BOARD OF EDUCATION RETIREMENT SYSTEM

Board Meeting Agenda

December 20, 2022

1. Calendar Item 1: Noting of the Minutes of the Meeting of the Board of Education Retirement System held on November 15, 2022 – **FOR CONSIDERATION AND ACTION.**

2. Executive Director's Update – **FOR DISCUSSION**.

3. Calendar Items 2-17: Ordinary Business – **FOR CONSIDERATION AND ACTION.**

4. Calendar Item 18: Appointment of a Trustee to the Comptroller's Strategic Accountability and Tactical Review Oversight Committee – **FOR CONSIDERATION AND ACTION**.

5. Calendar Item 19: Adoption of the Disability Committee's Recommendations – **FOR CONSIDERATION AND ACTION.**

6. Calendar Item 20: Presentation by Grant Thornton – **FOR DISCUSSION.**

7. Calendar Item 21: Performance Presentation by Steven Meier, Deputy Comptroller of Asset Management and Chief Investment Officer – **FOR DISCUSSION.**

8. Calendar Item 22: Authorization to the Comptroller of the City of New York to Invest, Sell and Exchange the Funds of the Retirement System – **FOR CONSIDERATION AND ACTION.**

9. Calendar Item 23: Authorization to the Executive Committee to Approve Certain Transactions – **FOR CONSIDERATION AND ACTION.**

10. Calendar Item 24: Actuarial Interest Rate – **FOR DISCUSSION**.

11. Calendar Item 25: Support of Legislation to Continue Certain Interest Rates – **FOR CONSIDERATION AND ACTION.**

Board of Education Retirement System

SUMMARY MINUTES
Meeting of the Board of Trustees
November 15, 2022

Appearances via WebEx:

Marjorie Dienstag	John Maderich
Gregory Faulkner	Kaliris Salas Ramirez
Sheree Gibson	Benjamin Schanback
Angela Green	Seritta Scott
Alison Hirsh	Thomas Sheppard
Ruth Maria Kenley	Karina Taveras
Kyle Kimball	Gladys Ward

Agenda Item 1 - Calendar Item 1: Noting the Minutes of the Meeting of the Board of Retirement held on October 25, 2022. On a motion by Mr. Maderich and a second by Dr. Salas-Ramirez, this item was unanimously approved.

Agenda Item 2: Executive Director's Update.

Agenda Item 3 - Calendar Items 2-17: Ordinary Business. On a motion by Mr. Maderich and a second by Ms. Taveras, these items were unanimously approved.

Agenda Item 4 – Calendar Item 18: Authorization to Enter into an Agreement with Crown Castle Fiber LLC to Provide Internet and Security Services to the Board of Education Retirement System. On a motion by Mr. Maderich and a second by Dr. Salas-Ramirez, this item was approved with opposition from Ms. Hirsh.

Agenda Item 5 – Calendar Item 19: Adoption of Board of Education Retirement System Code of Ethics. On a motion by Mr. Maderich and a second by Dr. Salas-Ramirez, this item was unanimously approved.

Agenda Item 6 – Calendar Item 20: Guidance for BERS Executives Concerning Fiduciary Duties and Conflicts of Interest. On a motion by Mr. Maderich and a second by Dr. Salas-Ramirez, this item was discussed.

Ms. Scott left the meeting at approximately 4:45 PM.

Mr. Kimball joined the meeting at approximately 4:48PM.

Agenda Item 7: Executive Session. Mr. Kimball motioned to enter executive session to discuss a disciplinary matter affecting two employees. The motion was seconded by Dr. Green. The motion failed to pass with Ms. Dienstag, Dr. Green, Ms. Hirsh, Mr. Kimball, Ms. Taveras, and Mr. Sheppard voting in favor, Mr. Maderich voting to oppose, and Mr. Faulkner voting to abstain.

Ms. Taveras motioned to enter into attorney-client session. The motion was seconded by Mr. Kimball. The motion failed to pass with Ms. Gibson, Ms. Hirsh, Mr. Kimball, Dr. Salas-Ramirez and Ms. Taveras voting in favor, Ms. Dienstag, Dr. Green, Mr. Faulkner, Mr. Maderich, Mr.

Sheppard voting to oppose, and Mr. Schanback voting to abstain.

Ms. Hirsh motioned to discuss a disciplinary matter affecting two employees in public session. The motion was seconded by Mr. Kimball. The motion failed to pass with Mr. Maderich, Dr. Green, Ms. Gibson, Mr. Faulkner, Dr. Salas Ramirez, and Mr. Sheppard voting to oppose.

Agenda Item 8 – Calendar Item 21: Appointment of a Trustee to the Comptroller's Strategic Accountability and Tactical Review Oversight Committee. On a motion by Ms. Hirsh and a second by Mr. Kimball, the Board considered this item. On a motion by Mr. Faulkner and a second by Mr. Maderich, the Board voted to table this item until the next meeting of the Board with Mr. Sheppard, Mr. Faulkner, Mr. Maderich, Ms. Gibson, Ms. Taveras, Dr. Green, and Dr. Salas-Ramirez voting in favor and Ms. Hirsh and Mr. Kimball voting to abstain.

Ms. Scott rejoined the meeting at approximately 5:10PM

Agenda Item 9 – Calendar Item 22: Appointment of a Disability Committee Member. On a motion by Mr. Maderich and a second by Dr. Salas-Ramirez, the Board considered this item. Mr. Faulkner volunteered to serve as an alternate for Mr. Sheppard on the Disability Committee. The Board voted unanimously to appoint Mr. Faulkner to the Disability Committee.

Agenda Item 10 – Calendar Item 23: Appointment of an Audit Committee Member. On a motion by Mr. Maderich and a second by Dr. Salas-Ramirez, the Board considered this item. Ms. Dienstag volunteered to serve as an alternate for Mr. Faulkner on the Audit Committee. The Board voted unanimously to appoint Ms. Dienstag to the Audit Committee.

No other items of business were presented. On a motion by Mr. Maderich and a second by Ms. Dienstag, the meeting was adjourned at approximately 5:18 PM.

December 2022

ADOPTION OF THE DISABILITY COMMITTEE'S RECOMMENDATIONS

WHEREAS, the Disability Committee of the Board of Trustees ("Disability Committee") held a meeting on December 8, 2022; and

WHEREAS, the Disability Committee reviewed 9 applications for disability retirement; and

WHEREAS, the Disability Committee has made recommendations to the Board of Trustees regarding 8 applications; now therefore be it

RESOLVED, that the Board of Trustees hereby adopts the recommendations of the Disability Committee with regard to the applications reviewed on December 8, 2022.

Respectfully Submitted,

____

Sanford R. Rich
Executive Director

December 2022

AUTHORIZATION TO THE COMPTROLLER OF THE CITY OF NEW YORK TO INVEST, SELL AND EXCHANGE THE FUNDS OF THE RETIREMENT SYSTEM

WHEREAS, in order that the receipts of monies, as and when they are credited to the fund, may be invested at the earliest possible moment, it is necessary that the Comptroller of the City of New York (the Comptroller), as custodian of the funds of the Board of Education Retirement System (BERS), be authorized to invest the available cash funds of said System, as they accumulate; now therefore be it

RESOLVED, that the Comptroller, as custodian of the funds of BERS, is hereby authorized to invest the funds of said System during the period of January 1, 2023 to March 31, 2023 in any investment authorized pursuant to the Administrative Code of the City of New York, the Retirement and Social Security Law, the Education Law, the Banking Law or as otherwise authorized by the laws governing the investments of said System, provided the Trustees of said System have heretofore approved such investment or hereafter approve such investment; and be it further

RESOLVED, that during the term of this delegation, investments in any asset class or category not previously authorized by BERS shall be made by the Comptroller only with the prior approval of the Trustees of said System; and be it further

RESOLVED, that the Comptroller is authorized to hold, sell, assign, transfer or dispose of any of the properties, securities or investments in which any of the funds of BERS shall have been invested, including the proceeds of such investments and any monies belonging to such fund, subject to the terms, conditions, limitations and restrictions imposed by law upon the Trustees of said System; and be it further

RESOLVED, that the Comptroller is authorized to execute BERS' corporate governance policy, including casting BERS' proxy votes, engaging portfolio companies and regulators, and submitting shareowner proposals that have been approved by the BERS Board of Trustees or a Committee of the Board authorized to approve shareholder proposals; and be it further

RESOLVED, that any termination, expiration or revocation of this delegation to invest shall not affect any binding commitment previously made by the Comptroller pursuant to such delegation and the Comptroller shall have the power to discharge fully any such binding commitment according to its terms.

Respectfully Submitted,

____

Sanford R. Rich
Executive Director

December 2022

AUTHORIZATION TO THE EXECUTIVE COMMITTEE TO APPROVE CERTAIN TRANSACTIONS

WHEREAS, the Board of Trustees ("the Board") adopted the Authority and Procedure of the Executive Committee of the Board of Education Retirement System (BERS) in January 2017 to more efficiently and effectively manage its duties; and

WHEREAS, the Board thereafter amended the Authority and Procedure of the Executive Committee in February 2020, December 2021, June 2022, September 2022, and October 2022; and

WHEREAS, the Board, as head of BERS, is vested by law with the authority to approve all investment transactions on behalf of BERS; and

WHEREAS, in December 2021, recognizing that investment transactions must often be executed on relatively short notice, according to a calendar which does not necessarily align with scheduled Board meetings, the Board amended the Authority and Procedure of the Executive Committee to authorize the Executive Committee to approve certain investment transactions through December 31, 2022; and

WHEREAS, in considering whether to extend the grant of such authority, the Board has reviewed the following:

i. the present holdings in the Portfolio;
ii. any marked changes in the Portfolio during the preceding period;
iii. the reasons for such changes and the results achieved thereby;
iv. the investment activity in the Portfolio, including the rate of turnover; and
v. other factors the Board considers pertinent to an analysis of the financial performance and planning, consistent with its obligation as a fiduciary;

and;

WHEREAS, having reviewed the foregoing, the Board wishes to extend the authority of the Executive Committee to approve certain investment transactions through December 31, 2023; now therefore be it

RESOLVED, that the Board hereby delegates its investment authority to the Executive Committee to the extent set forth herein through December 31, 2023:

the Executive Committee will have the power to:

i. Approve new index fund managers for inclusion in the BERS Investment Portfolio (the “Portfolio”);
ii. Approve new active public market managers and programs for inclusion in the Portfolio (up to $250 million per manager or program);
iii. Approve new private market managers and programs for inclusion in the Portfolio (up to $50 million per manager or program);
iv. Approve additional investments in funds previously approved by the Board, or their successor funds, on substantively identical terms; and
v. Reauthorize BERS participation in previously approved strategic initiatives of the Office of the Comptroller, in instances where the prior time limit has expired or the prior dollar threshold has been surpassed.

Respectfully Submitted,

____
Sanford R. Rich
Executive Director

December 2022

SUPPORT OF LEGISLATION TO CONTINUE CERTAIN INTEREST RATES

WHEREAS, the Actuarial Interest Rate (AIR) and the rates of special interest, additional interest, and supplementary interest used to determine employer contributions to BERS, the amount of interest to be paid into certain constituent funds of the BERS, and the amount of interest to be credited on accumulated member contributions and increased-take-home-pay reserves of Tier 1 and 2 BERS members, which are enacted by the New York State Legislature and codified in section 13-638.2 of Administrative Code of the City of New York (ACCNY) are scheduled to expire as of July 1, 2023; and

WHEREAS, the BERS Board of Trustees (Board), upon recommendation of the Actuary, supports proposed legislation providing for a two-year extension of the current AIR and the rates of special interest, additional interest, and supplementary interest; now therefore, be it

RESOLVED, that the Board requests that the Corporation Counsel develop, with the review and assistance of the Actuary, and that the New York State Legislature and Governor enact, legislation providing for a two-year extension of the current AIR and the rates of special interest, additional interest, and supplementary interest.

Respectfully Submitted,

____
Sanford R. Rich
Executive Director

New York City Board of Education Retirement System

(A Fiduciary Fund of the City of New York)

BERS | Board of Education Retirement System

Post-Audit Presentation
For the Year Ended June 30, 2022

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM

POST-AUDIT PRESENTATION

JUNE 30, 2022

TABLE OF CONTENTS

This report is intended solely for the information and use of the New York City Audit Committee and the Board of Trustees and management of New York City Board of Education Retirement System and should not be used by anyone other than these specified parties.

I - REQUIRED COMMUNICATIONS WITH THOSE CHARGED WITH GOVERNANCE

Grant Thornton

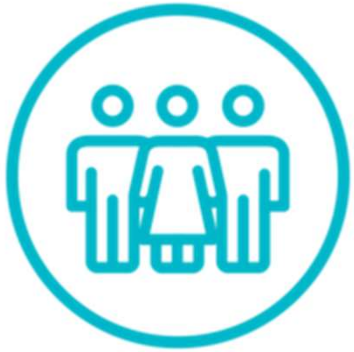
PRESENTATION TO THOSE CHARGED WITH GOVERNANCE

2022 Annual Audit Presentation

New York City Board of Education Retirement System

December 2022

Engagement Team



Core Engagement Team
Sharon Campbell – Managing Director
Patrizia Iacono – Manager
Will Richardson – Manager

Information Technology Specialists
Kevin Morris – Managing Director
Eugene Brizo – Manager

Investment Specialists
Cecille Publico – Managing Director
Bryan Abanilla – Manager

Actuarial Specialists
Phil Bonanno – Managing Director
Andy Zmich – Manager

Audit timeline & scope

March - April 2022	Client continuance	Independence
April - May 2022	Planning	Materiality Determination Kick Off Communications PBC list and IT DRL
May - June 2022	Preliminary risk assessment procedures	Significant Risks Identified
June 2022 - October 2022	Fieldwork	Areas of Focus, Work of Others
October 2022	Deliverables	Financial Statements, Misstatements, Disclosures

Responsibilities in a benefit plan audit

Those charged with governance	• Overseeing the financial reporting process • Setting a positive tone at the top and challenging the plan's activities in the financial arena • Discussing significant accounting and internal control matters with management • Informing us about fraud or suspected fraud, including its views about fraud risks • Informing us about other matters that are relevant to our audit
Management	• Preparing and fairly presenting the financial statements and any required supplementary information • Designing, implementing, and maintaining internal controls relevant to the preparation of financial statements • Administering the plan • Maintaining sufficient records with respect to participants • Communicating significant accounting and internal control matters to those charged with governance • Informing us about fraud, illegal acts, significant deficiencies, and material weaknesses in internal controls
Independent auditors	• Obtaining reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error • Issuing an auditor's report that includes our opinion

Significant risks

The following provides an overview of significant risks based on our risk assessments.

Significant risk area	Results
Management override of controls (presumed fraud risk) Based on the presumed risk in professional standards, manipulating the financial reporting process by recording inappropriate or unauthorized journal entries or making adjustments to amounts reported in the financial statements, omitting, obscuring, or otherwise misstating disclosures by manipulating the financial reporting process, intentional management bias in making accounting estimates, or significant unusual transactions to engage in fraudulent financial reporting or conceal misappropriation of assets.	We obtained an understanding of the financial reporting process and controls over journal entries and other adjustments, and the suitability of design and implementation of such controls; We made inquiries of individuals involved in the financial reporting process about inappropriate or unusual activity relating to the processing of journal entries and other adjustments; We considered any fraud risk indicators, the nature and complexity of accounts, and entries processed outside the normal course of Plan operations. Based on procedures performed, controls appear to be designed and implemented appropriately and individuals appear to have the appropriate authorization rights. No significant exceptions were identified.

Areas of audit focus

The following provides an overview of the areas of audit focus based on our risk assessments.

Areas of focus	Results
Investments and investment income	Confirmed investment positions Evaluated reasonableness of fair value disclosures Tested a sample of investments held at year-end to determine the reasonableness of the reported fair values Tested a sample of purchases and sales throughout the year to determine the reasonableness of the reported fair values Tested reasonableness of investment-related income, including net appreciation/(depreciation) in fair values Evaluated reasonableness of investment expenses 1 proposed adjustment due to a lag in reporting of June 30, 2021 and 2022, fair values of certain alternative investments by their respective fund managers. 1 reclassification adjustment related to alternative investments. 1 disclosure adjustment due to certain investments valued at NAV as a practical expedient that have been reported as level 3 in the FV hierarchy. No other significant exceptions noted.
Member contributions	Tested the completeness of the population of member contributions Selected a sample of members and determined: (1) Eligibility to contribute to the Plan; (2) Whether member contribution amounts were appropriately calculated and withheld in accordance with Plan provisions.

Areas of audit focus (continued)

The following provides an overview of the areas of audit focus based on our risk assessments.

Areas of focus	Results
Benefit payments	Tested the completeness of the population of benefit payments Selected a sample of benefit payments and reviewed supporting calculations and documentation and determined: (1) Member was eligible for the type of withdrawal requested; (2) Benefit payments were appropriately authorized; (3) Benefit payments are calculated based upon plan provisions.
Total Pension Liability	Tested the completeness and accuracy of the census data Assessed the reasonableness of actuarial assumptions and inputs used in the calculation of the pension liability (Expected rate of return/Discount rate, Mortality) Selected a sample of members included in the census data and tested the completeness and accuracy of selected demographic data.

