NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM
10 CORPORATE WOODS DRIVE, ALBANY NY

Risk Committee Meeting

A meeting of the Risk Committee of the Retirement Board of the New York State Teachers' Retirement System was held at the System on October 25, 2023. The meeting was called to order at 8:30 a.m. by Nicholas Smirensky, acting Chair.

The following individuals were in attendance:

Committee Members: Elizabeth Chetney, David Keefe (via WebEx), Nicholas Smirensky

Board Members: Juliet Benaquisto, Paul Farfaglia, Eric Iberger, Jennifer Longtin, Oliver Robinson

NYSTRS' Staff: Thomas Lee, Beth Dellea, Don Ampansiri, Dave Gillan, Paul Cummins, Gerald Yahoudy, Vijay Madala, Michael Federici, Richard Young, Kathy Ebert, Miriam Dixon, Danny Malavé, Matt Albano, Emily Ekland, Han Yik, John Rosenburg, Matt Tice, Ryan Ranado

Risk Advisors: Sean Atkinson (via WebEx), Steve Huber (via WebEx), Peter Cosgrove (via WebEx)

Visitors: Cyril Espanol, WithIntelligence (via WebEx) and Catarina Moura, Reorg (via WebEx)

The following items were discussed:

1. Approval of the minutes of July 26, 2023

Upon motion of E. Chetney, seconded by D. Keefe and unanimously carried, the meetings minutes of the July 26, 2023 were approved.

2. Information Security KRI Dashboard and Update

Upon motion of E. Chetney, seconded by D. Keefe and unanimously approved, the Committee went into Executive Session at 8:31 a.m. to hear an Information Security presentation given by J. Rosenberg. The Committee came out of Executive Session upon motion of E. Chetney, seconded by D. Keefe and unanimously approved at 9:04 a.m. and resumed open session.

3. Compliance Update

   M. Albano and M. Tice reviewed the compliance program inventory report (Appendix A, pp. 3-5)

4. Annual SEC Red Flags and OFAC Risk Assessment

   M. Albano reviewed the findings of the Risk Department's annual assessment using the SEC Risk Inventory Guide and reviewed the annual OFAC assessment (Appendix B, pp. 6-18).

5. Investment Risk KRI Dashboard and Update

   M. Albano and R. Ranado reviewed the risk management key risk indicator dashboard and the investment risk report (Appendix C, pp. 19-32).

6. Quarterly Review of Risk Management Team

   Upon motion of E. Chetney, seconded by N. Smirensky and unanimously approved, the Committee went into Executive Session at 9:23 a.m. to discuss personnel matters. Upon motion of E. Chetney, seconded by N. Smirensky and unanimously approved, the Committee came out of Executive Session at 9:34 a.m.

There being no further business, and with unanimous consent, the Committee adjourned at 9:34 a.m.

Respectfully submitted,

[redacted]

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Thomas K. Lee

Appendix A

Risk Management Compliance Update

Matthew Albano, CFA, Chief Risk Officer
Matthew Tice, Manager, Enterprise Risk and Compliance

Compliance Program Inventory Review

- Continue to refine the compliance inventory

- Currently have 100 compliance items being tracked
  - Level 3 –12 compliance items, none require Board action
  - Level 2 –70 compliance items, 6 require Board action
  - Level 1 –18 compliance items, 2 require Board action

- Period of April through August
  - All 49 required regulatory items due were completed by departments

Compliance Inventory Board Action

Board Action - Compliance Inventory Item	Owner	Board Meeting			
		January	April	July	October
Annual Reporting - Pension Government Accounting Standards Board- (GASB) 67 filing and System Financials	Actuary				Reviewed at the Board Meeting
Annual Reporting - Other Post Employment Benefits-(OPEB) GASB 68 Filing	Actuary	Reviewed in the December Audit Committee			
Transfer of Reserves & Pension Reserve Factors	Actuary		Board resolution only needed if transfer hits criteria		
Approval of Disaster Recovery (DR) and Business Continuity (BC) plan changes	Administration	Board Resolution			
Approval of the Investment Policy Manual (IPM)	Executive				Board Resolution
Divest and restriction list criteria. I.E. Divest from all of the System's directly held public equity securities in companies that derive more than 10% of their revenue from thermal coal.	Executive	At Board Discretion	At Board Discretion	At Board Discretion	At Board Discretion
Annual Investment Asset Allocation	Executive		Reviewed by the Board	Board Resolution	
Signatory approval	Finance			Board Resolution	

Appendix B

SECURITIES EXCHANGE COMMISSION RED FLAGS ASSESSMENT

Matthew Albano, CFA, Chief Risk Officer

Matthew Tice, Manager, Enterprise Risk and Compliance

Agenda

- What is the Securities Exchange Commission (SEC) Red Flags Assessment?
- SEC Red Flags Assessment Process
- Risk Assessment Results

What is the SEC Red Flags Assessment? 12 Red Flag Categories

1. Marketing/Performance
2. Form ADV/Disclosures
3. Invoices/Fees
4. IPO Offerings
5. Soft Dollars/Kickbacks
6. Compensation
7. Objectives/Restrictions
8. Trade Ticket
9. Trade Execution
10. Non-Public Information
11. Personal and Proprietary Trading Account
12. Money/Securities to/from Broker/Custodian

SEC Red Flags Assessment Process

- Send out broker attestations in January (50 sent for 2022)
- Review the 12 red flag categories with departments
- Review results with departments and issue report
- Report to the Risk Committee of the Board

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SEC Red Flags Risk Assessment

Likelihood (Probability)	**Impact** (Consequences)				
	Insignificant	**Minor**	**Moderate**	**Major**	**Severe**
Very Likely	Medium	High	High	Very High	Very High
Quite Likely	Medium	Medium	High	High	Very High
Somewhat Likely	Low	Medium	Medium	High	High
Unlikely	Low	Medium	Medium	Medium	High
Highly Unlikely	Very Low	Low	Low	Medium	Medium

Observation:
Risk mitigations reduced the likelihood of the risk to highly unlikely, but in the event of a regulatory breach, impact could be moderate. However, depending on the severity of the event the impact could be major.

Questions?

OFFICE OF FOREIGN ASSETS CONTROL ANNUAL RISK ASSESSMENT

Matthew Albano, CFA, Chief Risk Officer

Matthew Tice, Manager, Enterprise Risk Management and Compliance

Agenda

- Five Essential Components of Office of Foreign Assets Control (OFAC) Compliance
- Sanction Compliance Program (SCP) Review
- Annual OFAC Risk Assessment
- Recent Events

Five Essential Components of OFAC Compliance

1. Management Commitment
   - Commitment and support is one of the most important factors in the program's success
2. Risk Assessment
   - Conduct a routine, and if appropriate, ongoing "risk assessment" for the purposes of identifying potential OFAC issues
3. Internal Controls
   - Policies and procedures in place
4. Testing and Auditing
   - Audits assess the effectiveness of current processes
5. Training
   - An effective training program is an integral component of a successful program

Sanction Compliance Program Review

- Monitoring for OFAC Activity
- Perform Screens Against Specially Designated Nationals (SDN) list
  - OFAC software continually screens database
- Investment Manager OFAC Certification
- Documented Policies and Procedures
- Outside Counsel Discussion and Policy Review

Annual OFAC Risk Assessment

Five essential components of compliance	NYSTRS Compliance program		
	Conforms	Generally Conforms	Developing
Management Commitment			
Risk Assessment			
Internal Controls			
Testing and Auditing			
Training			

Annual OFAC Risk Assessment
NYSTRS is adequately addressing the risk of non-compliance with OFAC as it relates to investment management and non-investment transactions.

Recent Events

- Executive Orders
  - 14071 - Russian / Ukraine
  - 13959 – Chinese Military Companies
  - 14105 - Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern

Questions?

Appendix C

Re-evaluating Stressed Contingency Funding KRI

Matthew Albano, CFA, Chief Risk Officer
Ryan Ranado, Assistant Manager, Investment Risk

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Stressed Contingency Funding KRI

- Objective of KRI: avoid the forced sale of long-term assets during an equity bear market (“Contingency Funding”) for at least 24 months.
  - Proposing a language change from “long-term” to “illiquid”.
  - The current KRI methodology does not allow public equities to be used for cash raises, this language change would allow us to raise cash from public equities for this KRI calculation.
  - This update better reflects how staff manages the portfolio in practice.

- As of 9/30/23 the methodology change would increase the KRI by 4 months.

Current KRI Methodology		Allow Cash raise from Public Equities
09/30/23 KRI		**Adjusted 09/30/23 KRI**
15 Months	→	19 Months

Investment Risk Update

Risk Management

Risk Committee Meeting: October 25, 2023

Matthew Albano, CFA, Chief Risk Officer
Ryan Ranado, CFA, Assistant Manager, Investment Risk Management

Public market data as of 8/31/2023; Private asset data as of 6/30/2023

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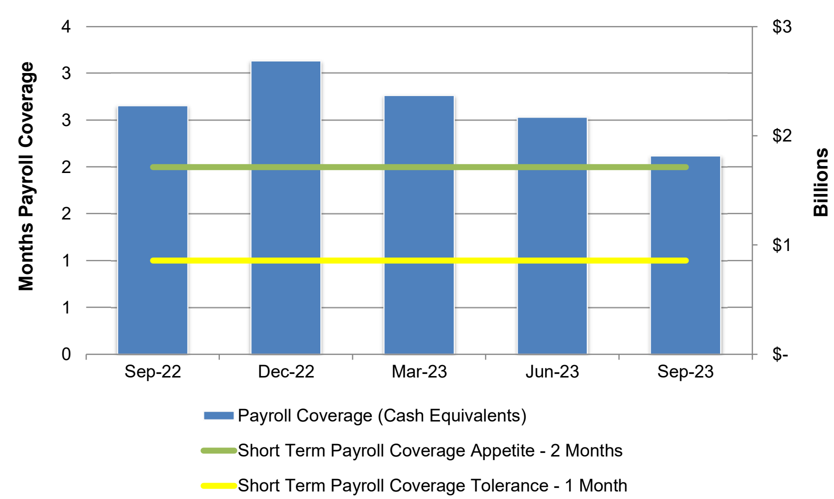
Investment Risk - Key Risk Indicators

Updates:

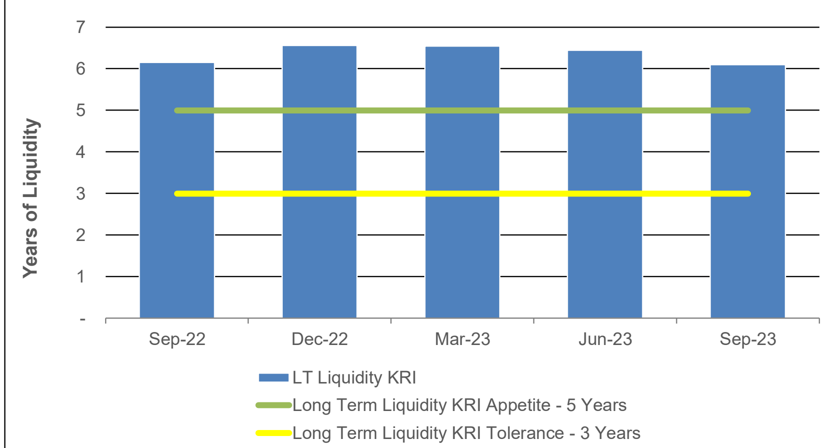
- Medium Term Liquidity has improved and is now within our "Risk Appetite".
- Stressed Contingency Funding has improved slightly but remains "Outside Tolerance".
  - **Risk Mitigation**
    - Staff continues to execute our plan to address the liquidity KRIs and meets weekly on asset allocation.
    - The Stressed Contingency Funding model assumes an extreme stressed scenario similar to the 2008-2009 Global Financial Crisis on the portfolio, beyond the current market volatility already experienced.
    - Investment Risk Staff have proposed a change to the Stressed Contingency Funding KRI which would take effect next quarter.
- Total Plan Risk; Tail Risk; and Risk Contributions by Asset Class, Sector, Geography, and Factor are as expected.

Key Risk Indicator	Outside Tolerance	Risk Tolerance	Risk Appetite	Current Assessment
Asset Allocation (Market Risk Management)	One or More Asset Classes Out of Bounds	One or More Asset Classes Outside of Policy During Transition Period	All Asset Classes within Policy Range	All Asset Classes within Policy Range
Net Benefit Payments as % of Assets (Liquidity)	>10%	>5 - 10%	<= 5%	4.8%
Short Term Liquidity (Liquidity)	<= 1 Month	1 - 2 Months	>= 2 Months	2.1 Months
Medium Term Liquidity (Liquidity)	<= 10 Months	10 - 12 Months	>= 12 Months	12.4 Months
Stressed Contingency Funding Liquidity (Liquidity)	<= 18 Months	18 - 24 Months	>= 24 Months	15 Months
Stressed Long Term Liquidity (Liquidity)	<= 3 Years	3 - 5 Years	>= 5 Years	6.1 Years
Funded Ratio: Market Value of Total Plan Assets (Unfunded Liability)	<80% or >120%	80 - 90% or 110 - 120%	90 - 110%	97.4% (6/30/2022)
ECR Volatility (Unfunded Liability)*	Δ +/- >3%	Δ +/- 2 - 3%	Δ +/- 2%	-0.53% (6/30/2022)
ECR Level (Unfunded Liability)*	<4% or >17%	4 - 6% or 12 - 17%	6 - 12%	9.76% (6/30/2022)
Actuarial Valuation: Quinquennial Full Scope Audit (Valuation Process)	Replicated Liabilities >4% of NYSTRS' Calculation	Replicated Liabilities 1 - 4% of NYSTRS' Calculation	Replicated Liabilities <=1% of NYSTRS' Calculation	0.04% (4/16/2019)
Actuarial Valuation: Annual Independent Review (Valuation Process)	Adverse Opinion	Modified Opinion	Unmodified Opinion	Unmodified Opinion (10/27/2022)

Funding Liquidity - Short Term Payroll Coverage				
Short Term Liquidity KRI (Months)	Current Qtr.	Appetite	Tolerance	Outside Tolerance
	2.1	>= 2 months	1-2 months	<=1 month

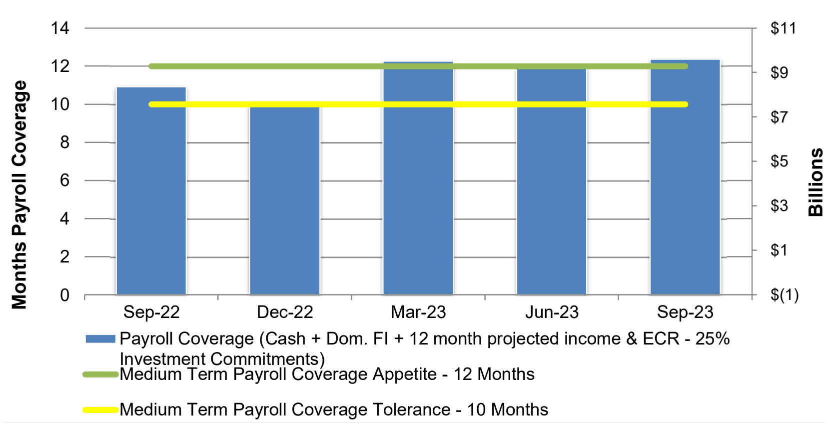


Stressed Long Term Funding Liquidity - Allocation to Liquid Assets				
Stressed Long Term Liquidity KRI (Years)	Current Qtr.	Appetite	Tolerance	Outside Tolerance
	6.1	>=5 Years	3-5 Years	<=3 Years



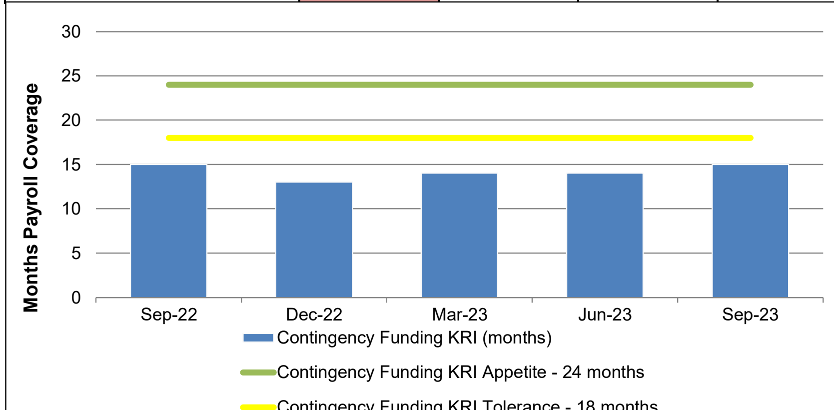
The Stressed Long Term Liquidity KRI assumes a hypothetical 40% portfolio loss then calculates years of required cash flow coverage from remaining public market assets and 12 months *estimated net cash flows (*includes stressed projections for: portfolio income, employer contributions and unfunded capital calls)

Funding Liquidity - Medium Term Payroll Coverage				
Medium Term Liquidity KRI (Months)	Current Qtr.	Appetite	Tolerance	Outside Tolerance
	12.4	>=12 months	10-12 months	<=10 months



Domestic Fixed Income included in payroll coverage observe the minimum allocation bound. Capital calls of 25% are indicative of a "non-stressed" market environment. Income and employer contributions are 12 month projections from the most recent quarter date depicted.

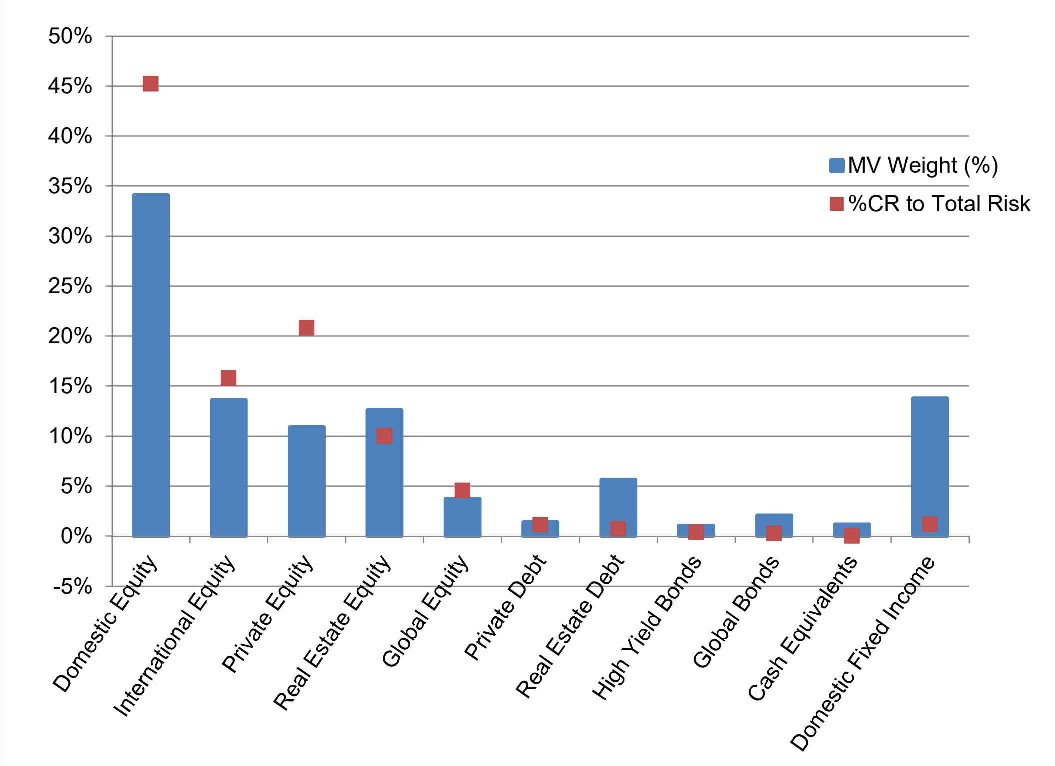
Stressed Funding Liquidity - Contingency Funding Plan				
Stressed Contingency Funding Liquidity KRI (Months)	Current Qtr.	Appetite	Tolerance	Outside Tolerance
	15.0	>=24 months	18-24 months	<=18 months



The Stressed Contingency Funding Liquidity KRI seeks to evaluate how many months of payroll can be made during a GFC like scenario before NYSTRS' CFP is triggered. GFC loss is experienced over 12 months with asset classes returning capital market assumptions years 2-5. Employer contributions are capped at 17%.

Total Predicted Risk by Asset Class

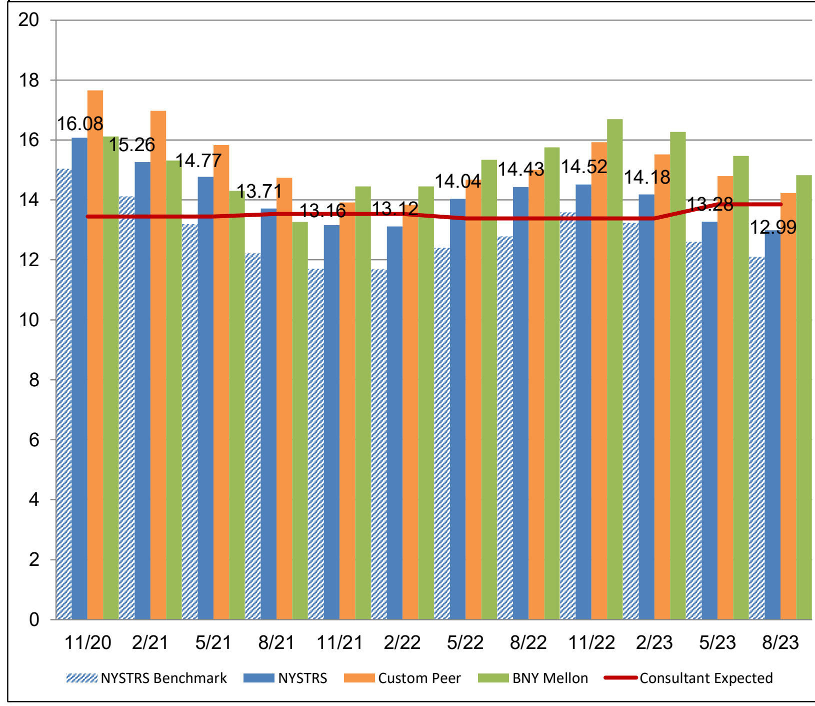
Asset class contributions to Total Predicted Risk are in line with expectations, with equity investments being the largest contributors.



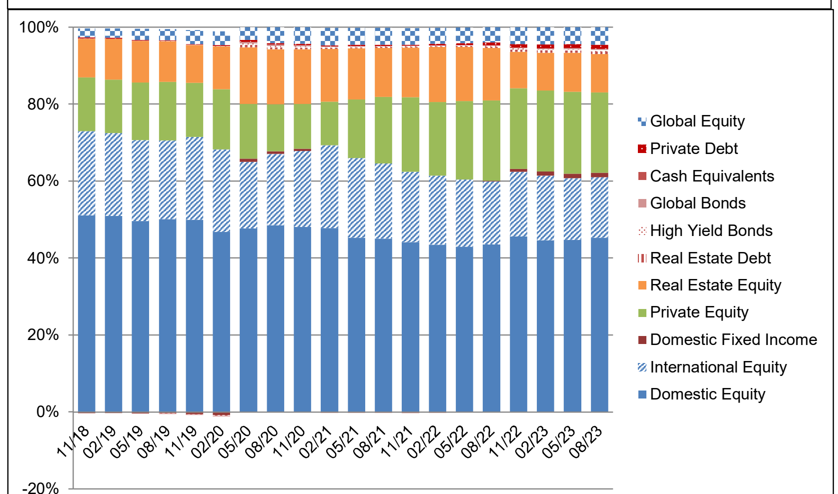
Portfolio Name		Market Value (Millions $)	Weight (%)	%CR to Total Risk	Total Plan Risk Cont.	Total Predicted Risk
Total Portfolio	***$***	***133,293***	***100%***	***100%***	***12.99***	***12.99***
Domestic Equity	$	45,427	34.08%	45.22%	5.87	17.88
International Equity	$	18,160	13.62%	15.79%	2.05	16.78
Private Equity	$	14,531	10.90%	20.81%	2.70	29.26
Real Estate Equity	$	16,785	12.59%	10.00%	1.30	12.57
Global Equity	$	4,966	3.73%	4.55%	0.59	16.33
Private Debt	$	1,864	1.40%	1.14%	0.15	12.29
Real Estate Debt	$	7,520	5.64%	0.72%	0.09	3.40
High Yield Bonds	$	1,401	1.05%	0.35%	0.05	5.86
Global Bonds	$	2,741	2.06%	0.26%	0.03	5.46
Cash Equivalents	$	1,564	1.17%	0.00%	0.00	0.12
Domestic Fixed Income	$	18,334	13.76%	1.18%	0.15	5.51

Total Predicted Risk and Peer Comparison

Long term expected risk target 13.86%; short term predicted risk 12.99%

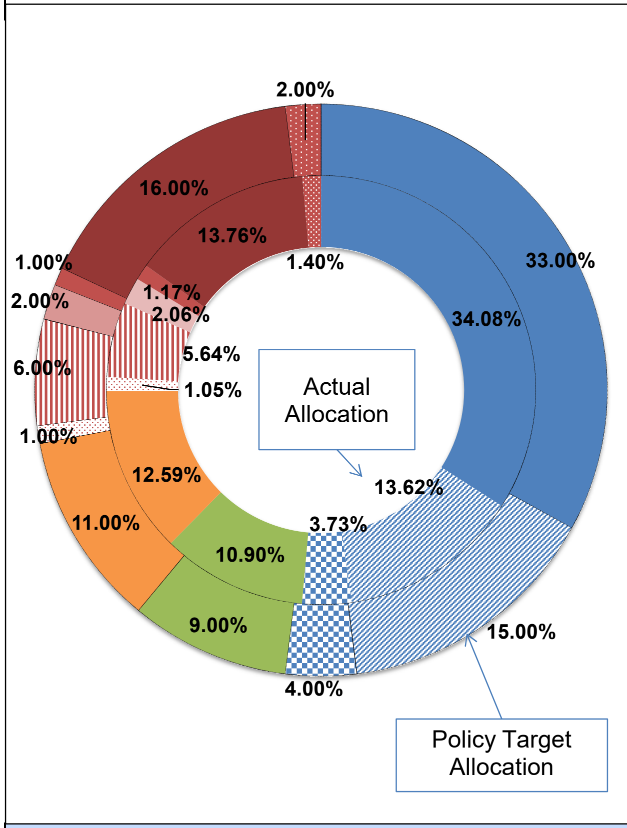


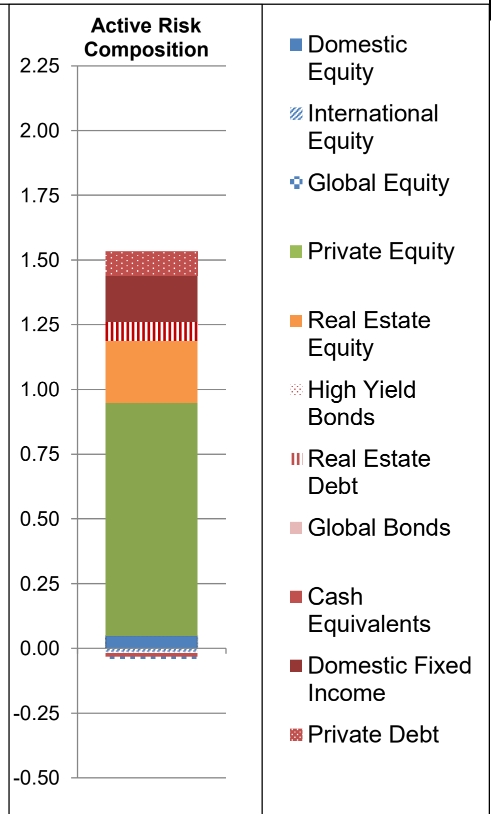
Historical Total Predicted Risk Contribution



Active Predicted Risk

Active predicted risk 1.49; an increase of 4 bps from last quarter.





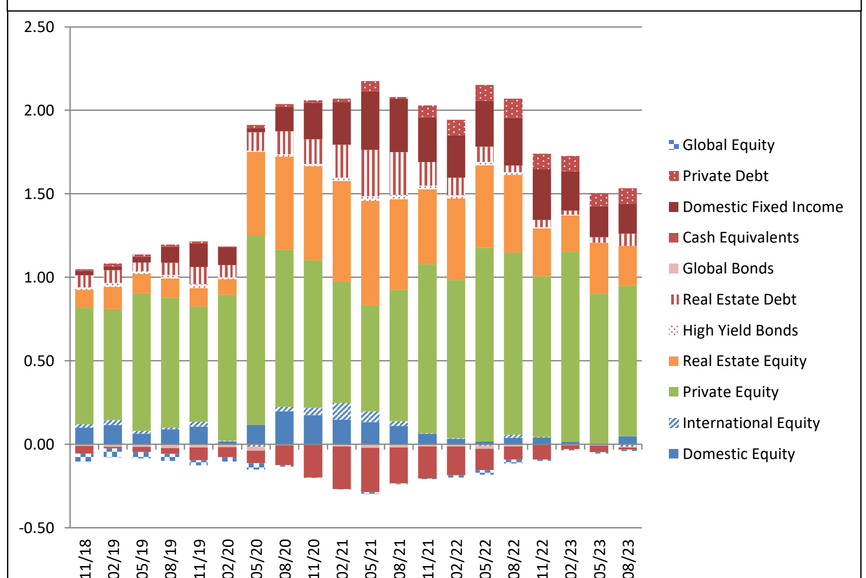
Portfolio Name	Weight (%)	BMK Weight (%)	Active Weight (%)	Active Risk Cont.	% CR to Active Risk	Active Predicted Risk
Total Portfolio	***100%***	***100%***	***0%***	***1.49***	***100%***	***1.49***
Domestic Equity	34.08%	33.00%	1.08%	0.05	3.3%	0.10
International Equity	13.62%	15.00%	-1.38%	-0.01	-0.9%	0.50
Global Equity	3.73%	4.00%	-0.27%	-0.01	-0.6%	2.10
Private Equity	10.90%	9.00%	1.90%	0.90	60.3%	7.57
Real Estate Equity	12.59%	11.00%	1.59%	0.24	16.0%	7.01
High Yield Bonds	1.05%	1.00%	0.05%	0.00	-0.2%	0.28
Real Estate Debt	5.64%	6.00%	-0.36%	0.07	4.8%	2.25
Global Bonds	2.06%	2.00%	0.06%	0.00	-0.3%	0.41
Cash Equivalents	1.17%	1.00%	0.17%	-0.01	-0.8%	0.12
Domestic Fixed Income	13.76%	16.00%	-2.24%	0.18	11.9%	0.76
Private Debt	1.40%	2.00%	-0.60%	0.09	6.3%	7.44

Active Predicted Risk:
Active Predicted Risk is defined as the expected volatility of excess returns, and results from differences between actual portfolio weights and holdings vs. policy weights and holdings. Excess returns may be positive or negative.

Observations:
Active Risk for the Fund is largely controlled by limiting the difference between the actual and policy benchmark (target) weights for each asset class.

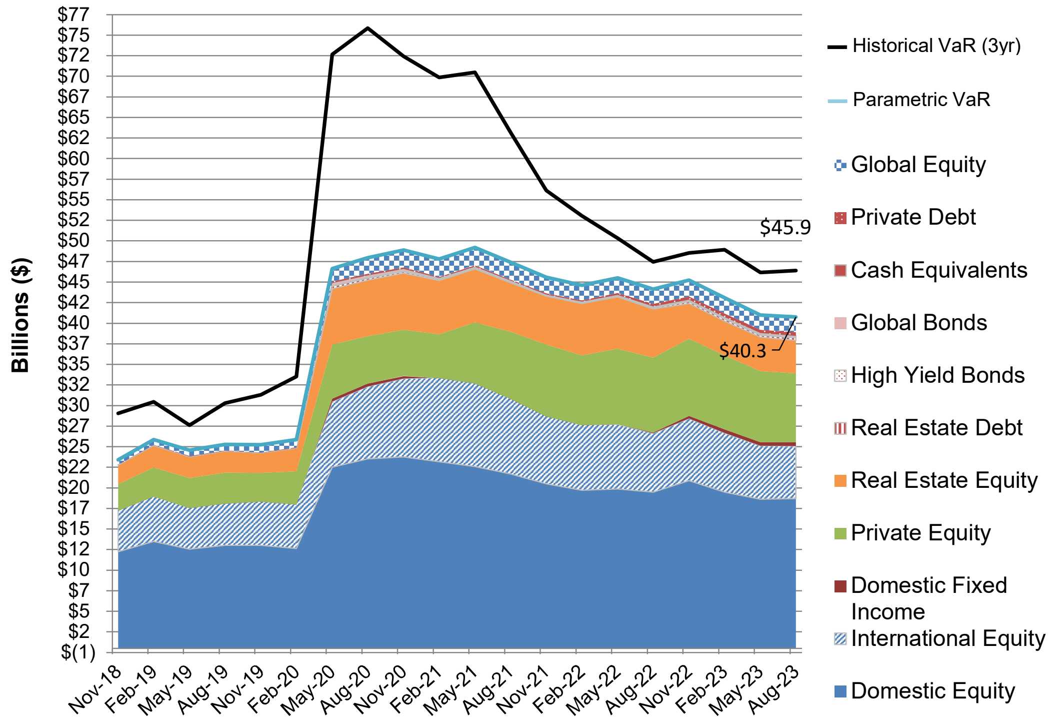
Benchmarking issues associated with private market portfolios also affect the measurement of 'active' risk. We see this most significantly with NYSTRS' private equity portfolio.

Historical Active Risk Contribution



Value at Risk Contribution by Asset Class

VaR metrics remain elevated as a result of recent market volatility, but have been slowly coming down. NYSTRS' strong liquidity position provides significant downside protection against realized portfolio losses.



Portfolio Name	Total Portfolio VaR	Diversification Benefit	$ Contribution to VaR (millions)	%Contribution to VaR
Total Portfolio	***$46,691***	***-$6,432***	***$40,259***	***100%***
Domestic Equity	$18,896		$18,207	45.22%
International Equity	$7,089		$6,356	15.79%
Private Equity	$9,890		$8,377	20.81%
Real Estate Equity	$4,908		$4,025	10.00%
High Yield Bonds	$191		$140	0.35%
Real Estate Debt	$594		$288	0.72%
Global Bonds	$348		$105	0.26%
Cash Equivalents	$4		$0	0.00%
Domestic Fixed Income	$2,350		$473	1.18%
Private Debt	$533		$458	1.14%
Global Equity	$1,887		$1,830	4.55%

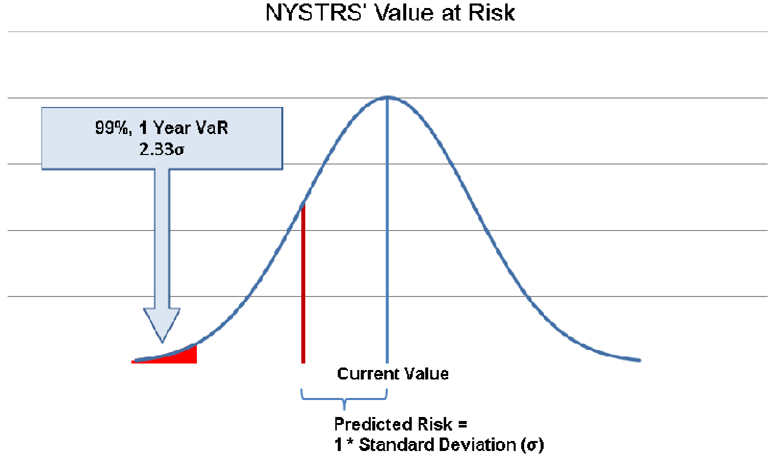
Value at Risk:
Value at Risk (VaR) is an estimate of the maximum portfolio loss over a specified time period and confidence interval given normal market conditions. VaR can be expressed in % loss or dollar terms. In this analysis, we use a 1 year time horizon and a 99% confidence interval. VaR can also be stated as: There is a 99% chance that the portfolio's market value will not lose more than [VaR amount] over the next year.

Methods Used:
► *Parametric VaR:* 99%VaR($) = 2.33σ * Portfolio Market Value
► *Historical Simulation VaR:* 99%VaR($) = Simulated P&L of portfolio utilizing empirical daily risk factor/price changes. 3 year lookback period (756 trading days) observed.

Drawbacks:
Parametric VaR assumes asset returns are normally distributed which may not be realistic. This could underestimate the VaR due to unfavorable asset returns having a higher chance of occurring in real life.

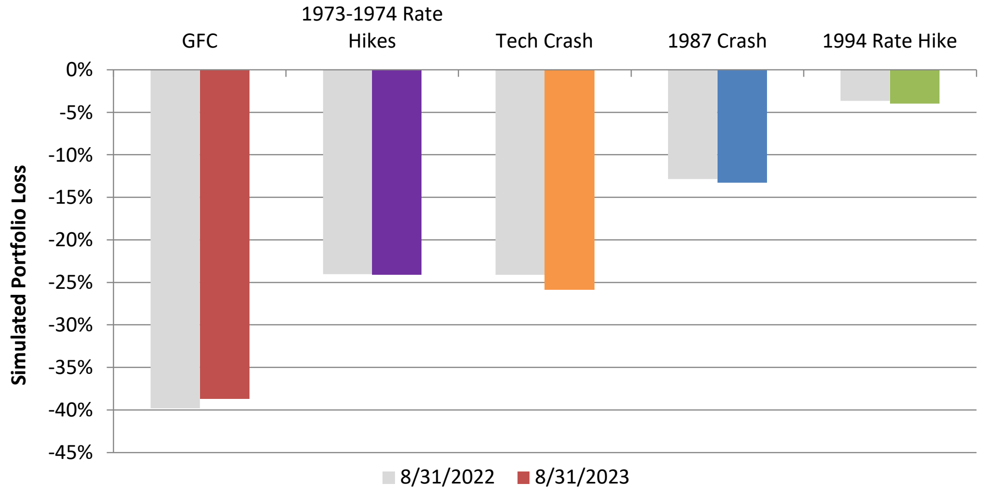
Historical Simulation VaR assumes past returns are indicative of future returns which may not be realistic. The specific return period analyzed directly impacts results which may or may not capture typical volatility, market extremes, or cyclicality.

NYSTRS' Value at Risk

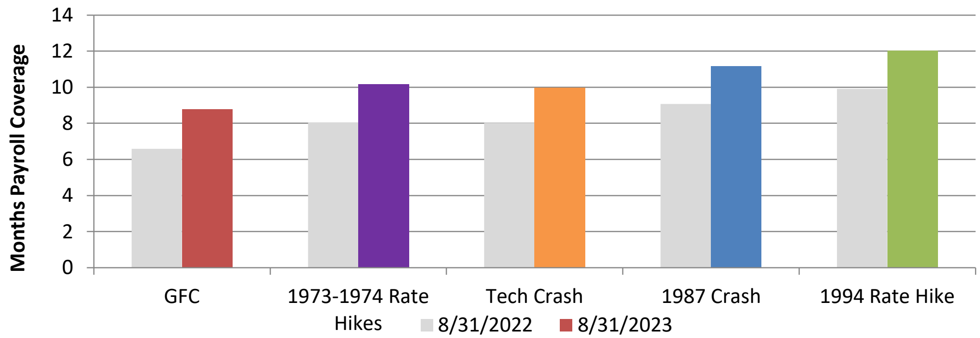


Historical Scenario Analysis

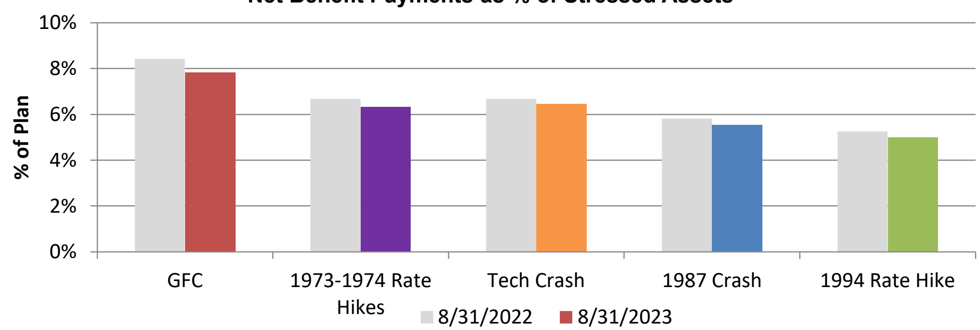
Scenario analysis is in line with expectations. Net Benefit Payments as a % of Assets in the most severe scenario is slightly below 8%.



Historical Scenario Funding Liquidity



Net Benefit Payments as % of Stressed Assets



Scenario Analysis
A scenario analysis seeks to determine how a portfolio may be affected by subjecting it to various historical or hypothetical market conditions.

Historical Scenarios:
The following historical scenarios apply market conditions experienced during their respective timeframes to NYSTRS' current portfolio as an instantaneous shock with no ability to rebalance or otherwise manage assets during the event. Simulated losses are illustrated on the chart to the top left. High level scenario inputs are provided below for context:

Historical Scenario	Domestic Equity	UST Yields: 2y/5y/10y (bps)	Credit Spreads: AA/BB/CCC (bps)
Global Financial Crisis: (9/30/07-3/4/09)	-54%	-308/-226/-115	+234/+849/+3779
1973-1974 Stagflation & Rate Hikes: (1/1/73-8/31/74)	-35%	+347(1y)/+239/+158	LIBOR +334
Tech Crash & Recession: (1/9/00-3/12/03)	-47%	-488/-387/-281	-13/+244/+1151
1987 Stock Market Crash: (8/3/87-11/30/87)	-27%	Unchanged	Unchanged
1994 US Rate Hike: (1/31/94-12/13/94)	-6%	+162/+152/+131	+2/+36/+0

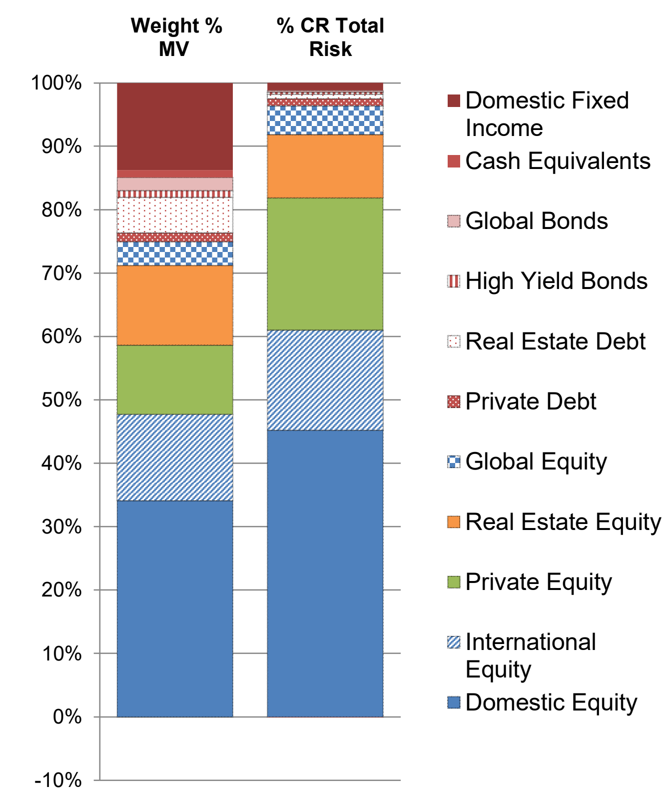
Funding Liquidity:
The middle chart depicts how each historical scenario would impact funding liquidity after a one-time rebalance to target policy weights. Cash and Domestic Fixed Income coverage represents how much of each asset could be used to make payroll before lower asset allocation bounds were breached and additional rebalancing was required. The attribution of each payroll coverage asset and cash flow component (in months coverage) is as follows:

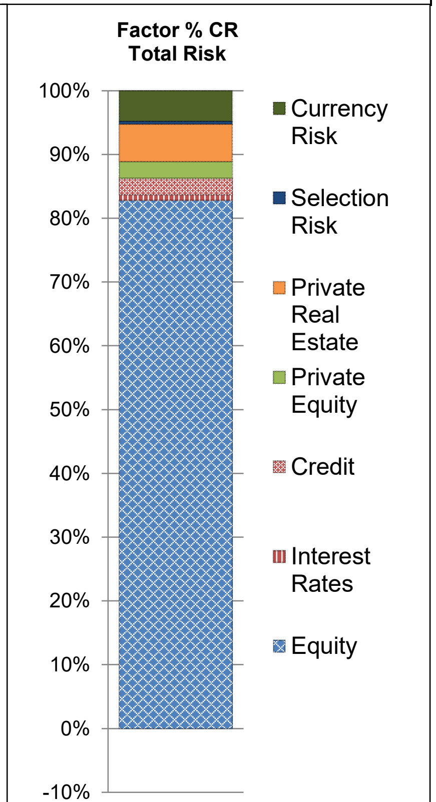
Funding Liquidity Assumptions	Months Coverage	
	8/31/2022	8/31/2023
Cash + Domestic Fixed Income	5.5 to 8.9	5.7 to 9
Portfolio Income/Maturities	8.0	8.3
Employer Contributions	2.7	3.0
Capital Calls	-9.6	-8.3
Total Payroll Coverage	**7 to 10**	**9 to 12**

Net Benefit Payments as % of Assets:
The bottom chart depicts how each historical scenario would impact net benefit payments as a percentage of assets. Figures are representative of each scenarios market bottom and do not incorporate expected cash flows or market recovery. (*Net Benefit Payments=Annual Benefit Payments-Employer & Employee Contributions)

Total Predicted Risk by Risk Factor

As expected, equity markets are the largest contributor to the Plan's total risk.





Risk Source	Total Plan Risk Cont.	%CR to Total Risk	BMK Risk Cont.	BMK %CR to Total Risk	% CR to Active Risk
Total Risk	***12.99***	***100%***	***12.11***	***100.00%***	***100%***
Local Market Risk	12.36	95.20%	11.52	95.15%	97.42%
Common Factor Risk	12.31	94.79%	11.45	94.60%	89.90%
Equity	10.75	82.82%	9.42	77.78%	58.02%
Interest Rates	0.11	0.85%	0.19	1.61%	5.18%
Credit	0.34	2.60%	0.37	3.04%	-0.76%
Private Equity	0.34	2.63%	0.14	1.14%	30.82%
Private Real Estate	0.77	5.90%	1.33	11.02%	-3.37%
Selection Risk	0.05	0.41%	0.07	0.55%	7.53%
Currency Risk	0.62	4.80%	0.59	4.85%	2.58%

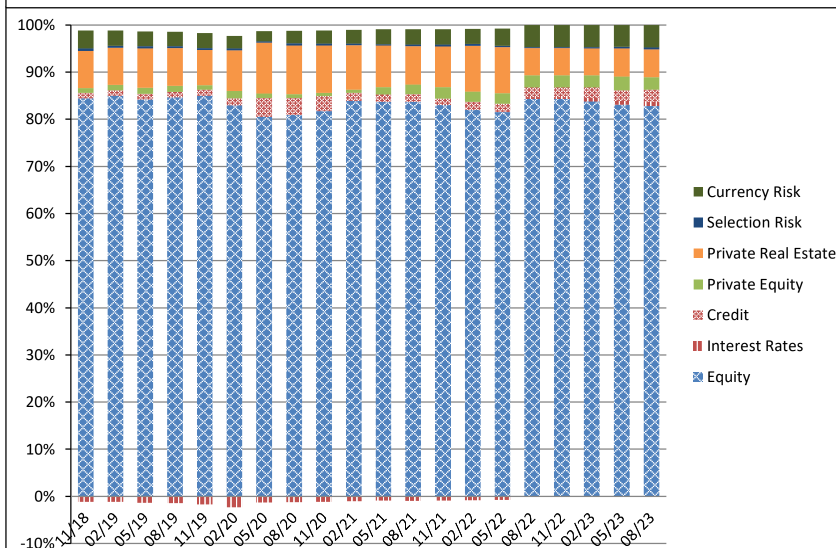
Risk Factors:
Risk factors are characteristics shared by a group of securities that influence their risk and return as well as their correlations.

The five risk factor groups used for this analysis (equity, interest rates, credit, private equity, and private real estate) can be further decomposed into underlying factors such as industry, style, interest rate term structure, and geography. Each factor has an expected volatility and correlation with the other risk factors.

All of NYSTRS holdings are modeled according to their exposures to individual risk factors.

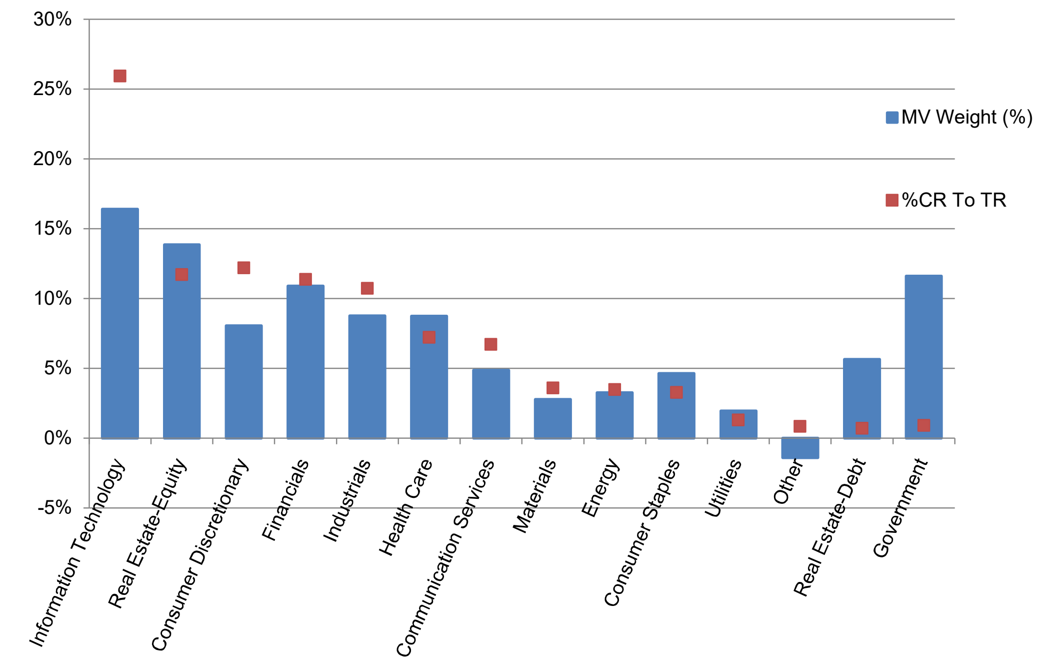
Observations:
As expected, Total Plan risk is primarily driven by the equity markets.

Historical Risk Factor Contribution to Total Risk



Sector Concentration

Sector contribution to risk is in line with expectations. Information Technology continues to drive an outsized contribution to total risk relative to its weight in the portfolio.



		Mkt Value (Mil $)	Weight (%)	Total Plan Risk Cont.	% CR to Total Risk	Total Predicted Risk
Total Portfolio	***$***	***133,293***	***100%***	***12.99***	***100%***	***12.99***
Information Technology	$	21,853	16.39%	3.37	25.94%	22.54
Real Estate-Equity	$	18,469	13.86%	1.52	11.72%	13.09
Consumer Discretionary	$	10,719	8.04%	1.58	12.20%	21.04
Financials	$	14,514	10.89%	1.48	11.36%	14.85
Industrials	$	11,675	8.76%	1.39	10.74%	16.79
Health Care	$	11,638	8.73%	0.94	7.21%	13.83
Communication Services	$	6,492	4.87%	0.87	6.70%	20.17
Materials	$	3,689	2.77%	0.47	3.59%	18.53
Energy	$	4,330	3.25%	0.45	3.49%	21.49
Consumer Staples	$	6,174	4.63%	0.43	3.28%	11.40
Utilities	$	2,613	1.96%	0.17	1.31%	11.84
Other	$	(1,874)	-1.41%	0.11	0.85%	10.79
Real Estate-Debt	$	7,520	5.64%	0.09	0.72%	3.40
Government	$	15,481	11.61%	0.12	0.90%	5.38

"Other" primarily consists of Cash, Private Equity fund liabilities; fund of funds; derivatives; and asset backed securities.

<u>Sectors:</u>
In developing the sector schedule, NYSTRS began with industry recognized sectors used by MSCI and S&P.

Five custom sectors were added to this base to accommodate the Fund's allocation to Government, Real Estate Debt, Real Estate Equity, Cash and "Other" investments.

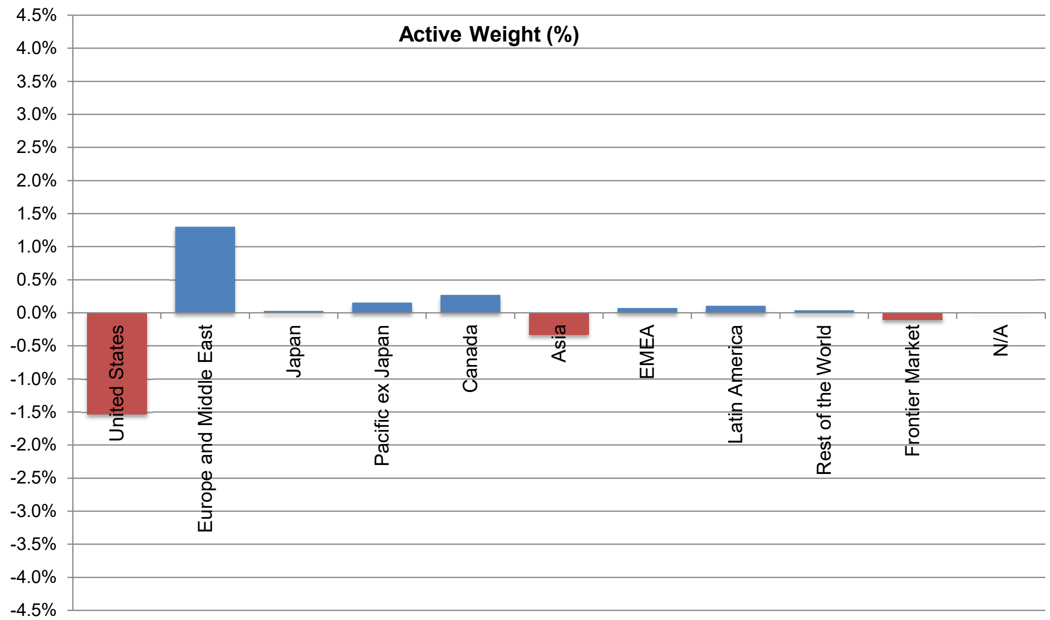
Defensive sectors such as Utilities, and Consumer Staples tend to be more stable and less volatile regardless of the condition of the overall financial markets. Because these sectors are not highly correlated with the business cycle, they are also known as "non-cyclical". Cyclical sectors such as Consumer Discretionary and Materials tend to be correlated with the business cycle and can be more volatile than defensive sectors. [1]

These characteristics can be seen in the chart. The risk contribution by the defensive sectors is less than their market value allocation and the risk contribution by the cyclical sectors is higher than their market value allocation.

[1]Investopedia

Geographic Region Concentration

Total developed and emerging market regions are within 1.0% of benchmark.



Geographic Region*		Mkt Value (Mil $)	Weight (%)	Bmk Weight (%)	Active Weight (%)	Total Plan Risk Cont.	Total Predicted Risk
Total Portfolio	***$***	***133,293***	***100%***	***100%***	***0%***	***12.99***	***12.99***
Total Developed	**$**	**125,093**	**93.85%**	**93.63%**	**0.22%**	**12.19**	**13.01**
United States	$	103,193	77.42%	78.95%	-1.53%	9.62	12.61
Europe and Middle East	$	13,810	10.36%	9.06%	1.30%	1.73	18.90
Japan	$	3,535	2.65%	2.63%	0.03%	0.31	17.85
Pacific ex Japan	$	2,102	1.58%	1.42%	0.16%	0.28	21.47
Canada	$	2,453	1.84%	1.57%	0.27%	0.25	15.13
Total Emerging	**$**	**7,452**	**5.59%**	**5.74%**	**-0.15%**	**0.77**	**17.41**
Asia	$	5,903	4.43%	4.76%	-0.33%	0.55	17.08
EMEA	$	719	0.54%	0.47%	0.07%	0.10	29.02
Latin America	$	830	0.62%	0.52%	0.11%	0.11	26.57
Total Other	**$**	**748**	**0.56%**	**0.63%**	**-0.07%**	**0.03**	**6.12**
Rest of the World	$	530	0.40%	0.36%	0.04%	0.00	3.80
Frontier Market	$	218	0.16%	0.27%	-0.10%	0.01	18.26
N/A	$	0	0.00%	0.00%	0.00%	0.01	-

Observations:
As expected, the largest contribution on a geographic basis comes from NYSTRS exposure to U.S. investments.

*See appendix for countries included in each geographic region.

Glossary:

%CR to Active Risk: Percent of Plan's Active Predicted Risk contributed by each component. This column sums to 100%.
%CR to Total Risk: Percent of Plan's Total Predicted Risk contributed by each component. Negative numbers imply a diversification benefit. This column sums to 100%.
Active Predicted Risk: Asset class portfolios' Active Predicted Risk compared to its respective benchmark.
Active Risk Cont.: Absolute contribution to Plan's Active Predicted Risk from each asset class portfolio. This column sums to the Plan's Active Predicted Risk.
Active Weight (%): Difference between the Plan's current weight and the Plan's benchmark policy weight.
BMK %CR to Total Risk: Percent of Total Predicted Risk for the Plan's Policy Benchmark contributed by each component. This column sums to 100%.
BMK Risk Cont.: Absolute contribution to Total Predicted Risk for Plan's Policy Benchmark from each Risk Factor group.
Total Predicted Risk: Individual components' distinct Total Predicted Risk.
Total Plan Risk Cont.: Absolute contribution to Plan's Total Predicted Risk from each component. Negative numbers imply a diversification benefit. This column sums to the Plan's Total Predicted Risk.
Total Portfolio VaR: The expected loss to a specified degree of confidence (99%) when subjected to a historical stress simulation. Also could be stated as there is a 99% chance that the total portfolio or individual asset classes' market value will not lose more than the [VaR amount] over the next year.
Diversification Benefit: The benefit achieved by owning a diversified portfolio comprised of assets with correlations < 1.

Notes:

BNY Mellon Peer Median; >$10B: BNY Mellon Total Public Fund > $10B median allocation.
- 41 public pension funds with an average plan size of $41.6B. Aggregate assets of $1,706.1B.

NYSTRS Custom Peer Group Median: NYSTRS' custom peer group used during annual asset allocation study. Allocation data provided by Pension Fund Date Exchange, ltd. (PFDE).
- 5 public pension funds with an average plan size of $160B and median plan size of $99B.
    - California State Teacher' Retirement System
    - New Jersey Division of Investment
    - Oregon Public Employees' Retirement Fund
    - State Board of Administration of Florida
    - State Teachers Retirement System of Ohio

Appendix:

MSCI ACWI & FRONTIER MARKETS INDEX

MSCI ACWI INDEX | **MSCI EMERGING & FRONTIER MARKETS INDEX**

MSCI WORLD INDEX			MSCI EMERGING MARKETS INDEX			MSCI FRONTIER MARKETS INDEX			
DEVELOPED MARKETS			EMERGING MARKETS			FRONTIER MARKETS			
Americas	Europe & Middle East	Pacific	Americas	Europe, Middle East & Africa	Asia	Europe	Africa	Middle East	Asia
Canada	Austria	Australia	Brazil	Czech Republic	China	Croatia	Kenya	Bahrain	Bangladesh
United States	Belgium	Hong Kong	Chile	Egypt	India	Estonia	Mauritius	Jordan	Pakistan
	Denmark	Japan	Colombia	Greece	Indonesia	Iceland	Morocco	Oman	Sri Lanka
	Finland	New Zealand	Mexico	Hungary	Korea	Lithuania	Nigeria		Vietnam
	France	Singapore	Peru	Kuwait	Malaysia	Kazakhstan	Tunisia		
	Germany			Poland	Philippines	Romania	WAEMU[2]		
	Ireland			Qatar	Taiwan	Serbia			
	Israel			Saudi Arabia	Thailand	Slovenia			
	Italy			South Africa					
	Netherlands			Turkey					
	Norway			United Arab Emirates					
	Portugal								
	Spain								
	Sweden								
	Switzerland								
	United Kingdom								

MSCI STANDALONE MARKET INDEXES[1]

Americas	Europe	Africa	Middle East
Argentina	Bosnia Herzegovina	Botswana	Lebanon
Jamaica	Bulgaria	Zimbabwe	Palestine
Panama	Malta		
Trinidad & Tobago	Ukraine		

*MSCI.com/market-classification

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM

INVESTMENT COMMITTEE MEETING
October 25, 2023

INVESTMENT COMMITTEE MEETING
NEW YORK STATE TEACHERS' RETIREMENT SYSTEM

A meeting of the Investment Committee of the Retirement Board of the New York State Teachers' Retirement System was held at the System on October 25, 2023. Nicholas Smirensky, Chair, called the meeting to order at 9:34 a.m.

Investment Committee
Elizabeth Chetney, Eric Iberger, David Keefe (via WebEx), Jennifer Longtin, Nicholas Smirensky

Board Members
Juliet Benaquisto, Paul Farfaglia, Oliver Robinson

NYSTRS' Staff
Thomas Lee, Beth Dellea, Vijay Madala, Kathy Ebert, Gerald Yahoudy, Michael Federici, Don Ampansiri, Matt Albano, Miriam Dixon, Paul Cummins, Dave Gillan, Richard Young, Danny Malavé, Han Yik, Emily Ekland, Heidi Brennan, Melody Prangley, Aaron Vanderwiel, Matt Pinchinat, Kevin Maloney, Christopher Brown, Ben Keezer, Wanette Alston, Jeffrey Shubert, Stacey Lesser Meehan

System Consultants

Callan Associates Inc. – Tom Shingler, Carlo Stadlinger
StepStone – Jose Fernandez

Presentators to Investment Committee

StepStone Group Real Estate – Jeff Giller, Lee Singer, Dev Subhash
Meketa – Christy Fields, Colin Hill, Reggie Ross

Visitors- via WebEx

Cyril Espanol - WithIntelligence
Catarina Moura - Reorg

Approval of Minutes

A. Approval of Minutes of July 26, 2023 Investment Committee Meeting

Upon motion of J. Longtin, seconded by E. Iberger and unanimously carried, the minutes of the July 26, 2023 Investment Committee meeting were approved.

The Investment Committee heard presentations on and reviewed the following information regarding the System's investments and performance.

Review of Investments

1. Investment Committee Executive Summary (Appendix A, pp. 9-17)
2. Public Equities Update (Appendix B, p. 18)
3. Fixed Income Update (Appendix C, p. 19)
4. Real Estate Update (Appendix D, pp. 20-22)
5. Private Equity/Debt Update (Appendix E, p. 23)
6. Callan

T. Shingler gave a performance update and a report on peer review rankings (Appendix F, pp. 24-47).

Presentations

A. Real Estate Consultant Discussion

Upon motion of E. Chetney, seconded by E. Iberger and unanimously carried, the Committee went into Executive Session at 11:31 a.m. for a discussion on Real Estate consultants and to hear presentations from StepStone Group Real Estate and Meketa Investment Group.

Upon motion of E. Chetney, seconded by E. Iberger and unanimously carried, the Committee came out of Executive Session at 12:10 p.m. and continued in open session.

Investment Committee Actions

A. Consent Agenda Recommendation items #1-5 (see Appendix G, pp. 48-49)

N. Smirensky asked the committee members if any of the consent agenda items should be moved to regular discussion items. Hearing no objections, the Committee proceeded to move the Consent Agenda Recommendation items together with one motion.

