T. Rowe Price Associates Inc.	Investment Manager	3,208,025	3,208,025
Taplin, Canida, Habacht	Investment Manager	962,838	962,838
Victory Conv Bonds	Investment Manager	874,299	874,299
Voya BL	Investment Manager	816,944	816,944
Wellington - Mortgage	Investment Manager	542,148	542,148
Wells BL	Investment Manager	700,516	700,516
<b>Domestic Equity</b>			
Adelante Cap. Management	Investment Manager	1,152,373	1,152,373
Attucks Asset Management - AF	Investment Manager	453,867	453,867
Blackrock R1000 Growth	Investment Manager	189,816	189,816
Blackrock R1000 Value	Investment Manager	177,464	177,464
Blackrock R2000 Growth	Investment Manager	7,418	7,418
Blackrock R2000 Value	Investment Manager	11,241	11,241
Brown AM	Investment Manager	2,632,051	2,632,051
Capital Prospects - CP	Investment Manager	414,319	414,319
Centersquare Inv Mgmt	Investment Manager	1,034,518	1,034,518
Cohen & Steers - REITS	Investment Manager	1,048,536	1,048,536
FIS Equity Russ 3000	Investment Manager	987,031	987,031
Profit Inv. Mgmt	Investment Manager	261	261
Progress Asset Management - PIM	Investment Manager	860,026	860,026
Sec Capital	Investment Manager	1,052,381	1,052,381
Seizert Cap	Investment Manager	289	289
State St GA S&P 400	Investment Manager	87,377	87,377
State Street R3000	Investment Manager	591,535	591,535
Walden Asset Mgmt	Investment Manager	341,749	341,749

*Continued on page 90*

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2016 (Continued)**

INVESTMENT MANAGERS	QPP	TOTAL
<b>International Fund</b>		
Acadian	Investment Manager	\$1,093,756
Ballie Gifford EM EQ	Investment Manager	9,186,645
Causeway	Investment Manager	4,104,312
CONY Baillie MTA	Investment Manager	3,488,697
CONY GT Blackrock MTA	Investment Manager	6,638,994
CONY Sprucegrove MTA	Investment Manager	2,987,748
CONY Walter Scott MTA	Investment Manager	3,792,926
DFA Em Reit MTA	Investment Manager	8,672,243
Eaton Vance Em MTA	Investment Manager	8,487,757
F & C MTA	Investment Manager	970,562
Main-LM Capital Dev.Growth	Investment Manager	107,168
MS Reit	Investment Manager	3,429,713
MSCI World SSGA MTA	Investment Manager	4,118
Pyramis	Investment Manager	1,972,410
SSGA Eafe Small Cap	Investment Manager	147,866
SSGA MTA	Investment Manager	495,575
<b>TIPS MTA Fund</b>		
Blackrock TIPS MTA	Investment Manager	234,485
State Street TIPS MTA	Investment Manager	60,969
<b>Alternative Investment</b>		
Acon Equity Partners	Investment Manager	123,850
ACS ( CONY ETI )	Investment Manager	245,550
AFL - CIO Housing Investment	Investment Manager	1,112,590
Aisling Capital Partners	Investment Manager	234,653
Altaris Health Parts Fund	Investment Manager	224,916
American Sec Ptn VI	Investment Manager	1,893,046
Angelo Gordon Ct St Ptn LP	Investment Manager	4,170,776
Apollo Centre St Ptn	Investment Manager	1,449,957
Apollo Investment Fund	Investment Manager	2,399,543
Ardian Secondary	Investment Manager	551,162
ARES Centre Street	Investment Manager	2,255,232
ARES Corp. Opp Fund	Investment Manager	4,073,941
Arsenal Capital Partners, II	Investment Manager	125,557
ASF VII - Ardian	Investment Manager	351,868
Aurora Eq	Investment Manager	2,606
Avanath Capital	Investment Manager	463,778
AVE Special Situations FD	Investment Manager	528,070
Avista Capital Partners, L.P.	Investment Manager	702,342
BC Eur Cap.	Investment Manager	693,308
BDCM Opp Fund	Investment Manager	361,202
Blackstone Group	Investment Manager	2,945,340
Blackstone Mezz Partners	Investment Manager	15,318
Bridgepoint Advisers Ltd	Investment Manager	2,834,382
Bridgepoint Europe	Investment Manager	381,278
Brightwood Capital	Investment Manager	357,036
Brookfield Asset Mgmt	Investment Manager	369,021
Brookfield Infr FD II	Investment Manager	1,587,701
Capital Partners PE	Investment Manager	138,165
Carlyle Group	Investment Manager	6,709,939

Continued on page 91



**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2016 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
Carpenter comm Banc	Investment Manager	\$1,279,389	\$1,279,389
Catterton Partners VI , L.P.	Investment Manager	263,482	263,482
CCMP Capital Investors II	Investment Manager	441,682	441,682
Centerbridge Capital	Investment Manager	723,474	723,474
CO Invest Prtnr Eur	Investment Manager	164,637	164,637
Collar Cap.	Investment Manager	62,855	62,855
Constellation Ventures III	Investment Manager	254,228	254,228
Contrarian CA	Investment Manager	671,810	671,810
Credit Suisse Emergind Mgn Co	Investment Manager	249,946	249,946
Credit Suisse Emergind Mgn Fd	Investment Manager	681,682	681,682
Crestview Prtnr	Investment Manager	670,202	670,202
CVC Capital Partners	Investment Manager	8,252,451	8,252,451
Cypress Associates	Investment Manager	200,000	200,000
Divco West Fd	Investment Manager	350,453	350,453
DRA Growth & Income Fd	Investment Manager	691,214	691,214
EQT VI LP	Investment Manager	1,142,263	1,142,263
Fairview Emerg Mgrs Fd LP	Investment Manager	468,510	468,510
Fairview Capital Partners	Investment Manager	109,732	109,732
FDG Capital Partners L.L.C.	Investment Manager	450,886	450,886
First Reserve Energy Infor GP II	Investment Manager	1,370,444	1,370,444
First Reserve Fund	Investment Manager	168,817	168,817
Fortress Ctr St	Investment Manager	2,921,716	2,921,716
Fourth Cinven Fund	Investment Manager	370,968	370,968
Freeman Spogli & Co., Inc.	Investment Manager	14,642	14,642
G F Cap. Private	Investment Manager	1,315,521	1,315,521
GI Partners Fund	Investment Manager	282,794	282,794
Global Infrastructure Mgmt LLC	Investment Manager	63,504	63,504
Goldentree OD MTA	Investment Manager	1,267,401	1,267,401
Governance for Owners	Investment Manager	2,947	2,947
Green Eq Inv	Investment Manager	698,938	698,938
Grey Mt Partners Fund	Investment Manager	142,786	142,786
GSC Recovery III	Investment Manager	41,637	41,637
GSO Cap. Opp	Investment Manager	376,136	376,136
Halyard Capital II	Investment Manager	129,205	129,205
ICV Partners	Investment Manager	219,296	219,296
IFM-Industry Fd Mgmt	Investment Manager	15,710	15,710
Incline Equity Partners	Investment Manager	65,718	65,718
InterMedia Partners VII, L.P.	Investment Manager	314,734	314,734
J.P. Morgan Inversment Management Inc.	Investment Manager	551,340	551,340
Jamestown Premier Fund	Investment Manager	21,282	21,282
KKR Global Infrastructure	Investment Manager	1,468,428	1,468,428
Lee Equity Partners	Investment Manager	447,438	447,438
Levine Leichtman Cap	Investment Manager	160,007	160,007
Lincolnshire Management, Inc.	Investment Manager	301,025	301,025
Lone Star Fund	Investment Manager	2,184,093	2,184,093
Marathon Ctr St Partners	Investment Manager	4,140,480	4,140,480
Midocean Partners III	Investment Manager	553,180	553,180
Mill City Cap.	Investment Manager	50,073	50,073
Nautic Partners VI	Investment Manager	40,931	40,931
New Mainstream	Investment Manager	271,567	271,567
New Mountain Investments	Investment Manager	2,459,870	2,459,870

*Continued on page 92*

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2016 (Continued)**

INVESTMENT MANAGERS		QPP	TOTAL
NGN Blomed Opportunity	Investment Manager	\$277,814	\$277,814
Oak Hill Ctr St Partners	Investment Manager	1,355,325	1,355,325
Oaktree Opp Fund	Investment Manager	1,989,313	1,989,313
Olympus Growth Fund	Investment Manager	1,530,398	1,530,398
ONEX Partners III	Investment Manager	435,279	435,279
Paladin Homeland Security	Investment Manager	722,110	722,110
Palladium Equity Partners III	Investment Manager	409,448	409,448
Patriot Financial Partners LP	Investment Manager	523,936	523,936
PCGAM Clean Energy & Tech Fund	Investment Manager	107,500	107,500
Pegasus Partners	Investment Manager	1,297,230	1,297,230
Perseus Partners VII	Investment Manager	25,008	25,008
Pine Brook Cap Partners	Investment Manager	278,054	278,054
Platinum Equity Cap Partners	Investment Manager	1,705,608	1,705,608
PRE Almanac Realty	Investment Manager	338,927	338,927
PRE Blackstone Pre Ptn Eur	Investment Manager	276,545	276,545
PRE Blackstone RE	Investment Manager	233,587	233,587
PRE Brookfield St RE Partners	Investment Manager	924,684	924,684
PRE Canyon Johnson UBN III	Investment Manager	2,031,428	2,031,428
PRE Carlyle	Investment Manager	87,676	87,676
PRE Carlyle Realty Fd	Investment Manager	3,119,374	3,119,374
PRE Emmes Am Co	Investment Manager	793,640	793,640
PRE Hudson Sep	Investment Manager	501,834	501,834
PRE JPMC Special Situations Fund	Investment Manager	142,847	142,847
PRE JPMC Strategick Property Fund	Investment Manager	773,546	773,546
PRE Lasalle US Prty Fd	Investment Manager	56,463	56,463
PRE Prudential Prisa	Investment Manager	450,724	450,724
PRE RFM NYCRS Sandy	Investment Manager	1,212,912	1,212,912
PRE Silverpeak RE Partners	Investment Manager	73,523	73,523
PRE Ventures	Investment Manager	489,602	489,602
PRE Westbrook RE Fd	Investment Manager	189,782	189,782
Prisa	Investment Manager	227,223	227,223
Prism Venture Partners	Investment Manager	2,398	2,398
Quadrangle Capital Partners II	Investment Manager	480,783	480,783
Quaker BioVentures II	Investment Manager	111,627	111,627
Raine Partners	Investment Manager	1,139,208	1,139,208
Riverstone / Carlyne GLB	Investment Manager	199,378	199,378
RLJ Equity Partners Fd	Investment Manager	225,650	225,650
SCP Private Equity Partners	Investment Manager	11,280	11,280
SCP Vitalife Partners II	Investment Manager	123,076	123,076
Siris Capital Group	Investment Manager	601,769	601,769
Snow Phipps & Guggenheim	Investment Manager	122,427	122,427
Solera Capital, L.L.C.	Investment Manager	112,825	112,825
Starvest Prtnrs II	Investment Manager	286,494	286,494
Stellex Cap. Management LP	Investment Manager	961,420	961,420
Terra Firma Cap III	Investment Manager	1,219,651	1,219,651
Torchlight Investors	Investment Manager	1,295,183	1,295,183
Trilantic Cap Ptnrs	Investment Manager	2,101,336	2,101,336
Tristan Euro Property	Investment Manager	634	634
UBS Real Estate Separate Account	Investment Manager	749,528	749,528
Valor Eq Partners	Investment Manager	862,134	862,134
Vista Equity Partners	Investment Manager	7,422,977	7,422,977