Other Areas of Audit Focus:
- Member loans
- Information technology general controls
- Adequacy of disclosures

Work of specialists and others

Grant Thornton Specialists

- **Compensation and Benefits Consulting Practice** – Review of the reasonableness of the actuarial assumptions and methods used by the NYC Office of the Actuary to determine the System's total pension liability
- **New York Pricing Group** – Investment Valuation

M/WBE Subcontractors

- **Galleros Koh, LLP**

Whole ledger analytics

The following provides an overview of our response to the presumed fraud risk of management override of controls.

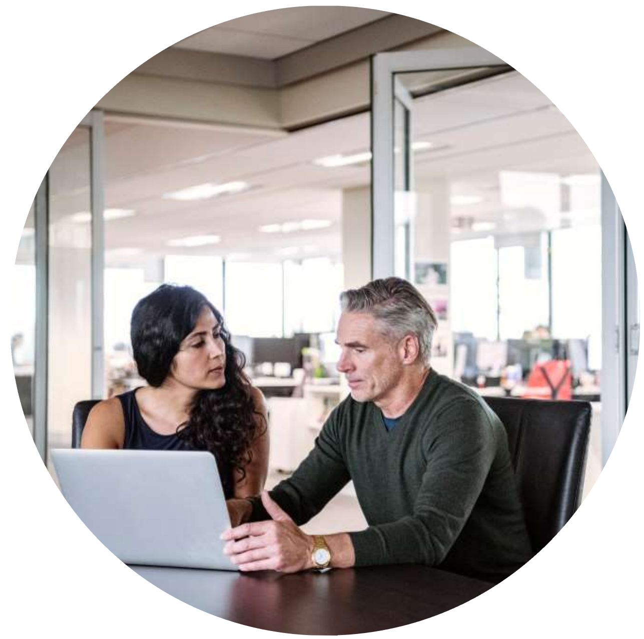
We performed Whole Ledger Analytics on all journal entries (manual and automated) to pinpoint transactions that appeared to have a higher risk of management override of controls based on the cumulative risk score. The cumulative risk score is generated based on how the individual transaction performs against 38 routines, which have been designed to identify unusual transactions or those that could indicate fraud (e.g., abnormal size, abnormal volume, unusual account combinations). We subjected entries with high cumulative risk scores to further analysis and isolated a subset of these entries for testing. For entries tested, we obtained underlying support, evaluated for validity in the normal course of business, and obtained evidence of approval.

Other considerations

Cybersecurity

Internal controls (systems)

Segregation of duties



Information Technology General Controls Review - In Scope Systems & Areas of focus

In-Scope Systems:

- Comprehensive Pension Management System (CPMS)
- PMS (Payroll Management, FISA)
- NYCAPS (PeopleSoft - New York City Automated Personnel System, FISA)

Areas of focus:

- Security Administration
- Program Maintenance
- Program Execution
- Technology Operations
- Cybersecurity

Results of Basic Financial Statement Audit

Basic Financial Statements

- Unmodified "clean" opinion
- The System adopted GASB Statements No. 87 and 97 in the current year
- No scope limitations
- Open and effective communication with management
- Internal Control and Best Practices recommendations discussed with management

Annual Comprehensive Financial Report (ACFR)

- Expected to be issued in third week of December 2022
- Will include GFOA Certificate of Achievement for the 2021 ACFR

Results of Basic Financial Statement Audit (continued)

Summary of audit adjustments:

We are required to accumulate and communicate financial statement misstatements (which may be factual, judgmental, or projected) identified during the audit that are greater than a clearly trivial amount. There were misstatements identified as part of an annual reconciliation process, which were proposed as adjustments, to the fair value of the alternative investments. These adjustments are due to a lag between the last reported valuation of the alternative investments and the Plan's fiscal year end.

Management believes that the effects of these uncorrected adjustments, are immaterial, both individually and in the aggregate, to the financial statements as a whole.

Other required communications

Professional standards require that we communicate the following matters to you, as applicable.

Going concern matters
Fraud and noncompliance with laws and regulations
Significant deficiencies and material weaknesses in internal control over financial reporting
Use of other auditors
Use of internal audit
Related parties and related party transactions
Significant unusual transactions
Disagreements with management
Management's consultations with other accountants
Significant issues discussed with management
Significant difficulties encountered during the audit
Difficult or contentious matters for which we consulted outside the engagement team and that are, in our professional judgment, significant and relevant to you and your oversight responsibilities
Other significant findings or issues that are relevant to you and your oversight responsibilities
Modifications to the auditor's report
Other information in documents containing audited financial statements

Quality of accounting practices

Accounting policies	The System's significant accounting policies are detailed in notes to the basic financial statements and are considered appropriate in all material respects and consistent with the prior year.
Accounting estimates	The following were identified as significant estimates: • Fair value of investments • Total pension liability and related disclosures
Disclosures	We have assessed the financial statements and disclosures for clarity and completeness. Footnote disclosures to the financial statements appear to be informative, consistent, and clear.

Audit Insights

Audit Execution Insights Used in Current Year

- Cross collaboration between Retirement System audit and CoNY audit teams
- Convene
  - PBC lists
  - Questions related to substantive testing
  - Open items
- DB Census Automation Tool
- IDEA
  - Audit sampling
  - Census testing
  - JE completeness
- TBEAM
  - JE completeness
- Whole Ledger Analytics
  - Journal entries testing
- DataSnipper
  - Financial statement proofreading and tie-outs
  - GASB 67/68 and 74/75 report proofreading and tie-outs

Commitment to promote ethical and professional excellence

We are committed to promoting ethical and professional excellence. To advance this commitment, we have put in place a phone and internet-based hotline system.

The Ethics Hotline (1.866.739.4134) provides individuals a means to call and report ethical concerns.

The EthicsPoint URL link can be accessed from our external website or through this link:

https://secure.ethicspoint.com/domain/en/report_custom.asp?clientid=15191

Disclaimer: EthicsPoint is not intended to act as a substitute for a plan’s "whistleblower" obligations.

II - COMMUNICATION OF INTERNAL CONTROL MATTERS

GRANT THORNTON LLP
757 Third Ave., 9th Floor
New York, NY 10017-2013

D +1 212 599 0100
F +1 212 370 4520

November 29, 2022

Board of Trustees
New York City Board of Education Retirement System
65 Court Street, 16th Floor
Brooklyn, New York 11201

To the Board of the Trustees of the
New York City Board of Education Retirement System

We are providing this letter in connection with our audit of the combining financial statements of New York City Board of Education Retirement System Qualified Pension Plan and the New York City Board of Education Retirement System Tax-Deferred Annuity Program, which collectively comprise the New York City Board of Education Retirement System (the “System”) as of June 30, 2022 and for the year then ended, performed in accordance with auditing standards generally accepted in the United States of America (“US GAAS”). The matters discussed herein are as of October 26, 2022, and we did not update our procedures regarding these matters since that date to the current date.

Our responsibility, as prescribed by US GAAS, is to plan and perform our audit to obtain reasonable assurance about whether the combining financial statements are free of material misstatement, whether due to fraud or error. An audit includes consideration of internal control over financial reporting (hereinafter referred to as “internal control”) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the combining financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System’s internal control. Accordingly, we express no such opinion on internal control effectiveness.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the System’s combining financial statements will not be prevented, or detected and corrected, on a timely basis.

Our consideration of internal control was not designed to identify all deficiencies in internal control that, individually or in combination, might be material weaknesses. Given the limitations described herein, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that were not identified.

This communication is intended solely for the information and use of management, the Board of Trustees, the New York City Audit Committee and others within the System, and is not intended to be and should not be used by anyone other than these specified parties.

Very truly yours,

Grant Thornton LLP

III - MANAGEMENT REPRESENTATION LETTER

SANFORD R. RICH
EXECUTIVE DIRECTOR

DANIEL D. MILLER
DEPUTY EXECUTIVE DIRECTOR

October 26, 2022

Grant Thornton LLP
757 Third Avenue
New York, NY 10017

Dear Sir or Madam:

We are providing this letter in connection with your audits of the financial statements of the New York City Board of Education Retirement System Qualified Pension Plan and the New York City Board of Education Retirement System Tax-Deferred Annuity Program, which collectively comprise the New York City Board of Education Retirement System (the "System"), a fiduciary fund of the City of New York, which comprise the combining statements of fiduciary net position as of June 30, 2022 and 2021 and the related combining statements of changes in fiduciary net position for the years ended June 30, 2022 and 2021, and the related notes to the combining financial statements. We understand that your audit was made for the purpose of expressing an opinion as to whether the combining financial statements are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America ("US GAAP").

We have fulfilled our responsibilities, as set out in the terms of the agreement for Financial Statement and Single Audits of The City of New York ("The City") for Fiscal Years 2020-2023 and Appendices (as amended) thereto (the "Agreement") between The City acting through the Office of the Comptroller of The City and the New York City Office of Management and Budget and Grant Thornton, LLP, executed on July 9, 2020, for the preparation and fair presentation of the combining financial statements in accordance with US GAAP.

We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to error or fraud, including programs and controls to prevent and detect fraud. We also acknowledge our responsibility for administering the System and determining that the System's transactions that are presented and disclosed in the financial statements are in conformity with the System's provisions, including maintaining sufficient records with respect to each of the participants to determine the benefits due or which may become due to such participants.

Certain representations in this letter are described as being limited to matters that are material. Items are considered to be material, regardless of size, if they involve an omission or misstatement of accounting information that, in light of the surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement. An omission or misstatement that is monetarily small in amount could be considered material as a result of qualitative factors.

We confirm, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves, as of October 26, 2022, the following representations made to you during your audit.

1. The combining financial statements referred to above, which include the related notes, have been prepared and are fairly presented in accordance with US GAAP, the notes include all disclosures required by laws and regulations to which the System is subject, and the supplemental schedules referred to above are fairly presented in accordance with GASB.

2. We have provided you with:
   a. Access to all information of which we are aware that is relevant to the preparation and fair presentation of the combining financial statements, including all financial records, documentation of internal control over financial reporting, and related information.
   b. The names of all related parties and all relationships and transactions with related parties.
   c. Additional information that you have requested for audit purposes
   d. Unrestricted access to persons from whom you determined it necessary to obtain audit evidence

e. Plan instruments, trust agreements, insurance contracts, or investment contracts and amendments to such documents entered into during the year, including amendments to comply with applicable laws.
f. Actuarial reports prepared for the System during the year.
g. Minutes of the meetings of the System's Board of Trustees and other oversight committees, or summaries of actions of recent meetings for which minutes have not yet been prepared. All significant Board of Trustees and committee actions are included in the summaries.

3. We have disclosed to you all known communications from regulatory agencies concerning operations of the System or known communications from regulatory agencies or others concerning noncompliance with, or deficiencies in, financial reporting practices.

4. Except for the matters related to the ongoing New York State Department of Financial Services ("DFS") examinations, we have no knowledge of any violations or possible violations of, or instances of noncompliance or suspected noncompliance with, laws and regulations whose effects should be considered by management when preparing the financial statements, as a basis for recording a loss contingency or for disclosure. With respect to the DFS matters identified, should it be determined that noncompliance has occurred, we will take all necessary steps to remedy the noncompliance as appropriate and maintain the tax-exempt status of the System.

5. We have disclosed to you all known actual or possible litigation, claims, and assessments whose effects should be considered when preparing the combining financial statements. The effects of all known actual or possible litigation, claims, and assessments have been accounted for and disclosed in accordance with US GAAP.

6. We are not aware of any other liabilities or gain or loss contingencies that are required to be accounted for or disclosed.

7. There are no other matters (e.g., breach of fiduciary responsibilities, loans or leases in default or events that may jeopardize the tax status) that legal counsel has advised us must be disclosed.

8. All transactions have been recorded in the accounting records and are reflected in the combining financial statements.

9. We understand that you are required to accumulate and communicate financial statement misstatements (which may be factual, judgmental, or projected) identified during the audit that are greater than a clearly trivial amount. We believe that the effects of these uncorrected adjustments, including omitted, inaccurate, or incomplete disclosures, in the accompanying schedule are immaterial, both individually and in the aggregate, to the financial statements as a whole.

10. We are aware that the Comptroller's Office has obtained and reviewed the service organization control (SOC) 1 reports for State Street Corporation, JPMorgan Chase Bank, N.A., Securities Services and Markets and Securities Services (MSS), a division of Citibank, N.A.s Institutional Clients Group and has designed, implemented, and maintained the applicable complementary user entity controls.

11. We are not aware of any significant deficiencies in the design or operation of internal control over financial reporting.

12. We have disclosed to you the results of our assessment of the risk that the combining financial statements may be materially misstated as a result of fraud. Except as previously disclosed to you, we have no knowledge of fraud or suspected fraud that affects the System involving:
    a. Management,
    b. Employees who have significant roles in internal control, or
    c. Others where the fraud could have a material effect on the combining financial statements.

13. We have no knowledge of any allegations of fraud or suspected fraud affecting the System's combining financial statements received in communications from employees, former employees, members, regulators, beneficiaries, service providers, third-party administrators, or others.

14. We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities.

15. Related-party relationships and transactions and related amounts receivable from or payable to related parties have been appropriately accounted for and disclosed in the combining financial statements in accordance with US GAAP.

16. There are no side agreements or other arrangements (either written or oral) that have not been disclosed to you by the System.

17. Guarantees, whether written or oral, under which the System is contingently liable, have been properly recorded or disclosed in accordance with US GAAP.

18. Amendments to the System instruments, if any, have been properly recorded or disclosed in the financial statements. All amendments required by changes in law or regulation or required by changes in operation of the System have been adopted by the System.

19. Significant estimates and material concentrations known to management that are required to be disclosed in accordance with US GAAP are properly disclosed in the combining financial statements.

    Significant estimates are estimates at the date of the combining financial statements that could change materially within the next year. Concentrations refer to the nature and type of investments held by the System, or markets or geographic areas for which events could occur that would significantly disrupt normal finances within the next year.

20. The System has satisfactory title to all owned assets and all liens, encumbrances, or security interests requiring disclosure in the combining financial statements have been properly disclosed.

21. The System has complied with all aspects of contractual agreements that would have a material effect on the combining financial statements in the event of noncompliance.

22. In connection with the preparation of the combining financial statements we evaluated, in accordance with US GAAP, whether there were conditions or events that, when considered in the aggregate, raised substantial doubt about the System's ability to continue as a going concern for a period not less than one year from the date the financial statements are issued or available to be issued. Our evaluation was based on relevant conditions and events known and reasonably knowable at that date.

23. We are responsible for the estimation methods and assumptions used in measuring investment assets and investment liabilities, including those reported or disclosed at fair value, as well as information obtained from brokers, pricing services, or other third parties. The methods, significant assumptions, and data used in making accounting estimates and the related disclosures, including those measured at fair value, are reasonable, are consistently applied, and result in a measurement appropriate to achieve recognition, measurement, or disclosure for financial statement and disclosure purposes in accordance with the financial reporting framework. In addition, the data used in making accounting estimates is accurate and complete.

24. The methods and significant assumptions used to estimate fair values of financial instruments, including non-readily marketable securities, are as follows:

    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 ("IIF") and Alternative Investment funds ("ALTINVF"). The IIF are private funds of publicly traded securities which are managed by various investment managers on behalf of the Funds. Fair value is determined by 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"). "). Fair value of these investments is based on the fair value of net assets reported in the partnership's most recent capital account statements from the general partner or administrator of the fund, adjusted for any cash flow and material changes in fair value between the reporting date of partnership's most recent capital account statements and the System's fiscal year end date.

No events have occurred subsequent to the date of the financial statements through the date of this letter that would require adjustment to these estimates and fair value measurements, or the related disclosures included in the financial statements.

25. The fair value measurements reported or disclosed represent the System's understanding of the best estimate of fair value as of the measurement date as provided by the Comptroller's Office. In addition, the System has categorized its financial instruments, based on the priority of inputs to the valuation technique, into a three-level fair value hierarchy. The fair value gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs that are used to measure the securities fall within different levels of the hierarchy, the categorization is based on the lowest level input that is significant to the fair value measurement of the instrument.

26. We are not aware of any financial instruments with off-balance sheet risk or financial instruments with concentrations of credit risk.

27. We have no knowledge of any omissions from the participants' data provided to the System's actuary for the purpose of determining the actuarial present value of the System's benefit obligations and other actuarially determined amounts in the combining financial statements.

28. We agree with the actuarial methods and assumptions used by the actuary for funding purposes and for determining the System's total pension liability and has no knowledge or belief that such methods or assumptions are inappropriate in the circumstances. We did not give any instructions, nor cause any to be given, to the System's actuary with respect to values or amounts derived, and we are not aware of any matters that have impacted the independence or objectivity of the System's actuary.

29. Changes in the actuarial methods or assumptions have been properly accounted for and disclosed in the financial statements.

30. Changes in benefit terms between the actuarial valuation date and the date of this letter have been properly accounted for and disclosed in the financial statements.

31. We acknowledge our responsibility for presenting the Schedules of Changes in the Employer's Net Pension Liability and Related Ratios, Schedules of Employer Contributions, Schedule of Investment Returns, Schedule of Investment Expenses, which the GASB considers to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Such required supplementary information is measured and presented in accordance with US GAAP. The methods of measurement and presentation of the supplemental schedules have not changed from those used in the prior period, and we have disclosed to you any significant assumptions or interpretations underlying the measurement and presentation of the required supplementary schedules.

32. All events subsequent to the date of the combining financial statements through the date of this letter and for which US GAAP requires recognition or disclosure have been recognized or disclosed.