Upon motion of E. Chetney, seconded by J. Longtin, the members of the Investment Committee voted unanimously to recommend the following consent agenda items (#1-5) to the Retirement Board:

1. Renew Consultants

- StepStone – Private Equity/Debt Consultant

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the System's contract with StepStone Group LP to serve as the System's private equity and private debt consultant and to perform such assignments as may be determined by the Executive Director and Chief Investment Officer or his designees in connection therewith, for a period of one year, commencing February 1, 2024 for all fixed services at an annual retainer not to exceed the current term's fee of $1,650,000 (subject to an inflation price adjustment not to exceed the lesser of 3% and the change in the ECI Index) and for all optional services at fees (1) for research on market trends or on private equity or private debt partnerships not in our portfolio not to exceed $40,000 per report; (2) for special research assignments to better define goals and objectives or monitor portfolio risk not to exceed $40,000 per report; (3) for negotiating final investment agreements and work with the System's legal counsel and staff in drafting, reviewing and/or revising partnership agreements, subscription agreements and other required documents for an additional fee not to exceed $15,000 per agreement; (4) for providing professional training not to exceed $20,000 per training; (5) for attending annual meetings and providing meeting notes not to exceed $8,000 per meeting; (6) for monitoring and reporting on legacy partnerships not to exceed $4,500 per partnership.

2. Renew Managers

- AQR Capital Management LLC

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with AQR Capital Management, LLC to manage a portion of the System's assets as an active MSCI ACWI Ex-US international equity manager for a period of one-year, effective January 6, 2024.

- BlackRock Institutional Trust Company

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with BlackRock Institutional Trust Company, N.A. to manage a portion of the System's assets as a passive ACWI ex-US international equity manager for a period of one-year, effective December 12, 2023.

- Dimensional Fund Advisors

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Dimensional Fund Advisors to manage a portion of the System's assets as an active emerging markets manager benchmarked to the MSCI Emerging Markets Index for a period of one-year commencing February 19, 2024.

- Goldman Sachs Asset Management

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Goldman Sachs Asset Management, L.P. to manage a portion of the System's assets as an active global bond manager benchmarked to the Bloomberg Global Aggregate Float Adjusted ex-CNY Bond Index Hedged to USD for a period of one year, effective November 12, 2023.

- Harding Loevner Management

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Harding Loevner LP to manage a portion of the System's assets as an active global equity manager benchmarked to the MSCI ACWI index for a period of one-year, effective February 27, 2024.

- Loomis Sayles & Co.

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Loomis Sayles & Co., L.P., to manage a portion of the System's assets as an active global bond manager benchmarked to the Bloomberg Global Aggregate Float Adjusted ex-CNY Bond Index Hedged to USD for a period of one year, effective November 8, 2023.

- Marathon Asset Management Limited, As Successor in Interest to Marathon Asset Management LLP

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Marathon Asset Management Limited, as successor in interest to Marathon Asset Management, LLP, to manage a portion of the System's assets as an active EAFE international equity manager for a period of one year, effective January 24, 2024.

- Nomura Corporate Research & Asset Management

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Nomura Corporate Research and Asset Management Inc. for a period of one year, effective November 27th, 2023, to manage a portion of the System's assets as an active U.S. high yield manager in two separate accounts: (A) a portfolio benchmarked to the ICE BofAML BB-B US High Yield Constrained Index (HUC4); and (B) a portfolio benchmarked to the ICE BofAML US High Yield Constrained Index (HUC0).

- State Street Global Advisors

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with State Street Global Advisors Trust Company (successor-in-interest by assignment from State Street Bank and Trust Company) to manage a portion of the System's assets as a passive ACWI ex US international equity manager, for a period of one year, effective February 18, 2024.

3. Reappointments to the Investment Advisory Committee

- Howard Bicker

WHEREAS, The term of Howard Bicker, as a member of the Investment Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Bicker to a three-year term as a member of the Investment Advisory Committee, effective January 1, 2024.

- Daniel Bukowski

WHEREAS, The term of Daniel Bukowski, as a member of the Investment Advisory Committee, expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Bukowski to a three-year term as a member of the Investment Advisory Committee, effective January 1, 2024.

4. Reappointments to the Real Estate Advisory Committee

- Paul Dolinoy

WHEREAS, The term of Mr. Paul Dolinoy as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Dolinoy to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

- Jill Hatton

WHEREAS, The term of Ms. Jill Hatton as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Ms. Hatton to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

- Laura Huntington

WHEREAS, The term of Ms. Laura Huntington as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Ms. Huntington to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

- Daniel Hogarty Jr.

WHEREAS, The term of Mr. Daniel Hogarty Jr. as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Hogarty to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

5. Resolution on Investment Policy Manual

RESOLVED, That the Investment Policy Manual, as presented to the Retirement Board reflecting significant changes through October 2023, as summarized in the grid below, is approved and accepted.

POLICY	SUMMARY OF SIGNIFICANT CHANGES 2023
Statement of Investment Policy	• Updated Controlling Statutes and Regulations -- §177(9) of the Retirement and Social Security Law amended to increase percentage of assets that may be invested in types of assets not otherwise specifically authorized from 25% to 35% • Added roles and responsibilities for Senior Advisor to the Executive Director and Chief Investment Officer - Stewardship
Delegation of Investment Authority	• Added "Limited Waiver of Credit Ratings Requirements for U.S. Government Obligations" section (July 26, 2023 Board meeting)

6. New Agreements

A. Resolution on Stepstone Group Real Estate LP

Upon motion of J. Longtin, seconded by E. Iberger, the members of the Investment Committee voted unanimously to recommend the following resolution to the Retirement Board:

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to contract with StepStone Group Real Estate LP to serve as the System's real estate consultant for a period of one year, commencing on such effective date as may be determined by the Executive Director and Chief Investment Officer upon the completion of legal due diligence, for all fixed services at an annual retainer not to exceed $450,000, and to perform such assignments and optional services as may be determined by the Executive Director and Chief Investment Officer in connection therewith.

B. Resolution on Meketa Investment Group Inc.

Upon motion of J. Longtin, seconded by E. Iberger, the members of the Investment Committee voted unanimously to recommend the following resolution to the Retirement Board:

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to contract with Meketa Investment Group, Inc. to serve as the System's secondary real estate consultant for a period of one year, commencing on such effective date as may be determined by the Executive Director and Chief Investment Officer upon the completion of legal due diligence, to perform such assignments and optional services as may be determined by the Executive Director and Chief Investment Officer in connection therewith.

Informational reports

- The Committee reviewed the following informational reports: EDCIO Investment Discretion Report (Appendix H, pp. 50-52) and Mail Vote Quarterly Board Report (Appendix I, p. 53).

There being no other business and upon unanimous motion, the meeting adjourned at 12:20 p.m.

Respectfully submitted,

[redacted]

Thomas K. Lee

Appendix A

Investment Committee Executive Summary

Office of the CFO: Investment Operations Department

Investment Committee Meeting: October 25, 2023

Margaret Andriola, CIPM, CPA
Chief Financial Officer

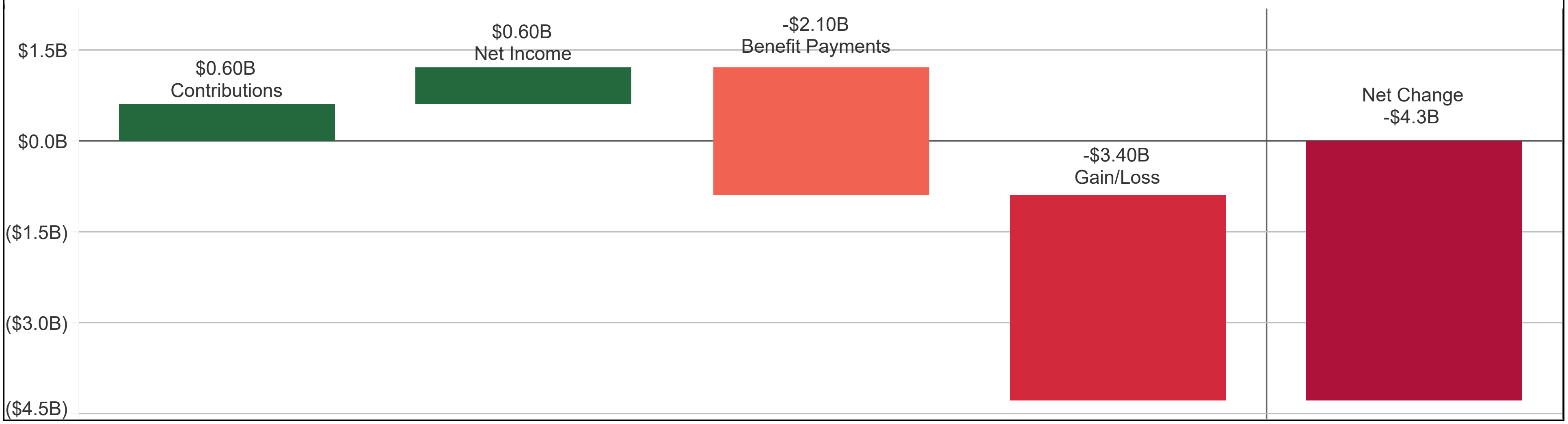
Investment Committee Executive Summary

Market Value Summary ('000s)

Asset Category	Asset Class	September 30, 2023 Net Asset Value	September 30, 2023 % Net Asset Value	June 30, 2023 Net Asset Value	June 30, 2023 % Net Asset Value	September 30, 2022 Net Asset Value	September 30, 2022 % Net Asset Value
Equity	Domestic Equity	$42,802,528	32.7%	$45,854,870	33.9%	$39,587,923	32.1%
	International Equity	$17,694,716	13.5%	$18,812,576	13.9%	$17,648,892	14.3%
	Global Equity	$4,810,378	3.7%	$4,926,176	3.6%	$3,909,635	3.2%
	Real Estate Equity	$16,326,716	12.5%	$16,482,638	12.2%	$16,318,944	13.2%
	Private Equity	$15,656,153	12.0%	$15,416,611	11.4%	$13,859,720	11.3%
	Asset Category Subtotal	**$97,290,491**	**74.4%**	**$101,492,872**	**75.1%**	**$91,325,114**	**74.1%**
Debt	Domestic Fixed Income	$18,186,385	13.9%	$18,194,259	13.5%	$16,849,018	13.7%
	Global Bonds	$2,636,024	2.0%	$2,697,024	2.0%	$2,592,643	2.1%
	High Yield	$1,387,676	1.1%	$1,381,448	1.0%	$970,083	0.8%
	Real Estate Debt	$7,678,481	5.9%	$7,532,011	5.6%	$8,061,632	6.5%
	Private Debt	$2,089,443	1.6%	$2,045,645	1.5%	$1,537,395	1.2%
	Cash & Short Term Debt	$1,514,345	1.2%	$1,750,709	1.3%	$1,860,009	1.5%
	Asset Category Subtotal	**$33,492,354**	**25.6%**	**$33,601,095**	**24.9%**	**$31,870,780**	**25.9%**
	Total Plan	**$130,782,844**	**100.0%**	**$135,093,967**	**100.0%**	**$123,195,893**	**100.0%**

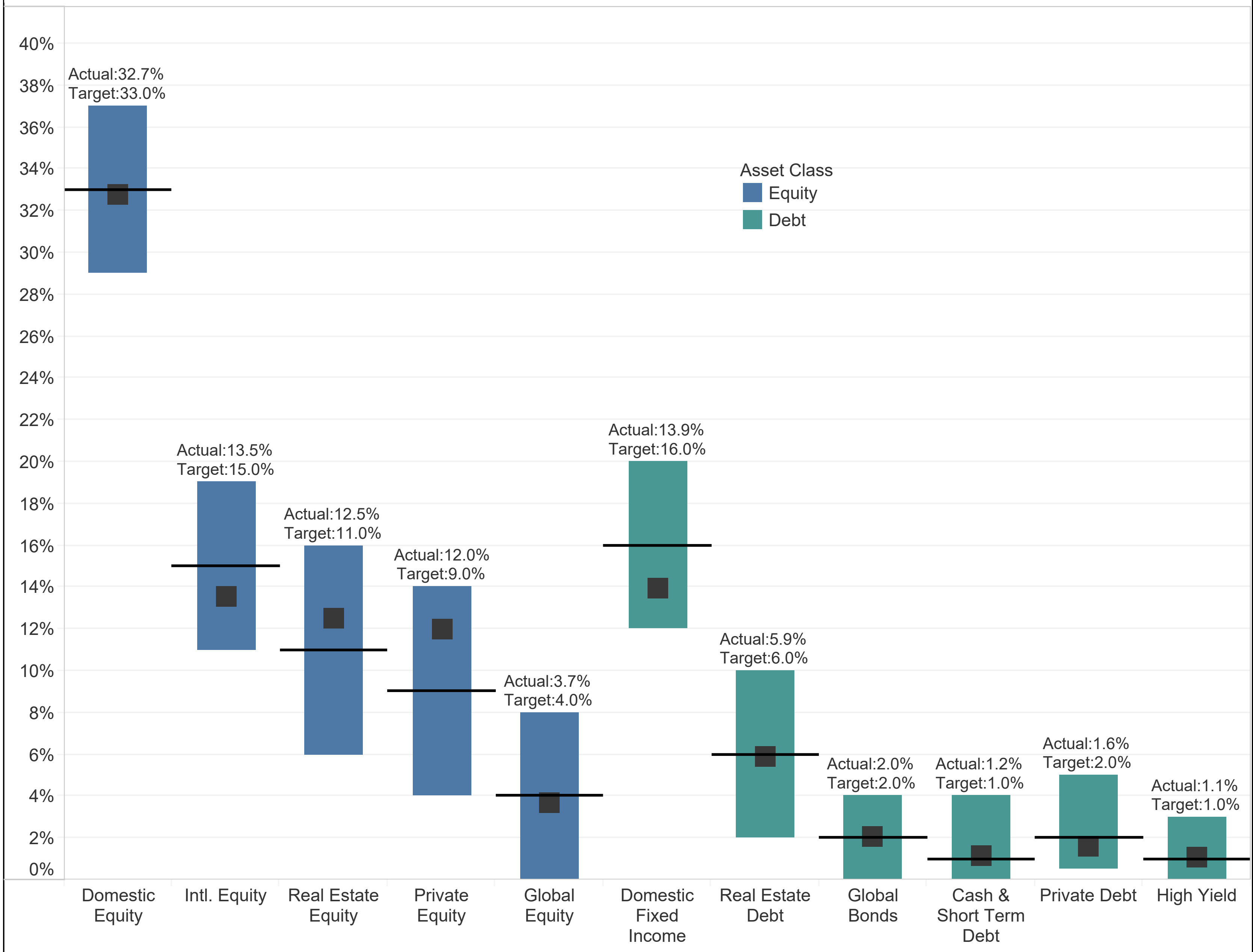
Due to rounding, numbers may not sum to 100%

Components of Change in Total Investments
FYTD: 7/1/2023 to 9/30/2023
$135.1B to $130.8B

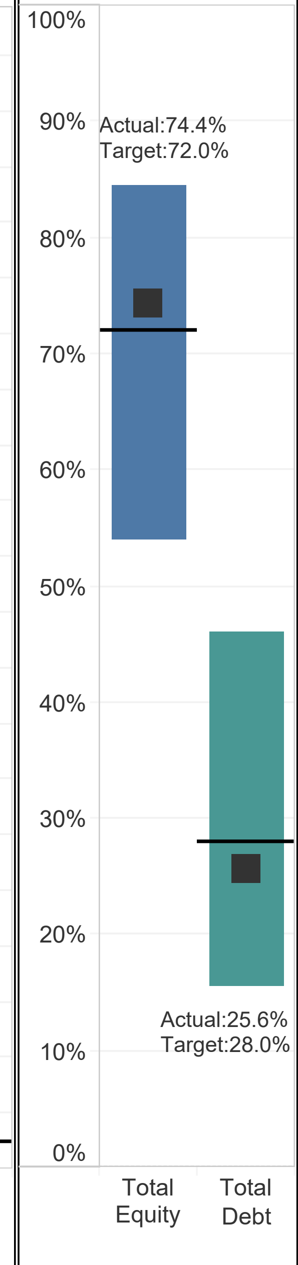


Investment Committee Executive Summary

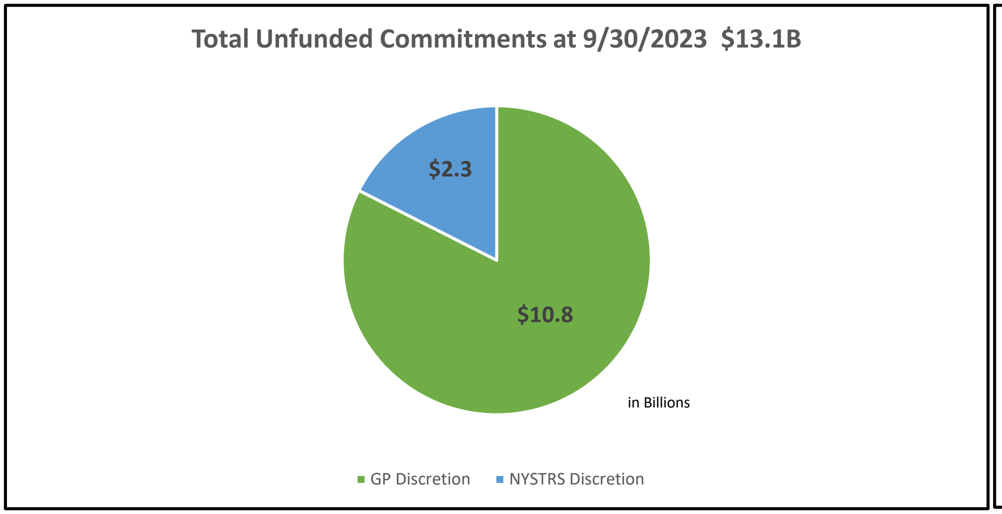
NYSTRS' Asset Allocation: $130.8B (September 30, 2023)

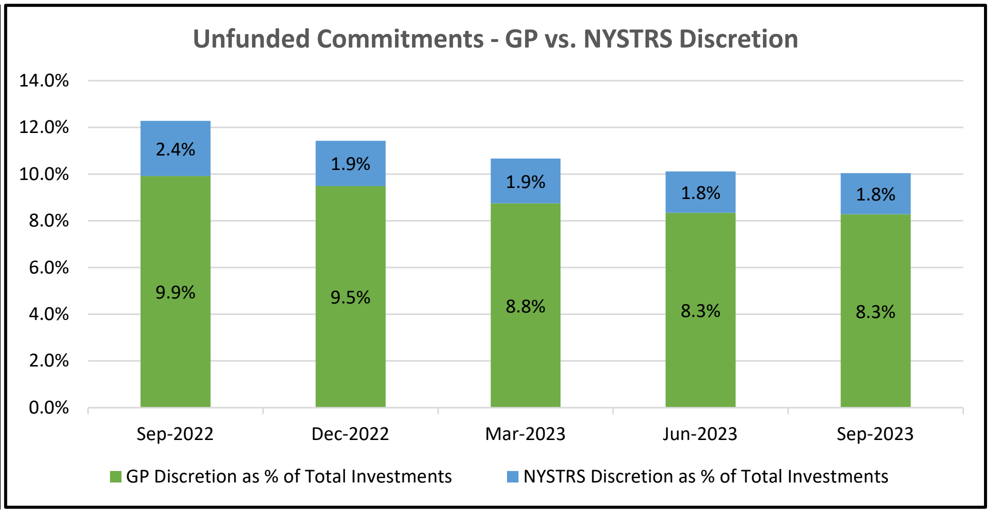


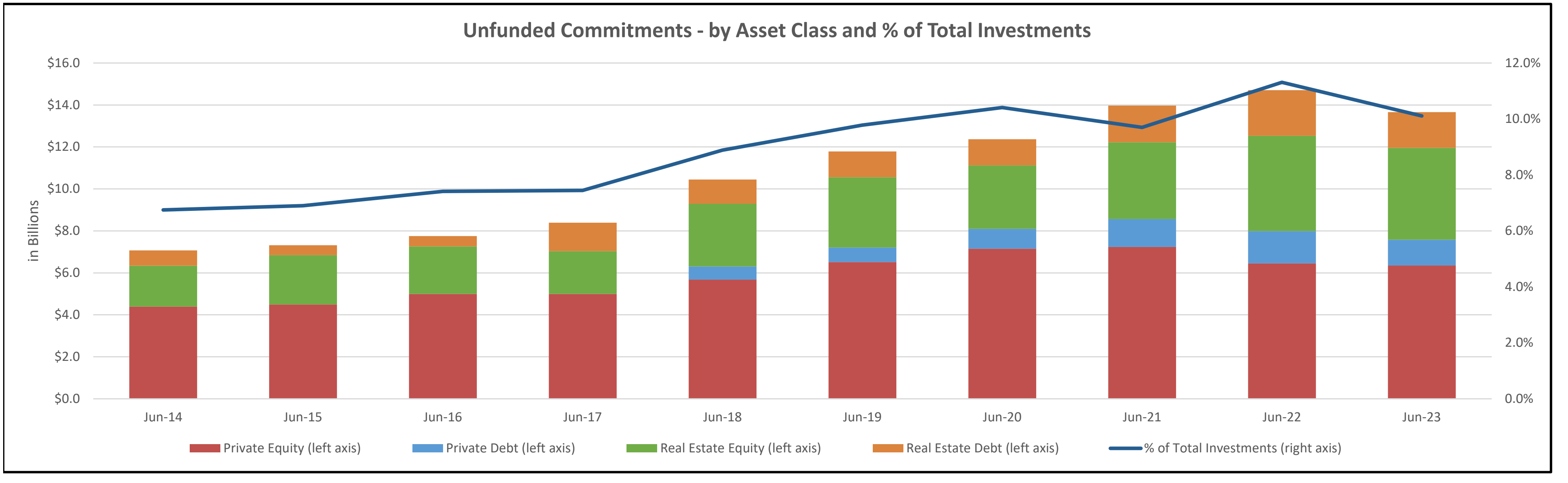
Equity vs. Debt



Unfunded Commitments - Private Assets

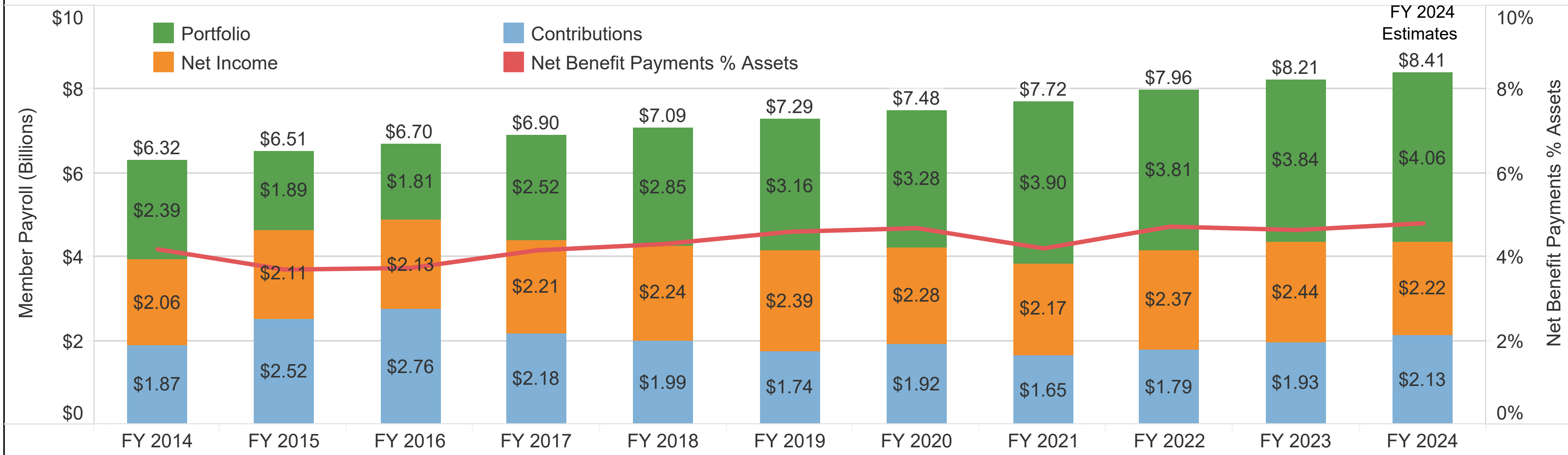




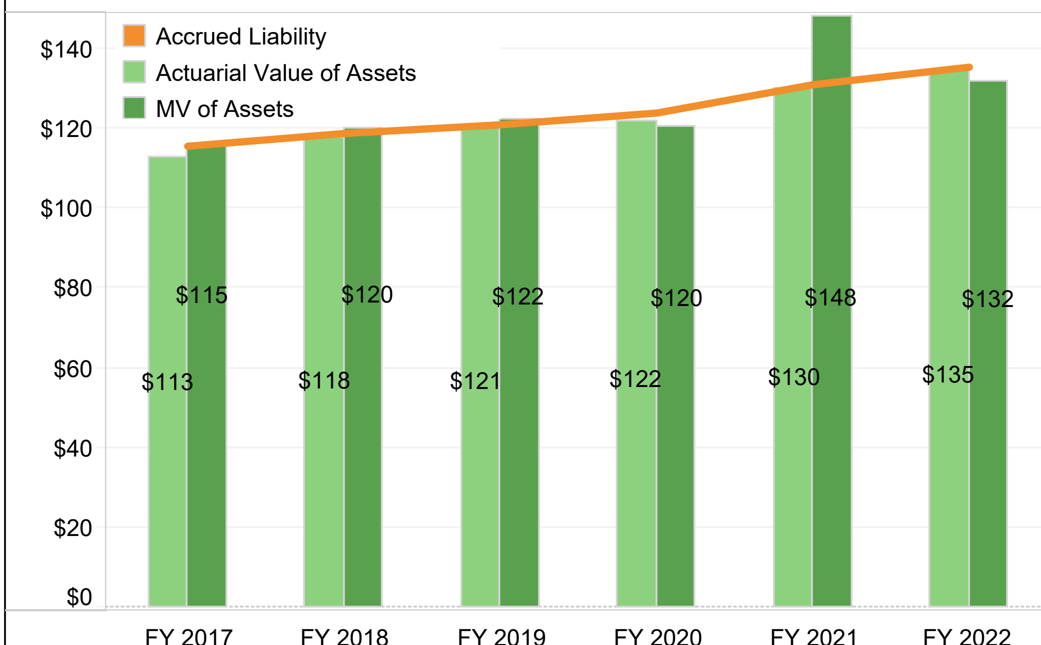


Investment Committee Executive Summary

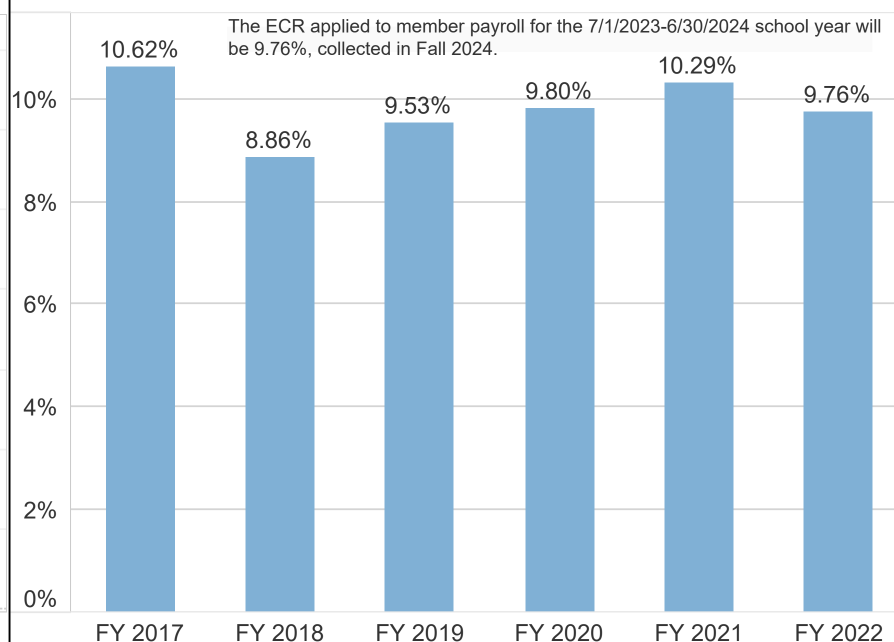
Member Payroll Funding Sources



Assets & Actuarial Accrued Liability



Employer Contribution Rate



Investment Committee Executive Summary

Public Market Performance as of September 30, 2023

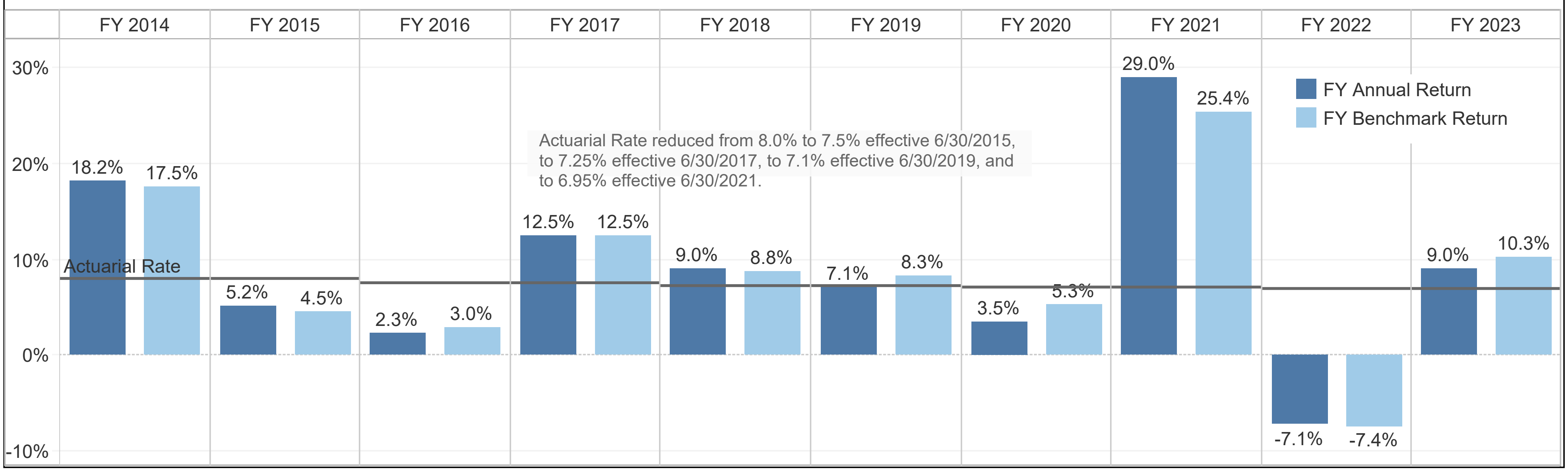
Asset Class	Current QTR Net Return	Current QTR Excess Return
Domestic Equity	-3.3%	0.1%
International Equity	-3.4%	0.3%
Global Equity	-2.4%	1.0%
Private Equity	N/A	N/A
Real Estate Equity	-5.9%	0.2%
Domestic Fixed Income	-2.4%	0.7%
Global Bonds	-2.3%	-0.1%
High Yield Bonds	0.4%	0.1%
Private Debt	N/A	N/A
Real Estate Debt	0.5%	0.7%
Short Term	1.3%	0.1%
Total Public Markets	**-2.9%**	**0.5%**

RE Equity is REITs only and RE Debt is CMBS only.
For additional performance information see Supplemental Materials.

Total Fund Performance as of June 30, 2023

	QTR		FYTD		10YR	
Asset Class	Net Return	Excess Return	Net Return	Excess Return	Net Return	Excess Return
Domestic Equity	8.5%	0.1%	19.4%	0.1%	12.5%	-0.1%
International Equity	3.0%	0.5%	13.6%	0.9%	5.2%	0.5%
Global Equity	6.2%	0.0%	16.1%	-0.4%	N/A	N/A
Private Equity	2.2%	-7.8%	5.8%	-18.8%	15.9%	-2.0%
Real Estate Equity	-0.3%	2.5%	-3.9%	6.9%	8.9%	1.0%
Domestic Fixed Income	-0.8%	0.0%	-0.3%	0.6%	1.3%	-0.2%
Global Bonds	-0.5%	-0.3%	0.0%	0.2%	2.2%	0.2%
High Yield Bonds	1.2%	0.0%	9.1%	0.5%	N/A	N/A
Private Debt	2.5%	-1.4%	9.2%	-4.5%	N/A	N/A
Real Estate Debt	-0.2%	0.6%	0.2%	0.8%	3.8%	0.6%
Short Term	1.3%	0.1%	3.9%	0.4%	1.1%	0.3%
Total Fund	**3.5%**	**-0.3%**	**9.0%**	**-1.3%**	**8.5%**	**0.0%**

Annual Performance



NYSTRS Periodic Table of Investment Returns by Asset Class
Fiscal Years Ending 1994 through 2023

1994	22.88% Private Equity	19.60% Int'l Equity	3.96% Real Estate Equity	3.41% Short Term	2.25% US Equity	1.80% Total Fund	1.17% Real Estate Debt	-1.45% US Fixed Income				
1995	24.77% US Equity	19.27% Total Fund	17.83% Real Estate Debt	14.81% US Fixed Income	9.80% Private Equity	7.33% Real Estate Equity	5.56% Short Term	0.51% Int'l Equity				
1996	35.15% Private Equity	26.06% US Equity	18.78% Total Fund	17.86% Int'l Equity	8.45% Real Estate Equity	5.72% Short Term	5.50% Real Estate Debt	4.42% US Fixed Income	4.06% Int'l Fixed Income			
1997	30.29% US Equity	21.96% Total Fund	21.32% Private Equity	15.24% Real Estate Equity	14.52% Int'l Equity	10.12% Real Estate Debt	8.43% US Fixed Income	6.00% Int'l Fixed Income	5.30% Short Term			
1998	37.17% Private Equity	28.01% US Equity	21.51% Total Fund	16.11% Real Estate Equity	14.30% Real Estate Debt	11.88% US Fixed Income	7.88% Int'l Equity	5.65% Short Term	4.23% Int'l Fixed Income			
1999	28.04% Private Equity	19.16% US Equity	15.35% EM Equity	13.97% Total Fund	8.51% Real Estate Equity	6.94% Int'l Equity	5.27% Short Term	3.33% US Fixed Income	3.23% Int'l Fixed Income	1.41% Real Estate Debt		
2000	17.67% Int'l Equity	16.08% EM Equity	13.56% Private Equity	11.15% Real Estate Equity	6.85% Total Fund	6.47% Real Estate Debt	5.92% US Equity	5.91% Short Term	4.54% US Fixed Income	2.13% Int'l Fixed Income		
2001	13.43% Real Estate Equity	11.14% US Fixed Income	10.50% Real Estate Debt	6.09% Short Term	-5.69% Total Fund	-10.49% US Equity	-11.20% Private Equity	-24.01% Int'l Equity	-28.91% EM Equity			
2002	11.42% Real Estate Debt	8.72% US Fixed Income	7.72% Real Estate Equity	2.50% Short Term	-6.79% Total Fund	-8.55% Int'l Equity	-13.48% Private Equity	-15.51% US Equity				
2003	13.00% Real Estate Debt	11.66% US Fixed Income	8.21% Real Estate Equity	4.04% Total Fund	1.52% Short Term	1.19% Private Equity	-0.17% US Equity	-6.15% Int'l Equity				
2004	31.02% Int'l Equity	20.99% US Equity	16.88% Private Equity	16.12% Real Estate Equity	16.10% Total Fund	1.32% Real Estate Debt	1.09% Short Term	0.44% US Fixed Income				
2005	27.09% Private Equity	25.67% Real Estate Equity	13.57% Int'l Equity	11.57% Real Estate Debt	10.62% Total Fund	9.30% US Equity	4.81% US Fixed Income	2.25% Short Term				
2006	32.26% Private Equity	26.61% Int'l Equity	25.77% Real Estate Equity	11.83% Total Fund	9.84% US Equity	4.34% Short Term	2.15% Real Estate Debt	0.80% US Fixed Income				
2007	39.36% Private Equity	25.48% Int'l Equity	25.34% Real Estate Equity	20.67% US Equity	19.43% Total Fund	7.15% Real Estate Debt	5.96% US Fixed Income	5.47% Short Term				
2008	7.37% US Fixed Income	5.19% Real Estate Equity	4.91% Private Equity	4.20% Real Estate Debt	4.13% Short Term	-6.32% Total Fund	-10.64% Int'l Equity	-13.41% US Equity				
2009	7.40% US Fixed Income	1.44% Short Term	-6.80% Real Estate Debt	-20.46% Total Fund	-23.57% Private Equity	-25.76% US Equity	-31.11% Int'l Equity	-35.06% Real Estate Equity				
2010	16.05% Real Estate Debt	15.77% US Equity	14.33% Private Equity	12.11% Total Fund	8.21% US Fixed Income	6.71% Int'l Equity	5.81% Real Estate Equity	0.22% Short Term				
2011	31.75% US Equity	30.84% Int'l Equity	23.73% Private Equity	23.64% Real Estate Equity	23.24% Total Fund	7.28% Real Estate Debt	3.77% US Fixed Income	0.21% Short Term				
2012	11.70% Real Estate Equity	7.43% Real Estate Debt	5.39% US Fixed Income	4.55% Private Equity	4.50% US Equity	2.84% Total Fund	0.16% Short Term	-13.56% Int'l Equity				
2013	21.41% US Equity	14.62% Int'l Equity	13.73% Total Fund	13.18% Real Estate Equity	12.61% Private Equity	4.80% Real Estate Debt	0.33% US Fixed Income	0.17% Short Term				
2014	25.03% US Equity	22.34% Private Equity	22.01% Int'l Equity	18.15% Total Fund	14.64% Real Estate Equity	7.12% Real Estate Debt	4.68% Global Bonds	3.00% US Fixed Income	0.12% Short Term			
2015	15.62% Real Estate Equity	15.11% Private Equity	7.30% US Equity	5.19% Total Fund	4.06% Real Estate Debt	2.44% Global Bonds	1.93% US Fixed Income	0.11% Short Term	-4.79% Int'l Equity			
2016	10.78% Real Estate Equity	8.67% Private Equity	7.21% Real Estate Debt	7.18% Global Bonds	4.26% US Fixed Income	2.99% US Equity	2.35% Total Fund	0.29% Short Term	-9.63% Int'l Equity			
2017	20.91% Int'l Equity	18.26% US Equity	17.37% Private Equity	12.51% Total Fund	6.62% Real Estate Equity	2.31% Real Estate Debt	0.71% Short Term	0.37% Global Bonds	-0.22% US Fixed Income			
2018	18.21% Private Equity	14.32% US Equity	13.69% Private Debt	9.01% Total Fund	8.50% Real Estate Equity	7.46% Int'l Equity	2.00% Real Estate Debt	1.81% Global Bonds	1.50% Short Term	-0.31% US Fixed Income		
2019	12.05% Private Equity	10.14% Private Debt	8.77% US Equity	8.39% Global Bonds	8.21% High-Yield Bonds	8.08% Real Estate Equity	7.96% Real Estate Debt	7.06% Total Fund	6.80% US Fixed Income	2.37% Short Term	1.29% Int'l Equity	1.16% Global Equity
2020	7.43% US Fixed Income	7.16% Global Bonds	6.03% US Equity	4.25% Private Equity	4.08% Real Estate Debt	3.45% Total Fund	3.05% Global Equity	1.69% Short Term	-0.55% High-Yield Bonds	-2.94% Real Estate Equity	-3.68% Int'l Equity	-3.88% Private Debt
2021	59.04% Private Equity	44.44% Global Equity	42.31% US Equity	36.91% Int'l Equity	28.98% Total Fund	24.79% Private Debt	19.34% Real Estate Equity	13.42% High-Yield Bonds	5.93% Real Estate Debt	1.42% Global Bonds	0.12% Short Term	-0.10% US Fixed Income
2022	14.97% Real Estate Equity	7.96% Private Debt	4.57% Private Equity	0.28% Short Term	-2.85% Real Estate Debt	-7.15% Total Fund	-8.31% US Fixed Income	-10.40% Global Bonds	-11.13% US Equity	-11.83% High-Yield Bonds	-16.82% Global Equity	-19.67% Int'l Equity
2023	19.37% US Equity	16.13% Global Equity	13.62% Int'l Equity	9.19% Private Debt	9.06% High-Yield Bonds	8.99% Total Fund	5.79% Private Equity	3.92% Short Term	0.21% Real Estate Debt	0.05% Global Bonds	-0.26% US Fixed Income	-3.87% Real Estate Equity

Actuarial Assumed Rate of Return*

*Actuarial Assumed Rate of Return reduced from 8.0% to 7.5% effective 6/30/15, from 7.5% to 7.25% effective 6/30/17, from 7.25% to 7.10% effective 6/30/19, and from 7.10% to 6.95% effective 6/21.

New York State Teachers' Retirement System
Portfolio Turnover Ratios - Internally Managed Portfolios
Period Ending 6/30/2023

Fund Name	Weighted Average Balance	Purchases[1]	Sales[1]	Portfolio Turnover Ratio[2]	Target Range
Passive					
Index2	$34,554,728,762	$343,653,278	$2,757,438,194	0.99%	1 - 6%
S&P 100	$1,422,315,624	$23,968,571	$23,818,140	1.67%	1 - 6%
S&P 500	$2,187,694,804	$42,170,782	$537,202,533	1.93%	1 - 6%
S&P 400	$358,077,557	$52,697,191	$49,153,985	13.73%	5 - 15%
S&P 600	$268,767,766	$45,385,433	$43,616,837	16.23%	5 - 20%
Canadian Index	$60,771,359	$1,451,296	$1,488,472	2.39%	1 - 8%
Active					
Growth Tilt2	$1,274,735,338	$150,541,476	$199,505,014	11.81%	10 - 20%
Value Tilt2	$1,253,524,524	$147,220,847	$196,694,948	11.74%	10 - 20%
AllCap Disc. Equity	$877,424,438	$389,254,335	$387,346,940	44.15%	40 - 60%
Long Term Bond[3]	$16,253,317,570	$3,590,113,465	$1,456,706,179	8.96%	0 - 20%
Short Term Bond[3]	$0	$0	$0	0.00%	N/A

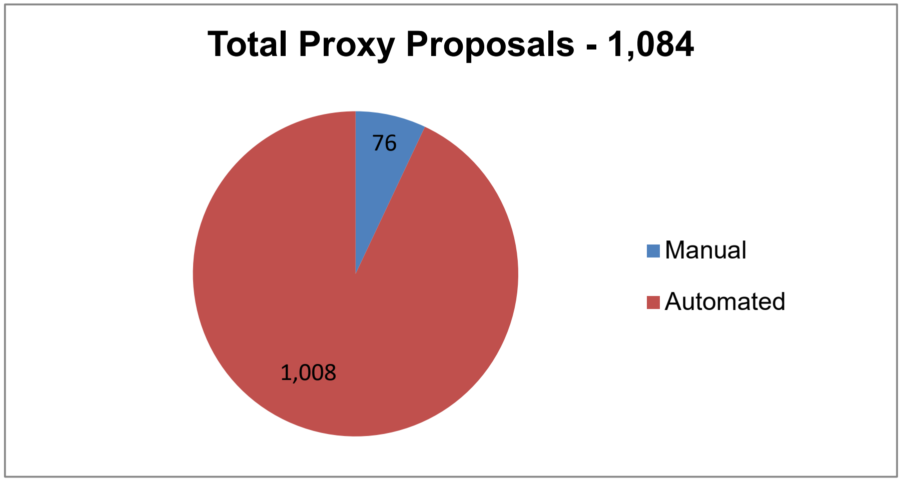
[1]Purchase and sales do not include maturities, calls or involuntary corporate actions.

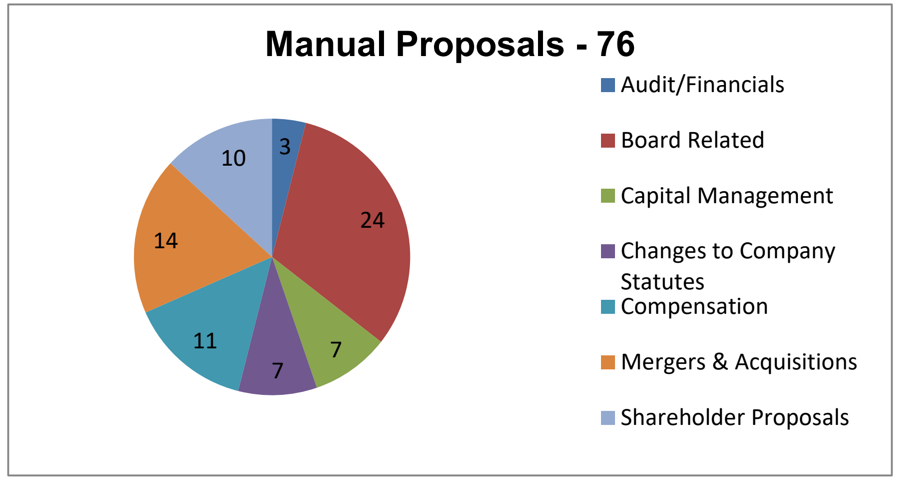
[2]Portfolio Turnover Ratio calculated as the lesser of the last 12 months purchases or sales divided by the weighted average balance.

[3]Securities with less than a 1 year maturity are excluded from both the numerator and denominator. The value of the Short Term Bond Portfolio was $1.8 billion at 6/30/23, the preponderance of which matures in less than one year.

Investment Committee Executive Summary

Proxy Voting Summary: 7/1/2023 - 9/30/2023





The System has implemented automated voting for those issues that can reliably be voted according to established policy without review. Those requiring review are voted manually utilizing research provided by our proxy advisory service to support the decision. In general, the System supports corporate management if management's position appears reasonable, is not detrimental to the long range economic prospects of the company, and does not tend to diminish shareholder rights. Should a sensitive issue arise which is not included in the established guidelines, the Executive Director and Chief Investment Officer or his designee is authorized to exercise best judgment in voting such issue.

Audit/Financials - The System may oppose auditor selection if there are concerns about objectivity.

Board Related - The System generally supports independent directors outside of management, gender diversity on boards, and considers related party transactions.

Capital Management - The System generally supports proposals that provide the company with flexibility provided they do not limit shareholder rights.

Changes to Company Statutes - The System generally supports proposals relating to bylaw or organizational changes provided they do not limit shareholder rights.

Compensation - The System generally supports reasonable compensation plans which are tied to objective performance measures. Stock option plans should be used to motivate corporate personnel.

Mergers & Acquisitions - Proposals are reviewed on a case by case basis.

Shareholder Proposals (type & number) - Compensation: 1, Environment: 1, Governance: 2, and Social: 6

Public Equity MD Update
Investment Committee October 25, 2023

Portfolio Values

Portfolio Values (000)	09/30/23	09/30/22	Difference
Domestic Equity	$42,802,528	$39,587,923	$3,214,605
International Equity	$17,694,716	$17,648,892	$45,824
Global Equity	$4,810,378	$3,909,635	$900,743
Total Public Equity	$65,307,622	$61,146,450	$4,161,172

Asset Allocation

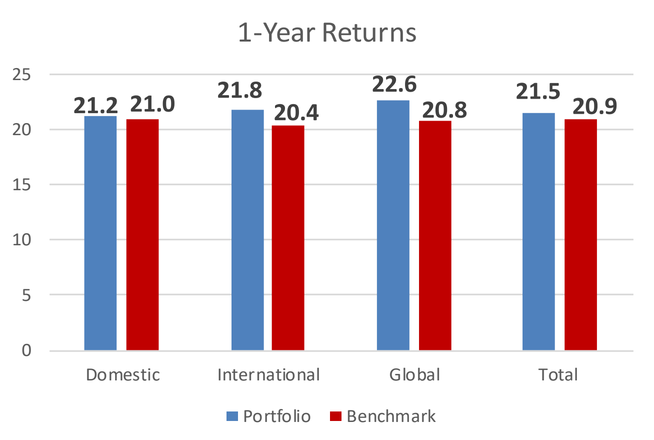
Asset Allocation	Range	Target	Actual 09/30/23
Domestic:	29-37%	33.0%	32.7%
International:	11-19%	15.0%	13.5%
Global:	0-8%	4.0%	3.7%

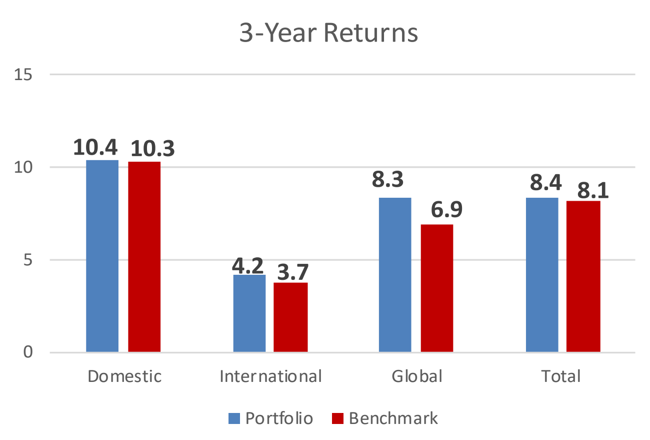
Public Equity Portfolio Values:

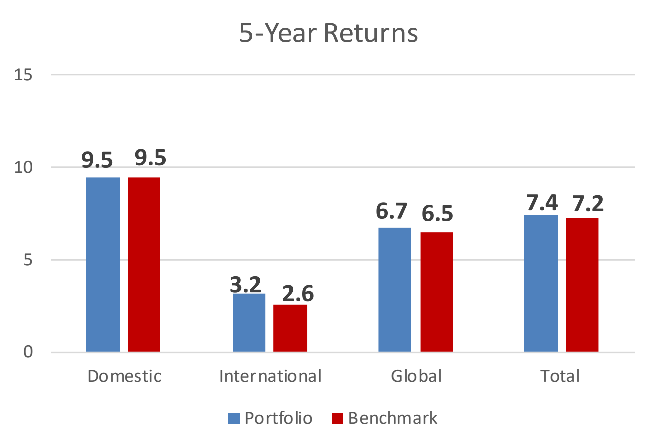
- Public Equities portfolio value increased by $4.2B for the one-year period.
- Despite a pullback in the first fiscal quarter, the portfolio generated a one-year return of 21.5%.
- Rebalancing to manage asset allocation and liquidity, during the period:
  - o $4.9B (including dividends swept) was raised from domestic equities.
  - o $3.75B was raised from international equities.

Asset Allocation

- The public equities asset classes remain close to their respective targets and well within their asset allocation ranges.
- $1.9B was raised from domestic and international equities during the quarter.







Commentary:

- Good relative performance from actively managed strategies for one, three and five-year periods.
- Quantitative strategies, including internally managed, are performing well generating positive excess returns.
- The interest rate environment remains a headwind for our growth managers.
- We continue to closely monitor Ariel Investments for the change in lead portfolio manager.
- Staff considers the announced retirement of a Marathon Asset Management co-founder to be an orderly transition.

Fixed Income MD Update
Investment Committee Meeting: October 25, 2023

	Sector/Portfolio	Mkt Val $B	Asset Allocation %			Net Returns %					Excess Returns %				
			Actual	Target	Range	Qtr	FYTD	1Y	3Y Ann	5Y Ann	Qtr	FYTD	1Y	3Y Ann	5Y Ann
Internal	Dom. Fixed Income	18.2	13.9	16	12-20	-2.39	-2.39	1.31	-3.93	0.43	0.72	0.72	0.53	1.25	0.25
	Short-Term Bond	1.5	1.2	1	0-4	1.35	1.32	4.77	1.86	1.83	0.09	0.09	0.43	0.25	0.34
External	Global Bonds	2.6	2.0	2	0-4	-2.31	-2.31	1.49	-4.32	0.61	-0.14	-0.14	-0.19	0.27	0.42
	High Yield	1.4	1.1	1	0-3	0.36	0.36	10.02	1.57	2.84	0.13	0.13	0.38	0.28	-0.10

- **Allocation**: Purchased net $560M in Domestic (more Treasuries and Mortgage-Backed versus Corporates)
- **Market in quarter**: Treasury yields increased sharply; longer maturities underperformed and credit spreads were little changed
  - **Dom. FI**: Hit from the rate sell-off; outperformed benchmark due to overall lower duration and yield curve positioning[1]
  - **Short-Term**: Rolling short maturities results in total yield around 5.5%; excess returns from high quality credit
  - **Global**: Affected by rate sell-off; underperformed due to overweight position on interest rate risk (duration)
  - **High Yield:** Benefited from low duration and high carry; outperformed due to yield curve positioning and security selection
- **Policy**: Split consensus on 1 more Fed hike; rate cuts expected late Q3/Q4 2024; US fiscal policy a concern (6% deficits)
- **Inflation**: Remains elevated, but ex-food and energy CPI continues to decline; geopolitics risk an oil price spike
- **Growth**: US stronger than expected in 2023 and 2024 outlook improved; risks from debt cost increase and weak global growth
- **Credit**: Spreads widened after mid-Sept; some deterioration expected (stress and defaults), but modest relative to history
- **Team:** 1 open Investment Officer position (corporate bonds); Aaron VanDerwiel promoted to Deputy MD

[1]*Domestic Fixed Income duration was -0.6 year vs. benchmark and -0.4 year excluding maturities under 1 year (compared to -1.2 and -0.8 in Sept. 2022)*

Commercial Real Estate (CRE) Investments - Managing Director Update

Appendix D

CRE Equity	9/30/23 Value	Target	Range	Actual	w/Commit
	$16,327	11%	6%-16%	12.5%	15.3%

Performance for Periods Ended June 30, 2023

Strategy (Inception Date)	Net Asset Value	Current Quarter	1 Year	5 Year	10 Year	Since Inception
Direct Properties (2/90)	$6,712	-1.7%	-4.2%	7.1%	9.6%	9.5%
Core Funds (7/85)	$1,667	-2.1%	-15.8%	1.6%	5.2%	6.3%
Value Added (12/89)	$1,643	-0.7%	-3.5%	15.4%	17.2%	12.0%
Opportunistic (3/99)	$3,015	-0.2%	0.1%	8.9%	10.2%	11.0%
U.S. RE Securities (7/95)	$2,167	4.3%	0.3%	6.0%	7.4%	10.9%
Global RE Securities (9/17)	$962	1.0%	-3.0%	1.3%	-	1.7%
Timber (12/98)	$312	5.0%	11.8%	7.4%	6.3%	4.7%
Total CRE Equity Portfolio	**$16,478**	**-0.3%**	**-3.9%**	**6.7%**	**8.9%**	**8.3%**
NCREIF-ODCE (Spliced)	-	-2.9%	-10.7%	6.2%	7.9%	6.5%

Return Drivers:

- For the quarter ended 6/30/23, performance was impacted by decreases in private valuations across all property sectors with the largest decline in office which is still materially impacted by the lack of tenant demand for space. Transaction volumes are significantly below prior year due to the availability and cost of financing as well as wide bid-ask spreads between buyers and sellers.
- Public real estate securities had a positive return for the quarter, regaining some of the previously recognized losses. Unfortunately, this trend reversed in the third quarter.

Market Conditions:

- As of September, the Green Street Commercial Property Price Index, a measure of pricing for institutional-quality commercial real estate across sectors, is 16% below the March 2022 peak with office producing the largest decline at 31% and industrial proving more resilient at 7% below prior peak. Although a significant downturn in the economy has yet to materialize, private real estate prices generally remain high and could take another step down as appraisals catch up with the transaction market.
- The office market remains of great concern as tenants contemplate future space needs due to widespread adoption of hybrid work schedules. Long-term growth estimates are lower for west coast markets compared to the east coast given larger exposure to tech layoffs and heightened secular work from home trends. Owners will need to contribute significant equity or walk away from office assets as mortgages come due.

Portfolio Focus:

- Department staff are focused on working through any potential issues with upcoming debt maturities and tenant maturities as well as evaluating liquidity options within the existing portfolio. Acquisitions remains focused on only the highest conviction opportunities in sectors with durable long term demand drivers.

Investment Activity:

- The System closed on commitments of $50 million to Penwood Select Industrial Partners VI, a value-add industrial focused commingled fund and $50 million to Pennybacker VI, an opportunistic diversified commingled fund. Additionally, $13.1M was returned from outstanding open-end commingled fund redemption requests.

Commercial Real Estate (CRE) Investments - Managing Director Update

CRE Debt	9/30/23 Value	Target	Range	Actual	w/Commit
	$7,678	6%	2%-10%	5.9%	7.0%

Performance for Periods Ended June 30, 2023

Strategy (Inception Date)	Net Asset Value	Current Quarter	1 Year	5 Years	10 Years	Since Inception
First Mortgages (7/85)	$2,624	-0.2%	1.1%	3.2%	3.6%	7.7%
Commercial MBS (4/01)	$2,372	0.3%	-1.3%	1.3%	2.4%	4.2%
Core Plus Strategies (8/04)	$1,872	-1.1%	-0.4%	3.3%	5.2%	3.7%
Opportunistic Debt (9/01)	$664	0.9%	3.9%	5.3%	8.3%	1.0%
Total CRE Debt Portfolio	**$7,532**	**-0.2%**	**0.2%**	**3.0%**	**3.8%**	**7.6%**
GL Custom Index (Spliced)	-	-0.8%	-0.6%	2.5%	3.1%	7.7%

Return Drivers:

- For the quarter ending 6/30/23, performance was impacted by the increase in interest rates, which led to unrealized markdowns of the System's existing fixed rate portfolio that carried lower yields relative to the current market.

Market Conditions:

- Interest rates were extremely volatile during the fiscal year due to Fed interest rate hikes, continued inflation, recession concerns, and regional bank failures. Reference rates during the fiscal year continued their steep ascent with SOFR moving from 1.73% to 5.14% and the 5-year U.S. Treasury yield increasing from 2.88% to 4.16%.
- Transaction financing volumes and new issuance CMBS continue to be down significantly due to the lack of financing availability for most property sectors and the overall increased cost of debt for all sectors. Owners and lenders will need to address a significant volume of mortgages coming due in the next three years ($1.5 trillion).
- Currently, stabilized first mortgage interest rates are in the 6.25%-6.50% range, investment grade CMBS securities are generally providing yields in the 6.0%-7.5% range, and private senior mezzanine/bridge loans provide net yields in excess of 8.0%.

Portfolio Focus:

- Work through $455 million of first mortgage maturities for the remainder of 2023 (Beverly Hills Office) and for calendar year 2024, which includes retail, in Henderson, NV, an office building in NYC as well as an apartment complex in Arlington, VA. We will focus on targeting paydowns with modifications/extensions as well as loan payoffs.
- Pursue first mortgages on high-quality stabilized assets with longer terms to increase the duration of the portfolio as the System's CMBS and mezzanine positions focus on shorter duration positions taking advantage of higher rates on the short end of the curve..
- Continue to pursue core first mortgages, investment grade CMBS, and private mezzanine/bridge loans in separate accounts.

Investment Activity:

- During the second quarter, the System received three loan payoffs at par; 50 Fremont Center (Office) in San Francisco, 1001 Pennsylvania (office) in Washington, DC and the Colonnade Residences (multifamily) in Boston totaling $520 million. In September, the System also closed on a $150 million upsize to the Raith Debt Separate Account focused on acquiring public and private real estate debt investments in the United States.

Commercial Real Estate (CRE) Investments - Managing Director Update
Performance Relative to Blended Benchmarks

Equity Real Estate Performance for Periods Ended June 30, 2023

Strategy (Inception Date)	Net Asset Value	Current Quarter	1 Year	5 Year	10 Year	Since Inception
Direct Properties (2/90)	$6,712	-1.7%	-4.2%	7.1%	9.6%	9.5%
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Total CRE Equity Portfolio	**$16,478**	**-0.3%**	**-3.9%**	**6.7%**	**8.9%**	**8.3%**
Blended Benchmark*	**-**	**-1.7%**	**-8.2%**	**4.1%**	**6.9%**	**6.3%**

Debt Real Estate Performance for Periods Ended June 30, 2023

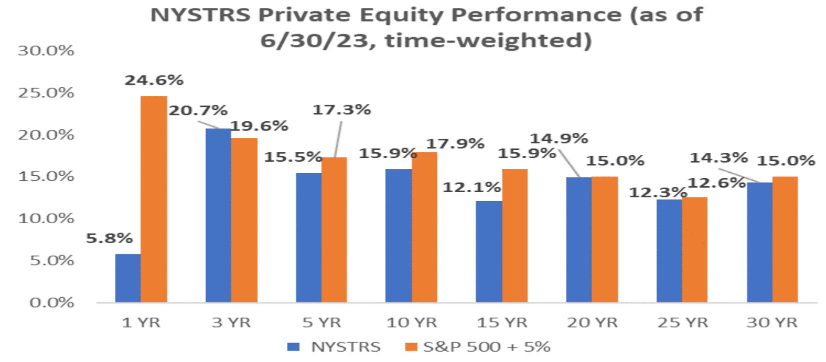
Strategy (Inception Date)	Net Asset Value	Current Quarter	1 Year	5 Years	10 Years	Since Inception
First Mortgages (7/85)	$2,624	-0.2%	1.1%	3.2%	3.6%	7.7%
Commercial MBS (4/01)	$2,372	0.3%	-1.3%	1.3%	2.4%	4.2%
Core Plus Strategies (8/04)	$1,872	-1.1%	-0.4%	3.3%	5.2%	3.7%
Opportunistic Debt (9/01)	$664	0.9%	3.9%	5.3%	8.3%	1.0%
Total CRE Debt Portfolio	**$7,532**	**-0.2%**	**0.2%**	**3.0%**	**3.8%**	**7.6%**
Blended Benchmark*	**-**	**-0.8%**	**-1.1%**	**2.2%**	**3.0%**	**7.7%**

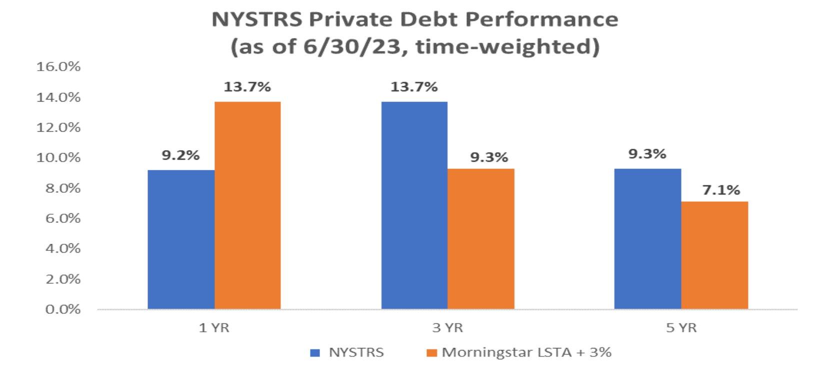
* The Blended Benchmarks used here represent the market-value weighted average of the underlying benchmarks for each of the strategies. The System's Real Estate Policy benchmark is the NCREIF-ODCE for the Real Estate Equity Portfolio, and the Giliberto-Levy Custom Index for the Real Estate Debt Portfolio.

Appendix E

Private Equity/Debt MD Update
October 25, 2023

Private Equity – 9% Target (4-14%)	Private Debt – 2% Target (0.5-5%)
• 9/30/23 - $15.7bn or approx. 11.97% vs. target • $6.0bn unfunded	• 9/30/23 - $2.1bn or approx. 1.6% vs. target • $1.2bn unfunded





Market Overview:
- Fundraising continues to be slow given investors are generally overallocated to private markets.
- PE deal activity continues to be slow due to buyer/seller pricing expectations and higher financing costs.
- Private debt markets continue to be a major source of financing for buyouts.
- NYSTRS Portfolio – 6/30 quarterly PE & PD time weighted returns up 2.2% and 2.5% respectively from 3/31.

