



June 30, 2023 Actuarial Valuation Report

for the

New York City Teachers' Retirement System

prepared by the

New York City
Office of the Actuary

CONTRIBUTIONS REQUIRED FOR FISCAL YEAR 2025



OFFICE OF THE ACTUARY

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MAREK TYSZKIEWICZ
CHIEF ACTUARY

November 13, 2025

Board of Trustees
New York City Teachers' Retirement System
55 Water Street, 16th Floor
New York, NY 10041

Re: June 30, 2023 Actuarial Valuation Report (Report)

Dear Trustees:

This is the June 30, 2023 actuarial valuation report of the New York City Teachers' Retirement System (TRS) Qualified Pension Plan (the Plan).

Purpose

The purpose of this actuarial valuation report is to:

- Determine the actuarially required contribution for Fiscal Year 2025 - the period from July 1, 2024 to June 30, 2025;
- Measure the Plan's funding progress; and
- Disclose the census data, financial information, assumptions, and methods used.

Required Contribution

The actuarially required contribution for Fiscal Year 2025 is \$3,483,426,947.

Data Used

Results shown for current and prior valuation dates are based on data as of June 30th of the valuation year, including:

- Census data, including the data for the cost for certain cases processed through June 30, 2023 due to the Gulino settlement, submitted by the Plan's administrative staff, by the participating employers' payroll facilities, by the Office of Payroll Administration, and by the Financial Information Services Agency; and
- Financial information was provided by TRS and the Office of the Comptroller.

The Office of the Actuary has reviewed this data for reasonableness, consistent with Actuarial Standards of Practice, but has not audited it. The accuracy of these results depends on the accuracy of this data. If the data provided is materially inaccurate, these results require revision.

Benefit Changes

A summary of the Plan's benefits is shown in SECTION VIII – SUMMARY OF PLAN PROVISIONS.

This valuation reflects:

- The enactment of Chapter 55 of the Laws of 2024, Part KK, which extends Chapter 56 of the Laws of 2022 by excluding overtime and compensation earned for supplemental work from wages used to calculate Tier 6 Basic Member Contribution Rates for two additional years.
- The enactment of Chapter 56 of the Laws of 2024, Part QQ, which reduces the number of years used to calculate the Final Average Salary from 5 years to 3 years for Tier 6 TRS members.

All other benefits under the Plan are unchanged from the prior valuation.

Actuarial Assumptions and Methods

A summary of the actuarial assumptions and methods used in the valuation of the Plan is shown in SECTION XI – ACTUARIAL ASSUMPTIONS AND METHODS. The actuarial assumptions and methods are unchanged from the prior valuation.

Items Excluded or Not Valued

Not included in this Report are:

- Governmental Accounting Standards Board (GASB) results. The Office of the Actuary publishes the Fiscal Year 2025 GASB67 and GASB68 results in a separate Report which can be found on the Office of the Actuary website www.nyc.gov/actuary.
- The cost for any pension payments that exceed the Internal Revenue Code Section 415 Limit which are expected to be made from the Excess Benefit Plan.

Risks and Uncertainty

These results may be different in future reports for many reasons, including:

- Economic or demographic experience being different than what was assumed;

- Changes in actuarial assumption and methods; and
- Changes in statute and plan provisions.

Likewise, results for purposes other than those described earlier may be quite different.

See SECTION VII – RISK AND UNCERTAINTY for more information about these risks.

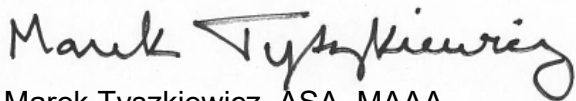
Actuarial Qualifications

Marek Tyszkiewicz and Dolores Capone are Associates of the Society of Actuaries and Members of the American Academy of Actuaries. Dolores Capone is also an Enrolled Actuary under the Employee Retirement Income Security Act of 1974.

Actuaries' Statement of Opinion

To the best of our knowledge, these results have been prepared in accordance with generally accepted actuarial principles, procedures, and under the Actuarial Standards of Practice issued by the Actuarial Standards Board. We meet the Qualification Standards of the American Academy of Actuaries to render this actuarial opinion.

Best Regards,



Marek Tyszkiewicz, ASA, MAAA
Chief Actuary



Dolores Capone, ASA, EA, MAAA
Assistant Deputy Chief Actuary

MT/eh

cc: Valerie Budzik, Esq. - New York City Teachers' Retirement System
Thad McTigue - New York City Teachers' Retirement System
Patricia Reilly - New York City Teachers' Retirement System

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SECTION I – SUMMARY OF VALUATION RESULTS

Funded Status

The funded status is the ratio of Plan assets to liabilities. The Plan's funded status based on the Market Value of Assets increased from 78.7% in the prior valuation to 80.3% as of June 30, 2023. The Plan's investment return for this period, based on the Market Value of Assets, was 8.0%.

Required Contribution Amount

The actuarially required contribution for Fiscal Year 2025 is \$3,483,426,947 and is derived as the sum of the:

- Normal Cost: The actuarial cost for the additional one year of service credit expected to be earned by current active members for the upcoming year; and
- Amortization of Unfunded Accrued Liabilities: The amortization of the unfunded actuarial accrued liabilities for past service earned prior to the valuation date; and
- Administrative Expense: The reimbursement to the Plan with interest for administrative expenses paid from Plan assets during the valuation year; and
- Annuity Savings Accumulation Fund (ASAF) Credit: Estimated contribution made by the Department of Education to the Annuity Savings Accumulation fund.
- DOE Gulino Charges: Cost for member contribution receivable amounts for cases processed through June 30, 2023 due to *Gulino vs. Board of Education*, 96 Civ. 8414 (KMW).
- Interest on Late Payments: Interest at 7% for any late employer contributions.

The derivation of the funded status and required contribution amounts are shown on the next page.

Table I-1
Valuation Results

Presented in **Table I-1** are the principal results of the June 30, 2023 actuarial valuation and, for comparative purposes, the June 30, 2022 actuarial valuation.