Very truly yours,

New York City Board of Education Retirement System

Sanford Rich

____

Sanford Rich, Executive Director

Chithra Subramaniam

____

Chithra Subramaniam, Director of Fiscal Operations

BERS Board of Education Retirement System of the City of New York

Summary of Unrecorded Misstatements
For the year ended June 30, 2022
(in thousands)

		DR	CR
1	**Current Year Differences on Alternative Investments:**		
	Dr. Net depreciation (CY)	13,042	
	Cr. Investments		13,042
	To adjust the estimated fair value of alternative investments at June 30, 2022.		
	Prior Year Reversing Differences on Alternative Investments:		
	Dr. Net depreciation (PY reversing)	97,233	
	Cr. Net position (PY reversing)		97,233
	To adjust the estimated fair value of alternative investments for the reversing impact of the prior year proposed adjusting journal entry.		

These entries are were identified as part of an annual reconciliation process and are due to a lag between the last reported valuation of the alternative investments and the Plan's fiscal year end.

		DR	CR
2	**Reclassification Adjustments**		
	Dr. Alternative investments	16,477	
	Cr. Investments (MDS)		16,477
	To reclass from Mortgage Debt Securities to Alternative Investments (AFL-CIO Housing Investment Trust)		

3 Disclosure adjustment

Certain investments valued as Net Asset Value Practical Expedient have been reported as level 3 in the Fair Value hierarchy.

IV - FISCAL YEAR 2022 COMBINING FINANCIAL STATEMENTS

New York City Board of Education Retirement System

(A Fiduciary Fund of The City of New York)

Board of Education Retirement System

Combining Financial Statements and Supplementary Information
(Together with Report of Independent Certified Public Accountants)

For the Years Ended June 30, 2022 and 2021

Contents

GRANT THORNTON LLP
757 Third Ave., 9th Floor
New York, NY 10017-2013

D +1 212 599 0100
F +1 212 370 4520

REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

To the Board of Trustees of
New York City Board of Education Retirement System

Opinion

We have audited the combining financial statements of New York City Board of Education Retirement System Qualified Pension Plan and the New York City Board of Education Retirement System Tax-Deferred Annuity Program, which collectively comprise the New York City Board of Education Retirement System (the “System”), which comprise the combining statements of fiduciary net position as of June 30, 2022 and 2021 and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to combining financial statements, which collectively comprise the System’s basic combining financial statements.

In our opinion, the accompanying combining financial statements present fairly, in all material respects, the combining fiduciary net position of the System as of June 30, 2022 and 2021, and the changes in the combining fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for opinion

We conducted our audits of the financial statements in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditor’s Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of management for the financial statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Plan's ability to continue as a going concern for one year after the date the financial statements are available to be issued.

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

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

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the combining financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the combining financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

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

Required supplementary information
Accounting principles generally accepted in the United States of America require that the management’s discussion and analysis, schedule 1 - schedules of changes in the employer’s net pension liability and related ratios for each of the nine years in the period ended June 30, 2022, schedule 2 - schedules of employer contributions for each of the ten years in the period ended June 30, 2022, and schedule 3 - schedule of investment returns for each of the nine years in the period ended June 30, 2022, be presented to supplement the basic combining financial statements. Such information is the responsibility of management and, although not a required part of the basic combining financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic combining financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with US GAAS. These limited

procedures consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic combining financial statements, and other knowledge we obtained during our audit of the basic combining financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Grant Thornton LLP

New York, New York
October 26, 2022

This narrative discussion and analysis of the New York City Board of Education Retirement System's ("BERS", "Funds", the "Plan" or the "System") financial performance provides an overview of the System's combining financial activities for the Fiscal Years ended June 30, 2022 and 2021. It is meant to assist the reader in understanding the System's combining financial statements by providing an overall review of the combining financial activities during the years, the effects of significant changes, and a comparison of the prior years' activities and results. This discussion and analysis is intended to be read in conjunction with the System's combining financial statements. The System administers the BERS Qualified Pension Plan (the "QPP") and the BERS Tax-Deferred Annuity Program (the "TDA Program").

OVERVIEW OF COMBINING FINANCIAL STATEMENTS

The following discussion and analysis is intended to serve as an introduction to the System's combining financial statements. The combining financial statements, which are prepared in accordance with Governmental Accounting Standards Board ("GASB") pronouncements and include the financial statements of the QPP and the TDA Program, are as follows:

- **The Combining Statements of Fiduciary Net Position -** presents the financial position of the System at fiscal year-end. It provides information about: the nature and amounts of resources with present service capacity that the System presently controls (assets); consumption of net assets by the System that is applicable to a future reporting period (deferred outflow of resources); present obligations to sacrifice resources that the System has little or no discretion to avoid (liabilities); and acquisition of net assets by the System that is applicable to a future reporting period (deferred inflow of resources) with the difference between assets/deferred outflow of resources and liabilities/deferred inflow of resources being reported as net position. Investments are shown at fair value. All other assets and liabilities are determined on an accrual basis.

- **The Combining Statements of Changes in Fiduciary Net Position -** presents the results of activities during the fiscal year. All changes affecting the assets/deferred outflow and liabilities/deferred inflow of the System are reflected on an accrual basis when the activity occurred, regardless of the timing of the related cash flows. In that regard, changes in the fair values of investments are included in the year's activity as net appreciation (depreciation) in fair value of investments.

- **The Notes to Combining Financial Statements -** provide additional information that is essential to a full understanding of the data provided in the combining financial statements. The notes present information about the System's accounting policies, significant account balances and activities, material risks, obligations, contingencies and subsequent events, if any.

- **Required Supplementary Information (Unaudited) -** as required by GASB includes the management discussion and analysis (this section) and information presented following the notes to combining financial statements.

FINANCIAL HIGHLIGHTS

QPP Fiduciary Net Position

QPP's net position restricted for pension benefits totaled $5.88 billion during Fiscal Year 2022, a decrease of 16.58% from Fiscal Year 2021. The decrease was the result of a bear stock market as indicated by the decline in the fair value of investments. The fair value of investments, which includes the collateral from security lending, decreased from $9.75 billion in Fiscal Year 2021 to $8.53 billion in Fiscal Year 2022, a decrease of 12.51%. Return on investments stood at -9.41%.

During Fiscal Year 2021, QPP's net position restricted for pension benefits stood at $7.04 billion, an increase of 35.91% from Fiscal Year 2020. The increase in the net position during Fiscal Year 2021 was due to an increase in the fair value of investments. The fair value of investments, including the collateral from security lending, stood at $9.75 billion, an increase of 32.37% from the Fiscal Year 2020. Return on investments stood at 19.37%.

QPP Fiduciary Net Position
June 30, 2022, 2021, and 2020
(In thousands)

	2022	2021	2020
Assets:			
Cash	$ 7,556	$ 12,920	$ 977
Receivables	212,230	304,182	195,190
Investments, at fair value	7,991,279	8,958,857	6,915,714
Collateral from securities lending	541,760	794,242	452,087
Other	319,776	464,473	242,160
Total assets	9,072,601	10,534,674	7,806,128
Liabilities:			
Accounts payable	63,581	78,462	32,441
Payable for investment securities purchased	204,459	436,597	166,434
Accrued benefits payable	12,621	13,150	12,884
Due to the TDA Program's fixed return fund from the System	2,374,096	2,167,983	1,959,392
Payables for securities lending	541,760	794,242	452,087
Total liabilities	3,196,517	3,490,434	2,623,238
Net position restricted for pension benefits	$ 5,876,084	$ 7,044,240	$ 5,182,890

Total receivables decreased from $304.18 million in Fiscal Year 2021 to $212.23 million in Fiscal Year 2022, a decrease of 30.23%. The decrease in the receivables was mainly caused by the decrease in the receivables for investment securities sold. Receivables for investment securities sold totaled $138.29 million in Fiscal Year 2022, a decrease of 40.61% from Fiscal Year 2021. Payables for investment securities purchased also decreased from $436.60 million in Fiscal Year 2021 to $204.46 million in Fiscal Year 2022, a decrease of 53.17% from Fiscal Year 2021.

At the close of Fiscal Year 2021, total receivables increased from $195.19 million in Fiscal Year 2020 to $304.18 million, an increase of 55.83%. Included in the total receivables are the receivables for investment securities sold, which increased from $116.43 million in Fiscal Year 2020 to $232.84 million in Fiscal Year 2021, an increase of 99.97% from Fiscal Year 2020.

The QPP's receivables and payables for investments are primarily generated through the timing differences between the trade and settlement dates for investment securities purchased or sold.

Member loans stood at $48.46 million as of June 30th, 2022, an increase of 2.56% from Fiscal Year 2021.

The account "Due to the TDA Program's fixed return fund from the System" represents a liability to the TDA program since the TDA Program assets are pooled with QPP assets for investment purposes. The liability for Fiscal Year 2022 stood at $2.37 billion, an increase of 9.50% from Fiscal Year 2021. This liability includes the TDA member's account balances for deposits in the fixed investment program.

Changes in QPP Fiduciary Net Position

During Fiscal Year 2022, the QPP member contributions increased to $49.59 million, an increase of 3.04% from Fiscal Year 2021. In Fiscal Year 2021, the QPP member contributions decreased to $48.12 million, a decrease of 3.29% from Fiscal Year 2020 contributions of $49.76 million.

Changes in QPP Program Fiduciary Net Position
Years ended June 30, 2022, 2021, and 2020
(In thousands)

	2022	2021	2020
Additions:			
Member contributions	$ 49,591	$ 48,125	$ 49,766
Employer contributions	262,404	182,983	257,503
Net investment income (loss) before securities lending transaction	(805,356)	1,888,731	364,295
Net securities lending income	1,692	1,020	1,472
TDA Program's interest income in the fixed return fund	(191,054)	(171,806)	(155,749)
Other - receipts from (payments to) other retirement systems and other revenues/expenses	(124,188)	239,808	(7,975)
Total additions	(806,911)	2,188,861	509,312
Deductions:			
Benefit payments and withdrawals	325,679	302,336	296,047
Administrative expenses	35,566	25,175	22,207
Total deductions	361,245	327,511	318,254
Net increase (decrease) in net position	(1,168,156)	1,861,350	191,058
Net position restricted for pension benefits:			
Beginning of year	7,044,240	5,182,890	4,991,832
End of year	$ 5,876,084	$ 7,044,240	$ 5,182,890

Employer contributions received through the QPP Program increased from $182.98 million in the Fiscal Year 2021 to $262.40 million in the Fiscal Year 2022, an increase of 43.40%. The employer contributions are made on a statutory basis based on the one-year lag methodology.

Fiscal Year 2022 reported a net investment loss of $805.36 million. Return on investments decreased from 19.37% in the Fiscal Year 2021 to -9.41% in Fiscal Year 2022.

The benefit payments and withdrawals increased from $302.34 million in the Fiscal Year 2021 to $325.68 million during the Fiscal Year 2022, an increase of 7.72%. Benefit payments to the retirees increased by 6.64%. During Fiscal Year 2021, the benefits payments and withdrawals increased by 2.12%, from $296.05 million to $302.34 million.

Administrative expenses increased from $25.18 million in the Fiscal Year 2021 to $35.57 million in the Fiscal Year 2022, an increase of $10.39 million. The increase was primarily due to the amortization of the rental lease payments and the depreciation of the ERP system. During Fiscal Year 2021, administrative expenses stood at $25.17 million, a net increase of 13.36% from Fiscal Year 2020.

Interest to the TDA Program's fixed return fund represents the statutory interest credited on the TDA Program member account balances. The statutory rate of interest is currently 7.00% for United Federation of Teachers ("UFT") members and 8.25% for all other members. During Fiscal Year 2022, the interest to the TDA Program's fixed return fund stood at $172.36 million, an increase of $16.46 million from Fiscal Year 2021. The table below displays revenue (expenses) to the System due to any surplus or deficiency between the actual rate of return on the fixed investments and the statutory rate.

Net Investment Income (Loss) to the System from TDA Member Holdings in Fixed Return Fund*:

Years ended June 30, 2022, 2021, 2020, 2019, and 2018

(In thousands)

	2022	2021	2020	2019	2018
Net investment income (loss)	$ (791,687)	$ 1,867,031	$ 364,638	$ 403,041	$ 559,753
TDA percent of fixed assets (average)	25.21%	24.60%	26.22%	25.26%	25.13%
Investment income (loss) on account of TDA investment	$ (199,622)	$ 459,255	$ 95,601	$ 101,812	$ 140,661
Less: Statutory interest to TDA**	(172,365)	(155,904)	(142,223)	(128,413)	(115,187)
Revenue (expense) to the System	$ (371,987)	$ 303,351	$ (46,622)	$ (26,601)	$ 25,474

*Includes security-lending income

** Prior amounts have been updated to conform to current year presentation and excludes amounts related to the variable return fund

TDA Program Fiduciary Net Position

The TDA program's net position restricted for TDA benefits stood at $2.74 billion as on June 30th, 2022, a net increase of 8.00% from Fiscal Year 2021. TDA Program's fixed return fund from the System, increased by 9.50% from Fiscal Year 2021. Amount due to the TDA Program's fixed return fund from the System increased from $2.16 billion in Fiscal Year 2021 to $2.37 billion in Fiscal Year 2022. Fair value of variable investments including collateral security lending stood at $637.15 million, a decrease of 19.31%, from Fiscal Year 2021.

During Fiscal Year 2021, the TDA Program's net position restricted for TDA benefits increased to $2.54 billion, a net increase of $206.96 million or 8.85% from Fiscal Year 2020. The increase in Fiscal Year 2021 was primarily due to an increase in the fair value of investments and the amounts due to the TDA Program's fixed return fund from the System, which increased by 45.22% and 10.64%, respectively. The TDA Program's total investments including collateral security lending stood at $789.66 million, an increase of $245.91 million from Fiscal Year 2020. Amounts due to the TDA Program's fixed return fund from the

System increased by 10.64% in the Fiscal Year 2021, from $1.95 billion for the Fiscal Year 2020 to $2.16 billion in the Fiscal Year 2021.

TDA Program Fiduciary Net Position

June 30, 2022, 2021, and 2020

(In thousands)

	2022	2021	2020
Assets:			
Cash	$ 556	$ 407	$ 398
Receivables	48,802	46,345	44,400
Due to the TDA Program's fixed return fund from the System	2,374,096	2,167,983	1,959,392
Investments, at fair value	602,475	754,622	540,275
Collateral from securities lending	34,684	35,039	3,480
Total assets	3,060,613	3,004,396	2,547,945
Liabilities:			
Other liability	269,491	414,297	195,228
Payable for investment securities purchased	529	168	711
Accrued benefits payable	8,681	11,174	11,776
Payables for securities lending transactions	34,684	35,039	3,480
Total liabilities	313,385	460,678	211,195
Net position restricted for TDA benefits	$ 2,747,228	$ 2,543,718	$ 2,336,750

Receivables and payables for investment stood at $0.27 million and $0.52 million, respectively, as on June 30th, 2022. Payables for collateral security lending stood at $34.68 million. The TDA Program's receivables and payables are primarily generated through the timing differences between the trade and settlement dates for investment securities purchased or sold within the variable return fund. Total receivables increased by $2.45 million during Fiscal Year 2022, an increase of 5.35% from Fiscal Year 2021. Included in these receivables, the TDA Program's member loans outstanding increased from $44.75 million in the Fiscal Year 2021 to $47.14 million in the Fiscal Year 2022, an increase of 5.35% from the Fiscal Year 2021.

At the end of Fiscal Year 2021, total receivables increased by $1.94 million, an increase of 4.38% from Fiscal Year 2020. Included in these receivables, the TDA Program's member loans outstanding increased from $42.81 million in the Fiscal Year 2020 to $44.75 million in the Fiscal Year 2021, an increase of 4.51% from the Fiscal Year 2020.

Changes in TDA Program Fiduciary Net Position

During Fiscal Year 2022, member contributions to the TDA Program was at $111.68 million, contributions marginal increased by 0.09% from fiscal year 2021. The number of contributing members declined by 1.86%. Net investment income decreased from $233.35 million in the Fiscal Year 2021 to a net loss of $119.08 million in the Fiscal Year 2022, a decrease of $352.44 million.

During Fiscal Year 2021, member contributions to the TDA Program increased to $111.58 million, a 1.48% increase from the $109.94 million contributed in Fiscal Year 2020. Net investment income increased from $14.91 million in the Fiscal Year 2020 to $233.35 million in the Fiscal Year 2021, a net increase of $218.44 million.

Changes in TDA Program Fiduciary Net Position

Years ended June 30, 2022, 2021, and 2020

(In thousands)

	2022	2021	2020
Additions:			
Member contributions	$ 111,685	$ 111,580	$ 109,944
Net investment income (loss) before securities lending transaction	(119,188)	233,245	14,838
Net securities lending income	102	112	74
TDA Program's interest income in the fixed return fund	191,054	171,806	155,749
Other - receipts from (payments to) other retirement systems and other revenues/expenses	115,459	(239,773)	2,945
Total additions	299,112	276,970	283,550
Deductions:			
Benefit payments and withdrawals	95,317	69,743	74,051
Administrative expenses	285	259	167
Total deductions	95,602	70,002	74,218
Net increase (decrease) in net position	203,510	206,968	209,332
Net position restricted for TDA benefits:			
Beginning of year	2,543,718	2,336,750	2,127,418
End of year	$ 2,747,228	$ 2,543,718	$ 2,336,750

Benefit payments and withdrawals increased from $69.74 million in Fiscal Year 2021 to $95.31 million in Fiscal Year 2022, an increase of $25.57 million or 36.66%. The increase was primarily due to the increase in the benefit payments for required minimum distributions ("RMD") withdrawals. The waiver for required minimum distributions per the Coronavirus Aid, Relief, and Economic Security Act ("CARES") Act, was not extended to calendar year 2021. The RMD payments increased from $9.06 million in Fiscal Year 2021 to $29.84 million in Fiscal Year 2022.