Other Items:
- Team – One departure this quarter; Upcoming search for Deputy MD
- Consultant - StepStone annual renewal resolution

Callan

Appendix F

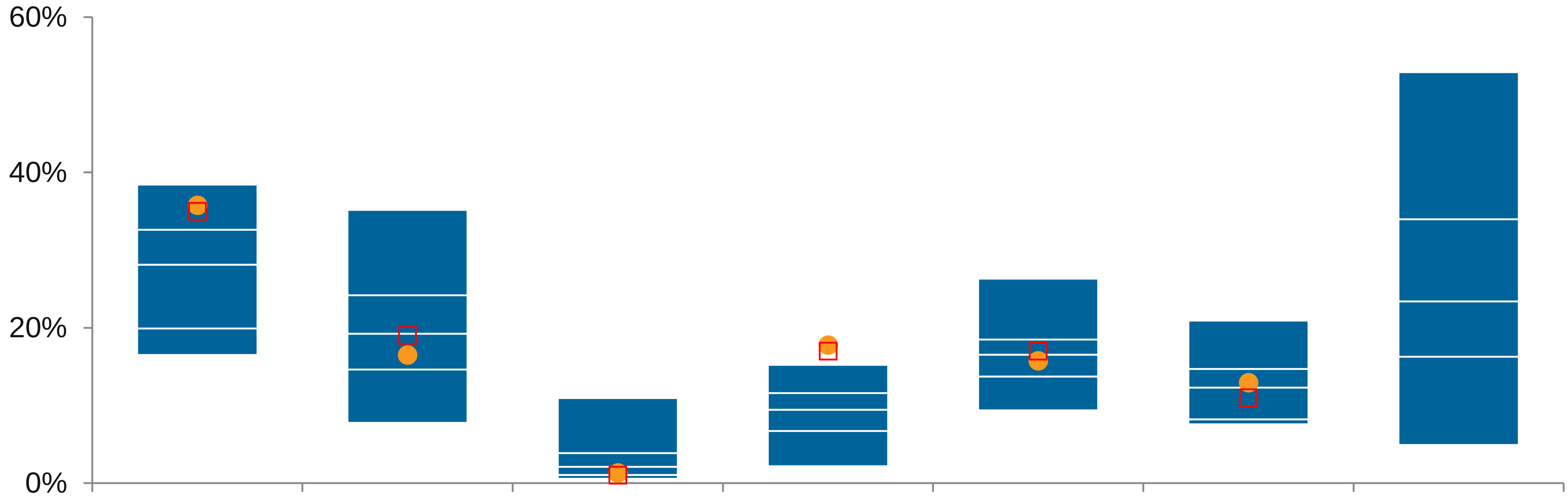
NYSTRS
Asset Allocation and Performance Statistics
As of June 30, 2023

Tom Shingler
Fund Sponsor Consulting

Carlo Stadlinger, CFA
Fund Sponsor Consulting

Angel G. Haddad
Fund Sponsor Consulting

NYSTRS Asset Allocation vs. Callan Public Fund Sponsor V. Lg DB (>10B)



	U.S. Equity*	Domestic Fixed Income**	Cash	Real Estate^	Non-US Equity*	Private Equity^^	Other Alternatives
10th Percentile	38%	35%	11%	15%	26%	21%	53%
25th Percentile	33%	24%	4%	12%	18%	15%	34%
Median	**28%**	**19%**	**2%**	**9%**	**17%**	**12%**	**23%**
75th Percentile	20%	15%	1%	7%	14%	8%	16%
90th Percentile	17%	8%	1%	2%	9%	8%	5%
% Group Invested	97%	97%	86%	90%	97%	21%	83%
NYSTRS ●	**36%**	**16%**	**1%**	**18%**	**16%**	**13%**	**--**
NYSTRS Target □	**35%**	**19%**	**1%**	**17%**	**17%**	**11%**	**--**

*The Global Equity allocation is split evenly between U.S. Equity and Non-U.S. Equity
**Domestic Fixed Income also includes NYSTRS' High Yield and Global Bond allocations
^Real Estate includes NYSTRS Real Estate Equity and Real Estate Debt
^^Private Equity also includes NYSTRS Private Credit
Data as of June 30, 2023. Median values do not sum to 100%.

Callan Public Fund Sponsor Very Large Peer Group

Asset Allocation Observations

To frame the peer performance and risk comparisons on subsequent pages, we observe that:

- NYSTRS has a higher than median target allocation to U.S. equity – note that the plan is subject to the basket clause
- NYSTRS has a median target allocation to fixed income (including global hedged and high yield)
- NYSTRS has an above median target allocation to real estate, including debt exposure to commercial mortgages
- NYSTRS has a below median target allocation to private equity and no allocation to "other alternatives"

In reading the chart on the prior page, it is important to keep in mind both 1) peer allocations and 2) "% of group invested". The % of group invested references the percentage of peer plans that have the dedicated allocation to that asset class. For instance, while 97% of plans have a U.S. equity allocation, 86% of plans have a short-term fixed income or cash allocation

Note that due to this being a combination of client and anonymous non-client data, there are limitations to the data's granularity. For instance, "Other Alternatives" is a catch all of alternatives exposure for non-client data. Peer funds may have allocations to hedge funds, which NYSTRS does not, that are contained in the Other Alternatives category

Callan Public Fund Sponsor Very Large Peer Group

Observations on Peer Return Comparisons

For the shorter term one year, three years, and five years ended 6/30/23, only three-year performance is ahead of the benchmark but all periods finished in the first, second, or third quartile as compared to the median peer (25th, 59th, and 37th percentiles, respectively).

Longer-term results of 20 and 30 years are ahead of the total fund benchmark while 10- and 15-year performance slightly trail the total fund benchmark. Over the trailing 10-, 15-, 20-, and 30-year periods the total fund ranked in the top quartile (12th, 17th, 25th, and 10th percentiles, respectively).

All NYSTRS returns are reported net of fees. Peer group returns are presented gross of fees.

NYSTRS returns for all periods shown are above the 6.95% discount rate.

Callan Public Fund Sponsor Very Large Peer Group

Observations on Peer Risk Comparisons

The higher realized volatility of the portfolio, as measured by standard deviation, relative to the median peer is reflective of:

1) the top quartile actual allocation to U.S. equity and

2) near bottom quartile actual allocation to fixed income

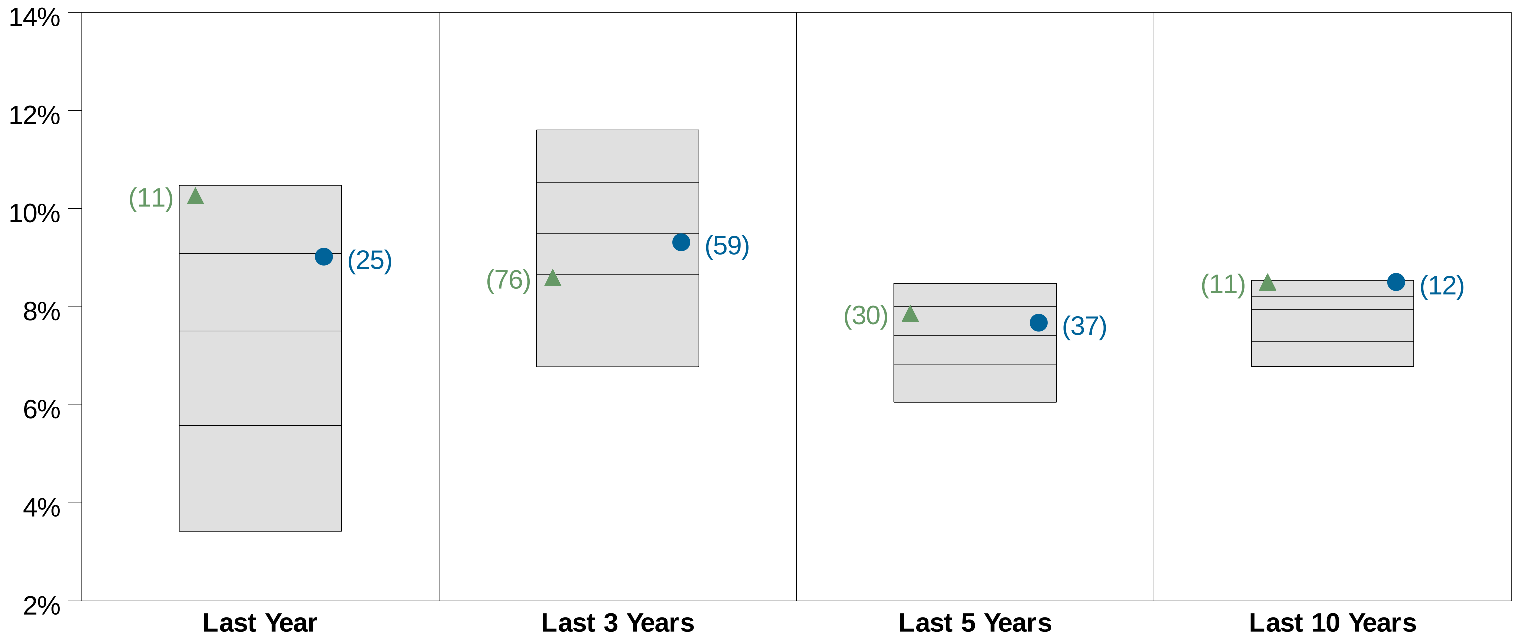
These asset class exposures will typically lead to higher observed volatility relative to the median peer, all else equal.

NYSTRS' portfolio construction is subject to the restrictions of the basket clause that limit alternative investments to 35% of the portfolio. Valuation methodology differences for private markets typically lead to lower observed volatility than for public markets, so NYSTRS having a higher allocation to public markets, particularly equities, than peers will generally lead to higher observed volatility. NYSTRS' private market returns include Q2 2023 results whereas some peers report lagged figures.

The risk-adjusted returns of the NYSTRS portfolio as measured by rolling three-year average Sharpe Ratio are above the median peer, in the second quartile.

NYSTRS Total Fund Performance Statistics

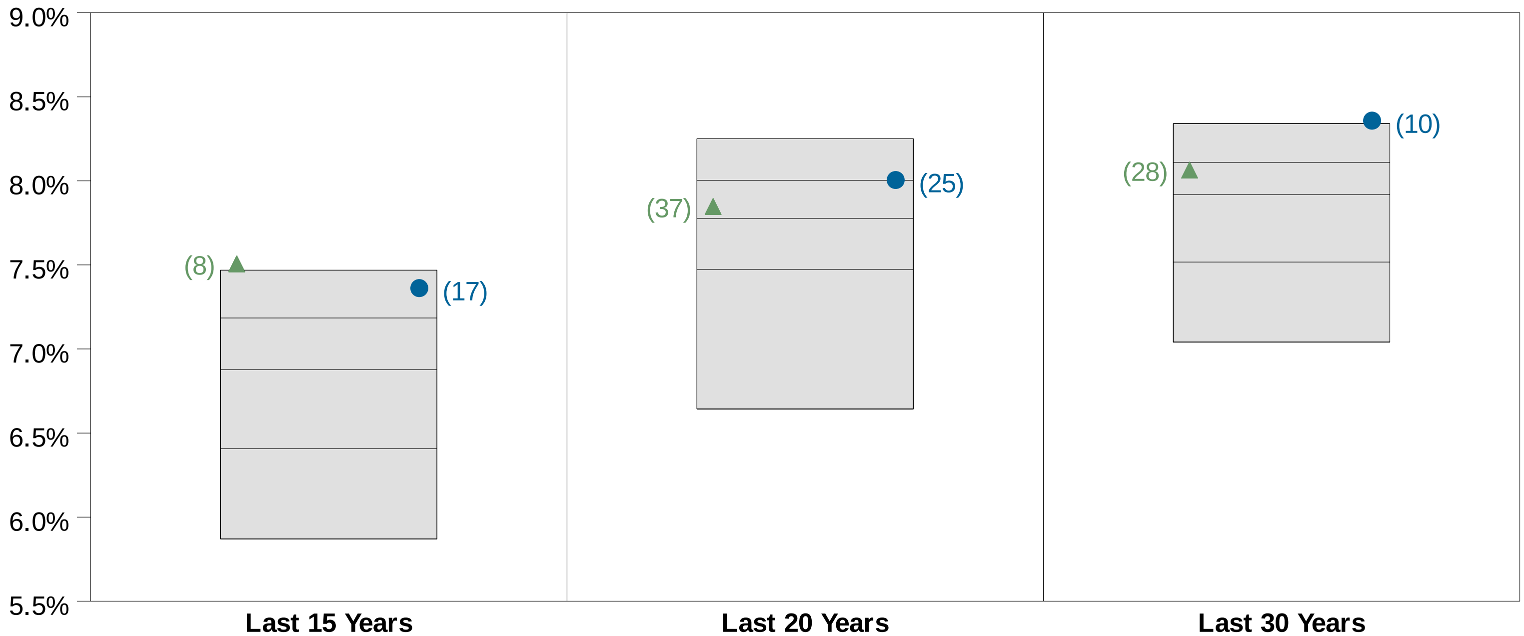
Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)



	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	10.48	11.60	8.48	8.54
25th Percentile	9.09	10.53	8.01	8.21
Median	7.50	9.49	7.41	7.94
75th Percentile	5.58	8.66	6.81	7.29
90th Percentile	3.43	6.77	6.05	6.78
NYSTRS Total Fund ●	8.99	9.29	7.65	8.47
NYSTRS Benchmark ▲	10.26	8.59	7.86	8.50

NYSTRS Total Fund Performance Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)

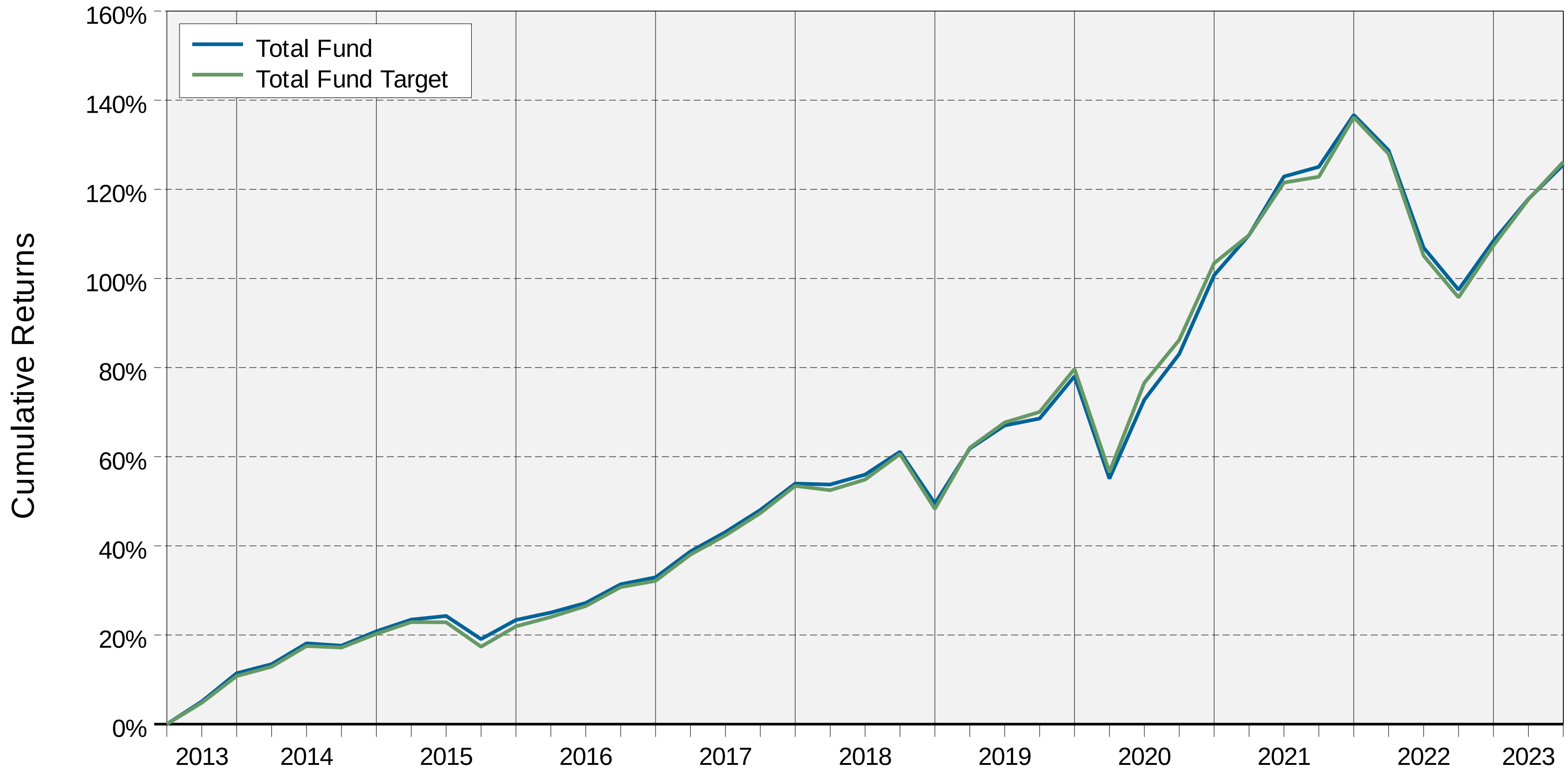


	Last 15 Years	Last 20 Years	Last 30 Years
10th Percentile	7.47	8.25	8.34
25th Percentile	7.18	8.00	8.11
Median	6.88	7.78	7.92
75th Percentile	6.41	7.47	7.52
90th Percentile	5.87	6.64	7.04
NYSTRS Total Fund ●	7.35	8.00	8.35
NYSTRS Benchmark ▲	7.51	7.85	8.06

NYSTRS Total Fund Performance Statistics

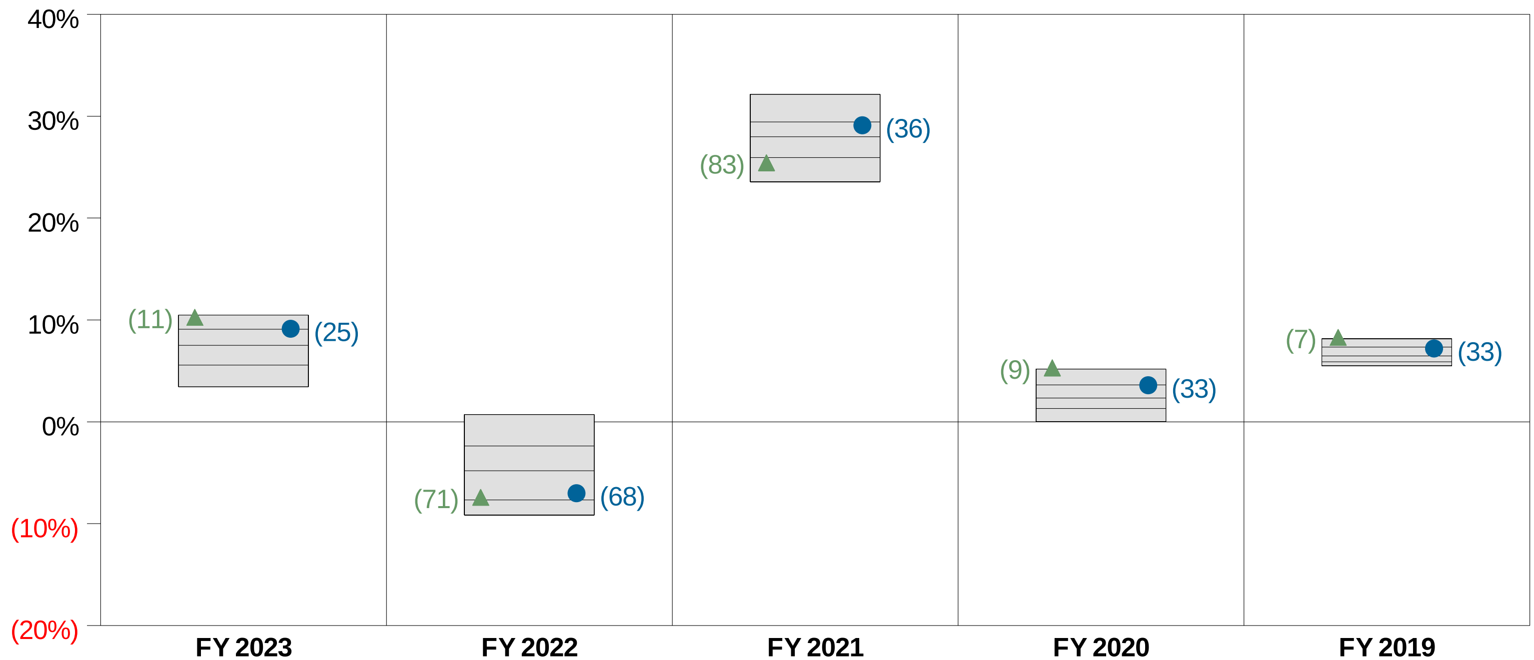
Periods ending 6/30/23

Cumulative Returns Actual vs Target



NYSTRS Total Fund Performance Statistics

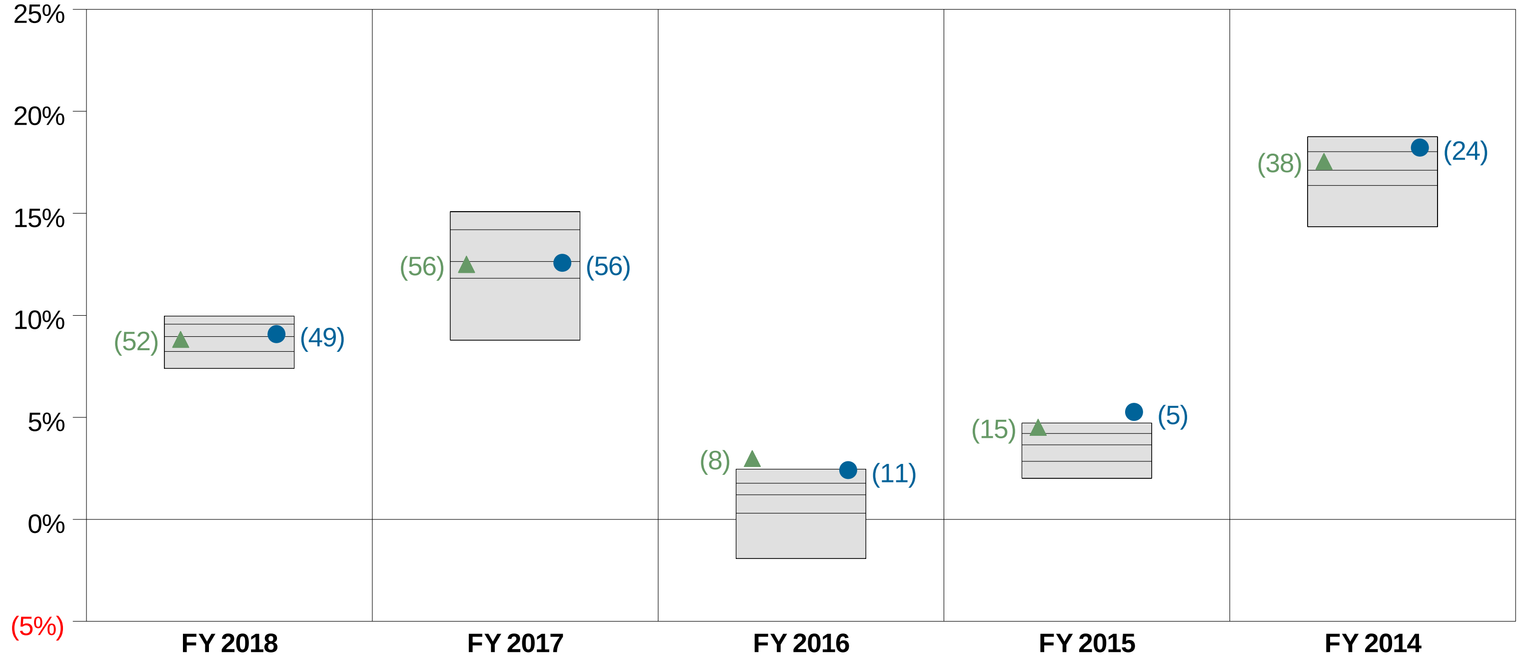
Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)



	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
10th Percentile	10.48	0.72	32.16	5.17	8.17
25th Percentile	9.09	(2.36)	29.44	3.62	7.33
Median	7.50	(4.81)	27.98	2.34	6.47
75th Percentile	5.58	(7.67)	25.95	1.31	5.89
90th Percentile	3.43	(9.16)	23.55	0.02	5.50
NYSTRS Total Fund ●	8.99	(7.15)	28.98	3.45	7.06
NYSTRS Benchmark ▲	10.26	(7.42)	25.43	5.30	8.29

NYSTRS Total Fund Performance Statistics

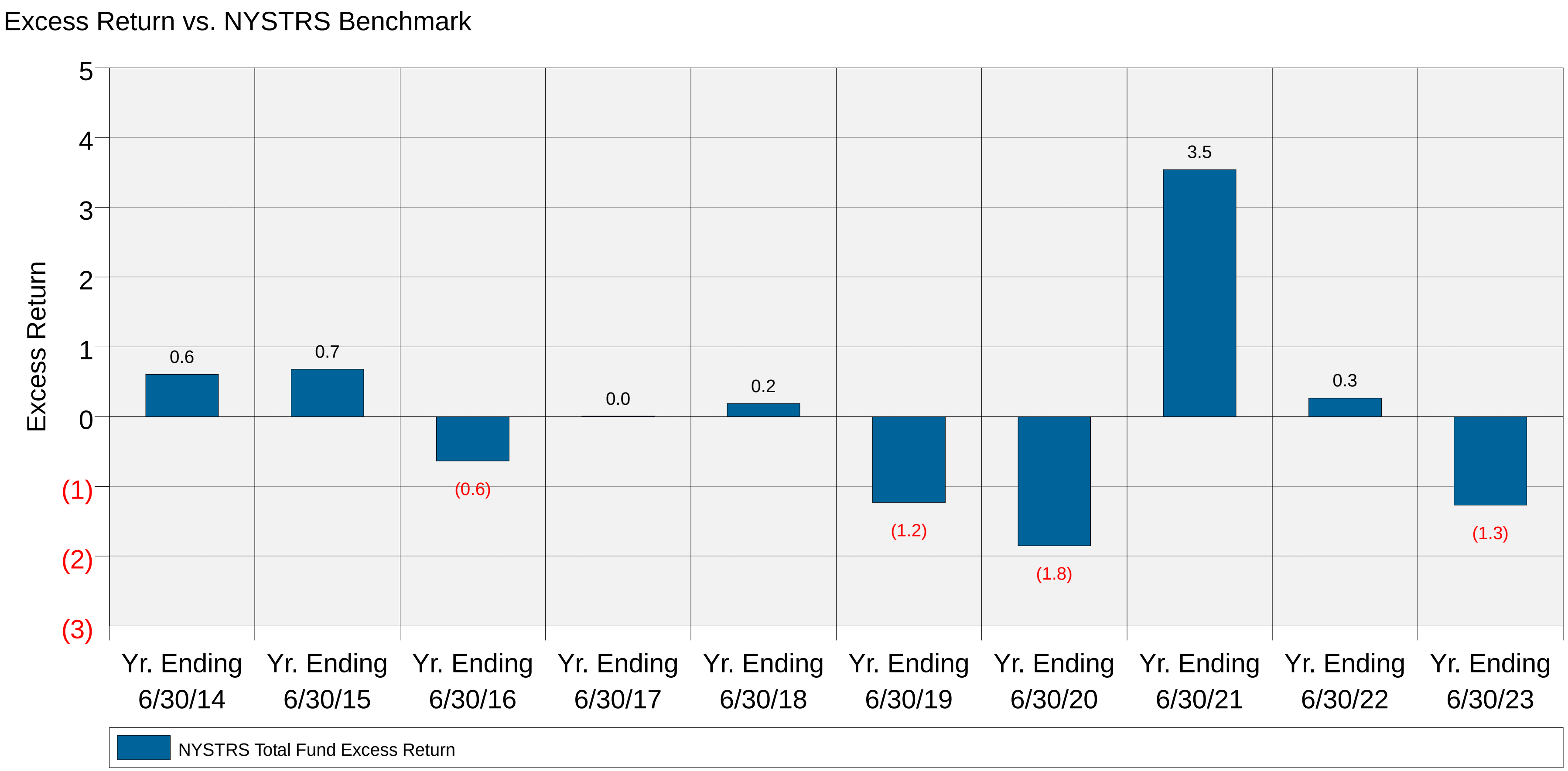
Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)



	FY 2018	FY 2017	FY 2016	FY 2015	FY 2014
10th Percentile	9.97	15.09	2.46	4.72	18.76
25th Percentile	9.57	14.20	1.78	4.21	18.02
Median	8.96	12.63	1.21	3.65	17.11
75th Percentile	8.23	11.82	0.31	2.84	16.36
90th Percentile	7.40	8.79	(1.92)	2.02	14.34
NYSTRS Total Fund ●	9.01	12.51	2.35	5.19	18.15
NYSTRS Benchmark ▲	8.82	12.50	2.98	4.52	17.55

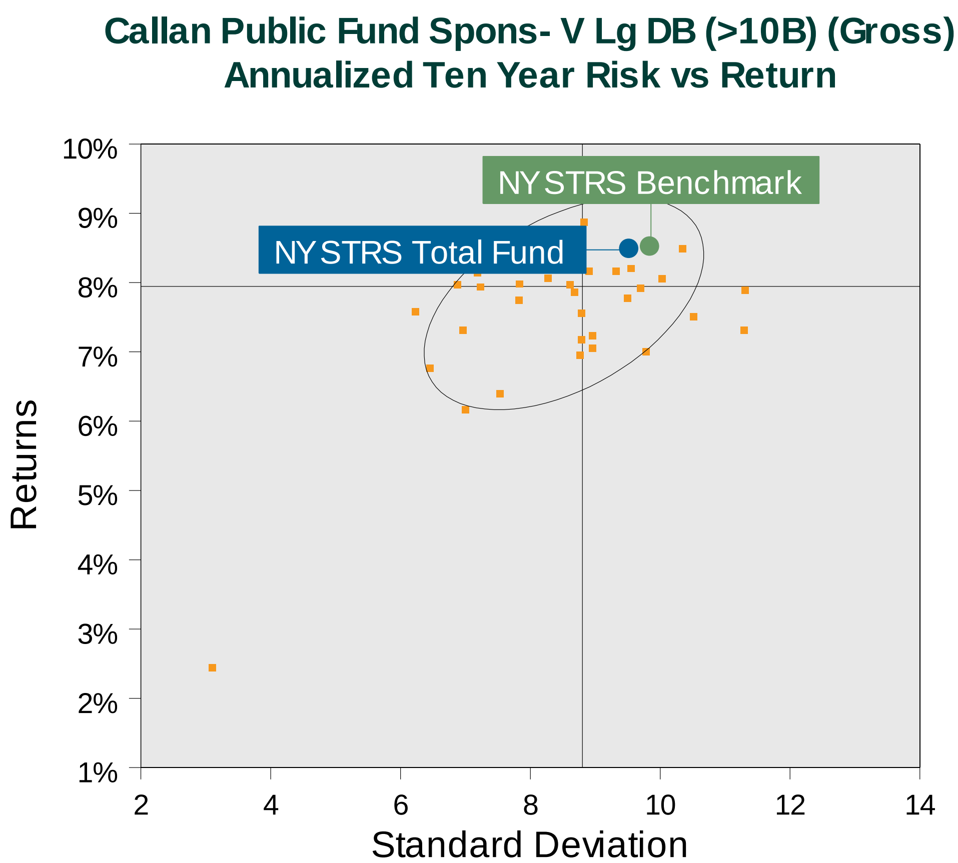
NYSTRS Total Fund Performance Statistics

Periods ending 6/30/23



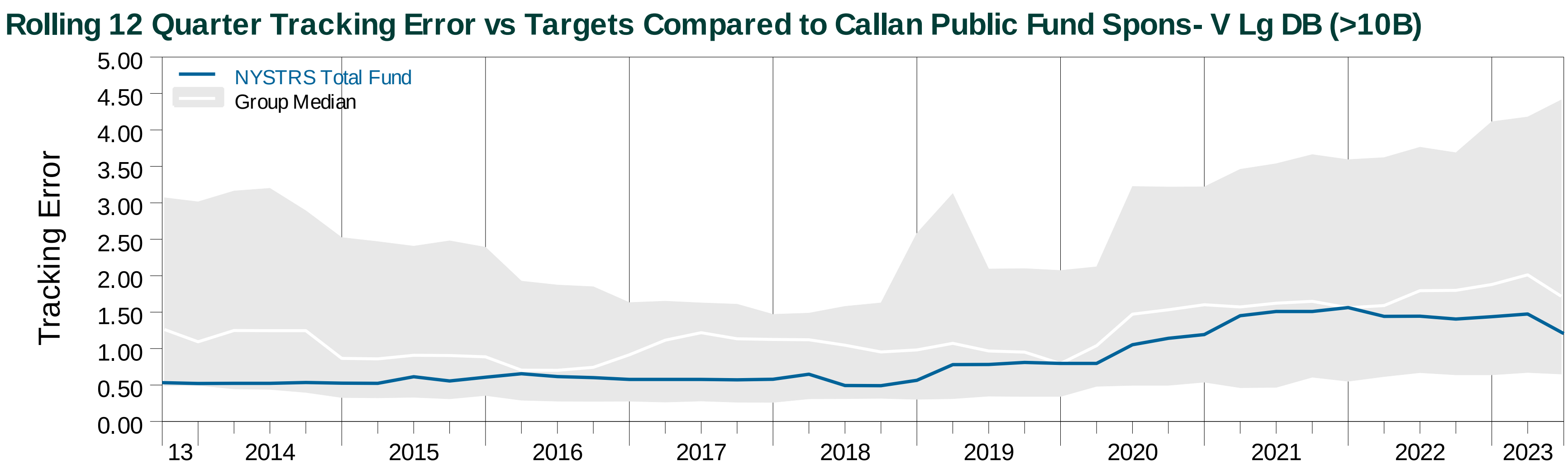
NYSTRS Total Fund Performance Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)



NYSTRS Total Fund Risk Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)



NYSTRS Total Fund Risk Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)

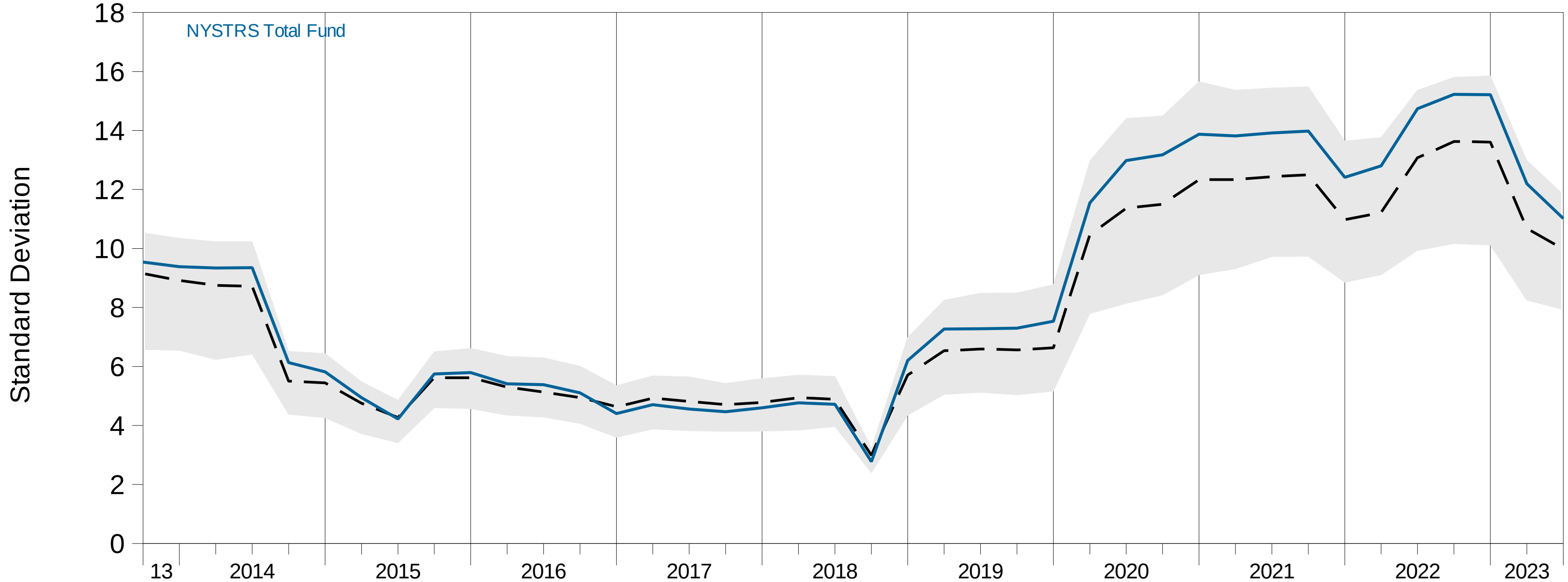
Standard Deviation
vs Callan Public Fund Spons- V Lg DB (>10B)

	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years	Last 30 Years
10th Percentile	12.03	14.11	10.64	11.08	11.33
25th Percentile	11.38	12.72	9.55	10.35	10.73
Median	10.03	11.66	8.84	9.70	9.90
75th Percentile	8.36	9.63	7.44	9.20	8.99
90th Percentile	7.95	8.76	6.99	8.52	8.73
NYSTRS Total Fund ●	11.02	12.88	9.54	10.35	10.60
NYSTRS Benchmark ▲	11.14	13.33	9.86	10.67	10.78

NYSTRS Total Fund Risk Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)

Rolling Three Year Standard Deviation
Ten Years Ended June 30, 2023



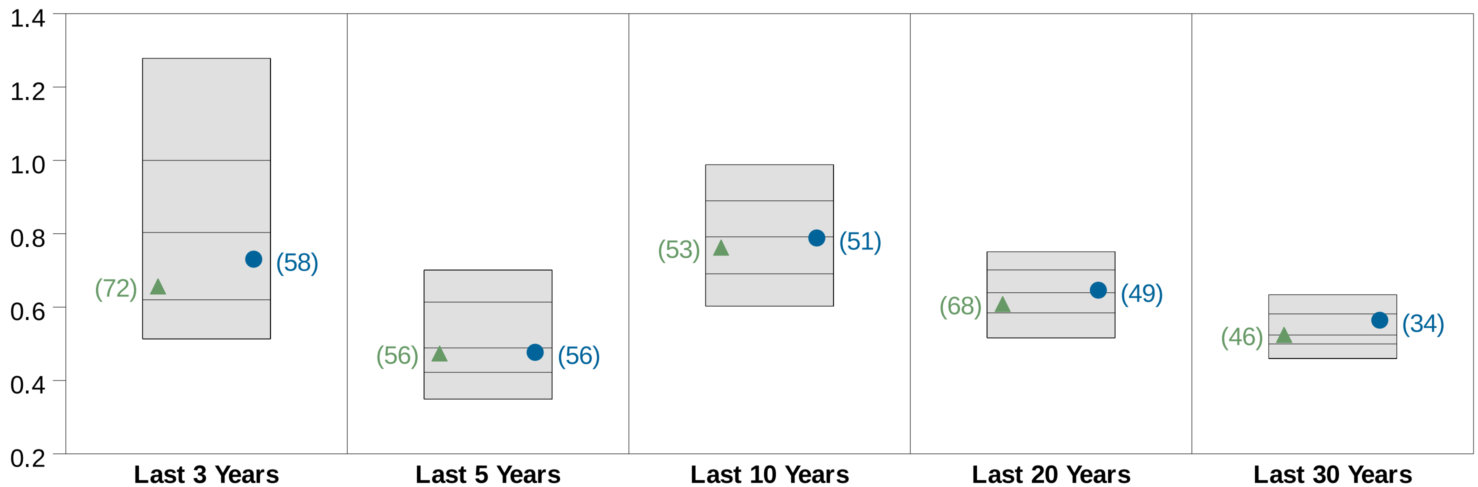
Rolling Three Year Period Analysis	Median	Portfolio
Average Annual Standard Deviation	7.92%	8.59%
% Positive Periods	100%	100%
Average Ranking	50	36

Blue Line: NYSTRS Total Fund
Dashed Line: Peer Group Median

NYSTRS Total Fund Risk Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)

Sharpe Ratio
vs Callan Public Fund Spons- V Lg DB (>10B)

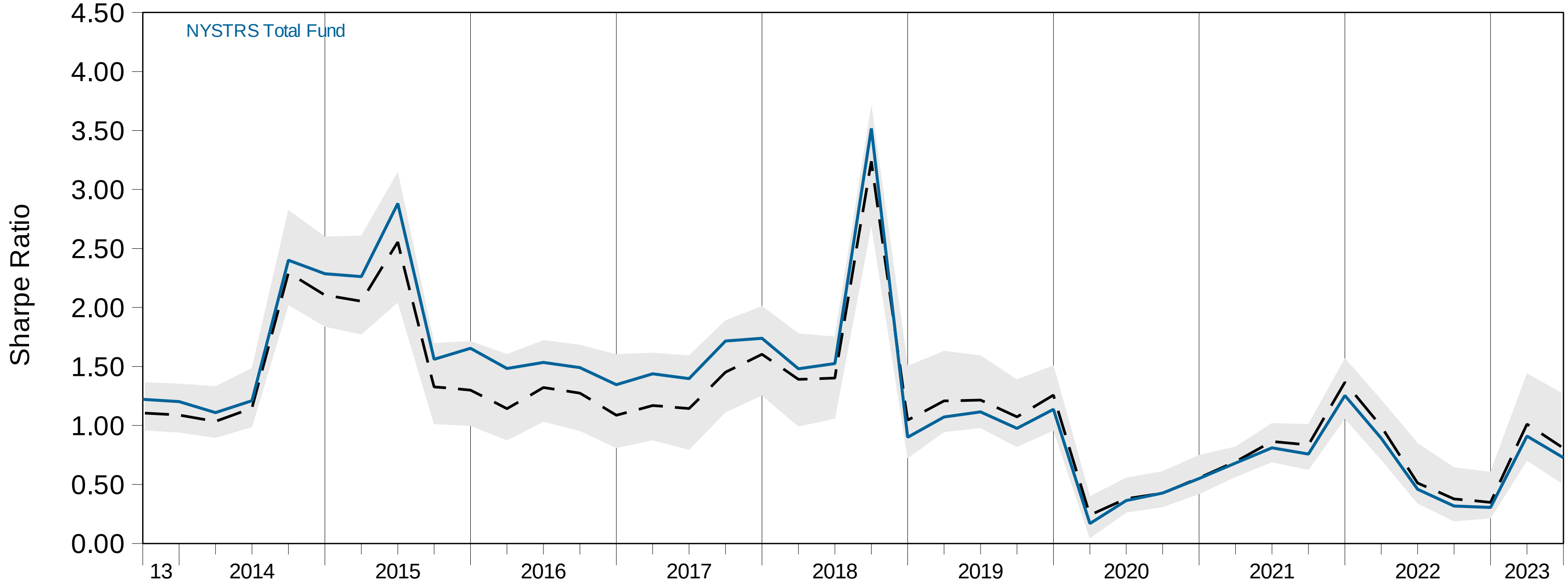


	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years	Last 30 Years
10th Percentile	1.28	0.70	0.99	0.75	0.63
25th Percentile	1.00	0.61	0.89	0.70	0.58
Median	0.80	0.49	0.79	0.64	0.52
75th Percentile	0.62	0.42	0.69	0.58	0.50
90th Percentile	0.51	0.35	0.60	0.52	0.46
NYSTRS Total Fund ●	0.73	0.47	0.78	0.64	0.56
NYSTRS Benchmark ▲	0.66	0.47	0.76	0.61	0.52

NYSTRS Total Fund Risk Statistics

Periods ending 6/30/23; Peer Group: Callan Public Fund Sponsor V. Lg DB (>10B) (Gross)

Rolling Three Year Sharpe Ratio Relative to NYSTRS Benchmark
Ten Years Ended June 30, 2023



Rolling Three Year Period Analysis	Median	Portfolio
Average Annual Sharpe Ratio	1.19%	1.26%
% Positive Periods	100%	100%
Average Ranking	50	42

Blue Line: NYSTRS Total Fund
Dashed Line: Peer Group Median

Callan Public Fund Sponsor Very Large Peer Group

Peer Group Information

This peer group has 47 constituent funds

The average AUM is $46.8 BN

The median AUM is $35.5 BN

The peer group includes Callan clients and anonymously shared data from BNY Mellon and Investment Metrics

Callan

Appendix

Published Research Highlights from 3Q23

Office-to-Residential Conversions: Vast Opportunity or Unfeasible Challenge?

Four-Part Series: The ESG Rule Explained

Callan Discount Rate Reporter: Regular Update on Corporate DB Plans

How Your Public DB Plan's Returns Compare: Quarterly Update

Recent Blog Posts

An Investor's Guide to the Nasdaq-100's Special Rebalance

Mark Wood

A Deeper Dive Into the Tradeoff Between Return and Risk

Kevin Machiz

S&P Global Moves Away from Numeric ESG Credit Indicators

Kristin Bradbury

Additional Reading

Alternatives Focus quarterly newsletter

Active vs. Passive quarterly charts

Capital Markets Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Real Estate Indicators market outlook

Callan Institute Events

Upcoming conferences, workshops, and webinars

Callan College

Intro to Investments—Learn the Fundamentals

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with basic investment theory, terminology, and practices.

- November 1–2, 2023 – Atlanta, Georgia
- March 5–7, 2024 – Virtual Session via Zoom

Intro to Alternatives

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with alternative investments like private equity, hedge funds, and real estate and how they can play a key role in any portfolio. You will learn about the importance of allocations to alternatives and how to consider integrating, evaluating, and monitoring them.

- February 21-22, 2024 – Virtual Session via Zoom

Please visit our website at callan.com/events-education as we add dates to our 2023 and 2024 calendar!

Mark Your Calendar

2023 Regional Workshops

October 24, 2023 – New York

October 26, 2023 – Chicago

2024 National Conference

April 8–10, 2024 – San Francisco

2024 Regional Workshops

June 25, 2024 – Atlanta

June 27, 2024 – San Francisco

Watch your email for further details and an invitation.

Webinars & Research Café Sessions

Webinar: ESG Study

November 7, 2023 – Virtual Session via Zoom

Webinar: The Retirement Conundrum

November 15, 2023 – Virtual Session via Zoom

Research Café: Conversion of Commercial Real Estate

December 6, 2023 – Virtual Session via Zoom

Callan Updates

Firm updates by the numbers, as of 9/30/23

Total Associates: ~200

Ownership
- 100% employees
- ~70% of employees are equity owners
- ~55% of shareholders identify as women or minority

Total General and Investment Consultants: more than 55

Total Specialty and Research Consultants: more than 50

Total CFA/CAIA/FRMs: more than 55

Total Institutional Investor Clients: more than 475

Assets Under Advisement: more than $4 trillion

Headquarters Office Move
- In August, Callan's headquarters office moved to One Bush Street in San Francisco

Milestones
- Celebrating our 50th anniversary

Diversity, Equity & Belonging (DEB)

Building a diverse workforce, pursuing equitable outcomes, and creating a sense of belonging

Five-Year Strategic Plan: Key Areas

DEB Leadership:
Greg Allen, Executive Sponsor and Lauren Mathias, Champion

DEB Council:
Annie Boschetti, Citlali Cuevas, Laura Dawson, Mike Joecken, Lindsay Jones, Paola Juarez, Erik Partida, Juan Pablo Piz, Avery Robinson, Jeff Salyer, Álvaro Vega, Nicole Wubbena

Accomplishments

- Inclusive culture education for all
- Engagement surveys
- Inclusive interviewing and resume review guides
- Equitable policies for promotion and partnership
- Enhanced pay equity and supplier diversity policies
- Pronoun education
- DEB Awareness Calendar
- Buddy Program for onboarding new Callanites
- CallanLearns professional development platform

Near-Term Future Plans

- Employee resource groups (ERGs)
- Mentorship program
- DEB progress report

Recent client DEB projects: *Investment manager Callan DEI Score trends, investment manager team and employee demographics review versus peers, diverse-owned manager searches, and incorporating diversity in an IPS.*

Glossary

Downside Risk stems from the desire to differentiate between "good risk" (upside volatility) and "bad risk" (downside volatility). Whereas standard deviation punishes both upside and downside volatility, downside risk measures only the standard deviation of returns below the target. Returns above the target are assigned a deviation of zero. Both the frequency and magnitude of underperformance affect the amount of downside risk.

Excess Return: Manager return less the benchmark

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the "risk-free" return (usually 3 Month Treasury Bill) from the portfolio return and dividing the resulting "excess return" by the portfolio's risk level (standard deviation). The result is a measure of return gained per unit of risk taken.

Standard Deviation: A statistical measure of portfolio risk. It reflects the average deviation of the observations from their sample mean. Standard deviation is used as an estimate of risk since it measures how wide the range of returns typically is. The wider the typical range of returns, the higher the standard deviation of returns, and the higher the portfolio risk. If returns are normally distributed (i.e. has a bell shaped curve distribution) then approximately 2/3 of the returns would occur within plus or minus one standard deviation from the sample mean.

Tracking Error: A statistical measure of a portfolio's risk relative to an index. It reflects the standard deviation of a portfolio's individual quarterly or monthly returns from the index's returns. Typically, the lower the Tracking Error, the more "index-like" the portfolio.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
10 Corporate Woods Drive
Albany, New York

Investment Committee Meeting Agenda pp. 54-55 October 25, 2023

Committee Members
Nicholas Smirensky, Chair
Elizabeth Chetney, Eric Iberger, David Keefe, Jennifer Longtin, Ruth Mahoney,

MINUTES

Appendix G

A. Approval of Minutes of July 26, 2023 meeting pp. 56-62

UPDATES

A. Investment Committee Executive Summary – M. Andriola pp. 63-71
B. Managing Director Updates
   1. Public Equity Update – P. Cummins p. 72
   2. Fixed Income Update – M. Federici p. 73
   3. Real Estate Update – D. Gillan pp. 74-76
   4. Private Equity/Debt Update – G. Yahoudy pp. 77
C. Consultant Update – Callan pp. 78-101

PRESENTATIONS

A. Real Estate Consultant Discussion (motion for **Executive Session** pursuant to Open Meetings Law §105 (1) (f). Matters leading to the appointment, employment, promotion, demotion, discipline or removal of a particular person or corporation) pp.102-193

Investment Committee Action Items

A. **Consent Agenda recommendation items A 1-5 pages**: 194-210
   1. Renew Consultant
      - StepStone - Private Equity/Debt Consultant p. 194
   2. Renew Managers:
      - AQR Capital Management LLC (International Equities, Active) p. 195
      - BlackRock Institutional Trust Company, N.A. (International Equities, Passive) p. 196
      - Dimensional Fund Advisors (International Equities, Active) p. 197
      - Goldman Sachs Asset Management (Global Bonds, Active) p. 198
      - Harding Loevner Management (Global Equities, Active) p. 199
      - Loomis Sayles & Co. (Global Bonds, Active) p. 200
      - Marathon Asset Management Ltd (International Equities, Active) p. 201
      - Nomura Corporate Research & Asset Management (High Yield Bonds, Active, 2 accounts) p. 202
      - State Street Global Advisors (International Equities, Passive) p. 203
   3. Reappointments to Investment Advisory Committee
      - Howard Bicker p. 204
      - Daniel Bukowski p. 205

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
10 Corporate Woods Drive
Albany, New York

4. Reappointments to Real Estate Advisory Committee
   - Paul Dolinoy p. 206
   - Jill Hatton p. 207
   - Laura Huntington p. 208
   - Daniel Hogarty, Jr. p. 209
5. Resolution on Investment Policy Manual p. 210

Move Walk in Resolutions for StepStone Group Real Estate and Meketa here

Informational Reports

1. EDCIO Investment Discretion Report pp. 211-213
2. Mail Vote Quarterly Board Report p. 214

NEW YORK STATE

TEACHERS' RETIREMENT SYSTEM

ED&CIO Investment Discretion Exercised

TO: Retirement Board

FROM: T. Lee

SUBJECT: Quarterly Report of Executive Director and Chief Investment Officer Investment Discretion Exercised July – September 2023

Fixed Income

Period	Action Taken	Amount
Q/E 9/30/23	Net cash reallocated **into** internally managed Long-Term Bonds	$559.6 M

Public Equities

Period	Action Taken	Amount
Q/E 9/30/2023	Net cash reallocated **out of** internally managed domestic equity portfolios	$1.4B
Q/E 9/30/2023	Net cash reallocated **out of** externally managed international equity portfolios (BlackRock $250M, SSGA $250M)	$500M

NEW YORK STATE

TEACHERS' RETIREMENT SYSTEM

ED&CIO Investment Discretion Exercised

SUBJECT: Quarterly Report of Executive Director and Chief Investment Officer Investment Discretion Exercised July – September 2023

Real Estate - New Commitments

Date of Internal Inv. Comm. Approval	Investment Name	Amount	New or Renew
August 3 2023	Penwood Select Industrial Partners VII	$50M	Renew
Aug 3 2023	Pennybacker VI	$50M	Renew
Sept 6 2023	Raith Real Estate Debt Separate Account Upsize	$150M	Renew

Real Estate

Period	Action Taken	Amount
	- None -	

NEW YORK STATE

TEACHERS' RETIREMENT SYSTEM

ED&CIO Investment Discretion Exercised

SUBJECT: Quarterly Report of Executive Director and Chief Investment Officer Investment Discretion Exercised July – September 2023

Private Equity/Debt – New Commitments

Date of Internal Inv. Comm. Approval	Investment Name	Amount	New or Renew
August 2 2023	EIV Capital Fund V	$100M	Renew
August 3 2023	Monomoy Credit Opportunities Fund II	$100M	Renew
Sept 12 2023	Comvest Credit Partners VII	$300M	Renew

NEW YORK STATE

TEACHERS' RETIREMENT SYSTEM

Board Mail Votes

TO: Retirement Board

FROM: T. Lee

SUBJECT: Quarterly Board Report of Mail Votes[i] for the period July – September 2023

Date	**Type** (Full Board Vote or Investment Committee Vote	**Transaction**
07-31-2023	Full Board	Rules and Regulations Clarifying Language Part 5004

[i] "…The Board may act by a unanimous vote of its members taken by mail and/or e-mail and other electronic means approved by the System, or by telephone confirmed by mail and/or other electronic means approved by the System, on occasional matters determined by the President to be non-controversial in nature so as not to require a special meeting of the Board but having circumstances which make it impractical to delay action until the next annual or stated meeting of the Board…" from NYSTRS' Bylaws

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM

A meeting of the Trustees of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust was held at the System on October 25, 2023.

Board Members: Juliet Benaquisto, Elizabeth Chetney, Paul Farfaglia, Eric Iberger, David Keefe (via WebEx), Jennifer Longtin, Oliver Robinson, Nicholas Smirensky

NYSTRS Staff: Thomas K. Lee, Don Ampansiri, Kathy Ebert, Richard Young

Plante Moran: Jean Young, Manju Patnaik

Audit Committee Advisor: Sue Landauer

The meeting was called to order by D. Keefe at 1:14 p.m.

1. Approval of Minutes of July 26, 2023

Upon motion of N. Smirensky, seconded by E. Chetney and unanimously adopted by the Trustees, the minutes of the July 26, 2023 meeting were approved.

2. Review of GASB 74/75 Report (attached Appendix A, pp. 3-43)
3. Review of Trust Financial Statements Quarter Ended September 30, 2023 (attached Appendix B, pp. 44-48).
4. Review of Trust Financial Statements with Independent Auditor's Report Year Ended June 30, 2023

J. Young and M. Patnaik of Plante Moran reviewed the Trust's audited financial statements for the year ended June 30, 2023 (attached Appendix C, pp. 49-86).

5. Resolution Accepting Plante Moran Annual Audit – Trust

J. Longtin, moved the following resolution, seconded by N. Smirensky and unanimously adopted by the Trustees:

RESOLVED, That the report of Plante Moran on the financial statements of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust as of June 30, 2023 and for the Trust year then ended, as presented to the Trustees, is accepted.

There being no further business, the meeting adjourned at 1:20 p.m.

Respectfully submitted,

[redacted]

Thomas K. Lee

Classic Values, Innovative Advice

Appendix A

New York State Teachers' Retirement System

Other Postemployment Benefits (OPEB) for NYSTRS Staff Plan

GASB 74/75 Report as of June 30, 2023 Measurement Date

Reporting Date June 30, 2024 for GASB 75

Reporting Date June 30, 2023 for GASB 74

Produced by Cheiron

August 2023

Restated to reflect July 1, 2023 NYSHIP Updates to Empire Plan

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Letter of Transmittal

September 28, 2023

Mr. Richard A. Young
Actuary
New York State Teachers' Retirement System
10 Corporate Woods Drive
Albany, New York 12211-2395

Dear Richard,

The purpose of this report is to provide accounting and financial disclosure information under Governmental Accounting Standards Board Statement 74 (GASB 74) for the postemployment benefit plan provided by the New York State Teachers' Retirement System (NYSTRS) and under GASB No. 75 (GASB 75) for NYSTRS as an employer. Postemployment benefits other than pensions in this report refer to the retiree medical and associated benefits provided to eligible retired employees of NYSTRS.

This actuarial valuation reflects a full valuation of updated census, claims, and premiums. This report provides GASB 74 and 75 results valued as of a measurement date of June 30, 2023. NYSTRS has elected to apply the one-year look-back method as permitted under GASB. Valuation results in this report apply for the fiscal year commencing July 1, 2023 and ending June 30, 2024 under GASB 75. Census, enrollment data, and claims experience are based upon June 30, 2022 plan information. The actuarial valuation was performed as of July 1, 2022 with results rolled forward to June 30, 2023.

This report presents results of the valuation as highlighted below:

- Total OPEB Liability of $116,221,408, Plan Fiduciary Net Position of $65,553,482, Net OPEB Liability of $50,667,926, Plan Fiduciary Net Position as a percentage of the Total OPEB Liability of 56.40%. (Please see Table V-4.)
- Recognition of the Net OPEB Liability on NYSTRS's Net Position of $43,139,435, as part of GASB 75 and prior to any contributions after the measurement date. (Please see Table I-1.)
- Determination of annual expense of $7,146,112 in accordance with GASB 75 for the fiscal year commencing July 1, 2023 and ending June 30, 2024. (Please see Table I-1 and Table VI-3.)
- Development of the discount rate applied in this valuation. This is a funded progam, and the discount rate reflects the long-term yield on plan assets. The long-term yield on assets is monitored and aligned with the asset allocation and projected yields. Please note that this valuation reflects the rate of 6.50% per annum, the same rate as last year. (Please see Table III-1.)
- Reconciliation of plan obligations from the prior year to this year. (Please see Table V-1.)

Mr. Richard A. Young
New York State Teachers' Retirement System
September 28, 2023
Page ii

- Required sensitivity results for changes in both discount rate and long-term trends. (Please see Tables V-2 and V-3.)
- Summary of census information gathered for active employees and retirees (per Appendix A).
- Summary of depletion testing for GASB 74/75 discount rate (per Appendix B).
- Summary of actuarial assumptions and methods in effect (per Appendix C).
- Summary of plan provisions in effect (per Appendix D).

If you have any questions about the report or need additional information, please let us know.

Sincerely,
Cheiron

Michele Domash, FSA, MAAA
Principal Consulting Actuary

Margaret A. Tempkin, FSA, EA, MAAA
Principal Consulting Actuary

Ryan Benitez, ASA, MAAA
Consulting Actuary

SECTION I – BOARD SUMMARY

The purpose of this report is to provide accounting and financial disclosure information under Governmental Accounting Standards Board (GASB) Statement No. 74 for the postemployment benefit plan provided by the New York State Teachers' Retirement System and under GASB No. 75 for NYSTRS as an employer. This information includes:

- Determination of the discount rate as of June 30, 2023,
- Total OPEB liability sensitivity information,
- Note disclosures and required supplementary information under GASB 74 for the Plan, and
- Determination of amounts under GASB 75.

Highlights

Under GASB 75, the measurement date for the postemployment benefits provided by the New York State Teachers' Retirement System contained in this report is June 30, 2023; the reporting date is June 30, 2024. Measurements are based upon the fair value of assets and OPEB liabilities as of June 30, 2023, the measurement date. However, under GASB 74, the measurement date is the same as the reporting date.

The table below provides a summary of the key results during this measurement period for the Plan in total. In addition to the information shown below, any contributions between the measurement date and the reporting date would be reported as deferred outflows to resources to offset the cash outflows reported.

Table I - 1
Summary of Key Results

Reporting Date under GASB 75		6/30/2024		6/30/2023
Measurement Date under GASB 74/75		6/30/2023		6/30/2022
Net OPEB Liability	$	50,667,926	$	48,846,994
Deferred Outflows		8,808,775		8,708,737
Deferred Inflows		1,280,284		2,249,462
Net Impact on Statement of Net Position	$	43,139,435	$	42,387,719
Contributions Subsequent to Measurement Date		6,910,000		6,394,396
Net Impact on Statement of Net Position	$	36,229,435	$	35,993,323
OPEB Expense ($ Amount)	$	7,146,112	$	5,069,146
OPEB Expense (% of Payroll)		20.09%		14.31%

SECTION I – BOARD SUMMARY

The net OPEB liability (NOL) increased during the measurement period. The change in NOL due to investment gains and losses is recognized into OPEB expense over five years, beginning in the year of occurrence. The change in NOL due to actuarial gains and losses as well as assumption changes are recognized over the average remaining service life, determined at the beginning of each measurement period, which is six years as of the current and prior measurement period for the Plan. Unrecognized amounts are reported as deferred outflows of resources (DOR) and deferred inflows of resources (DIR).

At the June 30, 2023 measurement date, New York State Teachers' Retirement System will report a net OPEB liability (asset) of $50,667,926, deferred outflows of resources of $8,808,775, and deferred inflows of resources of $1,280,284 related to the Plan. Consequently, the net impact, equal to the NOL minus the DOR plus the DIR, on NYSTRS' statement of net position due to the Plan would be $43,139,435 [$43,139,435 = $50,667,926 - $8,808,775 + $1,280,284] as of the June 30, 2023 measurement date.

For the measurement year ending June 30, 2023, reporting year ending June 30, 2024, the collective annual OPEB expense is $7,146,112 or 20.09% of covered-employee payroll. This amount is not related to NYSTRS' contribution to the Plan, equal to $6,394,396 during the measurement period, but instead represents the aggregate employer contributions plus the change in the net impact on the employer's statement of net position [$7,146,112 = $6,394,396 +$43,139,435 - $42,387,719].

Volatility in OPEB expense from year to year is to be expected. It will largely be driven by asset gains and losses, but other changes can also have a significant impact. Components of the net OPEB expense are provided in Section VI of this report.

SECTION II – CERTIFICATION

The purpose of this report is to provide accounting and financial reporting information under GASB Nos. 74 and 75 for the postemployment benefits provided by the New York State Teachers' Retirement System. This report is for the use of the New York State Teachers' Retirement System and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report is not appropriate for other purposes, including the measurement of funding requirements for the Plan.

In preparing our report, we relied on information (some oral and some written) supplied by the Plan. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, and changes in plan provisions or applicable law.

The potential impact of changes in Medicare from the Inflation Reduction Act has not been reflected in this valuation.

We hereby certify that this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for the Plan for the purposes described herein and for the use by the plan and employer auditors in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Michele Domash, FSA, MAAA
Principal Consulting Actuary

Margaret A. Tempkin, FSA, EA, MAAA
Principal Consulting Actuary

Ryan Benitez, ASA, MAAA
Consulting Actuary

SECTION III – DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total OPEB Liability (TOL) as of June 30, 2023 was 6.50%, which was the same as the long-term rate of return as of June 30, 2023. The discount rate used to measure the Total OPEB Liability (TOL) as of June 30, 2022 was 6.50%, also consistent with the long-term rate of return as of June 30, 2022.

The long-term expected rate of return on OPEB plan investments was determined using a building block method in which best estimate ranges of expected future rates of return are developed for each major asset class. The arithmetic returns are combined to produce the long-term expected arithmetic rate of return by weighting the expected future rates of return by the target asset allocation percentage. The target allocation projected arithmetic rates of return for each major asset class, and the expected total plan geometric return used in the derivation of the long-term expected investment rate of return assumption are summarized in the table below.