Continued on page 93

**SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)**  
**YEAR ENDED JUNE 30, 2016 (Continued)**

INVESTMENT MANAGERS		QPP		TOTAL
Vista Foundation Fd	Investment Manager	\$427,144		\$427,144
VSS Communication Partners IV	Investment Manager	125,254		125,254
Warburg Pincus Pe	Investment Manager	753,292		753,292
Webster Capital	Investment Manager	175,841		175,841
Welsh Carson Anderson & Stowe	Investment Manager	385,347		385,347
Yucaipa American Alliance Fund	Investment Manager	351,271		351,271
Yucaipa Corporation Initiatives II	Investment Manager	163,668		163,668
Almanac Really Sec.	Fee Refund	(75,433)		(75,433)
Apollo Real Estate	Fee Refund	(10,353)		(10,353)
AXA Secondary Fd	Fee Refund	(1,560,160)		(1,560,160)
Canyon Johnson	Fee Refund	(40,039)		(40,039)
ING Clarion	Fee Refund	(14,939)		(14,939)
Leeds Eq Partners V	Fee Refund	(508,879)		(508,879)
Leeds Weld Eq Partners IV	Fee Refund	(411,081)		(411,081)
Trident V. LP	Fee Refund	(409,882)		(409,882)
PricewaterhouseCoopers LLP	Purchase Fee	11,734		11,734
Bryan Cave LLP	Legal Fees	10,000		10,000
Cox, Castle & Nicholson LLP	Legal Fees	21,589		21,589
Daypitney LLP	Legal Fees	33,822		33,822
Foster Perrin PLLC	Legal Fees	67,066		67,066
Morgan, Lewis & Bockius LLP	Legal Fees	30,276		30,276
Nixon Peabody	Legal Fees	35,955		35,955
Orrick Herrington & Sutcliffe LLP	Legal Fees	299		299
Pillsbury Winthrop Shaw Pittman LLP	Legal Fees	16,845		16,845
Reinhart Boerner Van Deuren	Legal Fees	31,333		31,333
Seward and Kissel LLP	Legal Fees	13,104		13,104
Aksia LLC (OFI)	Consultant Fees	741		741
Courtland Partners LTD	Consultant Fees	83,032		83,032
Hamilton Lane	Consultant Fees	1,000,000		1,000,000
NYC Office of the Comptroller - BAM	Consultant Fees	2,890,866		2,890,866
Rocaton Investment	Consultant Fees	468,392		468,392
Stepstone Group LP	Consultant Fees	136,000		136,000
The Townsend Group	Consultant Fees	445,892		445,892
Investor Analytics LLC	Consultant Fees	87,485		87,485
Shareholder Research Services	Consultant Fees	65,873		65,873
State Street Bank & Trust Co.	Custodial Bank	1,163,501		1,163,501
<b>DIVERSIFIED EQUITY FUND AND INTERNATIONAL EQUITY FUND</b>			<b>TDA</b>	
Advent Conv Bond	Investment Manager	\$230,356	\$432,706	\$663,062
Amalgamated-S&P 1500	Investment Manager	10,611	19,932	30,543
Analytic Investors	Investment Manager	169,478	318,352	487,830
Aronson Johnson Ortiz	Investment Manager	234,101	439,741	673,842
Baillie Gifford Overseas Ltd	Investment Manager	65,998	123,972	189,970
Blackrock Intl Eafe Iidx	Investment Manager	61,521	115,562	177,083
Cardinal Sm Cap Val	Investment Manager	218,538	410,507	629,045
Clearbridge All Cap-Aggr. Gwth	Investment Manager	469,532	881,982	1,351,514
Crm-Mid Value	Investment Manager	13,732	25,795	39,527
Delaware Inv Mgmt Mid-Cap Gwth	Investment Manager	800,711	1,504,076	2,304,787
Diamond Hill Capital Mgmt Inc	Investment Manager	372,069	698,903	1,070,972
Gmo-Global Asset Alloc	Investment Manager	11,998	22,538	34,536
Intech-Super Fund	Investment Manager	237,675	446,454	684,129

Continued on page 94

<b>SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP &amp; TDA)</b>				
<b>YEAR ENDED JUNE 30, 2016</b>				
<b>INVESTMENT MANAGERS</b>		<b>QPP</b>	<b>TDA</b>	<b>TOTAL</b>
Mcm - Russ 3000	Investment Manager	\$54,956	\$103,230	\$158,186
Mfs Investment Advisors Intl Equity	Investment Manager	429,121	806,071	1,235,192
New South Capital Magt Inc	Investment Manager	400,030	751,428	1,151,458
Pyramis Global	Investment Manager	191,873	360,419	552,292
Shapiro - Small Cap	Investment Manager	285,752	536,764	822,516
Sound Shore-Value	Investment Manager	182,651	343,097	525,748
Sprucegrove Invst Magt Ltd	Investment Manager	141,450	265,702	407,152
Walter Scott - Int'L	Investment Manager	206,713	388,296	595,009
Wasatch Advisors Inc	Investment Manager	356,284	669,254	1,025,538
Wellington Magt Co, Llp Iep	Investment Manager	266,315	500,254	766,569
Zazove Conv Bond	Investment Manager	382,851	719,157	1,102,008
JP Morgan Chase Bank	Custodial Bank	45,126	84,765	129,891
<b>BOND FUND</b>				
NISA Investment Advisors	Investment Manager	36,808	410,819	447,627
JP Morgan Chase Bank	Custodial Bank	206	2,303	2,509
<b>INFLATION PROTECTION FUND</b>				
Fidelity Strategic R.Fund	Mutual Fund	-	-	-
JP Morgan Chase Bank	Custodial Bank	-	433	433
<b>SOCIALLY RESPONSIVE EQUITY FUND</b>				
Neuberger Berman SRF	Investment Manager	46,940	677,835	724,775
JP Morgan Chase Bank	Custodial Bank	73	1,050	1,123
<b>Investment Expenses</b>	<b>Subtotal:</b>	<b>\$222,163,027</b>	<b>\$12,061,397</b>	<b>\$234,224,424</b>
Provision for Groom	Legal Fees	30,889	68,761	99,650
Provision for Principles	Consultant Fees	1,818	4,049	5,867
Provision for Rocaton	Consultant Fees	147,876	324,313	472,189
Provision for Administrative expenses	Administrative Fees	4,507,768	14,527,843	19,035,611
Reserve Transfer to Administrative expenses	Fund Transfer	(11,783,729)	(32,631,768)	(44,415,497)
<b>Net (decrease) in variable expense provision</b>	<b>Subtotal:</b>	<b>(\$7,095,378)</b>	<b>(\$17,706,802)</b>	<b>(\$24,802,180)</b>
<b>Total Investment Expenses</b>		<b>\$215,067,649</b>	<b>(\$5,645,405)</b>	<b>\$209,422,244</b>

**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Abg Securities As (Stockholm)	62,518	\$0.54	\$1,458
Abg Securities Limited	169,112	0.20	1,040
Able Noser	157,400	11.46	7,022
Abn Amro Clearing Bank N.V.	180,606	2.98	5,875
Academy Securities Inc	124,317	1.43	2,184
Agora Corde Titul E Val Mob	76,700	0.00	76
American Portfolios Finanical	1,477	0.20	74
Antique Stock Broking LTD	118,984	0.00	548
Ascendant Capital Markets, LLC	2,938	0.06	88
Autonomous	21,790	0.18	654
Autrepat-Div Re	12,841	0.66	1,160
Avondale Partners LLC	43,281	0.80	1,370
B.Riley & Co., LLC	38,513	1.05	1,067
Baader Bank Ag	1,863	0.40	543
Banco Itau Sa	201,259	0.06	1,863
Banco Pactual S.A.	97,557	0.00	643
Banco Santander Central Hispano	906,671	0.38	15,222
Bank J.Vontobel Und Co. Ag	44,236	4.64	10,666
Bank of America Securities LLC	400	0.04	16
Barclays Bank Plc	25,068	0.03	356
Barclays Capital	3,177,551	30.19	72,093
Barclays Capital Inc.	144,368	0.41	4,727
Barclays Capital Inc./Le	17,091,423	1.95	58,201
Barclays Capital Le	1,901,415	17.01	60,436
Barrington Research Associates	3,315	0.19	101
Barrington Research Associates Inc.	620	0.07	22
Bb&T Investment Services Inc.	60	0.04	2
Bb&T Securities, LLC	61,936	2.08	2,018
Blaylock Robert Van LLC	681,961	1.62	13,849
Bloomberg Tradebook LLC	99,400	0.72	1,883
Bmo Capital Markets	1,065,368	2.08	22,362
Bnp Paribas Prime Brokerage Acting Agent	6,290	0.03	189
Bnp Paribas Securities (Asia) LTD.	38,175	42.19	5,033
Bnp Paribas Securities India Private Lim	995,450	0.11	8,908
Bnp Paribas Securities Service	978,862	1.32	4,547
Bnp Paribas Securities Services	748,394	0.26	6,709
Bnp Paribas Securities Services Austr Br	63,587	0.00	116
Bnp Paribas Securities Services Sa	22,922,550	5.27	13,329
Bnp Paribas Securities Services, Fr	291	0.34	131
BNY Brokerage	85,428	0.96	2,629
BNY Convergen Execution Solutions LLC	33,279,068	28.04	102,161
BNY Convergen Ljr	1,415	0.20	28
Brean Capital LLC	173,362	1.38	2,176
Broadcort Capital (Thru MI)	4,766	0.06	143
Broadcort Capital Corp	1,121	0.04	22
Btig, LLC	284,017	2.43	10,506
Buckingham Research Group Inc	8,417	0.62	345
Cabrera Capital Markets	802,250	4.88	18,015
Caceis Bank Deutschland Gmbh	32,590	6.20	8,076