During Fiscal Year 2021, the benefit payments and withdrawals stood at $69.74 million, a decrease of $4.30 million from Fiscal Year 2020. The decrease was primarily due to the net impact of the benefit payments towards death benefits and refund payments. The death benefit payments increased from $20.69 million in Fiscal Year 2020 to $26.87 million in Fiscal Year 2021, an increase of $6.17 million from Fiscal Year 2020. The refund payments stood at $42.40 million in Fiscal Year 2021, a decrease of $10.47 million from Fiscal Year 2020.

Investment Summary

Investments held by BERS' QPP and TDA Programs (which include the fixed fund and the variable fund programs), including collateral from securities lending transactions from both programs, are listed according to their investment classification in the following table:

Investment Summary

Fair Value

(In thousands)

	June 30, 2022	June 30, 2021	June 30, 2020
Short-term investments	$ 270,497	$ 350,053	$ 256,725
Debt (fixed income) securities	2,103,604	2,585,380	1,954,884
Equity securities	4,147,837	5,238,122	3,298,510
Collective trust funds	92,540	116,667	969,794
Alternative investments	1,979,276	1,423,257	976,076
Collateral from securities lending	576,444	829,281	455,567
Total	$ 9,170,198	$ 10,542,760	$ 7,911,556

Because the QPP's liabilities are of a long-term nature, the assets of the QPP and the TDA Programs are invested with a long-term investment horizon. Assets are invested in a diversified portfolio of capital market securities. Investments in these assets are expected to produce higher returns but are also subject to greater volatility and may produce negative returns. The System's investments decreased by 13.02% in Fiscal Year 2022 and increased by 33.26% in the Fiscal Year 2021 and 6.17% in Fiscal Year 2020.

CONTACT INFORMATION

This financial report is designed to provide a general overview of the New York City Board of Education Retirement System's finances. Questions concerning any data provided in this report or requests for additional information should be directed to the Director of Fiscal Operations, New York City Board of Education Retirement System, 55 Water Street, 50th Floor, New York, New York 10041.

New York City Board of Education Retirement System

COMBINING STATEMENT OF FIDUCIARY NET POSITION

June 30, 2022
(In thousands)

	QPP	TDA Program	Eliminations	Total
ASSETS				
Cash	$ 7,556	$ 556	$ -	$ 8,112
Receivables:				
Investment securities sold	138,290	271	-	138,561
Accrued interest and dividends	25,062	1,382	-	26,444
Member loans	48,461	47,149	-	95,610
Other	417	-	-	417
Total receivables	212,230	48,802	-	261,032
Investments - at fair value: (Notes 2 and 3)				
Fixed return funds:				
Short-term investments:				
Commercial paper	201,539	-	-	201,539
Short-term investment fund	60,875	-	-	60,875
T-bills and discount notes	2,409	-	-	2,409
Debt (fixed income) securities	2,103,604	-	-	2,103,604
Equity securities	3,493,244	-	-	3,493,244
Collective trust funds:				
International equity	1,524	-	-	1,524
Domestic equity	70,349	-	-	70,349
Mortgage debt security	20,493	-	-	20,493
Fixed income	174	-	-	174
Alternative investments	1,979,276	-	-	1,979,276
Collateral from securities lending	538,433	-	-	538,433
Variable return funds:				
Short-term investments	497	5,177	-	5,674
Debt (fixed income) securities	-	-	-	-
Equities	57,295	597,298	-	654,593
Collateral from securities lending	3,327	34,684	-	38,011
Total investments	8,533,039	637,159	-	9,170,198
Due to the TDA Program’s fixed return fund from System	-	2,374,096	(2,374,096)	-
Other assets	319,776	-	(269,491)	50,285
Total assets	9,072,601	3,060,613	(2,643,587)	9,489,627
LIABILITIES				
Accounts payable	63,581	-	-	63,581
Other liability	-	269,491	(269,491)	-
Payable for investment securities purchased	204,459	529	-	204,988
Accrued benefits payable	12,621	8,681	-	21,302
Due to the TDA Program’s fixed return fund from System	2,374,096	-	(2,374,096)	-
Payables for securities lending	541,760	34,684	-	576,444
Total liabilities	3,196,517	313,385	(2,643,587)	866,315
Net position restricted for benefits:				
Net position restricted for QPP (Qualified Pension Plan) benefits	5,876,084	-	-	5,876,084
Net position restricted for TDA (Tax-Deferred Annuity) benefits	-	2,747,228	-	2,747,228
Total net position restricted for benefits	$ 5,876,084	$ 2,747,228	$ -	$ 8,623,312

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

New York City Board of Education Retirement System

COMBINING STATEMENT OF FIDUCIARY NET POSITION

June 30, 2021
(In thousands)

	QPP	TDA Program	Eliminations	Total
ASSETS				
Cash	$ 12,920	$ 407	$ -	$ 13,327
Receivables:				
Investment securities sold	232,846	341	-	233,187
Accrued interest and dividends	23,673	1,252	-	24,925
Member loans	47,251	44,752	-	92,003
Other	412	-	-	412
Total receivables	304,182	46,345	-	350,527
Investments - at fair value: (Notes 2 and 3)				
Fixed return funds:				
Short-term investments:				
Commercial paper	135,880	-	-	135,880
Short-term investment fund	86,487	-	-	86,487
T-bills and discount notes	121,533	-	-	121,533
Debt (fixed income) securities	2,565,100	-	-	2,565,100
Equity securities	4,436,044	-	-	4,436,044
Collective trust funds:				
International equity	1,964	-	-	1,964
Domestic equity	90,709	-	-	90,709
Mortgage debt security	23,482	-	-	23,482
Fixed income	512	-	-	512
Alternative investments	1,423,257	-	-	1,423,257
Collateral from securities lending	790,811	-	-	790,811
Variable return funds:				
Short-term investments	549	5,604	-	6,153
Debt (fixed income) securities	1,809	18,471	-	20,280
Equities	71,531	730,547	-	802,078
Collateral from securities lending	3,431	35,039	-	38,470
Total investments	9,753,099	789,661	-	10,542,760
Due to the TDA Program’s fixed return fund from System	-	2,167,983	(2,167,983)	-
Other assets	464,473	-	(414,297)	50,176
Total assets	10,534,674	3,004,396	(2,582,280)	10,956,790
LIABILITIES				
Accounts payable	78,462	-	-	78,462
Other liability	-	414,297	(414,297)	-
Payable for investment securities purchased	436,597	168	-	436,765
Accrued benefits payable	13,150	11,174	-	24,324
Due to the TDA Program’s fixed return fund from System	2,167,983	-	(2,167,983)	-
Payables for securities lending	794,242	35,039	-	829,281
Total liabilities	3,490,434	460,678	(2,582,280)	1,368,832
Net position restricted for benefits:				
Net position restricted for QPP (Qualified Pension Plan) benefits	7,044,240	-	-	7,044,240
Net position restricted for TDA (Tax-Deferred Annuity) benefits	-	2,543,718	-	2,543,718
Total net position restricted for benefits	$ 7,044,240	$ 2,543,718	$ -	$ 9,587,958

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

New York City Board of Education Retirement System

COMBINING STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Year ended June 30, 2022
(In thousands)

	QPP	TDA Program	Total
Additions			
Contributions:			
Member contributions	$ 49,591	$ 111,685	$ 161,276
Employer contributions	262,404	-	262,404
Total contributions	311,995	111,685	423,680
Investment income (loss):			
Interest income	130,765	5,165	135,930
Dividend income	101,584	11,873	113,457
Net appreciation (depreciation) in fair value of investments	(976,018)	(134,362)	(1,110,380)
Total investment income (loss)	(743,669)	(117,324)	(860,993)
Less - investment expenses	(61,687)	(1,864)	(63,551)
Net investment income (loss), before securities lending transactions	(805,356)	(119,188)	(924,544)
Securities lending transactions:			
Securities lending income	1,874	114	1,988
Securities lending fees	(182)	(12)	(194)
Net securities lending income	1,692	102	1,794
Net investment income (loss)	(803,664)	(119,086)	(922,750)
Other - receipts from (payments to) other retirement systems and other revenues/expenses	(124,188)	115,459	(8,729)
TDA Program's interest income in the fixed return fund	(191,054)	191,054	-
Total additions	(806,911)	299,112	(507,799)
Deductions			
Benefit payments and withdrawals	325,679	95,317	420,996
Administrative expenses	35,566	285	35,851
Total deductions	361,245	95,602	456,847
Net increase (decrease) in net position	(1,168,156)	203,510	(964,646)
Net position restricted for benefits:			
Beginning of year	7,044,240	2,543,718	9,587,958
End of year	$ 5,876,084	$ 2,747,228	$ 8,623,312

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

New York City Board of Education Retirement System

COMBINING STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Year ended June 30, 2021
(In thousands)

	QPP	TDA Program	Total
Additions			
Contributions:			
Member contributions	$ 48,125	$ 111,580	$ 159,705
Employer contributions	182,983	-	182,983
Total contributions	231,108	111,580	342,688
Investment income:			
Interest income	95,613	2,884	98,497
Dividend income	82,601	8,632	91,233
Net appreciation in fair value of investments	1,753,472	222,870	1,976,342
Total investment income	1,931,686	234,386	2,166,072
Less - investment expenses	(42,955)	(1,141)	(44,096)
Net investment income, before securities lending transactions	1,888,731	233,245	2,121,976
Securities lending transactions:			
Securities lending income	1,140	124	1,264
Securities lending fees	(120)	(12)	(132)
Net securities lending income	1,020	112	1,132
Net investment income	1,889,751	233,357	2,123,108
Other - receipts from (payments to) other retirement systems and other revenues/expenses	239,808	(239,773)	35
TDA Program’s interest income in the fixed return fund	(171,806)	171,806	-
Total additions	2,188,861	276,970	2,465,831
Deductions			
Benefit payments and withdrawals	302,336	69,743	372,079
Administrative expenses	25,175	259	25,434
Total deductions	327,511	70,002	397,513
Net increase in net position	1,861,350	206,968	2,068,318
Net position restricted for benefits:			
Beginning of year	5,182,890	2,336,750	7,519,640
End of year	$ 7,044,240	$ 2,543,718	$ 9,587,958

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

NOTE 1 - SYSTEM DESCRIPTION

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

BERS administers the BERS Qualified Pension Plan (the “QPP”) and the BERS Tax-Deferred Annuity Program (the “TDA Program”). BERS is the fiduciary for the QPP and the TDA Program, which are included under BERS in the Pension and Other Employee Benefit Trust Funds section of The City’s Annual Comprehensive Financial Report (“ACFR”). GASB Statement No. 98, *The Annual Comprehensive Financial Report*, establishes the term annual comprehensive financial report and its acronym ACFR. The new term replaces comprehensive annual financial report and its acronym in generally accepted accounting principles for state and local governments.

The QPP is a cost-sharing, multiple-employer pension plan. The QPP provides pension benefits for non-pedagogical employees of the New York City Department of Education, certain other specific schools, and certain employees of the New York City School Construction Authority (collectively, the “Employer”). Substantially, all Department of Education non-pedagogical permanent employees, other than members of TRS, become members of the QPP on the first day of permanent employment. Employees classified as noncompetitive, exempt or provisional by Civil Service are eligible to enroll in the QPP voluntarily. For voluntary enrollment, membership date is governed by the date of filing.

The QPP functions in accordance with existing State statutes and City laws, which establish and amend the benefit terms and the Employer and member contribution requirements. It combines features of a defined benefit pension plan with those of a defined contribution pension plan but is considered a defined benefit pension plan for financial reporting purposes. Contributions are made by the Employer and the members.

At June 30, 2022, June 30, 2021, June 30, 2020, June 30, 2019, June 30, 2018, June 30, 2017, and June 30, 2016, the QPP's membership consisted of:

	2022*	2021	2020	2019	2018	2017	2016
Retirees and beneficiaries receiving benefits	19,979	19,448	19,120	18,502	18,041	17,425	16,937
Terminated vested members not receiving benefits	2,169	1,972	1,972	2,019	1,934	1,528	851
Terminated non-vested members **	12,374	8,922	8,826	11,422	10,525	2,618	2,629
Active members receiving salary	25,629	27,556	28,183	25,825	25,864	25,794	25,864
Total	60,151	57,898	58,101	57,768	56,364	47,365	46,281

* Preliminary figures.

** As of June 30, 2020, represents terminated members (and members deemed to be terminated) who are not vested in a pension benefit but who are eligible to withdraw their employee contribution account balance only. As of June 30, 2018, represents terminated members who are not vested in a pension benefit but who are eligible to withdraw their employee contribution account balance, and members who are no longer on payroll but who are not otherwise classified. Prior to June 30, 2018, represents members who are no longer on payroll but not otherwise classified.

BERS is a fiduciary component unit of The City and is included in The City's Annual Report as a Pension and Other Employee Benefit Trust Fund.

The TDA Program was created and is administered pursuant to the Internal Revenue Code ("IRC") Section 403(b) and existing State statutes and City laws. Certain 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 tax-deferred contributions until the period after retirement or upon withdrawal of contributions. Contributions to the TDA Program are made by the members only. The TDA Program is maintained as a separate plan.

The TDA Program participants consisted of the following as of June 30:

	2022	2021	2020	2019	2018	2017	2016
Contributing members	18,205	18,551	19,148	18,881	17,899	16,917	16,113
Retired members with TDA balances	8,124	7,628	7,102	6,798	6,484	6,673	5,844

Summary of Benefits

QPP Benefits

The New York State Constitution provides that pension rights of public employees are contractual and shall not be diminished or impaired. In 1973, 1976, 1983, 2012, and 2022, significant amendments made to the New York State Retirement and Social Security Law ("RSSL") modified certain benefits and member contributions for employees joining the QPP on or after the effective date of such amendments. As such, benefits under the QPP fall into various categories based on the year when an employee joined the QPP. A brief overview follows:

- Members who joined prior to July 1, 1973 ("Tier 1") are entitled to service retirement benefits of 55% of "final salary" (as defined within State statutes and City laws) after 25 years of qualifying service and attainment of age 55, a portion of which is provided from member contributions. Additional benefits equal to a specified percentage per year of service of "final salary" are payable for years in excess of the 25-year minimum. These additional 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 the Increased-Take-Home Pay ("ITHP") contributions accumulated after the 25th year of member qualifying service. ITHP represents amounts contributed by The City 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. Tier 1 members contribute on the basis of a normal rate of contribution which is assigned by the QPP at membership and which is dependent upon age and actuarial tables in effect at the time of membership.

  In addition, these same members could elect a service retirement benefit with no minimum service requirement which 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 upon attainment of age 55. This benefit is increased, where applicable, by an annuity attributable to the member contributions and ITHP contributions.

- For all members who enrolled in the QPP prior to July 27, 1976 ("Tier 1" and "Tier 2"), ITHP contributions made on their behalf as well as their own contributions are invested, at their election, in either the fixed return fund or the variable return fund, or 50% of such contributions in each. These investment elections can be changed every two years. The QPP guaranteed a 7.5% return on member contributions or ITHP contributions to the fixed return fund until June 30, 1982, increased the guaranteed return to 8% as of July 1, 1982, and to 8.25% as of July 1, 1988, for members who enrolled in the QPP prior to July 27, 1976 (5% on member contributions for members enrolled on or after July 27, 1976). The variable return fund includes only member contributions and ITHP contributions made on their behalf as described above and is expressed in terms of units, which are valued monthly, based on investment experience.

- Certain members of Tier 1 and Tier 2 have the right to make voluntary member contributions ("Voluntary Contributions") in excess of their required member contributions ("Required Contributions"). The investment of the Voluntary Contributions and the Required Contributions is directed by each member. A member may invest: (1) in the QPP's fixed return fund, which is credited with interest at the Statutory Interest Rate (currently 8.25% (7.0% for United Federation of Teachers ("UFT") members)); and/or (2) in the QPP's variable return fund. At the time of retirement or refund of contributions, a member's aggregate balance of actual Required Contributions and Voluntary Contributions, including the actual accumulated earnings thereon, less the outstanding balance of any member loans ("Net Actual Contributions"), may exceed ("Excess of Contributions") or fall short of ("Deficiency of Contributions") the member's Expected Balance. The Expected Balance is the sum of the Required Contributions which a member should have made during his or her credited service, plus the earnings that would have accumulated thereon at the Statutory Interest rate. The amount of the member's retirement annuity or the refund of contributions that he or she is entitled to is increased by any Excess of Contributions or reduced by any Deficiency of Contributions. The total value of active members' Excess of Contributions, net of all Deficiencies of Contributions, is $2.50 million and $2.62 million, for the years ended June 30, 2022 and 2021, respectively. Actuarial estimates of the impacts of Excesses and Deficiencies are incorporated into the calculation of the QPP's net pension liability (see Note 5).