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability	\$ 84,586,288,662	\$ 81,371,174,344
2. Actuarial Value of Assets (AVA)	72,194,959,000	69,597,755,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 12,391,329,662	\$ 11,773,419,344
4. Market Value of Assets (MVA)	67,934,256,000	64,009,428,000
5. Unfunded Accrued Liability (MVA Basis) (1. - 4.)	\$ 16,652,032,662	\$ 17,361,746,344
6. Funded Ratio (MVA Basis) (4. / 1.)	80.3%	78.7%
Contribution		
1. Normal Cost	\$ 1,502,009,318	\$ 1,442,949,993
2. Amortization of Unfunded Accrued Liability	1,940,765,438	1,678,719,993
3. Administrative Expenses	61,959,701	61,963,131
4. ASAF Credit	(26,500,000)	(26,300,000)
5. DOE Gulino Charges	5,192,490	4,419,008
6. Actuarial Required Contribution (1. + 2. + 3. + 4. + 5.)	\$ 3,483,426,947	\$ 3,161,752,125
Participant Data		
1. Active Members		
a. Number	124,368	123,674
b. Annual Salary ¹	\$ 12,247,353,457	\$ 11,825,123,918
c. Average Salary	\$ 98,477	\$ 95,615
d. Average Age	44.38	44.26
e. Average Service	12.28	12.16
2. Terminated Nonvested Members	29,739	5,106
3. Deferred Vested Members	21,830	19,604
4. Retirees and Beneficiaries		
a. Number	93,759	92,282
b. Total Annual Benefits	\$ 4,875,015,182	\$ 4,684,780,145
c. Average Annual Benefit	\$ 51,995	\$ 50,766
d. Average Age	74.78	74.60

¹ Includes the impact of recent labor contract settlements and certain non-union salary increases with retroactive effective dates, if any, that are not yet reflected in the census data.

Table I-2
Actuarial Liabilities

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM		
ACTUARIAL LIABILITIES BY STATUS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Accrued Liability		
1. Active Members	\$ 33,036,426,596	\$ 31,559,841,787
2. Terminated Nonvested Members	166,927,153	38,341,496
3. Deferred Vested Members	2,163,294,211	2,041,086,961
4. Retirees and Beneficiaries	47,511,635,972	46,131,609,191
5. Accrued Liability (1. to 4.)	\$ 82,878,283,932	\$ 79,770,879,435
6. Due To/(From) TDA ¹	1,708,004,730	1,600,294,909
7. Total Accrued Liability (AL) (5. + 6.)	\$ 84,586,288,662	\$ 81,371,174,344
Present Value of Benefits		
1. Active Members	\$ 53,426,065,263	\$ 50,981,602,047
2. Terminated Nonvested Members	166,927,153	38,341,496
3. Deferred Vested Members	2,163,294,211	2,041,086,961
4. Retirees and Beneficiaries	47,511,635,972	46,131,609,191
5. Present Value of Benefits (1. to 4.)	\$ 103,267,922,599	\$ 99,192,639,695
6. Due To/(From) TDA ¹	1,708,004,730	1,600,294,909
7. Total Present Value of Benefits (5. + 6.)	\$ 104,975,927,329	\$ 100,792,934,604

¹ Please refer to Table I-4 for more information on the amount due to/(from) the TDA.

Graph I-3
Historical Funded Status

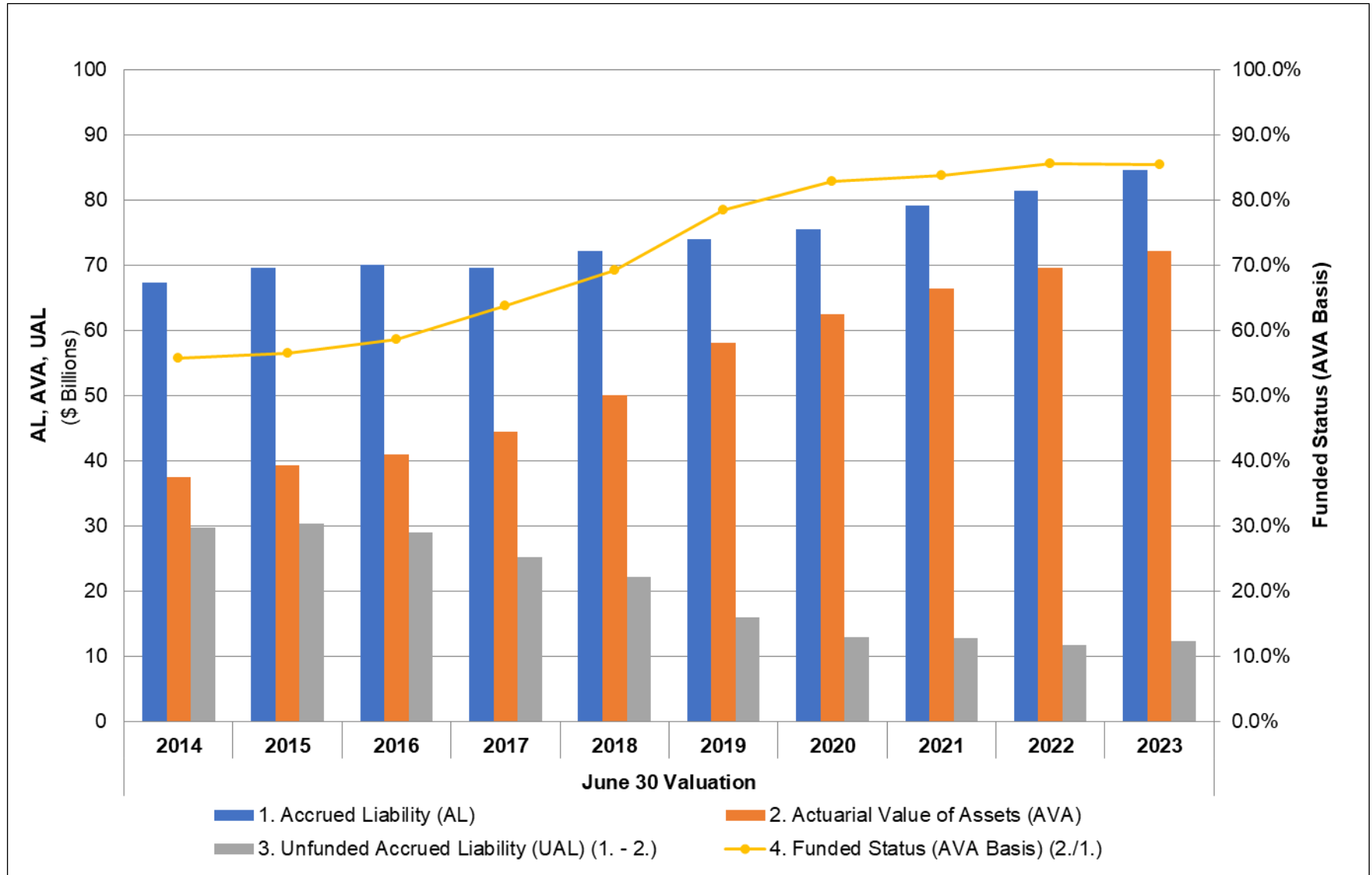


Table I-4
TDA Balances and Effect on the QPP

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

ACCNYS section 13-582, provides for the maintenance of TDA accounts in the Annuity Savings Fund ("Fixed-Return Fund") and Variable Annuity Programs ("Variable-Return Funds"), which are distinct from similar funds for the QPP.