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Canaccord Genuity Inc.	100,214	\$2.97	\$3,568
Canaccord Genuity Limited	12,562	0.01	128
Canadian Imperial Bank of Commerce	241,870	0.65	3,477
Cantor Clearing Services	3,400	0.12	68
Cantor Fitzgerald & Co.	770,801	5.55	16,076
Cantor Fitzgerald Europe	229,580	0.31	2,493
Cantor Fitzgerald/Cantor Clearing Serv	9,314,814	11.49	78,734
Capital Institutional Svcs Inc Equities	150,710	21.76	5,988
Carnegie Securities Finland	27,935	0.00	117
Celfin Capital Sa Corredores De Bolsa	19,022,749	0.10	2,502
Cheevers & Co. Inc.	674,987	15.57	19,407
Cibc World Mkts Inc	39,400	0.06	1,221
Cimb Securities (HK) LTD.	15,263,500	0.00	12
Cimb-Gk Securities Pte.LTD.	22,244	0.02	176
Citation Group	632,968	24.80	23,338
Citibank N.A.	1,161	0.06	33
Citibank of Colombia	514,686	0.09	1,659
Citigroup Global Markets Asia LTD	56,254	0.00	188
Citigroup Global Markets Australia Pty	76,962	0.00	157
Citigroup Global Markets Inc	17,664,966	15.90	148,050
Citigroup Global Markets Inc.	30,057,780	3.70	17,935
Citigroup Global Markets India	2,502,515	0.03	2,466
Citigroup Global Markets Limited	10,816,620	94.86	99,604
Clsa Australia Pty LTD	1,804,326	0.27	9,000
Clsa Securities Korea LTD.	60,251	21.97	17,676
Clsa Singapore Pte LTD.	6,325,621	15.87	27,023
Compass Point Research & Trading, LLC	62,461	2.04	2,169
Concept Capital Markets,LLC	7,235	0.09	217
Convergex Execution Solutions LLC	2,173,732	18.40	74,375
Convergex LLC	203,575	5.87	6,525
Cornerstone Macro LLC	5,850	0.30	293
Correval S.A.	176,929	0.09	992
Cowen And Company, LLC	190,206	7.04	6,238
Craig - Hallum	215,138	7.49	7,145
Credit Agricole Securities (USA) Inc	21,447	0.25	544
Credit Lyonnais Securities (Asia)	19,404,000	0.10	11,789
Credit Lyonnais Securities (USA) Inc	58,007	0.02	505
Credit Lyonnais Securities India	7,397,241	0.27	71,057
Credit Lyonnais Securities(Asia)	13,292,364	0.14	17,690
Credit Research & Trading LLC	59,948	1.49	1,946
Credit Suisse First Boston	31,836,000	0.07	22,894
Credit Suisse First Boston (Europe)	113,721	4.03	26,558
Credit Suisse Secs India Private LTD	4,404,378	0.83	24,832
Credit Suisse Securities (Europe) LTD	7,362,269	4.98	45,246
Credit Suisse Securities (USA) LLC	45,628,215	32.03	130,548
Cs First Boston (Hong Kong) Limited	12,386,747	113.36	45,109
Csfb Australia Equities LTD	5,552,146	0.02	7,809
Cuttone &Co.	8,090	0.06	162
D Carnegie Ag	38,113	0.14	651

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Daewoo Securities Co LTD	4,384	\$0.25	\$213
Daiwa Sbcm Europe	136,400	0.94	4,307
Daiwa Securities (HK) LTD.	125,900	0.21	922
Daiwa Securities America Inc	1,183,367	2.20	30,205
Danske Bank A.S.	1,191,109	0.47	14,612
Davidson D.A. & Company Inc.	51,013	0.96	1,452
Davy Stockbrokers	1,270,402	0.95	13,481
Dbv Vickers Securities (Singapore)	869,000	0.22	7,050
Den Norske Bank	101,074	0.04	683
Deutsche Bank Ag London	2,088,187	3.65	16,703
Deutsche Bank Alex Brown	178,990	0.24	7,160
Deutsche Bank Securities Inc	14,280,043	116.10	82,827
Deutsche Eq In Prvt Lim Db	6,424,488	0.62	44,050
Deutsche Morgan Grenfell Secs	518,695	0.04	3,375
Deutsche Securities Asia Limited	2,722,391	0.38	13,111
Dnb Nor Markets Custody Dnb Norbank Asa	5,248	0.04	127
Dougherty & Company LLC	43,709	1.69	1,521
Dougherty Company	22,979	0.74	723
Drexel Hamilton LLC	146,089	4.34	3,899
Dsp Merrill Lynch LTD	4,296,070	0.89	45,022
Erste Bank Befektetesi Rt.	295,906	0.52	13,761
Exane S.A.	1,657,818	7.00	19,846
Fbn Securities Inc	4,712	0.14	140
Fbr Capital Markets & Co.	165,319	2.38	6,032
Federated Managed Growth & Income 17 A7	492,910	1.79	3,696
Fidelity Capital Markets	11,379	0.47	168
Fidelity Clearing Canada	38,547	0.08	971
Fidelity Clearing Canada Ulc	34,381	0.20	688
Fig Partners LLC	46,607	1.18	932
Financial Brokerage Group (Fbg)	4,039,300	0.02	1,794
First Analysis Securities Corp	9,017	0.39	245
Flow Corretora De Mercadorias LTDa.	209,110	0.06	2,107
Fokus Bank Asa	11,472	0.01	147
Gabelli & Company	7,895	0.16	316
Goldman Sachs (India)	1,749,014	0.91	8,842
Goldman Sachs & Co	68,910,660	63.57	179,966
Goldman Sachs & Co Intl.	252,912	0.03	383
Goldman Sachs Do Brasil Corretora	9,781	0.00	49
Goldman Sachs International	2,556,695	6.04	44,990
Goodbody Stockbrokers	1,633,355	0.76	7,982
Green Street Advisors	646,309	1.17	25,353
Green Street Advisors (UK) LTD	155,243	0.18	2,147
Green Street Trading, LLC	1,089,513	4.10	39,890
Greentree Brokerage Services Inc	32,000	0.16	640
Guggenheim Capital Markets LLC	155,764	0.25	5,930
Guzman And Company	33,120	0.24	662
Hongkong And Shanghai Banking Corp	4,187,662	0.73	24,845
HSBC Bank Brasil Sa Banco Multiplo	15,000	0.00	9
HSBC Bank Plc	7,242,589	3.69	51,900

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
HSBC Securities (USA) Inc.	7,811,864	\$0.41	\$3,706
HSBC Securities India Holdings	277,803	0.01	919
Icap Do Brasil Dtvn LTDA	3,152,000	0.16	8,784
Icbc Fincl Svcs, Equity Clearance	1,439,122	3.04	24,967
Ichiyoshi Securities Co.,LTD.	52,000	0.00	145
Im Trust S.A. Corredores De Bolsa	1,558,091	0.08	1,717
Imperial Capital LLC	5,641	0.15	169
Industrial And Commercial Bank	12,637	0.52	363
Instinet	2,268,403	28.60	24,160
Instinet Australia Clearing Srvc Pty LTD	1,300,096	0.06	1,808
Instinet LLC	13,803,175	1.45	35,194
Instinet Pacific Limited	66,957,080	0.44	22,973
Instinet Singapore Services Pt	5,374,890	0.58	14,149
Instinet U.K. LTD	18,960,606	34.40	155,087
Investec Bank Plc	31,980,103	0.89	16,531
Investec Securities LTD	899,058	0.19	2,050
Investment Technology Group Inc.	1,052,995	5.32	10,741
Investment Technology Group LTD	6,571,020	14.59	38,391
Isi Group Inc	574,455	6.46	22,106
ITG Australia LTD.	4,270,595	1.69	2,110
ITG Canada	162,940	0.04	446
ITG Inc.	274,973	3.00	3,670
ITG Securities (HK) LTD	29,318,159	14.27	20,446
Ivy Securities, Inc.	5,004,003	9.35	157,867
J.P. Morgan India Private LTD	1,117,297	0.11	1,517
J.P. Morgan Securities Inc	2,312,128	0.11	4,146
J.P. Morgan Clearing Corp.	8,178,004	18.73	85,814
J.P. Morgan Securities (Taiwan) LTD	2,213,000	0.00	887
J.P. Morgan Securities Inc.	3,001,880	20.23	60,477
J.P. Morgan Securities Limited	671,423	0.03	1,275
J.P. Morgan Securities (Far East) LTD Seoul	121,450	2.19	2,245
Janney Montgomery, Scott Inc	17,187	0.70	547
Jefferies & Company Inc	32,884,397	17.55	133,114
Jefferies India Private Limited	4,668,771	1.67	11,576
Jefferies International LTD	138,548,623	2.77	55,818
Jmp Securities	194,899	2.52	6,801
Jnk Securities Inc	14,857	0.19	482
Joh Berenberg Gossler And Co	363,325	9.85	9,980
Johnson Rice & Company LLC	38,348	1.73	1,068
Johnson Rice & Co	18,621	0.44	553
Jonestrading Institutional Services LLC	1,455,266	14.99	30,040
JP Morgan Securities Australia LTD	348,621	0.01	654
JP Morgan Securities Plc	17,773,786	10.07	76,342
JP Morgan Securities Singapore	7,031,964	0.00	414
JP Morgan Chase Bank Na London	71,716	0.07	363
JP Morgan Securities (Asia Pacific) LTD	11,852,857	0.18	17,060
Kas-Associatie N.V.	385,560	0.08	1,433
Kb Securities N V	173,141	0.09	793
Kcg Americas LLC	730,819	1.51	3,880
Keefe Bruyette & Woods Inc	351,547	9.89	10,421