- Members who joined after July 1, 1973 and before July 27, 1976 ("Tier 2") have provisions similar to Tier 1, except that the eligibility requirements for retirement and the salary base for benefits are different and there was a limitation on their maximum benefit. Also, certain members retiring prior to age 62 may have their benefit reduced by an age-based factor. This maximum benefit limitation was subsequently eliminated under Chapter 574 of the Laws of 2000 for all Tier 2 members who retired after December 8, 2000. Tier 2 members contribute on the basis of a normal rate of contribution which is assigned by the QPP at membership, and which is dependent upon age and actuarial tables in effect at the time of membership.

- Members who joined the QPP on or after July 27, 1976 and prior to September 1, 1983 ("Tier 3") were originally entitled to a retirement benefit upon the completion of 10 years of service at age 62. The formula for this benefit was 1.67% of "Final Average Salary" ("FAS") per year of credited service for members with less than 20 years of service, or 2% of FAS per year of service for members with 20 to 30 years of service. Tier 3 benefits were reduced by one half of the primary Social Security benefit attributable to service with the Employer and provided an annual cost-of-living escalator in pension benefits of not more than 3%. Tier 3 required member contributions of 3% of salary for a period not to exceed 30 years. After September 1, 1983, all Tier 3 members were mandated into the Tier 4 plan. However, these members retain their Tier 3 rights. Effective October 1, 2000, Tier 4 members with Tier 3 rights, like other Tier 4 members, are not required to make contributions once the 10th anniversary of their membership date has passed, or upon completion of 10 years of credited service, whichever is earlier, and are eligible for a pension upon the completion of five years of credited service at age 62.

- Members who joined the QPP on or after September 1, 1983 and prior to April 1, 2012 ("Tier 4") are eligible for a pension upon the completion of five years of credited service at age 62. The annual benefit is 1.67% of FAS per year of service for members with less than 20 years of service, or 2% of FAS per year of service for members with 20 to 30 years of service, plus an addition of 1.5% of FAS per year of service for service in excess of 30 years of service. Tier 4 members were originally required to make contributions of 3% of salary until termination of service. As of October 1, 2000, these members are not required to make contributions after the 10th anniversary of their membership date or upon completion of 10 years of credited service, whichever is earlier (Chapter 126 of Laws of 2000). Certain members retiring prior to age 62 have their benefit reduced by an age-based factor.

- Effective June 28, 1995, active Tier 2 and Tier 4 members, excluding those who hold a position represented by the recognized teacher organization for collective bargaining purposes (currently, the UFT), were eligible to enroll in an early retirement program permitting them to retire at age 55 with 25 years of credited service ("55/25"), with no age reduction factor to their retirement allowance, or at age 50 with 25 years of credited service in a physically taxing position (Chapter 96 of the Laws of 1995). Additionally, Tier 4 members in non-UFT positions who joined BERS on or after June 28, 1995 and before April 1, 2012 were mandated into an early retirement program permitting them to retire at age 57 with 5 years of credited service ("57/5"), with no age reduction factor to their retirement allowance, or at age 50 with 25 years of credited service in a physically taxing position. Participants in the 55/25 and 57/5 early retirement programs are required to remit additional contributions of 1.85%, or 3.83% for physically taxing positions.

- Effective February 27, 2008, active Tier 4 members who hold a position represented by the recognized teacher organization for collective bargaining purposes (currently, UFT) were eligible to enroll in an early retirement program permitting them to retire at age 55 with 25 years of credited service ("55/25 UFT"), with no age reduction factor to their retirement allowance (Chapter 19 of the Laws of 2008). 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. UFT members in eligible titles who joined after February 27, 2008, but before December 10, 2009 were automatically enrolled in the 55/27 retirement program. Participants in the 55/27 retirement may retire if they are at least age 55 as of their retirement date and have attained at least 27 years of credited service. These members are required to make additional plan contributions of 1.85% of salary until they have accumulated 27 years of credited service.

- UFT members in covered titles who joined the QPP after December 10, 2009 and prior to April 1, 2012 are covered by 55/27 UFT but 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 (Chapter 504 of the Laws of 2009).

- Members who join the QPP on or after April 1, 2012 are subject to the provisions of Chapter 18 of the Laws of 2012 ("Chapter 18/12"), also known as "Tier 6". BERS members in Tier 6 are eligible for a pension upon the completion of 10 years of credited service at age 63. The annual benefit is 1.67% of FAS for the first 20 years of credited service, or 35% upon the attainment of 20 years of service plus an addition of 2% of FAS per year of service for service in excess of 20 years of service. Additionally, the FAS period is five years, rather than three, and a cap is imposed on the maximum permissible FAS. Tier 6 members are required to make Basic Member Contributions ("BMC") until they separate from service or until they retire. The BMC rate is dependent on annual wages earned during a plan year and ranges from 3% for salaries less than $45,000 to 6% for salaries greater than $100,000. Tier 6 members become vested after 10 years of service.

- 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.

- The QPP provides death benefits and retirement benefits on the occurrence of accidental or ordinary disability.

- During the Spring 2000 session, the State Legislature approved and the State Governor ("Governor") signed laws that provide automatic Cost-of-Living Adjustments ("COLA") for certain retirees and beneficiaries (Chapter 125 of the Laws of 2000). It also provides additional service credits for certain Tier 1 and Tier 2 members and reduced member contributions for certain Tier 3 and Tier 4 members (Chapter 126 of the Laws of 2000). COLA is payable to all members who are either: (1) at least age 62 and have been retired for at least five years; or (2) at least age 55 and have been retired for at least 10 years. Additionally, COLA is payable to members who retired for disability after being retired for five or more years and beneficiaries receiving accidental death benefits who have been receiving them for at least five years. COLA is one-half of the increase in the 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.

- Chapter 56 of the Laws of 2022, signed on April 9, 2022, was passed as part of the budget and provided for the following three relevant parts. Part HH waives RSSL 211 and 212 approval and income limitations on retirees as a result of earnings from employment in public schools in the state. It is deemed repealed June 30, 2023. Part SS excludes certain forms of overtime and extracurricular compensation from the salary used to determine Tier 6 BMC Contribution Rates during the specified period of 2022 through 2024. Part TT reduces the Tier 6 vesting requirement from 10 years to 5 years and allows for retirement with 5 years of service.

TDA Program Benefits

Contributions to the TDA Program are made by the members only and are voluntary. In order to contribute to the TDA Program, certain active members of the QPP are required to submit a salary reduction agreement and TDA enrollment request. A participant may elect to exclude an amount of his or her compensation from current taxable income (within the maximum allowed by the Internal Revenue Service ("IRS")) by contributing it to the TDA Program. The basic contribution limit, as of 2022 is $20,500. Participants, who have attained age 50, are permitted to make additional contributions. The additional contribution limit for 2022 is $6,500. Additionally, participants can elect to invest their contributions in either the fixed return fund or the variable return fund.

Benefits provided under the TDA Program are derived from participants' accumulated contributions and earnings on those contributions. No contributions are provided by the Employer.

A participant may withdraw all or part of the balance of his or her account at the time of retirement, termination of employment, or under certain hardship conditions. Beginning January 1, 1989, the tax laws restricted withdrawals of TDA contributions and accumulated earnings thereon for reasons other than retirement or termination.

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

Contributions made on or before December 31, 1989, and earnings credited on or before that date, may be withdrawn by active participants even before age 59½. A member who has received a hardship withdrawal may continue to contribute to the TDA Program for the remainder of the current year.

If a member dies in active service or after retirement while his or her TDA account is in deferral, the full value of his or her account at the date of death is paid to the member's beneficiary(ies) or estate.

When a member resigns before attaining vested rights under the QPP, he or she may withdraw the value of his or her TDA Program account or leave the funds in the account for a period of up to five years after the date of resignation. If a member resigns after attaining vested rights under the QPP, he or she may leave his or her funds in the TDA Program account, accruing earnings until reaching the age at which minimum distributions are required by IRS regulations. Once a member withdraws from the QPP, participation in the TDA Program will cease, and the member will receive a refund of the value of his or her account in the TDA Program.

When a TDA Program participant applies to retire from the QPP and has a positive TDA Program account balance, the participant has three options:

a. The participant may withdraw the total balance, either by receiving it as a taxable distribution or by rolling it over into an Individual Retirement Account ("IRA");

b. The participant may defer distribution of the account; or

c. The participant may elect to receive the balance of the account as a life annuity. The available benefit options depend on the member's Tier.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting - The QPP and the TDA Program use the accrual basis of accounting where the measurement focus is on a 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 respective employers make payroll deductions from the QPP's members and the TDA Program participants. Employer contributions to the QPP are recognized when due and the Employer has made a formal commitment to provide the contributions. Benefit payments and withdrawals are recognized when due and payable in accordance with the terms of governing the QPP and the TDA Program.

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

Cash and Cash Equivalents - Cash equivalents consist of financial instruments with original maturity dates of three months or less.

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

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

Investment Programs - The System's assets are invested in two investment programs. These are the fixed return fund, which is managed by BERS and the variable return fund (consisting primarily of equity securities), which is managed by TRS.

Under the fixed return program, members' TDA Program accounts are credited with the statutory rate of interest, currently 7% for UFT members and 8.25% for all other members. TDA Program members and certain Tier 1 and 2 QPP members may transfer their balances between the fixed return fund and the variable return fund on a quarterly basis.

The QPP's assets within the variable return fund are co-invested with those assets of the TDA Program that are earmarked for the variable return fund. These combining financial statements reflect the QPP investment activity in the fixed return fund; as well as the variable return fund.

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 by BERS for overdrawn bank balances, accrued administrative and investment expenses. BERS's practice is to fully invest cash balances in most bank accounts on a daily basis. Overdrawn balances result primarily from outstanding benefit checks that are presented to the banks for payment on a daily basis and these balances are routinely settled each day.

Accrued Benefits Payable - Accrued benefits payable represent benefits due and unpaid by the QPP and the TDA Program for the Fiscal Year ended on June 30.

Interest (to) from TDA Program's Fixed Return Fund - The statutory interest credited on TDA Program member account balances invested in the fixed return fund is reported as the "Interest (to) from TDA Program's Fixed Return Fund."

Inter-Plan Eliminations – Included on the Combining Statements of Fiduciary Net Position and the Combining Statements of Changes in Fiduciary Net Position is an elimination column, the purpose of which is to remove from the statement any transactions involving dealings between reported entities.

Securities Lending Transactions - State statutes and Board policies permit the System to lend its investments to broker-dealers and other entities for collateral, for the same securities in the future with a simultaneous agreement to return the collateral in the form of cash, U.S. Treasury and U.S. Government securities. The Systems' 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 System receives 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, 2022 and 2021, management believes that the System has no credit risk exposure to borrowers because the fair value of collateral held by the System equaled or exceeded the fair value of securities lent to the borrowers. The contracts with the System's Securities Lending Agent (the "Agent") require the Agent to indemnify the System as follows: In the situation when a borrower goes into default, the Agent will liquidate the collateral to purchase replacement securities. Any shortfall before the replacement securities cost and the collateral value is covered by the Agent. All Securities loans can be terminated on demand within a period specified in each agreement by either the System or the borrowers. Cash collateral is invested by the securities lending agent using approved Lender's Investment guidelines. The weighted-average maturity is 53.12 days for collateral investments.

The securities lending program in which the System participates only allows pledging or selling securities in the case of borrower default.

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. Securities received as collateral are also reported as assets if the government entity has the ability to pledge or sell them without a borrower default. Accordingly, the System recorded the investments purchased with the cash collateral as collateral from securities lending with a corresponding liability for securities lending. Securities on loan are carried at market value, the values reported by the QPP as of June 30, 2022 and 2021 are $526.46 million and $774.48 million, respectively. As of net position date, the maturities of the investments made with cash collateral on average exceed the maturities of the securities loans by approximately 44.52 days.

GASB Statement No. 72, *Fair Value Measurement and Application* ("GASB 72") describes fair value as an exit price, requiring investments to be categorized under a fair value hierarchy prescribed by GASB. GASB 72 establishes a hierarchy of inputs used to measure fair value consisting of three levels based on market price observability. Level 1 inputs are quoted prices in active markets for identical assets or liabilities.

Level 2 inputs are inputs, other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, and typically reflect management's estimates of assumptions that market participants would use in pricing the asset or liability. GASB 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that were used for the fair value measurements.

New Accounting Standards Adopted

GASB Statement No. 87, *Leases*, improves the usefulness of governmental financial statements to users by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this Statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources, thereby enhancing the relevance and consistency of information about governments' leasing activities. Management has evaluated all leases and determined there was no material impact as a result of adoption of GASB Statement No. 87.

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

NOTE 3 - INVESTMENTS AND DEPOSITS

The Comptroller of the City of New York (the "Comptroller") acts as an investment advisor to BERS. In addition, BERS employs staff and independent investment consultants as an investment advisor. BERS utilizes several investment managers to manage the long-term debt and equity portfolios. The managers are regularly reviewed, with regard to both their investment performance and their adherence to investment guidelines.

The BERS investment policy statement was ratified by the Board of Trustees in January 2009 and amended in October 2011, January 2013, February 2015, June 2016, April 2020, and December 2021. It addresses investment objectives, investment philosophy and strategy, monitoring and evaluating performance, risk management, security lending protocol and rebalancing investment mix. Assets may be invested in fixed income, equity and other vehicles as permitted by RSSL § 176-178(a) and Banking Law § 235, the New York City Administrative Code and the Legal Investments for New York Savings Banks list as published by the New York State Banking Department. However, investments up to 25% of total System assets may be made in instruments not expressly permitted by the RSSL.

The System does not possess an investment risk policy statement, nor does it actively manage its assets to specified risk targets. Rather, investment risk management is an inherent function of the System's asset allocation process. QPP and TDA Program assets are diversified over a broad range of asset classes and encompass multiple investment strategies aimed at limiting concentration risk.

State Street Bank and Trust Company ("State Street") is the primary custodian for the fixed return fund. The variable return fund assets are held in custody at JPMorgan Chase Bank.

The legal requirements for the System's investments are as follows:

a. Fixed income, equity and other investments may be made as permitted by RSSL § 176-178(a) and Banking Law § 235, the New York City Administrative Code, and the Legal Investments for New York Savings Banks list as published by The New York State Banking Department, subject to Note 3(b).

b. Investments up to 25% of total pension fund assets may be made in instruments not expressly permitted by the RSSL.

The information reflected in the credit ratings and in the years to maturity is derived from the Custodian's Risk and Performance Analytics Reporting System. Such information is prepared as a result of the Custodian's Risk Management Analysis.

Concentrations - In accordance with RSSL § 177, no investment in any individual company may represent more than 2% of the Plan's total net assets or 5% of the company's total outstanding shares. Exclusions apply for obligations of the United States, or those for which the faith of the United States is pledged to provide payment of the interest and principal.

Credit Risk - The possibility of a loss or default resulting from a borrower's inability to repay a loan or fulfill its contractual debt obligations. Portfolios other than U.S. Government and related portfolios, have credit rating limitations. Investment Grade portfolios are limited to mostly ratings, of BBB/Baa2 and above, except that they are also permitted a 10% maximum exposure to BB & B/Ba2 & B2 rated securities. While high yield non-investment grade managers primarily invest in BB & B/Ba2 & B2 rated securities, they can also invest up to 10% of their portfolio in securities rated CCC/Caa2. The quality ratings of the fund's investments, by percentage of the rated portfolio, as described by nationally recognized statistical rating organizations, at June 30, 2022 and 2021 are as follows:

Investment Type Fixed Funds June 30, 2022	Moody's Quality Ratings Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa & Below	Not Rated	Total
U.S. government	41.59%	-%	0.01%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.49%	42.09%
Corporate bonds	1.32%	0.04%	0.14%	0.05%	1.27%	2.08%	1.53%	2.88%	2.90%	4.01%	3.06%	4.14%	4.84%	4.71%	4.24%	3.08%	2.88%	3.72%	46.89%
Short term:																			
Commercial paper	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	8.50%	8.50%
STIF	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	2.52%	2.52%
Portfolio	42.91%	0.04%	0.15%	0.05%	1.27%	2.08%	1.53%	2.88%	2.90%	4.01%	3.06%	4.14%	4.84%	4.71%	4.24%	3.08%	2.88%	15.23%	100.00%

Investment Type Fixed Funds June 30, 2021	Moody's Quality Ratings Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa & Below	Not Rated	Total
U.S. government	43.72%	0.02%	0.01%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	4.69%	48.44%
Corporate bonds	1.00%	0.12%	0.22%	0.15%	0.60%	2.69%	2.01%	2.57%	3.09%	3.64%	2.78%	3.49%	4.35%	4.89%	3.29%	3.06%	3.55%	2.60%	44.10%
Short term:																			
Commercial paper	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	4.49%	4.49%
STIF	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	2.97%	2.97%
Portfolio	44.72%	0.14%	0.23%	0.15%	0.60%	2.69%	2.01%	2.57%	3.09%	3.64%	2.78%	3.49%	4.35%	4.89%	3.29%	3.06%	3.55%	14.75%	100.00%

The quality ratings of investments of the variable return fund, by percentage of the rated portfolio, as described by nationally recognized statistical rating organizations, at June 30, 2022 and 2021, are as follows:

Investment Type Variable Funds June 30, 2022	Moody's Quality Ratings																		
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Not Rated	Total
Corporate bond	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Short term:																				
U.S. Treasury bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Money market	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	100.00%	100.00%
Cash equivalent	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Portfolio	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	100.00%	100.00%

Investment Type Variable Funds June 30, 2021	Moody's Quality Ratings																		
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa1	Caa2	Not Rated	Total
Corporate bond	-%	-%	-%	-%	-%	0.14%	-%	1.25%	1.13%	0.72%	-%	0.84%	-%	0.87%	-%	-%	-%	-%	60.45%	65.40%
Short term:																				
U.S. Treasury bills	0.12%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.12%
Money market	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	34.48%	34.48%
Cash equivalent	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Portfolio	0.12%	-%	-%	-%	-%	0.14%	-%	1.25%	1.13%	0.72%	-%	0.84%	-%	0.87%	-%	-%	-%	-%	94.93%	100.00%

Custodial Credit Risk - Deposits are exposed to custodial credit risk if they are uninsured and uncollateralized. Custodial credit risk is the risk that in the event of a failure of the counterparty or depository financial institution, the Funds will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the Funds and are held by either the counterparty or the counterparty's trust department or agent but not in the name of the Funds. Consistent with the Funds' investment policy, the investments are held by the Funds' custodian and registered in the name of the Funds. All of the Funds' deposits are insured by the Federal Deposit Insurance Corporation ("FDIC") are collateralized by securities held by a financial institution separate from the Funds' depository financial institution. However, the System's cash balances can exceed FDIC insured limits. Non-invested cash is swept into a State Street Short-Term Investment Intraday account, which is not FDIC insured.