The assets of the TDA Program are accounted for separately from assets of the QPP Plan. Statutory Rates received by funds invested in the QPP and the TDA Program's Annuity Savings Fund ("Fixed-Return Fund") are set by ACCNYS sections 13-638.2 and 13-582(d).

Assets in the TDA Program's Fixed-Return Fund are pooled with the QPP assets in the TRS Pension Fund for investment purposes only. Differences between actual earnings and the TDA guaranteed Statutory Rates result in investment gains and losses for the QPP, which are reflected in the Actuarial Value of Assets. Annuitization of TDA balances result in QPP actuarial gains and losses as well. The TDA impact on QPP accrued liabilities as of June 30, 2023 is shown below, where the Unfunded TDA Amount is held as an additional QPP liability.

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM SUMMARY OF TDA BALANCES AND EFFECT ON THE QPP AS OF JUNE 30, 2023			
	TDA Liabilities	TDA Assets	Unfunded TDA Amount
UFT			
Fixed Balances	\$ 30,470,277,753	\$ 30,169,181,230	\$ 301,096,523
Variable Balances	7,141,462,343	7,070,933,857	70,528,486
Non-UFT			
Fixed Balances	7,054,869,556	5,744,445,081	1,310,424,475
Variable Balances	1,168,462,219	1,156,908,828	11,553,391
Annuitized Members	565,465,105	551,063,250	14,401,855
Other	710,913,307	710,913,307	0
TOTAL	\$ 47,111,450,283	\$ 45,403,445,553	\$ 1,708,004,730

The QPP Normal Cost has been increased by \$63,711,619 to reflect the cost of the TDA guaranteed Statutory Rate of 8.25% for non-UFT members differing from the Actuarial Interest Rate of 7.0%.

The Financial Section of the Teachers' Retirement System of the City of New York Annual Comprehensive Financial Report includes more detailed TDA asset information.

SECTION II – MARKET AND ACTUARIAL VALUES OF ASSETS

Information on the Market Value of Assets (MVA) of the Plan is provided by the Office of the Comptroller. An asset smoothing method is used to determine the Actuarial Value of Assets (AVA) of the Plan.

The Actuary reset the AVA to the MVA as of June 30, 2019. Beginning with the June 30, 2020 actuarial valuation, the asset smoothing method recognizes investment returns greater or less than expected over a period of five years, phasing these gains and losses into the AVA at a rate of 20% per year.

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

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

Table II-1
Statement of Plan Net Assets

(\$ Thousands)		
	June 30, 2023	June 30, 2022
ASSETS		
Cash	\$ 70,795	\$ 86,489
Receivables		
Investment Securities Sold	1,826,650	1,544,209
Member Loans	333,351	301,958
Accrued Interest and Dividends	<u>378,152</u>	<u>339,801</u>
Total Receivables	2,538,153	2,185,968
Investments - at Fair Value	105,967,045	96,981,873
Other Assets	<u>169,089</u>	<u>166,039</u>
TOTAL ASSETS	\$ 108,745,082	\$ 99,420,369
LIABILITIES		
Accounts Payable	\$ 339,755	\$ 308,685
Payable for Investment Securities Purchased	2,295,806	2,230,369
Accrued Benefits Payable	7,398	44,285
Due to TDA Program's Fixed Return Fund	33,663,158	31,868,042
Security Lending	4,378,298	828,300
Other Liabilities	<u>126,411</u>	<u>131,260</u>
TOTAL LIABILITIES	\$ 40,810,826	\$ 35,410,941
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 67,934,256	\$ 64,009,428

Table II-2
Statement of Changes in Plan Net Assets

(\$ Thousands)		
	June 30, 2023	June 30, 2022
ADDITIONS		
Contributions		
Member Contributions	\$ 292,473	\$ 273,686
Employer Contributions	3,086,082	3,303,798
Other Employer Contributions ¹	<u>57,721</u>	<u>60,581</u>
Total Contributions	\$ 3,436,276	\$ 3,638,065
Investment Income		
Interest Income	\$ 1,476,900	\$ 1,412,618
Dividend Income	1,115,816	1,238,843
Net Appreciation in Fair Value of Investments	<u>5,761,300</u>	<u>(12,974,971)</u>
Total Investment Income	\$ 8,354,016	\$ (10,323,510)
Less:		
Investment Expenses	\$ 534,098	\$ 544,879
Net (Decrease) in Fair Variable Expense Provision	<u>(15,231)</u>	<u>(9,595)</u>
Net Investment Income	\$ 7,835,149	\$ (10,858,794)
Securities Lending Transactions		
Securities Lending Income	\$ 9,542	\$ 7,057
Securities Lending Fees	<u>(307)</u>	<u>(2,125)</u>
Net Securities Lending Income (Loss)	\$ 9,235	\$ 4,932
Other		
Net Receipts from (to) Other Retirement Systems	<u>(6,564)</u>	<u>(2,993)</u>
TOTAL ADDITIONS	\$ 11,274,096	\$ (7,218,790)
DEDUCTIONS		
Benefit Payments and Withdrawals	\$ 4,947,702	\$ 4,909,488
Administrative Expenses	73,784	71,490
Other		
Interest from (to) TDA Program's Fixed Return Fund	2,261,718	2,140,639
TDA Rebalance	<u>66,064</u>	<u>(2,537)</u>
TOTAL DEDUCTIONS	\$ 7,349,268	\$ 7,119,080
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ 3,924,828	\$ (14,337,870)
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	\$ 64,009,428	\$ 78,347,298
End of Year	\$ 67,934,256	\$ 64,009,428

¹ Includes amounts for employer's portion of Additional Member Contributions and supplemental contributions for the ASAF and ASF Funds.