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Kempen & Co N.V.	130,577	\$0.69	\$3,740
Kepler Equities Paris	41,071	1.44	2,149
Keybanc Capital Markets Inc	648,527	9.85	22,839
King, Cl,& Associates, Inc	765,176	11.44	18,170
Knight Equity Markets L.P.	317,361	16.55	6,381
Knight Securities International	605,410	1.04	1,413
Korea Investment And Securities Co., LTD	57,410	12.79	25,796
Kotak Securities LTD	3,290,558	0.30	35,157
Ladenburg Thalman & Co	18,255	0.34	428
Larrain Vial	21,101,452	0.12	2,873
Leerink Partners LLC	44,263	2.17	1,552
Liberum Capital Limited	43,305	0.14	876
Liquidnet Inc	3,759,548	30.26	78,781
Longbow Securities LLC	3,374	0.09	101
Loop Capital Markets	12,658,982	75.59	248,052
Loop Capital Markets LLC	659,488	0.20	6,595
M Ramsey King Securities Inc	9,249	0.64	254
M Ramsey King Securities, Inc.	1,992,500	0.69	36,143
Macquarie Bank Limited	3,855,982	11.75	26,347
Macquarie Capital (USA) Inc	138,488	0.06	2,271
Macquarie Capital (USA) Inc.	88,286	0.28	2,123
Macquarie Sec Nz LTD	63,031	0.01	93
Macquarie Securities (India) Pvt LTD	166,570	0.10	3,640
Macquarie Securities (USA) Inc	43,678	0.68	1,464
Macquarie Securities LTD Seoul	46,700	0.03	384
Mainfirst Bank De	43,786	0.54	2,114
Maxim Group	19,990	0.75	533
Merrill Lynch	98,964	2.30	3,666
Merrill Lynch And Co Inc	14,731,240	1.44	31,876
Merrill Lynch Corredores De Bolsa S.A.	91,429	0.01	415
Merrill Lynch International	98,889,871	63.36	340,017
Merrill Lynch Pierce Fenner & Smith Inc	17,365,026	35.60	198,718
Merrill Lynch Pierce Fenner And S	7,627,613	1.27	21,909
Merrill Lynch Professional Clearing Corp	2,602	0.24	102
Merrill Lynch, Pierce Fenner Smith	54,458	0.85	2,723
Miller Tabak Roberts Secs LLC	5,150	0.04	206
Mischler Financial Group, Inc-Equities	513,415	1.35	6,869
Mitsubishi Ufj Securities	17,795	0.04	712
Mitsubishi Ufj Securities (USA)	1,800	0.02	43
Mitsubishi Ufj Securities Int Plc	20,400	0.30	3,011
Mizuho International Plc	5,360	0.02	158
Mizuho Securities Asia Limited	176,200	0.92	3,035
Mizuho Securities USA Inc	193,439	0.65	5,081
Mizuho Securities USA Inc.	170,186	0.40	4,374
Mkm Partners LLC	103,868	1.64	4,042
Montrose Securities Equities	324,400	0.34	3,931
Morgan Stanley And Co International	276,610	2.85	16,830
Morgan Stanley And Co Intl Taipei Metro	8,397,000	0.00	12,525
Morgan Stanley And Co. International	3,816,190	5.01	51,946
Morgan Stanley Co Incorporated	46,500,016	33.66	270,188

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Morgan Stanley India Company Pvt LTD	4,947,855	\$0.25	\$26,887
National Financial Services Corp.	1,484,553	5.12	19,939
Natixis Securities	309,272	1.79	9,050
Needham & Company	81,459	1.26	2,895
Needham And Company LLC	260,371	5.23	9,463
Nesbitt Burns	253,357	0.55	6,111
Noble International Investments Inc.	19,845	0.14	556
Nomura Financial Advisory & Sec India	2,919,987	0.94	8,956
Nomura Financial And Investment	420,780	1.76	2,150
Nordea Bank Finland Plc	819,901	0.61	4,871
North South Capital LLC	74,625	2.75	2,692
Northland Securities Inc.	18,559	0.74	655
Numis Securities Limited	1,122,091	0.25	3,051
Oddo Et Cie	5,400	0.77	472
Oppenheimer & Co. Inc.	114,983	4.17	3,916
Ord Minnett Limited	18,491	0.00	39
Parel	27,426	1.17	6,076
Pavilion Global Markets LTD	232,020	0.49	2,493
Peel Huntllp	482,941	0.74	5,923
Penserra Securities	3,293,618	9.22	57,245
Penserra Securities LLC	142,938	0.06	1,036
Pep Serv Noms	8,228	0.35	411
Pershing LLC	1,300,098	2.27	12,036
Pershing Securities Limited	2,577,777	3.40	16,615
Piper Jaffray	159,663	4.75	5,860
Rabobank Netherland	2,898	0.34	353
Raymond James And Associates Inc	690,630	11.96	18,959
Rbc Capital Markets	827,201	6.47	18,653
Rbc Dominion Securities	328,995	0.72	8,762
Rbc Dominion Securities Inc.	414,962	0.66	9,060
Redburn Partners Llp	4,134,407	2.08	28,043
Robert W.Baird Co.Incorporate	903,177	19.72	32,512
Rosenblatt Securities LLC	11,162	0.28	309
Roth Capital Partners LLC	13,364	0.37	468
Royal Bank of Canada Europe LTD	1,381,086	0.26	5,688
Samsung Securities Co LTD	403,517	3.22	17,100
Samuel A Ramirez & Company Inc	330,004	0.35	2,475
Sandler Oneill & Part Lp	21,702	0.50	672
Sandler Oneill And Partners L.P.	21,136	1.05	819
Sanford C. Bernstein And Co. LLC	1,227,497	0.49	6,801
Sanford C. Bernstein LTD	4,227,744	4.55	48,664
Sanford Cbernstein Co LLC	808,157	3.57	13,196
Santander Central Hispano Bolsa	2,951,752	0.00	9,106
Scotia Capital (USA) Inc	19,000	0.11	505
Seaport Group Securities, LLC	173,259	2.62	2,510
Sg Americas Securities LLC	112,171	0.03	364
Sg Asia Securities (Inoia) Pvt LTD	8,093,516	1.57	22,338
Sg Securities (London) LTD.	13,728,998	0.00	4,466
Sg Securities HK	83,016,655	26.38	46,293
Sidoti & Company LLC	236,171	4.71	7,874

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)**  
**FISCAL YEAR ENDED JUNE 30, 2016 (Continued)**

<b>BROKERAGE FIRM</b>	<b>NO. OF SHARES TRADED</b>	<b>COMMISSION PER SHARE</b>	<b>COMMISSION PAID</b>
Skandinaviska Enskilda Banken	3,014	\$0.04	\$75
Smbc Nikko Capital Markets Limited	296,000	0.64	12,717
Smbc Nikko Securities (Honk Kong) LTD	14,700	0.16	414
Societe Generale London Branch	8,093,547	10.06	35,824
Spark Capital Advisors (India) Priv LTD	104,116	0.00	477
Spear, Leeds And Kellogg	58,427	0.00	95
State Street Bank And Trust Co	7,040	0.01	61
State Street Bank And Trust Company	1,742,127	5.81	16,130
State Street Global Markets	164,801	2.52	444
State Street Global Markets, LLC	97,689	2.55	1,566
Stephens, Inc.	272,671	11.10	10,037
Sterne Agee & Leach Inc.	16,740	5.25	837
Stifel Nicolaus & Co Inc	2,053,724	23.08	58,705
Strategas Securities LLC	6,000	0.09	180
Stuart Frankel & Co Inc	273	0.06	8
Sungard Brokerage & Securities Svcs LLC	7,300	0.12	122
Suntrust Capital Markets Inc	1,532	0.40	68
Suntrust Capital Markets, Inc.	241,540	7.04	8,361
Svenska Handelsbanken	81,279	0.39	1,788
Taiwan Depository Clearing Corporation	1,580,921	0.08	7,480
TD Securities (USA) LLC	3,900	0.08	39
TD Waterhouse Cda	8,622	0.02	226
Telsey Advisory Group LLC	671,514	12.00	23,485
Tera Menkul Degerler A.S.	1,153,872	0.00	1,056
The Hongkong And Shanghai Bank	172,954	0.45	1,294
The Vertical Trading Group	15,391	0.51	496
Topeka Capital Markets Inc	3,215,717	10.61	34,666
UBS Ag	12,080,064	2.75	152,204
UBS Limited	21,981,896	31.51	126,388
UBS Securities Asia LTD	29,464,123	226.76	89,661
UBS Securities Canada Inc	498,094	0.17	1,684
UBS Securities India Private LTD	402,750	0.85	11,169
UBS Securities LLC	8,361,117	21.72	62,101
UBS Securities Pte.LTD	10,073,945	0.01	5,467
UBS Securities Pte.LTD., Seoul	32,860	1.05	1,005
UBS Warburg Australia Equities	300,929	0.01	535
Vandham Securities Corp	899	0.09	27
Warburg Dillon Read Securities Co	486,966	0.00	34
Wedbush Morgan Securities Inc	267,302	7.94	6,771
Weeden & Co.	5,415,984	10.98	104,346
Wells Fargo Prime Services, LLC	858,667	2.52	6,439
Wells Fargo Securities LLC	342,824	0.74	4,178
Wells Fargo Securities, LLC	1,582,087	7.48	50,031
William Blair & Company L.L.C	504,000	15.97	18,451
Williams Capital Group Lp (The)	6,596,463	26.61	84,217
Woori Investment Securities	3,392	0.12	83
Wunderlich Securities Inc	6,934	0.15	190
Wunderlich Securities Inc.	25,289	0.94	784
Xp Investimentos Cctvm Sa	4,816,802	0.01	12,316
Yamner & Co Inc (Cis Thru 443)	110,417	0.68	1,104

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

As of June 30, 2016

Par Value		Interest Rate	Due Date	Fair Value
\$136,200,000	Federal Nat Mtg Assn TBA 30YRS	4.000%	08/16/2046	\$145,900,164
122,996,000	Govt Nat Mtg Assn II TBA 30YR	3.500	08/23/2046	130,370,840
101,016,520	Govt Nat Mtg Assn II TBA 30YR	3.000	07/20/2046	105,619,843
88,799,000	Govt Nat Mtg Assn II TBA 30YR	4.000	08/23/2046	94,889,723
72,115,000	United States Treasury Notes	3.375	05/15/2044	88,878,853
62,020,000	Govt Nat Mtg Assn II TBA 30YR	3.500	07/20/2046	65,826,167
59,605,000	United States Treasury Notes	2.500	02/15/2046	62,066,090
51,075,000	Govt Nat Mtg Assn II TBA 30YR	4.000	07/20/2046	54,594,578

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

As of June 30, 2016

Company Name	Shares	Fair Value
Apple Inc	6,120,780	\$585,146,568
Microsoft Corp	8,893,187	455,064,379
Exxon Mobil Corp	4,568,147	428,218,100
Johnson & Johnson	3,115,013	377,851,077
General Electric Co	10,360,530	326,149,484
Berkshire Hathaway Inc	2,135,560	309,207,732
Amazon.Com Inc	429,606	307,434,646
AT&T Inc	6,995,548	302,277,629
Facebook Inc	2,643,155	302,059,753
Procter & Gamble Co/The	3,099,755	262,456,256
Verizon Communications Inc	4,672,093	260,889,673
JP Morgan Chase & Co	4,136,347	257,032,603
Pfizer Inc	7,128,267	250,986,281
Alphabet Inc Cl A	350,440	246,545,053
Wells Fargo & Co	5,184,025	245,359,903
Alphabet Inc Cl B	336,925	233,185,793
Comcast Corp	3,419,982	222,948,627
Chevron Corp	2,066,701	216,652,266
Simon Property Group Inc	930,384	201,800,290
Coca-Cola Co/The	4,313,291	195,521,481
Merck & Co Inc	3,253,281	187,421,518
Philip Morris International Inc	1,830,732	186,222,059
Unitedhealth Group Inc	1,312,766	185,362,559
Walt Disney Co/The	1,866,332	182,564,596
Pepsico Inc	1,697,470	179,829,972

**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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SHERRY S. CHAN  
 CHIEF ACTUARY

December 20, 2016

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, 2016

Dear Members of the Retirement Board:

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

An actuarial valuation of the Plan is performed annually as of the second June 30 preceding each fiscal year to determine the Employer Contributions to be paid for that fiscal year (i.e., June 30, 2014 (Lag) actuarial valuation to determine Fiscal Year 2016 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 2016, the Actuarial Contributions to TRS, are equal to those recommended by the Actuary of the New York City Pension Funds and Retirement Systems (the Actuary) and represent the Statutory Contributions.