Interest Rate Risk - The risk that the value of debt securities will be affected by fluctuations in market interest rates. Although there is no formal interest rate risk management policy, the duration of the portfolio, relative to the duration of the portfolio's benchmark, is monitored by the Comptroller's Bureau of Asset Management. The lengths of investment maturities for fixed return fund (in years), as shown by the percent of the rated portfolio, at June 30, 2022 and 2021 are as follows:

		Investment Maturities			
Years to Maturity Investment Type June 30, 2022	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	42.09%	0.13%	14.48%	9.20%	18.28%
Corporate bonds	46.89	0.47	15.38	22.15	8.89
Short term:					
Commercial paper	8.50	8.50	-	-	-
STIF	2.52	2.52	-	-	-
Portfolio	100.00%	11.62%	29.86%	31.35%	27.17%

		Investment Maturities			
Years to Maturity Investment Type June 30, 2021	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	48.44%	4.18%	16.03%	9.28%	18.95%
Corporate bonds	44.10	0.32	12.07	22.32	9.39
Short term:					
Commercial paper	4.49	4.49	-	-	-
STIF	2.97	2.97	-	-	-
Portfolio	100.00%	11.96%	28.10%	31.60%	28.34%

The lengths of investment maturities (in years) of the variable return fund, as shown by the percent of the rated portfolio, at June 30, 2022 and 2021 are as follows:

Years to Maturity Investment Type June 30, 2022	Fair Value	Investment Maturities Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Corporate bonds	-%	-%	-%	-%	-%
Short term:					
U.S. Treasury bills	-	-	-	-	-
Money market	100.00	100.00	-	-	-
Cash equivalent	-	-	-	-	-
Portfolio	100.00%	100.00%	00.00%	00.00%	00.00%

Years to Maturity Investment Type June 30, 2021	Fair Value	Investment Maturities Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Corporate bonds	65.40%	1.74%	47.68%	14.20%	1.78%
Short term:					
U.S. Treasury bills	0.12	0.12	-	-	-
Money market	34.48	34.48	-	-	-
Cash equivalent	-	-	-	-	-
Portfolio	100.00%	36.34%	47.68%	14.20%	1.78%

Foreign Currency Risk - Foreign currency risk is the risk that changes in the exchange rates will adversely impact the fair value of an investment. Currency risk is present in underlying portfolios that invest in foreign stocks and/or bonds. The currency markets are effective diversifiers in a total portfolio context; therefore, the System 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. The System has no formal risk policy.

In addition, the System has investments in foreign stocks and/or bonds denominated in foreign currencies. The System's foreign currency exposures as of June 30, 2022 and 2021 in the fixed return fund are as follows (amounts in thousands of U.S. dollars):

Trade Currency	June 30, 2022	June 30, 2021
Euro Currency	$ 399,346	$ 450,512
Hong Kong Dollar	165,590	184,131
Japanese Yen	99,424	123,174
British Pound Sterling	82,246	138,600
New Taiwan Dollar	73,494	98,913
Indian Rupee	59,754	74,723
South Korean Won	54,312	83,860
Swiss Franc	45,286	64,073
Canadian Dollar	30,829	28,712
Australian Dollar	26,100	36,109
Brazilian Real	24,164	39,439
Singapore Dollar	23,084	17,983
Danish Krone	21,422	29,362
Chinese Yuan (Offshore)	19,625	20,736
Swedish Krona	16,675	24,197
South African Rand	16,333	24,268
Chinese Renminbi	14,007	35,365
Thailand Baht	12,896	4,269
Polish Zloty	8,067	12,817
Norwegian Krone	7,302	15,499
Indonesian Rupiah	6,114	3,853
Mexican Peso	6,084	3,506
Malaysian Ringgit	4,461	3,376
New Israeli Shekel	2,630	749
Qatari Rial	2,481	335
Hungarian Forint	1,977	2,780
Czech Koruna	1,941	594
UAE Dirham	1,913	230
Turkish Lira	1,623	2,499
Kuwaiti Dinar	1,487	13
Chilean Peso	569	999
New Zealand Dollar	415	237
Philippine Peso	56	85
Egyptian Pound	20	62
Colombian Peso	13	16
Russian Ruble	1	103
Pakistan Rupee	-	1
	$ 1,231,741	$ 1,526,180

The foreign currency exposures of the variable return funds as of June 30, 2022 and 2021 are as follows (amounts in thousands of U.S. dollars):

Trade Currency	June 30, 2022	June 30, 2021
Euro Currency	$ 32,901	$ 39,174
Japanese Yen	20,752	23,994
British Pound Sterling	16,776	18,221
Hong Kong Dollar	12,286	12,128
Swiss Franc	9,490	9,744
South Korean Won	7,064	8,703
Indian Rupee	5,602	5,613
Australian Dollar	5,221	5,614
Taiwan Dollar	4,507	5,806
Canadian Dollar	2,917	3,948
Swedish Krona	2,865	3,578
South African Rand	2,525	1,810
Danish Krone	2,407	3,119
Brazilian Real	2,110	2,382
Singapore Dollar	1,760	1,331
Mexican Nuevo Peso	1,550	950
Chinese Renminbi (Yuan)	1,475	1,635
Indonesian Rupiah	1,025	649
Thailand Baht	932	692
Norwegian Krone	781	961
Polish Zloty	602	525
UAE Dirham	528	317
Saudi Arabian Ryal	479	790
Malaysian Ringgit	424	161
Turkish Lira	399	252
Russian Ruble	376	144
Egyptian Pound	302	268
Israeli Shekel	298	249
New Zealand Dollar	268	399
Czech Koruna	161	2
Hungarian Forint	57	10
Chilean Peso	31	42
Philippine Peso	24	1
Peruvian Nuevo Sol	3	-
Total	$ 138,898	$ 153,212

Securities Lending Transactions: Credit Risk - The quality ratings of investments held as collateral for Securities Lending at June 30, 2022 and 2021 are as follows:

Investment Type and Fair Value - Fixed Return Fund
Securities Lending Transactions
June 30, 2022
(In thousands)

	Moody's Quality Ratings											
	Aaa	Aa	A1	A2	A3	Baa	Ba	B	Caa	Ca	Not Rated	Total
U.S. government												
Short term:												
Tri Party Repo	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reverse repurchase agreements	-	-	-	76,563	147,300	6,315	-	-	-	-	207,773	437,951
Money market	32,692	-	-	-	-	-	-	-	-	-	18,506	51,198
Overnight Citibank account	-	-	-	-	-	-	-	-	-	-	-	-
Cash or cash equivalent	-	-	54,350	-	-	-	-	-	-	-	-	54,350
Under/over invested cash collateral	-	-	-	-	-	-	-	-	-	-	(5,066)	(5,066)
Total	$ 32,692	$ -	$ 54,350	$ 76,563	$ 147,300	$ 6,315	$ -	$ -	$ -	$ -	$ 221,213	$ 538,433
Percent of securities lending portfolio	6.07%	-%	10.09%	14.22%	27.36%	1.17%	-%	-%	-%	-%	41.09%	100.00%

Investment Type and Fair Value - Fixed Return Fund
Securities Lending Transactions
June 30, 2021
(In thousands)

	Moody's Quality Ratings											
	Aaa	Aa	A1	A2	A3	Baa	Ba	B	Caa	Ca	Not Rated	Total
U.S. government												
Short term:												
Tri Party Repo	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 389,546	$ 389,546
Money market	321,584	-	-	-	-	-	-	-	-	-	-	321,584
Overnight Citibank account	-	-	79,014	-	-	-	-	-	-	-	-	79,014
Uninvested	-	-	-	-	-	-	-	-	-	-	667	667
Total	$ 321,584	$ -	$ 79,014	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 390,213	$ 790,811
Percent of securities lending portfolio	40.66%	-%	10.00%	-%	-%	-%	-%	-%	-%	-%	49.34%	100.00%

Investment Type and Fair Value - Variable Return Fund
Securities Lending Transactions
June 30, 2022
(In thousands)

	Moody's Quality Ratings																		
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba	B1	B2	B3	Caa	Not Rated	Total
U.S. government	$ 32,524	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 32,524
Short term:																			
U.S. Treasury bills	281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	281
Repurchase agreements	3,711	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,495	5,206
Uninvested	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	$ 36,516	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,495	$ 38,011
By percent	96.07%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	3.93%	100.00%

Investment Type and Fair Value - Variable Return Fund
Securities Lending Transactions
June 30, 2021
(In thousands)

	Moody's Quality Ratings																		
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba	B1	B2	B3	Caa	Not Rated	Total
U.S. government	$ 31,286	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 31,286
Short term:																			
U.S. Treasury bills	1,409	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,409
Repurchase agreements	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,774	5,774
Uninvested	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total	$ 32,695	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,775	$ 38,470
By percent	84.99%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	15.01%	100.00%

Interest Rate Risk - The lengths of investment maturities of the collateral for Securities Lending at June 30, 2022 and 2021 are as follows:

Years to Maturity Fixed Return Fund June 30, 2022 (In thousands)	Investment Maturities (in Years)				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	$ -	$ -	$ -	$ -	$ -
Short term:					
Tri Party Repo	-	-	-	-	-
Reverse repurchase agreements	437,951	437,951	-	-	-
Money market	51,198	51,198	-	-	-
Overnight Citibank account	-	-	-	-	-
Cash or cash equivalent	54,350	54,350	-	-	-
Uninvested	-	-	-	-	-
Under/over invested cash Collateral	(5,066)	(5,066)	-	-	-
Total	$ 538,433	$ 538,433	$ -	$ -	$ -
By percent	100.00%	100.00%	-%	-%	-%

Years to Maturity Fixed Return Fund June 30, 2021 (In thousands)	Investment Maturities (in Years)				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	$ -	$ -	$ -	$ -	$ -
Short term:					
Tri Party Repo	389,546	389,546	-	-	-
Money market	321,584	321,584	-	-	-
Overnight Citibank account	79,014	79,014	-	-	-
Uninvested	667	667	-	-	-
Total	$ 790,811	$ 790,811	$ -	$ -	$ -
By percent	100.00%	100.00%	-%	-%	-%

Years to Maturity Variable Return Fund June 30, 2022 (In thousands)	Investment Maturities (in Years) Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	$ 32,524	$ 3,474	$ 14,811	$ 7,145	$ 7,094
Short term:					
Repurchase agreements	5,206	5,206	-	-	-
U.S. treasury	281	281	-	-	-
Uninvested	-	-	-	-	-
Total	$ 38,011	$ 8,961	$ 14,811	$ 7,145	$ 7,094
By percent	100.00%	23.58%	38.96%	18.80%	18.66%

Years to Maturity Variable Return Fund June 30, 2021 (In thousands)	Investment Maturities (in Years) Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	$ 31,286	$ 3,355	$ 15,749	$ 6,838	$ 5,344
Short term:					
Repurchase agreements	5,774	5,774	-	-	-
U.S. treasury	1,409	1,409	-	-	-
Uninvested	1	1	-	-	-
Total	$ 38,470	$ 10,539	$ 15,749	$ 6,838	$ 5,344
By percent	100.00%	27.40%	40.94%	17.77%	13.89%

Rate of Return - For the years ended June 30, 2022 and 2021, the annual money-weighted rate of return on the System's fixed return fund investments, net of investment expense on the System's fixed return fund, was -9.01% and 27.97%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense adjusted for the changing amounts invested.

In Fiscal Year 2015, the System adopted GASB 72. GASB 72 was issued to address accounting and financial reporting issues related to fair value measurements.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles (“GAAP"). The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The System has the following recurring fair value measurements as of June 30, 2022 and 2021:

GASB 72 - Disclosure
Fixed Return Funds
Investments - at fair value
(In thousands)

	2022			
	Level 1	Level 2	Level 3	Total
Short-term investments:				
Commercial paper	$ -	$ 201,539	$ -	$ 201,539
Short-term investment fund	-	60,875	-	60,875
U.S. Treasury bills and agencies	-	2,409	-	2,409
Debt (fixed income) securities:				
Bank loans	-	16,383	-	16,383
Corporate and other	-	1,047,621	912	1,048,533
Mortgage debt securities	-	353,897	16,477	370,374
Treasury inflation-protected securities	-	288,815	-	288,815
U.S. government and agency	-	379,499	-	379,499
Equity securities	3,493,244	-	-	3,493,244
Collective trust funds:				
Bank loans	-	174	-	174
Domestic equity	70,349	-	-	70,349
International equity	1,524	-	-	1,524
Mortgage debt securities	-	9,616	10,877	20,493
Alternative investments	-	-	1,979,276	1,979,276
	$ 3,565,117	$ 2,360,828	$ 2,007,542	$ 7,933,487

GASB 72 - Disclosure
Fixed Return Funds
Investments - at fair value
(In thousands)

	2021			
	Level 1	Level 2	Level 3	Total
Short-term investments:				
Commercial paper	$ -	$ 135,880	$ -	$ 135,880
Short-term investment fund	-	86,487	-	86,487
U.S. Treasury bills and agencies	-	121,533	-	121,533
Debt (fixed income) securities:				
Bank loans	-	18,692	274	18,966
Corporate and other	-	1,206,668	2,229	1,208,897
Mortgage debt securities	-	419,922	-	419,922
Treasury inflation-protected securities	-	306,727	-	306,727
U.S. government and agency	-	610,588	-	610,588
Equity securities	4,414,294	-	21,750	4,436,044
Collective trust funds:				
Bank loans	-	512	-	512
Domestic equity	90,501	-	208	90,709
International equity	1,964	-	-	1,964
Mortgage debt securities	-	10,655	12,827	23,482
Alternative investments	-	-	1,423,257	1,423,257
	$ 4,506,759	$ 2,917,664	$ 1,460,545	$ 8,884,968

Equity and Debt (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 of the fair value hierarchy are securities whose stated market price is unobservable by the marketplace; many of these securities are priced by the issuers or industry groups for these securities. Fair value is defined as the quoted market value on the last trading day of the period. These prices are obtained from various pricing sources by the System's custodian bank. The 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.

Collective Trust Funds - Collective trust funds are separately managed accounts which are owned 100% by The City's pension systems. The investments underlying the collective trust funds are presented as Level 1, Level 2 or Level 3 based on their respective fair value hierarchy classifications.

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 net asset value calculated by the GP's valuation policy. Alternative investments are mainly illiquid and typically not sold or redeemed.

Investments in non-public equity securities are valued by the GP or the fund administrator using one or more valuation methodologies outlined in GASB 72, depending upon the availability of data required by each methodology. In some cases, the GP may use multiple approaches to estimate a valuation range.

Because of the subjective nature of estimated fair value of the private investments, such value may differ significantly from the values that would have been used had a ready market existed for these investments. These financial instruments have been classified as Level 3 in the fair value hierarchy. Distributions from each fund will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will generally be liquidated within 10 years but in some cases can take longer.

Alternative investments are not fully funded upon subscribing to the investment. The GP can draw down or call for capital as the fund goes into more investments or when the need arises such as expenses associated with the partnership. The residual balance of uncalled capital is also known as unfunded commitments which are restricted to the maximum amount of the limited partners total committed amount. The total unfunded commitments for the alternative investments as of June 30, 2022 and 2021 amounted to $1.3 billion and $1.0 billion, respectively.

GASB 72 - Disclosure
Variable Return Funds
(In thousands)

	2022			
	Level 1	Level 2	Level 3	Total
Variable return funds:				
Short-term investments	$ -	$ 5,674	$ -	$ 5,674
Debt (fixed income) securities	-	-	-	-
Equities	644,803	9,679	111	654,593
Total	$ 644,803	$ 15,353	$ 111	$ 660,267

GASB 72 - Disclosure
Variable Return Funds
(In thousands)

	2021			
	Level 1	Level 2	Level 3	Total
Variable return funds:				
Short-term investments	$ -	$ 6,153	$ -	$ 6,153
Debt (fixed income) securities	-	20,280	-	20,280
Equities	765,050	22,889	14,139	802,078
Total	$ 765,050	$ 49,322	$ 14,139	$ 828,511

Level 1 - Valued using prices quoted in active markets.

Level 2 - Valued using a matrix pricing technique: based on relationship to benchmark quoted prices.

Level 3 - Valued using discounted cash flow techniques.

NOTE 4 - CONTRIBUTIONS AND ACTUARIAL ASSUMPTIONS

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

Contributions to the TDA program are made on a voluntary basis by certain members of the QPP.