Table III - 1

OPEB Trust Asset Allocation	Weight	20 Year - Arithmetic	Standard Deviation
US Equity - Large Cap	37.50%	7.82%	16.33%
US Equity - Small/Mid Cap	12.50%	8.98%	20.34%
Non-US Equity - Developed	21.25%	8.67%	18.09%
Non-US Equity - Emerging	3.75%	10.67%	23.92%
US Corporate Bonds - Core	7.50%	3.65%	5.36%
US Treasuries (Cash Equivalents)	17.50%	2.00%	1.12%
	100.00%	6.92%	12.62%
20-Year Geometric Return		**6.18%**	
Selected Long-Term Return		**6.50%**	

In the table above, we reflect Horizon's Survey of Capital Market Assumptions 2022 Edition as one recognized benchmark of the long-term returns and utilize those in the determination of the weighted average arithmetic yield amount. We apply the Horizon study published as of the valuation measurement date and based upon the 50th percentile results in such study, consistent with the prior year method. Other methods and studies are available; the above reflects a solid and reasonable approach.

In developing the projection of cash flows used to determine the discount rate, we have assumed that employer contributions to the Plan will continue to follow the written contribution policy for fiscal year 2023-24, as well as following the historical contributions, thus funding at least the ADC in the future. The total employer contribution rate is the sum of the normal cost rate plus an amortization of the Plan's unfunded actuarial liability (UAL). The normal cost rate is determined under the entry age actuarial cost method while the UAL rate is that necessary to pay down the UAL over a closed 24-year period and determined as a level percentage of participant payroll. The normal cost and UAL amortization is then trended to the middle of the next fiscal year. The Plan has historically contributed at least the required actuarially determined contributions.

SECTION III – DETERMINATION OF DISCOUNT RATE

Based on these assumptions, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current members following the procedures described in paragraphs 48-50 of GASB 74. Consequently, the single equivalent rate used to determine the Total OPEB Liability as of June 30, 2023 is 6.50%, the long-term expected rate-of-return as defined by GASB 74 as of that date.

Table III - 2
Schedule of Investment Returns

FYE	Annual Money Weighted Rate of Return, Net of Investment Expense
2014	17.1%
2015	2.9%
2016	1.3%
2017	13.1%
2018	8.8%
2019	7.6%
2020	5.8%
2021	28.8%
2022	-14.4%
2023	12.3%

SECTION IV – TOTAL OPEB LIABILITY SENSITIVITY

The table below shows the total OPEB liability (TOL) amounts at discount rates equal to the rate used for measuring the TOL at the June 30, 2023 measurement date as well as plus and minus one percent from that rate.

Table IV - 1
Projection of the Total OPEB Liability from Valuation Date to Measurement Date

Discount Rate	**5.50%**	**6.50%**	**7.50%**
Valuation Total OPEB Liability, 6/30/2022			
Actives	$ 57,501,566	$ 48,849,248	$ 41,866,888
Retirees	69,154,758	62,273,601	56,466,241
Total	**$ 126,656,324**	**$ 111,122,849**	**$ 98,333,129**
Net Service Cost	4,424,736	3,488,806	2,776,035
Benefit Payments	(5,439,240)	(5,439,240)	(5,439,240)
Interest	6,818,521	7,048,993	7,174,701
Total OPEB Liability, 6/30/2023	**$ 132,460,341**	**$ 116,221,408**	**$ 102,844,625**

The table below shows the total OPEB liability (TOL) amounts at healthcare trend rates equal to the rate used for measuring the TOL at the June 30, 2023 measurement date as well as plus and minus one percent from that rate.

Table IV - 2
Projection of the Total OPEB Liability from Valuation Date to Measurement Date

Healthcare Trends	**-1.00%**	**Baseline**	**1.00%**
Valuation Total OPEB Liability, 6/30/2022			
Actives	$ 40,524,296	$ 48,849,248	$ 59,404,610
Retirees	56,671,594	62,273,601	68,788,802
Total	**$ 97,195,890**	**$ 111,122,849**	**$ 128,193,412**
Net Service Cost	2,792,594	3,488,806	4,412,833
Benefit Payments	(5,439,240)	(5,439,240)	(5,439,240)
Interest	6,143,740	7,048,993	8,158,579
Total OPEB Liability, 6/30/2023	**$ 100,692,984**	**$ 116,221,408**	**$ 135,325,584**

Net OPEB liability (NOL) sensitivity disclosures required under GASB No. 74 are developed based on this information in Tables V-2 and V-3 in Section V of this report.

SECTION V – GASB 74 REPORTING INFORMATION

Note Disclosures

The table below shows the changes in the total OPEB liability (TOL), the Plan fiduciary net position (i.e., fair value of Plan assets) (FNP), and the net OPEB liability (NOL) during the measurement period ending on June 30, 2023, as well as the prior two measurement periods.

Table V - 1
Change in Net OPEB Liability

Reporting Date under GASB 75	6/30/2024	6/30/2023	6/30/2022
Measurement Date under GASB 74/75	6/30/2023	6/30/2022	6/30/2021
Total OPEB Liability			
Total OPEB Liability at BOY	**$ 106,354,619**	**$ 100,662,726**	**$ 96,809,772**
Changes for the year:			
Service cost	3,375,953	3,069,185	2,984,622
Interest	6,958,495	6,587,914	6,585,821
Changes of benefits	(622,395)	0	0
Differences between expected and actual experience	915,720	869,679	1,259,391
Changes of assumptions	4,678,256	0	(2,449,602)
Benefit payments	(5,439,240)	(4,834,885)	(4,527,278)
Net changes	9,866,789	5,691,893	3,852,954
Total OPEB Liability at EOY	$ 116,221,408	$ 106,354,619	$ 100,662,726
Plan Fiduciary Net Position			
Plan Fiduciary Net Position at BOY	**$ 57,507,625**	**$ 65,870,637**	**$ 49,622,279**
Changes for the year:			
Contributions - employer	6,394,396	6,000,000	6,261,000
Contributions - member	0	0	0
Net investment income	7,104,701	(9,584,492)	14,534,551
Benefit payments	(5,439,240)	(4,834,885)	(4,527,278)
Administrative expense	(14,000)	56,365	(19,915)
Net changes	8,045,857	(8,363,012)	16,248,358
Plan Fiduciary Net Position at EOY	$ 65,553,482	$ 57,507,625	$ 65,870,637
Net OPEB Liability			
Net OPEB Liability at BOY	**$ 48,846,994**	**$ 34,792,089**	**$ 47,187,493**
Changes for the year:			
Service cost	3,375,953	3,069,185	2,984,622
Interest	6,958,495	6,587,914	6,585,821
Changes of benefits	(622,395)	0	0
Differences between expected and actual experience	915,720	869,679	1,259,391
Changes of assumptions	4,678,256	0	(2,449,602)
Contributions - employer	(6,394,396)	(6,000,000)	(6,261,000)
Contributions - member	0	0	0
Net investment income	(7,104,701)	9,584,492	(14,534,551)
Benefit payments	0	0	0
Administrative expense	14,000	(56,365)	19,915
Net changes	1,820,932	14,054,905	(12,395,404)
Net OPEB Liability at EOY	$ 50,667,926	$ 48,846,994	$ 34,792,089

SECTION V – GASB 74 REPORTING INFORMATION

During the measurement year, the NOL increased by approximately $1.82 million.

- The service cost and interest cost increased the NOL by approximately $10.33 million.
- Investment gains related to plan assets and contributions offset slightly by administrative expenses decreased the NOL by approximately $13.48 million.
- An experience loss, due to changes in population, increased the TOL by approximately $0.92 million.
- Assumption losses due to changes in claims, trends, and timing, increased the TOL by $4.7 million.
- A gain of $0.62 million due to mid-year changes effective 7/1/2023 to the NYSHIP Empire Plan.

SECTION V – GASB 74 REPORTING INFORMATION

Changes in the discount rate affect the measurement of the TOL. Lower discount rates produce a higher TOL, and higher discount rates produce a lower TOL. The table below shows the sensitivity of the NOL to the discount rate.

Table V - 2
Sensitivity of Net OPEB Liability to Changes in Discount Rate
Reporting Date June 30, 2024
Measurement Date June 30, 2023

	1% Decrease 5.50%	Discount Rate 6.50%	1% Increase 7.50%
Total OPEB Liability	$ 132,460,341	$ 116,221,408	$ 102,844,625
Plan Fiduciary Net Position	65,553,482	65,553,482	65,553,482
Net OPEB Liability	$ 66,906,859	$ 50,667,926	$ 37,291,143
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	49.5%	56.4%	63.7%

A one percent decrease in the discount rate increases the TOL by approximately 14% and increases the NOL by approximately 32%. A one percent increase in the discount rate decreases the TOL by approximately 12% and decreases the NOL by approximately 26%.

Changes in the healthcare trends affect the measurement of the TOL. Lower healthcare trends produce a lower TOL, and higher healthcare trends produce a higher TOL. The table below shows the sensitivity of the NOL to the healthcare trends.

Table V - 3
Sensitivity of Net OPEB Liability to Changes in Healthcare Cost Trend Rates
Reporting Date June 30, 2024
Measurement Date June 30, 2023

	1% Decrease	Healthcare Trend	1% Increase
Total OPEB Liability	$ 100,692,984	$ 116,221,408	$ 135,325,584
Plan Fiduciary Net Position	65,553,482	65,553,482	65,553,482
Net OPEB Liability	$ 35,139,502	$ 50,667,926	$ 69,772,102
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	65.1%	56.4%	48.4%

A one percent decrease in the healthcare trends decreases the TOL by approximately 13% and decreases the NOL by approximately 31%. A one percent increase in the healthcare trends increases the TOL by approximately 16% and increases the NOL by approximately 38%.

SECTION V – GASB 74 REPORTING INFORMATION

Required Supplementary Information

The schedule below shows the changes in NOL and related ratios required by GASB.

Table V - 4
Schedule of Changes in Net OPEB Liability and Related Ratios

Reporting Date under GASB 75	6/30/2024	6/30/2023	6/30/2022	6/30/2021	6/30/2020	6/30/2019	6/30/2018
Measurement Date under GASB 74/75	6/30/2023	6/30/2022	6/30/2021	6/30/2020	6/30/2019	6/30/2018	6/30/2017
Total OPEB Liability							
Service cost	$ 3,375,953	$ 3,069,185	$ 2,984,622	$ 2,914,852	$ 2,907,107	$ 2,604,313	$ 2,490,519
Interest (includes interest on service cost)	6,958,495	6,587,914	6,585,821	6,621,826	6,168,584	5,747,125	5,959,407
Changes of benefit terms	(622,395)	0	0	(9,789,000)	0	6,211,000	0
experience	915,720	869,679	1,259,391	79,202	714,079	(841,844)	(2,165,915)
Changes of assumptions	4,678,256	0	(2,449,602)	4,038,931	1,102,479	(878,222)	(5,848,836)
Benefit payments + expenses, including refunds of member contributions	(5,439,240)	(4,834,885)	(4,527,278)	(4,412,579)	(3,965,315)	(3,756,945)	(3,412,013)
Net change in total OPEB liability	**$ 9,866,789**	**$ 5,691,893**	**$ 3,852,954**	**$ (546,768)**	**$ 6,926,934**	**$ 9,085,427**	**$ (2,976,838)**
Total OPEB liability - beginning	**106,354,619**	**100,662,726**	**96,809,772**	**97,356,540**	**90,429,606**	**81,344,179**	**84,321,017**
Total OPEB liability - ending	**$ 116,221,408**	**$ 106,354,619**	**$ 100,662,726**	**$ 96,809,772**	**$ 97,356,540**	**$ 90,429,606**	**$ 81,344,179**
Plan fiduciary net position							
Contributions - employer	$ 6,394,396	$ 6,000,000	$ 6,261,000	$ 6,004,000	$ 5,500,000	$ 5,500,000	$ 5,500,000
Contributions - member	0	0	0	0	0	0	0
Net investment income	7,104,701	(9,584,492)	14,534,551	2,672,787	3,155,344	3,212,503	4,212,256
Benefit payments, including refunds of member contributions	(5,439,240)	(4,834,885)	(4,527,278)	(4,412,579)	(3,965,315)	(3,756,945)	(3,412,013)
Administrative expense	(14,000)	56,365	(19,915)	(65,585)	(18,575)	(53,435)	(15,000)
Net change in plan fiduciary net position	**$ 8,045,857**	**$ (8,363,012)**	**$ 16,248,358**	**$ 4,198,623**	**$ 4,671,454**	**$ 4,902,123**	**$ 6,285,243**
Plan fiduciary net position - beginning	**57,507,625**	**65,870,637**	**49,622,279**	**45,423,656**	**40,752,202**	**35,850,079**	**29,564,836**
Plan fiduciary net position - ending	**$ 65,553,482**	**$ 57,507,625**	**$ 65,870,637**	**$ 49,622,279**	**$ 45,423,656**	**$ 40,752,202**	**$ 35,850,079**
Net OPEB liability - ending	**$ 50,667,926**	**$ 48,846,994**	**$ 34,792,089**	**$ 47,187,493**	**$ 51,932,884**	**$ 49,677,404**	**$ 45,494,100**
Plan fiduciary net position as a percentage of the total OPEB liability	56.40%	54.07%	65.44%	51.26%	46.66%	45.07%	44.07%
Covered payroll	$ 35,579,229	$ 35,423,191	$ 33,142,258	$ 32,124,845	$ 31,189,170	$ 30,682,745	$ 29,752,583
Net OPEB liability as a percentage of covered payroll	142.41%	137.90%	104.98%	146.89%	166.51%	161.91%	152.91%

SECTION V – GASB 74 REPORTING INFORMATION

If an Actuarially Determined Contribution (ADC) is calculated, the following schedule is required. An ADC is a contribution amount determined in accordance with Actuarial Standards of Practice.

Table V - 5
Schedule of Employer Contributions

Reporting Date under GASB 75	6/30/2024	6/30/2023	6/30/2022	6/30/2021	6/30/2020	6/30/2019
Measurement Date under GASB 74/75	6/30/2023	6/30/2022	6/30/2021	6/30/2020	6/30/2019	6/30/2018
Normal Cost adjusted for timing	$ 3,847,608	$ 3,483,944	$ 3,167,363	$ 3,083,708	$ 3,011,622	$ 2,949,204
Amortization of the unfunded actuarial liability adjusted for timing	3,062,418	2,910,452	2,172,493	2,738,348	2,946,246	2,400,171
Actuarially Determined Contribution (ADC)	$ 6,910,026	$ 6,394,396	$ 5,339,856	$ 5,822,056	$ 5,957,868	$ 5,349,375
Actual Contribution related to ADC		6,394,396	6,000,000	6,261,000	6,004,000	5,500,000
Contribution Deficiency/(Excess) relative to ADC		$ 0	$ (660,144)	$ (438,944)	$ (46,132)	$ (150,625)
Covered Payroll (Pay)	$ 35,579,229	$ 35,423,191	$ 33,142,258	$ 32,124,845	$ 31,189,170	$ 30,682,745
Actual Contributions as % of Pay		18.05%	18.10%	19.49%	19.25%	17.93%
Reporting Date under GASB 75		**6/30/2018**	**6/30/2017**	**6/30/2016**	**6/30/2015**	**6/30/2014**
Measurement Date under GASB 74/75		**6/30/2017**	**6/30/2016**	**6/30/2015**	**6/30/2014**	**6/30/2013**
Normal Cost adjusted for timing		$ 2,670,757				
Amortization of the unfunded actuarial liability adjusted for timing		2,607,989				
Actuarially Determined Contribution (ADC)		$ 5,278,747	$ 5,374,220	$ 4,782,000	$ 4,542,000	$ 4,767,000
Actual Contribution related to ADC		5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
Contribution Deficiency/(Excess) relative to ADC		$ (221,253)	$ (125,780)	$ (718,000)	$ (958,000)	$ (733,000)
Covered Payroll (Pay)		$ 29,752,583	$ 29,087,397	$ 26,506,965	$ 25,556,000	$ 26,500,000
Actual Contributions as % of Pay		18.49%	18.91%	20.75%	21.52%	20.75%

SECTION V – GASB 74 REPORTING INFORMATION

The notes below summarize the key methods and assumptions used to determine the ADC for June 30, 2024.

Notes to Schedule

Valuation Date:	July 1, 2022.
Timing:	Actuarially determined contributions are calculated based on the actuarial valuation at the end of the fiscal year. See Funding Report Valuation for more details on calculation.

Key Methods and Assumptions Used to Determine Contribution Rates

Actuarial Cost Method:	Entry Age Normal Cost Method, level percentage of payroll
Asset Valuation Method:	Market Value
Amortization Method:	30-Year Closed Amortization, level percentage of payroll
Remaining Amortization Period:	24 years as of July 1, 2022
Discount Rate:	6.50% per annum
Expected Return on Assets:	6.50% per annum
Salary Increases:	Varies by service from 3.00% - 8.00%
Mortality:	SOA PUB-2010 Headcount Weighted for General Employees Mortality Table with base year 2010 and Improvement Scale MP-2020, with a 90% adjustment to base rates.

SECTION VI – GASB 75 REPORTING INFORMATION

NYSTRS was required to implement GASB 75 for their first fiscal year commencing after June 15, 2017. The amounts reported as of their fiscal year end (their reporting date) must be based on a measurement date up to 12 months and one day prior to their reporting date. For employers with a reporting date of June 30, the Fiscal Year End 2024 disclosures can be based upon either the June 30, 2023 or 2024 measurement dates. Since NYSTRS has elected to implement GASB 75 using a 12-month lookback, the exhibits on the following pages will be used for Fiscal Year End 2024 employer reporting.

The impact of experience gains or losses and assumption changes on the TOL are recognized in expense over the average expected remaining service life of all active and inactive members of the Plan. As of the measurement date, this recognition period was 6.00 (six) years.

During the year, there was an experience loss of $915,720. $152,620 of that loss was recognized in the current year, and an identical amount will be recognized in each of the next 5.00 years, resulting in a deferred outflow of resources as of June 30, 2023 of $763,100.

There was an assumption loss due to the revised claim curves, trends and timing of $4,678,256. $779,709 of that loss was recognized in the current year, and an identical amount will be recognized in each of the next 5.00 years, resulting in a deferred inflow of resources as of June 30, 2023 of $3,898,547.

The impact of investment gains or losses is recognized over a period of five years. During the measurement year, there was an investment gain of $3,336,118. $667,224 of that gain was recognized in the current year, and an identical amount will be recognized in each of the next four years, resulting in a deferred inflow of resources as of June 30, 2022 of $2,668,894.

SECTION VI – GASB 75 REPORTING INFORMATION

The table below summarizes the current balances of deferred outflows and deferred inflows of resources related to the Plan along with the net recognition over the next five years and the total recognition thereafter, if any.

Table VI - 1
Schedule of Deferred Inflows and Outflows of Resources as of Reporting Date June 30, 2024 Measurement Date June 30, 2023

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	$ 2,117,995	$ 27,155
Changes in assumptions	5,428,602	1,253,129
Net difference between projected and actual earnings on OPEB plan investments	1,262,178	0
Contributions subsequent to the measurement date	6,910,000	0
Total	**$ 15,718,775**	**$ 1,280,284**

Amounts reported as deferred outflows and deferred inflows of resources will be recognized in OPEB expense as follows:

Year ended June 30:	
2025	1,764,752
2026	1,428,518
2027	2,992,839
2028	410,051
2029	932,331
Thereafter	$ 0

SECTION VI – GASB 75 REPORTING INFORMATION

Table VI - 2
Schedule of Deferred Inflows and Outflows of Resources as of
June 30, 2024 Reporting Date
June 30, 2023 Measurement Date
June 30, 2023 Fiscal Year End

Recognition of Experience (Gains) and Losses

Experience Year	Recognition Period	Total Amount	BOY Remaining Amount	EOY Remaining Amount	Recognition Year 2024	2025	2026	2027	2028	2029
2023	6.00	$ 915,720	$ 915,720	$ 763,100	$ 152,620	$ 152,620	$ 152,620	$ 152,620	$ 152,620	$ 152,620
2022	6.00	$ 869,679	$ 724,732	$ 579,785	$ 144,947	$ 144,947	$ 144,947	$ 144,947	$ 144,944	$ -
2021	6.00	$ 1,259,391	$ 839,593	$ 629,694	$ 209,899	$ 209,899	$ 209,899	$ 209,896	$ -	$ -
2020	6.00	$ 79,202	$ 39,602	$ 26,402	$ 13,200	$ 13,200	$ 13,202	$ -	$ -	$ -
2019	6.00	$ 714,079	$ 238,027	$ 119,014	$ 119,013	$ 119,014	$ -	$ -	$ -	$ -
2018*	6.20	$ (841,841)	$ (162,936)	$ (27,155)	$ (135,781)	$ (27,155)	$ -	$ -	$ -	$ -
2017*	6.22	$ (2,165,915)	$ (76,607)	$ -	$ (76,607)	$ -	$ -	$ -	$ -	$ -
Recognition of liability gains and losses			$ 2,518,131	$ 2,090,840	$ 427,291	$ 612,525	$ 520,668	$ 507,463	$ 297,564	$ 152,620

Recognition of Assumption Changes (Gains) and Losses

Experience Year	Recognition Period	Total Amount	BOY Remaining Amount	EOY Remaining Amount	Recognition Year 2024	2025	2026	2027	2028	2029
2023	6.00	$ 4,678,256	$ 4,678,256	$ 3,898,547	$ 779,709	$ 779,709	$ 779,709	$ 779,709	$ 779,709	$ 779,711
2022	6.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2021	6.00	$ (2,449,602)	$ (1,633,068)	$ (1,224,801)	$ (408,267)	$ (408,267)	$ (408,267)	$ (408,267)	$ -	$ -
2020	6.00	$ 4,038,931	$ 2,019,466	$ 1,346,311	$ 673,155	$ 673,155	$ 673,156	$ -	$ -	$ -
2019	6.00	$ 1,102,479	$ 367,491	$ 183,744	$ 183,747	$ 183,744	$ -	$ -	$ -	$ -
2018*	6.20	$ (878,222)	$ (169,977)	$ (28,328)	$ (141,649)	$ (28,328)	$ -	$ -	$ -	$ -
2017*	6.22	$ (5,848,836)	$ (206,874)	$ -	$ (206,874)	$ -	$ -	$ -	$ -	$ -
Recognition of assumption changes			$ 5,055,294	$ 4,175,473	$ 879,821	$ 1,200,013	$ 1,044,598	$ 371,442	$ 779,709	$ 779,711

Recognition of Investment (Gains) and Losses

Experience Year	Recognition Period	Total Amount	BOY Remaining Amount	EOY Remaining Amount	Recognition Year 2024	2025	2026	2027	2028
2023	5	$ (3,336,118)	$ (3,336,118)	$ (2,668,894)	$ (667,224)	$ (667,224)	$ (667,224)	$ (667,224)	$ (667,222)
2022	5	$ 13,905,782	$ 11,124,626	$ 8,343,470	$ 2,781,156	$ 2,781,156	$ 2,781,156	$ 2,781,158	$ -
2021	5	$ (11,253,404)	$ (6,752,042)	$ (4,501,361)	$ (2,250,681)	$ (2,250,681)	$ (2,250,680)	$ -	$ -
2020	5	$ 444,807	$ 177,924	$ 88,963	$ 88,961	$ 88,963	$ -	$ -	$ -
2019	5	$ (353,402)	$ (70,682)	$ -	$ (70,682)	$ -	$ -	$ -	$ -
Recognition of investment gains and losses			$ 1,143,708	$ 1,262,178	$ (118,470)	$ (47,786)	$ (136,748)	$ 2,113,934	$ (667,222)

Total (Gains) and Losses	Total Amount	Remaining Amounts BOY	Remaining Amounts EOY	Recognition Year 2024	2025	2026	2027	2028	2029
Total (Gains) and Losses	**$ 880,986**	**$ 8,717,133**	**$ 7,528,491**	**$ 1,188,642**	**$ 1,764,752**	**$ 1,428,518**	**$ 2,992,839**	**$ 410,051**	**$ 932,331**

*Based on results from the prior actuarial report with measurement date June 30, 2018.

SECTION VI – GASB 75 REPORTING INFORMATION

The annual OPEB expense recognized by the employer can be calculated two different ways. First, it is the change in the amounts reported on the employers' Statements of Net Position that relate to the Plan and are not attributable to employer contributions. That is, it is the change in NOL minus the change in deferred outflows plus the change in deferred inflows plus employer contributions during the year.

Alternatively, annual OPEB expense can be calculated by its individual components. While GASB does not require or suggest the organization of the individual components shown in the table below, we believe it helps to understand the level and volatility of the OPEB expense.

The table below shows the development of the OPEB expense through both of these methodologies. In addition to the information shown below, any contributions between the measurement date and the reporting date would be reported as deferred outflows to resources to offset the cash outflows reported.

Table VI - 3
Calculation of OPEB Expense

Reporting Date under GASB 74/75		6/30/2024		6/30/2023
Measurement Date under GASB 74/75		**6/30/2023**		**6/30/2022**
Change in Net OPEB Liability	$	1,820,932	$	14,054,905
Change in Deferred Outflows		(100,038)		(4,005,544)
Change in Deferred Inflows		(969,178)		(10,980,215)
Employer Contributions		6,394,396		6,000,000
OPEB Expense	**$**	**7,146,112**	**$**	**5,069,146**
OPEB Expense as % of Payroll		**20.09%**		**14.31%**
Operating Expenses				
Service cost	$	3,375,953	$	3,069,185
Administrative expenses		14,000		(56,365)
Total	$	3,389,953	$	3,012,820
Financing Expenses				
Interest cost	$	6,958,495	$	6,587,914
Expected return on assets		(3,768,583)		(4,321,290)
Total	$	3,189,912	$	2,266,624
Changes				
Benefit changes	$	(622,395)	$	0
Recognition of assumption changes		879,821		(633,341)
Recognition of liability gains and losses		427,291		3,060
Recognition of investment gains and losses		(118,470)		419,983
Total	$	566,247	$	(210,298)
OPEB Expense	**$**	**7,146,112**	**$**	**5,069,146**

SECTION VI – GASB 75 REPORTING INFORMATION

First, there are components referred to as operating expenses. These are items directly attributable to the operation of the Plan during the measurement year. Service cost less employee contributions represents the increase in employer-provided benefits attributable to the year, and administrative expenses are the cost of operating the Plan for the year.

Second, there are the financing expenses: the interest on the total OPEB liability less the expected return on assets.

The final category is changes. This category will drive most of the volatility in OPEB expense from year to year. It includes any changes in benefits made during the year and the recognized amounts due to assumption changes, gains or losses on the TOL, and investment gains or losses.

APPENDIX A – MEMBERSHIP INFORMATION

Participant Data Comparison:

Census Date	6/30/2021	6/30/2022	% Change
Active Employees:			
Count	374	365	-2.41%
Average Age	46.1	46.1	-0.11%
Average Service	11.3	10.7	-5.50%
Covered Payroll	$ 34,391,448	$ 34,542,941	0.44%
Inactives:			
Retirees*	283	297	4.95%
Average Age	69.4	69.6	0.20%
Surviving Spouses	16	14	-12.50%
Average Age	82.4	81.2	-1.44%
Spouses of Retirees	122	132	8.20%
Average Age	68.5	69.1	0.83%

*2 deferred retirements treated as "retired" for valuation purposes

Member Data as of June 30, 2022:

Eligible Active Employees as of June 30, 2022 Years of Service										
Age Group	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 25	3	0	0	0	0	0	0	0	0	**3**
25 to 29	20	2	0	0	0	0	0	0	0	**22**
30 to 34	20	13	0	1	0	0	0	0	0	**34**
35 to 39	27	18	4	3	1	0	0	0	0	**53**
40 to 44	14	23	8	10	2	0	0	0	0	**57**
45 to 49	15	10	11	10	1	0	0	0	0	**47**
50 to 54	11	18	13	9	9	6	5	0	0	**71**
55 to 59	7	3	4	16	9	4	6	1	0	**50**
60 to 64	6	2	3	3	4	1	1	0	2	**22**
65 to 69	1	0	0	0	1	1	0	0	1	**4**
70 & up	0	0	0	1	0	0	0	0	1	**2**
Total	**124**	**89**	**43**	**53**	**27**	**12**	**12**	**1**	**4**	**365**

APPENDIX A – MEMBERSHIP INFORMATION

Retirees as of June 30, 2022			
Age Group	**Males**	**Females**	**Total**
Under 50	0	0	0
50 to 54	0	1	1
55 to 59	10	21	31
60 to 64	14	47	61
65 to 69	22	49	71
70 to 74	18	40	58
75 to 79	23	23	46
80 to 84	10	10	20
85 to 89	5	3	8
90 to 94	0	0	0
95 to 99	0	1	1
100 & Over	0	0	0
Under Age 65	**24**	**69**	**93**
Age 65 and Older	**78**	**126**	**204**
Total	**102**	**195**	**297**

Status Reconciliation				
	Active	**Retired**	**Surviving SP**	**Total**
Members on June 30, 2021	**374**	**283**	**16**	**673**
Deceased		(8)	(2)	(10)
Surviving Spouse Added			0	0
Added Records				0
Terminations	(17)			(17)
Retired Coverage Waived				0
Retired Elected Coverage	(22)	22		0
Newly Elected Coverage	4			4
New Hires	26			26
Members on June 30, 2022	**365**	**297**	**14**	**676**

*Treated as "Retired" for valuation purposes

Distribution of Plan Coverage as of June 30, 2022			
Plan	**Single**	**Family**	**Total**
Empire Plan	184	228	412
CDPHP	75	135	210
MVP	15	17	32
Pre-85 Empire	0	0	0
Waived Medical	22	0	22
Total	296	380	**676**

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM POSTEMPLOYMENT BENEFIT PLAN
JUNE 30, 2023 MEASUREMENT DATE
GASB 74 JUNE 30, 2023 REPORTING DATE AND GASB 75 JUNE 30, 2024 REPORTING DATE

APPENDIX B – DEPLETION TEST

Year Beginning July 1:	Year (A)	Projected Beginning Plan Fiduciary Net Position (B)	Projected Total Contributions (C)	Projected Benefit Payments and Administrative Expenses (D)	Projected Investment Earnings (E)	Projected Ending Plan Fiduciary Net Position (F) = (B) + (C) - (D) + (E)	Projected Beginning Fiduciary Net Position (G) = (B)	Projected Benefit Payments for current plan paticipants (H)	"Funded" Portion of Benefit Payments (I) = (D) if (B) >= (D), then 0	"Unfunded" Portion of Benefit Payments (J) = (I) - (H)	Present Value of "Funded" Benefit Payments (K) = (I) / (1+ int)^(A)	Present Value of "Unfunded" Benefit Payments (L) = (J) / (1+bond rate)^(A)	Present Value of Benefit Payments Using the Single Discount Rate (M) = (H) / (1+ singlerate)^(A)
2023	1	$ 65,553,482	$ 6,910,000	$ 5,785,213	$ 4,296,956	$ 70,975,225	$ 65,553,482	$ 5,785,213	$ 5,785,213	$ 0	$ 5,432,125	$ 0	$ 5,432,125
2024	2	70,975,225	6,982,777	6,016,811	4,644,289	76,585,480	70,975,225	6,016,811	6,016,811	0	5,304,777	0	5,304,777
2025	3	76,585,480	7,015,530	6,256,010	5,002,352	82,347,352	76,585,480	6,256,010	6,256,010	0	5,179,032	0	5,179,032
2026	4	82,347,352	7,042,884	6,785,675	5,360,806	87,965,367	82,347,352	6,785,675	6,785,675	0	5,274,662	0	5,274,662
2027	5	87,965,367	7,076,123	7,284,385	5,711,087	93,468,192	87,965,367	7,284,385	7,284,385	0	5,316,733	0	5,316,733
2028	6	93,468,192	7,107,473	7,689,628	6,056,810	98,942,847	93,468,192	7,689,628	7,689,628	0	5,269,964	0	5,269,964
2029	7	98,942,847	7,126,003	8,112,083	6,399,742	104,356,508	98,942,847	8,112,083	8,112,083	0	5,220,176	0	5,220,176
2030	8	104,356,508	7,155,816	8,521,606	6,739,484	109,730,202	104,356,508	8,521,606	8,521,606	0	5,149,020	0	5,149,020
2031	9	109,730,202	7,180,001	9,063,170	7,072,224	114,919,257	109,730,202	9,063,170	9,063,170	0	5,142,019	0	5,142,019
2032	10	114,919,257	7,200,259	9,473,550	7,397,033	120,043,000	114,919,257	9,473,550	9,473,550	0	5,046,807	0	5,046,807
2033	11	120,043,000	7,200,081	9,904,981	7,716,270	125,054,369	120,043,000	9,904,981	9,904,981	0	4,954,593	0	4,954,593
2034	12	125,054,369	7,215,695	10,329,009	8,028,944	129,969,999	125,054,369	10,329,009	10,329,009	0	4,851,358	0	4,851,358
2035	13	129,969,999	7,228,821	10,416,639	8,346,077	135,128,259	129,969,999	10,416,639	10,416,639	0	4,593,912	0	4,593,912
2036	14	135,128,259	7,264,116	10,866,244	8,668,111	140,194,241	135,128,259	10,866,244	10,866,244	0	4,499,714	0	4,499,714
2037	15	140,194,241	7,320,228	11,321,464	8,984,633	145,177,638	140,194,241	11,321,464	11,321,464	0	4,402,085	0	4,402,085
2038	16	145,177,638	7,360,133	11,737,385	9,296,525	150,096,912	145,177,638	11,737,385	11,737,385	0	4,285,264	0	4,285,264
2039	17	150,096,912	7,405,573	12,211,569	9,602,563	154,893,479	150,096,912	12,211,569	12,211,569	0	4,186,279	0	4,186,279
2040	18	154,893,479	7,456,279	12,519,752	9,906,104	159,736,110	154,893,479	12,519,752	12,519,752	0	4,029,979	0	4,029,979
2041	19	159,736,110	7,510,755	12,879,851	10,211,098	164,578,112	159,736,110	12,879,851	12,879,851	0	3,892,856	0	3,892,856
2042	20	164,578,112	7,561,127	12,996,758	10,523,700	169,666,181	164,578,112	12,996,758	12,996,758	0	3,688,441	0	3,688,441
2043	21	169,666,181	7,655,843	13,351,432	10,846,109	174,816,700	169,666,181	13,351,432	13,351,432	0	3,557,837	0	3,557,837
2044	22	174,816,700	7,780,512	13,549,056	11,178,559	180,226,716	174,816,700	13,549,056	13,549,056	0	3,390,140	0	3,390,140
2045	23	180,226,716	7,933,555	13,867,047	11,524,934	185,818,157	180,226,716	13,867,047	13,867,047	0	3,257,939	0	3,257,939
2046	24	185,818,157	8,213,451	14,077,204	11,890,608	191,845,013	185,818,157	14,077,204	14,077,204	0	3,105,459	0	3,105,459
2047	25	191,845,013	1,355,013	14,218,613	12,058,440	191,039,853	191,845,013	14,218,613	14,218,613	0	2,945,215	0	2,945,215
2048	26	191,039,853	1,028,640	14,274,425	11,993,879	189,787,947	191,039,853	14,274,425	14,274,425	0	2,776,316	0	2,776,316
2049	27	189,787,947	903,845	14,288,346	11,908,068	188,311,513	189,787,947	14,288,346	14,288,346	0	2,609,411	0	2,609,411
2050	28	188,311,513	796,467	14,195,082	11,811,649	186,724,548	188,311,513	14,195,082	14,195,082	0	2,434,159	0	2,434,159
2051	29	186,724,548	702,654	14,214,112	11,704,886	184,917,976	186,724,548	14,214,112	14,214,112	0	2,288,659	0	2,288,659
2052	30	184,917,976	607,250	14,088,516	11,588,425	183,025,135	184,917,976	14,088,516	14,088,516	0	2,129,987	0	2,129,987
2053	31	183,025,135	513,772	13,983,710	11,465,752	181,020,949	183,025,135	13,983,710	13,983,710	0	1,985,110	0	1,985,110
2054	32	181,020,949	431,977	13,920,459	11,334,887	178,867,354	181,020,949	13,920,459	13,920,459	0	1,855,522	0	1,855,522
2055	33	178,867,354	347,993	13,555,099	11,203,904	176,864,152	178,867,354	13,555,099	13,555,099	0	1,696,546	0	1,696,546
2056	34	176,864,152	280,589	13,489,917	11,073,625	174,728,449	176,864,152	13,489,917	13,489,917	0	1,585,341	0	1,585,341
2057	35	174,728,449	221,989	13,194,322	10,942,385	172,698,501	174,728,449	13,194,322	13,194,322	0	1,455,965	0	1,455,965
2058	36	172,698,501	176,638	12,933,736	10,817,324	170,758,727	172,698,501	12,933,736	12,933,736	0	1,340,103	0	1,340,103
2059	37	170,758,727	138,822	12,680,945	10,698,115	168,914,719	170,758,727	12,680,945	12,680,945	0	1,233,719	0	1,233,719
2060	38	168,914,719	103,985	12,307,322	10,589,092	167,300,474	168,914,719	12,307,322	12,307,322	0	1,124,290	0	1,124,290
2061	39	167,300,474	78,835	11,896,745	10,496,495	165,979,060	167,300,474	11,896,745	11,896,745	0	1,020,454	0	1,020,454
2062	40	165,979,060	52,244	11,541,873	10,421,104	164,910,535	165,979,060	11,541,873	11,541,873	0	929,591	0	929,591
2063	41	164,910,535	43,583	11,216,242	10,361,790	164,099,665	164,910,535	11,216,242	11,216,242	0	848,230	0	848,230
2064	42	164,099,665	32,201	10,930,185	10,317,869	163,519,550	164,099,665	10,930,185	10,930,185	0	776,147	0	776,147
2065	43	163,519,550	22,337	10,619,159	10,289,796	163,212,524	163,519,550	10,619,159	10,619,159	0	708,039	0	708,039
2066	44	163,212,524	18,281	10,326,175	10,279,081	163,183,711	163,212,524	10,326,175	10,326,175	0	646,482	0	646,482
2067	45	163,183,711	11,182	10,012,963	10,287,001	163,468,931	163,183,711	10,012,963	10,012,963	0	588,614	0	588,614

APPENDIX B – DEPLETION TEST

Year Beginning July 1:	Year (A)	Projected Beginning Plan Fiduciary Net Position (B)	Projected Total Contributions (C)	Projected Benefit Payments and Administrative Expenses (D)	Projected Investment Earnings (E)	Projected Ending Plan Fiduciary Net Position (F) = (B) + (C) - (D) + (E)	Projected Beginning Fiduciary Net Position (G) = (B)	Projected Benefit Payments for current plan paticipants (H)	"Funded" Portion of Benefit Payments (I) = (D) if (B) >= (D), then 0	"Unfunded" Portion of Benefit Payments (J) = (I) - (H)	Present Value of "Funded" Benefit Payments (K) = (I) / (1+ int)^(A)	Present Value of "Unfunded" Benefit Payments (L) = (J) / (1+bond rate)^(A)	Present Value of Benefit Payments Using the Single Discount Rate (M) = (H) / (1+ singlerate)^(A)
2068	46	$ 163,468,931	$ 4,884	$ 9,678,330	$ 10,316,043	$ 164,111,528	$ 163,468,931	$ 9,678,330	$ 9,678,330	$ 0	$ 534,218	$ 0	$ 534,218
2069	47	164,111,528	836	9,327,796	10,368,895	165,153,463	164,111,528	9,327,796	9,327,796	0	483,445	0	483,445
2070	48	165,153,463	788	8,963,838	10,448,262	166,638,675	165,153,463	8,963,838	8,963,838	0	436,227	0	436,227
2071	49	166,638,675	742	8,584,718	10,556,926	168,611,624	166,638,675	8,584,718	8,584,718	0	392,279	0	392,279
2072	50	168,611,624	0	8,192,378	10,697,695	171,116,941	168,611,624	8,192,378	8,192,378	0	351,503	0	351,503
2073	51	171,116,941	0	7,787,842	10,873,481	174,202,580	171,116,941	7,787,842	7,787,842	0	313,752	0	313,752
2074	52	174,202,580	0	7,372,065	11,087,347	177,917,862	174,202,580	7,372,065	7,372,065	0	278,875	0	278,875
2075	53	177,917,862	0	6,946,703	11,342,447	182,313,606	177,917,862	6,946,703	6,946,703	0	246,746	0	246,746
2076	54	182,313,606	0	6,514,057	11,642,010	187,441,559	182,313,606	6,514,057	6,514,057	0	217,256	0	217,256
2077	55	187,441,559	0	6,076,950	11,989,310	193,353,919	187,441,559	6,076,950	6,076,950	0	190,308	0	190,308
2078	56	193,353,919	0	5,637,770	12,387,662	200,103,811	193,353,919	5,637,770	5,637,770	0	165,779	0	165,779
2079	57	200,103,811	0	5,199,984	12,840,409	207,744,236	200,103,811	5,199,984	5,199,984	0	143,574	0	143,574
2080	58	207,744,236	0	4,766,527	13,350,902	216,328,611	207,744,236	4,766,527	4,766,527	0	123,573	0	123,573
2081	59	216,328,611	0	4,340,551	13,922,513	225,910,573	216,328,611	4,340,551	4,340,551	0	105,662	0	105,662
2082	60	225,910,573	0	3,925,104	14,558,630	236,544,099	225,910,573	3,925,104	3,925,104	0	89,717	0	89,717
2083	61	236,544,099	0	3,523,471	15,262,656	248,283,284	236,544,099	3,523,471	3,523,471	0	75,621	0	75,621
2084	62	248,283,284	0	3,138,588	16,038,015	261,182,711	248,283,284	3,138,588	3,138,588	0	63,250	0	63,250
2085	63	261,182,711	0	2,772,397	16,888,192	275,298,506	261,182,711	2,772,397	2,772,397	0	52,460	0	52,460
2086	64	275,298,506	0	2,427,868	17,816,739	290,687,377	275,298,506	2,427,868	2,427,868	0	43,137	0	43,137
2087	65	290,687,377	0	2,106,130	18,827,308	307,408,555	290,687,377	2,106,130	2,106,130	0	35,137	0	35,137
2088	66	307,408,555	0	1,809,042	19,923,688	325,523,201	307,408,555	1,809,042	1,809,042	0	28,338	0	28,338
2089	67	325,523,201	0	1,537,395	21,109,829	345,095,635	325,523,201	1,537,395	1,537,395	0	22,613	0	22,613
2090	68	345,095,635	0	1,291,741	22,389,896	366,193,790	345,095,635	1,291,741	1,291,741	0	17,840	0	17,840
2091	69	366,193,790	0	1,072,420	23,768,291	388,889,661	366,193,790	1,072,420	1,072,420	0	13,907	0	13,907
2092	70	388,889,661	0	879,033	25,249,709	413,260,337	388,889,661	879,033	879,033	0	10,704	0	10,704
2093	71	413,260,337	0	710,845	26,839,183	439,388,675	413,260,337	710,845	710,845	0	8,127	0	8,127
2094	72	439,388,675	0	566,618	28,542,139	467,364,196	439,388,675	566,618	566,618	0	6,083	0	6,083
2095	73	467,364,196	0	444,639	30,364,449	497,284,006	467,364,196	444,639	444,639	0	4,482	0	4,482
2096	74	497,284,006	0	343,213	32,312,482	529,253,275	497,284,006	343,213	343,213	0	3,249	0	3,249
2097	75	529,253,275	0	260,235	34,393,138	563,386,178	529,253,275	260,235	260,235	0	2,313	0	2,313
2098	76	563,386,178	0	193,610	36,613,908	599,806,476	563,386,178	193,610	193,610	0	1,616	0	1,616
2099	77	599,806,476	0	141,179	38,982,905	638,648,202	599,806,476	141,179	141,179	0	1,106	0	1,106
2100	78	638,648,202	0	100,780	41,508,909	680,056,331	638,648,202	100,780	100,780	0	741	0	741
2101	79	680,056,331	0	70,346	44,201,411	724,187,396	680,056,331	70,346	70,346	0	486	0	486
2102	80	724,187,396	0	47,961	47,070,647	771,210,082	724,187,396	47,961	47,961	0	311	0	311
2103	81	771,210,082	0	31,904	50,127,635	821,305,813	771,210,082	31,904	31,904	0	194	0	194
2104	82	821,305,813	0	20,686	53,384,216	874,669,343	821,305,813	20,686	20,686	0	118	0	118
2105	83	874,669,343	0	13,064	56,853,089	931,509,368	874,669,343	13,064	13,064	0	70	0	70
2106	84	931,509,368	0	8,033	60,547,852	992,049,187	931,509,368	8,033	8,033	0	41	0	41
2107	85	992,049,187	0	4,808	64,483,043	1,056,527,422	992,049,187	4,808	4,808	0	23	0	23
2108	86	1,056,527,422	0	2,806	68,674,193	1,125,198,809	1,056,527,422	2,806	2,806	0	12	0	12
2109	87	1,125,198,809	0	1,597	73,137,872	1,198,335,084	1,125,198,809	1,597	1,597	0	7	0	7
2110	88	1,198,335,084	0	888	77,891,752	1,276,225,948	1,198,335,084	888	888	0	3	0	3
2111	89	1,276,225,948	0	484	82,954,671	1,359,180,135	1,276,225,948	484	484	0	2	0	2

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Economic and Health Economic Assumptions

1. **Expected Return on Plan Assets:** 6.50% per annum consistent with the discount rate effective July 1, 2023.

2. **Discount Rate:** 6.50% per annum effective July 1, 2023.

3. **Health Cost Trends:** Health care trend assumptions used were developed using the Society of Actuaries (SOA) Long-Run Medical Cost Trend Model version 2023_f. The following assumptions were applied in this model as below:

Trend Assumption Inputs	
Variable	**Rate**
Rate of Inflation	2.70%
Rate of Growth in Real Income/GDP per capita 2029+	1.40%
Extra Trend due to Taste/Technology 2029+	0.80%
Expected Health Share of GDP 2029	19.8%
Health Share of GDP Resistance Point	19.0%
Year for Limiting Cost Growth to GDP Growth	2043

The SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical U.S. medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables have been developed under the guidance of the SOA Project Oversight Group.

On the next page are the year-by-year trends applied for Non-Medicare and Medicare costs, Medicare Part B premiums, and a blended trend. The blended trend reflects the portion of Medicare costs associated with health care claims versus Medicare Part B reimbursement.

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Fiscal Year Ending June 30,	Non-Medicare Claims and Premium Trends	Medicare Claims and Premium Trends	Medicare Part B Premium Trends	Blended Medicare Claims and Premiums Trends
2023	6.50%	6.90%	5.00%	6.50%
2024	8.00%	8.82%	4.90%	8.00%
2025	7.75%	8.53%	4.80%	7.75%
2026	7.38%	8.09%	4.70%	7.38%
2027	6.97%	7.61%	4.60%	6.97%
2028	6.57%	7.12%	4.50%	6.57%
2029	6.17%	6.64%	4.40%	6.17%
2030	5.77%	6.16%	4.30%	5.77%
2031	5.37%	5.68%	4.20%	5.37%
2032	4.97%	5.20%	4.10%	4.97%
2033	4.80%	5.01%	4.00%	4.80%
2034	4.57%	4.75%	3.90%	4.57%
2035	4.46%	4.63%	3.80%	4.46%
2036	4.39%	4.58%	3.70%	4.39%
2037	4.35%	4.55%	3.60%	4.35%
2038	4.32%	4.53%	3.50%	4.32%
2039	4.29%	4.50%	3.50%	4.29%
2040	4.28%	4.48%	3.50%	4.28%
2041	4.26%	4.46%	3.50%	4.26%
2042	4.20%	4.39%	3.50%	4.20%
2043+	4.14%	4.31%	3.50%	4.14%

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

4. **Retiree Premiums:**

No retiree contributions are required for those who retired before July 1, 1985. For eligible retirees who retire on or after July 1, 1985, retirees must pay a contribution equal to the active employee contribution, namely the percentage of premium in the schedule below.

Effective Period	Contribution Percentage
January 1, 2020 to December 31, 2023	14%
January 1, 2024 and after	15%

In addition, if a retiree opts to enroll in a plan other than the Empire Plan, 100% of the excess premium over the Empire Plan premium, if any, must be paid by the retiree.

After a three-month extended coverage period, surviving spouses: pay 25% of the premium cost if the retiree had 10 or more years of service, otherwise the surviving spouse pays the full premium cost.

The fully insured premiums paid to NYSHIP are blended for actives, non-Medicare retirees, and Medicare retirees. Such premiums include medical benefits, prescription drugs, vision, and Part B Medicare premium reimbursement (page 33 for Medicare Part B amounts).

Retirees with a deferred vested benefit pay 50% of the premium cost for single coverage and 65% of the premium cost for family coverage.

	Effective 1/1/2022		Effective 1/1/2023		Effective 7/1/2023	
Plan	**Single Coverage**	**Family Coverage**	**Single Coverage**	**Family Coverage**	**Single Coverage**	**Family Coverage**
Empire Plan	$11,056.56	$27,361.80	$12,169.44	$30,107.88	$11,842.20	$29,283.24
CDPHP	$9,808.20	$23,922.12	$10,519.00	$25,673.64	$10,519.00	$25,673.64
MVP	$9,682.32	$22,240.08	$10,209.84	$23,481.24	$10,209.84	$23,481.24

5. **Annual Maximums:** Employee and retiree contributions are subject to an annual maximum that varies based upon salary (salary at retirement for retirees) and are established as part of the collective bargaining agreement. The maximums listed below for the four salary bands are effective as of January 1, 2023. Next year the annual maximums will increase based on the amounts shown in the table below.

Salary	Annual Maximum	Annual Maximum Increases
Up to $40,000	$3,150	$300
$40,001 - $60,000	$3,750	$400
$60,001 - $90,000	$4,575	$550
$90,001 and above	$5,025	$600

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

6. **Maximum Retiree Contributions:** The annual retiree contribution maximum based on salary at retirement is assumed to increase $100 per year after 2024.

7. **Banked Sick Pay Credit:** Retirements after April 1, 1991 are eligible to have unused sick leave converted into a credit to offset the required retiree contribution. Sick Leave Credit = (Rate of Pay x Sick Leave Hours)/Life Expectancy. The sick leave credit is calculated at retirement and does not change. For the valuation, participants are assumed to accrue 4.74 days of unused sick days per year. Upon retirement, all employees are assumed to use 100% of sick pay credit.

   The maximum sick leave credit eligible to be used in the calculation of sick leave credit is 200 days.

8. **Life Expectancy:** Expected future lifetime for purposes of the sick leave credit described above is based on the mortality table in use at retirement age. Calculations prior to December 31, 2020 were based on the 1983 Life Expectancy Table. Effective January 1, 2021, the calculation is based on the 1999 Life Expectancy Table. Effective January 1, 2024, the calculation will be based on the 2015 Life Expectancy Table. Samples of the Life Expectancy Months calculated are shown in the table below.

	Life Expectancy Tables		
Age	1983	1999	2015
45	342	446	488
50	308	389	432
55	271	337	378
60	232	288	327
65	192	241	277
70	154	197	228
75	119	155	182
80	89	119	141

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Demographic Assumptions

1. Rates of Retirement:

Age	Rate (%)	Previous Rate (%)
Under 45	0.00	0.00
45 to 54	0.25	0.25
55	20.00	20.00
56	14.00	20.00
57	15.00	15.00
58	16.00	15.00
59	17.00	15.00
60	20.00	20.00
61	25.00	10.00
62	30.00	25.00
63	40.00	25.00
64	25.00	20.00
65	20.00	20.00
66 to 69	10.00	10.00
70+	100.00	100.00

2. Rates of Withdrawal:

Years of Service	Rate (%)	Previous Rate (%)
0	15.00	14.0
1	12.00	13.6
2	9.00	9.7
3	8.00	7.8
4	7.00	6.2
5	6.00	4.3
6	5.00	4.1
7	4.75	4.0
8	4.50	3.9
9	4.25	3.8
10	3.75	1.7
11	3.25	1.7
12	2.75	1.6
13	2.25	1.6
14	1.75	1.5
15+	1.00	1.0

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

3. **Rates of Mortality:**

   Pre-Retirement Mortality: The Pub-2010 General Employee Headcount-Weighted Mortality table [PubG.H-2010 Employee] as published by the Society of Actuaries with an 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. All pre-retirement deaths are assumed ordinary deaths.

   Healthy Retirees (Healthy Annuitants): The Pub-2010 General Healthy Retiree Headcount-Weighted Mortality table [PubG.H-2010 Healthy Retiree] as published by the Society of Actuaries with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

   Beneficiaries (Healthy Annuitants): Pub-2010 General Contingent Survivors Headcount-Weighted Mortality [PubG.H-2010 Contingent Survivors] as published by the Society of Actuaries with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

   Disabled Retirees (Disabled Annuitants): The Pub-2010 General Disabled Retiree Headcount-Weighted Mortality table [PubG.H-2010 Disabled Retiree] as published by the Society of Actuaries with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

4. **Rate of Disability:** No disability was assumed.

5. **Rate of Payroll Increase:** 3.00% per annum

6. **Salary Increase Rate:**

Years of Service	Rate (%)	Years of Service	Rate (%)	Years of Service	Rate (%)
0	8.00	7	4.10	13	3.50
1	8.00	8	4.00	14	3.40
2	7.00	9	3.90	15	3.30
3	6.00	10	3.80	16	3.20
4	5.00	11	3.70	17	3.10
5	4.50	12	3.60	18+	3.00
6	4.20				

7. **Participation and Coverage Election:** 100% of future eligible service retirees were assumed to elect coverage. 0% of future inactive vested retirees were assumed to retain eligibility for and elect coverage.

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

8. **Dependents:** Demographic data was provided for spouses of current retirees. Of those future retirees who elect to continue their health coverage at retirement, 70% of males and 40% of females were assumed to have an eligible spouse who also opts for health coverage at that time. For future retirees, male retirees are assumed to be two years older than their female spouses. For future retirees, female retirees are assumed to be two years younger than their male spouses.75% of surviving spouses of actives with 10 or more years of service and 0% of surviving spouses with less than 10 years of service were assumed to elect coverage.

9. **Rationale for Demographic and Economic Assumptions:** The actuarial assumptions for the New York State Teachers' Retirement System are the same assumptions that were used for the valuation dated June 30, 2022, which were reviewed and considered reasonable, except for those changes listed below.

10. **Changes Since Last Valuation:** Claim curves and trends were updated to align with recent experience.

11. **Disclosures Regarding Models Used:**

    a. **Valuation Software**

    Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate the liabilities, normal costs, and projected benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

    b. **SOA Long-Run Medical Cost Trend Model**

    The SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical U.S. medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables have been developed under the guidance of the SOA Project Oversight Group.

    The trends selected from 2023 to 2026 were based on short-term expectations for medical cost increases based on current market conditions.

    We have reviewed the baseline assumptions for the model and found them to be reasonable and consistent with the other economic assumptions used in the valuation, except we are limiting medical costs to the rate of growth in GDP after the year 2043.

    We have relied on the Society of Actuaries as the developer of the Model. We have reviewed the Model and have a basic understanding of the Model and have used the Model in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of the Model that would affect this report.

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Claim and Expense Assumptions

Medical, prescription drug, Medicare Part B reimbursement and vision costs for the year beginning July 1, 2022 are shown in the table below for retirees and spouses at selected ages. These costs are net of deductibles and other benefit plan cost-sharing provisions. These claims are derived from actual blended premiums and allocated using Cheiron's aging factors to each age and by gender. No aging factors were applied to the Medicare Part B premium reimbursement when developing these rates.

Average Claim and Expense Assumptions:		
For Fiscal Year 7/1/2022 - 6/30/2023:		
Age	**Male**	**Female**
40	$7,126	$11,828
45	$9,365	$12,625
50	$12,174	$14,619
55	$15,552	$17,717
60	$19,499	$20,793
64	$23,067	$21,592
65	$8,225	$7,952
70	$9,158	$8,387
75	$9,575	$8,715
80	$9,703	$8,924
85	$9,711	$9,015

The following benefit changes are effective 1/1/2023 for the NYSHIP plans, which were determined to be immaterial to the assumed claim costs.

- Empire Plan:
    - Out-of-Pocket Maximum for medical expenses increased from $5,650/$11,300 to $5,900/$11,800.
    - Out-of-Pocket Maximum for Rx expenses increased from $3,050/$6,100 to $3,200/$6,400.

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

The following benefit changes are effective 7/1/2023 for the NYSHIP Empire plan, which were reflected in the determination of trend rates.

- Premiums reduced by 2.7% from the 1/1/2023 rates.
- Out-of-Pocket Maximum for medical expenses decreased from $5,900/$11,800 to $2,600/$5,200.
- Out-of-Pocket Maximum for Rx expenses decreased from $3,200/$6,400 to $1,400/$2,800.
- Only a single $25 copayment will be charged for all covered services provided under the Medical/Surgical Program by a participating provider in a single visit.
- Massage Therapy and Acupuncture services will have a 20-visit limit per calendar year.
- Out-of-network allowed amounts will be based on 275% of the Medicare rates published by CMS. Prior out-of-network allowed amounts were determined as the 90th percentile of the FAIR Health rates.
- Other changes such as a new Center of Excellence for Substance Use Disorder, Carelon Behavioral Health name change, Mastectomy Bras, Covid-19 Immunizations, and other changes mentioned in the Empire Plan Special Report released in May 2023 were determined to be immaterial to the assumed claim costs.

Methodology

The actuarial valuation is conducted using the one-year look-back with the measurement date being one year prior to the end of the applicable fiscal year. Census and claims data are gathered as of June 30, 2022, which are used in the actuarial valuation performed as of July 1, 2022 with results rolled forward to June 30, 2023. We have determined that the use of such data in this manner does not materially affect the results.

The Entry Age Actuarial Cost Method was used to value the Plan's actuarial liabilities and to set the normal cost. Under this method, the normal cost rate is the percentage of pay contribution which would be sufficient to fund the Plan benefits if it were paid from each member's entry into the Plan until termination or retirement. The unfunded liability is amortized over a closed 30-year period as of July 1, 2016. There are 24 years remaining as of July 1, 2022. The amortization method is a level percentage of pay.

The medical, pharmacy, and vision claims and expenses costs for fiscal year ending 2023 were developed using the average of NYSTRS premium rates for the calendar year 2022 and calendar year 2023. From this data, we developed per person per month (PPPM) costs for actives and retiree non-Medicare Eligible (NME), and for retiree Medicare Eligible (ME). We then adjusted those using Cheiron's age curves. Medical and pharmacy claims and expenses costs include a 19.0% load for anticipated children of pre-Medicare retirees. Medicare-eligible program costs valued include medical, pharmacy and associated administrative costs, plus Medicare Part B premium reimbursements provided under the Plan.

APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

The Plan is assumed to be in compliance with the Patient Protection and Affordability Care Act (PPACA) and the Health Care and Education Reconciliation Act (HCERA) of 2010 as of the valuation date.

Actuarial Value of Assets

The actuarial value of assets is set equal to the market value of assets.

Changes Since Last Valuation

Prior to this year the ADC was based upon a valuation date coincident with the beginning of the fiscal year for which the contribution was to be made. Beginning this year, a lag methodology was introduced such that the valuation date is one year earlier than the beginning of the fiscal year the contribution is to be made, improving the System's budgeting process by allowing the final ADC to be known before the fiscal year of payment.

APPENDIX D – SUMMARY OF PLAN PROVISIONS

Eligibility

A retiree is eligible for retiree health benefits only if all of the following requirements are met:

Must have worked for at least 10 years for the System,

1. Retired directly from System employment, and
2. Commenced receipt of a pension from the New York State and Local Employees' Retirement System (ERS).

In order to maintain benefits coverage, eligible retirees enroll in the Plan and pay monthly premiums owed.

Spouses Covered

Surviving spouses of active employees are eligible to continue to enroll in the Plan if the retiree had 10 or more years of service at the time of death. Eligible spouses continue coverage by paying 25% of the cost of coverage in premiums. Also, in the event of death of a retiree, surviving spouses are eligible to continue to enroll in the Plan by paying 25% of the cost of coverage in premiums.

Benefits Covered

The retiree health plan offered to eligible employees of the New York State Teachers' Retirement System includes medical, prescription drugs, vision, and Medicare Part B reimbursement. Eligible retirees can elect coverage for themselves, their spouses, and dependent children.

Medical and Prescription Drug Benefits

Each of the plans offered includes medical coverage (inpatient facility, outpatient facility, physician and surgeon services, and other related care) and prescription drug benefits. We include a side-by-side comparison of key coverage. Upon reaching eligibility for Medicare (generally at age 65), the Plan coordinates with Medicare being primary before the Plan pays benefits.

Dental Benefits

None offered

Vision Benefits

Included

APPENDIX D – SUMMARY OF PLAN PROVISIONS

Medicare Part B Reimbursement

Medicare Part B premiums are reimbursed by the State and are included in the blended premiums charged by the State.

The standard 2022 Medicare Part B premiums are $170.10 per month per Medicare beneficiary covered. Higher premiums apply for those retirees having an applicable modified adjusted gross income between $91,000 to $114,000 per individual or married couples with modified adjusted gross income between $182,000 to $228,000, the Part B monthly premium amount would be the Standard premium + $68.00 = $238.10 per month.

The standard 2023 Medicare Part B premiums are $164.90 per month per Medicare beneficiary covered. Higher premiums apply for those retirees having an applicable modified adjusted gross income between $97,000 to $123,000 per individual or married couples with modified adjusted gross income between $194,000 to $246,000, the Part B monthly premium amount would be the Standard premium + $65.90 = $230.80 per month.

Premiums to Enroll in Coverage

Provisions for Retiree Contributions, Contribution Maximums, Bank Sick Leave Credit, and Life Expectancy Tables are all described on pages 24 and 25 of this report.

Subsequent Events

Subsequent to the calculation of liabilities for this report, the Empire Plan Special Report was released in May 2023 and described certain changes effective 7/1/2023 as a result of negotiations by State employee unions. Such changes were administratively extended to active participating employers. Average premiums for the Empire option were reduced (by 2.7% for the 60% enrolled for 7/1/2023 to 12/31/2023, or an estimated impact of 1.6% of medical costs going forward). Concurrently, the Empire program was updated for: in-network benefits with lower out of pocket maximums, no copayment for virtual visits using LiveHealth Online, and limits for acupuncture and massage therapy of 20 visits per year. Out-of-network benefits were also reduced with allowed amounts limited to 275% of contracted Medicare rates. The updated plan provisions will tend to increase net expected trends in the long-term. The trend rates utilized in this valuation have been updated to reflect these changes.