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

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).

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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).

On October 11, 2016 the Actuary published the "GASB67/68 Report for the City of New York and the New York City Retirement Systems For Fiscal Year Ended June 30, 2016" (the Fiscal Year 2016 GASB67/68 Report). Appendix B of the Fiscal Year 2016 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, 2014 (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.

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.

In October 2015, the independent actuarial auditor, Gabriel, Roeder, Smith & Company (GRS) issued a report on their NYC Charter-mandated actuarial experience studies for the four-year and ten-year periods ended June 30, 2013 (the GRS report).

Based, in part, on the GRS Report, on published studies of mortality improvement, and on input from the City's outside consultants and auditors, the Actuary proposed, and the Retirement Board of TRS adopted, new post-retirement mortality tables for use in determining employer contributions beginning in Fiscal Year 2016. The new tables of post-retirement mortality are based primarily on the experience of TRS (the Base Tables) and the application of Mortality Improvement Scale MP-2015, published by the Society of Actuaries in October 2015 (the Valuation Tables). Scale MP-2015 replaced Mortality Improvement Scale AA.



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In addition, beginning in Fiscal Year 2016, the Actuary revised the Actuarial Asset Valuation Method to constrain the Actuarial Asset Value to be within a 20% corridor of the Market Value of Assets.

The 2012 A&M reflecting the above revisions is referred to as the "2016 A&M."

These actuarial assumptions and methods (2016 A&M) used for funding purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs).

### **Benefits and Census Data**

A summary of the benefits applicable to Plan members included in the June 30, 2014 (Lag) actuarial valuation is shown later in this Actuarial Section of the CAFR.

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

A summary of the census data used in the June 30, 2014 (Lag) actuarial valuation is included in this CAFR. A summary of the census data used in the June 30, 2013 (Lag) actuarial valuation of the Plan is available in the June 30, 2015 CAFR.

### **Funded Status**

The Funded Status of the Plan is usually expressed by the relationship of Assets to Liabilities.

With respect to the Funded Status of the Plan, included in the Actuarial Section of the CAFR is a schedule of Funded Status based on the Entry Age Actuarial Cost Method (Table 9).

Also included in the Actuarial Section of the CAFR is a Solvency Test (i.e., Comparative Summary of Aggregate Accrued Liabilities Funded by Actuarial Value of Assets) (Table 10), 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 items in the Actuarial Section of the CAFR were prepared by the OA:

- Summary of Actuarial Assumptions and Methods in Effect for the June 30, 2014 (Lag) Actuarial Valuation.
- Active Member Valuation Data.
- Summary of Plan Membership.
- Retirants and Beneficiaries Added to and Removed from Rolls.
- Funded Status Based on Entry Age Actuarial Cost Method.
- Comparative Summary of Aggregate Accrued Liabilities Funded by Actuarial Value of Assets - Solvency Test.
- Statutory vs Actuarial Contributions.
- Summary of Plan Provisions.

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

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

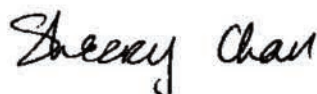
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If you have any questions about any of the information in this Actuarial Section or any of the actuarial information presented elsewhere in this CAFR, please do not hesitate to contact Mr. Michael J. Samet, Mr. Edward Hue, or me.

#### **Acknowledgment of Qualification**

I, Sherry S. Chan, am the Chief Actuary for, and independent of, the New York City Pension Funds and Retirement Systems. I am a Fellow 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, FSA, FCA, MAAA  
Chief Actuary

SSC/eh

Att.

cc: Mr. Edward Hue - New York City Office of the Actuary  
Ms. Michele 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

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (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.

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

The 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.

Based, in part, on the GRS Report, on published studies of mortality improvement, and on input from the City's outside consultants and auditors, the Actuary proposed, and the TRS Retirement Board adopted, new post-retirement mortality tables for use in determining employer contributions beginning in Fiscal Year 2016. The new tables of post-retirement mortality are based primarily on the experience of TRS (the Base Tables) and the application of Mortality Improvement Scale MP-2015, published by the Society of Actuaries in October 2015 (the Valuation Tables). Scale MP-2015 replaced Mortality Improvement Scale AA.

In addition, beginning in Fiscal Year 2016, the Actuary revised the Actuarial Asset Valuation Method to constrain the Actuarial Asset Value to be within a 20% corridor of the Market Value of Assets.

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.

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.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATION  
(Cont'd)

- (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.
- (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 assumption is 1.5% per annum for Auto COLA and 2.5 % per annum for escalation.
- (7) The valuation assumes a closed group of members.
- (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.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATION  
(Cont'd)

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).

- (9) One-Year Lag Methodology (Lag or OYLM) uses a June 30, XX-2 valuation date to determine Fiscal Year XX Employer Contributions.

The June 30, 2014 (Lag) actuarial valuation uses a June 30, 2014 valuation date to determine Fiscal Year 2016 Employer Contributions.

This methodology requires technical adjustments to certain components used to determine Fiscal Year 2016 Employer Contributions as follows:

- Present Value of Future Salary (PVFS)

The PVFS at June 30, 2014 is reduced by the value of salary projected to be paid during Fiscal Year 2015.

- Salary for Determining Employer Contributions

Salary used to determine the employer normal contribution is the salary projected to be paid during Fiscal Year 2016 to members on payroll at June 30, 2014.

- UAAL payments

For determining the UAAL payments for Fiscal Year 2016, and to be consistent with OYLM, the UAAL as of June 30, 2014 is adjusted by the discounted value of employer normal contributions paid during Fiscal Year 2015 and the discounted value of the administrative expenses reimbursed during Fiscal Years 2015 and 2016.

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

Beginning with the June 30, 2012 (Lag) actuarial valuation, the Actuarial Asset Valuation Method (AAVM) recognizes investment returns greater or less than expected over a period of six years.

In accordance with this AAVM, actual Unexpected Investment Returns (UIR) are phased into the AAV at rates of 15%, 15%, 15%, 15%, 20% and 20% per year, respectively, (i.e., cumulative rates of 15%, 30%, 45%, 60%, 80% and 100%).

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

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATION  
(Cont'd)

Beginning with the June 30, 2014 (Lag) actuarial valuation, the AAV is constrained to be within a 20% corridor of the Market Value.

- (11) The APVB as of June 30, 2014, used to determine Fiscal Year 2016 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 unchanged from those used in the June 30, 2013 (Lag) actuarial valuation except for the adoption of revised post-retirement Mortality Tables and a 20% corridor constraining the Actuarial Asset Value as described in sections (1) and (10) above, respectively.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATION  
(Cont'd)

**Table 1A**

**Deaths among Service and Disability Pensioners**

Percentage of Pensioners Dying within the Next Year

<u>Age</u>	<u>Service Pensioners</u>		<u>Disability Pensioners</u>	
	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>
40	0.0811%	0.0655%	1.1871%	1.2819%
45	0.1364	0.0998	1.2946	1.4007
50	0.2242	0.1758	1.6120	1.6789
55	0.4099	0.2596	2.2672	1.8852
60	0.6285	0.3627	2.5149	1.7754
65	0.9949	0.5274	2.5616	1.7061
70	1.6073	0.8783	2.9239	1.7872
75	2.4011	1.4297	3.5989	2.6433
80	3.8316	2.5076	4.9691	3.9197
85	6.6940	5.0418	8.5579	6.3098
90	11.6557	8.7091	15.2572	10.6964
95	21.4397	15.6068	25.2664	17.1864
100	31.4230	21.7114	34.2380	21.7114
105	37.5244	27.6686	37.7237	27.6686
110	100.0000	100.0000	100.0000	100.0000

Society of Actuaries Mortality Improvement Scale MP-2015 is applied to these rates.



SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATION  
(Cont'd)

**Table 1B**

**Deaths among Beneficiaries**

**Percentage of Beneficiaries Dying within the Next Year**

<u>Age</u>	<u>Males</u>	<u>Females</u>
40	0.0811%	0.0655%
45	0.1364	0.0998
50	0.2242	0.1758
55	0.4099	0.2596
60	0.6285	0.3627
65	0.9949	0.5274
70	1.6073	0.8783
75	2.4011	1.4297
80	3.8316	2.5076
85	6.6940	5.0418
90	11.6557	8.7091
95	21.4397	15.6068
100	31.4230	21.7114
105	37.5244	27.6686
110	100.0000	100.0000

Society of Actuaries Mortality Improvement Scale MP-2015 is applied to these rates.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
IN EFFECT FOR THE JUNE 30, 2014 (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><u>Age</u></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>
20	0.00%	0.00%	0.01%	0.01%	0.040%	0.020%
25	0.00	0.00	0.01	0.01	0.040	0.020
30	0.00	0.00	0.01	0.01	0.040	0.020
35	0.01	0.01	0.06	0.05	0.050	0.025
40	0.02	0.01	0.10	0.10	0.060	0.030
45	0.03	0.02	0.15	0.15	0.110	0.055
50	0.03	0.03	0.15	0.20	0.160	0.080
55	0.04	0.04	0.15	0.20	0.210	0.105
60	0.04	0.04	0.15	0.20	0.260	0.130
65	0.04	0.04	0.15	0.20	0.320	0.160
70	NA	NA	NA	NA	NA	NA

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
 IN EFFECT FOR THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATION  
 (Cont'd)

**Table 3**

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

Percentage of Active Members Withdrawing within Next Year

<u>Years of Service</u>	<u>Probability of Withdrawal</u>
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

<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>Years of Service Since First Elig.</u>			<u>Years of Service Since First Elig.</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	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 6 plans.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS  
 IN EFFECT FOR THE JUNE 30, 2014 (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.