Table II-3
Development of Actuarial Value of Assets

(\$ Thousands)		
Valuation Date	June 30, 2023	June 30, 2022
1. Market Value of Fixed Fund Assets		
a. Beginning of Year (BOY)	\$ 58,724,228	\$ 71,185,752
b. End of Year (EOY)	\$ 62,344,218	\$ 58,724,228
2. Contributions		
a. Employee	\$ 292,463	\$ 273,503
b. Employer	3,086,082	3,303,798
c. Other	57,715	60,574
d. Total Contributions	\$ 3,436,260	\$ 3,637,875
3. Net Investment Income		
a. Investment Income	\$ 5,193,598	\$ (11,372,382)
b. Investment Expenses	(525,532)	(530,878)
c. Total Net Investment Income	\$ 4,668,066	\$ (11,903,260)
4. Benefit Payments and Other Cash Flow	\$ (4,484,336)	\$ (4,196,139)
5. Net Cash Flow (2.d. + 4.)	\$ (1,048,076)	\$ (558,264)
6. Expected Investment Return	\$ 4,074,634	\$ 4,963,794
7. Unexpected Investment Return (UIR) (3.c. - 6.)	\$ 593,432	\$ (16,867,054)
8. Preliminary Fixed Fund AVA		
a. Preliminary Fixed Fund AVA @ BOY	\$ 64,312,555	\$ 60,759,903
b. Net Cash Flow (5.)	\$ (1,048,076)	\$ (558,264)
c. Expected Investment Return (6.)	\$ 4,074,634	\$ 4,963,794
d. Phase in of UIR		
20% of UIR for prior year (20% of 7.)	\$ 118,686	\$ (3,373,411)
20% of UIR for second prior year	\$ (3,373,411)	2,864,251
20% of UIR for third prior year	2,864,251	(343,718)
20% of UIR for fourth prior year	(343,718)	N/A
20% of UIR for fifth prior year	N/A	N/A
Total	\$ (734,192)	\$ (852,878)
e. Lower Corridor Bound (80% of 1.b.)	\$ 49,875,374	\$ 46,979,382
f. Upper Corridor Bound (120% of 1.b.)	\$ 74,813,062	\$ 70,469,074
g. Preliminary Fixed AVA (a. through d., bounded by e. and f.)	\$ 66,604,921	\$ 64,312,555
9. Market Value of Variable Fund Assets	\$ 5,590,038	\$ 5,285,200
10. AVA (8.g. + 9.)	\$ 72,194,959	\$ 69,597,755

Graph II-4
Historical Market and Actuarial Value of Assets

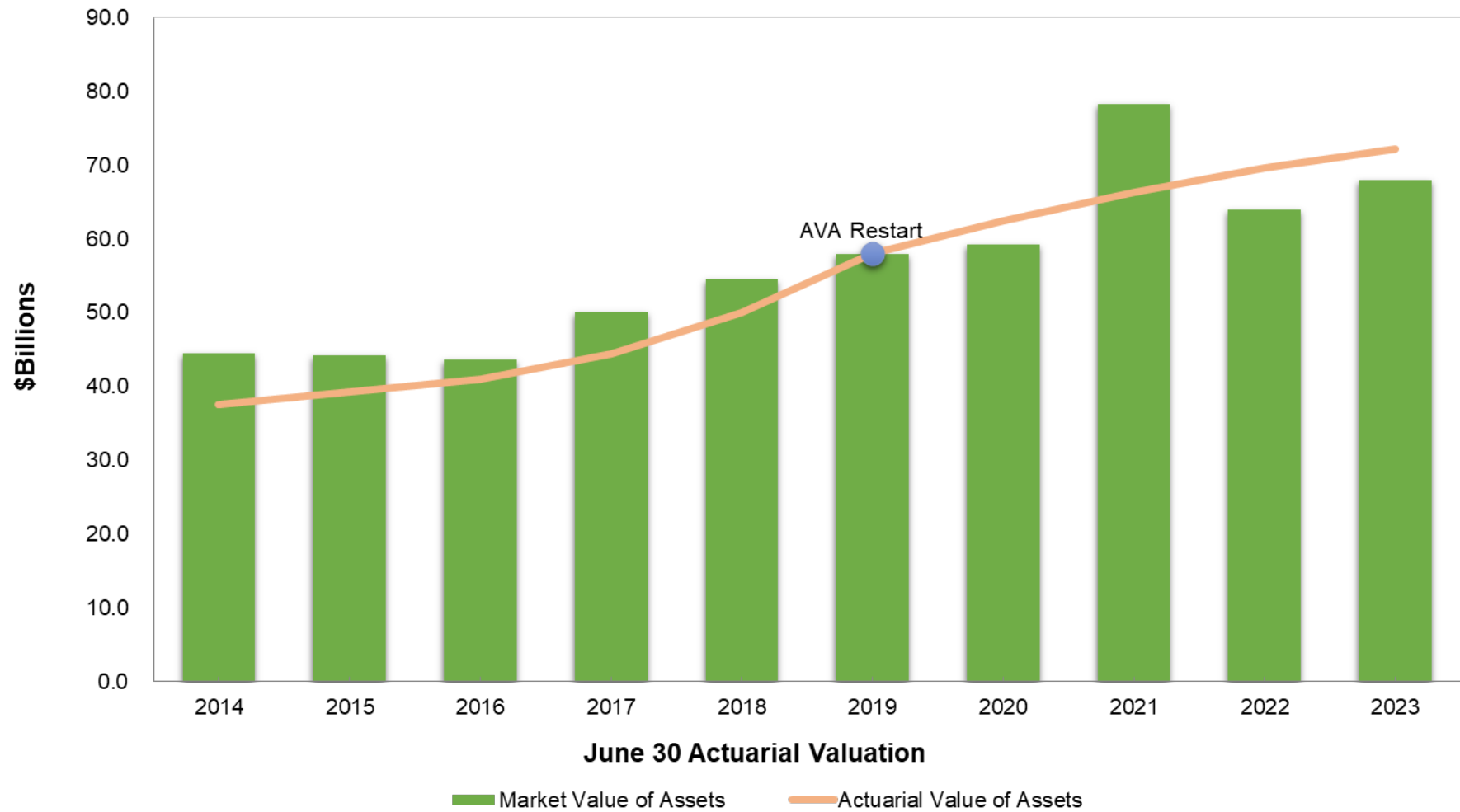


Table II-5
Future Recognition of Unexpected Investment Return

(\$ Thousands)

	June 30 Valuation				Total ¹
	2024	2025	2026	2027	
2020 Deferred Investment Gain/(Loss) Recognition	\$ (343,718)				\$ (343,718)
2021 Deferred Investment Gain/(Loss) Recognition	\$ 2,864,251	\$ 2,864,251			\$ 5,728,501
2022 Deferred Investment Gain/(Loss) Recognition	\$ (3,373,411)	\$ (3,373,411)	\$ (3,373,411)		\$ (10,120,232)
2023 Deferred Investment Gain/(Loss) Recognition	\$ 118,686	\$ 118,686	\$ 118,686	\$ 118,686	\$ 474,746
Total Deferred Investment Gain/(Loss) Recognition ¹	\$ (734,191)	\$ (390,474)	\$ (3,254,724)	\$ 118,686	\$ (4,260,703)

¹ Total may not add due to rounding.

	June 30, 2023
Actuarial Value of Assets (including Variable Fund Assets)	\$ 72,194,959
Deferred Investment Gain/(Loss) Future Recognition	\$ (4,260,703)
Market Value of Assets	\$ 67,934,256

SECTION III – CONTRIBUTION DEVELOPMENT AND HISTORY

Table III-1
Actuarial Required Contributions

Table III-1 shows the components of the Fiscal Year 2025 and the Fiscal Year 2024 Actuarial Required Contributions.