APPENDIX D – SUMMARY OF PLAN PROVISIONS

New York State Teachers' Retirement System					
Plan:	Empire Plan PPO	CDPHP HMO	BlueShield of Northeastern NY	EmblemHealth HMO	MVP HMO
In-Network (INN) Benefits					
Deductible (Ded) (Individual/Family)	$0 / $0	$0 / $0	$0 / $0	$0 / $0	$0 / $0
Coinsurance maximum (Individual/Family)	$3,750 / $3,750 (combined with OON)	0%	0%	0%	0%
Out-of-Pocket Max (Individual/Family)	$3,200 / $6,400 (Rx) $5,900 / $11,800 (Medical)	$8,550 / $17,100	$3,000 / $6,000	$6,850 / $13,700	$6,350 / $12,700
Preventive Care	No Charge	No Charge	No Charge	No Charge	No Charge
Office Visit (OV) - Primary Care (PCP)	$25 Copay	$20 Copay	$10 Copay	$5 Copay/ no charge for dep child visit	$15 Copay/$0 for dep child visit (up to age 26 yrs)
OV - Specialist Care Provider (SCP)	$25 Copay	$20 Copay	$15 Copay	$10 Copay/ no charge for dep child visit	$25 Copay
Hospital Emergency Room (ER)	$100 copay	$50 Copay	$100 Copay	$75 Copay	$75 Copay
Outpatient Surgery	Total fees: $25 Copay/office surgery; $95 Copay/outpatient surgery (for hospital, office, or facility)	Hospital or Outpatient Surgery Facility fees: $75 Copay/visit Physician fee: $20 Copay/visit	Hospital or Outpatient Surgery Facility fees: $100 Copay/visit Physician fee: $15 Copay/visit	Facility fees: No charge Physician fee: $5 Copay/PCP visit and $10 Copay/specialist visit	Hospital or Outpatient Surgery Facility fees: $25 Copay/visit Physician fee: $25 Copay/PCP visit and $25 Copay/specialist visit
Hospital Inpatient	No charge for facility or for Physician	No charge for facility or for Physician	No charge for facility or for Physician	No charge for facility or for Physician	No charge for facility or for Physician
Out-of-Network (OON) Benefits					
Deductible (Individual/Family)	$1,250 / $1,250	Not covered	Not covered	Not covered	Not covered
Coinsurance	Inpatient: 10% Outpatient: Greater of 10% or $75 copay	Not covered	Not covered	Not covered	Not covered
Coinsurance maximum (Individual/Family)	$3,750 / $3,750 (combined with OON)	Not covered	Not covered	Not covered	Not covered
Office Visits (PCP) & (SCP)	20% Coin	Not covered	Not covered	Not covered	Not covered
Prescription Drugs					
Deductible (Rx Only) (Individual/Family)	$3,200 / $6,400 (does not apply to Empire Plan Medicare Rx)				
Out-of-Pocket Max (INN Rx Only) (Individual/Family)	$2,850 / $5,700				
Retail (1-30 Days) - Generic/Formulary /Non-Form. Copay	$5 / $30 / $60	$5 / $30 / $50	$5 / $30 / $60	$5 / $20 / Not Covered	$0 / $30 / $50
Network Pharmacy (31-90 Days) - Generic/Formulary /Non-Form. Copay	$10 / $60 / $120				
Mail Order (31-90 Days) - Generic/Form. /Non-Form. Copay	$5 / $55 / $110	$10 / $60 / $100	$12.50 / $75 / $150	$7.50 / $30 / Not Covered	$0 / $75 / $125
Specialty - Generic/Formulary /Non-Form. Copay	Variable	Variable	Variable	Variable	Retail covered - $0 / $30 / $50

APPENDIX E – GLOSSARY OF TERMS

1. **Actuarially Determined Contribution**

   A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

2. **Actuarial Valuation Date**

   The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

3. **Deferred Inflow of Resources**

   An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 75, these are experience gains on the total OPEB liability, assumption changes reducing the total OPEB liability, or investment gains that are recognized in future reporting periods.

4. **Deferred Outflow of Resources**

   A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 75, these are experience losses on the total OPEB liability, assumption changes increasing the total OPEB liability, or investment losses that are recognized in future reporting periods.

5. **Entry Age Actuarial Cost Method**

   The actuarial cost method required for GASB 74 and 75 calculations. Under this method, the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Service Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future service costs is called the total OPEB liability.

6. **Measurement Date**

   The date as of which the total OPEB liability and plan fiduciary net position is measured. The total OPEB liability may be projected from the Actuarial Valuation Date to the Measurement Date. The Measurement Date must be the same as the Reporting Date for the Plan.

APPENDIX E – GLOSSARY OF TERMS

7. Net OPEB Liability

The liability of employers and non-employer contributing entities for employees for benefits provided through a defined benefit OPEB plan. It is calculated as the total OPEB liability less the plan fiduciary net position.

8. Plan Fiduciary Net Position

The fair or Market Value of Assets.

9. Reporting Date

The last day of the plan or employer's fiscal year.

10. Service Cost

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB 74 and 75. The Service Cost is the normal cost calculated under the entry age actuarial cost method.

11. Total OPEB Liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of GASB 74 and 75. The total OPEB liability is the actuarial liability calculated under the entry age actuarial cost method.

Classic Values, Innovative Advice

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM

MEMORANDUM

Appendix B

TO: T. Lee

FROM: Office of the CFO / Finance Department

DATE: October 25, 2023

SUBJECT: Retirement Board Package - OPEB Trust

Attached are the quarterly OPEB Trust financial statements and related supplemental schedule for the quarters ended September 30, 2023 and 2022.

The following is a list of the documents included:

1. Statements of Fiduciary Net Position (unaudited)
2. Statements of Changes in Fiduciary Net Position (unaudited)
3. Diversification of Investments
4. Fund Performance

New York State Teachers' Retirement System Retired Employee Health Benefits Trust
(Administered by New York State Teachers' Retirement System)
Statements of Fiduciary Net Position (Unaudited)

September 30, 2023 and 2022

	2023	2022
Assets:		
Investments at fair value:		
Cash equivalents	$ 181,615	$ 72,092
Mutual funds	63,489,148	54,163,693
Total investments	63,670,763	54,235,785
Receivables:		
Employer contributions	5,182,520	4,795,797
Total assets	**68,853,283**	**59,031,582**
Liabilities:		
Accounts payable	29,633	32,181
Total liabilities	29,633	32,181
Net position restricted for other postemployment health benefits	**$ 68,823,650**	**$ 58,999,401**

Office of the CFO/ Finance Department
October 25, 2023

New York State Teachers' Retirement System Retired Employee Health Benefits Trust
(Administered by New York State Teachers' Retirement System)
Statements of Changes in Fiduciary Net Position (Unaudited)

For the three months ending September 30, 2023 and 2022

	2023	2022
Additions:		
Investment income:		
Net (decrease) in fair		
value of investments	$ (2,570,134)	$ (3,841,021)
Dividends	348,678	295,822
Net investment (loss)	(2,221,456)	(3,545,199)
Contributions:		
Employer	6,910,026	6,394,396
Total contributions	6,910,026	6,394,396
Total additions	4,688,570	2,849,197
Deductions:		
Other postemployment benefit payments	1,388,769	1,325,240
Professional fees and services	29,633	32,181
Total deductions	1,418,402	1,357,421
Net increase	3,270,168	1,491,776
Net position restricted for other		
postemployment health benefits		
Beginning of year	65,553,482	57,507,625
End of period	**$ 68,823,650**	**$ 58,999,401**

Office of the CFO/ Finance Department
October 25, 2023

New York State Teachers' Retirement System Retired Employee Health Benefits Trust
(Administered by New York State Teachers' Retirement System)
Diversification of Investments

September 30, 2023 and 2022

Investment Type*	2023	Percent	2022	Percent	Increase (Decrease)	Target Percent
Short-term:						
Federal Money Market Fund	$ 181,615	0.29	$ 72,092	0.13	$ 109,523	1.00
Domestic fixed income securities:						
Total Bond Market Index Institutional Fund	15,919,944	25.00	14,121,584	26.04	1,798,360	24.00
Domestic equities:						
Total Stock Market Index Institutional Fund	31,807,752	49.96	26,854,638	49.51	4,953,114	50.00
International equities:						
International Stock Index Institutional Fund	15,761,452	24.75	13,187,471	24.32	2,573,981	25.00
Total investments	$ **63,670,763**	**100.00**	$ **54,235,785**	**100.00**	$ **9,434,978**	**100.00**

*All investments are held with Vanguard

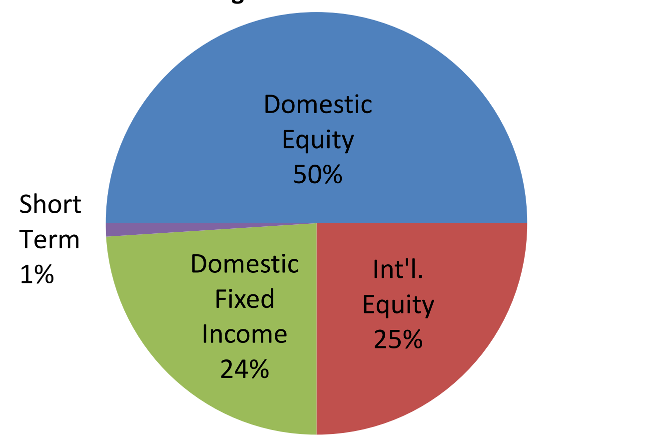
Office of the CFO/ Finance Department
October 25, 2023

New York State Teachers' Retirement System
Retired Employee Health Benefits Trust
as of September 30, 2023

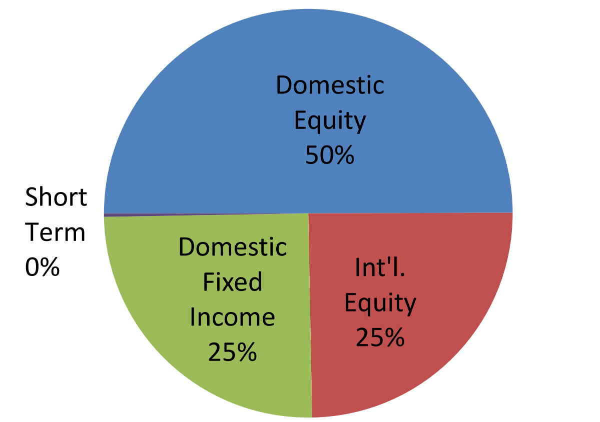
Fund Performance[1]

	Market Value	Quarter	FYTD	1 Year	3 Years	5 Years	10 Years	Inception Return	Inception Date
Domestic Equity[2]	$ 31,807,752	-3.29%	-3.29%	20.38%	8.51%	8.92%	11.39%	9.47%	4/30/2008
CRSP US Total Market[3]		-3.30%	-3.30%	20.37%	8.51%	8.92%	11.39%	9.47%	
International Equity[4]	$ 15,761,452	-4.01%	-4.01%	20.50%	3.89%	2.76%	3.63%	2.00%	4/30/2008
FTSE Global All Cap ex US[5]		-3.33%	-3.33%	20.40%	3.90%	2.68%	3.40%	1.79%	
Domestic Fixed Income	$ 15,919,944	-3.08%	-3.08%	0.74%	-5.20%	0.15%	1.12%	2.35%	4/30/2008
Bloomberg Cap. US Agg. Float Adj.		-3.11%	-3.11%	0.78%	-5.18%	0.18%	1.16%	2.41%	
Short Term	$ 181,615	0.30%	0.30%	8.44%	3.01%	2.43%	1.45%	1.09%	4/30/2008
iMoney Net Money Fund Avg/Taxable		1.26%	1.26%	4.33%	1.61%	1.50%	0.92%	0.68%	
Total Portfolio	$ 63,670,763	-3.35%	-3.35%	15.17%	4.05%	5.47%	6.86%	6.82%	4/30/2008

Target Asset Allocation



Actual Asset Allocation



Footnotes:

[1]Returns for periods greater than 1 year are annualized. All returns are time-weighted rates of return and reflect the deduction of fund expense ratios, purchase or redemption fees, and any advisory service fees.

[2]Effective 5/31/21, the Domestic Equity portfolio was transferred from the Institutional Index fund to the Vanguard Total Stock Market Index fund.

[3]S&P 500 Index through 5/31/21, and the CRSP US Total Market Index thereafter.

[4]The Benchmark for the Vanguard Total International Stock Index Fund was the MSCI EAFE + Emerging Markets Index through 12/15/2010; MSCI ACWI ex USA IMI Index through 6/2/2013; and FTSE Global All Cap ex US Index thereafter.

[5]MSCI EAFE Index through 10/31/11, MSCI ACWI Ex-US Index through 5/31/21, and the FTSE Global All Cap ex US Index thereafter.

Appendix C

New York State Teachers' Retirement System Retired Employee Health Benefits Trust

Health Benefits Trust Audit Presentation

October 25, 2023

Introductions

Jean Young, CPA

Co-engagement Partner

Manju Patnaik, CPA

Senior Manager

Agenda

- ✓ Audit timeline and deliverables
- ✓ Audit scope
- ✓ Required communications
- ✓ Questions

Audit timeline and deliverables

Audit timeline:

- January/May 2023 – Initiated planning procedures and risk assessment phase
- May/July 2023 – Performed interim procedures
- July/October 2023 – Performed year end audit procedures, including review of financial statements
- October 25, 2023 – Issuance of audit opinion

Deliverables:

- NYSTRS' Health Benefits Trust Audited Financial Statement Opinion as of and for the year ended June 30, 2023
- Required Communications with the Board

Audit scope

Scope of work	• Audit of the financial statements for NYSTRS Health Benefits Trust as of and for the year ended June 30, 2023
Financial reporting framework	• U.S. Generally Accepted Accounting Principles (GAAP)
Auditing standards	• We perform our audit in accordance with: ○ Auditing standards generally accepted in the United States of America
Independence	• We are independent of NYSTRS Health Benefits Trust under all relevant professional and regulatory standards
Audit areas of focus	• Investment valuations • Census data testing • Actuarial assumptions and actuarial calculations • Accuracy of benefit calculations and related payments • Financial reporting

Required communications

Our responsibility under Generally Accepted Auditing Standards	• Express an opinion on whether the financial statements are fairly presented in conformity with U.S. GAAP • Plan and perform the audit to obtain reasonable, not absolute, assurance that the financial statements are free of material misstatement • Planning our audit includes obtaining an understanding of internal controls over financial reporting • The extent, timing, and nature of our procedures is determined based on risk assessments and our understanding of control and inherent risks to enable us to express an opinion on the financial statements • Communicate significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process • Evaluate Trust's ability to continue as a going concern
Management's responsibilities	• Financial statements • Selection and use of appropriate accounting policies • Adopting and maintaining sound internal controls • Evaluate Trust's ability to continue as a going concern
Opinion	• Expect unmodified opinion for the year ended June 30, 2023 ○ Free from material misstatement ○ Highest level of assurance you can obtain

Required communications

Significant accounting policies	• Note 2 to the financial statements • No significant or unusual transactions occurred
Significant accounting estimates	• Assumptions utilized in the GASB 74 actuarial valuation, including long-term expected rate of return, mortality assumptions, and health care cost trend rates • No changes in methodology • We evaluated key factors and assumptions used • Estimates are reasonable
Significant disclosures	• None

Required communications

Reportable control deficiencies	• No material weaknesses or significant deficiencies in internal control over financial reporting identified
Disagreements or difficulties with management	• None
Corrected and uncorrected misstatements	• None
Other matters	• No significant issues discussed with management prior to or during the audit • Management to provide management representation letter dated October 25, 2023 • No consultations with other accountants

Questions?

Thank you!

For more information contact:

Jean Young, CPA

517-336-7458

Jean.Young@plantemoran.com

Manju Patniak, CPA

248-223-3768

Manju.Patniak@plantemoran.com

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Basic Financial Statements and Required Supplementary Information

June 30, 2023 and 2022

(With Independent Auditors' Report Thereon)

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

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plante moran

Plante Moran, PC
P.O. Box 307
3000 Town Center, Suite 100
Southfield, MI 48075
Tel: 248.352.2500
Fax: 248.352.0018
plantemoran.com

Independent Auditor's Report

To the Board of Trustees
New York State Teachers' Retirement System
Retired Employee Health Benefits Trust

Opinion

We have audited the financial statements of New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the "Trust") as of and for the years ended June 30, 2023 and 2022 and the related notes to the financial statements, which collectively comprise the Trust's basic financial statements, as listed in the table of contents.

In our opinion, the accompanying financial statements present fairly, in all material respects, the fiduciary net position of the Trust as of June 30, 2023 and 2022 and the changes in its 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 in accordance with auditing standards generally accepted in the United States of America (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 Trust 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 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 Trust's ability to continue as a going concern for 12 months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor’s Responsibilities for the Audit of the Financial Statements

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

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.

To the Board of Trustees
New York State Teachers' Retirement System
Retired Employee Health Benefits Trust

- 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 Trust's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Trust'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 and other required supplementary information, as identified in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, which considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

October 25, 2023

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Management's Discussion and Analysis

June 30, 2023 and 2022

(Unaudited)

The following discussion and analysis of the financial performance of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the Trust) provides an overview of its activities for the years ended June 30, 2023, 2022, and 2021. Its purpose is to provide explanations and insights into the information presented in the financial statements, notes to the financial statements, and required supplementary information.

Financial Highlights

- In 2023, the Trust received a contribution in the amount of $6.4 million from the New York State Teachers' Retirement System (the System) to invest and accumulate assets in order to provide health insurance benefits to retirees of the System. The contribution represents 100% of the Actuarially Determined Contribution (ADC) for fiscal year 2023. Contributions to the Trust in 2022 and 2021 were $6.0 million and $6.3 million, respectively, and represent 112% of the ADC in 2022 and 108% of the ADC in 2021.
- Total Other Postemployment Benefits (OPEB) liability as of June 30, 2023 is $116.2 million, an increase of $9.8 million from total OPEB liability of $106.4 million as of June 30, 2022. Net OPEB liability at June 30, 2023 and 2022 was $50.7 million and $48.8 million, respectively.

Overview of the Financial Statements

The following discussion and analysis is intended to assist the reader in better understanding the purpose and meaning of each of the key components of the Trust's financial statements, which comprise the following:

1. *The Statements of Fiduciary Net Position* present the Trust's assets and liabilities by major categories and may serve over time as a useful indicator of the Trust's financial position. The difference between assets and liabilities represents the net position restricted for other postemployment health benefits. The statement also compares assets and liabilities by class to the previous year, which offers the reader the opportunity to note changes in each class of asset and liability from year to year.
2. *The Statements of Changes in Fiduciary Net Position* provide information on the changes in the Trust's net position during the current fiscal year. The additions are derived from net appreciation in fair value of investments, investment income, and contributions from the System. Deductions include other postemployment health benefit payments and professional fees and services. For comparison purposes, information pertaining to the previous year's Statement of Changes in Fiduciary Net Position is also provided.
3. *The Notes to Basic Financial Statements* are an essential part of the financial statements. They provide important background and detailed information about the Trust, its investments, and the statements themselves.
4. *The Required Supplementary Information (RSI) and accompanying notes* consists of information pertaining to the Trust's actuarial methods and assumptions and provides data on the System's net OPEB liability, the changes in the System's net OPEB liability, the System's contributions, and the Trust's investment returns.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Management's Discussion and Analysis

June 30, 2023 and 2022

(Unaudited)

Financial Analysis

Tables 1 and 2 summarize the Trust's financial position and results for the years 2023, 2022, and 2021. The changes from year to year are due to a combination of the annual employer contribution, changes in fair value of investments, and retired employee health benefit payments.

Table 1 - Summary of Fiduciary Net Position

	June 30			Amount increase (decrease) 2022 to 2023	Percentage change of total, 2022 to 2023
	2023	2022	2021		
Investments at fair value:					
Cash equivalents	$ 77,795	$ 129,594	$ 99,620	$ (51,799)	(0.09)%
Mutual funds	65,475,687	57,378,031	65,827,382	8,097,656	14.08 %
Total investments	65,553,482	57,507,625	65,927,002	8,045,857	13.99 %
Total assets	65,553,482	57,507,625	65,927,002	8,045,857	13.99 %
Liabilities:					
Accounts payable	—	—	56,365	—	— %
Total liabilities	—	—	56,365	—	— %
Net position restricted for other postemployment health benefits	$ 65,553,482	$ 57,507,625	$ 65,870,637	$ 8,045,857	13.99 %

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Management's Discussion and Analysis

June 30, 2023 and 2022

(Unaudited)

As shown in Table 2, the Trust's 2023 net position increased from 2022 by $8.0 million, and 2022 net position decreased from 2021 by $8.4 million. The increase in 2023 is primarily a result of investment income of $7.1 million and employer contributions of $6.4 million, offset by benefit payments of $5.5 million, The decrease in 2022 is primarily a result of investment loss of $9.6 million and benefit payments of $4.8 million, offset by employer contributions of $6.0 million.

Table 2 - Summary of Changes in Fiduciary Net Position

	Years ended June 30			Amount increase (decrease) 2022 to 2023	Percentage change of total, 2022 to 2023
	2023	2022	2021		
Net investment income (loss)	7,104,701	(9,584,492)	14,534,551	16,689,193	29.02%
Total contributions	6,394,396	6,000,000	6,261,000	394,396	0.69
Total additions (deductions)	13,499,097	(3,584,492)	20,795,551	17,083,589	29.71%
Retired employee health benefit payments	5,439,240	4,834,885	4,527,278	604,355	1.05
Professional fees and services	14,000	(56,365)	19,915	70,365	0.12
Total deductions	5,453,240	4,778,520	4,547,193	674,720	1.17
Net increase (decrease)	8,045,857	(8,363,012)	16,248,358	16,408,869	28.53%
Net Position restricted for postemployment health benefits					
Beginning of year	57,507,625	65,870,637	49,622,279	(8,363,012)	(14.54)
End of year	$ 65,553,482	$ 57,507,625	$ 65,870,637	$ 8,045,857	13.99%

Economic Factors

The economic factors that are of primary significance for the Trust are the annual contributions made by the System and the returns earned in the capital markets. Changes in healthcare premiums, plan provisions, actuarial assumptions, and demographic changes can also have a significant impact on the net OPEB liability and funded status of the Trust. All of these factors play a part in determining the amount the System must contribute to fund current and future retired employee benefits. The Trust's fiduciary net position as a percentage of the total OPEB liability is 56.40% as of June 30, 2023, 54.07% as of June 30, 2022 and 65.44% as of June 30, 2021.

Requests for Information

This financial report is designed to provide active members, retirees, taxpayers, and anyone else who is interested, with a general overview of the financial activities of the Trust. Questions about this report or requests for additional financial information should be addressed to the Public Information Office, New York State Teachers' Retirement System Retired Employee Health Benefits Trust, 10 Corporate Woods Drive, Albany, NY 12211 or by e-mail at communit@nystrs.org.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Statement of Fiduciary Net Position

June 30, 2023 and 2022

		2023		2022
Assets:				
Investments - at fair value (note 3, 4 and 5):				
Cash equivalents	$	77,795	$	129,594
Mutual funds		65,475,687		57,378,031
Total investments		65,553,482		57,507,625
Total assets		65,553,482		57,507,625
Liabilities:				
Accounts payable		—		—
Total liabilities		—		—
Net position restricted for other postemployment health benefits	$	65,553,482	$	57,507,625

See accompanying notes to financial statements.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Statement of Changes in Fiduciary Net Position

Years ended June 30, 2023 and 2022

	2023	2022
Additions:		
Investment income:		
Net increase (decrease) in fair value of investments	$ 5,670,563	$ (10,884,538)
Dividend income	1,434,138	1,300,046
Net investment income (loss)	7,104,701	(9,584,492)
Contributions:		
Employer	6,394,396	6,000,000
Total contributions	6,394,396	6,000,000
Total additions - net	13,499,097	(3,584,492)
Deductions:		
Retired employee health benefit payments	5,439,240	4,834,885
Professional fees and services	14,000	(56,365)
Total deductions	5,453,240	4,778,520
Net increase (decrease) in net position	8,045,857	(8,363,012)
Net Position restricted for postemployment health benefits		
Beginning of year	57,507,625	65,870,637
End of year	$ 65,553,482	$ 57,507,625

See accompanying notes to financial statements.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Notes to Basic Financial Statements

June 30, 2023 and 2022

(1) Plan Description

The New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the Trust) was created under the general laws of New York. The Trust was created in 2008 for the sole purpose of receiving irrevocable contributions from the New York State Teachers' Retirement System (the System) to provide postemployment healthcare benefits to eligible System employees who retire from the System, in accordance with the terms of the Trust. Trust assets are legally protected from creditors of the System.

The Trust is a defined-benefit, single-employer, other postemployment benefits (OPEB) plan that accumulates resources to pay current and future health insurance premiums for retired System employees. These healthcare plans are designed and administered by the New York State Health Insurance Program (NYSHIP).

The Trust is administered by a 10-member Board to provide healthcare benefits for retired System employees and their beneficiaries. The members of the Board of the Trust are the same as those of the System. The Trust's Board is composed of:

- Three teacher members elected from the active System membership
- One retired member elected by a mail vote of all retired System members
- Two school administrators appointed by the Commissioner of Education
- Two present or former school board members, experienced in the fields of finance and investment, elected by the Board of Regents. At least one of these individuals must have experience as an executive of an insurance company.
- One present or former bank executive elected by the Board of Regents
- The State Comptroller or his/her designee

As of June 30, the Trust's membership consisted of:

	2023	2022
Retired participants and their survivors currently receiving benefits	318	311
Active participants	371	365
Total	689	676

(a) Benefits

Pursuant to contractual agreement and policy, the System provides postemployment healthcare benefits to eligible System employees who retire from the System and reimburses Medicare eligible retirees for their Medicare Part B premiums. The System is a voluntary participating employer in NYSHIP. Article XI of the New York State Civil Service Law assigns the authority to NYSHIP to establish and amend the benefit provisions of the plan and to establish maximum obligations of the plan participants to contribute to the plan. The System's Board is authorized to establish the contribution rates of System retirees below those set by Civil Service Law, and they are set as part of the collective bargaining process.

In order to be eligible for OPEB, employees must have worked for at least 10 years for the System, retire directly from System employment, and commence receipt of their pension from the New York State and Local Employees' Retirement System. Dependents may also be covered.

System retirees are required to contribute toward the cost of their coverage if retired on or after July 1, 1985. Post July 1, 1985 retirees are currently required to contribute an amount equal to 14% of the premium paid by the System up to the premium of the Empire Plan option. Starting January 1, 2024 the contribution requirement increases to 15%. Retiree contributions are subject to an annual maximum that varies based upon salary at retirement. Annual maximum amounts effective January 1, 2023 are:

Salary	Annual maximum amounts
Up to $40,000	$3,150
$40,001 - $60,000	$3,750
$60,001 - $90,000	$4,575
$90,001 and over	$5,025

Starting January 1, 2021 and each subsequent January 1 through January 1, 2024, the annual maximum will increase based on the amounts shown in the table below.

Salary	Annual maximum increases
Up to $40,000	$300
$40,001 - $60,000	$400
$60,001 - $90,000	$550
$90,001 and over	$600

If more expensive coverage is elected, the retiree pays the current required premium percentage of the Empire Plan option and 100% of the difference between the two.

Employees who retire on or after April 1, 1991 are eligible to have accumulated unused sick leave up to a maximum of 185 days (165 days for management and executive employees) converted into a credit based on life expectancy to offset their contribution requirement. Starting January 1, 2021 the sick leave maximum increased to 200 days (for all employees including management and executives).

Under the plan, benefit coverage continues as survivor benefits for an eligible retiree’s dependent(s) upon the death of the retiree. Surviving dependents pay 25% of the premium cost after a 3 month extended coverage period.

(b) Employer Contribution

The employer contribution, or funding, of the System’s OPEB obligation is at the discretion of the System’s management and Board. The System’s current policy is to prefund benefits by contributing an amount that is, at a minimum, equal to the Actuarially Determined Contribution (ADC).

Contributions in 2023 were $6.4 million, which approximated 17.97% of covered payroll. Contributions in 2022 were $6.0 million, which approximated 16.94% of covered payroll.

(2) Summary of Significant Accounting Policies

(a) Basis of Accounting

The Trust's financial statements are prepared using the economic resource measurement focus and accrual basis of accounting and follow the provisions of Governmental Accounting Standards Board (GASB) Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other than Pension Plans* (GASB 74). Contributions from the System are recognized when due pursuant to legal requirement. Benefits and refunds are recognized when due and payable in accordance with the terms of the Trust.

Revenue is recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows.

(b) Cash Equivalents

The Trust considers all highly liquid investments purchased with original maturities of three months or less to be cash equivalents. The carrying amount reported in the balance sheet for cash equivalents approximates fair value due to the short-term nature of these investments.

(c) Method Used to Value Investments

Trust investments are reported at fair value. Quoted market prices have been used to value investments. Investment purchases and sales are recorded on a trade-date basis.

Given the inherent nature of investments, it is reasonably possible that changes in the value of those investments will occur in the near term and that such changes could materially affect the amounts reported in the statements of fiduciary net position.

(d) Retired Employee Health Benefit Payments

The Trust reimburses the System for the health insurance premiums attributable to retired System employees paid to NYSHIP on a monthly basis.

(e) Administrative Support

Administrative support for the Trust's investment, accounting, and legal operations is provided by the System at no charge to the Trust.

(f) Federal Tax Status

The Trust is exempt from federal income taxes under Section 115 of the Internal Revenue Code.

(g) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the Unites 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 financial statements and the reported amounts of additions and deductions during the reporting period. Actual results could differ from those estimates.

(3) OPEB Plan Investments

(a) Investment Policy

All investment transactions undertaken on behalf of the Trust will be for the sole benefit of eligible retirees and dependents, for the exclusive purpose of providing certain health care benefits and defraying reasonable administrative expenses. The System shall be responsible for managing and directing the investments of the Trust. The Trust's long-term objective is to earn an average rate of return greater than the rate of return of the representative indices for individual asset classes but no less than the actuarial assumption rate (currently 6.50% per annum).

(b) Asset Allocation

The Trust's asset allocation policy as adopted by the Board of Trustees diversifies Trust investments to reduce risk while maximizing the investment return.

The Trust's asset allocation targets at June 30, 2023 and 2022 are as follows:

Asset class	Allowable range	Target percentage
Domestic equity	40% to 60%	50 %
International equity	20% to 30%	25
Domestic fixed income	20% to 30%	24
Cash equivalents	0% to 4%	1
Total		100 %

(c) Rate of Return

The annual money-weighted rate of return on Trust investments, net of OPEB plan investment expense, was negative 14.4% for the year ended June 30, 2022, but was 12.3% for the year ended June 30, 2023. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

(4) Deposit and Investment Risk Disclosure

The Trust has been authorized by the Board of Trustees to invest in passively managed mutual funds for domestic and international equity and domestic fixed income investments. Additionally, there is a federal money market mutual fund to allow the Trust to have liquid investments available for the payment of retired employee health benefits.

As of June 30, 2023 and 2022, the Trust did not hold investments in any one issuer that would represent 5.0% or more of fiduciary net position.

Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the Trust, and are held by either the counterparty or the counterparty's trust department or agent but not in the Trust's name. Consistent with the Trust's investment policy, the investments are held by the Trust's custodian and registered in the Trust's name. The Trust does not have specific investment policies related to credit or interest rate risk of mutual fund holdings.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Notes to Basic Financial Statements

June 30, 2023 and 2022

The Trust has the following mutual fund holdings at June 30, 2023 and 2022:

	2023		2022	
Asset class	Fair value	Percentage of total	Fair value	Percentage of total
Domestic equity	$ 33,919,497	51 %	$ 27,361,878	48 %
International equity	16,053,575	25	14,337,659	25
Domestic fixed income	15,502,615	24	15,678,494	27
Total	$ 65,475,687	100 %	$ 57,378,031	100 %

At June 30, 2023 and 2022, the Trust's domestic fixed income mutual fund had an average duration of 6.5 and 6.7 years, respectively. The domestic fixed income fund is an unrated mutual fund.

The Trust's cash equivalent investments (federal money market mutual fund) at June 30, 2023 and 2022 had an average maturity of 14.6 and 35.0 days, respectively.

(5) Fair Value Measurement

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

At June 30, 2023 and 2022, the Trust had the following Level 1 investments:

Mutual funds:	2023	2022
Domestic equity	$ 33,919,497	$ 27,361,878
International equity	16,053,575	14,337,659
Domestic fixed income	15,502,615	15,678,494
	$ 65,475,687	$ 57,378,031

(6) Net OPEB Liability

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

	2023	2022
Total OPEB liability	$ 116,221,408	$ 106,354,619
OPEB Plan fiduciary net position	65,553,482	57,507,625
Net OPEB liability	$ 50,667,926	$ 48,846,994
The OPEB plan's fiduciary net position as a percentage of total OPEB liability	56.40 %	54.07 %

(a) *Actuarial Assumptions*

The total OPEB liability at June 30, 2023 was determined using an actuarial valuation as of July 1, 2022, with update procedures used to roll forward the total OPEB liability to June 30, 2023. The total OPEB liability at June 30, 2022 was determined using an actuarial valuation as of July 1, 2021, with update procedures used to roll forward the total OPEB liability to June 30, 2022.The measurement of total OPEB liability at June 30, 2023 and 2022, respectively, used the following actuarial assumptions:

	2023	2022
Valuation date	July 1, 2022	July 1, 2021
Investment rate of return	6.50%	6.50%
Payroll increase rate	3.00%	3.00%
Salary increase rate	Varies by service from 3.00%-8.00%	Varies by service from 3.00%-8.00%
Maximum retiree contribution based on salary at retirement	Increase $100 per year after 2024	Increase $100 per year after 2025
Healthcare cost and premium trend rates:		
Non-Medicare	6.50% in 2023, 8.0% in 2024 graded to 4.14% over 19 years	7.40% graded to 4.34% over 19 years
Medicare	6.90% in 2023, 8.8% in 2024 graded to 4.31% over 19 years	8.45% graded to 4.34% over 19 years
Medicare Part B	5.00% graded to 3.50% over 20 years	3.50%
Blended Medicare	6.50% graded to 4.14% over 20 years	7.41% graded to 4.16% over 19 years

Pre-retirement mortality: The Pub-2010 General Employee Headcount-Weighted Mortality table (PubG.H-2010 Employee) as published by the Society of Actuaries (SOA) with an 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. All pre-retirement deaths are assumed ordinary deaths

Post-retirement mortality:

- Healthy Retirees: The Pub-2010 General Healthy Retiree Headcount-Weighted Mortality table [PubG.H-2010 Healthy Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

- Beneficiaries: Pub-2010 General Contingent Survivors Headcount-Weighted Mortality [PubG.H-2010 Contingent Survivors] as published by SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

- Disabled Retirees: The Pub-2010 General Disabled Retiree Headcount-Weighted Mortality table [PubG.H-2010 Disabled Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

Banked sick leave: Participants are assumed to accrue 4.74 days of unused sick leave per year and use 100% of accumulated leave at retirement for the sick leave offset.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Notes to Basic Financial Statements

June 30, 2023 and 2022

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best estimate ranges of expected future rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of June 30, 2023 and June 30, 2022 are summarized in the following table:

Long-Term Expected Real Rate of Return*

Asset class	2023	2022
Domestic equity	5.41%	5.62%
International equity	6.27	6.49
Domestic fixed income	(0.21)	(0.25)
Cash equivalents	(0.70)	(0.69)

* Real rates of return are net of the long-term inflation assumption of 2.70% and 2.60% for 2023 and 2022, respectively.

(b) Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates

Healthcare cost trend rates measure the anticipated overall rate at which health plan costs are expected to increase in future years. The following presents the net OPEB liability of the System using the healthcare cost trend rates presented previously in the actuarial assumptions, as well as what the System's net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the applied healthcare cost trend rates:

System's Net OPEB Liability

	1% Decrease	Current Healthcare Cost Trend Rates	1% Increase
June 30, 2023	$ 35,139,502	$ 50,667,926	$ 69,772,102
June 30, 2022	$ 35,496,339	$ 48,846,994	$ 65,199,149

(c) Discount Rate

The discount rate used to measure the total pension liability as of June 30, 2023 and 2022 was 6.50%. The projection of cash flows used to determine the discount rate assumed that contributions would be made at rates equal to the actuarially determined contribution rates. Based on these assumptions, the OPEB Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan participants. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

(d) Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

The following presents the net OPEB liability of the System as well as what the System's net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the applied rate:

System's Net OPEB Liability

	1% Decrease	Current Discount Rate	1% Increase
June 30, 2023	$ 66,906,859	$ 50,667,926	$ 37,291,143
June 30, 2022	$ 63,459,504	$ 48,846,994	$ 36,787,643

(7) Risk Management

The Trust is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; and errors and omissions, for which the Trust retains the risk of loss. At this time, there are no matters pending against the Trust.

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Required Supplementary Information

Schedule of Changes in the System's Net OPEB Liability and Related Ratios (Unaudited)

Last 8 Fiscal Years

	2023	2022	2021	2020	2019
Total OPEB liability:					
Service cost	$ 3,375,953	$ 3,069,185	$ 2,984,622	$ 2,914,852	$ 2,907,107
Interest	6,958,495	6,587,914	6,585,821	6,621,826	6,168,584
Changes of benefit terms	(622,395)	—	—	(9,789,000)	—
Differences between expected and actual experience	915,720	869,679	1,259,391	79,202	714,079
Changes of assumptions	4,678,256	—	(2,449,602)	4,038,931	1,102,479
Benefit payments	(5,439,240)	(4,834,885)	(4,527,278)	(4,412,579)	(3,965,315)
Net change in total OPEB liability	9,866,789	5,691,893	3,852,954	(546,768)	6,926,934
Total OPEB liability - beginning	106,354,619	100,662,726	96,809,772	97,356,540	90,429,606
Total OPEB liability - ending (a)	$ 116,221,408	$ 106,354,619	$ 100,662,726	$ 96,809,772	$ 97,356,540
Plan fiduciary net position:					
Contributions - employer	$ 6,394,396	$ 6,000,000	$ 6,261,000	$ 6,004,000	$ 5,500,000
Net investment income	7,104,701	(9,584,492)	14,534,551	2,672,787	3,155,344
Benefit payments	(5,439,240)	(4,834,885)	(4,527,278)	(4,412,579)	(3,965,315)
Professional fees and services	(14,000)	56,365	(19,915)	(65,585)	(18,575)
Net change in plan fiduciary net position	8,045,857	(8,363,012)	16,248,358	4,198,623	4,671,454
Plan fiduciary net position - beginning	57,507,625	65,870,637	49,622,279	45,423,656	40,752,202
Plan fiduciary net position - ending (b)	$ 65,553,482	$ 57,507,625	$ 65,870,637	$ 49,622,279	$ 45,423,656
System's net OPEB liability - ending (a) - (b)	$ 50,667,926	$ 48,846,994	$ 34,792,089	$ 47,187,493	$ 51,932,884
Plan fiduciary net position as a percentage of the total OPEB liability	56.40 %	54.07 %	65.44 %	51.26 %	46.66 %
Covered payroll	$ 35,579,229	$ 35,423,191	$ 33,142,258	$ 32,124,845	$ 31,189,170
System's net OPEB liability as a percentage of covered payroll	142.41 %	137.90 %	104.98 %	146.89 %	166.51 %

(Continued)

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Required Supplementary Information

Schedule of Changes in the System's Net OPEB Liability and Related Ratios (Unaudited) *(continued)*

Last 8 Fiscal Years

	2018	2017	2016
Total OPEB liability:			
Service cost	$ 2,604,313	$ 2,490,519	$ 2,579,474
Interest	5,747,125	5,959,407	5,589,288
Changes of benefit terms	6,211,000	—	—
Differences between expected and actual experience	(841,844)	(2,165,915)	399,912
Changes of assumptions	(878,222)	(5,848,836)	—
Benefit payments	(3,756,945)	(3,412,013)	(2,979,914)
Net change in total OPEB liability	9,085,427	(2,976,838)	5,588,760
Total OPEB liability - beginning	81,344,179	84,321,017	78,732,257
Total OPEB liability - ending (a)	$ 90,429,606	$ 81,344,179	$ 84,321,017
Plan fiduciary net position:			
Contributions - employer	$ 5,500,000	$ 5,500,000	$ 5,500,000
Net investment income	3,212,503	4,212,256	382,144
Benefit payments	(3,756,945)	(3,412,013)	(2,979,914)
Professional fees and services	(53,435)	(15,000)	(12,700)
Net change in plan fiduciary net position	4,902,123	6,285,243	2,889,530
Plan fiduciary net position - beginning	35,850,079	29,564,836	26,675,306
Plan fiduciary net position - ending (b)	$ 40,752,202	$ 35,850,079	$ 29,564,836
System's net OPEB liability - ending (a) - (b)	$ 49,677,404	$ 45,494,100	$ 54,756,181
Plan fiduciary net position as a percentage of the total OPEB liability	45.07 %	44.07 %	35.06 %
Covered payroll	$ 30,682,745	$ 29,752,583	$ 29,087,397
System's net OPEB liability as a percentage of covered payroll	161.91 %	152.91 %	188.25 %

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

See accompanying independent auditors' report.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Required Supplementary Information

Schedule of System and Other Contributing Entity Contributions (Unaudited)

Last 10 Fiscal Years

	2023	2022	2021	2020	2019
Actuarially determined contribution	$ 6,394,396	$ 5,339,856	$ 5,822,056	$ 5,957,868	$ 5,349,375
Contributions in relation to the actuarially determined contribution:					
System	6,394,396	6,000,000	6,261,000	6,004,000	5,500,000
Other contributing entity	—	—	—	—	—
Total contributions	6,394,396	6,000,000	6,261,000	6,004,000	5,500,000
Contribution deficiency (excess)	$ —	$ (660,144)	$ (438,944)	$ (46,132)	$ (150,625)
Covered payroll	$ 35,579,229	$ 35,423,191	$ 33,142,258	$ 32,124,845	$ 31,189,170
Contributions as a percentage of covered payroll	17.97 %	16.94 %	18.89 %	18.69 %	17.63 %

(Continued)

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Required Supplementary Information

Schedule of System and Other Contributing Entity Contributions (Unaudited) *(continued)*

Last 10 Fiscal Years

	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 5,278,747	$ 5,374,220	$ 4,782,000	$ 4,542,000	$ 4,767,000
Contributions in relation to the actuarially determined contribution:					
System	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
Other contributing entity	—	—	—	—	756
Total contributions	5,500,000	5,500,000	5,500,000	5,500,000	5,500,756
Contribution deficiency (excess)	$ (221,253)	$ (125,780)	$ (718,000)	$ (958,000)	$ (733,756)
Covered payroll	$ 30,682,745	$ 29,752,583	$ 29,087,397	$ 26,506,965	$ 25,556,000
Contributions as a percentage of covered payroll	17.93 %	18.49 %	18.91 %	20.75 %	21.52 %

See accompanying independent auditors' report.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Required Supplementary Information

Schedule of Investment Returns (Unaudited)

Last 8 Fiscal Years

	2023	2022	2021	2020	2019
Annual money-weighted rate of return, net of investment expense	12.3%	(14.4)%	28.8%	5.8%	7.6%

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

See accompanying independent auditors' report.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Required Supplementary Information

Schedule of Investment Returns (Unaudited) *(continued)*

Last 8 Fiscal Years

	2018	**2017**	**2016**
Annual money-weighted rate of return, net of investment expense	8.8%	13.1%	1.3%

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

See accompanying independent auditors' report.

Change of benefit terms

Significant changes to net OPEB Liability

Beginning with the 2018 measurement date, the liability for a plan provision that reimburses retirees for their Medicare Part B Premiums is recognized. This recognition increased the liabilities in 2018 by approximately $6.2 million.

For the 2020 measurement date there was a reduction in the liability of $9.79 million from benefit changes due to:

- $4.66 million from legislative changes, specifically the Excise Tax that was part of the Patient Protection and Affordability Act (PPACA) was repealed.
- $5.13 million from bargaining amendments pursuant to the CBA effective from April 2019 to March 2024. These include the premium contribution rate changes and contribution cap changes, increase in the Sick Leave Maximum to 200 days from 185 days for bargaining groups, and update of the Life Expectancy table from 1983 to 1999 factors.

For the 2023 measurement date there was a reduction in the liability of $0.62 million from benefit changes due to the NYSHIP Empire plan changes including premium reductions, Out-of-Pocket Maximum decreases, co-payment consolidations and massage therapy and acupuncture service limits.

Changes of assumptions

Actuarial assumptions are revised annually to reflect more closely actual, as well as anticipated, future experience. The actuarially determined contributions are calculated as of June 30th of the preceding year.

Significant assumption changes over the last 8 fiscal years are outlined below:

Investment Rates of Return

Valuation Year(s)	Investment Rate of Return
2016	8.00%
2017	7.00%
2018-2020	6.75%
2021	6.50%
2022	6.50%
2023	6.50%

Significant changes on net OPEB liability

For the 2017 measurement date, the discount rate was lowered from 8.00% to 7.00%, there was a net decrease in the liability of $5.8 million primarily due to the modification of mortality rates and updating the per-capita health costs and retiree contribution rates.

For the 2018 measurement date, the discount rate was lowered from 7.00% to 6.75%, the per-capita health costs and retiree contribution rates were updated, the assumed health trend rates were modified, and the unused sick days accrual rate was updated. Collectively this decreased the liability $878 million.

For the 2019 measurement date, there was a change to the claim costs assumption during the measurement year and the projected trend rates, which increased the liability by approximately $1.1 million.

For the 2020 measurement date, there was a net increase in the liability of $4.04 million from the following assumption changes:

- $1.56 million decrease for updating the post-retirement mortality table to SOA RP-2014 with White Collar Adjustment using improvement Scale MP-2019.
- $4.56 million increase for higher immediate trends in response to greater unknowns about health care needs by adding 1% to the starting trend, but retaining the same ultimate year, and
- $1.04 million increase for full revision of claim curves and premiums reflecting current information.

For the 2021 measurement date there was a decrease in the liability of $2.45 million from the following assumption changes:

- $6.46 million decrease for updating the pre-retirement and post-retirement mortality tables to SOA PUB-2010 Headcount Weighted for General Employees Mortality Tables with the base year 2010 and Improvement Scale MP-2020, with a 98.75% adjustment to base rates,
- $1.51 million increase for updating retirement and termination rates to align with recent experience,
- $3.07 million increase for lowering the discount rate from 6.75% to 6.50%, and
- $0.57 million decrease for full revision of claim curves and premiums reflecting current information.

For the 2022 measurement date there was no change to the liability due to assumption changes.

For the 2023 measurement date there was an increase in the liability of $4.7 million due to revised claim curves, trends and timing.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST

Notes to Required Supplementary Information (Unaudited) *(continued)*

Key Methods and Assumptions Used to Determine OPEB Contribution Rates:

Asset Valuation Method:	Market Value
Amortization Method:	30-Year Closed Amortization, level percentage of payroll
Remaining Amortization Period:	24 years as of July 1, 2022
Discount Rate:	6.50% per annum
Expected Return on Assets:	6.50% per annum
Salary Increases:	Varies by service from 3.00%-8.00%
Healthcare cost and premium trend rates:	
Non-Medicare	7.40% graded to 4.34% over 19 years
Medicare	8.45% graded to 4.34% over 19 years
Medicare Part B	3.50%
Blended Medicare	7.41% graded to 4.16% over 19 years
Pre-Retirement Mortality:	The Pub-2010 General Employee Headcount-Weighted Mortality table [PubG.H-2010 Employee] as published by the SOA with an 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. All pre-retirement deaths are assumed ordinary deaths.
Healthy Retirees Mortality:	The Pub-2010 General Healthy Retiree Headcount-Weighted Mortality table [PubG.H-2010 Healthy Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.
Beneficiaries:	Pub-2010 General Contingent Survivors Headcount-Weighted Mortality [PubG.H-2010 Contingent Survivors] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.
Disabled Retirees:	The Pub-2010 General Disabled Retiree Headcount-Weighted Mortality table [PubG.H-2010 Disabled Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM
Audit Committee Meeting

A meeting of the Audit Committee of the New York State Teachers' Retirement System was held at the System on October 25, 2023.

Committee Members: Juliet Benaquisto, Eric Iberger, Jennifer Longtin, Oliver Robinson

Board Members: Elizabeth Chetney, Paul Farfaglia, David Keefe (via WebEx), Nicholas Smirensky

NYSTRS Staff: Thomas K. Lee, Don Ampansiri, Kathy Ebert, Bruce Woolley, Lei Zhang, Darlene Dempsey, Teddi Kaczmarek

Audit Committee Advisor: Sue Landauer

Plante Moran: Jean Young, Manju Patnaik

CohnReznick: Anthony LaMalfa, Courtney Klinga

O. Robinson, Chair, called the meeting to order at 1:20 p.m.

1. Approval of Minutes from June 8, 2023

Upon motion of J. Benaquisto seconded by J. Longtin and unanimously carried, the Committee approved the minutes of the June 8, 2023 meeting.

2. Plante Moran Annual Report

J. Young and M. Patnaik reviewed the System's audited financial statements for the year ended June 30, 2023 (Appendix A, pp. 3-78)

3. Resolution Accepting Plante Moran Annual Audit

Upon motion of J. Benaquisto, seconded by J. Longtin and unanimously approved, the Committee voted to recommend the following resolution to the Board:

RESOLVED, That the report of Plante Moran on the financial statements of the Retirement System as of June 30, 2023 and for the plan year then ended, as presented to the Retirement Board, is accepted.

4. CohnReznick Report on Audits of NYSTRS Wholly Owned Real Estate Investment Accounts

   A. LaMalfa and C. Klinga presented the results of the audits for the years ended December 31, 2022 and June 30, 2023 and discussed the plan for the audit of the year ending December 31, 2023 (Appendix B, pp. 79-101)

5. Resolution on CohnReznik Audit Reports

Upon motion of J. Longtin, seconded by J. Benaquisto and unanimously carried, the Committee approved the following resolution:

RESOLVED, That the report of CohnReznick, LLP on the audits of NYSTRS Wholly Owned Real Estate Investment Accounts as of December 31, 2022, and June 30, 2023, as presented to the Audit Committee, is accepted.

6. Internal Audit Update

   K. Ebert, B. Woolley, L. Zhang, D. Dempsey and T. Kaczmarek provided updates on internal audits.

7. Executive Session

   Upon motion of J. Longtin, seconded by J. Benaquisto and carried, the Committee went into Executive Session at 2:00 p.m. to discuss personnel matters. With unanimous consent, the Committee came out of Executive Session at 2:22 p.m.

There being no further business, the meeting adjourned at 2:23 p.m. with a motion made by J. Longtin, seconded by J. Benaquisto and unanimously carried.

Respectfully submitted,

[redacted]

Thomas K. Lee

Appendix A

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New York State Teachers' Retirement System

Retirement System Audit Presentation – Audit Committee

October 25, 2023

Introductions

Jean Young, CPA
Co-engagement Partner

Manju Patnaik, CPA
Senior Manager

Agenda

- ✓ Audit timeline and deliverables
- ✓ Upcoming timeline and deliverables
- ✓ Audit scope
- ✓ Required communications
- ✓ Questions

Audit timeline and deliverables

Audit timeline:

- January/May 2023 – Initiated planning procedures and risk assessment phase
- January/May 2023 – Employer payroll census audits
- May/July 2023 – Performed interim procedures
- July/October 2023 – Performed year end audit procedures, including review of financial statements
- October 25, 2023 – Issuance of audit opinion and actuarial letter

Deliverables:

- NYSTRS' audited financial statement opinion as of and for the year ended June 30, 2023
- Required Communications with the Board
- Actuarial letter – Review of the methods, procedures, and actuarial assumptions used by the System

Upcoming audit timeline and deliverables

Upcoming audit timeline:

- October/November 2023 – Complete testing of schedules of Collective Pension Amounts and Employer Allocations in accordance with GASB 68
- December 2023 – Issuance of report in accordance with GASB 68
- November 2023 – Issuance of opinion on NYSTRS ACFR
- December 2023 – Procedures on NYSTRS PAFR

Upcoming deliverables:

- NYSTRS' Annual Comprehensive Financial Report (ACFR) opinion as of and for the year ended June 30, 2023
- Audit, in accordance with GASB 68, the Schedules of Collective Pension Amounts and Employer Allocations for the measurement year ended June 30, 2023

Audit scope

Scope of work	• Audit of the financial statements for NYSTRS as of and for the year ended June 30, 2023
Financial reporting framework	• U.S. Generally Accepted Accounting Principles (GAAP)
Auditing standards	• We perform our audit in accordance with: ○ Auditing standards generally accepted in the United States of America
Independence	• We are independent of NYSTRS under all relevant professional and regulatory standards
Audit areas of focus	• Investment valuations • Census data testing • Actuarial assumptions and actuarial calculations • Accuracy of benefit calculations and related payments • Financial reporting

Required communications

Our responsibility under Generally Accepted Auditing Standards	• Express an opinion on whether the financial statements are fairly presented in conformity with U.S. GAAP • Plan and perform the audit to obtain reasonable, not absolute, assurance that the financial statements are free of material misstatement • Planning our audit includes obtaining an understanding of internal controls over financial reporting • The extent, timing, and nature of our procedures is determined based on risk assessments and our understanding of control and inherent risks to enable us to express an opinion on the financial statements • Communicate significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process • Evaluate System's ability to continue as a going concern
Management's responsibilities	• Financial statements • Selection and use of appropriate accounting policies • Adopting and maintaining sound internal controls • Evaluate System's ability to continue as a going concern

Opinion	• Expect unmodified opinion for the year ended June 30, 2023
	    ○ Free from material misstatement
	    ○ Highest level of assurance you can obtain

Required communications

Significant accounting policies	• Note 2 to the financial statements • No significant or unusual transactions occurred
Significant accounting estimates	• Fair value of harder-to-value investments, mainly the non-publicly traded investments, including alternative investments • Assumptions utilized in the GASB 67 actuarial valuation, including long-term expected rate of return and mortality assumptions • No changes in methodology • We evaluated key factors and assumptions used • Estimates are reasonable
Significant disclosures	• None

Required communications

Reportable control deficiencies	• No material weaknesses or significant deficiencies in internal control over financial reporting identified
Disagreements or difficulties with management	• None
Corrected and uncorrected misstatements	• None
Other matters	• No significant issues discussed with management prior to or during the audit • Management to provide management representation letter dated October 25, 2023 • No consultations with other accountants

Required communications

Other information included in annual reports

- The Annual Comprehensive Financial Report (ACFR) and Popular Annual Financial Report (PAFR) will be reviewed prior to issuance of the ACFR and PAFR to ensure they are not materially misstated or materially inconsistent with the information or manner of its presentation appearing in the financial statements

Questions?

Thank you!

For more information contact:

Jean Young, CPA
517-336-7458
Jean.Young@plantemoran.com

Manju Patnaik, CPA
248-223-3768
Manju.Patniak@plantemoran.com

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM

Basic Financial Statements and Supplemental Schedules

June 30, 2023 and 2022

(With Independent Auditors' Report Thereon)

Financial

Plante Moran, PC
P.O. Box 307
3000 Town Center, Suite 100
Southfield, MI 48075
Tel: 248.352.2500
Fax: 248.352.0018
plantemoran.com

To the Retirement Board
New York State Teachers' Retirement System

Opinion

We have audited the accompanying financial statements of New York State Teachers' Retirement System (the "System") as of and for the year ended June 30, 2023 and 2022 and the related notes to the financial statements, which collectively comprise the System's basic financial statements, as listed in the table of contents.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of New York State Teachers' Retirement System as of June 30, 2023 and 2022 and the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (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 audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for 12 months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

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

To the Retirement Board
New York State Teachers' Retirement System

In performing an audit in accordance with GAAS, we:

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

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

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and other required supplementary information, as identified in the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, which considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Schedules

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise New York State Teachers' Retirement System's basic financial statements. The other supplementary information, as identified in the table of contents, is presented for the purpose of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information is fairly stated in all material respects in relation to the basic financial statements as a whole.

October 25, 2023

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MANAGEMENT'S DISCUSSION AND ANALYSIS

June 30, 2023 and 2022
(Unaudited)

The following discussion and analysis of the financial performance of the New York State Teachers' Retirement System (NYSTRS or the System) provides an overview of its activities for the years ended June 30, 2023 and 2022. Its purpose is to provide explanations and insights into the information presented in the financial statements, notes to the financial statements, and required supplementary information.

Financial Highlights

- The net position of the System represents funds available to pay current and future benefits. Net position was $137.2 billion as of the fiscal year ended 2023, and $132.0 billion and $148.1 billion as of the fiscal years ended 2022 and 2021, respectively. The change for the fiscal year ended 2023 was positive $5.2 billion, or positive 4.0%, and the change for the fiscal year ended 2022 was negative $16.1 billion, or negative 10.9%.

- The System's investments experienced appreciation of $9.0 billion in 2023 and depreciation of $12.4 billion and appreciation of $31.5 billion in 2022 and 2021, respectively.

- Contributions from employers were $1.9 billion in 2023, $1.7 billion in 2022, and $1.6 billion in 2021, consistent with the change in the employer contribution rate.

- The number of retired members and beneficiaries receiving benefits has been steadily increasing, leading to an increase in the retirement benefits paid. Retirement benefits paid in 2023, 2022, and 2021 were $8.2 billion, $8.0 billion, and $7.7 billion, respectively.

- The System's funded ratio, a comparison of the actuarial value of assets to the accrued pension benefit liability, was 99.3% as of the 2022 valuation. Valuations in 2021 and 2020 resulted in the System's funded ratio of 99.3% and 98.9%, respectively.

Overview of Financial Statements

The following discussion and analysis are intended to assist the reader in better understanding the purpose and meaning of each of the key components of NYSTRS' financial statements, which comprise the following:

1. The Statements of Fiduciary Net Position present NYSTRS' assets and deferred outflows of resources and liabilities and deferred inflows of resources by major categories and may serve over time as a useful indicator of the System's financial position. The difference between assets and deferred outflows of resources and liabilities and deferred inflows of resources represents the net position restricted for pensions. The statements also compare assets and deferred outflows of resources and liabilities and deferred inflows of resources by class to the previous year, which offers the reader the opportunity to note changes in each class from year to year.

2. The Statements of Changes in Fiduciary Net Position provide information on the change in the System's net position during the current year. The majority of additions are normally derived from net investment income, primarily in the form of changes in the fair value of assets from the prior year. Deductions include retirement benefit payments, beneficiary payments, return of contributions, and administrative expenses. For comparison purposes, information pertaining to the previous year's Statement of Changes in Fiduciary Net Position is also provided.

3. The Notes to the Basic Financial Statements are an essential part of the basic financial statements. They provide important background and detailed information about NYSTRS, the plan and the basic financial statements themselves.

4. The Required Supplementary Information (RSI) consists of information pertaining to NYSTRS' actuarial methods and assumptions and provides data on changes in the school districts' net pension liability, the composition of the school districts' net pension liability, and the school districts' contributions. Also included is information on NYSTRS' proportionate share of their pension liability to ERS as well as a schedule of their contributions to that plan. Lastly, the RSI includes a schedule of changes in the other post-employment benefits (OPEB) liability and NYSTRS' contributions toward that plan.

MANAGEMENT'S DISCUSSION AND ANALYSIS *(continued)*

June 30, 2023 and 2022
(Unaudited)

Other supplementary information is also presented and includes the schedules of administrative expenses, investment expenses, and consulting fees.

Financial Analysis

Tables 1 and 2 summarize and compare the System's financial results for the years 2023 and 2022. Investments comprise the overwhelming majority of assets of the System. Investment performance, contributions and benefit payments are the primary drivers of changes in net fiduciary position.

TABLE 1 - SUMMARY OF FIDUCIARY NET POSITION

(dollars in thousands)

	June 30			Amount increase (decrease)	Percentage change	Percentage change of total
	2023	2022	2021	2022 to 2023	2022 to 2023	2022 to 2023
Investments at fair value	$134,825,969	$129,860,183	$146,219,128	$ 4,965,786	3.8 %	3.8 %
Receivables	2,522,666	2,311,013	2,302,028	211,653	9.2	0.2
Securities lending collateral — invested	352,050	709,827	481,018	(357,777)	(50.4)	(0.3)
Member Loans	251,103	232,473	236,944	18,630	8.0	0.0
Other Assets	25,602	31,956	41,308	(6,354)	(19.9)	0.0
Total Assets	137,977,390	133,145,452	149,280,426	4,831,938	3.6	3.7
Total Deferred Outflows of Resources	30,470	28,756	32,671	1,714	6.0	0.0
Securities lending collateral — due to borrowers	350,249	707,887	479,186	(357,638)	(50.5)	(0.2)
Investment Purchases Payable	192,337	278,472	450,377	(86,135)	(30.9)	(0.1)
Other Liabilities	240,183	176,269	198,526	63,914	36.3	0.0
Total Liabilities	782,769	1,162,628	1,128,089	(379,859)	(32.7)	(0.3)
Total Deferred Inflows of Resources	3,554	46,998	36,551	(43,444)	(92.4)	0.0
Net position restricted for pensions	**$137,221,537**	**$131,964,582**	**$148,148,457**	**$ 5,256,955**	**4.0 %**	**4.0 %**

The increase in the investment value as of June 30, 2023 is attributable to appreciation of the investment portfolio due to particularly strong market performance. The portfolio earned a time-weighted rate of return of positive 8.99%, compared to an assumed rate of return of 6.95%.

The decrease in the investment value as of June 30, 2022 is attributable to depreciation of the investment portfolio due to particularly weak market performance. The portfolio earned a time-weighted rate of return of negative 7.15%, compared to an assumed rate of return of 6.95%.

MANAGEMENT'S DISCUSSION AND ANALYSIS *(continued)*

June 30, 2023 and 2022

(Unaudited)

TABLE 2 - SUMMARY OF CHANGES IN FIDUCIARY NET POSITION

(dollars in thousands)

	Years ended June 30 2023	2022	2021	Amount increase (decrease) 2022 to 2023	Percentage change 2022 to 2023	Percentage change of total 2022 to 2023
Net appreciation (depreciation) in fair value of investments	$ 9,004,904	$(12,446,619)	$31,499,853	$ 21,451,523	(172.3)%	16.3 %
Other investment income	2,434,382	2,367,805	2,168,155	66,577	2.8	0.1
Contributions- Employer and Member	2,131,878	1,934,793	1,788,336	197,085	10.2	0.1
Total additions (deductions)	13,571,164	(8,144,021)	35,456,344	21,715,185	(266.6)	16.5
Retirement benefits	(8,214,698)	(7,961,870)	(7,717,521)	(252,828)	3.2	(0.2)
Other deductions	(99,511)	(77,984)	(69,871)	(21,527)	27.6	0.0
Total Deductions	(8,314,209)	(8,039,854)	(7,787,392)	(274,355)	3.4	(0.2)
Net increase (decrease) in net position	5,256,955	(16,183,875)	27,668,952	21,440,830	(132.5)	16.2
Net position, beginning of year	131,964,582	148,148,457	120,479,505	(16,183,875)	(10.9)	(12.3)
Net position, end of year	**$137,221,537**	**$131,964,582**	**$148,148,457**	**$ 5,256,955**	**4.0 %**	**4.0 %**

Net Investment Income

For the year ended June 30, 2023, NYSTRS reported net investment income of $11.4 billion compared to net investment loss of $10.1 billion in 2022 and net investment income of $33.7 billion in 2021. The strong appreciation in 2023 was due to robust market returns, primarily in the equity segments. The net appreciation (depreciation) by asset class and year is shown in the table below:

TABLE 3 - NET APPRECIATION (DEPRECIATION) ON INVESTMENTS *

(dollars in thousands)

	Years ended June 30 2023	2022	2021	Amount increase (decrease) 2022 to 2023
Domestic equity	$ 7,017,781	$ (5,876,449)	$ 15,646,731	$ 12,894,230
International equity	2,066,564	(5,203,533)	6,762,617	7,270,097
Global equity	579,639	(947,017)	1,527,191	1,526,656
Real estate equity	(971,887)	1,780,335	1,947,403	(2,752,222)
Private equity	982,626	917,693	5,679,894	64,933
Domestic fixed income	(514,068)	(2,128,080)	(452,552)	1,614,012
High-yield bonds	35,697	(178,770)	55,978	214,467
Global bonds	(63,756)	(391,260)	(22,191)	327,504
Real estate debt	(400,521)	(534,179)	130,075	133,658
Private debt	183,883	117,213	221,004	66,670
Cash equivalents	85,456	3,942	2,492	81,514
Other	3,490	(6,514)	1,211	10,004
Totals	**$ 9,004,904**	**$ (12,446,619)**	**$ 31,499,853**	**$ 21,451,523**

*net of purchases, sales and maturities

MANAGEMENT'S DISCUSSION AND ANALYSIS *(continued)*

June 30, 2023 and 2022

(Unaudited)

Economic Factors

The economic factor that is of primary significance to NYSTRS is the investment rate of return earned in the capital markets. Legislative, demographic, and actuarial assumption changes can also have a significant impact on the net pension liability and funded status of the plan. All of these factors are incorporated into the annual actuarial valuation, which determines the rate at which participating employers must contribute in order to appropriately fund member benefits. In terms of demographics, the System will likely continue to experience a shift toward a greater proportion of retirees relative to active members. This year the System experienced appreciation on investments, primarily driven by strong returns in domestic and international equities. Investment returns are smoothed (averaged) by NYSTRS over a five-year period for purposes of computing the actuarial value of assets used to determine the employer contribution rate. Industry forecasts of a decrease in expected future investment returns contributed to an increase in the employer contribution rate, from 9.8% on 2021-22 member salaries to 10.29% on 2022-23 member salaries.