**Table 6**  
**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>
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>(1)</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)	111,726	8,274,685,657	74,062	2.5

<sup>(1)</sup> Beginning with the June 30, 2010 (Lag) actuarial valuation, the annualized covered payroll is based on revised actuarial assumptions.

## SUMMARY OF PLAN MEMBERSHIP

As of the June 30, 2014 (Lag) and June 30, 2013 (Lag) actuarial valuations, the Plan's Membership consisted of:

**Table 7**  
**Summary of Plan Membership**

<b><u>Group</u></b>	<b><u>2014 (Lag)</u></b>	<b><u>2013 (Lag)</u></b>
Retirees and beneficiaries currently receiving benefits	80,419	78,177
Terminated vested members not yet receiving benefits	12,349	10,867
Other Inactives*	8,702	6,683
Active members	<u>111,726</u>	<u>112,481</u>
Total	<u>213,196</u>	<u>208,208</u>

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

**Table 8**  
**Retirees and Beneficiaries Added to and Removed from Rolls**

Year Ended June 30	Added to Rolls		Removed from Rolls		Rolls End of Year		% Increase In Annual Allowances	Average Annual Allowances
	Number	Annual Allowances <sup>(1)</sup>	Number	Annual Allowances	Number	Annual Allowances <sup>(2)</sup>		
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
2014	4,356	275,947,759	2,114	67,585,789	80,419	3,746,242,537	5.9	46,584

<sup>(1)</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.

<sup>(2)</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.

## FUNDED STATUS BASED ON ENTRY AGE ACTUARIAL COST METHOD

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.

**Table 9****Funded Status Based on Entry Age Actuarial Cost Method**

(Dollar Amounts in Thousands)

<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</sup>	\$37,521,424	\$67,309,977	\$29,788,553	55.7%	\$8,274,686	360.0%
June 30, 2013 (Lag) <sup>1</sup>	35,186,072	61,988,933	26,802,861	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.



**Table 10**  
**Comparative Summary of Aggregate Accrued Liabilities Funded by Actuarial Value of Assets**  
**Solvency Test**

(Dollar Amounts in Thousands)

As of June 30	Aggregate Accrued Liabilities for				Actuarial Value of Assets (D)	(A)	(B)	(C)
	Accumulated Member Contributions (A)	Current Retirees and Beneficiaries (B)	Active Members' Employer Financed Portion (C)	Percentage of Aggregate Accrued Liabilities Funded by Actuarial Value of Assets				
2005 (Lag)	\$2,624,824	\$26,590,313	\$11,418,808	\$32,865,126	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	
2014 (Lag)	3,547,779	40,753,340	20,093,955	37,521,424	100	83	0	

Also, see following "SOLVENCY TEST – NOTES."

COMPARATIVE SUMMARY OF AGGREGATE ACCRUED  
LIABILITIES FUNDED 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, 2014 (Lag) valuation used to compute the Employer Contributions for Fiscal Year 2016 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. 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. Prior to the June 30, 2010 (Lag) actuarial valuation, the Actuarial Interest Rate assumption was 8% per annum, gross of expenses.

**Table 11**  
**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>
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
2016	3,702,569,102	3,702,569,102	44.846

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

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.

<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.

## 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 the World Trade Center (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.

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 Increased-Take-Home-Pay (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.

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.

- 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.

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 City University of New York (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.



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.

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.

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.

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.

- 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.

## 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, 2014 (Lag) actuarial valuation and include the provisions of Chapter 18 of the Laws of 2012 (i.e., Tier 6).

## 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 6) with immediate payability after 5 or more years of service (10 or more years of service for Tier 6), 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 6 members are required to make contributions in amounts ranging from 3% to 6% per annum, based on annual wages earned during a "plan year," originally defined as April 1 to March 31, but amended to January 1 to December 31 as of January 1, 2016.

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 6) 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.

- 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 6) but fewer than 30 years of service (Tier 4), the benefit is  $1/50$  times FAS multiplied by years of service (Tier 4) or 35% plus 2% times FAS multiplied by each additional year exceeding 20 years of service (Tier 6).
  - {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 4).

#### 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 6), 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 4 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 4 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 4 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 4 member with 30 or more years of service receives no reduction in benefits because of early retirement.
- {3} For a Tier 6 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 6) will receive a reduced benefit.

**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) 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.



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>4/01/13 – 3/31/14</u></b>	<b><u>4/01/14 – 3/31/15</u></b>
1 Year	2 Years	One x Final Rate of Pay, But Not in Excess of:	\$ 49,800	\$ 50,500
2 Years	3 Years	Two x Final Rate of Pay, But Not in Excess of:	\$ 99,500	\$101,000
3 Years	Or More	Three x Final Rate of Pay, But Not in Excess of:	\$124,300	\$126,200

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.

## 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.

**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.

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.

### 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.

## 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.

**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.

#### 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 Consumer Price Index for all Urban Consumers (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.



**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.

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.

**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.

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 \$3,702,569,102 for the Fiscal Year ended June 30, 2016.

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.

## 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 \$78.102 during July 2016.

**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 \$17.418 during July 2016.

**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.

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 \$9.128 during July 2016.

**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 \$10.443 during July 2016.

**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 \$15.184 during March 2015 and a low of \$6.844 during March 2009. The monthly unit value of the Socially Responsive Equity Fund was \$14.323 during July 2016.

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





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.

### 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
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)
2016	41,440,456	2,142,217	22,786	12,262	3,930	7,894	43,629,545	(625,119)

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

### SCHEDULE 2: 2016 CHANGES IN NET POSITION—QPP

*In Thousands*

	Pension Fund	Diversified Equity	Bond Fund	International Equity	Inflation Protection	Socially Responsive Equity	Net Position
2015 Net Position	\$41,452,046	\$2,740,658	\$34,034	\$15,071	\$4,747	\$8,108	\$44,254,664
Member Contributions	173,287	355	42	6	-	6	173,696
Employer Contributions	3,760,674	39	1	-	-	-	3,760,714
Interest & Misc Income	873,660	3,475	428	7	-	-	877,570
Dividend Income	829,050	66,915	-	125	-	118	896,208
Realized Profit/Loss	872,464	140,112	23	262	(9)	17	1,012,869
Unrealized Profit/Loss	(1,377,875)	(232,789)	417	(1,074)	10	(1)	(1,611,312)
Benefit Payments	(3,539,631)	(539,039)	(12,320)	(1,524)	(486)	(918)	(4,093,918)
Refunds & Withdrawals	(11,957)	(1,580)	-	-	-	-	(13,537)
Interest Paid to TDA Funds	(1,354,207)	-	-	-	-	-	(1,354,207)
Transfer to other Systems	1,233	-	-	-	-	-	1,233
Interfund Transfer	25,536	(25,510)	257	(584)	(324)	625	-
Provision for Expenses**	(263,824)	(10,419)	(96)	(27)	(8)	(61)	(274,435)
<b>2016 Net changes</b>	<b>(\$11,590)</b>	<b>(\$598,441)</b>	<b>(\$11,248)</b>	<b>(\$2,809)</b>	<b>(\$817)</b>	<b>(\$214)</b>	<b>(\$625,119)</b>
<b>2016 Net Position</b>	<b>\$41,440,456</b>	<b>\$2,142,217</b>	<b>\$22,786</b>	<b>\$12,262</b>	<b>\$3,930</b>	<b>\$7,894</b>	<b>\$43,629,545</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
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)	(3,537,881)	(24,006)	(12,690)	(44,677)	(39,682)	4,081,695
2014	154,962	3,054,424	9,435,906	404	(1,047,923)	(3,740,243)	(24,866)	(18,813)	(134,326)	(46,042)	7,633,483
2015	158,590	3,325,528	1,611,929	329	(1,248,988)	(3,884,026)	(28,775)	(14,312)	(97,159)	(58,391)	(235,275)
2016	173,696	3,760,714	960,267	1,233	(1,354,207)	(3,998,271)	(20,126)	(13,639)	(75,419)	(59,367)	(625,119)

**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
2007	(\$2,776,467)	(\$39,190)	(\$19,942)	(\$95,697)	(\$2,931,296)
2008	(2,888,618)	(42,663)	(22,621)	(111,190)	(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)	(3,537,881)
2014	(3,531,071)	(51,484)	(23,087)	(134,601)	(3,740,243)
2015	(3,660,115)	(54,633)	(30,276)	(139,002)	(3,884,026)
2016	(3,761,370)	(58,144)	(32,000)	(146,757)	(3,998,271)

\* Benefit Payment categories for 2007-2015 take into account retirement valuation reports.

\*\* Other Benefits consists of Retiree Advances, delayed interest payments, Active Death Payments, and excluding Fiscal Year 2016, 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 6, 7, 8 and 9.

**SCHEDULE 4: PARTICIPATING EMPLOYERS—QPP***As of June 30, 2014 (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			105,813	\$7,941,077,018
City University of New York Senior Colleges & Community Colleges			5,347	292,889,798
Charter Schools**	<u>Start Date</u>	<u>Type</u>		
Beginning with Children***	09/2001	DOE Conversion - UFT	39	2,677,547
Future Leaders Institute	09/2005	DOE Conversion - UFT	42	2,629,145
Harriet Tubman	09/2005	DOE Conversion - Non Union	49	2,889,431
Kipp Academy	09/2000	DOE Conversion - UFT	66	5,215,706
Kipp AMP	09/2005	Non Conversion - Non Union	9	740,865
Kipp Infinity	09/2005	Non Conversion - Non Union	51	4,425,024
Opportunity	09/2004	Non Conversion - UFT	61	4,211,215
Renaissance	09/2000	DOE Conversion - UFT	54	4,124,799
UFT Charter School	09/2005	Non Conversion - UFT	93	5,989,101
University Prep (formally UFT Green Dot)	09/2008	Non Conversion - UFT	32	2,806,213
Voice	09/2008	Non Conversion - Non Union	43	2,785,988
Wildcat	09/2000	DOE Conversion - UFT	27	2,223,807
<b>SUBTOTAL</b>			566	\$40,718,841
<b>TOTAL</b>			<b>111,726</b>	<b>\$8,274,685,657</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.

\*\*\* Beginning with Children Charter School closed following the 2016 school year. South Bronx Early College Academy Charter School ("SBECACS") opened in May 2016. For SBECACS, while member contributions have begun, employer contributions begin Fiscal Year 2018.

### SCHEDULE 5: ACTIVE MEMBERSHIP SUMMARY—QPP

Year	As of July 1	Contributors Registered	Payroll Updates	Contributors Withdrawn	As of June 30th
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
2015	111,726	8,727	(2,499)	(3,302)	114,652

\*Revised for FY 2010.