Member Contributions

- Members who joined the QPP prior to July 1, 1973 ("Tier 1") contribute on the basis of a normal rate of contribution which is assigned by the QPP at membership, and which is dependent upon age and actuarial tables in effect at the time of membership. Tier 1 members can also make Increased Take Home Pay ("ITHP") contributions, for which they can receive an additional annuity after retirement.

- Members who joined after July 1, 1973 and before July 27, 1976 ("Tier 2") also contribute on the basis of a normal rate of contribution which is assigned by the QPP at membership, and which is dependent upon age and actuarial tables in effect at the time of membership. Note that the actuarial tables are different in Tier 2. Tier 2 members can also make ITHP contributions, for which they can receive an additional annuity after retirement.

- Members who joined after July 27, 1976 and before April 1, 2012 ("Tier 4") contribute 3% of salary until the earlier of the 10th anniversary of their membership date, or upon the completion of 10 years of credited service. Certain Tier 4 members are enrolled in special early retirement plans and must, therefore, also make Additional Member Contributions ("AMC"), depending on the specific plan.

- Members who joined on or after April 1, 2012 ("Tier 6") are required to make Basic Member Contributions ("BMC") until they separate from service or until they retire. The BMC rate is dependent on annual wages earned during a plan year and ranges from 3% for salaries less than $45,000 to 6% for salaries greater than $100,000. Certain Tier 6 members are enrolled in special early retirement plans and must, therefore, also make Additional Member Contributions ("AMC"), depending on the specific plan.

- For members of Tier 6 who earned certain forms of overtime and extracurricular compensation during 2020 through 2022, these earnings are excluded from the salary used to determine their Tier 6 BMC Contribution Rates for the period from 2022 through 2024.

Employer Contributions - Statutorily-required contributions ("Statutory Contributions") to the QPP, determined by the System's Chief Actuary of the Office of the Actuary (the "Actuary") in accordance with State statutes and City laws, are generally funded by the Employer within the appropriate fiscal year.

NOTE 5 - QPP NET PENSION LIABILITY

The components of the net pension liability of the Employers at June 30, 2022 and 2021 were as follows:

(In thousands)	2022	2021
Total pension liability	$ 6,000,500	$ 5,776,055
Fiduciary net position *	5,876,084	7,044,240
Employers' net pension liability	$ 124,416	$ (1,268,185)
Fiduciary net position as a percentage of the total pension liability	97.93%	121.96%

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

The total pension liability as of June 30, 2022 and 2021 was calculated from the actuarial valuations as of June 30, 2021 (Preliminary) and June 30, 2020 (Updated Preliminary), respectively, that were rolled forward to develop the total pension liability to the respective fiscal year end. The following actuarial assumptions were applied to all periods included in the measurement:

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

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

The fiscal year 2021 results reflect changes in the actuarial assumptions and methods from the prior year. These changes reflect refinements and improvements to the actuarial assumptions and methods under the judgment of the Chief Actuary.

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

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

On January 24, 2019, the Actuary issued a Report titled "Proposed Changes in Actuarial Assumptions and Methods used in Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2018 for the New York City Board of Education Retirement System." The actuarial assumptions and methods described in that report are referred to as the "2019 A&M."

On July 16, 2021, the Actuary issued a memorandum titled "Proposed Changes to Actuarial Assumptions and Methods." The actuarial assumptions and methods described in that memorandum amend certain assumptions and methods from the 2019 A&M. This revised set of actuarial assumptions and methods are referred to as the "Revised 2021 A&M."

The June 30, 2021 total pension liability was calculated from the Updated Preliminary June 30, 2020 actuarial valuation, which was based on the Revised 2021 A&M.

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

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

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

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

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

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

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 allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

	As of June 30, 2022		As of June 30, 2021	
Asset Class	Target Asset Allocation	Long-Term Expected Real Rate of Return	Target Asset Allocation	Long-Term Expected Real Rate of Return
Public markets				
U.S. public market equities	31.0%	6.6%	31.0%	7.1%
Developed public market equities	10.0	7.0%	10.0	7.8%
Emerging public market equities	6.0	8.6%	6.0	9.7%
Fixed income	27.0	1.4%	27.0	1.9%
Private markets (alternative investments)				
Private equity	9.0	10.5%	9.0	11.0%
Private real estate	8.0	6.8%	8.0	6.9%
Infrastructure	4.0	5.6%	4.0	6.3%
Opportunistic-fixed income	5.0	5.5%	5.0	6.3%
Total	100.0%		100.0%	

Discount Rate

The discount rate used to measure the total pension liability was 7%. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at the rates applicable to the current Tier for each member and that Employer contributions will be made at rates as determined by the Actuary. Based on those assumptions, the QPP's fiduciary net position was projected to be available to make all projected future benefit payments of current active and non-active QPP members. Therefore, the long-term expected rate of return on QPP investments was applied to all periods of projected benefit payments to determine the total pension liability.

The following presents the net pension liability of the Employers, calculated using the discount rate of 7.0%, as well as what the Employers' net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.0%) or 1-percentage-point higher (8.0%) than the current rate:

(In thousands)	1% Decrease (6.0%)	Discount Rate (7.0%)	1% Increase (8.0%)
Employers' net pension liability - June 30, 2022	$ 837,357	$ 124,416	$ (476,646)
Employers' net pension liability - June 30, 2021	$ (580,898)	$ (1,268,185)	$ (1,848,509)

NOTE 6 - MEMBER LOANS

Members of the QPP are permitted to borrow up to 75% of their employee contribution account balances, including accumulated interest, subject to the limitations of Section 72 of the IRC. The balance of QPP member loans receivable at June 30, 2022 and 2021 is $48.46 million and $47.25 million, respectively. When a member withdraws from the QPP with an outstanding QPP loan balance, this outstanding QPP loan balance will be deducted from the refund of the member's contribution balance. When a member retires with an outstanding QPP loan balance, the member's retirement benefit will be reduced by the actuarial value of the amount of the outstanding QPP loan balance, unless this balance is paid off.

Members of the TDA Program are permitted to borrow up to 75% of their TDA Program account balances, including accumulated interest, subject to the limitations of Section 72 of the IRC. The balance of TDA Program member loans receivable at June 30, 2022 and 2021 is $47.15 million and $44.75 million, respectively.

NOTE 7 - RELATED PARTIES

The Comptroller has been appointed by law as custodian for the assets of the QPP and the TDA Program. QPP fixed return fund 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") also provides cash receipt and cash disbursement services to the System. Actuarial services are provided to the System by the New York City Office of the Actuary. The City's Corporation Counsel provides legal services to the System. Other administrative services are also provided by The City. Costs of $2.75 million and $2.82 million were incurred on behalf of the System by other City agencies, primarily the Comptroller's Office for 2022 and 2021, respectively. The fixed return fund assets of the QPP are co-invested with those of the TDA Program. The variable return fund assets of the QPP are co-invested with those of the TDA Program and TRS (see Note 2). TRS holds the assets of the variable return fund.

NOTE 8 - ADMINISTRATIVE EXPENSES

In Fiscal Years 2022 and 2021, as per Chapter 307 of the New York State Laws of 2002, the System provided BERS with corpus funding for administrative expenses in the amount of $35.85 million and $25.43 million, respectively.

In August 2019, the System entered into a Sub-sublease agreement for office space. The agreement is for a term of six years and seven months and requires a total commitment of approximately $11.18 million over the term of the lease. Rent expense under the lease agreement for the year ended June 30, 2022 was $1.83 million.

NOTE 9 - CONTINGENT LIABILITIES AND OTHER MATTERS

Contingent Liabilities - The System has claims pending against it and has been named as a defendant in lawsuits and also has certain other contingent liabilities. Management of the System, on the advice of legal counsel, believes that such proceedings and contingencies will not have a material effect on the net position of the System or changes in the net position of the System. Under the existing State statutes and City laws that govern the functioning of the System, increases in the obligations of the System to members and beneficiaries ordinarily result in increases in the obligations of the New York City Board of Education to the System.

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 NYCRS are conducted every two years.

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

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

Previously, Gabriel, Roeder, Smith & Company (GRS) published their study in October 2015.

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

Chapter 18 of the Laws of 2012 ("Chapter 18/12") placed certain limitations on the Tier 3 and Tier 4 benefits available to participants hired on and after April 1, 2012 in most New York State PERS, including BERS. These changes are sometimes referred to as Tier 6.

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

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

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

Chapter 510 of the Laws of 2015 ("Chapter 510/15") clarifies for Tier 6 the definition of multiple employers for the purpose of exclusion of wages and changes the Plan year for contributions from plan year April 1 to March 31 to plan year January 1 to December 31.

Chapter 41 of the Laws of 2016 was enacted on May 31, 2016. This amendment removes the specified periods of time, medal requirements, and theaters of operation in which military service would had to have been rendered for a service purchase pursuant to RSSL § 1000. Accordingly, for a member to be eligible to purchase service credit pursuant to RSSL § 1000 for pre-membership military service, the member need only have been honorably discharged from the military; all other requirements of RSSL § 1000 remain the same. This law is not retroactive and does not permit retired members to purchase service credit.

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

Chapter 438 of the Laws of 2016, enacted on November 14, 2016, amends Retirement and Social Security Law Section 43 to eliminate restrictions upon transferring between public retirement systems.

Chapter 71 of the Laws of 2017, enacted on June 29, 2017, continues for Fiscal Year 2019, the Actuarial Interest Rate assumption of 7.0% per annum used to determine employer contributions to the New York City Pension Funds and Retirement Systems. This act also extends through Fiscal Year 2019, the interest rate of 8.25% per annum to credit interest on Tier 1 and Tier 2 member contributions and Increased-Take-Home-Pay ("ITHP") Reserves.

Chapter 266 of 2018 extends the time for members or eligible beneficiaries to file a Notice of Participation in World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2022.

Chapter 59 of the Laws of 2019 revises the composition of the Board of Education of The City of New York, and, therefore, the BERS Board of Trustees, to include one additional mayoral appointee and one member to be elected by community district education council presidents. This provision took effect on July 1, 2020.

Chapter 589 of the Laws of 2019 increases the amount of money a retiree may earn in a position of public service in the year 2020 and thereafter to $35,000 from $30,000.

Chapter 76 of the Laws of 2019 extends for two fiscal years, until June 30, 2021, the 7% rate of interest used by the Chief Actuary for BERS in valuing the retirement system liabilities for the purpose of computing the amount of Employer contributions. The bill also extends for two fiscal years the rate of interest to be paid into certain constituent funds of The City retirement systems and the 8.25% per annum rate to be credited on AMCs and ITHP reserves for Tier 1 and Tier 2 members.

Chapter 89 of the Laws of 2020 provides death benefits to statutory beneficiaries of members whose death was a result of or was contributed to by the coronavirus disease ("COVID-19"). This law provides an Accidental Death Benefit to the eligible beneficiaries of a member or a retiree who retired after March 1, 2020, where such member reported for work outside their home and contracted COVID-19 within 45 days after reporting for work, and whose death was caused by COVID-19 or where COVID-19 contributed to such member's death. Amounts payable are reduced by payments of any ordinary death benefits or option benefit paid to another statutory beneficiary.

Chapter 78 of the Laws of 2021 establishes a COVID-19 public employee death benefit for individuals who reported to their usual place of employment or an alternate worksite at the direction of their employer on or after March 1, 2020 and such individual contracted COVID-19 within 45 days of reporting to such workplace as confirmed by a laboratory test or by a licensed physician and such individual died on or before December 31, 2022.

Chapter 391 of the Laws of 2021 extends for two fiscal years until June 30, 2023, the 7% rate of interest used by the Chief Actuary for BERS in valuing the retirement system liabilities for the purpose of computing the amount of Employer contributions. The bill also extends for two fiscal years the rate of interest to be paid into certain constituent funds of The City retirement systems and the 8.25% per annum rate to be credited on AMCs and ITHP reserves for Tier 1 and Tier 2 members.

Chapter 417 of the Laws of 2021 authorizes political subdivisions to permit any public body to hold meetings remotely and without in-person access during the COVID-19 state disaster emergency until the expiration or termination of the disaster emergency.

Chapter 424 of the Laws of 2021 expands the definition of a member for World Trade Center purposes to include certain professionals who were in qualifying employment in a qualifying period for a qualifying employer, irrespective of whether such person was a participant in such system at that time, provided they purchased service credit for a period of time that includes some or all of the qualifying period in accordance with applicable law.

Chapter 425 of the Laws of 2021 provides for the electronic submission of a notice that a member of a retirement system participated in World Trade Center rescue, recovery or cleanup operations for a qualifying period.

Chapter 481 of the Laws of 2021 requires certain records to be discussed at an open meeting to be made available to the public at least twenty-four hours prior to the meeting upon request.

Chapter 525 of the Laws of 2021 places family workers, family assistants, family associates, and parent program assistants under the jurisdiction of BERS instead of TRS, and provides that the membership of paraprofessionals in TRS is mandatory.

Chapter 561 of the Laws of 2021 extends the time for members or eligible beneficiaries to file a Notice of Participation in World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2026.

Chapter 587 of the Laws of 2021 requires a public body that maintains a regularly and routinely updated website and utilizes a high speed internet connection to post the minutes of meetings within two weeks.

Chapter 56 of the Laws of 2022 enacted into law major components of legislation necessary to implement the state education, labor, housing and family assistance budget for the 2022-2023 state fiscal year and including some reform of the retirement law. This law provides that all BERS members, including Tier 6 members, now become vested with 5 years of credited service; suspends earnings limitations for retirees from April 9, 2022 through June 30, 2023; and revises the Tier 6 contribution rate determination process to disregard overtime between April 1, 2022 and April 1, 2024.

Chapter 173 of the Laws of 2022 extended the filing time for the Oath of Office for Public Officers who failed to file their oath of office within the statutory 30-day period from January 1, 2022 through March 31, 2022.

The Coronavirus Aid, Relief, and Economic Security ("CARES") Act

The CARES Act, signed into law on March 27, 2020, is a major piece of federal legislation providing relief to individuals, as well as state and local governments, in connection with the impact of the COVID-19 outbreak. The CARES Act impacted the operations of BERS in six principal ways during Fiscal Year 2022 and 2021:

a) all required minimum distributions ("RMDs") were suspended between March 27, 2020 and December 31, 2020;

b) qualified individuals who were entitled to receive a QPP refund (other than a refund of a deduction in error) were permitted to classify such a refund as a coronavirus-related distribution, not subject to the 10% penalty for individuals younger than 59½ years of age (subject to the limitation that the sum of all coronavirus-related distributions cannot exceed $100,000), until December 30, 2020;

c) qualified individuals were permitted to request a TDA refund, even if they would not otherwise have been eligible to do so, as a coronavirus-related distribution, not subject to the 10% penalty for individuals younger than 59½ years of age (subject to the limitation that the sum of all coronavirus-related distributions cannot exceed $100,000), until December 30, 2020;

d) qualified individuals were permitted to apply for coronavirus-related loans, with a higher aggregate maximum amount than ordinary loans (for QPP/AMC loans, the expanded limit was the lesser of $100,000 or 75% of the account balance; for TDA loans, the expanded limit was the lesser of $100,000 or 100% of the account balance), until September 23, 2020;

e) qualified individuals with outstanding loans of any type were permitted to apply for extension of any loan payments due between March 27, 2020 and December 31, 2020 by up to one year; and

f) For the purposes of the above provisions, the CARES Act defined a “qualified individual” as an individual who:

1. is diagnosed with COVID-19 by a test approved by the Centers for Disease Control and Prevention; or

2. has a spouse or dependent diagnosed with COVID-19 by a test approved by the Centers for Disease Control and Prevention; or

3. experiences adverse financial consequences as a result of (i) being quarantined, furloughed or laid off or having work hours reduced due to COVID-19, (ii) being unable to work due to lack of child care due to COVID-19, (iii) being unable to work due to closing or reducing hours of a business owned or operated by the individual due to COVID-19, or (iv) other factors as determined by the Secretary of the Treasury.

The Setting Every Community Up for Retirement Enhancement (“SECURE”) Act

The SECURE Act of December 2019 increased the age at which RMDs must commence from 70.5 to 72. It also required that certain inherited retirement plan accounts be more rapidly distributed to their owners.

COVID-19

The outbreak of COVID-19 was declared a pandemic by the World Health Organization. Then-Governor Andrew Cuomo declared a state of emergency in the State on March 7, 2020 and the Mayor declared a state of emergency in New York City on March 12, 2020. Governor Cuomo declared an end to the state of emergency due to the COVID-19 pandemic in the State on June 24, 2021, effective June 25, 2021. Due to increased COVID-19 transmission rates, current Governor Kathy Hochul declared a state of emergency in the State on November 26, 2021 and extended this state of emergency a number of times through September 12, 2022. The state of emergency in New York City due to the COVID-19 pandemic remains in effect. The ultimate impact of the COVID-19 pandemic on the Plan cannot be determined at this time.