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR ACTUARIAL REQUIRED CONTRIBUTIONS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Normal Cost	\$ 1,502,009,318	\$ 1,442,949,993
Unfunded Accrued Liability Amortization ¹	\$ 1,940,765,438	\$ 1,678,719,993
Administrative Expenses	61,959,701	61,963,131
ASAF Credit	(26,500,000)	(26,300,000)
DOE Gulino Charges	<u>5,192,490</u>	<u>4,419,008</u>
Total Contribution to the New York City Teachers' Retirement System	\$ 3,483,426,947	\$ 3,161,752,125

¹ See Table III-2 for additional details.

Table III-2
Schedule of Unfunded Accrued Liability Bases

The Initial Unfunded Accrued Liability (UAL) established with the 6/30/2010 valuation is being amortized as a level percent of pay (with payments increasing by 3% per year) over a 22-year period.

Increments to the UAL established after June 30, 2010 are amortized as level dollar over the following periods:

- Benefit Changes: Over the remaining working lifetimes of those impacted unless the amortization period is determined by statute.
- Assumption and Method Changes: Over a 20-year period.
- Actuarial Gains and Losses: Over a 15-year period.

Under the One-Year Lag methodology (OYLM), the number of payments is one fewer than the number of years in the amortization period (e.g., 14 payments over a 15-year amortization period).

Table III-2
Schedule of Unfunded Accrued Liability Bases (cont'd)

Table III-2 shows the Schedule of UAL Bases as of June 30, 2023.

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM SCHEDULE OF UNFUNDED ACCRUED LIABILITY BASES				
Amortization Base	Date Established	Original \$ Amount	Amortization Years	Amortization \$ Payment
Initial UAL	6/30/10	20,524,022,955	22	2,264,497,103
(Gain)/Loss	6/30/11	1,329,890,090	15	157,298,501
(Gain)/Loss	6/30/12	778,617,335	15	92,094,332
(Gain)/Loss	6/30/13	2,065,937,513	15	244,357,693
(Gain)/Loss	6/30/14	992,709,734	15	117,417,036
Assumption Change ¹	6/30/14	2,239,586,352	20	224,142,498
(Gain)/Loss	6/30/15	734,444,345	15	86,869,581
(Gain)/Loss	6/30/16	(848,431,601)	15	(100,351,916)
(Gain)/Loss	6/30/17	(2,235,025,973)	15	(264,357,362)
ASAF Method Change	6/30/17	116,239,745	20	11,633,517
Assumption Change ²	6/30/17	(1,078,725,991)	20	(107,961,163)
Method Change ²	6/30/17	9,078,212	20	908,566
(Gain)/Loss	6/30/18	(622,129,323)	15	(73,585,040)
Method Change ³	6/30/18	(1,403,608,000)	20	(140,476,031)
(Gain)/Loss	6/30/19	(1,755,622,201)	15	(207,653,807)
Assumption Change ⁴	6/30/19	(383,977,377)	20	(38,429,261)
Method Change ⁴	6/30/19	(3,158,833,000)	20	(316,142,629)
(Gain)/Loss	6/30/20	(53,115,849)	15	(6,282,507)
Method Change ⁵	6/30/20	976,069,325	20	97,687,066
Plan Change ⁶	6/30/20	55,042,203	8	10,564,676
(Gain)/Loss	6/30/21	(2,563,963,216)	15	(303,263,841)
Plan Change ⁷	6/30/21	11,165,833	20	1,117,499
(Gain)/Loss	6/30/22	62,096,532	15	7,344,740
Death Audit	6/30/22	(11,569,110)	2	0
(Gain)/Loss	6/30/23	1,368,020,535	15	161,808,546
Plan Change ⁸	6/30/23	2,441,965	2	2,702,807
Plan Change ⁹	6/30/23	188,093,943	20	18,824,834
TOTAL				1,940,765,438

¹ Change in post-retirement mortality assumptions including the change to the mortality improvement scale MP-2015.

² 2019 A&M.

³ Change in method of characterizing interest credited on TDA Fixed Fund account balances.

⁴ Revised 2021 A&M.

⁵ TDA guaranteed interest credits reflected as a liability of the QPP.

⁶ Older Workers Benefit Protection Act (OWBPA).

⁷ Chapter 56 of the Laws of 2022

⁸ Change in plan due to Chapter 56 of the Laws of 2024 credited on Deferred Vesteds Fixed Fund amount balances.

⁹ Change in plan due to Chapter 56 of the Laws of 2024 credited on Actives Fixed Fund amount balances and Chapter 55 of the Laws of 2024.