Requests for Information

This financial report is designed to provide active members, retirees, employers, and anyone else who is interested, with a general overview of the financial activities of NYSTRS. Questions about this report or requests for additional financial information should be addressed to the Communications & Outreach department, New York State Teachers' Retirement System, 10 Corporate Woods Drive, Albany, NY 12211, or by email at communit@nystrs.org.

STATEMENTS OF FIDUCIARY NET POSITION

June 30, 2023 and 2022

(dollars in thousands)

Assets:	2023	2022
Investments — at fair value (notes 4, 5 and 6):		
Domestic equity	**$ 45,821,765**	$ 41,961,629
International equity	**18,709,768**	19,509,375
Global equity	**4,904,670**	4,218,623
Real estate equity	**16,469,247**	16,491,592
Private equity	**15,416,611**	14,073,681
Domestic fixed income	**18,091,466**	18,271,844
High-yield bonds	**1,359,492**	958,586
Global bonds	**2,714,220**	2,950,256
Real estate debt	**7,531,061**	7,730,876
Private debt	**2,045,645**	1,424,443
Cash equivalents	**1,762,024**	2,269,278
Total investments	**134,825,969**	129,860,183
Receivables:		
Employer	**1,855,257**	1,695,040
Member contributions	**197,849**	167,254
Investment income	**332,408**	291,344
Investment sales	**137,152**	157,375
Total receivables	**2,522,666**	2,311,013
Other assets:		
Securities lending collateral — invested (note 5)	**352,050**	709,827
Member loans	**251,103**	232,473
Capital assets, net of depreciation	**19,659**	20,722
Miscellaneous assets	**5,943**	11,234
Total other assets	**628,755**	974,256
Total assets	**137,977,390**	133,145,452
Deferred outflows of resources:		
Changes in net OPEB liability (note 10)	**15,103**	10,703
Changes in net pension liability (note 9)	**15,367**	18,053
Total deferred outflows of resources	**30,470**	28,756
Liabilities:		
Securities lending collateral — due to borrowers (note 5)	**350,249**	707,887
Investment purchases payable	**192,337**	278,472
Mortgage escrows and deposits — net of investments	**6,269**	12,895
Net OPEB liability (note 10)	**48,847**	34,792
Other liabilities (notes 5 and 9)	**185,067**	128,582
Total liabilities	**782,769**	1,162,628
Deferred inflows of resources:		
Changes in net OPEB liability (note 10)	**2,249**	13,230
Changes in net pension liability (note 9)	**1,305**	33,768
Total deferred inflows of resources	**3,554**	46,998
Net position restricted for pensions (note 3)	**$ 137,221,537**	$ 131,964,582

See accompanying notes to financial statements.

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

Fiscal Years Ended June 30, 2023 and 2022

(dollars in thousands)

Additions:	2023	2022
Investment income:		
Net increase (decrease) in fair value of investments	**$ 9,004,904**	$ (12,446,619)
Interest income	**882,703**	785,225
Dividend income	**1,412,283**	1,442,149
Real estate — net operating income	**540,404**	525,001
Securities lending — gross earnings	**21,814**	4,007
Other — net	**2,683**	10,969
	11,864,791	(9,679,268)
Less:		
Investment expenses	**408,762**	399,564
Securities lending:		
Broker rebates	**15,753**	(523)
Management fees	**851**	613
Depreciation (appreciation) on collateral	**139**	(108)
Net investment income (loss)	**11,439,286**	(10,078,814)
Contributions:		
Employer (note 1)	**1,899,885**	1,735,255
Member contributions	**221,152**	190,853
Transfers (to)/from other systems	**10,841**	8,685
Total contributions	**2,131,878**	1,934,793
Net additions (deductions)	**13,571,164**	(8,144,021)
Deductions:		
Retirement benefit payments — periodic	**8,135,346**	7,895,257
Beneficiary payments	**79,352**	66,613
Return of contributions	**20,213**	16,754
Administrative expenses	**79,298**	61,230
Total deductions	**8,314,209**	8,039,854
Net increase (decrease) in net position	**5,256,955**	(16,183,875)
Net position restricted for pensions, beginning of year	**131,964,582**	148,148,457
Net position restricted for pensions, end of year	**$ 137,221,537**	$ 131,964,582

See accompanying notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

June 30, 2023 and 2022
(dollars in thousands)

(1) Plan Description

The New York State Teachers' Retirement System (NYSTRS or the System) was created and exists, pursuant to Article 11 of the New York State Education Law. The System is the administrator of a cost-sharing, multiple-employer, defined benefit public employee retirement system (PERS), administered by a 10-member Board to provide pension benefits for teachers employed by participating employers in the State of New York, excluding New York City. The System's Board is composed of:

- Three teacher members elected from the active membership.
- One retired member elected by a mail vote of all retired members.
- Two school administrators appointed by the Commissioner of Education.
- Two present or former school board members, experienced in the fields of finance and investment, elected by the Board of Regents. At least one of these individuals must have experience as an executive of an insurance company.
- One present or former bank executive elected by the Board of Regents.
- The State Comptroller or the Comptroller's designee.

Funding of the System is accomplished through member and employer contributions and investment earnings, according to New York State Education Law.

As of June 30, the number of participating employers was:

	2023	2022
Public school districts	679	679
Boards of Cooperative Educational Services (BOCES)	37	37
SUNY	31	31
Community colleges	30	30
Charter schools	32	27
Special act districts	9	9
Other	9	9
Total	827	822

As of June 30, the System's membership consisted of:

	2023	2022
Retired members and beneficiaries currently receiving benefits	180,727	178,569
Members:		
Active members	257,494	253,258
Terminated members entitled to but not yet receiving benefits	10,564	10,217
Subtotal	268,058	263,475
Total	448,785	442,044

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

(a) Benefits

The benefits provided to members of the System are established by New York State law and may be amended only by the Legislature with the Governor's approval. Benefit provisions vary depending on date of membership and are subdivided into the following six classes:

Tier 1
Members who last joined prior to July 1, 1973 are covered by the provisions of Article 11 of the Education Law.

Tier 2
Members who last joined on or after July 1, 1973 and prior to July 27, 1976 are covered by the provisions of Article 11 of the Education Law and Article 11 of the Retirement and Social Security Law (RSSL).

Tier 3
Members who last joined on or after July 27, 1976 and prior to September 1, 1983 are covered by the provisions of Article 14 and Article 15 of the RSSL.

Tier 4
Members who last joined on or after September 1, 1983 and prior to January 1, 2010 are covered by the provisions of Article 15 of the RSSL.

Tier 5
Members who joined on or after January 1, 2010 and prior to April 1, 2012 are covered by the provisions of Article 15 of the RSSL.

Tier 6
Members who joined on or after April 1, 2012 are covered by the provisions of Article 15 of the RSSL.

(b) Service Retirements

Tier 1 and 2 members are generally eligible for a service retirement benefit of 2.0% per year of credited service times final average salary (FAS). A 5% reduction generally applies for each full year of state service under 20 years (prorated for partial years with a maximum reduction of 50%). Tier 1 and 2 members may retire as early as age 55 with five or more years of state service credit. Retirement may also occur for Tier 1 members at age 55 with less than five years of service if two years are credited since July 1, 1967, after the current membership date, and since the member turned age 53.

Generally, the maximum pension payable to Tier 1 and 2 members (with two years of credit under the Article 19 Benefit Enhancement law) is 79% of FAS. An age factor applies to Tier 2 members who retire before age 62 with less than 30 years of service. There is no age factor for Tier 1 members.

Tier 3 and 4 members are generally eligible for a service retirement benefit of 1.67% per year of credited service times FAS for less than 20 years of service, 2.0% per year for 20 to 30 years of service, and 60% of FAS plus 1.5% per year for service beyond 30 years. Tier 3 and 4 members may retire as early as age 55 with five years of state service credit. An age factor applies for Tier 3 and 4 members who retire before age 62 with less than 30 years of service.

Tier 5 members are generally eligible for a service retirement benefit of 1.67% per year of credited service times FAS for less than 25 years of service, 2.0% per year for 25 to 30 years of service, and 60% of FAS plus 1.5% per year for service beyond 30 years. Tier 5 members may retire as early as age 55 with five years of state service credit. An age factor applies to Tier 5 members who retire before age 57 or retire between age 57 and 62 with less than 30 years of service.

Tier 6 members are generally eligible for a service retirement benefit of 1.67% per year of credited service times FAS for less than 20 years of service, 1.75% per year for 20 years of service, and 35% of FAS plus 2% per year for service beyond 20 years. Tier 6 members may retire as early as age 55 with five years of state service credit. An age factor applies for Tier 6 members who retire before age 63. In addition, vested Tier 6 members with an inactive membership must be at least 63 to retire.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022
(dollars in thousands)

(c) *Vested Benefits*

Retirement benefits for Tiers 1-6 are now vested after five years of credited service. Prior to April 9, 2022, Tier 5 and 6 members needed to attain 10 years of state service credit to be vested. Benefits are payable at age 55 or greater with the limitations noted for service retirements above.

(d) *Disability Retirement*

Members are eligible for disability retirement benefits after 10 years of credited New York State service, except for Tier 3 where disability retirement is permissible after five years of credited New York State service pursuant to the provisions of Article 14 of the RSSL. The Tier 3 benefit is integrated with Social Security.

(e) *Death Benefits*

Death benefits are paid to the beneficiary of active members who die in service and certain retirees. For active members, the benefit is based on final salary, age and the number of years of credited service. For retired members, it is also based on the number of years in retirement.

(f) *Prior and Military Service*

After two years of membership, members of all tiers may claim and receive credit for prior New York State public or teaching service. Only Tier 1 and 2 members may, under certain conditions, claim out-of-state service. Certain members may also claim military service credit prior to or interrupting membership.

(g) *Tier Reinstatement*

In accordance with Chapter 640 of the Laws of 1998, any active member who had a prior membership may elect to be reinstated to their original date and tier of membership.

(h) *Employer*

Pursuant to Article 11 of the New York State Education Law, employers are required to contribute at an actuarially determined rate adopted annually by the Retirement Board. The actuarially determined employer contribution rate applied to 2022-23 and 2021-22 member salaries is 10.29% and 9.80%, respectively. A reconciliation of total required employer contributions presented in the Schedule of the School Districts' Contributions and additions from employer contributions per the System's Statements of Changes in Fiduciary Net Position for fiscal years 2023 and 2022 is as follows:

	June 30	
	2023	2022
Total required employer contributions	$ 1,900,474	$ 1,736,097
Miscellaneous billing adjustments	(589)	(842)
Additions from employer contributions	$ 1,899,885	$ 1,735,255

In April 2013, the System's Retirement Board adopted a Stable Contribution Option (SCO) provided for under Chapter 57 of the Laws of 2013. Under the law, BOCES and public school districts participating in NYSTRS were offered the choice of either paying the actuarially determined contribution (ADC) or electing to participate in the SCO program, thereby paying a stable contribution rate for up to seven years beginning with the rate applied to the 2013-14 salaries and concluding with the rate applied to the 2022-23 salaries; deferring payment of the difference between the ADC and the contribution determined applying the SCO rate. Interest on deferred contribution amounts were based on the monthly average yield on 10-year U.S. Treasury securities for the 12-month period that precedes August 1 of the applicable deferred year, plus 1.0%. As of June 30, 2017, all districts that participated in the SCO have opted out and have either paid their outstanding deferral in full or have opted to repay the System over five years. The SCO receivable balances at June 30, 2023 and 2022 were $0.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

(i) Member Contributions

Tier 3 and Tier 4 members were required by law to contribute 3% of salary to the System. Effective October 2000, contributions were eliminated for Tier 3 and 4 members with 10 or more years of service or membership. Effective January 1, 2010, Tier 5 members are required by law to contribute 3.5% of salary throughout their active membership. Effective April 1, 2012, Tier 6 members are required by law to contribute between 3.0% and 6.0% of salary throughout their active membership in accordance with a schedule based upon salary earned. Pursuant to Article 14 and Article 15 of the RSSL, those member contributions are used to help fund the benefits provided by the System. However, if a member dies or leaves covered employment with less than five years of credited service for Tiers 3 - 6, the member contributions with interest calculated at 5.0% per annum are refunded to the employee or designated beneficiary. Eligible Tier 1 and Tier 2 members may make member contributions under certain conditions pursuant to the provisions of Article 11 of the Education Law and Article 11 of the RSSL. Upon termination of membership, such accumulated member contributions are refunded. At retirement, such accumulated member contributions can be withdrawn or are paid as a life annuity.

(j) Permanent Cost-of-Living Adjustment (COLA)

Section 532-a of the Education Law provides a permanent cost-of-living benefit to both current and future retired members. This benefit will be paid commencing September of each year to retired members who have attained age 62 and have been retired for five years or attained age 55 and have been retired for 10 years. Disability retirees must have been retired for five years, regardless of age, to be eligible. The annual COLA percentage is equal to 50.0% of the increase in the Consumer Price Index (CPI), not to exceed 3.0% nor be lower than 1.0%. It is applied to the first $18,000 dollars of the maximum annual benefit. The applicable percentage payable beginning September 2023 and 2022 is 2.5% and 3.0%, respectively.

Members who retired prior to July 1, 1970 are eligible for a minimum benefit of $17,500 dollars for 35 years of credited full-time New York State service. Certain members who retire pursuant to the provisions of Article 14 of the RSSL are eligible for automatic cost-of-living supplementation based on the increase in the CPI with a maximum per annum increase of 3.0%.

(2) Summary of Significant Accounting Policies

(a) Basis of Accounting

The System's financial statements are prepared using the economic resource measurement focus and accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due and the employer has a legal requirement to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan. Investment purchases and sales are recorded on a trade-date basis.

(b) Investments

Plan investments are reported at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where plan investments do not have a readily determinable fair market value, fair value of the plan investments has been established using the net asset value per share (or its equivalent) of the investment to establish fair value where applicable. Refer to note 6 for more detail regarding the methods used to measure the fair value of investments.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

(c) System Employees' Pension Plan and Other Postemployment Benefits

The System offers a defined benefit pension plan to its employees. The System records a net pension liability for the difference between the total pension liability calculated by the actuary and the pension plan's fiduciary net position. For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions and pension expense, information about the fiduciary net position of the Employees Retirement System (ERS) and additions to/deductions from ERS's fiduciary net position have been determined on the same basis as they are reported for ERS by the New York State and Local Retirement System (NYSLRS).

The System offers a defined benefit other postemployment benefits (OPEB) plan to its employees. The System records a net OPEB liability for the difference between the total OPEB liability calculated by the actuary and the OPEB plan's fiduciary net position. For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB and OPEB expense, information about the fiduciary net position of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the Trust) and additions to/deductions from the Trust's fiduciary net position have been determined on the same basis as they are reported for by the Trust.

For these purposes, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms, and investments are reported at fair value for both plans.

In addition to assets, the statement of fiduciary net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element represents a consumption of net position that applies to a future period and will not be recognized as an outflow of resources (expense/expenditure) until then.

In addition to liabilities, the statement of fiduciary net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net position that applies to a future period and will not be recognized as an inflow of resources (revenue) until that time.

The System reports deferred outflows of resources and deferred inflows of resources related to their employee's participation in separate pension and OPEB plans.

(d) Capital Assets

Capital assets with a useful life greater than one year and of one hundred thousand dollars or more are recorded at historical cost and capitalized over their useful life. Depreciation has been provided over the estimated useful lives using the straight-line method. The estimated useful lives are as follows:

	Years
Building	39
Building improvements	15
Roads and shrubbery	10
Office furniture and equipment	7
Computer equipment and software	3 - 5
Automobiles	5

(e) Federal Tax Status

The System is exempt from federal income taxes under Section 501(a) of the IRC.

(f) Use of Estimates

Management of the System has made a number of estimates and assumptions relating to the reporting of assets and liabilities and in the disclosure of contingencies to prepare these financial statements in conformity with U.S. generally

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

accepted accounting principles. The System's most significant estimates relate to assumptions made about future events as part of the annual actuarial valuation process and the valuation of investments. Due to the inherent nature of these estimates, actual results could differ from those estimates.

(3) Funds

The following funds were established pursuant to the laws of the State of New York.

(a) Annuity Savings Fund

The fund in which contributions of Tier 1 and 2 members covered by the provisions of Article 11 of the Education Law and Article 11 of the RSSL are accumulated. For reporting purposes below, this fund is combined with the Annuity Reserve Fund.

(b) Annuity Reserve Fund

The fund from which the accumulated contributions of members covered by the provisions of Article 11 of the Education Law and Article 11 of the RSSL are paid as a life annuity. For reporting purposes below, this fund is combined with the Annuity Savings Fund.

(c) Pension Accumulation Fund

The fund in which all reserves for the payment of all benefits are accumulated with the exception of the annuity provided by the accumulated contributions of Tier 1 and 2 members, supplemental retirement allowances, and group term life insurance.

(d) Pension Reserve Fund

The fund that pays pensions with the reserves from the Pension Accumulation Fund.

(e) Group Life Insurance Fund

Pursuant to Article 4-B of the RSSL, the Retirement Board established a Group Life Insurance Fund. The Group Life Insurance Fund provides a group term death benefit not to exceed fifty thousand dollars, payable upon the death of eligible members. Group term death benefits paid for the years ended June 30, 2023 and 2022 were $30,590 and $25,209, respectively. For reporting purposes below, this fund is combined with the Pension Accumulation Fund.

(f) CO-ESC Member Contributions Fund

Members covered by the provisions of Article 14 and Article 15 of the RSSL contributed a range of 3% to 6% of salary depending on their tier to the System's CO-ESC Member Contribution Fund. Contributions to this fund were $175,481 and $144,019 for the years ended June 30, 2023 and 2022, respectively. For reporting purposes below, this fund is combined with the Pension Accumulation Fund.

(g) Administrative Fund

All operating expenses of the System are paid through this fund. The fund receives an allocation from employer contributions, which are designated by law to cover all non-investment-related operating expenses.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

(h) Summary of Fund Balances

Net position restricted for pensions at June 30, 2023 and 2022 consist of the following:

	2023	2022
Administrative fund	$ 58,923	$ 62,053
Annuity savings and reserve funds	55,230	63,454
Pension accumulation, group life insurance and CO-ESC funds	62,608,589	58,826,877
Pension reserve fund	74,498,795	73,012,198
Total	$ 137,221,537	$ 131,964,582

(4) Pension Plan Investments

(a) Investment Policy

The System has been authorized by the New York State Legislature pursuant to the Banking Law, Section 235; the Education Law, Article 11, Section 508; and the RSSL, Article 4-A, Sections 176 and 177, to invest in stocks, bonds, mortgages, real estate, and other investments. A specific investment within these broad asset classes may be subject to particular restrictions or limitations contained in the applicable statutory provision. The Leeway Clause of Section 177 provides that, subject to guidelines adopted by the Retirement Board, up to 35.0% of assets may be invested in types of assets not otherwise specifically authorized, provided the Retirement Board is satisfied such investments were made with the care, skill, prudence and diligence of a prudent person acting in a like capacity and familiar with such matters. Pursuant to regulations promulgated by the New York State Department of Financial Services, investments must be made in a manner consistent with those of a reasonably prudent person exercising care, skill and caution. In addition to applicable legal constraints, the Retirement Board has adopted policies governing the investments made by the System.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

(b) Asset Allocation

The System's asset allocation policy as of June 30, 2023 and 2022, as adopted by the Retirement Board is as follows:

Asset Class	Target June 30, 2023	Target June 30, 2022	Range June 30, 2023	Range June 30, 2022
Domestic equity	33%	33%	29-37%	29-37%
International equity	15	16	11-19	12-20
Global equity	4	4	0-8	0-8
Real estate equity	11	11	6-16	6-16
Private equity	9	8	4-14	3-13
Total equity	72	72		
Domestic fixed income	16	16	12-20	12-20
High-yield bonds	1	1	0-3	0-3
Global bonds	2	2	0-4	0-4
Real estate debt	6	6	2-10	2-10
Private debt	2	2	0.5-5	0.5-5
Cash equivalents	1	1	1-4	1-4
Total debt	28	28		
Total	100%	100%		

(c) Rate of Return

The annual money-weighted rate of return on System investments, net of pension plan investment expense, was negative 7.12% for the year ended June 30, 2022, but was 9.16% for the year ended June 30, 2023. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022
(dollars in thousands)

(5) Deposit and Investment Risk Disclosure

(a) Credit Risk

The quality ratings of investments in fixed income securities as described by nationally recognized statistical rating organizations at June 30, 2023 and 2022 are as follows:

	2023		2022	
Quality rating	Fair value	Percentage of portfolio	Fair value	Percentage of portfolio
Short-term:				
P-1	$ 1,143,492	4.4 %	$ 1,899,118	7.2 %
Long-term:				
Aaa	6,370,065	24.4	5,750,836	21.7
Aa	1,395,543	5.3	1,634,395	6.2
A	3,552,611	13.6	4,139,237	15.6
Baa	2,736,108	10.5	2,993,038	11.3
Ba	636,439	2.4	663,043	2.5
B	730,850	2.8	588,177	2.2
Caa	77,292	0.3	32,581	0.1
Other	375,576	1.5	(15,358)	0.0
Total credit risk debt securities	17,017,976	65.2	17,685,067	66.8
U.S. government fixed income securities*	9,094,792	34.8	8,807,561	33.2
Total fixed income securities**	$ 26,112,768	100.0 %	$ 26,492,628	100.0 %

** Obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not considered to have credit risk and do not have purchase limitations.*

*** Cash equivalents, real estate debt, high-yield and global bond on the Statements of Fiduciary Net Position at June 30, 2023 and 2022 include $185,423 and $229,059, respectively, in cash and commingled commercial mortgage backed securities.*

Additionally, as of June 30, 2023 and 2022, the System held mortgages, secured by a lien of the properties, valued at $2.6 billion and $3.2 billion, respectively, that are not publicly traded assets and are not rated by the rating agencies.

(b) Custodial Credit Risk

Custodial credit risk is the risk that, in the event of a failure of the counterparty, the System will not be able to recover the value of its deposit or investment, or collateral securities that are in the possession of an outside party. Deposits are exposed to custodial credit risk if they are uninsured and uncollateralized. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the System, and are held by either the counterparty or the counterparty's trust department or agent but not in the System's name.

The head of the Division of the Treasury in the New York State Department of Taxation and Finance (the Treasurer) is the statutory custodian of the funds of the System and, in this capacity, has arranged to have bank accounts collateralized. Collateral is held in the name of the Treasurer, as custodian for the System, by a bank that does not act as an agent for the System. The System's bank accounts were fully collateralized during the year. At June 30, 2023 and 2022, the System's bank balance was a negative $3,899 and a negative $3,600, respectively, representing a managed overdraft. Consistent with the System's investment policy, all of the System's securities are held by the System's custodial bank in the System's name.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

(c) Concentration of Investment and Credit Risk

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

As of June 30, 2023 and 2022, the System did not hold investments in any one issuer that would represent 5.0% or more of fiduciary net position. Obligations issued or explicitly guaranteed by the U.S. government and pooled investments are not considered subject to concentration of credit risk.

Issuer limits for investments held by the System are established for each investment area by the RSSL Article 4-A, Sections 176-179.

Short-term fixed income investments are generally limited to the following investment types maturing in one year or less:

- Obligations of the U.S. or those for which the faith of the United States is pledged to provide for the payment of the interest and principal.
- Obligations issued by any Federal Home Loan Bank or obligations fully guaranteed as to principal and interest by Fannie Mae or Freddie Mac.
- Commercial Paper, Certificates of Deposit, and Supranational obligations that have the highest rating by two nationally recognized rating services
- Other securities meeting legal investment criteria.

Fixed income securities are generally limited to the following investment types with maturities longer than one year:

- Obligations payable in U.S. dollars issued by any department, agency or political subdivision of the U.S. government or issued by any corporation, company or other issuer of any kind or description created or existing under the laws of the U.S.; any state of the U.S., District of Columbia or Commonwealth of Puerto Rico; and obligations of Canada or any province or city of Canada, provided each obligation shall be rated investment grade by two nationally recognized rating services. The aggregate investment by the System in the obligations of any one issuer shall not exceed 2.0% of the assets of the System or 5.0% of the direct liabilities of the issuer.
- Notwithstanding the 2.0% limitation stated above, the System may invest not more than 2.5% of its assets in the obligations of any one railroad or industrial corporation; or any one corporation engaged directly and primarily in the production, transportation, distribution or sale of electricity or gas; or the operations of telephone and telegraph systems or waterworks or in some combination thereof.
- In no event may more than 30.0% of the System's assets be invested in bonds of electric and gas corporations. Equipment trust certificates, subject to the provisions of the law, are not to exceed 5.0% of the assets of the System.
- Obligations issued or guaranteed by the Inter-American Development Bank, Asian Development Bank, the African Development Bank or the Youth Facilities Project Guarantee Fund and participations therein.
- Obligations of the Dominion of Canada, of any province of the Dominion of Canada, and of any city of the Dominion of Canada, payable in U.S. funds, provided that the aggregate unpaid principal amount of all such obligations at any time held by the System shall not exceed 5.0% of the System's assets.
- Bonds of the Savings and Loan Bank of the State of New York, Federal Land Bank, Federal Intermediate Credit Banks, and Banks for Cooperatives.
- Bonds of Freddie Mac, Federal Home Loan Banks, Tennessee Valley Authority, Fannie Mae, and the United States Postal Service.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

- Obligations issued or guaranteed by the International Bank for Reconstruction and Development, provided the aggregate unpaid principal amount of such obligations at any time held by the System shall not exceed 5.0% of the System's assets.
- Bonds and notes of any bank, trust company, savings bank, or savings and loan association organized under the laws of New York State having a net worth of at least $10 million, which meet all applicable statutes, provided the aggregate unpaid principal amount of bonds and notes secured by conventional mortgages shall not exceed 5.0% of the assets of the System.
- Mortgage pass-through certificates, provided the certificates evidence ownership of undivided interests in pools or mortgage loans secured by first mortgages on real property located in New York state improved by one-to-four family residential dwellings, which meet all applicable statutes. The aggregate unpaid principal on conventional mortgages securing mortgage pass-through certificates cannot exceed 10.0% of the assets of the System nor can the total unpaid principal on any single pool of conventional mortgages securing mortgage pass-through certificates exceed 1.0% of the assets of the System.
- Collateralized Mortgage Obligations, which meet the requirements of applicable statutes.
- Private placements, where the purchase of unrated obligations is authorized by the Banking Law or the RSSL governing fixed income obligations; if not so provided, private placements as well as other domestic fixed income not otherwise provided for may be purchased under the Leeway Clause.

The System may invest in domestic equity securities and interest-bearing obligations payable in U.S. funds, which are convertible into equity securities of any corporation created or existing under the laws of the U.S., any state of the U.S., District of Columbia, and the Commonwealth of Puerto Rico; or any investment company, as defined by, and which is registered under, an act of Congress of the United States, entitled to the Investment Company Act of 1940, as amended, subject to certain limitations.

The System's international equity investments may not exceed 10.0% of the System's assets including emerging market equity securities. To the extent the 10.0% limitation is exceeded, the System's international equity securities may be invested in Leeway investments (which amount shall not exceed 25.0% of System assets).

The maximum amount invested within the System's equities, including domestic and international, may not exceed, in any one year, 15.0% of System assets or 70.0% of the total System assets in aggregate. The System may not own more than 5.0% of the total issued and outstanding equity securities of any one corporation.

The System's real estate investments will be diversified across geographic regions to allow for competitive portfolio performance in the event of a temporary weakness in any one region and to allow for differing urban and suburban market trends within any region. The System may invest in certain conventional mortgages constituting a first lien upon real property located in the U.S. pursuant to statute subject to certain provisions. The value of all real property held by the System shall not exceed ten percent (10.0%) of System assets and the cost of each parcel of real property shall not exceed two percent (2.0%) of the System's assets.

Alternative investments are made pursuant to the Leeway Clause of the RSSL.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of the investment. The System is exposed to interest rate risk at June 30, 2023 and 2022 as follows:

	2023		2022	
Investment type	**Fair value**	**Duration (in years)**	**Fair value**	**Duration (in years)**
Mortgages	$ 2,624,241	1.510	$ 3,200,577	1.840
Cash equivalents*	1,762,024	0.068	2,269,278	0.068
Domestic fixed income	18,091,466	4.298	18,271,844	4.334
CMBS	2,370,989	0.465	2,271,723	0.496
High-yield bonds	1,359,492	0.219	958,586	0.207
Global bonds	2,714,220	6.720	2,950,256	6.810
Total fair value	$ 26,298,191		$ 26,721,687	
Cash equivalents and fixed income portfolio modified duration		6.850		4.810

*Commercial paper, negotiable certificates of deposit and U.S. Treasury, agency, supranational and floating debt issues.

Duration is a measure of a debt investment's exposure to fair value changes arising from changing interest rates. The greater the duration, the greater its price volatility will be in response to a change in interest rates and vice versa.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022
(dollars in thousands)

(d) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The System has exposure through global and international holdings in commingled investment trust funds and separate accounts, global real estate investment trusts (REITs), global bonds, and alternatives. The "alternatives" represent private equity and real estate investments denominated in foreign currency. With respect to global bond investments, the majority of currency risk inherent in non-U.S. dollar denominated bonds owned by the System in a separate account is hedged away by the managers through currency forwards. The System has an exposure to foreign currency fluctuation at June 30, 2023 and 2022 as follows:

	2023		2022	
	Equity Securities and REITs	Alternatives, Cash, and Global Bonds	Equity Securities and REITs	Alternatives, Cash, and Global Bonds
Currency:				
Euro	$ 4,826,322	$ 1,828,225	$ 4,405,253	$ 1,963,947
Japanese Yen	3,185,753	134,881	3,217,012	242,259
British Pound Sterling	2,047,293	908,112	2,100,950	685,158
Canadian Dollar	1,329,407	70,136	1,536,996	85,709
Swiss Franc	1,131,053	7,190	1,230,812	6,720
Hong Kong Dollar	1,078,430	29	1,369,233	84
Australian Dollar	862,285	198,436	959,661	213,899
China Renminbi	1,014,328	59	1,176,177	—
New Taiwan Dollar	859,938	(21)	831,925	23
Indian Rupee	782,723	0	606,821	9
South Korean Won	692,837	45,476	689,169	40,792
Swedish Krona	495,057	14,010	525,244	6,657
Danish Krone	418,145	1,844	404,039	2,059
Brazilian Real	323,093	12,226	308,605	7,139
South African Rand	166,258	21,751	212,651	16,724
Other	1,225,433	101,338	1,423,659	93,522
Totals	$ 20,438,355	$ 3,343,692	$ 20,998,207	$ 3,364,701

(e) Securities Lending Transactions

The Retirement and Social Security Law authorizes the System to enter into agreements to loan securities. Agreements to lend a security must be with a broker dealer or with New York State or nationally chartered banks and must not exceed a period of one year. The market value of securities loaned may not exceed 20% of the market value of the System's invested assets. The System lends domestic and international bonds and equities. Initial collateral of at least 102% of the market value of loaned securities is received from the borrower for domestic securities and 105% for international securities. Securities on loan are marked to market daily and collateral for the loan is required not to fall below 100%. The fair value of invested cash collateral is reported as an asset and cash collateral due to borrowers is reported as a liability on the Statement of Fiduciary Net Position. The fair value of the cash collateral invested exceeded the amount the System owed borrowers by approximately $1.8 million as of June 30, 2023 and $1.9 million as of June 30, 2022. Non-cash collateral is not reported on the Statement of Fiduciary Net Position as the System does not have the ability to pledge or sell collateral securities without a borrower default. For each year end, the System had limited credit risk exposure to borrowers because the amounts the System owes the borrowers (the collateral) exceeds the amounts the borrowers owe the System (the loaned securities).

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

As of June 30, 2023 and 2022, JP Morgan Chase Bank, N.A. (JP Morgan) acted as agent for the domestic equity and fixed income securities lending program while Bank of New York Mellon (BNY Mellon) acted as agent for the international equity, global bond, and global equity securities lending program. Under the terms of the contracts with the lending agents, the System is fully indemnified against losses resulting from the failure of the borrowers to return the loaned securities (to the extent the collateral is inadequate to replace the loaned securities) or failure to pay the System for income distributions by the securities' issuers while the securities are on loan. There were no significant violations of legal or contractual provisions, no borrower or lending agent defaults, and no material recoveries of prior period losses during the year. The majority of securities on loan can be recalled by the System on demand or returned by the borrower at any time. Cash collateral is invested by the System's lending agents, in short term investment funds managed by the agent lenders pursuant to System approved investment guidelines. There is no direct match of the maturities of the collateral investments with the maturities of the securities loans. Investments are restricted to issuers with a short-term credit rating issued by Standard & Poor's and Moody's Investors Service, not lower than A- 1/P -1 or long-term ratings not lower than A/A2, respectively, or the equivalent thereof. Non-cash collateral received is limited to high quality U.S. treasuries, agency securities and agency mortgage-backed securities. At June 30, 2023 and 2022, the average effective duration of the fund managed by JP Morgan was 9 and 4 days respectively and that managed by BNY Mellon was 4 days for both. Security loans and related collateral investments are monitored daily to ensure compliance with collateral requirements, limitations, and cash collateral investment guidelines.

Securities Lending Program	2023	2022
Fair value of securities on loan — cash collateral	$ 334,223	$ 688,474
Fair value of securities on loan — non-cash collateral	824,246	853,622
Total fair value of securities on loan	$ 1,158,469	$ 1,542,096
Fair value of liabilities to borrowers — cash collateral	$ 350,249	$ 707,887
Fair value of liabilities to borrowers — non-cash collateral	841,887	876,174
Total collateral due to borrowers	$ 1,192,136	$ 1,584,061
Fair value of cash collateral invested by System	$ 352,050	$ 709,827
Fair value of non-cash collateral held by System	841,887	876,174
Total collateral invested and held by the System	$ 1,193,937	$ 1,586,001

(6) Fair Value Measurement

NYSTRS' investments measured and reported at fair value are classified according to the following hierarchy in which the levels are based on the nature of inputs used to measure the fair value of the investment:

Level 1 – Investments' fair values based on prices quoted in active markets for identical assets.

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

Level 3 – Investments' fair values based upon unobservable inputs.

The categorization of investments within the hierarchy above is based solely upon the objectivity of the inputs used in the measurement of fair value of the investments and does not reflect the level of risk associated with the investments.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022
(dollars in thousands)

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

NYSTRS' investments and securities lending collateral reinvested have the following fair value measurements or net asset values (NAV) as of June 30, 2023 and 2022, respectively:

		Fair Value Measurements Using		
Investments by Fair Value Level	**June 30, 2023**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Domestic equity	$ 45,821,761	$ 45,816,070	$ 5,635	$ 56
International equity	17,706,996	17,596,650	109,479	867
Global equity	4,950,959	4,886,258	64,193	508
Real estate equity:				
Direct equity real estate and joint venture investments	5,193,752	—	—	5,193,752
Real estate alternative investments	312,177	—	—	312,177
Domestic REIT	2,158,483	2,031,426	127,057	—
Global REIT	953,986	944,989	8,995	2
Total real estate equity	$ 8,618,398	$ 2,976,415	$ 136,052	$ 5,505,931
Domestic fixed income	18,091,466	146,789	17,944,677	—
High-yield bonds	1,359,125	581	1,358,472	72
Global bonds	2,684,126	(3,851)	2,687,977	—
Real estate debt:				
Domestic commercial mortgage backed securities	2,370,989	—	2,370,988	1
Real estate alternative investments	574,830	—	—	574,830
Mortgages	2,624,241	—	—	2,624,241
Total real estate debt	$ 5,570,060	$ —	$ 2,370,988	$ 3,199,072
Cash Equivalents*	1,745,825	—	1,745,825	—
Securities Lending Collateral, Invested	352,050	—	350,721	1,329
Total investments by fair value level	$ 106,900,766	$ 71,418,912	$ 26,774,019	$ 8,707,835

*Commercial paper, negotiable certificates of deposit and U.S. Treasury, agency, supranational and floating debt issues.

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

Investments Measured at the NAV	June 30, 2023	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Commingled international equity funds (1)	949,615	—	Daily or Monthly	5-30 days
Privately held real estate investment trusts (2)	1,522,739	85,000	NA	NA
Real estate equity funds (3)				
Closed-end funds	5,119,291	4,088,706	NA	NA
Open-end funds	1,205,272	42,198	Quarterly	30-120 days
Private equity closed-end funds (4)	15,416,611	6,352,804		
Real estate debt funds (5)				
Closed-end funds	1,855,743	1,683,381	NA	NA
Open-end funds	105,258	—	Quarterly	90 days
Private debt closed-end funds (6)	2,045,645	1,230,603	NA	NA
Total investments measured at the NAV	$ 28,220,174	$ 13,482,692		
Investment related cash, receivables and payables not included in above	57,079			
Total investments and securities lending collateral reinvested	$ 135,178,019			

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

Investments by Fair Value Level	June 30, 2022	Fair Value Measurements Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Domestic equity	$ 41,961,610	$ 41,958,863	$ 2,646	$ 101
International equity	18,598,195	18,438,864	157,797	1,534
Global equity	4,264,158	4,129,267	134,852	39
Real estate equity:				
Direct equity real estate and joint venture investments	4,639,383	—	—	4,639,383
Real estate alternative investments	283,439	—	—	283,439
Domestic REIT	2,681,606	2,470,522	211,084	—
Global REIT	1,341,873	1,327,542	13,802	529
Total real estate equity	$ 8,946,301	$ 3,798,064	$ 224,886	$ 4,923,351
Domestic fixed income	18,271,844	100,966	18,170,878	—
High-yield bonds	958,564	1,213	956,433	918
Global bonds	2,920,498	39,718	2,880,780	—
Real estate debt:				
Domestic commercial mortgage backed securities	2,271,723	28,674	2,243,049	—
Real estate alternative investments	559,903	—	—	559,903
Mortgages	3,200,577	—	—	3,200,577
Total real estate debt	$ 6,032,203	$ 28,674	$ 2,243,049	$ 3,760,480
Cash Equivalents*	2,257,952	—	2,257,952	—
Securities Lending Collateral, Invested	709,827	—	708,364	1,463
Total investments by fair value level	$ 104,921,152	$ 68,495,629	$ 27,737,637	$ 8,687,886

*Commercial paper, negotiable certificates of deposit and U.S. Treasury, agency, supranational and floating debt issues.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

Investments Measured at the NAV	June 30, 2022	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Commingled international equity funds (1)	813,333	—	Daily or Monthly	5-30 days
Privately held real estate investment trusts (2)	1,524,520	85,000	NA	NA
Real estate equity funds (3)				
Closed-end funds	4,687,493	4,242,949	NA	NA
Open-end funds	1,331,798	86,707	Quarterly	30-120 days
Private equity closed-end funds (4)	14,073,681	6,449,962		
Real estate debt funds (5)				
Closed-end funds	1,584,217	2,051,393	NA	NA
Open-end funds	114,456	—	Quarterly	90 days
Private debt closed-end funds (6)	1,424,443	1,539,290	NA	NA
Total investments measured at the NAV	$ 25,553,941	$ 14,455,301		
Investment related cash, receivables and payables not included in above	94,917			
Total investments and securities lending collateral reinvested	$ 130,570,010			

(1) Commingled international equity funds consist of three commingled investment vehicles which invest primarily in publicly traded global equity securities. The funds are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

(2) Privately held real estate investment trusts consist of one trust which primarily invest in U.S. commercial real estate. The fair value of the investment in this group have been determined using the net asset value of units held at the end of the period based upon the property appraisals of the underlying assets. The trust is perpetual in nature, making periodic operating distributions to shareholders. Capital calls and redemptions are determined by a unanimous vote of the trust board members.

(3) Real estate equity funds invest primarily in U.S. commercial real estate with some investing in global commercial real estate. The investment structures are either open-end funds or closed-end funds. In these structures, NYSTRS commits funds along with other investors to create a pool of capital that the fund manager then invests according to an agreed upon strategy such as core, value add or opportunistic. The fair values of the investments in this group have been determined using the NAV per share (or its equivalent) of the Plan's ownership interest in partners' capital. Open-end funds may be redeemed on a quarterly basis with notice. Closed-end funds are not redeemable; however, distributions will be received as the underlying investments of the funds are liquidated, which on average can occur over the span of eight to ten years after final closing.

(4) Private equity funds include buyout, growth equity, venture capital, co-investment, and turnaround/restructuring strategies. These investments are accessed through primary commitments to commingled funds, secondary funds, fund of funds and separately managed accounts. The fair values have been determined using the NAV per share (or its equivalent) of the Plan's ownership interest in partners' capital.

(5) Real estate debt funds invest primarily in transitional first mortgage, mezzanine, and subordinate debt positions. The fair values of the investments in this group have been determined using the NAV per share (or its equivalent) of the Plan's ownership, interest in partners' capital. Open-end funds may be redeemed on a quarterly basis with notice.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

Closed-end funds are not redeemable; however, distributions will be received as the underlying investments of the funds are liquidated, which on average can occur over the span of eight to ten years after final closing.

(6) Private debt funds consist of direct lending, mezzanine, distressed and special situations. These investments are accessed through primary commitments to closed-end commingled funds and evergreen funds. The fair values have been determined using the NAV per share (or its equivalent) of the Plan's ownership interest in partners' capital.

(7) Net Pension Liability (Asset) of NYSTRS Participating School Districts

The components of the net pension liability (asset) of the NYSTRS participating school districts at June 30, 2023 and 2022 were as follows:

	2023	2022
Total pension liability	$ 138,365,122	$ 133,883,474
Plan fiduciary net position	137,221,537	131,964,582
School districts' net pension liability (asset)	$ 1,143,585	$ 1,918,892
Plan fiduciary net position as a percentage of total pension liability	99.2%	98.6%

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

(a) Actuarial Methods and Assumptions

The total pension liability at June 30, 2023 was determined using an actuarial valuation as of June 30, 2022, with update procedures used to roll forward the total pension liability to June 30, 2023. The total pension liability at June 30, 2022 was determined using an actuarial valuation as of June 30, 2021, with update procedures used to roll forward the total pension liability to June 30, 2022. These actuarial valuations applied the following actuarial methods and assumptions:

Actuarial cost method	Entry age normal
Inflation	2.40% for June 30, 2023 and June 20, 2022
Projected salary increases	Rates of increase differ based on service
	They have been calculated based upon recent NYSTRS member experience.

Service	Rate
5	5.18%
15	3.64
25	2.50
35	1.95

Projected COLAs	1.3% for June 30, 2023 and June 30, 2022
Investment rate of return	6.95% for June 30, 2023 and June 30, 2022 measurement of total pension liability. The rates are compounded annually, net of pension plan investment expense, including inflation.
Mortality	Annuitant and active mortality rates are based on plan member experience, with adjustments for mortality improvements based on Society of Actuaries Scale MP2021 for June 30, 2023 and June 30, 2022, applied on a generational basis.
Experience Period	Assumptions were computed by the Actuary and were adopted by the Retirement Board in October 2021. They are based upon recent NYSTRS member experience. Detailed assumption information may be found in NYSTRS' annual Actuarial Valuation Report.

The long-term expected rate of return on pension plan investments was determined in accordance with Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* and generally accepted accounting principles. ASOP No. 27 provides guidance on the selection of an appropriate assumed investment rate of return. Consideration was given to expected future real rates of return (expected returns, net of pension plan investment expense and inflation) for each major asset class as well as historical investment data and plan performance.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

The Long-Term Expected Real Rates of Return are presented by asset allocation classification. Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of the measurement date of June 30, 2023 and June 30, 2022 (see the discussion of the pension plan's investment policy) are summarized in the following table:

Long-Term Expected Real Rate of Return*		
Asset Class	**2023**	**2022**
Domestic equity	6.8%	6.5%
International equity	7.6	7.2
Global equity	7.2	6.9
Real estate equity	6.3	6.2
Private equity	10.1	9.9
Domestic fixed income	2.2	1.1
Global bonds	1.6	0.6
Private debt	6.0	5.3
Real estate debt	3.2	2.4
High-yield bonds	4.4	3.3
Cash equivalents	0.3	(0.3)

**Real rates of return are net of pension plan investment expenses and long-term inflation expectations.*

(b) *Discount Rate*

The discount rate used to measure the total pension liability was 6.95% as of June 30, 2023 and June 30, 2022. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from school districts will be made at statutorily required rates, actuarially determined. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(c) *Sensitivity of the Net Pension Liability (Asset) to Changes in the Discount Rate*

The following presents the net pension liability (asset) of the NYSTRS participating school districts calculated using the discount rate of 6.95% for June 30, 2023 and 6.95% for June 30, 2022, as well as what the school districts' net pension liability (asset) would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

System's Net Pension Liability (Asset)			
	1% Decrease (5.95%)	Current Discount Rate (6.95%)	1% Increase (7.95%)
June 30, 2023	$ $17,417,380	$ $1,143,585	$ $(12,543,380)
June 30, 2022	$ $17,693,081	$ $1,918,892	$ $(11,347,098)

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

(8) Commitments and Contingencies

The System, in the normal course of business, enters into commitments with off-balance-sheet risk. The System adheres to the same credit policies, financial and administrative controls, and risk limiting and monitoring procedures for commitments as for on-balance-sheet investments.

The commitments for loans on real estate or purchases of real estate are subject to satisfactory appraisals prior to closing. Once investments are made, the System's exposure to potential loss is determined by the value of the underlying collateral.

The future financial commitments outstanding at June 30, 2023 and 2022, respectively, were: real estate and real estate alternative investments of $4.4 billion and $4.5 billion; mortgages and real estate debt funds of $1.7 billion and $2.2 billion; CMBS $13.8 million and $123.9 million; private equity $6.4 billion and $6.4 billion; and private debt investments of $1.2 billion and $1.5 billion.

(9) System Employees' Pension Plan

(a) Plan Description

As an employer, the System participates in ERS, a cost-sharing, multiple-employer defined benefit pension plan which falls under NYSLRS and is administered by the Comptroller of the State of New York. ERS provides retirement, disability, withdrawal, and death benefits to plan members and beneficiaries as authorized by the RSSL of the State of New York. Benefits are guaranteed by the state Constitution and cannot be diminished or impaired. Benefits can be reduced for future members only by an act of the state Legislature. NYSLRS issues a publicly available financial report that contains financial statements and required supplementary information for ERS. The report may be obtained on the Comptroller's website at www.osc.state.ny.us/pension.

(b) Benefits

The classes of employees covered under ERS range from Tiers 1 – 6. In order to be eligible for retirement, all members must be at least age 55 and have a minimum of five years of service. There is no minimum service requirement for Tier 1 members. Generally, all members are eligible for early retirement at age 55 with a benefit calculation of 1.67% of final average salary. Benefit calculations for Tier 1 – 5 members with greater than 20 years of service credit are 2.0% of final average salary. Tier 3 – 5 members are eligible for an additional 1.5% of final average salary applied to each year of service over 30 years. Generally, Tier 6 member retirement benefits are 1.8% of final average salary with 20 years of service, with an additional 2.0% of final average salary for each year of service over 20 years.

For Tiers 1 – 5, final average salary is the average of the wages earned in the three highest consecutive years of employment. Tier 6 final average salary is the average of the wages earned in the five highest consecutive years of employment.

Other benefits provided under ERS include ordinary disability, accidental disability and post-retirement benefit increases.

(c) Funding Policy

Funding of ERS is accomplished through member and employer contributions and investment earnings, according to the New York State RSSL.

Plan members are required to contribute between 0% and 6% throughout active service. Employers are required to contribute at an actuarially determined rate. An average employer contribution rate for the tiers of 11.4% and 16.1% was applicable to the annual covered payroll for the years ended March 31, 2023 and March 31, 2022, respectively. The

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022
(dollars in thousands)

contributions paid to ERS during the System's years ended June 30, 2023 and 2022 were $3.9 million and $5.4 million, respectively, and were 100% of the contributions required.

(d) Pension Liabilities, Pension Expense, Deferred Outflows of Resources, and Deferred Inflows of Resources Related to Pensions

At June 30, 2023 and 2022, the System reported a liability of $24.8 million and negative $9.9 million, respectively, for its proportionate share of the ERS net pension liability measured as of March 31, 2023 and 2022, respectively. The balance is reported within "other liabilities."

NYSTRS' proportion of the ERS net pension liability was based on the projection of the long-term share of contributions to ERS relative to the projected contributions of all participating employers, actuarially determined. At March 31, 2023, the System's proportion was 0.1158665% and was 0.1207750% at March 31, 2022.

For the years ended June 30, 2023 and 2022, the System recognized pension expense of $8.8 million and $0.6 million, respectively.

Deferred outflows of resources were $15.4 million and $18.1 million at June 30, 2023 and 2022, respectively. Deferred inflows of resources were $1.3 million and $33.8 million at June 30, 2023 and 2022, respectively.

The following presents a summary of deferred outflows of resources and deferred inflows of resources at June 30, 2023 and 2022:

	2023	2022
Deferred outflows of resources:		
Difference between expected and actual experience	$ 2,646	$ 748
Changes of assumptions	12,067	16,477
Changes in proportion and differences between employer contributions and proportionate share of contributions	654	828
	$ 15,367	$ 18,053
Deferred inflows of resources:		
Difference between expected and actual experience	$ 698	$ 970
Net differences between projected and actual investment earnings on pension plan investments	146	32,329
Changes of assumptions	133	278
Changes in proportion and differences between employer contributions and proportionate share of contributions	328	191
	$ 1,305	$ 33,768

Amounts reported as deferred outflows of resources and deferred inflows of resources at June 30, 2023 related to pensions will be recognized in pension expense as follows:

Year Ended June 30:	
2024	$ 3,373
2025	(1,225)
2026	5,199
2027	6,715

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

(e) Actuarial Assumptions

The total pension liability for the March 31, 2023 measurement date was determined by using an actuarial valuation as of April 1, 2022, with update procedures used to roll forward the total pension liability to March 31, 2023. The total pension liability for the March 31, 2022 measurement date was determined by using an actuarial valuation as of April 1, 2021, with update procedures used to roll forward the total pension liability to March 31, 2022. These actuarial valuations applied the following actuarial assumptions

	2023	2022
Inflation	2.9%	2.7%
Salary scale	4.4%, indexed by service	4.4%, indexed by service
Investment rate of return, including inflation	5.9% compounded annually, net of investment expenses	5.9% compounded annually, net of investment expenses
Cost of living adjustments	1.5% annually	1.4% annually
Decrements	Developed from the Plan's experience study of the period April 1, 2015 through March 31, 2020	Developed from the Plan's experience study of the period April 1, 2015 through March 31, 2020
Mortality improvement	Society of Actuaries Scale MP-2021	Society of Actuaries Scale MP-2020

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected return, net of 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 future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class for the measurement period March 31, 2023 and 2022 are summarized in the following table:

	2023		2022	
Asset class	Target allocation	Long-term expected real rate of return	Target allocation	Long-term expected real rate of return
Domestic equity	32 %	4.30 %	32 %	3.30 %
International equity	15	6.85	15	5.85
Private equity	10	7.50	10	6.50
Real estate	9	4.60	9	5.00
Opportunistic/ARS portfolio	3	5.38	3	4.10
Credit	4	5.43	4	3.78
Real assets	3	5.84	3	5.58
Fixed income	23	1.50	23	—
Cash	1	—	1	(1.00)
	100 %		100 %	

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

(f) Discount Rate

The discount rate used to calculate the total pension liability was 5.9% for years ending March 31, 2023 and 2022. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially determined. Based upon those assumptions, the ERS's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(g) Sensitivity of the System's Proportionate Share of the ERS Net Pension Liability

The following presents the System's proportionate share of the ERS net pension liability calculated using the discount rate of 5.9% for the years ending June 30, 2023 and 2022, as well as what the System's proportionate share of the ERS net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

System's net pension liability (asset)			
	1% Decrease (4.9%)	Current discount rate (5.9%)	1% Increase (6.9%)
June 30, 2023	$ 60,043	$ 24,846	$ (4,565)
June 30, 2022	$ 25,413	$ (9,873)	$ (39,387)

(10) System Employees' Other Post-Employment Benefits

(a) Plan Description

The System's Board established the Trust in 2008 to provide post-employment health insurance benefits. Contributions from the System to the Trust are irrevocable.

The Trust is a defined-benefit, single-employer other post-employment benefit (OPEB) plan that accumulates resources to pay current and future health insurance premiums for retired System employees and beneficiaries. The Trust is administered by a 10-member Board whose members are the same as the System Board. The Trust is a legally separate entity with standalone financial statements and required supplementary information, which can be found on the System's website at www.nystrs.org. The fiduciary net position of the OPEB and changes in fiduciary net position of the OPEB have been determined on the same basis as they are reported in the financial statements of the Trust.

(b) Benefits

Pursuant to contractual agreement and policy, the System provides post-employment healthcare benefits to eligible System employees who retire from the System and reimburses Medicare eligible retirees for their Medicare Part B premiums. The System is a voluntary participating employer in the New York State Health Insurance Program (NYSHIP), administered by the State of New York. Article XI of the New York State Civil Service Law assigns the authority to NYSHIP to establish and amend the benefit provisions of the plan and to establish maximum obligations of the plan members to contribute to the plan. The System's Board is authorized to establish the contribution rates of System employees and retirees up to those set by Civil Service Law, and they are set as part of the collective bargaining process.

In order to be eligible, employees must have worked for at least 10 years for the System, retire directly from System employment, and commence receipt of their pension from ERS. Dependents may also be covered.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

System retirees are required to contribute toward the cost of their coverage. Employees who retire on or after July 1, 1985 contribute an amount equal to 14.0% of the premium up to the premium of the Empire Plan option. If more expensive coverage is elected, the retiree pays 14.0% of the Empire Plan option and 100% of the difference between the two.

Employees who retire on or after April 1, 1991, are eligible to have accumulated unused sick leave converted into a credit to offset their contribution requirement.

As of June 30, 2023, 689 participants including 371 current employees and 318 retired and/or spouses of retired employees participated in the healthcare plan. As of June 30, 2022, 676 participants including 365 current employees and 311 retired and/or spouses of retired employees participated in the healthcare plan.

(c) Employer Contribution

The employer contribution, or funding, of the System's OPEB obligation is at the discretion of the System's management and Board. The System's current policy is to prefund benefits by contributing an amount that is, at a minimum, equal to the ADC. At June 30, 2023 and 2022, the Trust recognized contributions of $6.4 million and $6.0 million, respectively, which were approximately 100.0% and 112.4% of the ADC or 18.0% and 17.0% of covered payroll, respectively.

(d) OPEB Liabilities, OPEB Expense, Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

At June 30, 2023 and 2022, the System reported a net OPEB liability of $48.8 million and $34.8 million, respectively. The June 30, 2023 OPEB liability was determined using an actuarial valuation as of July 1, 2021, with update procedures used to roll forward the total OPEB liability to the measurement date of June 30, 2022. The total OPEB liability at June 30, 2022 was determined using an actuarial valuation as of July 1, 2020, with update procedures used to roll forward the total OPEB liability to June 30, 2021.

For the years ended June 30, 2023 and 2022, the System recognized OPEB expense of $5.1 million and $2.8 million, respectively.

Deferred outflows of resources were $15.1 million for June 30, 2023 and $10.7 million for June 30, 2022. Deferred inflows of resources were $2.2 million at June 30, 2023 and $13.2 million at June 30, 2022.

The following presents a summary of deferred outflows of resources and deferred inflows of resources at June 30, 2023 and 2022:

Reporting Date	2023	2022
Deferred outflows of resources:		
Difference between expected and actual experience	$ 1,842	$ 1,459
Changes in assumptions	2,387	3,244
Net difference between projected and actual earnings	4,480	—
Contributions subsequent to the measurement date	6,394	6,000
	$ 15,103	$ 10,703
Deferred inflows of resources:		
Difference between expected and actual experience	$ 240	$ 724
Changes in assumptions	2,009	3,500
Net difference between projected and actual earnings	—	9,006
	$ 2,249	$ 13,230

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

Amounts reported as deferred outflows and deferred inflows of resources will be recognized in OPEB expense as follows:

Year ended June 30:

2024	$	924
2025	$	1,500
2026	$	1,163
2027	$	2,728
2028	$	145
Thereafter	$	—

(e) Actuarial Assumptions

	2023	2022
Valuation date	July 1, 2021	July 1, 2020
Investment rate of return	6.50%	6.50%
Payroll increase rate	3.00%	3.00%
Salary increase rate	Varies by service from 3.00%-8.00%	Varies by service from 3.00%-8.00%
Maximum retiree contribution based on salary at retirement	Increase $100 per year after 2025	Increase $100 per year after 2025
Healthcare cost and premium trend rates:		
Non-Medicare	7.40% graded to 4.34% over 19 years	7.70% graded to 4.34% over 20 years
Medicare	8.45% graded to 4.34% over 19 years	8.80% graded to 4.34% over 20 years
Medicare Part B	3.50%	3.50%
Blended Medicare	7.41% graded to 4.16% over 19 years	7.69% graded to 4.16% over 20 years
Pre-retirement mortality	The Pub-2010 General Employee Headcount-Weighted Mortality table [PubG.H-2010 Employee] as published by the SOA with an 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. All pre-retirement deaths are assumed ordinary deaths.	The Pub-2010 General Employee Headcount-Weighted Mortality table (PubG.H-2010 Employee) as published by the Society of Actuaries (SOA) with an 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. All pre-retirement deaths are assumed ordinary deaths

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022

(dollars in thousands)

Post-retirement mortality	• **Healthy Retirees:** The Pub-2010 General Healthy Retiree Headcount-Weighted Mortality table [PubG.H-2010 Healthy Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. • **Beneficiaries:** Pub-2010 General Contingent Survivors Headcount-Weighted Mortality [PubG.H-2010 Contingent Survivors] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. • **Disabled Retirees:** The Pub-2010 General Disabled Retiree Headcount-Weighted Mortality table [PubG.H-2010 Disabled Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.	• **Healthy Retirees:** The Pub-2010 General Healthy Retiree Headcount-Weighted Mortality table (PubG.H-2010 Healthy Retiree) as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. • **Beneficiaries:** Pub-2010 General Contingent Survivors Headcount-Weighted Mortality (PubG.H-2010 Contingent Survivors) as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. • **Disabled Retirees:** The Pub-2010 General Disabled Retiree Headcount-Weighted Mortality table (PubG.H-2010 Disabled Retiree) as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.
Banked sick leave	Participants are assumed to accrue 4.74 days of unused sick leave per year and use 100% of accumulated leave at retirement for the sick leave offset.	Participants are assumed to accrue 4.74 days of unused sick leave per year and use 100% of accumulated leave at retirement for the sick leave offset.

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best estimate ranges of expected future rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of June 30, 2022 and June 30, 2021 are summarized in the following table:

NOTES TO FINANCIAL STATEMENTS *(continued)*

June 30, 2023 and 2022
(dollars in thousands)

Long-Term Expected Real Rate of Return*		
Asset Class	**2022**	**2021**
Domestic equity	5.62 %	6.06 %
International equity	6.49	6.83
Domestic fixed income	-0.25	0.12
Cash equivalents	-0.69	-0.32

* Real rates of return are net of the long-term inflation assumption of 2.60% for 2021 and 2020.

(f) Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates

Healthcare cost trend rates measure the anticipated overall rate at which health plan costs are expected to increase in future years. The following presents the net OPEB liability of the System using the healthcare cost trend rates presented previously in the actuarial assumptions, as well as what the System's net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the applied healthcare cost trend rates:

System's Net OPEB Liability			
Reporting Date	**1% Decrease**	**Current Healthcare Cost Trend Rates**	**1% Increase**
June 30, 2023	$ 35,496	$ 48,847	$ 65,199
June 30, 2022	22,218	34,792	50,200

(g) Discount Rate

The discount rate used to measure the total pension liability as of June 30, 2023 and 2022 was 6.50%. The projection of cash flows used to determine the discount rate assumed that contributions would be made at rates equal to the actuarially determined contribution rates. Based on these assumptions, the OPEB Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan participants. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

(h) Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

The following presents the net OPEB liability of the System as well as what the System's net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the applied rate:

System's Net OPEB Liability			
Reporting Date	**1% Decrease**	**Current Discount Rate**	**1% Increase**
June 30, 2023	$ 63,460	$ 48,847	$ 36,788
June 30, 2022	48,613	34,792	23,387

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

(11) Risk Management

The System is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; job-related illnesses or injuries to employees; and certain natural disasters for which the System carries commercial insurance. There were no settlements in the past three years that exceeded coverage. Management of the System believes there would be no material adverse effect on the financial statements as a result of the outcome of these matters if they occur.