Active membership summary based on latest active valuation reports. Estimated active memberships of 119,000 for 2016.

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

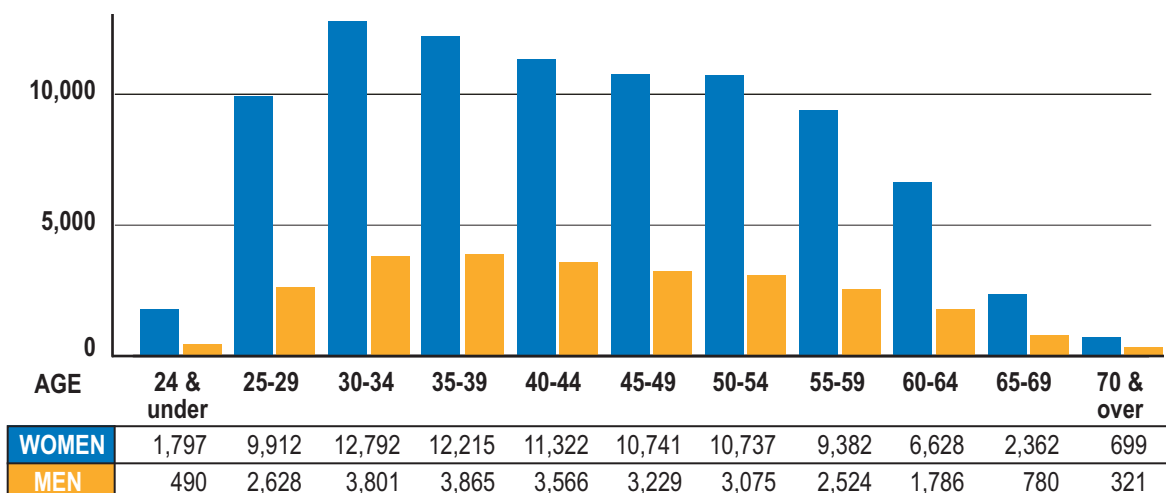
As of June 30, 2015

MEN			WOMEN		
Age	Number of In-Service Members*	Average Salaries*	Age	Number of In-Service Members*	Average Salaries*
24 & under	490	\$48,108	24 & under	1,797	\$50,145
25-29	2,628	59,863	25-29	9,912	60,862
30-34	3,801	73,420	30-34	12,792	73,419
35-39	3,865	82,468	35-39	12,215	78,413
40-44	3,566	87,422	40-44	11,322	80,343
45-49	3,229	89,964	45-49	10,741	79,245
50-54	3,075	92,365	50-54	10,737	80,039
55-59	2,524	91,044	55-59	9,382	78,784
60-64	1,786	88,378	60-64	6,628	79,080
65-69	780	82,897	65-69	2,362	76,368
70 & over	321	80,463	70 & over	699	67,992
<b>TOTAL</b>	<b>26,065</b>	<b>\$82,219</b>	<b>TOTAL</b>	<b>88,587</b>	<b>\$75,650</b>
TOTAL ANNUAL SALARIES		\$2,143,041	TOTAL ANNUAL SALARIES		\$6,701,609

\* 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, 2015



**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	
2007	44.6	3.2%	1.5%	3.7%	91.6%	0.0%	72.1%	14.4%	3.8%	1.0%	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%	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%	1.6%	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%	1.9%	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%	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%	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%	2.7%	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%	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%	3.3%	2.3%	7.7%
2016	44.7	0.3%	0.2%	0.6%	81.0%	17.9%	63.6%	17.3%	5.6%	3.4%	3.4%	2.3%	7.8%



**SCHEDULE 8: RETIREE SUMMARY—QPP**

Year	As of July 1	Retirees Registered	Payroll Status Changes	Retirees Withdrawn	As of June 30th
2006	65,168	3,997	(455)	(1,134)	67,576
2007	67,576	2,715	(616)	(1,183)	68,492
2008	68,492	2,838	(307)	(1,248)	69,775
2009	69,775	2,626	(140)	(1,436)	70,825
2010	70,825	3,065	(404)	(1,130)	72,356
2011	72,356	3,285	(39)	(1,537)	74,065
2012	74,064	4,180	(412)	(1,293)	76,539
2013	76,539	3,541	(451)	(1,452)	78,177
2014	78,177	3,791	(186)	(1,363)	80,419
2015	80,419	4,171	(308)	(1,505)	82,777

Retiree membership summary based on latest retirement valuation reports. Estimated retiree memberships of 84,000 for 2016.

**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*
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	2,626
2010	26.6	25.8	26.0	3,065
2011	26.5	25.3	25.6	3,285
2012	25.8	25.2	25.3	4,180
2013	25.1	24.8	24.9	3,541
2014	24.2	24.7	24.6	3,791
2015	24.9	24.0	24.2	4,171

\*Total number of new retirees based on latest valuation reports.

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

Year	Average Age	OPTIONS CHOSEN BY TIER I/II MEMBERS					OPTIONS CHOSEN BY TIER III/IV/VI MEMBERS			
		Maximum Payout	Pop-Up Payments	Continuing Payments	Lump-Sum Payment	Guaranteed Number of Payments	Maximum Payout	Pop-Up Payments	Continuing Payments	Guaranteed Number of Payments
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%
2016	60.9	59.4%	20.3%	17.6%	0.7%	2.0%	68.2%	19.6%	10.7%	1.5%

**SCHEDULE 11: RETIREES' AVERAGE MONTHLY BENEFIT PAYMENTS AND FINAL AVERAGE SALARY ORGANIZED BY YEARS OF CREDITED SERVICE—QPP**

Year*	Survivor	Other**	Under 5 Yrs***	5 - 9 Yrs	10 - 14 Yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 35 Yrs	35 & up Yrs	Total
Retirees 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	4,620	68	1,481	5,543	6,374	10,588	18,260	19,649	11,791	82,777
Retirees 2016****	4,564	4,896	67	1,516	5,794	6,535	10,854	18,568	19,536	11,670	84,000

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 2007	\$996	\$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
Avg Monthly Benefit 2016****	\$1,290	\$681	\$1,118	\$1,555	\$2,601	\$4,065	\$5,202	\$6,895

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 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	\$30,646	\$43,911	\$47,700	\$48,561	\$60,661	\$70,338	\$75,376	\$83,206
Final Average Salary 2015	\$30,946	\$44,441	\$49,831	\$50,645	\$63,802	\$73,796	\$77,860	\$84,692
Final Average Salary 2016****	\$30,465	\$44,767	\$51,350	\$52,142	\$65,096	\$75,755	\$78,660	\$85,340

\* Retiree figures for 2007-2015 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 2016 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.

<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
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
2015	75,251	48,639	2,481	22,020	732	41,360	4,313	32,229

**SCHEDULE 13: SERVICE RETIREMENT ALLOWANCES—QPP**  
As of June 30, 2015

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	787	\$50,947	55-59	2,318	\$49,584
60-64	2,165	52,810	60-64	7,245	49,263
65-69	6,391	62,055	65-69	13,690	52,495
70-74	5,085	59,442	70-74	10,826	46,362
75-79	3,099	54,228	75-79	7,063	39,847
80-84	2,268	53,568	80-84	5,256	37,203
85-89	1,535	49,983	85-89	3,884	36,120
90 & over	798	46,860	90 & over	2,841	32,905
<b>TOTAL</b>	<b>22,128</b>	<b>\$56,803</b>	<b>TOTAL</b>	<b>53,123</b>	<b>\$45,238</b>

TOTAL ANNUAL ALLOWANCES PAID \$1,256,944,915

TOTAL ANNUAL ALLOWANCES PAID \$2,403,170,254

**SCHEDULE 14: ORDINARY DISABILITY RETIREMENT ALLOWANCES—QPP***As of June 30, 2015*

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	\$27,934	35-39	9	\$23,695
40-44	7	29,701	40-44	30	22,511
45-49	15	23,783	45-49	73	23,678
50-54	46	26,467	50-54	178	24,724
55-59	75	25,458	55-59	287	23,007
60-64	115	23,778	60-64	410	22,196
65-69	134	25,360	65-69	395	21,406
70-74	94	23,967	70-74	247	18,796
75-79	39	21,426	75-79	125	15,848
80-84	15	22,087	80-84	72	16,020
85-89	11	20,540	85-89	42	17,250
90 & over	10	33,748	90 & over	50	21,815
<b>TOTAL</b>	<b>563</b>	<b>\$24,624</b>	<b>TOTAL</b>	<b>1,918</b>	<b>\$21,256</b>

TOTAL ANNUAL ALLOWANCES PAID \$13,863,391      TOTAL ANNUAL ALLOWANCES PAID \$40,769,116

**SCHEDULE 15: ACCIDENT DISABILITY RETIREMENT ALLOWANCES—QPP***As of June 30, 2015*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	0	-	under 30	0	-
30-34	1	\$34,828	30-34	1	\$38,810
35-39	1	56,515	35-39	6	36,794
40-44	6	44,862	40-44	10	48,265
45-49	2	42,827	45-49	12	44,278
50-54	8	43,981	50-54	31	38,193
55-59	14	50,878	55-59	63	37,452
60-64	27	51,364	60-64	94	42,234
65-69	65	43,212	65-69	125	39,993
70-74	47	49,498	70-74	77	40,561
75-79	19	45,829	75-79	36	34,153
80-84	11	36,914	80-84	36	33,133
85-89	9	42,638	85-89	12	41,721
90 & over	5	40,009	90 & over	14	39,317
<b>TOTAL</b>	<b>215</b>	<b>\$46,013</b>	<b>TOTAL</b>	<b>517</b>	<b>\$39,425</b>

TOTAL ANNUAL ALLOWANCES PAID \$9,892,898      TOTAL ANNUAL ALLOWANCES PAID \$20,382,685

**SCHEDULE 16: SURVIVORS' BENEFITS—QPP**  
As of June 30, 2015

MEN			WOMEN		
Age	Number of Beneficiaries	Average Annual Benefit	Age	Number of Beneficiaries	Average Annual Benefit
under 30	6	\$19,613	under 30	5	\$26,668
30-34	3	12,689	30-34	8	26,849
35-39	9	22,009	35-39	14	18,437
40-44	14	22,765	40-44	12	22,729
45-49	16	12,761	45-49	23	17,329
50-54	24	12,137	50-54	56	17,917
55-59	37	20,935	55-59	75	22,329
60-64	60	20,563	60-64	139	35,610
65-69	134	31,697	65-69	316	40,550
70-74	171	34,379	70-74	424	38,745
75-79	152	26,534	75-79	415	39,128
80-84	160	27,101	80-84	504	36,171
85-89	209	26,460	85-89	508	33,090
90 & over	224	25,347	90 & over	595	28,063
<b>TOTAL</b>	<b>1,219</b>	<b>\$26,973</b>	<b>TOTAL</b>	<b>3,094</b>	<b>\$34,299</b>
<b>TOTAL ANNUAL BENEFITS PAID</b>		<b>\$32,879,851</b>	<b>TOTAL ANNUAL BENEFITS PAID</b>		<b>\$106,122,631</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
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
2016	230**	\$209,422,244**	365	\$91,998,934

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

\*\* 2016 details are found in the schedule: Summary of Investment Managers and Fees of the Investment Section.