Graph III-3
Remaining UAL Amortizations as of June 30, 2023

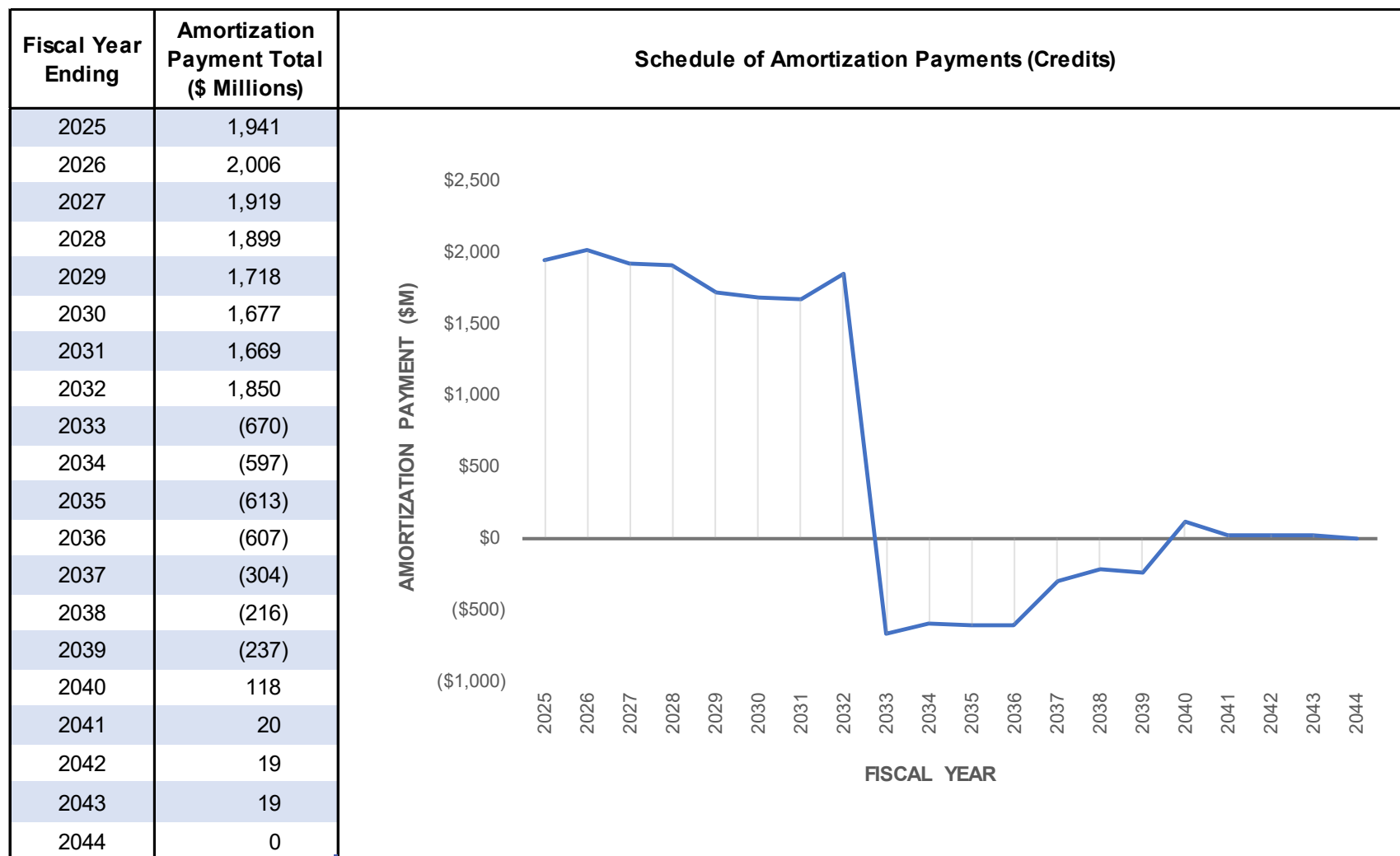


Table III-4
Reconciliation of Outstanding UAL Bases

Cost Component	Date Established	Original Amount	Amort Years	Outstanding Balance 6/30/2023	FY 2024 Payment on 12/31/2023	Outstanding Balance 6/30/2024	FY 2025 Payment on 12/31/2024	Additional Payments
Initial UAL	06/30/10	\$ 20,524,022,955	22	\$ 16,504,344,358	\$ 2,198,540,876	\$ 15,385,460,098	\$ 2,264,497,103	7
(Gain)/Loss	06/30/11	1,329,890,090	15	427,004,653	157,298,501	294,184,147	157,298,501	1
(Gain)/Loss	06/30/12	778,617,335	15	322,676,305	92,094,332	250,000,530	92,094,332	2
(Gain)/Loss	06/30/13	2,065,937,513	15	1,036,388,712	244,357,693	856,170,359	244,357,693	3
(Gain)/Loss	06/30/14	992,709,734	15	578,930,212	117,417,036	497,998,201	117,417,036	4
Assumption Change	06/30/14	2,239,586,352	20	1,738,603,660	224,142,498	1,628,451,114	224,142,498	9
(Gain)/Loss	06/30/15	734,444,345	15	484,273,963	86,869,581	428,314,548	86,869,581	5
(Gain)/Loss	06/30/16	(848,431,601)	15	(619,849,624)	(100,351,916)	(559,434,269)	(100,351,916)	6
(Gain)/Loss	06/30/17	(2,235,025,973)	15	(1,781,612,289)	(264,357,362)	(1,632,871,767)	(264,357,362)	7
ASAF Method Change	06/30/17	116,239,745	20	105,241,247	11,633,517	100,574,330	11,633,517	12
Assumption Change	06/30/17	(1,078,725,991)	20	(976,657,935)	(107,961,163)	(933,348,098)	(107,961,163)	12
Method Change	06/30/17	9,078,212	20	8,219,239	908,566	7,854,759	908,566	12
(Gain)/Loss	06/30/18	(622,129,323)	15	(534,613,629)	(73,585,040)	(495,919,630)	(73,585,040)	8
Method Change	06/30/18	(1,403,608,000)	20	(1,323,466,766)	(140,476,031)	(1,270,799,904)	(140,476,031)	13
(Gain)/Loss	06/30/19	(1,755,622,201)	15	(1,610,706,015)	(207,653,807)	(1,508,656,666)	(207,653,807)	9
Assumption Change	06/30/19	(383,977,377)	20	(375,518,799)	(38,429,261)	(362,053,579)	(38,429,261)	14
Method Change	06/30/19	(3,158,833,000)	20	(3,089,247,553)	(316,142,629)	(2,978,474,402)	(316,142,629)	14
(Gain)/Loss	06/30/20	(53,115,849)	15	(51,616,942)	(6,282,507)	(48,731,450)	(6,282,507)	10
Method Change	06/30/20	976,069,325	20	986,556,946	97,687,066	954,567,646	97,687,066	15
Plan Change	06/30/20	55,042,203	8	44,807,720	10,564,676	37,016,076	10,564,676	3
(Gain)/Loss	06/30/21	(2,563,963,216)	15	(2,621,782,941)	(303,263,841)	(2,491,609,191)	(303,263,841)	11
Plan Change	06/30/21	11,165,833	20	11,627,810	1,117,499	11,285,805	1,117,499	16
(Gain)/Loss	06/30/22	62,096,532	15	66,443,294	7,344,740	63,496,869	7,344,740	12
Death Audit	06/30/22	(11,569,110)	2	(12,378,949)	(12,804,884)	0	0	0
Kipp Overfunding Charge	06/30/22	46,849	0	50,128	51,853	0	0	0
Kipp Overfunding Credit	06/30/22	(46,849)	0	(50,128)	0	(53,637)	0	1
Admin Expenses	06/30/22	55,983,196	2	59,902,020	61,963,131	0	0	0
Normal Cost	07/01/22	1,303,693,841	2	1,394,952,409	1,442,949,993	0	0	0
DOE Gulino Charges	07/01/22	3,992,539	2	4,272,016	4,419,008	0	0	0
(Gain)/Loss	06/30/23	1,368,020,535	15	1,368,020,535	0	1,463,781,974	161,808,546	13
Plan Change	06/30/23	2,441,965	2	2,441,965	0	2,612,902	2,702,807	0
Plan Change	06/30/23	188,093,943	20	188,093,943	0	201,260,519	18,824,834	18
Admin Expenses	06/30/23	55,980,097	2	55,980,097	0	59,898,704	61,959,701	0
Normal Cost	07/01/23	1,357,053,472	2	0	0	1,452,047,212	1,502,009,318	0
DOE Gulino Charges	07/01/23	4,691,373	2	0	0	5,019,770	5,192,490	0
ASAF Credit	12/31/23	0	0	0	(26,300,000)	0	0	0
ASAF Credit	12/31/24	0	0	0	0	0	(26,500,000)	0
TOTAL				\$ 12,391,329,662	\$ 3,161,752,125	\$ 11,418,042,970	\$ 3,483,426,947	

Payment for amortization bases, normal costs, Gulino charges and administrative expenses are deferred 1.5 years to the middle of the fiscal year under the One-Year Lag Methodology. The number of amortization payments is one less than the number of years amortized. Required contributions are the sum of all cost components after interest adjustments due to the lag. Payments by the Department of Education to the Annuity Savings Accumulation Fund (ASAF) offset required contributions.