NOTES TO FINANCIAL STATEMENTS *(continued)*
June 30, 2023 and 2022
(dollars in thousands)

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REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN THE SCHOOL DISTRICTS' NET PENSION LIABILITY (ASSET) (UNAUDITED)

(Last Ten Fiscal Years)

(dollars in thousands)

	2023	2022	2021	2020	2019
Total pension liability					
Service cost	$ 1,809,524	$ 1,751,453	$ 1,755,405	$ 1,563,222	$ 1,528,402
Interest	9,259,036	8,959,475	8,752,345	8,418,885	8,189,405
Changes of benefit terms	12,101	10,091	—	678	815
Differences between expected and actual experience	1,635,898	251,733	558,905	1,169,842	753,802
Changes of assumptions	—	69,931	4,241,884	(285,424)	(1,392,886)
Benefit payments, incl. refunds of member contributions	(8,234,911)	(7,978,624)	(7,731,900)	(7,503,901)	(7,307,318)
Net change in total pension liability	4,481,648	3,064,059	7,576,639	3,363,302	1,772,220
Total pension liability — beginning	133,883,474	130,819,415	123,242,776	119,879,474	118,107,254
Total pension liability — ending (a)	$ 138,365,122	$ 133,883,474	$ 130,819,415	$ 123,242,776	$ 119,879,474
Plan fiduciary net position					
Contributions — employer	$ 1,899,885	$ 1,735,255	$ 1,618,437	$ 1,504,688	$ 1,774,646
Contributions — member	221,152	190,853	159,874	145,034	136,610
Net investment income	11,439,286	(10,078,814)	33,668,008	3,923,633	8,023,180
Benefit payments, incl. refunds of member contributions	(8,234,911)	(7,978,624)	(7,731,900)	(7,503,901)	(7,307,318)
Administrative expenses	(79,298)	(61,230)	(55,492)	(71,385)	(74,242)
Other	10,841	8,685	10,025	3,955	9,087
Net change in plan fiduciary net position	5,256,955	(16,183,875)	27,668,952	(1,997,976)	2,561,963
Plan fiduciary net position — beginning	131,964,582	148,148,457	120,479,505	122,477,481	119,915,518
Cumulative effect of change in accounting principle	—	—	—	—	—
Beginning balance as restated	131,964,582	148,148,457	120,479,505	122,477,481	119,915,518
Plan fiduciary net position — ending (b)	$ 137,221,537	$ 131,964,582	$ 148,148,457	$ 120,479,505	$ 122,477,481
School districts' net pension liability (asset) — ending (a) — (b)	$ 1,143,585	$ 1,918,892	$ (17,329,042)	$ 2,763,271	$ (2,598,007)

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF CHANGES IN THE SCHOOL DISTRICTS' NET PENSION LIABILITY (ASSET) (UNAUDITED) *(continued)*

(Last Ten Fiscal Years)

(dollars in thousands)

	2018	2017	2016	2015	2014
Total pension liability					
Service cost	$ 1,319,513	$ 1,292,143	$ 1,181,609	$ 1,396,824	$ 1,397,547
Interest	8,224,221	7,988,167	7,809,566	7,611,757	7,434,764
Changes of benefit terms	—	—	—	—	—
Differences between expected and actual	964,258	727,895	(111,652)	(161,043)	(181,834)
Changes of assumptions	—	3,045,909	7,085,423	—	—
Benefit payments, incl. refunds of member contributions	(7,108,999)	(6,923,037)	(6,719,866)	(6,531,140)	(6,343,538)
Net change in total pension liability	3,398,993	6,131,077	9,245,080	2,316,398	2,306,939
Total pension liability — beginning	114,708,261	108,577,184	99,332,104	97,015,706	94,708,767
Total pension liability — ending (a)	$ 118,107,254	$ 114,708,261	$ 108,577,184	$ 99,332,104	$ 97,015,706
Plan fiduciary net position					
Contributions — employer	$ 1,597,139	$ 1,857,359	$ 2,046,562	$ 2,633,682	$ 2,400,386
Contributions — member	131,595	129,770	124,587	119,411	120,762
Net investment income	9,928,011	12,951,892	2,392,354	5,400,265	16,664,703
Benefit payments, incl. refunds of member contributions	(7,108,999)	(6,923,037)	(6,719,866)	(6,531,140)	(6,343,538)
Administrative expenses	(60,610)	(61,611)	(60,426)	(56,948)	(55,616)
Other	9,278	7,845	4,014	3,213	1,365
Net change in plan fiduciary net position	4,496,414	7,962,218	(2,212,775)	1,568,483	12,788,062
Plan fiduciary net position — beginning	115,468,360	107,506,142	109,718,917	108,155,083	95,367,021
Cumulative effect of change in accounting principle	(49,256)	—	—	(4,649)	—
Beginning balance as restated	115,419,104	107,506,142	109,718,917	108,150,434	95,367,021
Plan fiduciary net position — ending (b)	$ 119,915,518	$ 115,468,360	$ 107,506,142	$ 109,718,917	$ 108,155,083
School districts' net pension liability (asset) — ending (a) — (b)	$ (1,808,264)	$ (760,099)	$ 1,071,042	$ (10,386,813)	$ (11,139,377)

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF THE SCHOOL DISTRICTS' NET PENSION LIABILITY (ASSET) (UNAUDITED)

(Last Ten Fiscal Years)

(dollars in thousands)

	2023	2022	2021	2020	2019
Total pension liability	$ 138,365,122	$ 133,883,474	$ 130,819,415	$ 123,242,776	$ 119,879,474
Plan fiduciary net position	137,221,537	131,964,582	148,148,457	120,479,505	122,477,481
School districts' net pension liability (asset)	$ 1,143,585	$ 1,918,892	$ (17,329,042)	$ 2,763,271	$ (2,598,007)
Plan fiduciary net position as a percentage of the total pension liability	99.2%	98.6%	113.2%	97.8%	102.2%
Covered payroll	$ 18,469,130	$ 17,715,273	$ 16,973,207	$ 16,973,171	$ 16,691,626
School districts' net pension liability (asset) as a percentage of covered payroll	6.2%	10.8%	(102.1)%	16.3%	(15.6)%

SCHEDULE OF THE SCHOOL DISTRICTS' CONTRIBUTIONS (UNAUDITED)

(Last Ten Fiscal Years)

(dollars in thousands)

	2023	2022	2021	2020	2019
Actuarially determined contribution	$ 1,900,474	$ 1,736,097	$ 1,617,547	$ 1,503,823	$ 1,772,651
Contributions in relation to the actuarially determined contribution	1,900,474	1,736,097	1,617,547	1,503,823	1,772,651
Contribution deficiency	$ —	$ —	$ —	$ —	$ —
Covered payroll	$ 18,469,130	$ 17,715,273	$ 16,973,207	$ 16,973,171	$ 16,691,626
Contributions as a percentage of covered payroll	10.29%	9.80%	9.53%	8.86%	10.62%

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF THE SCHOOL DISTRICTS' NET PENSION LIABILITY (ASSET) (UNAUDITED) *(continued)*
(Last Ten Fiscal Years)

(dollars in thousands)

	2018	2017	2016	2015	2014
Total pension liability	$ 118,107,254	$ 114,708,261	$ 108,577,184	$ 99,332,104	$ 97,015,706
Plan fiduciary net position	119,915,518	115,468,360	107,506,142	109,718,917	108,155,083
School districts' net pension liability (asset)	$ (1,808,264)	$ (760,099)	$ 1,071,042	$ (10,386,813)	$ (11,139,377)
Plan fiduciary net position as a percentage of the total pension liability	101.5%	100.7%	99.0%	110.5%	111.5%
Covered payroll	$ 16,288,884	$ 15,846,705	$ 15,431,009	$ 15,021,357	$ 14,771,301
School districts' net pension liability (asset) as a percentage of covered payroll	(11.1)%	(4.8)%	6.9%	(69.1)%	(75.4)%

SCHEDULE OF THE SCHOOL DISTRICTS' CONTRIBUTIONS (UNAUDITED) *(continued)*
(Last Ten Fiscal Years)

(dollars in thousands)

	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 1,596,311	$ 1,857,234	$ 2,046,152	$ 2,633,244	$ 2,400,378
Contributions in relation to the actuarially determined contribution	1,596,311	1,857,234	2,046,152	2,608,266	2,383,145
Contribution deficiency	$ —	$ —	$ —	$ 24,978	$ 17,233
Covered payroll	$ 16,288,884	$ 15,846,705	$ 15,431,009	$ 15,021,357	$ 14,771,301
Contributions as a percentage of covered payroll	9.80%	11.72%	13.26%	17.36%	16.13%

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF INVESTMENT RETURNS (UNAUDITED)
(Last Ten Fiscal Years)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	9.16%	(7.12)%	28.97%	3.32%	6.93%	8.95%	13.05%	2.28%	5.18%	18.16%

See accompanying independent auditors' report.

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REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF NYSTRS' PROPORTIONATE SHARE OF THE NET PENSION LIABILITY NEW YORK STATE AND LOCAL EMPLOYEES' RETIREMENT SYSTEM (ERS)

(Last Ten Fiscal Years)

(dollars in thousands)

	2023	2022	2021	2020	2019
System's proportion of the net pension liability	0.1158665 %	0.1207750 %	0.1108277 %	0.1120455 %	0.1095732 %
System's proportionate share of the net pension (asset) liability	$ 24,846	$ (9,873)	$ 110	$ 29,670	$ 7,764
System's covered payroll	34,551	34,055	33,718	31,466	30,546
System's proportionate share of the net pension liability as a percentage of covered payroll	71.9 %	(29.0)%	— %	94.3 %	25.4 %
ERS fiduciary net position as a percentage of the total pension liability	90.78 %	103.65 %	99.95 %	86.39 %	96.27 %

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF NYSTRS' PROPORTIONATE SHARE OF THE NET PENSION LIABILITY NEW YORK STATE AND LOCAL EMPLOYEES' RETIREMENT SYSTEM (ERS) *(continued)* (Last Ten Fiscal Years)

(dollars in thousands)

	2018	2017	2016	2015	2014
System's proportion of the net pension liability	0.1115115 %	0.1098533 %	0.1095719 %	0.1028788 %	0.1028788 %
System's proportionate share of the net pension (asset) liability	$ 3,599	$ 10,322	$ 17,587	$ 3,475	$ 4,649
System's covered payroll	29,728	28,994	28,251	28,067	26,188
System's proportionate share of the net pension liability as a percentage of covered payroll	12.1 %	35.6 %	62.3 %	12.4 %	17.8 %
ERS fiduciary net position as a percentage of the total pension liability	98.24 %	94.70 %	90.70 %	97.90 %	97.20 %

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF NYSTRS' CONTRIBUTIONS (UNAUDITED)
NEW YORK STATE AND LOCAL EMPLOYEES' RETIREMENT SYSTEM (ERS)
(Last Ten Fiscal Years)

(dollars in thousands)

	2023	2022	2021	2020	2019
Actuarially determined contribution	$ 3,860	$ 5,377	$ 4,499	$ 4,360	$ 4,308
Contributions in relation to the actuarially determined contribution	3,860	5,377	4,499	4,360	4,308
Contribution deficiency	$ —	$ —	$ —	$ —	$ —
Covered payroll	$ 34,551	$ 34,055	$ 33,718	$ 31,466	$ 30,546
Contributions as a percentage of covered payroll	11.17 %	15.79 %	13.34 %	13.86 %	14.10 %

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF NYSTRS' CONTRIBUTIONS (UNAUDITED)

NEW YORK STATE AND LOCAL EMPLOYEES' RETIREMENT SYSTEM (ERS) *(continued)*

(Last Ten Fiscal Years)

(dollars in thousands)

	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 4,310	$ 4,318	$ 5,289	$ 5,131	$ 5,250
Contributions in relation to the actuarially determined contribution	4,310	4,318	5,289	5,131	5,250
Contribution deficiency	$ —	$ —	$ —	$ —	$ —
Covered payroll	$ 29,728	$ 28,994	$ 28,251	$ 28,067	$ 26,188
Contributions as a percentage of covered payroll	14.50 %	14.89 %	18.72 %	18.28 %	20.05 %

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See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF CHANGES IN THE SYSTEM'S NET OPEB LIABILITY AND RELATED RATIOS (UNAUDITED)

(Last Seven Fiscal Years)

(dollars in thousands)

Total OPEB liability:

Reporting Date:	**2023**	**2022**	**2021**	**2020**	**2019**
Measurement Date:	**2022**	**2021**	**2020**	**2019**	**2018**
Service cost	$ 3,069	2,985	$ 2,915	$ 2,907	$ 2,604
Interest	6,588	6,586	6,622	6,169	5,747
Changes of benefit terms	—	—	(9,789)	—	6,211
Differences between expected and actual experience	870	1,259	79	714	(842)
Changes of assumptions	—	(2,450)	4,039	1,102	(878)
Benefit payments	(4,835)	(4,527)	(4,413)	(3,965)	(3,757)
Net change in total OPEB liability	5,692	3,853	(547)	6,927	9,085
Total OPEB liability - beginning	100,663	96,810	97,357	90,430	81,344
Total OPEB liability - ending (a)	$ 106,355	100,663	$ 96,810	$ 97,357	$ 90,430
Plan fiduciary net position:					
Contributions - employer	$ 6,000	6,261	$ 6,004	$ 5,500	$ 5,500
Net investment income	(9,584)	14,535	2,673	3,155	3,213
Benefit payments	(4,835)	(4,527)	(4,413)	(3,965)	(3,757)
Professional fees and services	56	(20)	(66)	(19)	(53)
Net change in plan fiduciary net position	(8,363)	16,248	4,199	4,671	4,902
Plan fiduciary net position - beginning	65,871	49,622	45,424	40,752	35,850
Plan fiduciary net position - ending (b)	$ 57,508	65,871	$ 49,622	$ 45,424	$ 40,752
System's net OPEB liability - ending (a) - (b)	$ 48,847	34,792	$ 47,187	$ 51,933	$ 49,677
Plan fiduciary net position as a percentage of the total OPEB liability	54.07 %	65.44 %	51.26 %	46.66 %	45.07 %
Covered payroll	$ 35,423	33,142	$ 32,125	$ 31,189	$ 30,683
System's net OPEB liability as a percentage of covered payroll	137.90 %	104.98 %	146.89 %	166.51 %	161.90 %

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF CHANGES IN THE SYSTEM'S NET OPEB LIABILITY AND RELATED RATIOS (UNAUDITED)

(continued)

(Last Seven Fiscal Years)

(dollars in thousands)

Reporting Date:	2018	2017
Measurement Date:	**2017**	**2016**
Total OPEB liability:		
Service cost	$ 2,491	$ 2,579
Interest	5,959	5,589
Changes of benefit terms	—	—
Differences between expected and actual experience	(2,166)	400
Changes of assumptions	(5,849)	—
Benefit payments	(3,412)	(2,980)
Net change in total OPEB liability	(2,977)	5,589
Total OPEB liability - beginning	84,321	78,732
Total OPEB liability - ending (a)	$ 81,344	$ 84,321
Plan fiduciary net position:		
Contributions - employer	$ 5,500	$ 5,500
Net investment income	4,212	382
Benefit payments	(3,412)	(2,980)
Professional fees and services	(15)	(13)
Net change in plan fiduciary net position	6,285	2,890
Plan fiduciary net position - beginning	29,565	26,675
Plan fiduciary net position - ending (b)	$ 35,850	$ 29,565
System's net OPEB liability - ending (a) - (b)	$ 45,494	$ 54,756
Plan fiduciary net position as a percentage of the total OPEB liability	44.07 %	35.06 %
Covered payroll	$ 29,753	$ 29,087
System's net OPEB liability as a percentage of covered payroll	152.91 %	188.25 %

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

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF SYSTEM AND OTHER CONTRIBUTING ENTITY CONTRIBUTIONS (UNAUDITED)

(Last Ten Fiscal Years)

(dollars in thousands)

	2023	2022	2021	2020	2019
Actuarially determined contribution	$ 6,394	$ 5,340	$ 5,822	$ 5,958	$ 5,349
Contributions in relation to the actuarially determined contribution:					
System	6,394	6,000	6,261	6,004	5,500
Other contributing entity	—	—	—	—	—
Total contributions	6,394	6,000	6,261	6,004	5,500
Contribution deficiency (excess)	$ —	$ (660)	$ (439)	$ (46)	$ (151)
Covered payroll	$ 35,579	$ 35,423	$ 33,142	$ 32,125	$ 31,189
Contributions as a percentage of covered payroll	17.97 %	16.94 %	18.89 %	18.69 %	17.63 %

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

SCHEDULE OF SYSTEM AND OTHER CONTRIBUTING ENTITY CONTRIBUTIONS (UNAUDITED)

(continued)

(Last Ten Fiscal Years)

(dollars in thousands)

	2018	2017	2016	2015	2014
Actuarially determined contribution	$ 5,279	$ 5,374	$ 4,782	$ 4,542	$ 4,767
Contributions in relation to the actuarially determined contribution:					
System	5,500	5,500	5,500	5,500	5,500
Other contributing entity	—	—	—	—	1
Total contributions	5,500	5,500	5,500	5,500	5,501
Contribution deficiency (excess)	$ (221)	$ (126)	$ (718)	$ (958)	$ (734)
Covered payroll	$ 30,683	$ 29,753	$ 29,087	$ 26,507	$ 25,556
Contributions as a percentage of covered payroll	17.93 %	18.49 %	18.91 %	20.75 %	21.53 %

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)

(Last Ten Fiscal Years)

Method and assumptions used in calculations of school districts' Total Pension Liability (TPL)

Changes of benefit terms. Effective with the 2023 actuarial valuation, the following plan change was effective: Chapter 720 of the Laws of 2022 changed the age at which reductions in the ordinary death benefit commence to age 62 for members with a date of membership prior to April 1, 2012 (before it was 61), and to age 63 for members with a date of membership on or after April 1, 2012 (before it was age 61). The post-retirement death benefit has been increased as well.

Changes of assumptions. Actuarial assumptions are revised periodically to more closely reflect actual, as well as anticipated future experience. The actuarial assumptions were revised and adopted by the Retirement Board on October 28, 2021 and first used in the 2021 determination of the Total Pension Liability.

The System's long-term rate of return assumption for purposes of the NPL is 6.95%, effective with the 2021 actuarial valuation. For the 2020 and 2019 actuarial valuations, the System's long-term rate of return assumption was 7.10%. For the 2018 and 2017 actuarial valuations, the System's long-term rate of return assumption was 7.25%. For the 2016 actuarial valuation, the System's long-term rate of return assumption was 7.50%. Prior to the 2016 actuarial valuation, the System's long-term rate of return was 8.00%.

The System's assumed annual inflation rate is 2.40%. For the 2019 and 2020 actuarial valuations, the System's annual inflation assumption was 2.20%. For the 2018 and 2017 actuarial valuations, the System's annual inflation assumption was 2.25%. For the 2016 actuarial valuation, the System's annual inflation assumption was 2.50%. Prior to the 2016 actuarial valuation, the System's annual inflation assumption was 3.00%.

Effective with the 2019 actuarial valuation, the COLAs is projected to increase at a rate of 1.30% annually. Effective with the 2015 actuarial valuation, COLAs were projected to increase at a rate of 1.50% annually. Prior to the 2015 actuarial valuation, COLAs were projected to increase at a rate of 1.625% annually.

Effective with the 2022 actuarial valuation, the assumed scale for mortality improvement was changed from MP2020 to MP2021. Effective with the 2021 actuarial valuation, the assumed scale for mortality improvement was changed from MP2019 to MP2020. Effective with the 2020 actuarial valuation, the assumed scale for mortality improvement was changed from MP2018 to MP2019. Effective with the 2019 actuarial valuation, the assumed scale for mortality improvement was changed from MP2014 to MP2018.

See accompanying independent auditors' report.

REQUIRED SUPPLEMENTARY INFORMATION *(continued)*

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED) *(continued)*
(Last Ten Fiscal Years)

Method and assumptions used in calculations of school districts' actuarially determined contributions. The actuarially determined contribution rates in the schedule of school districts' contributions are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine school districts' contributions in 2023. For assumptions and plan provisions used in contributions reported for years prior to 2023, refer to the Annual Actuarial Report for two years prior to the end of the fiscal year in which contributions are reported.

Valuation Date	June 30, 2021
Actuarial cost method	Aggregate (level percent of payroll)*
Amortization method	n/a*
Remaining amortization period	n/a*
Asset valuation method	Five-year phased-in deferred recognition of each year's net investment income/loss in excess of (or less than) the assumed valuation rate of interest at a rate of 20.0% per year, until fully recognized after 5 years.
Inflation	2.40%
Projected salary increases	Rates of increase differ based on service. They have been calculated based upon recent NYSTRS member experience.

Service	Rate
5	5.18%
15	3.64
25	2.50
35	1.95

Projected COLAs	1.3% compounded annually
Valuation rate of interest	6.95% compounded annually, net of pension plan investment expense.

** The System is funded in accordance with the Aggregate Cost Method, which does not identify or separately amortize unfunded actuarial liabilities. Costs are determined by amortizing the unfunded present value of benefits over the average future working lifetime of active plan members, which currently for NYSTRS is approximately 12.56 years.*

Base Rates of Mortality: Rates differ by member status, age and gender. They have been calculated based upon recent NYSTRS member experience

Base Rates of Mortality*

Active Members			Retired Members		
Age	Male	Female	Age	Male	Female
30	0.03%	0.02%	60	0.35%	0.26%
40	0.05	0.03	70	0.94	0.62
50	0.10	0.07	80	3.84	2.62
60	0.26	0.16	90	13.57	10.98
Disabled Members			**Survivor and Beneficiaries**		
Age	Male	Female	Age	Male	Female
30	0.47%	0.34%	30	0.04%	0.02%
40	0.77	0.72	40	0.07	0.04
60	2.65	2.14	60	0.64	0.41
80	6.96	5.95	80	4.52	3.27

Key Methods and Assumptions Used to Determine OPEB Contribution Rates:

Asset Valuation Method:	Market Value
Amortization Method:	30-Year Closed Amortization, level percentage of payroll
Remaining Amortization Period:	24 years as of July 1, 2022
Discount Rate:	6.50% per annum
Expected Return on Assets:	6.50% per annum
Salary Increases:	Varies by service from 3.00% - 8.00%
Healthcare cost and premium trend rates:	
Non-Medicare	7.40% graded to 4.34% over 20 years
Medicare	8.45% graded to 4.34% over 20 years
Medicare Part B	3.50%
Blended Medicare	7.41% graded to 4.16% over 19 years
Pre-Retirement Mortality:	The Pub-2010 General Employee Headcount-Weighted Mortality table (PubG.H-2010 Employee) as published by the Society of Actuaries (SOA) with an 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020. All pre-retirement deaths are assumed ordinary deaths
Healthy Retirees Mortality:	The Pub-2010 General Healthy Retiree Headcount-Weighted Mortality table [PubG.H-2010 Healthy Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.
Beneficiaries:	Pub-2010 General Contingent Survivors Headcount-Weighted Mortality [PubG.H-2010 Contingent Survivors] as published by SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020
Disabled Retirees:	The Pub-2010 General Disabled Retiree Headcount-Weighted Mortality table [PubG.H-2010 Disabled Retiree] as published by the SOA with a 98.75% adjustment for both males and females, and with future improvement from the base year of 2010 on a generational basis using SOA's Scale MP-2020.

See accompanying independent auditors' report.

OTHER SUPPLEMENTARY SCHEDULES

SCHEDULES OF ADMINISTRATIVE EXPENSES

Years ended June 30, 2023 and 2022

(dollars in thousands)

	2023	2022
Salaries and benefits:		
Salaries	$ 37,245	$ 36,038
Civil service	63	57
Employees retirement	5,286	4,451
Health and dental insurance	13,517	12,019
Overtime salaries	58	28
Social Security	2,594	2,511
Total salaries and benefits	58,763	55,104
Building occupancy expenses:		
Building, grounds and equipment	$ 2,660	$ 1,815
Depreciation - building and improvements	1,954	1,950
Depreciation - Equipment	126	146
Office supplies and expenses	185	164
Utilities and municipal assessments	1,101	1,127
Total building occupancy expenses	6,026	5,202
Computer expenses:		
Amortization/depreciation - computer equipment	$ 906	$ 1,108
Computer hardware and software	4,908	4,027
Computer maintenance and supplies	—	44
Total computer expenses	5,814	5,179
Personnel and meeting expenses:		
Board - meetings, travel and education	$ 83	$ 72
Delegates meeting	632	5
Pre-retirement seminars	5	(3)
Professional development	855	636
Travel and automobile expense	211	68
Other personnel expenses	170	116
Total personnel and meeting expenses	1,956	894
Professional and governmental services:		
Auditors - financial*	$ 461	$ 482
Auditors - Department of Financial Services	—	—
Disability medical examinations	80	96
Postage and cartage	863	804
Professional fees and services	1,322	1,218
Publications	255	130
Statutory custodian charges	141	136
Total professional and governmental services	3,122	2,866
Total administrative fund expenses	75,681	69,245
Reconciliation of contribution expense to pension and OPEB expense	3,617	(8,015)
Total Administrative Expenses	$ 79,298	$ 61,230

**Presented on an accrual basis for 2022. Expenses incurred in fiscal year 2023 when services performed.*

See accompanying independent auditors' report.

OTHER SUPPLEMENTARY SCHEDULES *(continued)*

SCHEDULES OF INVESTMENT EXPENSES

Years ended June 30, 2023 and 2022

(dollars in thousands)

Investment Category	2023 Fair Value of Assets Serviced or Under Management	2023 Expenses	2022 Fair Value of Assets Serviced or Under Management	2022 Expenses
Externally managed/serviced assets:				
International equity	$ 18,647,679	$ 27,619	$ 19,449,286	$ 30,362
Real estate equity	16,464,297	128,485	16,486,742	134,387
Private equity	15,416,611	155,204	14,073,681	149,217
Real estate debt	6,050,162	24,817	5,756,791	17,590
Global equity	4,904,670	2,792	4,218,623	4,418
Global bonds	2,714,220	18,234	2,950,256	19,896
Domestic equity	1,397,214	3,712	1,147,137	5,589
Private debt	2,045,645	27,217	1,424,443	22,272
High-yield bonds	1,359,492	4,317	958,586	3,992
Sub-total	68,999,990	392,397	66,465,545	387,723
General expenses	—	16,365	—	11,841
Totals	**$ 68,999,990**	**$ 408,762**	**$ 66,465,545**	**$ 399,564**

See accompanying independent auditors' report.

OTHER SUPPLEMENTARY SCHEDULES *(continued)*

SCHEDULE OF CONSULTING FEES

Year ended June 30, 2023

Fees in excess of $50,000 for outside professionals other than investment advisers.

Name	Amount	Nature
Turner Construction	$ 1,496,905	Construction Management
StepStone Group LP	1,300,000	Investment Consulting
Mythics Inc	733,870	IT Professional Services
Callan Associates	686,164	Investment Consulting
Carahsoft Technology Corporation	532,812	IT Professional Services
Callan LLC	528,319	Investment Consulting
Seward & Kissel LLP	584,710	Investment Consulting
Plante Moran PC	452,370	Accounting Services
Insight Public Sector Inc.	378,148	IT Professional Services
Nixon Peabody LLP	329,604	Legal Services
Dell Marketing LP	240,954	IT Professional Services
Novacoast Inc	203,552	IT Professional Services
Software House International	192,384	IT Professional Services
Kofax Inc	171,876	IT Professional Services
WCGS Architects, P.C.	151,098	Architectural & Engineering Services
Presidio Holdings Inc.	142,589	IT Professional Services
International Consulting Acquisition Corp.	137,000	IT Professional Services
Pension Benefit Information LLC	136,079	IT Professional Services
Reed Smith LLP	127,982	Legal Services
Clutch Solutions LLC	105,666	IT Professional Services
Winklevoss Technologies LLC	104,602	IT Professional Services
Dyntek Services Inc.	102,402	IT Professional Services
Mercer Investments LLC	150,000	Investment Consulting
Open Text Inc	99,911	IT Professional Services
Compulink Technologies Inc.	94,071	IT Professional Services
Meridian It Inc	74,643	IT Professional Services
GOVCONNECTION, Inc.	73,153	IT Professional Services
Microsoft Corporation	71,200	IT Professional Services
Joseph J. Blake and Associates	68,350	Investment Consulting
Lenox Park Solutions, Inc.	65,000	MWBE Consulting
Linea Secure LLC	64,792	IT Professional Services
Cheiron Inc.	62,628	Actuarial Consulting
Core BTS	60,373	IT Professional Services
Atlantic Data Security	57,262	IT Professional Services

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plante moran

Plante Moran, PC
P.O. Box 307
3000 Town Center, Suite 100
Southfield, MI 48075
Tel: 248.352.2500
Fax: 248.352.0018
plantemoran.com

Retirement Board

Re: New York State Teachers' Retirement System:

Contemporaneously with the audit of the financial statements of the New York State Teachers' Retirement System (the System) for the year ended June 30, 2023, an actuary from our firm performed certain procedures to assess the reasonableness of the actuarial assumptions, methods, and procedures used by the System's Actuary to calculate the employer contributions for the System as reported in the System's June 30, 2023 basic financial statements. Specifically, an actuary from our firm reviewed the following for reasonableness as compared to Actuarial Standard of Practice (ASOP) No. 4, *Measuring Pension Obligations*, as adopted by the Actuarial Standards Board:

- The actuarial assumptions, methods and procedures described in the System's Actuarial Valuation Report as of June 30, 2021, used to derive the resultant employer contribution rate of 10.29% applied to employer payroll for the fiscal year ended June 30, 2023.

- The System's Experience Studies incorporated in the System's Actuarial Report as of June 30, 2021, and the opinions of the System's Actuary presented therein.

Based on the results of the above review, we determined that the methods, procedures, and actuarial assumptions used to develop the employer contributions reported in the System's 2023 basic financial statements appeared reasonable in the context of ASOP No. 4.

This report is intended solely for the use of the New York State Teachers Retirement System and should not be used for any other purpose.

PLANTE MORAN, PC

October 25, 2023

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Appendix B

New York State Teachers' Retirement System (NYSTRS)

December 31, 2022 and June 30, 2023, Audit Results and December 31, 2023, Audit Plan

Presented to: The Audit Committee of NYSTRS
October 25, 2023

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October 12, 2023

Dear Members of the Audit Committee:

Thank you for the opportunity to provide professional services to the New York State Teachers' Retirement System ("NYSTRS"), an organization we are proud to serve. We look forward to meeting with you on October 25, 2023, to discuss the results of our audits of the financial statements as of and for the years ended December 31, 2022, and June 30, 2023, and to discuss our plan to perform the audits of the financial statements as of and for the year ending December 31, 2023. This meeting will serve as a forum to validate our understanding of key issues, confirm your expectations, and make certain that our efforts are aligned with your expectations. We welcome your suggestions regarding areas of special concern and ideas to aid us in presenting the most appropriate and valuable reports to you.

Our audits are designed to express an opinion on the financial statements. We will consider NYSTRS's current and emerging business needs, along with an assessment of risks that could materially affect the financial statements and design our audit procedures accordingly. Our audits will be conducted with the objectivity and independence that you and the entire Board of Trustees expect. Rest assured that our unceasing commitment to quality is and will be reflected in every aspect of our work.

The attached report outlines the scope of our work and key considerations affecting the audits of the 2022/2023 financial statements. If you have questions or comments on this material, please contact me anytime at (646) 448-5470 or at Anthony.LaMalfa@CohnReznick.com.

We look forward to working with you this year.

Anthony La Malfa

Anthony La Malfa
Partner, Commercial Real Estate
CohnReznick LLP

Entities/Reports with June 30 year ends:

- Merritt 7 Venture, LLC
- Combined financial statements of That Portion of the New York State Teachers' Retirement System (NYSTRS) for which Sentinel Realty Advisors Corporation is Investment Advisor
- Combined financial statements of That Portion of the New York State Teachers' Retirement System (NYSTRS) for which Cabot Properties, Inc. in Investment Advisor
- Combined financial statements of That Portion of the New York State Teachers' Retirement System (NYSTRS) for which BentallGreenOak (US) LP is Investment Advisor

Entities/Reports with December 31 year ends:

- Adirondack Timber Company, Inc. I and Subsidiary
- Knickerbocker Barrington Place LLC
- RSQ Tower LLC
- Knickerbocker Park Point LLC
- Knickerbocker Longwood LLC
- Combined financial statements of That Portion of the New York State Teachers' Retirement System (NYSTRS) Residential Portfolio Managed by CBRE Investment Management
- Knickerbocker Fourth & Madison, LLC (new for December 31, 2023)
- Combined financial statements of the New York State Teachers' Retirement System (NYSTRS) Residential Portfolio Managed by Invesco Real Estate (previously issued for December 31, 2022)

Audit Results – December 2022 and June 2023

- We have completed (substantially completed for certain entities) our audits of the financial statements as of and for the years ended December 31, 2022, and June 30, 2023. The audits have been conducted in accordance with auditing standards generally accepted in the United States ("GAAS").
- The objective of our audits was to obtain reasonable assurance about whether the financial statements are free from material misstatement.
- We have issued (intend to issue for certain entities) unmodified opinions on each of the financial statements as of and for the years ended December 31, 2022, and June 30, 2023.

Additional Services Provided:

- We have prepared the annual Return of Organization Exempt From Income Tax (Form 990) and U.S. Return of Partnership Income (Form 1065) and have filed with the Internal Revenue Service and other state regulatory compliance filings for the year ended December 31, 2022.
- We intend to prepare the annual Return of Organization Exempt From Income Tax (Form 990) and U.S. Return of Partnership Income (Form 1065) to be filed with the Internal Revenue Service and other state regulatory compliance filings for the year ended June 30, 2023.

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Audit Results – December 2022 and June 2023

Areas of Audit Emphasis

We considered the following factors during the planning and performance of our audit procedures:

- Accounting policies and procedures and internal controls
- Information systems and related controls
- Significant operating risks, including fraud risk factors
- Relationship of current versus prior year financial and non-financial data
- Changes on operations and environmental factors

Our areas of audit emphasis included, but were not limited to, the following:

Assets

Cash

Invesments in real estate (including realized and unrealized gains/losses)

Right of use asset/lease liabity

Liabilities

Debt

Unrecorded liabilities

Commitments and contingencies

Net Assets

Revenues

Recognition of revenue from leases

Expenses

Property operating expenses

Property management fees

Interest expense

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Required Communications – December 2022 and June 2023

Required Discussion Item	Comments
Auditors' Responsibilities under Generally Accepted Auditing Standards (GAAS)	As communicated in our engagement letter, our responsibilities include: • Forming and expressing an opinion about whether the financial statements, prepared by management, are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States. • Planning and performing our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. • Consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, as part of our audit, we considered internal controls solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal controls. • Communicating significant matters related to the audit that are, in our professional judgement, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you. Our audit does not relieve you or management of your responsibilities. We have substantially completed the audits of the financial statements of as of and for the years ended December 31, 2022 and June 30, 2023, in accordance with GAAS and intend to issue unmodified opinions.
Planned Scope and Timing of the Audit	We conducted our audit consistent with the planned scope and timing we previously communicated to you during our proposal process and in our engagement letter.

Required Communications – December 2022 and June 2023

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Required Discussion Item	Comments
Compliance with All Ethics Requirements Regarding Independence	The engagement teams, others in our firm, as appropriate, and our firm as a whole, have complied with all relevant ethical requirements regarding independence.
Significant Risks	Significant risks related to our audits are as follows: • Management override of internal controls • Fair value of investments in real estate • Fair value of debt instruments • Improper revenue recognition (presumed risk of fraud)
Significant Accounting Policies	Management has the responsibility to select and use appropriate accounting policies. The significant accounting policies are described in Note 2 to the financial statements. During the years ended December 31, 2022, and June 30, 2023, the entities adopted "ASU 2016-02", Leases, which did not have a material impact on the financial statements. The ASU revises accounting guidance on lease accounting and supersedes all previous leasing standards. The new standard requires lessees to record a right-of-use asset and a lease liability for all leases with a term greater than 12 months and to classify such leases as either finance or operating leases.
Significant Accounting Estimates	Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments. We evaluated the key factors and assumptions used to develop these estimates in determining that they are reasonable in relation to the financial statements taken as a whole. The most sensitive estimates affecting the financial statements were: • Fair value of investments in real estate • Fair value of debt instruments

Required Communications – December 2022 and June 2023

Required Discussion Item	Comments
Financial Statement Disclosures	Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the financial statements were: • Summary of Significant Accounting Policies • Fair Value Measurements • Leases • Related Party Transactions The disclosures in the financial statement are neutral, consistent, and clear.
Significant Unusual Transactions	For purposes of this communication, professional standards require us to communicate to you significant unusual transactions identified during our audit. There were no significant unusual transactions identified.
Identified or Suspected Fraud	During the course of the audits, we perform procedures, including inquiries of management and others involved in the financial reporting process, designed to identify actual or suspected instances of fraud. There were no actual or suspected instances of fraud identified.
Significant Difficulties Encountered During the Audit	We encountered no significant difficulties in dealing with management in performing and completing the audit.

Required Communications – December 2022 and June 2023

Required Discussion Item	Comments
Uncorrected and Corrected Misstatements	For purposes of this communication, professional standards also require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole. There were no uncorrected financial statement misstatements noted. In addition, professional standards require us to communicate to you all material, corrected misstatements that were brought to the attention of management as a result of our audit procedures. There were no material, corrected financial statement misstatements.
Disagreements with Management	For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to the financial statements or the auditor's report. No such disagreements arose during the course of the audit.
Circumstances that Affect the Form and Content of the Auditor's Report	There were no circumstances that affected the form and content of the auditor's report regarding the entities. We expect to issue unmodified opinions.

Required Communications – December 2022 and June 2023

CohnReznick
ADVISORY • ASSURANCE • TAX

Required Discussion Item	Comments
Representations Requested from Management	We will request certain representations from management and the investment advisors that will be included in a letter to us, all of which are expected to be dated prior to November 15, 2023.
Management's Consultations with Other Accountants	In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.
Other Significant Matters, Findings, or Issues	During the course of our interactions, we discussed a variety of matters, including the application of accounting principles and auditing standards, operating conditions affecting the entity, and operating plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention.

Looking forward: Audit Plan – December 2023

CohnReznick ADVISORY • ASSURANCE • TAX

Entities/Reports with December 31 year ends:

- Adirondack Timber Company, Inc. I and Subsidiary
- Knickerbocker Barrington Place LLC
- RSQ Tower LLC
- Knickerbocker Park Point LLC
- Knickerbocker Longwood LLC
- Combined financial statements of That Portion of the New York State Teachers' Retirement System (NYSTRS) Residential Portfolio Managed by CBRE Investment Management
- Knickerbocker Fourth & Madison, LLC (new for December 31, 2023)

COHNREZNICK'S COMMITMENT TO YOU

- To provide forward-thinking solutions, service that exceeds expectations, and create opportunity, value, and trust for our clients, our people, and our communities.

- We will be a firm of excellence and innovation – providing invaluable services and insights to our clients; fostering a workplace culture that develops leaders and values diversity; and working to make our communities better.

Meeting the challenges. Providing value.

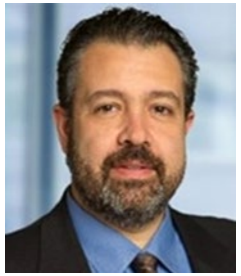
CohnReznick

SERVICES AND DELIVERABLES TO NYSTRS

Financial Statements Audits	• Express an opinion on the financial statements as of and for the year ending December 31, 2023. • Communicate matters in accordance with AU-C 265, "Communicating Internal Control Related Matters Identified in an Audit."
Non-attest services	• Prepare Federal Form 990, Federal Form 1065, and other state regulatory compliance filings as of and for the year ended December 31, 2023, and assist management with e-filing the returns.

KEY MEMBERS OF THE ENGAGEMENT TEAM

Resources



Anthony La Malfa, CPA
Lead Engagement Partner

Courtney Klinga, CPA
Real Estate Audit Senior Manager

E.J. Edelman, CPA/ABV, CGMA, MAI
Director Valuation Advisory Services

Ron Kaplan, CPA
Commercial Real Estate Industry Leader
Account Executive

Lori Rothe Yokobosky, CPA MST
Lead Tax Partner

Sima Wolfson, CPA
Exempt Organizations Tax Services Manager

AUDIT PLAN CONSIDERATIONS

Preliminary Communication → Understanding and Evaluating Controls → Application of Analytical Procedures → Development of Audit Programs → Year-End Fieldwork → Reporting

Understanding and Evaluating Controls

- Review accounting policies and procedures
- Understand the design of internal controls and perform walkthroughs of key processes:
  - Revenue
  - Expenses
  - Leases
  - Valuation
  - Financial reporting and closing

Significant Risks

- Management override of controls
- Internal controls over financial reporting
- Fair value of investments in real estate and debt instruments
- Improper revenue recognition risk

Key Audit Areas

- Rental revenue
- Operating expenses
- Property management fees
- Realized and unrealized gains/losses
- Debt and interest expense

KEY AUDIT PROCEDURES

To ensure that our audit procedures will effectively address the risks associated with the areas identified we will:

- Obtain an understanding of the significant financial reporting and accounting processes, the important business strengths and risks, and controls to monitor operations.
- Obtain an understanding of general controls over information systems.
- Evaluate the design of internal controls, including any changes in internal controls, over the key financial processes.
- Test the valuations of investments and debt instruments.
- Perform a search for unrecorded liabilities to ensure expenses are recorded in the proper period.
- On a sample basis, agree revenue and expense transactions to supporting documentation.
- Test year-end reconciliations and rollforward schedules of key audit areas.
- Perform preliminary and final analytical reviews.
- Evaluate key factors and assumptions used by management to develop significant estimates.
- Independently confirm with third parties select year-end balances.
- Evaluate management's assumptions about the ability to continue as a going concern.

CYBERSECURITY CONSIDERATIONS

- **Increased cybersecurity risks**
  - Usage of remote workflows
  - Surge and sophistication of cyber attacks
  - Risks & vulnerabilities in third party vendors

- **Audit considerations**
  - Obtain an understanding of the IT General Controls
  - Perform walkthroughs of selected controls to determine the operating effectiveness of those controls

- **Information security**
  - The audit team will use Converge or Sharefile to transmit documents during the engagement for enhanced security.

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USE OF TECHNOLOGY

Converge is CohnReznick's preferred method of sharing electronic information with our clients. We leverage Converge to securely and efficiently communicate with our clients. Our portal allows our clients to upload and download documents, share open items, and review project information.

Microsoft Office 365 Email Encryption is CohnReznick's method for sending protected emails to our clients. With this easy-to-use and proven service, our professionals can securely send clients sensitive, personal information, such as personally identifiable information ("PII"), protected health information ("PHI"), and credit card information, as regulated by the Payment Card Industry Data Security Standard ("PCI DSS").

CCH Engagement is a powerful trial balance and engagement workflow tool that not only allows us to automate financial statements, workpapers, and tax return preparation, but also provides the tools to manage and perform our engagements in a completely paperless environment.

WorkFlow enables our professionals to track entire tax processes, from the creation of an electronic tax folder, to the routing of client source documents, to the final delivery of the tax return reports to the client. It gives us convenient access to reports and the ability to easily monitor and manage project workflow.

IDEA data extraction software allows our professionals to gather and analyze financial information from your systems.

GoFileRoom is a Web-hosted document management service that maintains all paper and electronic files in a secure data center, allowing for convenient, 24/7 access from any location. CohnReznick professionals can access all client documents quickly and easily, which results in increased efficiency and quick response times for client requests. Other significant advantages of GoFileRoom include advanced document security and business continuity.

TeamMate Analytics data extraction software allows our professionals to gather and analyze financial information from your systems, aiding in the efficiency of our audit.

Artificial Intelligence Software Tool
CohnReznick uses Leverton, an artificial intelligence software tool, to automatically extract data from documents to create structured data for better data analysis and document management. Leverton is a time-saving platform that uses optical character recognition and data extraction to efficiently consolidate data from disparate sources. Once data is validated, it can be validated, accessed, analyzed, and exported.

TIMETABLE OF AUDIT SERVICES – DECEMBER 2023

	OCT - DEC	JAN	FEB	MAR	APR	MAY	APR - JUNE
Pre-planning meeting with audit committee and management							
Audit design and planning							
Year-end field work							
Present drafts of the financial statements and if applicable, management letter							
Issue financial statements and if applicable, management letter							

RESPONSIBILITIES

Management's Responsibilities*	• The preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("GAAP"). • Designing, implementing, and maintaining of internal controls relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error, fraudulent financial reporting, misappropriation of assets or violations of laws, governmental regulations, grant agreements, or contractual agreements. • Accepting responsibility for nonattest services, including identifying the proper party with the skills, knowledge, and experience to oversee the nonattest services provided. • Informing us of any known or suspected fraud affecting the entity involving management, employees with significant role in internal control and others where fraud could have a material effect on the financials. • Ensuring the accuracy and completeness of all information provided. • The audit of the consolidated financial statements does not relieve management or those charged with governance of their responsibilities.
Auditor's Responsibilities*	• Communicating with those charged with governance the responsibilities of CohnReznick regarding the consolidated financial statements audit and an overview of the planned scope and timing of the audit. • Obtaining from those charged with governance information relevant to the audit. • Providing those charged with governance with timely observations arising from the audit that are significant and relevant to their responsibility to oversee the financial reporting process. • Promoting effective two-way communication between the auditor and those charged with governance. • Communicating effectively with management and third parties. • Forming and expressing an opinion about whether the consolidated financial statements that have been prepared by management, with the oversight of governance, are prepared, in all material respects, in accordance with the applicable financial reporting framework. • Establish the overall audit strategy and audit plan, including the nature, timing, and extent of procedures necessary to obtain sufficient appropriate audit evidence.

**The complete terms of our mutual responsibilities are included in our engagement letter.*

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EFFECTIVE ACCOUNTING AND AUDITING UPDATES

Accounting		
Effective Date for the Organization	**Pronouncement Number**	**Description**
Through December 31, 2024	FASB ASU 2022-06	FASB Codification - FASB Accounting Standards Updates, FASB Accounting Standards Updates - Accounting Standards Update No. 2022-06 – Reference Rate Reform (Topic 848) – Deferral of the Sunset Date of Topic 848
January 1, 2023, and July 1, 2023	FASB ASU 2016-13	Financial Instruments–Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments (see summary on page 22)

Auditing		
Effective Beginning Date for the Organization	**Auditing Standards Number**	**Description**
January 1, 2024	Auditing Standard 145	Understanding the Entity and Its Environment and Assessing the Risks of Material Misstatement

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UPCOMING ACCOUNTING AND AUDITING UPDATES

Accounting		
Effective Beginning Date for the Organization	Pronouncement Number	Description
January 1, 2025 (early adoption permitted)	FASB ASU 2023-05	Business Combinations—Joint Venture Formations (Subtopic 805-60) - Recognition and Initial Measurement

UPCOMING ACCOUNTING AND AUDITING UPDATES

Current Expected Credit Loss ("CECL") Accounting Standards Update ("ASU") 2016-13 "Financial Instruments–Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments"	The Financial Accounting Standards Board ("FASB") issued ASU 2016-13 "Financial Instruments–Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments" to amend its guidance on the impairment of financial instruments (e.g., trade receivables, lease receivables, loans and loan commitments, and held-to-maturity debt securities). ASU 2016-13 adds an impairment model known as the current expected credit loss ("CECL") model, which is based on expected losses rather than incurred losses. The objectives of the CECL model are to: • Reduce the complexity in US GAAP by decreasing the number of credit impairment models that entities use to account for debt instruments • Eliminate the barrier to timely recognition of credit losses by using an expected loss model instead of an incurred loss model • Require an entity to recognize an allowance of lifetime expected credit losses • Not require a specific method for entities to use in estimating expected credit losses The implementation of ASU 2016-13 was delayed two years to fiscal years beginning after December 15, 2022. Therefore, the implementation date for entities with years ending on June 30 will be the annual periods beginning on July 1, 2023, and the implementation date for entities with years ending on December 31 will be the annual periods beginning on January 1, 2023.

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NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM
10 CORPORATE WOODS DRIVE, ALBANY NY

Compensation Committee Meeting

A meeting of the Compensation Committee of the Retirement Board was held at the System on October 26, 2023. The meeting was called to order at 8:30 a.m. by Phyllis Harrington, Chair.

Committee Members:	Phyllis Harrington (via WebEx), Oliver Robinson, Nicholas Smirensky
Board Members:	Juliet Benaquisto, Elizabeth Chetney, Paul Farfaglia, Eric Iberger, David Keefe (via WebEx), Jennifer Longtin

1. Approval of Minutes from April 26, 2023

Upon motion of O. Robinson, seconded by N. Smirensky and unanimously carried, the meeting minutes from April 26, 2023 were approved.

Upon motion of N. Smirensky, seconded by O. Robinson and unanimously carried, the meeting went into Executive Session at 8:30 a.m. to discuss personnel matters and the Executive Director and Chief Investment Officer performance evaluation.

With unanimous consent, the meeting came out of Executive Session and adjourned at 9:03 a.m.

Respectfully submitted,

[redacted]

Thomas K. Lee

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM
10 CORPORATE WOODS DRIVE, ALBANY NY

Disability Review Committee Meeting

A meeting of the Disability Review Committee of the Retirement Board was held at the System on October 26, 2023. The meeting was called to order at 9:05 a.m. by Elizabeth Chetney, Chair.

The following individuals were in attendance:

Committee Members: Juliet Benaquisto, Elizabeth Chetney, Eric Iberger, David Keefe (via WebEx), Oliver Robinson

Board Members: Paul Farfaglia, Jennifer Longtin, Phyllis Harrington (via WebEx), Nicholas Smirensky

Upon motion of E. Iberger, seconded by O. Robinson and unanimously carried, the meeting minutes of July 26, 2023 were approved.

E. Chetney, Chair, reported that the System's Medical Board had met monthly over the prior three months and that a disability denial and a disability rescission resolution would be brought to the Board at the Board meeting on October 26, 2023.

With unanimous consent, the Committee adjourned at 9:06 a.m.

Respectfully submitted,

[redacted]

Thomas K. Lee

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM
10 Corporate Woods Drive, Albany NY

Ethics Committee Meeting

A meeting of the Ethics Committee of the Retirement Board was held at the System on October 26, 2023. The meeting was called to order by Nicholas Smirensky, acting Chair, at 9:06 a.m.

The following individuals were in attendance:

Committee Members: Elizabeth Chetney, Nicholas Smirensky, Thomas Lee, Don Ampansiri

Board Members: Juliet Benaquisto, Paul Farfaglia, Phyllis Harrington (via WebEx), Eric Iberger, David Keefe (via WebEx), Jennifer Longtin, Oliver Robinson

NYSTRS Staff: Matt Albano

Upon motion of E. Chetney seconded by T. Lee, the minutes from the July 26, 2023 meeting were approved.

N. Smirensky asked the Committee if any discussion in Executive Session was needed on the EDCIO quarterly disclosures. The Committee agreed no further discussion was needed.

There being no further business, the meeting unanimously adjourned at 9:07 a.m.

Respectfully submitted,

[redacted]

Thomas K. Lee

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM
10 CORPORATE WOODS DRIVE, ALBANY NY

Executive Committee Meeting

A meeting of the Executive Committee of the Retirement Board of the New York State Teachers' Retirement System was held at the System on October 26, 2023.

Committee Members: Elizabeth Chetney, Phyllis Harrington (via WebEx), David Keefe (via WebEx), Oliver Robinson

Board Members: Juliet Benaquisto, Paul Farfaglia, Eric Iberger, Jennifer Longtin, Nicholas Smirensky

NYSTRS' Staff: Thomas K. Lee, Don Ampansiri, Yiselle Ruoso

With unanimous consent, the meeting was called to order by D. Keefe, Chair, at 9:07 a.m.

The following items were discussed:

1. Approval of minutes from July 26, 2023 meeting

   Upon motion of P. Harrington, seconded by O. Robinson and unanimously carried, the minutes of the July 26, 2023 meeting were approved.

2. 2024 Legislative Program

   D. Ampansiri provided an overview of the recommendation from Staff for the 2024 Legislative Program (Appendix A, pp. 3-13).

   A. Resolution on 2024 Legislative Program

   Upon motion of O. Robinson, seconded by P. Harrington and unanimously carried, the Committee voted to recommend the following resolution to the Board:

   RESOLVED, That the 2024 Legislative Program, as presented to the Retirement Board by System staff, is approved and the Executive Director and Chief Investment Officer, or his designees, is authorized to seek introduction and enactment of the bill contained therein.

3. Board Member Salary Reimbursement Annual Report

   The Committee reviewed the annual board member salary reimbursement report (Appendix B, p. 14).

4. Finance Reports

   The Committee members reviewed quarterly financial statements (Appendix C, pp. 15-19)

5. Quarterly Signatory Additions & Deletions

   The Committee reviewed the quarterly report (Appendix D, p. 20)

With no further business and unanimous consent, the meeting adjourned at 9:14 a.m.

Respectfully submitted,

[redacted]

____

Thomas K. Lee

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
Memorandum

TO: Retirement Board

FROM: D. Ampansiri, Jr./Y. Ruoso/K. Vrbanac

RE: 2024 Legislative Program and Update

DATE: October 17, 2023

CC: T. Lee

2024 Legislative Program

Accompanying the Retirement Board materials is the 2024 Legislative Program recommended by System staff. With it being the second year of the legislative cycle, the 2024 Program proposes to carry forward 1 bill from the 2023 Legislative Program not acted upon by the Legislature.

Program bill 23-2 (2 year benefit recalculation) will be carried forward as program bill 24-2 respectively.

> **24-2 -** Allows retirees of the New York State Teachers' Retirement System who suspend retirement the option of a benefit recalculation after 2 years of service.

For your review and action at this time, you have been provided with the legislative package: the bill text, memo and fiscal note updated for the 2024 legislative session.

Update on 2023 Legislation

As of this writing, program bill 23-1 (transfer of reserves), which passed both houses (the Senate on June 5, 2023 and the Assembly on June 9, 2023) has not been delivered to the Governor.

> **23-1** – Reinstates the transfer of reserves for members transferring between certain public retirement systems with 10 or more years of credited service.

We will continue to keep you posted on any further action.

2024 Legislative Program

New York State Teachers' Retirement System

New York State Teachers' Retirement System
10 Corporate Woods Drive
Albany, New York 12211-2395
(800) 348-7298 or (518) 447-2900
NYSTRS.org

2023-2024 NYSTRS Legislative Program

2023 Bill Numbers	Subject	2024 Program Number	2024 Cost
S7512 A7444A	Reinstates the transfer of reserves for members transferring between certain public retirement systems with 10 or more years of credited service.	**NYSTRS Bill No. 23-1** **6/5/23 Passed Senate** **6/9/23 Passed Assembly** **No Cost** **Pending delivery to the Governor.**	
S7462	Allows retirees of the New York State Teachers' Retirement System who suspend retirement the option of a benefit recalculation after 2 years of service.	24-2	Negligible

New York State Teachers' Retirement System
10 Corporate Woods Drive
Albany, New York 12211-2395
(800) 348-7298 or (518) 447-2900
NYSTRS.org

Proposed 2024 Legislative Program

Bill No.	Bill Purpose
24-2	Allows retirees of the New York State Teachers' Retirement System who suspend retirement the option of a benefit recalculation after 2 years of service.

New York State Teachers' Retirement System
10 Corporate Woods Drive
Albany, New York 12211-2395
(800) 348-7298 or (518) 447-2900
NYSTRS.org

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
BILL NO. 24-2

MEMORANDUM

RE

"AN ACT TO AMEND THE EDUCATION LAW, IN RELATION TO ALLOWING RETIREES OF THE NEW YORK STATE TEACHERS' RETIREMENT SYSTEM WHO SUSPEND THEIR RETIREMENT THE OPTION OF A BENEFIT RECALCULATION AFTER TWO YEARS OF SERVICE"

Purpose of the Bill

The New York State Teachers' Retirement System (NYSTRS) proposes an amendment to Education Law Section 503(11) to mirror the provisions of Retirement and Social Security Law Section 101, the provisions available to members of the New York State and Local Employees' Retirement System (NYSLRS). The purpose of this amendment is to maintain consistency in the law for members of the state systems (NYSLRS and NYSTRS). The amendments to Education Law Section 503(11) would allow retired members of NYSTRS to suspend their retirement, return to work and have the option of a benefit recalculation after working at least two years of additional public service.

Summary and Justification

Under the current statute, Education Law Section 503(11)(b), NYSTRS retirees are permitted to suspend their retirement and return to work to have their benefit recalculated after five years or alternatively upon re-retiring with at least two years of service, they become eligible to receive two separate retirement benefits. In order to avail themselves of the recalculation after five years of additional service, the member is required to pay back all the pension benefits received under the original retirement benefit, with interest, or take an actuarial equivalent lifetime reduction. The intent of these provisions, Education Law Section 503 and Retirement and Social Security Law Section 101, is to allow members of NYSTRS and NYSLRS, as public employees, the opportunity to have all their public service under either two separate retirement benefits or the option of a combined retirement benefit, if the recalculation requirements are satisfied.

The amendments to Education Law Section 503(11) update the law to reflect the requirements under Retirement and Social Security Law Section 101, and would allow NYSTRS members to avail themselves of a recalculation after two years of member service credit after restoration to active service, provided, such members return to the retirement system with regular interest the actuarial equivalent of the amount of the retirement allowance received in the first retirement or repayment of same through actuarial lifetime reduction.

In addition, the System recognizes that allowing retirees the option of recalculating their benefit after two years of service, instead of five years, may assist those who believe they attained a service credit marker, but discover after the fact and post verification of service record with the school district that they had not. For example, in some cases, members retiring believe they have reached their intended service credit milestone, twenty years, but once the service has been verified with the employer the service credit is less than what was anticipated. At that point, it could be very difficult for the retiree to return to the position they retired from or even find a similar position, much less for an additional five years. Reducing the benefit recalculation requirement to two years, would provide a more reasonable avenue to rectify such miscalculations, equitably avail NYSTRS retirees of the same recalculation already provided in law for NYSLRS retirees, and may provide employers with opportunities to hire an experienced worker to fill in during a transition and assist in succession planning.

This legislation was captured under veto message 138 of the laws of 2022 for the reason that the funding source was not identified. The System's fiscal note was appended to the bill and provided that due to the nature of this legislation NYSTRS is unable to ascertain the exact number of members who will pursue the recalculation upon restoration to membership. Accordingly, it is not possible to state that there will be no cost to the bill. An individual's life circumstances determine how and when a member retires and then elects to return to public service. The law does currently require, however, that for a member to afford themselves of the benefit recalculation addressed in this legislation the member must remit the repayment of all pension received under the first retirement plus interest or repayment through an actuarial reduction. With that said, there may be a cost associated due to the employer contribution rate collected and applicable at the time of the service and that is reflected in the negligible cost in the fiscal note appended.

The amendments sought by this proposed legislation seek to update the application of the law and provide NYSTRS members with the similar option currently available to other state employees.

Effective Date of the Bill

This act shall take effect on the sixtieth day after it shall have become a law.

Other Agencies to Whom the Bill May Be of Interest

Division of the Budget, Department of Financial Services.

Budgetary Implications of the Bill

If this bill is enacted, the annual cost to the employers of members of the New York State Teachers' Retirement System is estimated to be negligible.

NOTE: This bill was prepared under the direction of the New York State Teachers' Retirement System Board and was introduced at its request.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM BILL NO. 24-2

AN ACT to amend the education law, in relation to allowing retirees of the New York state teachers’ retirement system who suspend their retirement the option of a benefit recalculation after two years of service

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Subdivision 11 of section 503 of the education law, as added by chapter 507 of the laws of 1972 and as renumbered by chapter 512 of the laws of 1976, is amended to read as follows:

11. a. If a retired member, receiving a retirement allowance for other than disability, returns to active public service, except as otherwise provided in sections two hundred eleven or two [~~hyndred~~] hundred twelve of the retirement and social security law, and is eligible for membership in the retirement system, he [~~thereupon~~] or she shall become a member and his or her retirement allowance shall be suspended in the same manner as provided in subdivision five of this section [~~five hundred three of this article. In such event, he shall contribute to the retirement system as if he were a new member~~]. Upon [~~his~~] subsequent retirement [~~after at least two years of service he~~] they shall:

1. Be credited with all member service earned [~~by him~~] since he or she last became a member of the retirement system, and

2. Receive a retirement allowance which shall consist of[~~:~~

~~(a) An annuity as provided in subdivision five of section five hundred three of this article plus an annuity which is the actuarial equivalent of any contributions made by him since he last became a member, and~~

~~(b) The~~] the pension which he or she was receiving immediately prior to his or her last restoration to membership as provided in subdivision five of this section [~~five hundred three of this article~~], plus a pension based upon the [~~member~~] service credit earned [~~by him~~] since he or she last became a member. Such latter pension shall be computed as if [~~he~~] they were a new member when he or she rejoined the system pursuant to the provisions of this subdivision.

b. Where such member shall have earned at least [~~five~~] two years of [~~member~~] service credit after restoration to active service, the total service credit to which he or she was entitled at the time of [~~his~~] the earlier retirement may, at his or her option, again be credited to him or her and upon [~~his~~] subsequent retirement he or she shall be credited in addition for purposes of computation of the pension portion of the retirement allowance with all [~~member~~] service credit earned by him or her subsequent to [~~his~~] the last restoration to membership. Such total service credit to which he or she was entitled at the time of [~~his~~] the earlier retirement shall be so credited only in the event that such member returns to the retirement system with regular interest the actuarial equivalent of the amount of the pension [~~he~~] received, or in the event that such amount is not so repaid the actuarial equivalent thereof shall be deducted from his or her subsequent retirement allowance.

c. Notwithstanding the foregoing provisions of this subdivision, a retired member who is receiving a retirement allowance for other than physical disability, and who returns to active public service, may elect not to be restored to membership in the retirement system until he or she has rendered one year of service following his or her return to public service. In such event his or her retirement allowance shall be suspended during such year of service in the same manner as provided in subdivision five of this section [~~five hundred three of this article~~]. Upon restoration to membership following completion of such year of service, his or her service in such year shall be deemed to be service while a member for purposes of subdivision b of section five hundred twelve of this article. He or she may purchase [~~member~~] service credit for such year, which shall be deemed earned [~~member~~] service credit. If a retired member receiving a retirement benefit allowance for other than physical disability, returns to active public service, and is then ineligible for membership in the retirement system, his or her retirement allowance shall be suspended in the same manner as provided in this section.

d. Notwithstanding any other provision of this article, a retired member who rejoins the system under the provisions of [~~paragraphs a or c of~~] this subdivision shall only be entitled to a death benefit according to the provisions of paragraph two of subdivision b of section five hundred twelve of this article and of no other subdivision thereof and for the purposes of said paragraph two of subdivision b of section five hundred twelve the credited service as a teacher shall be service as a teacher credited since last joining the system.

§2. This act shall take effect on the sixtieth day after it shall have become a law.

FISCAL NOTE. - - Pursuant to Legislative Law, Section 50:

This bill would amend subdivision 11 of Section 503 of the Education Law to allow a retired member of the New York State Teachers' Retirement System (NYSTRS), who returns to active service and suspends their pension benefit, to elect to combine their service credit earned prior to their retirement with the service credit earned after their restoration to active service, provided they have earned at least two years of service credit since restoration and they pay back their prior pension received or have the new benefit reduced for life based upon the actuarial equivalent of the prior pension received. Current law requires five years of service credit since restoration to combine all service credit into one pension benefit. State employees and other members of the New York State and Local Retirement System

(NYS&LRS) are eligible to combine their service credit after earning two years of service credit after restoration. This bill would make this eligibility the same for teachers as it is for state employees. This bill would take effect on the sixtieth day after it shall become a law.

The annual cost to the employers of members of the New York State Teachers' Retirement System would be negligible if this bill is enacted.

Member data is from the System's most recent actuarial valuation files, consisting of data provided by the employers to the Retirement System. Data distributions and statistics can be found in the System's Annual Report. System assets are as reported in the System's financial statements and can also be found in the System's Annual Report. Actuarial assumptions and methods are provided in the System's Actuarial Valuation Report.

The source of this estimate is Fiscal Note 2024-2 dated October 16, 2023 prepared by the Actuary of the New York State Teachers' Retirement System and is intended for use only during the 2024 Legislative Session. I, Richard A. Young, am the Chief Actuary for the New York State Teachers' Retirement System. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM

TO: Retirement Board

FROM: C. O'Grady

CC: T. Lee, M. Andriola, B. Dellea, D. Ampansiri

SUBJECT: Board Member Salary Reimbursement Report: 2022-23 Fiscal Year

DATE: October 26, 2023

In accordance with statute and the Board Member Salary Reimbursement Policy, reimbursement was made to Baldwinsville Central School District for teacher Board Member Elizabeth Chetney, to Bayport Blue Pont School District for teacher Board Member Eric Iberger, and to Schenectady City School District for Juliet Benaquisto.

Reimbursable Board Member Functions	**E. Chetney (days)**	**E. Iberger (days)**	**J. Benaquisto (days)**
Regular and Special Meetings of the Retirement Board and the Retirement Board Retreat	7	7	3
Meetings of Committees of the Retirement Board	2.5	3	0
Meetings of the Investment Advisory Committee and the Real Estate Advisory Committee	6.5	5	6
Annual Delegates Convention pursuant to Education Law S505	1.5	1	1
Meetings of the Medical Board pursuant to Education Law S507(6)	7	8	5
CII spring/fall meeting, NCTR annual conference, NIRS and/or Audit Committee member attendance at one Audit Trustee workshop	7.5	0	4
Total days of reimbursed service	**32**	**24**	**19**
Total amounts reimbursed:	**$ 21,828.34**	**$ 19,512.00**	**$ 13,736.05**

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM

Appendix C

MEMORANDUM

TO: T. Lee

FROM: Office of the CFO / Finance Department

DATE: October 26, 2023

SUBJECT: Retirement Board Package

Attached are the System's quarterly financial statements and related schedules for the quarters ended September 30, 2023 and 2022.