**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
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
2016	20,511,536	7,365,430	312,613	96,081	41,444	117,236	28,444,340	1,110,758

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

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

Year Ended	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
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
2016	717,566	1,354,207	(11,194)	(699,245)	(173,610)	(44,334)	(32,632)	1,110,758

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

## SCHEDULE 20: 2016 CHANGES IN NET POSITION—TDA PROGRAM

*In Thousands*

	Pension Fund	Diversified Equity	Bond Fund	International Equity	Inflation Protection	Socially Responsive Equity	Net Position
2015 Net Position	\$18,922,602	\$7,869,896	\$302,816	\$97,942	\$39,437	\$100,889	\$27,333,582
Member Contributions	484,543	179,846	18,888	12,075	5,874	16,340	717,566
Payment of interest on TDA fixed return funds	1,354,207	-	-	-	-	-	1,354,207
Interest & Misc Income	25,701	6,524	4,781	16	105	6	37,133
Dividend Income	-	125,625	-	304	753	1,701	128,383
Realized Profit/Loss	-	263,047	254	636	(255)	238	263,920
Unrealized Profit/Loss	-	(442,749)	4,310	(7,553)	(272)	(11)	(446,275)
Benefit Payments	(144,432)	(68,065)	(2,815)	(1,053)	(109)	(1,465)	(217,939)
Refunds & Withdrawals	(533,123)	(152,674)	(7,250)	(1,880)	(2,205)	(2,118)	(699,250)
Interfund Transfer	402,038	(391,241)	(7,305)	(4,207)	(1,814)	2,529	-
Provision for Expenses*	-	(24,779)	(1,066)	(199)	(70)	(873)	(26,987)
<b>2016 Net changes</b>	<b>\$1,588,934</b>	<b>(\$504,466)</b>	<b>\$9,797</b>	<b>(\$1,861)</b>	<b>\$2,007</b>	<b>\$16,347</b>	<b>\$1,110,758</b>
<b>2016 Net Position</b>	<b>\$20,511,536</b>	<b>\$7,365,430</b>	<b>\$312,613</b>	<b>\$96,081</b>	<b>\$41,444</b>	<b>\$117,236</b>	<b>\$28,444,340</b>

\* Includes Administrative and Investment Expenses.

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

Year	As of July 1	Contributors Registered	Payroll Status Changes	Contributors Withdrawn	As of June 30th
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
2015	77,705	2,751	3,168	(2,440)	81,184

*Active membership summary based on latest valuation reports.*

### SCHEDULE 22: TDA PROGRAM ANNUITANTS SUMMARY

Year	As of July 1	Annuitants Registered	Payroll Status Changes	Annuitants Withdrawn	As of June 30th
2006	4,607	140	(126)	(248)	4,373
2007	4,373	84	(76)	(241)	4,140
2008	4,140	69	(57)	(295)	3,857
2009	3,857	51	7	(311)	3,604
2010	3,604	63	(81)	(167)	3,419
2011	3,419	86	10	(264)	3,251
2012	3,251	140	(42)	(165)	3,184
2013	3,184	97	(50)	(176)	3,055
2014	3,055	120	(5)	(134)	3,036
2015	3,036	105	(18)	(132)	2,991

*Annuitant membership summary based on latest valuation reports.*

### SCHEDULE 23: MEMBERSHIP BY AGE (ACTIVE, DEFERRAL & BENEFICIARY ACCOUNTS AS OF JUNE 30, 2016)—TDA PROGRAM

Age	Contributing		Non-Contributing		Deferred*		Beneficiary		Loans**	
	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance	Count	Loan Balance
=<25	8,055	\$77,436,078	510	\$2,135,814	2	\$81,391	21	\$1,809,290	508	\$1,976,921
30	10,945	308,899,091	1,221	32,700,954	95	3,425,566	14	1,223,782	2,773	16,859,547
35	11,876	635,605,708	1,676	64,716,583	235	11,248,236	15	3,075,550	6,413	41,418,204
40	11,128	887,142,868	1,146	53,851,045	354	23,679,007	32	6,829,395	8,118	54,837,226
45	10,809	1,181,731,429	981	50,485,832	462	36,877,188	60	13,647,010	8,530	56,715,820
50	10,174	1,475,680,276	922	69,811,885	579	61,309,108	81	12,623,141	8,277	55,179,705
55	8,967	1,517,452,044	693	48,925,673	3,114	778,936,445	98	17,375,655	7,510	52,466,622
60	6,242	1,207,397,880	428	28,108,701	7,476	2,284,515,040	96	19,906,965	5,143	39,111,452
65	2,334	526,552,379	194	15,370,893	15,686	6,198,296,402	113	35,452,691	3,931	36,056,016
70	450	130,399,737	64	6,314,557	12,079	5,101,920,053	124	49,390,048	1,807	16,746,630
75	103	47,213,177	33	3,865,060	6,687	2,664,275,646	100	32,096,491	711	6,669,352
80	19	8,755,538	14	4,025,610	3,792	1,376,968,411	82	24,444,747	272	2,288,148
85	7	1,971,363	5	137,217	1,772	550,153,650	44	11,500,538	64	773,744
90	3	22,369	1	113,774	389	79,156,045	23	4,538,616	5	78,143

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 2016)—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	1	\$27,000	1	\$6,969	10	\$18,193	18	\$256,773	7	\$68,058
30	16	128,820	19	41,908	14	23,629	137	1,634,755	2	8,857
35	67	595,060	36	101,837	7	20,402	220	4,285,404	3	41,443
40	140	1,957,443	57	169,149	12	50,272	192	4,722,489	13	379,497
45	210	3,787,349	101	379,109	27	167,610	126	4,959,610	10	325,593
50	222	2,931,544	103	509,638	39	233,902	101	4,978,895	17	1,934,079
55	517	10,023,504	154	826,366	54	304,229	71	3,938,255	35	2,191,355
60	2,123	40,214,885	121	656,335	48	298,141	117	7,085,537	53	5,039,243
65	4,272	61,517,901	113	511,324	48	461,363	201	10,700,709	135	18,019,053
70	3,573	63,388,426	31	178,384	1,360	20,856,667	140	11,708,494	210	33,132,033
75	2,307	37,632,868	6	40,082	9,636	155,969,467	85	11,663,287	221	38,856,527
80	702	12,707,147	1	740	5,330	103,451,586	21	1,919,939	319	46,136,531
85	312	5,320,555	0	-	3,026	67,272,161	13	2,707,028	305	36,287,209
90	83	2,005,714	0	-	1,389	31,512,470	20	3,665,216	233	23,567,847

Source: TRS query reports

\* Includes 95 Partial Withdrawals to Beneficiaries.

\*\* Includes 513 RMD Withdrawals to Beneficiaries.

\*\*\* Includes 27 Total Withdrawals to Beneficiaries.

\*\*\*\* Includes the establishment of 166 (\$40.4 million) new Beneficiary accounts.

### SCHEDULE 25: FUND CONVERSION OF INVESTMENT BALANCES BY AGE (FISCAL YEAR 2016)—TDA PROGRAM

From	To	=<25	30	35	40	45	50	55	60	65	70	75	80	85	90+
FX	VA	7.5%	14.1%	14.5%	4.6%	3.0%	5.9%	0.9%	1.9%	1.6%	1.8%	0.9%	1.3%	0.0%	11.9%
FX	VB	0.3%	0.1%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FX	VC	1.0%	2.2%	0.7%	0.7%	0.5%	0.2%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.6%	0.0%
FX	VD	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FX	VE	3.0%	5.5%	4.8%	2.8%	1.3%	1.8%	0.5%	1.0%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%
VA	FX	52.4%	43.6%	53.0%	70.1%	83.7%	80.5%	88.9%	88.6%	91.0%	92.7%	93.0%	88.2%	67.9%	84.8%
VA	VB	0.0%	0.6%	0.1%	0.7%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VA	VC	0.0%	0.3%	1.7%	0.8%	0.3%	0.1%	0.1%	0.2%	0.5%	0.3%	0.1%	0.0%	0.0%	0.0%
VA	VD	0.0%	0.1%	0.0%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VA	VE	0.2%	1.0%	1.3%	0.9%	0.9%	1.7%	0.9%	0.2%	1.4%	0.5%	0.2%	0.0%	17.7%	0.0%
VB	FX	3.8%	6.0%	3.0%	3.0%	2.6%	3.0%	4.0%	2.8%	1.0%	0.4%	0.1%	5.1%	2.5%	0.0%
VB	VA	0.5%	0.4%	0.6%	0.5%	0.5%	0.2%	0.3%	0.1%	0.2%	0.0%	0.0%	0.3%	0.0%	0.0%
VB	VC	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
VB	VD	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%	0.0%
VB	VE	0.9%	0.4%	1.3%	0.4%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VC	FX	7.3%	8.2%	5.0%	4.6%	1.2%	1.3%	0.9%	1.3%	0.9%	1.0%	0.8%	2.7%	0.6%	3.3%
VC	VA	1.9%	1.2%	2.4%	1.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.4%	0.3%	0.0%	5.5%	0.0%
VC	VB	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VC	VD	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%
VC	VE	1.1%	2.8%	0.5%	0.8%	0.2%	0.3%	0.3%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%
VD	FX	4.1%	3.3%	0.9%	0.8%	0.4%	0.4%	0.5%	0.6%	0.4%	0.2%	0.1%	0.5%	5.2%	0.0%
VD	VA	2.0%	0.9%	0.3%	0.2%	0.1%	0.2%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VD	VB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
VD	VC	0.2%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VD	VE	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VE	FX	12.9%	7.4%	7.3%	7.2%	3.9%	3.3%	2.1%	2.3%	2.2%	1.7%	3.9%	1.8%	0.0%	0.0%
VE	VA	0.1%	1.3%	1.2%	0.3%	0.3%	0.2%	0.1%	0.1%	0.0%	0.0%	0.4%	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%	0.1%	0.0%	0.0%	0.0%	0.0%
VE	VC	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
VE	VD	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	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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