Table III-4
Reconciliation of Outstanding UAL Bases (cont'd)

Total of Cost Components Summarized by Type	Outstanding Balance 6/30/2023	FY 2024 Payment on 12/31/2023	Outstanding Balance 6/30/2024	FY 2025 Payment on 12/31/2024
Initial UAL	\$ 16,504,344,358	\$ 2,198,540,876	\$ 15,385,460,098	\$ 2,264,497,103
Method Changes	(3,325,075,836)	(359,194,395)	(3,186,277,571)	(346,389,511)
Assumption Changes	386,426,926	77,752,074	333,049,437	77,752,074
Plan Changes	246,971,438	11,682,175	252,175,302	33,209,816
(Gain)/Loss	(2,936,443,766)	(250,112,590)	(2,883,276,345)	(88,304,044)
Normal Cost	1,394,952,409	1,442,949,993	1,452,047,212	1,502,009,318
Admin Expenses	115,882,117	61,963,131	59,898,704	61,959,701
Overfunding Charges/Credit	0	51,853	(53,637)	0
ASAF Credit	0	(26,300,000)	0	(26,500,000)
DOE Gulino Charges	4,272,016	4,419,008	5,019,770	5,192,490
TOTAL	\$ 12,391,329,662	\$ 3,161,752,125	\$ 11,418,042,970	\$ 3,483,426,947

	6/30/2023
(A) Actuarial Accrued Liability	\$ 84,586,288,662
(B) Actuarial Value of Assets	72,194,959,000
(C) Unfunded Accrued Liabilities (A) - (B)	\$ 12,391,329,662

	FY 2025
Normal Cost	\$ 1,502,009,318
UAL Payment	1,940,765,438
Admin Expenses	61,959,701
ASAF Credit	(26,500,000)
DOE Gulino Charges	5,192,490
Total	\$ 3,483,426,947

Table III-5
Contribution History

Table III-5 compares actual contributions to the Actuarial Required Contributions for Fiscal Years 2016 through 2025.

(\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution	Amount Contributed	Percentage of Required Contributed
2016	\$ 3,702,569	\$ 3,702,569	100.0%
2017	3,888,399	3,888,399	100.0%
2018	3,889,710	3,889,710	100.0%
2019	3,696,686	3,696,686	100.0%
2020	3,590,801	3,590,801	100.0%
2021	3,131,607	3,131,607	100.0%
2022	3,303,798	3,303,798	100.0%
2023	3,086,082	3,086,082	100.0%
2024	3,161,752	3,161,752	100.0%
2025	3,483,427	3,483,427	100.0%

Table III-6
City Rates: Contributions as a Percentage of Salary

Table III-6 shows the City Rates defined to be the contributions as a percentage of salary for the Fiscal Years 2016 through 2025.

CITY RATES (\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution ¹	Salary ² at Beginning of Fiscal Year	City Rate
2016	\$ 3,702,569	\$ 8,256,100	44.8%
2017	3,888,399	8,818,537	44.1%
2018	3,889,710	9,200,180	42.3%
2019	3,722,186	9,874,119	37.7%
2020 ³	3,616,322	10,439,259	34.6%
2021	3,157,307	10,950,176	28.8%
2022	3,329,798	11,266,796	29.6%
2023	3,112,882	11,527,491	27.0%
2024	3,188,052	11,905,541	26.8%
2025	3,509,927	12,326,241	28.5%

¹ Starting in Fiscal Year 2019, reflects the estimate of the contribution made by the Department of Education to the Annuity Savings Fund (ASAF).

² Includes the impact of recent labor contract settlements and certain non-union salary increases with retroactive effective dates, if any.

³ Actuarial Required Contribution is amount before offsetting for ASAF and Pre-Payment Credits.

Table III-7
Normal Cost Rates by Tier

Table III-7 shows the Normal Cost Rates as a percentage of salary by Tier.

NORMAL COST RATES AS OF JUNE 30, 2023					
	Tier 1	Tier 2	Tier 3/4	Tier 6	Total
Total	13.7%	20.1%	15.2%	12.7%	14.2%
Employee	<u>(1.3%)</u>	<u>(2.0%)</u>	<u>(2.5%)</u>	<u>(5.3%)</u>	<u>(3.6%)</u>
Employer	12.4%	18.1%	12.7%	7.4%	10.6%

SECTION IV – RESULTS BY CONTRIBUTING ENTITY

Table IV-1
Employer Contributions by Obligor

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM												
EMPLOYER CONTRIBUTION BY OBLIGOR												
As of June 30, 2023 Fiscal Year 2025												
Charter School	Future Leaders	Harriet Tubman	Imagine Me Leadership	KIPP Academy	KIPP NYC	Opportunity	Renaissance	South Bronx Early College Academy	University Prep Charter HS	Voice	Wildcat	Charter School Subtotal
1. Normal Cost	\$ 367,816	\$ 629,644	\$ 143,731	\$ 655,756	\$ 696,877	\$ 714,766	\$ 775,618	\$ 396,658	\$1,004,118	\$ 812,175	\$ 376,846	\$ 6,574,005
2. Amortization of Unfunded Accrued Liability	15,361	104,778	2,995	(613,639)	(49,455)	(45,463)	438,107	(88,925)	116,979	(142,657)	13,030	(248,889)
3. Administrative Expenses	17,572	25,697	5,669	41,179	20,458	30,212	30,402	20,025	51,241	39,509	13,504	295,468
4. Actuarial Required Contribution (1. + 2. + 3.)	\$ 400,749	\$ 760,119	\$ 152,395	\$ 83,296	\$ 667,880	\$ 699,515	\$ 1,244,127	\$ 327,758	\$1,172,338	\$ 709,027	\$ 403,380	\$ 6,620,584
CUNY	Senior Colleges	Community Colleges / Others	CUNY Subtotal									
1. Normal Cost	\$ 51,337,414	\$ 29,920,614	\$ 81,258,028									
2. Amortization of Unfunded Accrued Liability	60,059,279	23,074,963	83,134,242									
3. Administrative Expenses	1,897,401	1,049,789	2,947,190									
4. Actuarial Required Contribution (1. + 2. + 3.)	\$113,294,094	\$ 54,045,366	\$ 167,339,460									
Obligor	Charter School	CUNY	UFT	Department of Education	Total							
1. Normal Cost	\$ 6,574,005	\$ 81,258,028	\$ 1,160,929	\$ 1,413,016,356	\$ 1,502,009,318							
2. Amortization of Unfunded Accrued Liability	(248,889)	83,134,242	883,238	1,856,996,847	1,940,765,438							
3. Administrative Expenses	295,468	2,947,190	32,485	58,684,558	61,959,701							
4. ASAF Credit	0	0	0	(26,500,000)	(26,500,000)							
5. DOE Gulino Charges	0	0	0	5,192,490	5,192,490							
6. Actuarial Required Contribution (1. + 2. + 3. + 4. + 5.)	\$ 6,620,584	\$ 167,339,460	\$ 2,076,652	\$ 3,307,390,251	\$ 3,483,426,947							