The following is a list of the documents included:

1. Statements of Fiduciary Net Position (Unaudited)
2. Statements of Changes in Fiduciary Net Position (Unaudited)
3. Schedule of Administrative Expenses (Unaudited)

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
Statements of Fiduciary Net Position (Unaudited)

September 30, 2023 and 2022

Assets	2023	2022
Investments at fair value:		
Domestic equity	$ 42,776,166,938	$ 39,556,056,782
International equity	17,597,744,821	17,581,768,565
Global equity	4,794,555,004	3,921,705,143
Real estate equity	16,312,162,060	16,307,176,062
Private equity	15,656,152,784	13,859,719,586
Domestic fixed income	18,064,866,768	16,755,701,993
High-yield bonds	1,371,808,597	956,287,093
Global bonds	2,635,672,995	2,634,046,170
Real estate debt	7,671,146,374	8,056,343,265
Private debt	2,089,443,361	1,537,394,728
Cash equivalents	1,611,661,450	1,871,550,860
Total investments	130,581,381,152	123,037,750,247
Receivables:		
Employer	1,854,438,702	1,730,843,050
Member	50,593,261	42,944,370
Investment income	348,845,217	290,870,207
Investment sales	296,409,694	174,304,700
Total receivables	2,550,286,874	2,238,962,327
Other assets:		
Securities lending collateral, invested	386,466,893	633,674,258
Member loans	269,270,845	249,487,110
Net investment in capital assets	19,588,553	20,034,071
Miscellaneous assets	5,360,517	5,031,273
Total other assets	680,686,808	908,226,712
Total assets	133,812,354,834	126,184,939,286
Deferred outflows of resources:		
Changes in net OPEB liability	15,103,133	10,703,193
Changes in net pension liability	15,366,904	18,052,606
Total deferred outflows of resources	30,470,037	28,755,799
Liabilities		
Securities lending collateral, due to borrowers	384,605,511	631,748,444
Investment purchases payable	435,048,345	296,669,890
Mortgage escrows and deposits, net of investments	8,256,079	13,336,488
Net OPEB liability	48,846,994	34,792,089
Other liabilities	171,529,561	131,832,090
Total liabilities	1,048,286,490	1,108,379,001
Deferred inflows of resources:		
Changes in net OPEB liability	2,249,463	13,229,678
Changes in net pension liability	1,305,207	33,768,375
Total deferred inflows of resources	3,554,670	46,998,053
Net position restricted for pensions	**$132,790,983,711**	**$125,058,318,031**

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
Statements of Changes in Fiduciary Net Position (Unaudited)

For the three months ending September 30, 2023 and 2022

	2023	2022
Additions:		
Investment income:		
Net (decrease) in fair value of investments	$ (3,414,532,879)	$ (6,000,898,056)
Interest	250,918,001	205,174,743
Dividends	321,204,677	369,177,291
Real estate, net operating income	118,739,984	136,366,727
Securities lending, gross earnings	5,709,375	3,561,787
Other (net)	2,015,248	1,532,013
	(2,715,945,594)	(5,285,085,495)
Less: Investment expenses	140,326,943	93,101,110
Securities lending:		
Broker rebates	3,992,623	2,018,767
Management fees	251,827	221,254
(Appreciation) depreciation on collateral	(59,975)	14,328
Net investment (loss)	(2,860,457,012)	(5,380,440,954)
Contributions:		
Employer	498,883,565	502,021,563
Member	55,517,224	47,232,644
Transfers (to)/from other systems	4,762,773	2,879,597
Total contributions	559,163,562	552,133,804
Net (deductions)	(2,301,293,450)	(4,828,307,150)
Deductions:		
Retirement benefit payments, periodic	2,086,721,906	2,032,349,401
Beneficiary payments	16,257,326	22,018,751
Return of contributions	6,209,290	6,231,296
Administrative expenses	20,071,259	17,357,478
Total deductions	2,129,259,781	2,077,956,926
Net (decrease) in net position	(4,430,553,231)	(6,906,264,076)
Net position restricted for pensions, beginning of year	137,221,536,942	131,964,582,107
Net position restricted for pensions, end of period	**$132,790,983,711**	**$125,058,318,031**

Compared to Budget Appropriations for 2023-2024

	Budget Appropriations 2023-2024	Expenses and Encumbrances YTD 09/30/2023	Remaining Balance 9/30/2023	Actual Expenses YTD 09/30/2023
Salaries:				
Salaries	$ 41,425,284	$ 7,898,457	$ 33,526,827	$ 9,387,367
Overtime salaries	60,021	1,235	58,786	1,282
Social Security	3,002,604	550,197	2,452,407	656,464
Subtotal Salaries	44,487,909	8,449,889	36,038,020	10,045,113
Benefits				
Employees retirement	5,126,948	896,723	4,230,225	896,723
Dental insurance	330,054	73,344	256,710	84,222
Health insurance	8,303,782	1,821,073	6,482,710	2,084,782
OPEB contribution	6,910,026	1,727,507	5,182,520	1,727,507
Civil service	61,800	13,750	48,050	13,750
Subtotal Benefits	20,732,610	4,532,396	16,200,214	4,806,983
Total salaries and benefits	65,220,519	12,982,285	52,238,234	14,852,096
Building occupancy:				
Building security and vending	325,000	329,891	(4,891)	61,257
Building supplies and expenses	148,000	23,764	124,236	23,764
Heat, light and power	593,836	89,303	504,533	89,303
Insurance	569,844	523	569,321	523
Municipal assessments	196,100	106,554	89,546	106,554
Office supplies and expenses	151,050	16,671	134,379	16,271
Storage	64,000	28,800	35,200	17,615
Telephone	585,000	150,453	434,547	136,148
Total building occupancy	2,632,830	745,959	1,886,871	451,435
Computer:				
IT Hardware Purchases	525,000	326,534	198,466	35,095
IT Software Purchases	449,000	69,139	379,861	43,559
Software and support services	4,455,197	3,480,236	974,961	2,257,089
Computer supplies	—	—	—	—
Total computer	6,000,197	3,875,909	2,124,288	2,335,743
Personnel and meeting:				
Board - meetings, travel and education	129,800	25,799	104,001	25,799
Delegates meeting	65,000	8,154	56,846	8,154
Dues	322,025	31,637	290,388	31,637

Compared to Budget Appropriations for 2023-2024

	Budget Appropriations 2023-2024	Expenses and Encumbrances YTD 09/30/2023	Remaining Balance 9/30/2023	Actual Expenses YTD 09/30/2023
Personnel and meeting (continued):				
Employee Engagement	$ 51,225	$ 5,518	$ 45,707	$ 5,518
Library	39,223	19,821	19,402	19,821
Overtime meals	2,017	93	1,924	103
Personnel expenses	224,800	54,242	170,558	43,594
Pre-retirement seminars	35,000	13,542	21,458	13,542
Staff schooling	726,828	181,197	545,631	88,588
Travel and automobile expense	321,684	12,833	308,851	6,750
Tuition assistance	55,000	1,410	53,590	1,410
Wellness fund	9,000	1,250	7,750	(1,200)
Total personnel and meeting	1,981,602	355,496	1,626,106	243,716
Professional and governmental services:				
Auditors - financial	420,000	259,410	160,590	—
Auditors - insurance department	—	203,879	(203,879)	178,451
Disability medical examinations	100,000	19,275	80,725	19,275
Postage and cartage	828,200	359,449	468,751	359,449
Professional fees and services	1,642,390	1,426,676	215,714	393,789
Publications	195,000	64,488	130,512	64,488
Statutory custodian charges	145,000	37,500	107,500	37,500
Total professional and governmental services	6,193,490	2,550,477	3,643,013	1,052,952
Capital improvement program:				
Depreciation - building and improvements	2,013,623	476,090	1,537,533	476,090
Depreciation - equipment	380,528	25,757	354,771	25,757
Amort./depreciation - computer micro	1,299,809	187,452	1,112,357	187,452
Building improvement expense	318,500	267,608	50,892	9,734
Building maintenance contracts	797,174	569,542	227,632	274,329
Equipment	217,000	243,047	(26,047)	185,724
Equipment maintenance	50,000	(14,081)	64,081	(31,230)
Computer equipment maintenance	125,000	—	125,000	—
Fleet maintenance	40,000	7,461	32,539	7,461
Capital contingency	8,366	—	8,366	—
Total capital improvement program	5,250,000	1,762,876	3,487,124	1,135,317
Total Administration Expenses	$ 87,278,638	$ 22,273,002	$ 65,005,636	$ 20,071,259

Quarterly Signatory Additions & Deletions

For Quarter Ended September 30, 2023

Division	Name	Position	Warrant Signatory	Document Signatory
Information Technology	Mark Gallagher	Manager/Director	Not Applicable	Deleted
Real Estate	David Maye	Assistant Manager/Assistant Director	Added	Added

NEW YORK STATE
TEACHERS' RETIREMENT SYSTEM

BOARD MEETING
October 26, 2023

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NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
10 CORPORATE WOODS DRIVE, ALBANY NEW YORK

A MEETING OF THE NEW YORK STATE TEACHERS' RETIREMENT SYSTEM BOARD was held at the System on October 26, 2023. The meeting was called to order by Board President David Keefe at 9:14 a.m. President Keefe asked Jennifer Longtin to lead the group in the Pledge of Allegiance.

Present: Juliet Benaquisto, Elizabeth Chetney, Paul Farfaglia, Phyllis Harrington (via WebEx), Eric Iberger, David Keefe (via WebEx), Jennifer Longtin, Oliver Robinson, Nicholas Smirensky and Thomas Lee.

After the Pledge of Allegiance, President Keefe welcomed Paul Farfaglia back to the Board. Mr. Farfaglia previously served on the NYSTRS Board as an active teacher member from 2009-2019 and retired from the Board upon his retirement from teaching in 2019. On October 17, 2023, the NYS Board of Regents appointed Mr. Farfaglia to fill the school board member seat left vacant by the resignation of Christopher Morin in August 2023.

<u>Agenda</u>

1. Introduction of Visitors

T. Lee introduced Greg Berck, NYS School Boards Association (via WebEx), Pete Savage from NYS United Teachers (via WebEx)

2. Correspondence

None.

3. Approval of July 26, 2023 Board Minutes, July 27, 2023 Board Retreat

Upon motion of N. Smirensky, seconded by J. Longtin and unanimously carried, the minutes of the July 26, 2023 Board Meeting and the July 27, 2023 Board Retreat were approved.

4. Resolution of Recognition – Christopher Morin (R1)

The following resolution was moved by E. Iberger, seconded by E. Chetney and unanimously carried by the Board:

Whereas Christopher Morin was first elected to the Retirement Board by the New York State Board of Regents on the recommendation of the New York State School Boards Association for a term beginning July 1, 2019;

Whereas he chaired the Retirement Board's Risk Committee and served on the Executive and Investment committees;

Whereas Mr. Morin was committed to his fiduciary duty as a NYSTRS Trustee to provide a secure retirement to the Retirement System's nearly 449,000 members;

Whereas his investment expertise contributed to the System remaining among the best-funded public pension plans in the country with a funded ratio of 97% based on the market value of assets as of the last completed fiscal year;

Whereas his leadership of the Risk Committee was integral to the System's review and mitigation of risks related to business operations and investments; now, therefore be it

Resolved, that the New York State Teachers' Retirement System Board hereby extends its sincere appreciation to Mr. Morin for his four years of service on the Retirement Board and his commitment to New York's educators; be it further

Resolved, that the Retirement Board wishes Mr. Morin all the best in his future endeavors; and be it further

Resolved, that a copy of this resolution be presented to Mr. Morin and be included in the proceedings of the NYSTRS Board meeting held October 26, 2023.

Committee Reports & Action Items

1. Audit Committee

A. Chairman's Report

O. Robinson, Chair, reported that the Committee had met on June 8, 2023 and discussed vulnerability assessment and penetration testing, the status of the internal audit plan and results of internal audits.

B. Resolution on Plante Moran Annual Audit Report (R2)

E. Iberger offered the following resolution, seconded by J. Longtin

and unanimously carried by the Board:

RESOLVED, That the report of Plante Moran on the financial statements of the Retirement System as of June 30, 2023 and for the plan year then ended, as presented to the Retirement Board, is accepted.

2. Disability Committee

A. Disability Denial Resolution (R3)

E. Iberger offered the following resolution, seconded by O. Robinson

and unanimously carried by the Board:

WHEREAS, After reviewing the medical information submitted in connection with the following member, the Medical Board has determined the member is not incapacitated for the performance of gainful employment and has recommended the member's application be denied, be it

RESOLVED, That the application for retirement on account of disability submitted by the following member be denied as recommended by the Medical Board:

[redacted]

B. Disability Rescission Resolution (R4)

J. Benaquisto offered the following resolution, seconded by E. Iberger

and unanimously carried by the Board:

WHEREAS, After reviewing the physician's report of the following annuitants who have retired for disability, the Medical Board believes they are improved and no longer incapacitated for the performance of all gainful employment, and recommended they be restored to active membership, therefore, be it

RESOLVED, That upon recommendation of the Medical Board, the action taken in retiring the following members for disability be rescinded and they be restored to active membership on the date indicated:

EmplID	Date Retired	Date Restored
[redacted]	07/14/2006	09/15/2023
	11/28/2016	06/09/2023
	06/13/2014	09/15/2023

3. Ethics Committee

N. Smirensky, acting Chair, reported that the Committee had met earlier in the day.

4. Executive Committee

A. Resolution on the 2024 Legislative Program (R5)

E. Chetney offered the following resolution, seconded by P. Harrington and unanimously carried by the Board:

> RESOLVED, That the 2024 Legislative Program (Appendix A, pp. 12-22), as presented to the Retirement Board by System staff, is approved and the Executive Director and Chief Investment Officer, or his designees, is authorized to seek introduction and enactment of the bill contained therein.

5. Compensation Committee

P. Harrington, Chair, reported that the Committee had met and discussed the Executive Director and Chief Investment Officer's annual performance review.

A. Resolution on Executive Compensation – EDCIO (R23)

O. Robinson offered the following resolution, seconded by N. Smirensky and unanimously carried by the Board:

> RESOLVED, that the report of the Compensation Committee regarding a recommended action on Executive Compensation, a copy of which is attached as Appendix B, pp. 23-24, is authorized and approved.

6. Investment Committee

N. Smirensky, Chair, asked the Board members if any of the consent agenda items should be moved to regular discussion items. Hearing no objections, the Board proceeded to move the Consent Agenda Items #1 A-E (Appendix C, pp. 25-26) together with one motion.

E. Iberger offered the following resolutions, seconded by P. Farfaglia and unanimously carried by the Board:

A. Renew Consultants

- StepStone – Private Equity/Debt Consultant (R6)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the System's contract with StepStone Group LP to serve as the System's private equity and private debt consultant and to perform such assignments as may be determined by the Executive Director and Chief Investment Officer or his designees in connection therewith, for a period of one year, commencing February 1, 2024 for all fixed services at an annual retainer not to exceed the current term's fee of $1,650,000 (subject to an inflation price adjustment not to exceed the lesser of 3% and the change in the ECI Index) and for all optional services at fees (1) for research on market trends or on private equity or private debt partnerships not in our portfolio not to exceed $40,000 per report; (2) for special research assignments to better define goals and objectives or monitor portfolio risk not to exceed $40,000 per report; (3) for negotiating final investment agreements and work with the System's legal counsel and staff in drafting, reviewing and/or revising partnership agreements, subscription agreements and other required documents for an additional fee not to exceed $15,000 per agreement; (4) for providing professional training not to exceed $20,000 per training; (5) for attending annual meetings and providing meeting notes not to exceed $8,000 per meeting; (6) for monitoring and reporting on legacy partnerships not to exceed $4,500 per partnership.

B. Renew Managers

- AQR Capital Management LLC (R7)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with AQR Capital Management, LLC to manage a portion of the System's assets as an active MSCI ACWI Ex-US international equity manager for a period of one-year, effective January 6, 2024.

- BlackRock Institutional Trust Company (R8)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with BlackRock Institutional Trust Company, N.A. to manage a portion of the System's assets as a passive ACWI ex-US international equity manager for a period of one-year, effective December 12, 2023.

- Dimensional Fund Advisors (R9)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Dimensional Fund Advisors to manage a portion of the System's assets as an active emerging markets manager benchmarked to the MSCI Emerging Markets Index for a period of one year commencing February 19, 2024.

- Goldman Sachs Asset Management (R10)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Goldman Sachs Asset Management, L.P. to manage a portion of the System's assets as an active global bond manager benchmarked to the Bloomberg Global Aggregate Float Adjusted ex-CNY Bond Index Hedged to USD for a period of one year, effective November 12, 2023.

- Harding Loevner Management (R11)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Harding Loevner LP to manage a portion of the System's assets as an active global equity manager benchmarked to the MSCI ACWI index for a period of one-year, effective February 27, 2024.

- Loomis Sayles & Co. (R12)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Loomis Sayles & Co., L.P., to manage a portion of the System's assets as an active global bond manager benchmarked to the Bloomberg Global Aggregate Float Adjusted ex-CNY Bond Index Hedged to USD for a period of one year, effective November 8, 2023.

- Marathon Asset Management Limited, As Successor in Interest to Marathon Asset Management LLP (R13)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Marathon Asset Management Limited, as successor in interest to Marathon Asset Management, LLP, to manage a portion of the System's assets as an active EAFE international equity manager for a period of one year, effective January 24, 2024.

- Nomura Corporate Research & Asset Management (R14)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with Nomura Corporate Research and Asset Management Inc. for a period of one year, effective November 27th, 2023, to manage a portion of the System's assets as an active U.S. high yield manager in two separate accounts: (A) a portfolio benchmarked to the ICE BofAML BB-B US High Yield Constrained Index (HUC4); and (B) a portfolio benchmarked to the ICE BofAML US High Yield Constrained Index (HUC0).

- State Street Global Advisors (R15)

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to renew the agreement with State Street Global Advisors Trust Company (successor-in-interest by assignment from State Street Bank and Trust Company) to manage a portion of the System's assets as a passive ACWI ex US international equity manager, for a period of one year, effective February 18, 2024.

C. Reappointments to the Investment Advisory Committee

- Howard Bicker (R16)

WHEREAS, The term of Howard Bicker, as a member of the Investment Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Bicker to a three-year term as a member of the Investment Advisory Committee, effective January 1, 2024.

- Daniel Bukowski (R17)

WHEREAS, The term of Daniel Bukowski, as a member of the Investment Advisory Committee, expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Bukowski to a three-year term as a member of the Investment Advisory Committee, effective January 1, 2024.

D. Reappointments to the Real Estate Advisory Committee

- Paul Dolinoy (R18)

WHEREAS, The term of Mr. Paul Dolinoy as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Dolinoy to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

- Jill Hatton (R19)

WHEREAS, The term of Ms. Jill Hatton as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Ms. Hatton to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

- Laura Huntington (R20)

WHEREAS, The term of Ms. Laura Huntington as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Ms. Huntington to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

- Daniel Hogarty Jr. (R21)

WHEREAS, The term of Mr. Daniel Hogarty Jr. as a member of the Real Estate Advisory Committee expires on December 31, 2023; be it

RESOLVED, That the Retirement Board hereby reappoints Mr. Hogarty to a three-year term as a member of the Real Estate Advisory Committee effective January 1, 2024.

E. Resolution on Investment Policy Manual (R22)

RESOLVED, That the Investment Policy Manual, as presented to the Retirement Board reflecting significant changes through October 2023, as summarized in the grid below, is approved and accepted.

POLICY	SUMMARY OF SIGNIFICANT CHANGES 2023
Statement of Investment Policy	• Updated Controlling Statutes and Regulations -- §177(9) of the Retirement and Social Security Law amended to increase percentage of assets that may be invested in types of assets not otherwise specifically authorized from 25% to 35% • Added roles and responsibilities for Senior Advisor to the Executive Director and Chief Investment Officer - Stewardship
Delegation of Investment Authority	• Added "Limited Waiver of Credit Ratings Requirements for U.S. Government Obligations" section (July 26, 2023 Board meeting)

F. New Agreements

1. Resolution on Stepstone Group Real Estate LP (R24)

P. Farfaglia offered the following resolution, seconded by J. Longtin and unanimously carried by the Board:

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to contract with StepStone Group Real Estate LP to serve as the System's real estate consultant for a period of one year, commencing on such effective date as may be determined by the Executive Director and Chief Investment Officer upon the completion of legal due diligence, for all fixed services at an annual retainer not to exceed $450,000, and to perform such assignments and optional services as may be determined by the Executive Director and Chief Investment Officer in connection therewith.

2. Resolution on Meketa Investment Group Inc (R25)

E. Iberger offered the following resolution, seconded by J. Longtin and unanimously carried by the Board:

RESOLVED, That the Executive Director and Chief Investment Officer is authorized to contract with Meketa Investment Group, Inc. to serve as the System's secondary real estate consultant for a period of one year, commencing on such effective date as may be determined by the Executive Director and Chief Investment Officer upon the completion of legal due diligence, to perform such assignments and optional services as may be determined by the Executive Director and Chief Investment Officer in connection therewith.

7. Risk Committee

N. Smirensky, acting Chair, reported that the Committee had met earlier in the day and heard a presentation an information security update and personnel updates in Executive Session and in open session heard reports on the annual SEC Red Flags risk assessment and the investment risk KRI dashboard.

Staff Reports

A. Old Business

None.

B. New Business

1. Litigation

Don Ampansiri discussed the Litigation report (Appendix D, pp. 27-28)

2. Member Relations

Beth Dellea reviewed details for the upcoming Delegates Meeting to be held in Saratoga NY on November 5-6, 2023. She also reviewed the memo provided to the Board regarding the five year review of the member loan service charge. Staff recommended that the fee remain at thirty dollars for the next five years. The next review/recommendation will occur in October 2028 (Appendix E, pp. 29-30)

3. Stewardship Update

Han Yik provided an update on the System's stewardship efforts.

4. EDCIO Work Plan Update

Emily Ekland provided a sample of a dashboard that tracks projects under the ED/CIO work plan.

5. DEI Update

Danny Malavé and Matt Pinchinat provided department updates (Appendix F, pp. 31-35)

6. Employer Contribution Rate Presentation

Richard Young and Melody Prangley gave a presentation to the Board on the employer contribution rate (Appendix G, pp. 36-51).

There being no further business, the meeting unanimously adjourned at 10:40 a.m.

Respectfully submitted,

[redacted]

Thomas K. Lee

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
Memorandum

TO: Retirement Board

FROM: D. Ampansiri, Jr./Y. Ruoso/K. Vrbanac

RE: 2024 Legislative Program and Update

DATE: October 17, 2023

CC: T. Lee

2024 Legislative Program

Accompanying the Retirement Board materials is the 2024 Legislative Program recommended by System staff. With it being the second year of the legislative cycle, the 2024 Program proposes to carry forward 1 bill from the 2023 Legislative Program not acted upon by the Legislature.

Program bill 23-2 (2 year benefit recalculation) will be carried forward as program bill 24-2 respectively.

24-2 - Allows retirees of the New York State Teachers' Retirement System who suspend retirement the option of a benefit recalculation after 2 years of service.

For your review and action at this time, you have been provided with the legislative package: the bill text, memo and fiscal note updated for the 2024 legislative session.

Update on 2023 Legislation

As of this writing, program bill 23-1 (transfer of reserves), which passed both houses (the Senate on June 5, 2023 and the Assembly on June 9, 2023) has not been delivered to the Governor.

23-1 – Reinstates the transfer of reserves for members transferring between certain public retirement systems with 10 or more years of credited service.

We will continue to keep you posted on any further action.

2024 Legislative Program

New York State Teachers' Retirement System

New York State Teachers' Retirement System
10 Corporate Woods Drive
Albany, New York 12211-2395
(800) 348-7298 or (518) 447-2900
NYSTRS.org

2023-2024 NYSTRS Legislative Program

2023 Bill Numbers	Subject	2024 Program Number	2024 Cost
S7512 A7444A	Reinstates the transfer of reserves for members transferring between certain public retirement systems with 10 or more years of credited service.	**NYSTRS Bill No. 23-1** **6/5/23 Passed Senate** **6/9/23 Passed Assembly** **No Cost** **Pending delivery to the Governor.**	
S7462	Allows retirees of the New York State Teachers' Retirement System who suspend retirement the option of a benefit recalculation after 2 years of service.	24-2	Negligible

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Proposed 2024 Legislative Program

Bill No.	Bill Purpose
24-2	Allows retirees of the New York State Teachers' Retirement System who suspend retirement the option of a benefit recalculation after 2 years of service.

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NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
BILL NO. 24-2

M E M O R A N D U M

RE

"AN ACT TO AMEND THE EDUCATION LAW, IN RELATION TO ALLOWING RETIREES OF THE NEW YORK STATE TEACHERS' RETIREMENT SYSTEM WHO SUSPEND THEIR RETIREMENT THE OPTION OF A BENEFIT RECALCULATION AFTER TWO YEARS OF SERVICE"

Purpose of the Bill

The New York State Teachers' Retirement System (NYSTRS) proposes an amendment to Education Law Section 503(11) to mirror the provisions of Retirement and Social Security Law Section 101, the provisions available to members of the New York State and Local Employees' Retirement System (NYSLRS). The purpose of this amendment is to maintain consistency in the law for members of the state systems (NYSLRS and NYSTRS). The amendments to Education Law Section 503(11) would allow retired members of NYSTRS to suspend their retirement, return to work and have the option of a benefit recalculation after working at least two years of additional public service.

Summary and Justification

Under the current statute, Education Law Section 503(11)(b), NYSTRS retirees are permitted to suspend their retirement and return to work to have their benefit recalculated after five years or alternatively upon re-retiring with at least two years of service, they become eligible to receive two separate retirement benefits. In order to avail themselves of the recalculation after five years of additional service, the member is required to pay back all the pension benefits received under the original retirement benefit, with interest, or take an actuarial equivalent lifetime reduction. The intent of these provisions, Education Law Section 503 and Retirement and Social Security Law Section 101, is to allow members of NYSTRS and NYSLRS, as public employees, the opportunity to have all their public service under either two separate retirement benefits or the option of a combined retirement benefit, if the recalculation requirements are satisfied.

The amendments to Education Law Section 503(11) update the law to reflect the requirements under Retirement and Social Security Law Section 101, and would allow NYSTRS members to avail themselves of a recalculation after two years of member service credit after restoration to active service, provided, such members return to the retirement system with regular interest the actuarial equivalent of the amount of the retirement allowance received in the first retirement or repayment of same through actuarial lifetime reduction.

In addition, the System recognizes that allowing retirees the option of recalculating their benefit after two years of service, instead of five years, may assist those who believe they attained a service credit marker, but discover after the fact and post verification of service record with the school district that they had not. For example, in some cases, members retiring believe they have reached their intended service credit milestone, twenty years, but once the service has been verified with the employer the service credit is less than what was anticipated. At that point, it could be very difficult for the retiree to return to the position they retired from or even find a similar position, much less for an additional five years. Reducing the benefit recalculation requirement to two years, would provide a more reasonable avenue to rectify such miscalculations, equitably avail NYSTRS retirees of the same recalculation already provided in law for NYSLRS retirees, and may provide employers with opportunities to hire an experienced worker to fill in during a transition and assist in succession planning.

This legislation was captured under veto message 138 of the laws of 2022 for the reason that the funding source was not identified. The System's fiscal note was appended to the bill and provided that due to the nature of this legislation NYSTRS is unable to ascertain the exact number of members who will pursue the recalculation upon restoration to membership. Accordingly, it is not possible to state that there will be no cost to the bill. An individual's life circumstances determine how and when a member retires and then elects to return to public service. The law does currently require, however, that for a member to afford themselves of the benefit recalculation addressed in this legislation the member must remit the repayment of all pension received under the first retirement plus interest or repayment through an actuarial reduction. With that said, there may be a cost associated due to the employer contribution rate collected and applicable at the time of the service and that is reflected in the negligible cost in the fiscal note appended.

The amendments sought by this proposed legislation seek to update the application of the law and provide NYSTRS members with the similar option currently available to other state employees.

Effective Date of the Bill

This act shall take effect on the sixtieth day after it shall have become a law.

Other Agencies to Whom the Bill May Be of Interest

Division of the Budget, Department of Financial Services.

Budgetary Implications of the Bill

If this bill is enacted, the annual cost to the employers of members of the New York State Teachers' Retirement System is estimated to be negligible.

NOTE: This bill was prepared under the direction of the New York State Teachers' Retirement System Board and was introduced at its request.

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM BILL NO. 24-2

AN ACT to amend the education law, in relation to allowing retirees of the New York state teachers' retirement system who suspend their retirement the option of a benefit recalculation after two years of service

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Subdivision 11 of section 503 of the education law, as added by chapter 507 of the laws of 1972 and as renumbered by chapter 512 of the laws of 1976, is amended to read as follows:

11. a. If a retired member, receiving a retirement allowance for other than disability, returns to active public service, except as otherwise provided in sections two hundred eleven or two [~~hyndred~~] hundred twelve of the retirement and social security law, and is eligible for membership in the retirement system, he [~~thereupon~~] or she shall become a member and his or her retirement allowance shall be suspended in the same manner as provided in subdivision five of this section [~~five hundred three of this article. In such event, he shall contribute to the retirement system as if he were a new member~~]. Upon [~~his~~] subsequent retirement [~~after at least two years of service he~~] they shall:

1. Be credited with all member service earned [~~by him~~] since he or she last became a member of the retirement system, and

2. Receive a retirement allowance which shall consist of[~~:~~

~~(a) An annuity as provided in subdivision five of section five hundred three of this article plus an annuity which is the actuarial equivalent of any contributions made by him since he last became a member, and~~

~~(b) The~~] the pension which he or she was receiving immediately prior to his or her last restoration to membership as provided in subdivision five of this section [~~five hundred three of this article~~], plus a pension based upon the [~~member~~] service credit earned [~~by him~~] since he or she last became a member. Such latter pension shall be computed as if [~~he~~] they were a new member when he or she rejoined the system pursuant to the provisions of this subdivision.

b. Where such member shall have earned at least [~~five~~] two years of [~~member~~] service credit after restoration to active service, the total service credit to which he or she was entitled at the time of [~~his~~] the earlier retirement may, at his or her option, again be credited to him or her and upon [~~his~~] subsequent retirement he or she shall be credited in addition for purposes of computation of the pension portion of the retirement allowance with all [~~member~~] service credit earned by him or her subsequent to [~~his~~] the last restoration to membership. Such total service credit to which he or she was entitled at the time of [~~his~~] the earlier retirement shall be so credited only in the event that such member returns to the retirement system with regular interest the actuarial equivalent of the amount of the pension [~~he~~] received, or in the event that such amount is not so repaid the actuarial equivalent thereof shall be deducted from his or her subsequent retirement allowance.

c. Notwithstanding the foregoing provisions of this subdivision, a retired member who is receiving a retirement allowance for other than physical disability, and who returns to active public service, may elect not to be restored to membership in the retirement system until he or she has rendered one year of service following his or her return to public service. In such event his or her retirement allowance shall be suspended during such year of service in the same manner as provided in subdivision five of this section [~~five hundred three of this article~~]. Upon restoration to membership following completion of such year of service, his or her service in such year shall be deemed to be service while a member for purposes of subdivision b of section five hundred twelve of this article. He or she may purchase [~~member~~] service credit for such year, which shall be deemed earned [~~member~~] service credit. If a retired member receiving a retirement benefit allowance for other than physical disability, returns to active public service, and is then ineligible for membership in the retirement system, his or her retirement allowance shall be suspended in the same manner as provided in this section.

d. Notwithstanding any other provision of this article, a retired member who rejoins the system under the provisions of [~~paragraphs a or c of~~] this subdivision shall only be entitled to a death benefit according to the provisions of paragraph two of subdivision b of section five hundred twelve of this article and of no other subdivision thereof and for the purposes of said paragraph two of subdivision b of section five hundred twelve the credited service as a teacher shall be service as a teacher credited since last joining the system.

§2. This act shall take effect on the sixtieth day after it shall have become a law.

FISCAL NOTE. - - Pursuant to Legislative Law, Section 50:

This bill would amend subdivision 11 of Section 503 of the Education Law to allow a retired member of the New York State Teachers' Retirement System (NYSTRS), who returns to active service and suspends their pension benefit, to elect to combine their service credit earned prior to their retirement with the service credit earned after their restoration to active service, provided they have earned at least two years of service credit since restoration and they pay back their prior pension received or have the new benefit reduced for life based upon the actuarial equivalent of the prior pension received. Current law requires five years of service credit since restoration to combine all service credit into one pension benefit. State employees and other members of the New York State and Local Retirement System

(NYS&LRS) are eligible to combine their service credit after earning two years of service credit after restoration. This bill would make this eligibility the same for teachers as it is for state employees. This bill would take effect on the sixtieth day after it shall become a law.

The annual cost to the employers of members of the New York State Teachers' Retirement System would be negligible if this bill is enacted.

Member data is from the System's most recent actuarial valuation files, consisting of data provided by the employers to the Retirement System. Data distributions and statistics can be found in the System's Annual Report. System assets are as reported in the System's financial statements and can also be found in the System's Annual Report. Actuarial assumptions and methods are provided in the System's Actuarial Valuation Report.

The source of this estimate is Fiscal Note 2024-2 dated October 16, 2023 prepared by the Actuary of the New York State Teachers' Retirement System and is intended for use only during the 2024 Legislative Session. I, Richard A. Young, am the Chief Actuary for the New York State Teachers' Retirement System. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

October 26, 2023

Recommendation of Compensation Committee

Title	Effective Date	Current Salary	Proposed Salary
Executive Director/Chief Investment Officer	October 26, 2023	$736,550	$758,646

X______________________________

David Keefe
Board President

X [redacted]

Phyllis Harrington
Compensation Committee, Chair

October 26, 2023

Recommendation of Compensation Committee

Title	Effective Date	Current Salarv	Proposed Salarv
Executive Director/Chief Investment Officer	October 26, 2023	$736,550	$758,646

X [redacted]

David Keefe
Board President

X

Phyllis Harrington
Compensation Committee, Chair

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
10 Corporate Woods Drive
Albany, New York

Appendix C

Board Meeting Agenda pp. 32-33

October 26, 2023

Call to Order by President

A. Introduction of Visitors
B. Correspondence - none
C. Approval of Minutes of Board Meeting July 26, 2023, July 27, 2023 Board Retreat pp. 34-49
D. Resolution of Recognition – Christopher Morin (R1, p. 50)

Committee Reports & Action Items

A **Audit Committee -** O. Robinson, Chair
   1. Chair's Report
   2. Resolution on Plante Moran Annual Audit Report (R2, p. 51)

B. **Disability Review Committee** - E. Chetney, Chair
   1. Chair's Report
   2. Disability Denial Resolution (R3, p. 52)
   3. Disability Rescission Resolution (R4, p. 53)

C. **Ethics Committee** - R. Mahoney, Chair
   1. Chair's Report

D. **Executive Committee** - D. Keefe, Chair
   1. Resolution on 2024 Legislative Program (R5, p. 54)

E. **Compensation Committee** - P. Harrington, Chair
   1. Chair's Report – move walk in resolution here (R23)

F. **Investment Committee** - N. Smirensky, Chair
   1. **Consent Agenda items 1 A-E pages**: 55-71
      A. Renew Consultant
         - StepStone – Private Equity/Debt Consultant R6, p. 55
      B. Renew Managers
         - AQR Capital Management LLC (International Equities, Active) R7, p. 56
         - BlackRock Institutional Trust Company (International Equities, Passive) R8, p. 57
         - Dimensional Fund Advisors (International Equities, Active) R9, p. 58
         - Goldman Sachs Asset Management (Global Bonds, Active) R10, p. 59
         - Harding Loevner Management (Global Equities, Active) R11, p. 60
         - Loomis Sayles & Co. (Global Bonds, Active) R12, p. 61
         - Marathon Asset Management Ltd (International Equities, Active) R13, p. 62
         - Nomura Corporate Research & Asset Management (High Yield Bonds, Active, 2 accounts) R14, p. 63
         - State Street Global Advisors (International Equities, Passive) R15, p. 64
      C. Reappointments to Investment Advisory Committee
         - Howard Bicker (R16, p. 65)
         - Daniel Bukowski (R17, p. 66)
      D. Reappointments to Real Estate Advisory Committee
         - Paul Dolinoy (R18, p. 67)
         - Jill Hatton (R19, p. 68)
         - Laura Huntington (R20, p. 69)
         - Daniel Hogarty, Jr. (R21, p. 70)
      E. Resolution on Investment Policy Manual (R22, p. 71)

Move Walk-in Resolutions for StepStone (R24) and Meketa (R25) here

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
10 Corporate Woods Drive
Albany, New York

G. **Risk Committee** (R. Mahoney, Chair)
   1. Chair's Report

Staff Reports

A. Old Business
B. New Business
   1. Litigation – D. Ampansiri pp. 72-73
   2. Member Relations Update – B. Dellea
      - Member Loan Service Charge Memo pp. 74-75
   3. Stewardship Update – H. Yik
   4. EDCIO Work Plan Presentation – E. Ekland p. 76
   5. DEI Update – D. Malavé, M. Pinchinat pp. 77-81
   6. Employer Contribution Rate Presentation – R. Young, M. Prangley pp. 82-97

NEW YORK STATE TEACHERS' RETIREMENT SYSTEM

Memorandum

TO: Retirement Board

FROM: Don Ampansiri, Jr., Janet A. Graham

RE: Status of System Litigation as of October 17, 2023

DATE: October 17, 2023

CC: T. Lee, Y. Ruoso

UPDATE ON PENDING LAWSUITS SINCE THE LAST REPORT

Michael Bellarosa v. New York State Teachers' Retirement System

Action commenced: 9/8/2022
Favorable Article 78 decision: 5/12/2023

CURRENT STATUS: May 12, 2023, the Court found in favor of the System and dismissed the petition. Petitioner filed a Notice of Appeal on May 24, 2023, and has until November 24, 2023, to perfect the filing of the appeal. The Attorney General's office will continue to represent the System in the appeal.

Summary of the case/background information:

Petitioner, a Tier 4 member, is challenging the System's determination excluding for pension purposes payments made to Petitioner for a Technology/ Wellness/ Transportation Allowance and Vacation by the Valley Central School District (the District). The District converted the Technology/ Wellness/Transportation Allowance and unused vacation days into salary. The conversion of these benefits into salary on the eve of retirement has the effect of artificially inflating the pension benefit. As such, these payments are not considered regular salary and NYSTRS contends the payments are excluded from the pension calculation.

Andrea Loscalzo v. New York State Teachers' Retirement System
Action commenced: 7/18/2022
Favorable Article 78 decision: 7/11/2023

CURRENT STATUS: July 11, 2023, the Court found in favor of the System and dismissed the petition. Petitioner did not appeal so the case is now closed.

Summary of the case/background information:

Petitioner, a Tier 4 member, is challenging the System's determination excluding for pension purposes all salary and service credit under a settlement agreement with Greenburgh-Graham Union Free School District (District). Notwithstanding that Petitioner rendered no further service to the District following entry into the settlement, the cause of action contends such payments should be considered regular compensation and, as such, be includable in the pension calculation.

Audra Schmitt v. New York State Teachers' Retirement System
Action commenced: 4/4/2023

CURRENT STATUS: The Attorney General's office responded on behalf of NYSTRS. We are awaiting the court's decision.

Summary of the case/background information:

Petitioner, a Tier 4 member, is challenging the System's determination excluding for pension purposes all salary and service credit under a settlement agreement with Livonia Central School District (the District) because the payment is termination pay which is not includable in a Tier 4 benefit calculation. Pursuant to NYSTRS' regulations, termination pay is any payment received in anticipation of the termination of a member's employment, for any reason, or any payment for accrued sick leave, annual leave, deferred compensation, or other credits for time not worked. Notwithstanding that Petitioner rendered no further service to the District following entry into the settlement, and tendered her resignation, the cause of action contends such payments should be considered regular compensation and, as such, includable in the pension calculation.

LAWSUITS COMMENCED SINCE THE LAST REPORT

NONE

New York State Teachers' Retirement System

Memorandum

To: Retirement Board

From: T. Lee

Subject: Member Loan Service Charge

Date: October 26, 2023

CC: B. Dellea, D. Ampansiri, M. Andriola, K. Ebert

Background

The Retirement Board is required by Education Law Section 512-b to set a service charge payable upon loan issuance, "in an amount sufficient to cover the cost to the retirement system of administering the loans."

Regulation requirements

Section 5004.7 CHARGES.

(a) A service charge payable upon loans shall be set by the Retirement Board in an amount sufficient to cover the cost of administering the loan and it shall be a minimum of thirty dollars ($30.00).

(1) The System will review the service charge payable upon loans on a five-year basis and make a recommendation to the Retirement Board.

(2) The service charge shall be a unit of direct labor cost.

(3) For the purposes of this section, "direct labor cost" shall mean salaries, benefits, and payroll taxes of staff responsible for loan issuance.

(4) In the event the direct labor cost is less than the service charge set forth in paragraph (b) of this section, the difference shall be attributed to overhead cost.

(b) The current service charge on each loan shall be thirty dollars ($30.00).

(c) A loan payment shall be considered delinquent when it is 10 days past due and for each such payment a ten-dollar ($10.00) charge shall be added to the loan. A loan payment must be paid in full in order not to be considered delinquent.

Process	Recommendation
Determine the 'cost' of administering the loans	Define cost as direct labor cost for the Loan unit. Direct labor cost includes salaries, benefits, and payroll taxes.
Set the Member Loan Service Charge	Set the charge based on the cost as defined above but not less than $30. Any excess of $30 over the cost as defined will be attributed to overhead. With this recommendation, the loan service charge would remain at its current level of $30.
Determine increments for the changes in the rate	The rate will be increased or decreased in $5 increments when the cost is within one dollar of the next increment.*

**Staff will apprise the board and make a recommendation regarding the service charge every five years. The next recommendation would occur at the October 2028 meeting.*

<u>Analysis</u>

The Member Relations division analyzed the direct costs of loan issuance in conjunction with the indirect cost of all loans maintained projected over the five-year project period. A similar process was used for the last review back in 2018. At this point, the fee has not increased over the next $5 increment.

<u>Recommendation</u>

Based on the cost projections over the next five years, we recommend the Loan Service fee remain at $30 for the next five years.

Diversity, Equity, & Inclusion Division

Strategic Plan Update

October 26, 2023

Diversity Commitment Priority – Analytical Insights

- Expansion of community outreach model toward career pathway partnerships

Inclusion Commitment Priority – Inclusion Insights & Customer Service

- Restructure *Inclusion and Equity Survey* based on feedback and extended review period
- Scaffold System DEI projects through adaptation of unit/department level project-specific training

Equity Commitment Priority – Workplace Equity

- Established *Community Conversations* to expand employee support structures

Data Commitment Priority – Continued Enhancement to Infrastructure

- Expansion of MWBE outreach and industry engagement through collaborative strategy group

Communication Commitment Priority – Reflecting DEI Commitment Externally

- Align external reporting and engagement with internal DEI strategy

New Items

- I& E Survey Review & Redesign
- Community Conversations & Drop-in Hours
- Training Needs Assessment – by Department

Recurring Initiatives

- NYSTRS Voices – Monthly Fireside Chat Series
- Employee Mentorship Program & Peer Mentor Partners
- Holiday Observance & Cultural Competence Programming
- System Accessibility Working Group & NYSTRS Inclusion Council

Upcoming

- Biennial EEO-4 Report
- 2024 MWBE Conference – Tentative Date February 15, 2023

Department Project Training Design
ICC Example

Observation	• Role observation and active participation with individual units
Curriculum Implementation	• Development and design of multi-part training series, moving beyond infrastructure toward direct service
Tangible Applicaiton	• Generative outcomes with direct connection to member service & established model for ongoing partnership and staff support

MWBE/DEI Strategy Team – Restructured Working Group

- Prioritization of manager/vendor engagement process and resource sharing

Engagement Instrument – Design & Review

- Establish System-wide DEI engagement tool for external partners
- Expand data collection through structured qualitative inquiry centering manager/vendor DEI strategy

MWBE Report – Review & Update

- Exploring enhancements to scope and utility of System annual MWBE report

2024 MWBE Conference – Purposeful Expansion

- Embed conference design enhancements to expand MWBE outreach and System exposure to MWBE entities

October 2023

Updated I&E Survey MWBE Report

December 2023

MWBE Report Update

February 2024

MWBE Conference

April 2024

MWBE Strategy Progress & Conference Outcomes

July 2024

- System DEI Strategy Forecasting

Diversity, Equity, & Inclusion Division

Adjusted Timeline

Presentation to the Retirement Board

Estimated Range of the Next Employer Contribution Rate

Richard A. Young, Chief Actuary

Melody Prangley, Deputy Chief Actuary

October 26, 2023

Current ECR
June 30, 2022 Actuarial Valuation

Employer Contribution Rate (ECR) = 9.76%

- Applicable to 7/1/2023 – 6/30/2024 member salaries

- Contribution to be collected in the Fall of 2024

ECR – Where are we going?

The *Estimated* *Range* of the next Employer Contribution Rate:

June 30, 2023 Actuarial Valuation

9.75% to 10.25%

Application Dates

- Will be multiplied by the 2024 – 2025 fiscal year salaries
- Will be collected in 2025 – 2026 fiscal year (September, October, November 2025)

2025

September	October	November

Employer Dollars Contributed

Collection Date	Employer Contributions	ECR
Fall 2020	$1.5 billion	8.86%
Fall 2021	$1.6 billion	9.53%
Fall 2022	$1.7 billion	9.80%
Fall 2023	$1.9 billion	10.29%
Fall 2024	$1.8 billion*	9.76%
Fall 2025	$1.9 - $2.0 billion*	9.75% – 10.25%

**estimated*

Historic 50 Years of ECR

’74 – ’75	18.80%	’87 – ’88	16.83%	’00 – ’01	0.43%	’13 – ’14	16.25%
’75 – ’76	19.40%	’88 – ’89	14.79%	’01 – ’02	0.36%	’14 – ’15	17.53%
’76 – ’77	19.40%	’89 – ’90	6.87%	’02 – ’03	0.36%	’15 – ’16	13.26%
’77 – ’78	20.40%	’90 – ’91	6.84%	’03 – ’04	2.52%	’16 – ’17	11.72%
’78 – ’79	21.40%	’91 – ’92	6.64%	’04 – ’05	5.63%	’17 – ’18	9.80%
’79 – ’80	22.49%	’92 – ’93	8.00%	’05 – ’06	7.97%	’18 – ’19	10.62%
’80 – ’81	23.49%	’93 – ’94	8.41%	’06 – ’07	8.60%	’19 – ’20	8.86%
’81 – ’82	23.49%	’94 – ’95	7.24%	’07 – ’08	8.73%	’20 – ’21	9.53%
’82 – ’83	23.49%	’95 – ’96	6.37%	’08 – ’09	7.63%	’21 – ’22	9.80%
’83 – ’84	22.90%	’96 – ’97	3.57%	’09 – ’10	6.19%	’22 – ’23	10.29%
’84 – ’85	22.80%	’97 – ’98	1.25%	’10 – ’11	8.62%	’23 – ’24	9.76%
’85 – ’86	21.40%	’98 – ’99	1.42%	’11 – ’12	11.11%		
’86 – ’87	18.80%	’99 – ’00	1.43%	’12 – ’13	11.84%		

NYSTRS Funded Ratio

Funded Ratio is the ratio of plan assets to accrued liabilities

FYE	Funded Ratio Based on MVA	Funded Ratio Based on AVA
6/30/2018	100.9%	99.2%
6/30/2019	101.2%	99.6%
6/30/2020	97.3%	98.9%
6/30/2021	113.0%	99.3%
6/30/2022	97.4%	99.3%
6/30/2023*	98%	98%

NY STRS

**estimated*

Investment Rates of Return

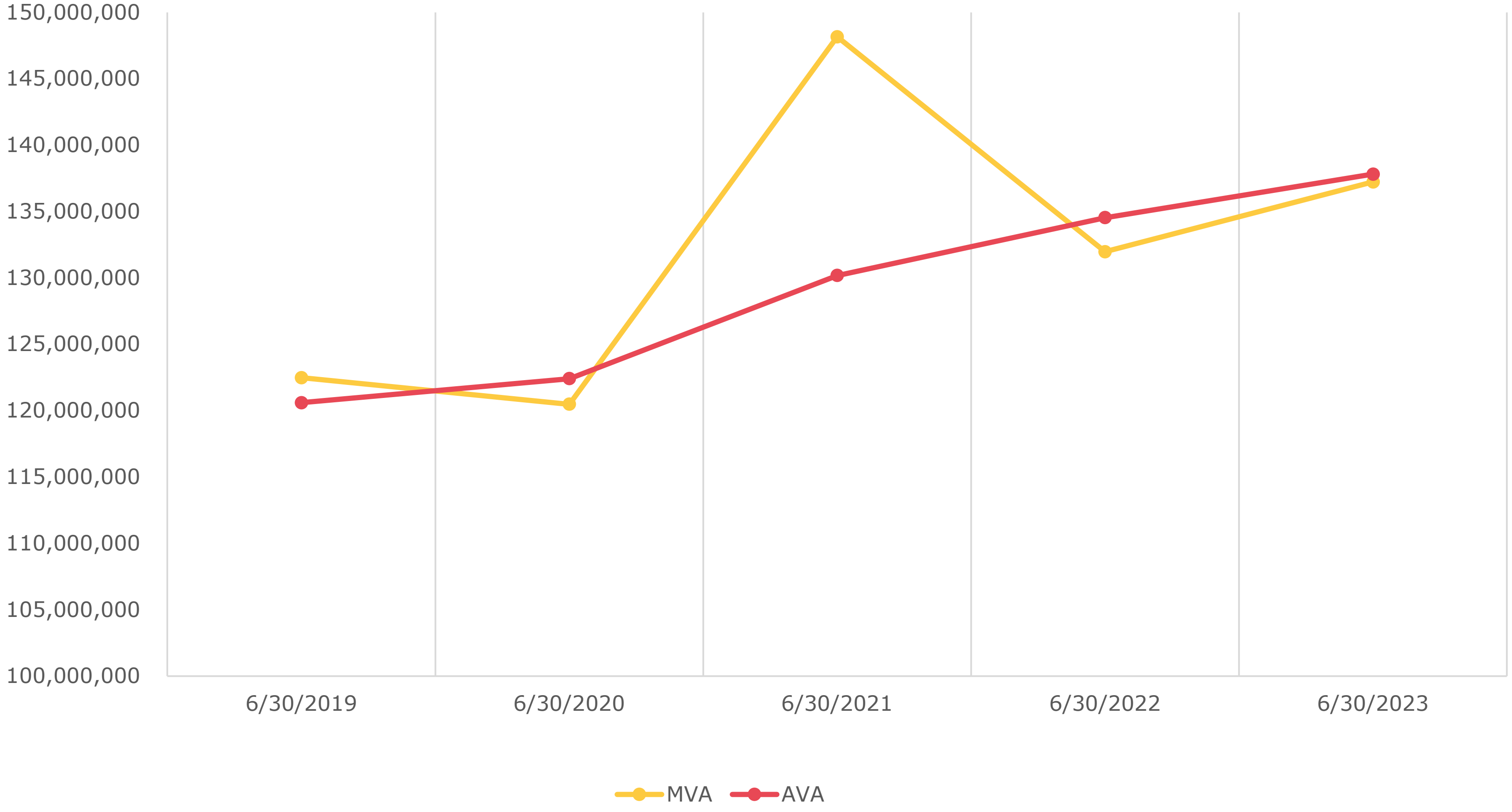
Fiscal Year	Market Value Rate of Return (net of fees)
2018 – 2019	7.1%
2019 – 2020	3.5%
2020 – 2021	29.0%
2021 – 2022	-7.1%
2022 – 2023	**9.0%**
5-year average:	**7.7%**

5-year geometric average: $[(1.071)\text{x}(1.035)\text{x}(1.29)\text{x}(0.929)\text{x}(1.09)]^{(1/5)} - 1 = 7.68$ %

Note that the 2017-2018 return was 9.0%

NY STRS

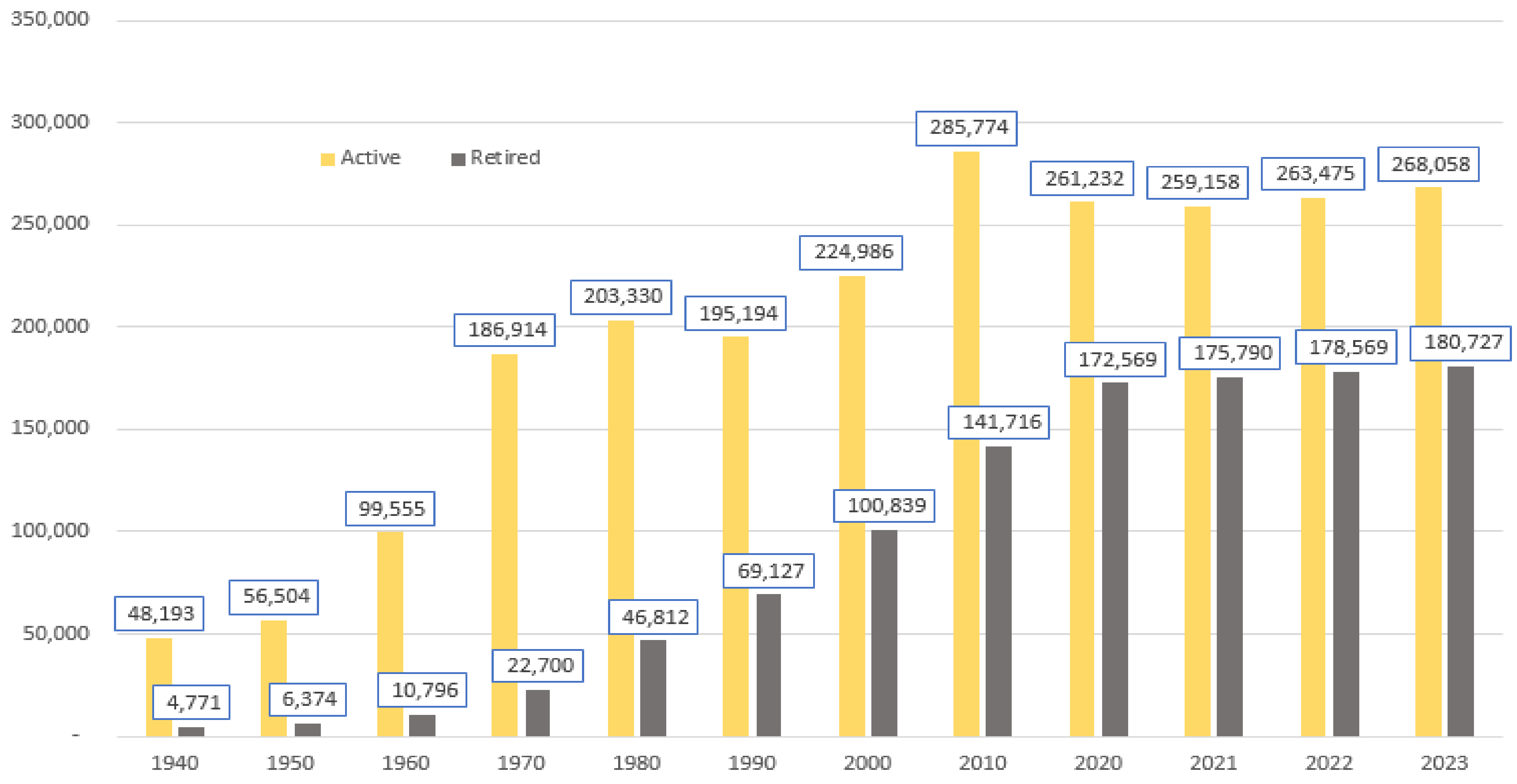
Actuarial Value of Assets Development



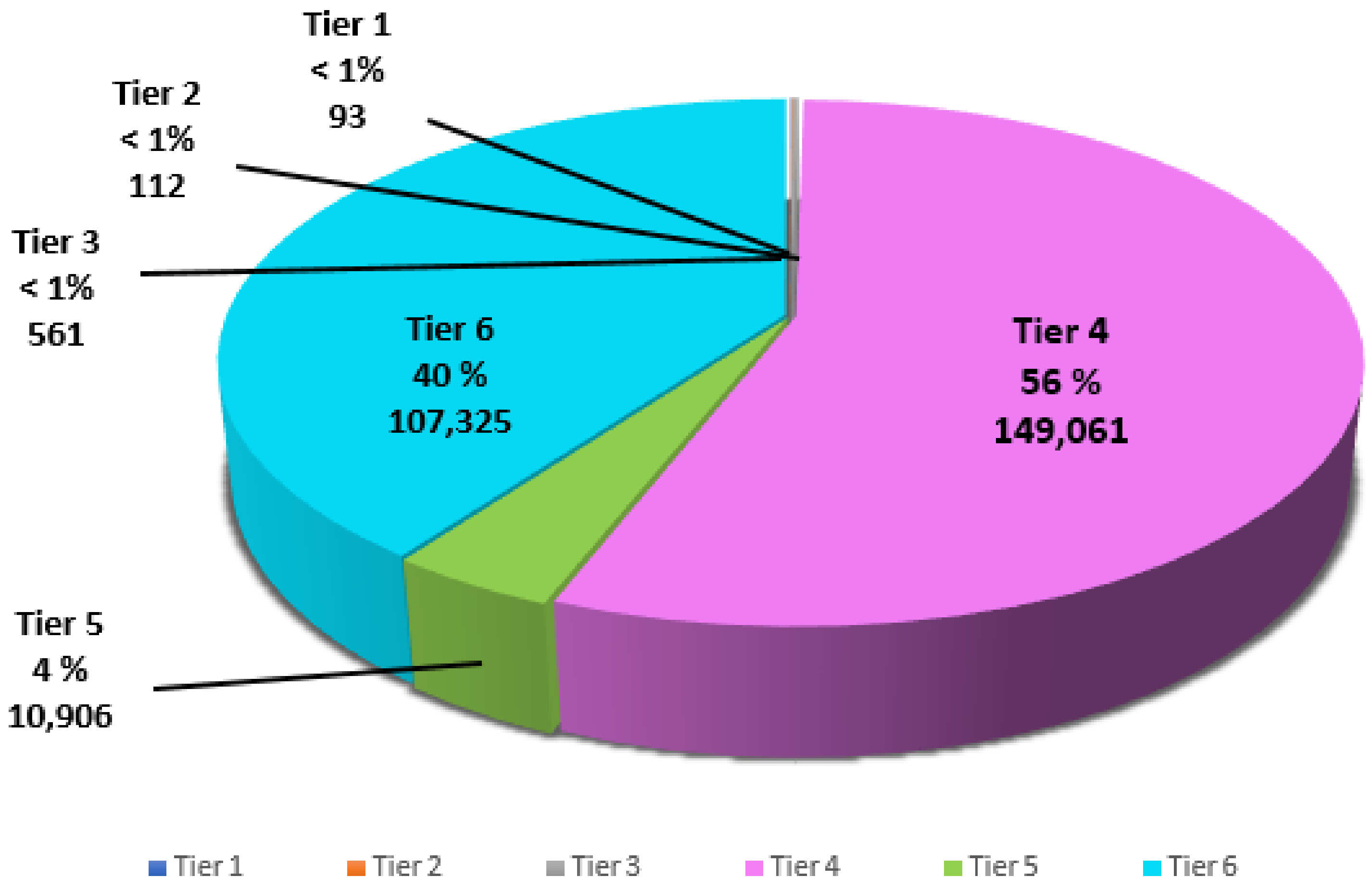
Long-Term Annualized Rates of Return as of June 30, 2023

Period	Rate of Return (net of fees)
1-Year	9.0%
5-Year	7.7%
10-Year	8.5%
15-Year	7.4%
20-Year	8.0%
25-Year	6.8%
30-Year	8.4%

Active and Retired Member Counts

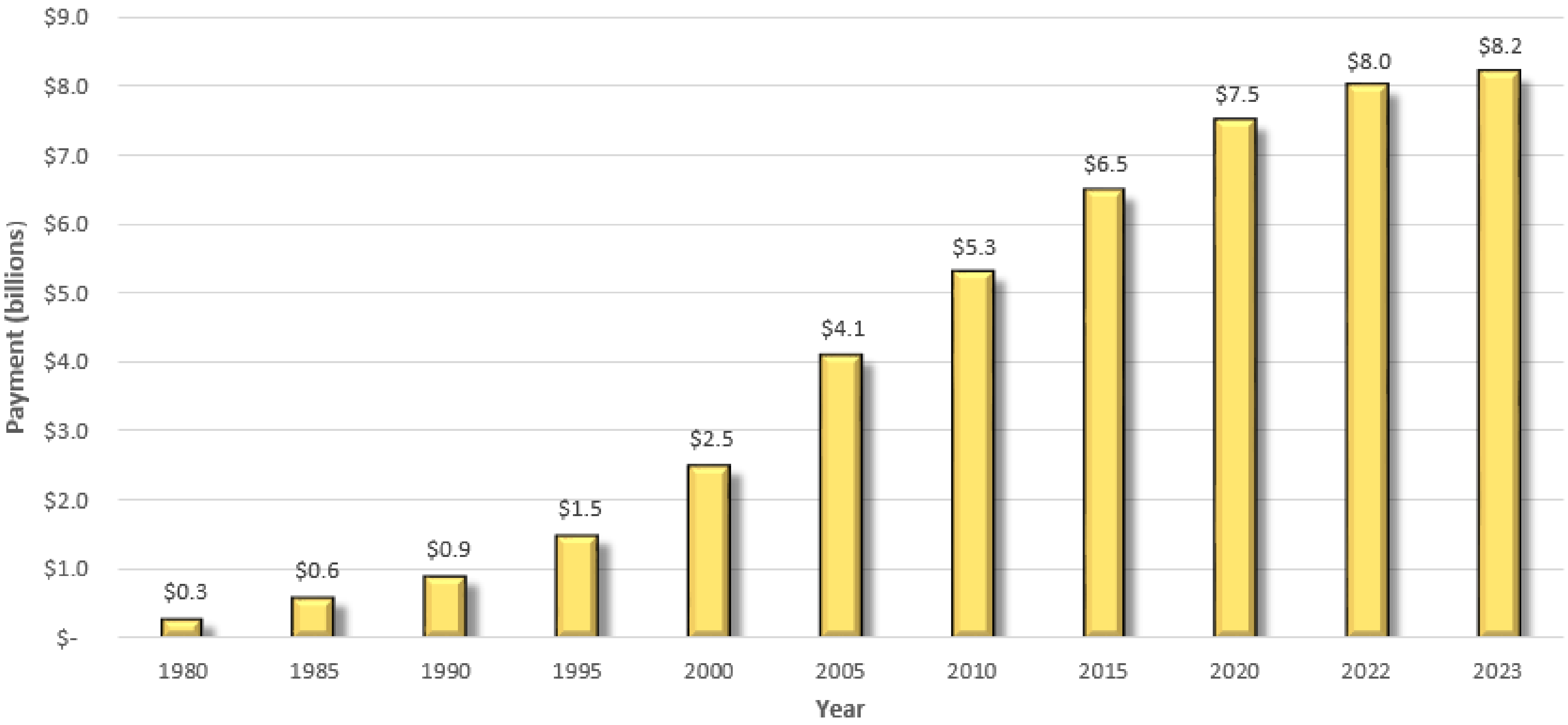


Distribution of Active Members by Tier as of June 30, 2023



NY STRS

Annual Benefit Payments



Monthly COLA Increase

	Commencing September 2023	Commencing September 2022
CPI Percentage Change for Year ended March 31	4.98%	8.54%
Applicable COLA Percentage	2.5%	3.0%
Maximum Monthly COLA Increase based on Annual Benefit Amount of $18,000	$37.50	$45.00
Cumulative Maximum Monthly COLA (back to Sept. 2001)	$481.50	$444.00

Cost-of-living benefits are paid to eligible retired members (generally the later of age 62 and retired for 5 years) and are increased each September. The annual COLA percentage is equal to 50% of the increase in the annual CPI, not to exceed 3% nor be lower than 1%. It is applied to the first $18,000 of the maximum annual benefit.

Retired in Fiscal Year Ended	Number of Retired Members	Average Age at Retirement (yrs.-mos.)	Average Service at Retirement (yrs.-mos.)	Average Final Average Salary	Average Maximum Annual Benefit
2014	6,547	61-0	25-4	$84,545	$44,978
2015	6,161	60-11	25-4	84,362	44,487
2016	6,245	61-2	25-0	84,308	44,215
2017	6,396	61-3	25-0	85,242	45,049
2018	6,416	61-1	25-1	86,910	45,725
2019	6,890	61-0	25-1	87,085	45,713
2020	7,642	61-4	25-8	90,228	48,273
2021	7,617	61-5	26-3	91,713	49,145
2022	7,135	61-3	25-7	92,434	48,724
2023	6,680	61-0	25-5	94,394	49,794
*Averages are for service and vested retirees.					

Retired Members' Characteristics By Year of Retirement


Frank and Ernest
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Questions ??