New York City Board of Education Retirement System

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS

June 30,
(In thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability:									
Service cost	$ 179,402	$ 175,281	$ 166,792	$ 168,501	$ 176,110	$ 168,625	$ 153,107	$ 147,898	$ 142,687
Interest	391,274	405,690	369,904	366,084	350,999	346,510	320,315	299,592	288,162
Changes of benefit terms	15,863	-	-	-	-	-	-	-	-
Differences between expected and actual experience	(36,415)	38,132	(46,574)	152,160	(164,587)	19,938	(75,907)	50,148	-
Changes of assumptions	-	(853)	-	(314,503)	-	-	183,677	-	-
Benefit payments/withdrawals	(325,679)	(302,336)	(296,047)	(280,463)	(261,574)	(262,432)	(240,727)	(223,244)	(214,315)
Net change in total pension liability	224,445	315,914	194,075	91,779	100,948	272,641	340,465	274,394	216,534
Total pension liability - beginning	5,776,055	5,460,141	5,266,066	5,174,287	5,073,339	4,800,698	4,460,233	4,185,839	3,969,305
Total pension liability - ending (a)	6,000,500	5,776,055	5,460,141	5,266,066	5,174,287	5,073,339	4,800,698	4,460,233	4,185,839
Plan fiduciary net position:									
Employer contributions	262,404	182,983	257,503	269,637	318,643	288,233	265,532	258,099	214,590
Member contributions	49,591	48,125	49,766	46,304	40,846	39,821	38,581	39,564	37,193
Net investment income	(803,664)	1,889,751	365,767	406,879	565,577	862,510	164,144	177,166	875,453
Payment of interest on TDA program fixed return funds	(191,054)	(171,806)	(155,749)	(141,695)	(127,972)	(106,554)	(94,789)	(85,104)	(206,615)
Benefit payments and withdrawals	(325,679)	(302,336)	(296,047)	(280,463)	(261,574)	(262,432)	(240,727)	(223,244)	(214,315)
Administrative expenses	(35,566)	(25,175)	(22,207)	(17,357)	(13,212)	(15,486)	(12,818)	(10,956)	(9,776)
Other	(124,188)	239,808	(7,975)	35,624	51,024	(122,954)	(157,499)	(52,021)	(70,916)
Net change in plan fiduciary net position	(1,168,156)	1,861,350	191,058	318,929	573,332	683,138	(37,576)	103,504	625,614
Plan fiduciary net position - beginning*	7,044,240	5,182,890	4,991,832	4,672,903	4,099,571	3,416,433	3,454,009	3,350,505	2,653,652
Plan fiduciary net position - ending (b)	5,876,084	7,044,240	5,182,890	4,991,832	4,672,903	4,099,571	3,416,433	3,454,009	3,279,266
BERS's net pension liability - ending (a)-(b)	$ 124,416	$ (1,268,185)	$ 277,251	$ 274,234	$ 501,384	$ 973,768	$ 1,384,265	$ 1,006,224	$ 906,573
Plan fiduciary net position as a percentage of the total pension liability	97.93%	121.96%	94.92%	94.79%	90.31%	80.81%	71.17%	77.44%	78.34%
Covered payroll[1]	$ 1,484,264	$ 1,476,598	$ 1,353,266	$ 1,264,079	$ 1,102,184	$ 1,052,171	$ 1,008,056	$ 1,016,822	$ 989,168
BERS's net pension liability as percentage of covered payroll	8.38%	-85.89%	20.49%	21.69%	45.49%	92.55%	137.32%	98.96%	91.65%

*FY 2015 Plan fiduciary net position - beginning was revised from the prior year.

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

In accordance with paragraph 50 of GASB No. 67, this schedule should present information for 10 years, if available. The information presented here pertains to periods beginning with the June 30, 2014 fiscal year, the System's adoption year of GASB No. 67. Additional years will be added until the 10-year requirement is met.

See Report of Independent Certified Public Accountants.

New York City Board of Education Retirement System

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

Fiscal years ended June 30,
(In thousands)

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Actuarially determined contribution	$ 262,404	$ 182,983	$ 257,503	$ 269,637	$ 318,643	$ 288,233	$ 265,532	$ 258,099	$ 214,590	$ 196,246
Contributions in relation to the actuarially determined contribution	262,404	182,983	257,503	269,637	318,643	288,233	265,532	258,099	214,590	196,246
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll [1]	$ 1,484,264	$ 1,476,598	$ 1,353,266	$ 1,264,079	$ 1,102,184	$ 1,052,171	$ 1,008,056	$ 1,016,822	$ 989,168	$ 886,186
Contributions as a percentage of covered-employee payroll	17.68%	12.39%	19.03%	21.33%	28.91%	27.39%	26.34%	25.38%	21.69%	22.15%

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

See Report of Independent Certified Public Accountants.

New York City Board of Education Retirement System

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

Note to Schedule:

The above actuarially determined contributions were developed using a One-Year Lag Methodology, under which the actuarial valuation determines the Employer contribution for the second following fiscal year (e.g., fiscal year 2022 contributions were determined using an actuarial valuation as of June 30, 2020). The methods and assumptions used to determine the actuarially determined contributions are as follows:

Valuation Dates	**June 30, 2020**	**June 30, 2019**	**June 30, 2018**	**June 30, 2017**	**June 30, 2016**
Actuarial cost method	Entry age	Entry age	Entry age	Entry age	Entry age
Amortization method for unfunded actuarial accrued liabilities:					
Initial unfunded	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar
Post-2010 unfundeds	Level dollar	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period:					
Initial unfunded	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	16 years (closed)
2010 ERI	0 year (closed)	0 year (closed)	0 year (closed)	0 year (closed)	0 year (closed)
2011 Actuarial gain/loss	6 years (closed)	7 years (closed)	8 years (closed)	9 years (closed)	10 years (closed)
2012 Actuarial gain/loss	7 years (closed)	8 years (closed)	9 years (closed)	10 years (closed)	11 years (closed)
2013 Actuarial gain/loss	8 years (closed)	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)
2014 Actuarial gain/loss	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)
2015 Actuarial gain/loss	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)
2016 Actuarial gain/loss	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)
2017 Actuarial gain/loss	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	NA
2017 Assumption change	17 years (closed)	18 years (closed)	19 years (closed)	20 years (closed)	NA
2017 Method change	17 years (closed)	18 years (closed)	19 years (closed)	20 years (closed)	NA
2018 Actuarial gain/loss	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA
2018 Method change	18 years (closed)	19 years (closed)	20 years (closed)	NA	NA
2019 Actuarial gain/loss	14 years (closed)	15 years (closed)	NA	NA	NA
2019 Method change	19 years (closed)	20 years (closed)	NA	NA	NA
2019 Assumption change	19 years (closed)	20 years (closed)	NA	NA	NA
2020 Actuarial gain/loss	15 years (closed)	NA	NA	NA	NA
2020 Method change	20 years (closed)	NA	NA	NA	NA
2020 Plan change	7 years (closed)	NA	NA	NA	NA
Actuarial assets valuation method[1]	Five-year moving average of market values with a "Market Value Restart" as of June 30, 2020.	Five-year moving average of market values with a "Market Value Restart" as of June 30, 2019.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.

[1] As of the June 30, 2014 (Lag) valuation, the AVA is constrained to be no more than 20% from Market Value.

See Report of Independent Certified Public Accountants.

New York City Board of Education Retirement System

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

Note to Schedule:

The above actuarially determined contributions were developed using a One-Year Lag Methodology, under which the actuarial valuation determines the Employer contribution for the second following fiscal year (e.g., fiscal year 2022 contributions were determined using an actuarial valuation as of June 30, 2020). The methods and assumptions used to determine the actuarially determined contributions are as follows:

Valuation Dates	**June 30, 2015**	**June 30, 2014**	**June 30, 2013**	**June 30, 2012**	**June 30, 2011**
Actuarial cost method	Entry age	Entry age	Entry age	Entry age	Entry age
Amortization method for unfunded actuarial accrued liabilities:					
Initial unfunded	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar
Post-2010 unfundeds	Level dollar	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period:					
Initial unfunded	17 years (closed)	18 years (closed)	19 years (closed)	20 years (closed)	21 years (closed)
2010 ERI	1 year (closed)	2 years (closed)	3 years (closed)	4 years (closed)	5 years (closed)
2011 Actuarial gain/loss	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)
2012 Actuarial gain/loss	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	NA
2013 Actuarial gain/loss	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA
2014 Actuarial gain/loss	14 years (closed)	15 years (closed)	NA	NA	NA
2015 Actuarial gain/loss	15 years (closed)	NA	NA	NA	NA
2016 Actuarial gain/loss	NA	NA	NA	NA	NA
2017 Actuarial gain/loss	NA	NA	NA	NA	NA
2017 Assumption change	NA	NA	NA	NA	NA
2017 Method change	NA	NA	NA	NA	NA
2018 Actuarial gain/loss	NA	NA	NA	NA	NA
2018 Method change	NA	NA	NA	NA	NA
2019 Actuarial gain/loss	NA	NA	NA	NA	NA
2019 Method change	NA	NA	NA	NA	NA
2019 Assumption change	NA	NA	NA	NA	NA
2020 Actuarial gain/loss	NA	NA	NA	NA	NA
2020 Method change	NA	NA	NA	NA	NA
2020 Plan change	NA	NA	NA	NA	NA
Actuarial assets valuation method[1]	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2010 investment performance.

[1] As of the June 30, 2014 (Lag) valuation, the AVA is constrained to be no more than 20% from Market Value.

See Report of Independent Certified Public Accountants.

New York City Board of Education Retirement System

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

Valuation Dates	**June 30, 2020**	**June 30, 2019**	**June 30, 2018**	**June 30, 2017**	**June 30, 2016**
Actuarial assumptions:					
Assumed rate of return[2]	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.
Post-retirement mortality[3]	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2016
Active service: withdrawal, death, disability, service retirement[3]	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2019	Tables adopted by Board of Trustees during Fiscal Year 2012
Salary increases[2]	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.
Cost-of-living adjustments[2]	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.

[2] Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

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

See Report of Independent Certified Public Accountants.

New York City Board of Education Retirement System

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

Valuation Dates	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012	June 30, 2011
Actuarial assumptions:					
Assumed rate of return[2]	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.	7.0% per annum, net of investment expenses.
Post-retirement mortality[3]	Tables adopted by Board of Trustees during Fiscal Year 2016	Tables adopted by Board of Trustees during Fiscal Year 2016	Tables adopted by Board of Trustees during Fiscal Year 2012	Tables adopted by Board of Trustees during Fiscal Year 2012	Tables adopted by Board of Trustees during Fiscal Year 2012
Active service: withdrawal, death, disability, service retirement[3]	Tables adopted by Board of Trustees during Fiscal Year 2012	Tables adopted by Board of Trustees during Fiscal Year 2012	Tables adopted by Board of Trustees during Fiscal Year 2012	Tables adopted by Board of Trustees during Fiscal Year 2012	Tables adopted by Board of Trustees during Fiscal Year 2012
Salary increases[2]	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.	In general, merit and promotion increases plus assumed general increases of 3.0% per year.
Cost-of-living adjustments[2]	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.

[2] Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

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

New York City Board of Education Retirement System

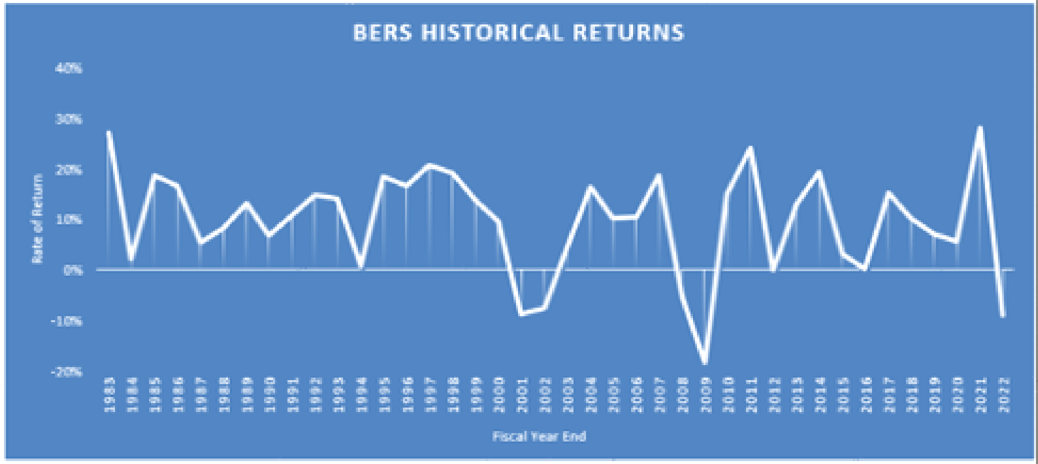
REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULE OF INVESTMENT RETURNS

The following table displays annual money-weighted rate of return from fixed investments for each of the past nine fiscal years:

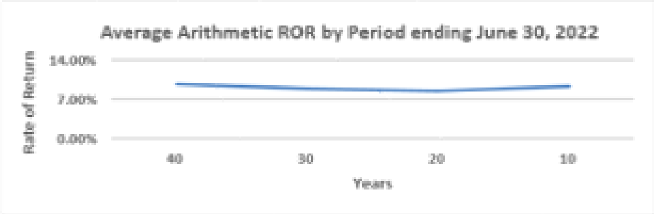
Fiscal years ended	Money-Weighted Rate of Return
June 30, 2022	-9.01%
June 30, 2021	27.97%
June 30, 2020	5.75%
June 30, 2019	7.00%
June 30, 2018	10.31%
June 30, 2017	15.33%
June 30, 2016	0.20%
June 30, 2015	3.15%
June 30, 2014	19.51%

Note: In accordance with paragraph 50 of GASB Statement No. 67, *Financial Reporting for Pension Plans* ("GASB 67"), this schedule should present information for 10 years, if available. The information presented here pertains to periods beginning with the June 30, 2014 fiscal year, the Plan's adoption year of GASB 67. Additional years will be added until the 10-year requirement is met.

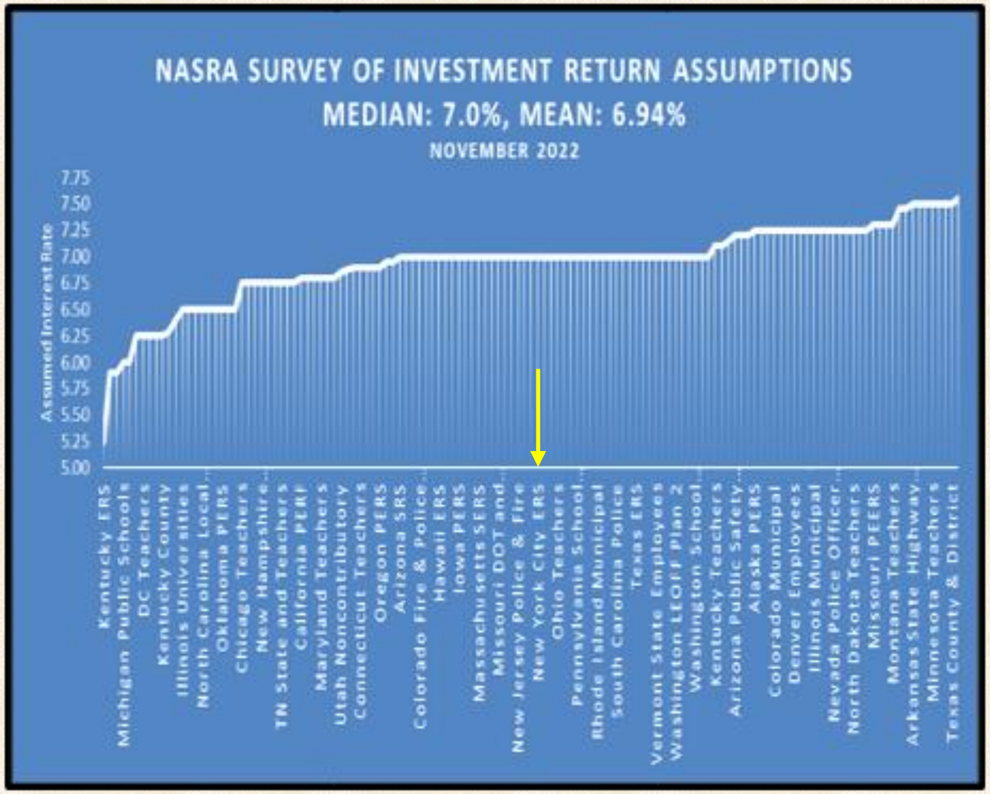
Actuarial Interest Rate Discussion



Period	Geo Avg	Arth Avg
40	9.28%	9.77%
30	8.31%	8.88%
20	7.87%	8.45%
10	8.86%	9.31%



Source: Derived from Reports issued by the Office of the Comptroller of the City of New York.
Note: Net Returns Shown Starting in 2015, Gross Returns Shown Prior to 2015



Long-Term Expected Rates of Return for GASB 67/68*
Issued by the Systems' Investment Consultants

FY 2022	NYCERS	TRS	BERS	POLICE	FIRE
Expected Real Return	6.05%	4.95%	5.70%	5.73%	4.65%
CPI Assumption	2.25%	2.40%	2.30%	2.40%	2.66%
Total	8.30%	7.35%	8.00%	8.13%	7.31%
FY 2021	**NYCERS**	**TRS**	**BERS**	**POLICE**	**FIRE**
Expected Real Return	5.85%	4.89%	6.25%	5.02%	4.76%
CPI Assumption	2.00%	2.25%	2.10%	2.45%	2.22%
Total	7.85%	7.14%	8.35%	7.47%	6.98%

*Expected 30-Year Arithmetic Returns

"OA's current investment return assumption is 7.0% We concluded that 7.0% remains a reasonable investment return assumption, particularly in combination with the 2.5% inflation assumption, based on the expectations of the current Systems' investment advisors and other sources."

- From Bolton Final Experience Study Report to the Comptroller dated June 4, 2019