Table IV-2
Accrued Liabilities by Obligor

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM												
SUMMARY OF LIABILITY BY STATUS AND OBLIGOR												
As of June 30, 2023 Fiscal Year 2025												
Charter School	Future Leaders	Harriet Tubman	Imagine Me Leadership	KIPP Academy	KIPP NYC	Opportunity	Renaissance	South Bronx Early College Academy	University Prep Charter HS	Voice	Wildcat	Charter School Subtotal
Accrued Liability												
1. Active Members	\$ 5,140,036	\$ 9,799,608	\$ 1,560,103	\$ 6,891,332	\$14,808,938	\$10,100,217	\$17,975,161	\$ 2,740,786	\$13,746,137	\$ 7,013,408	\$ 7,405,819	\$ 97,181,545
2. Terminated Nonvested Members	31,324	49,504	0	136,459	11,957	62,308	9,456	151,331	95,077	126,362	0	673,778
3. Deferred Vested Members	686,852	1,605,884	76,619	5,400,127	2,921,843	2,773,260	804,591	719,378	730,257	1,567,344	823,060	18,109,215
4. Retirees and Beneficiaries	1,576,225	1,176,724	185,169	527,462	0	2,496,823	8,473,797	0	1,307,040	0	3,689,687	19,432,927
5. Accrued Liability SubTotal (1. to 4.)	\$ 7,434,437	\$ 12,631,720	\$ 1,821,891	\$12,955,380	\$17,742,738	\$15,432,608	\$27,263,005	\$ 3,611,495	\$15,878,511	\$ 8,707,114	\$11,918,566	\$135,397,465
6. Due To/(From) TDA	256,207	396,466	15,462	150,306	2,332,972	518,051	984,307	232,069	243,128	767,492	270,197	6,166,657
7. Total Accrued Liability (AL) (5. + 6.)	\$ 7,690,644	\$ 13,028,186	\$ 1,837,353	\$13,105,686	\$20,075,710	\$15,950,659	\$28,247,312	\$ 3,843,564	\$16,121,639	\$ 9,474,606	\$12,188,763	\$141,564,122
Present Value of Benefits												
1. Active Members	\$ 12,980,287	\$ 18,592,946	\$ 3,660,264	\$25,222,704	\$20,971,954	\$20,891,933	\$27,196,714	\$ 10,971,680	\$34,438,207	\$24,792,265	\$11,168,697	\$210,887,651
2. Terminated Nonvested Members	31,324	49,504	0	136,459	11,957	62,308	9,456	151,331	95,077	126,362	0	673,778
3. Deferred Vested Members	686,852	1,605,884	76,619	5,400,127	2,921,843	2,773,260	804,591	719,378	730,257	1,567,344	823,060	18,109,215
4. Retirees and Beneficiaries	1,576,225	1,176,724	185,169	527,462	0	2,496,823	8,473,797	0	1,307,040	0	3,689,687	19,432,927
5. Present Value of Benefits (1. to 4.)	\$ 15,274,688	\$ 21,425,058	\$ 3,922,052	\$31,286,752	\$23,905,754	\$26,224,324	\$36,484,558	\$ 11,842,389	\$36,570,581	\$26,485,971	\$15,681,444	\$249,103,571
6. Due To/(From) TDA	256,207	396,466	15,462	150,306	2,332,972	518,051	984,307	232,069	243,128	767,492	270,197	6,166,657
7. Total Present Value of Benefits (5. + 6.)	\$ 15,530,895	\$ 21,821,524	\$ 3,937,514	\$31,437,058	\$26,238,726	\$26,742,375	\$37,468,865	\$ 12,074,458	\$36,813,709	\$27,253,463	\$15,951,641	\$255,270,228
CUNY	Senior Colleges	Community Colleges / Others	CUNY Subtotal									
Accrued Liability												
1. Active Members	\$ 692,824,615	\$ 388,658,844	\$1,081,483,459									
2. Terminated Nonvested Members	7,317,857	5,288,965	12,606,822									
3. Deferred Vested Members	45,361,231	33,340,184	78,701,415									
4. Retirees and Beneficiaries	968,077,799	363,846,575	1,331,924,374									
5. Accrued Liability SubTotal (1. to 4.)	\$1,713,581,502	\$ 791,134,568	\$2,504,716,070									
6. Due To/(From) TDA	69,366,966	40,515,461	109,882,427									
7. Total Accrued Liability (AL) (5. + 6.)	\$1,782,948,468	\$ 831,650,029	\$2,614,598,497									
Present Value of Benefits												
1. Active Members	\$1,282,691,962	\$ 722,747,436	\$2,005,439,398									
2. Terminated Nonvested Members	7,317,857	5,288,965	12,606,822									
3. Deferred Vested Members	45,361,231	33,340,184	78,701,415									
4. Retirees and Beneficiaries	968,077,799	363,846,575	1,331,924,374									
5. Present Value of Benefits (1. to 4.)	\$2,303,448,849	\$1,125,223,160	\$3,428,672,009									
6. Due To/(From) TDA	69,366,966	40,515,461	109,882,427									
7. Total Present Value of Benefits (5. + 6.)	\$2,372,815,815	\$1,165,738,621	\$3,538,554,436									

Table IV-2
Accrued Liabilities by Obligor (cont'd)

<p style="text-align: center;">NEW YORK CITY TEACHERS' RETIREMENT SYSTEM</p> <p style="text-align: center;">SUMMARY OF LIABILITY BY STATUS AND OBLIGOR</p> <p style="text-align: center;">As of June 30, 2023 Fiscal Year 2025</p>					
Obligor	Charter School	CUNY	UFT	Department of Education	Total
Accrued Liability					
1. Active Members	\$ 97,181,545	\$ 1,081,483,459	\$ 23,819,850	\$ 31,833,941,742	\$ 33,036,426,596
2. Terminated Nonvested Members	673,778	12,606,822	0	153,646,553	166,927,153
3. Deferred Vested Members	18,109,215	78,701,415	0	2,066,483,581	2,163,294,211
4. Retirees and Beneficiaries	<u>19,432,927</u>	<u>1,331,924,374</u>	<u>540,968</u>	<u>46,159,737,703</u>	<u>47,511,635,972</u>
5. Accrued Liability SubTotal (1. to 4.)	\$ 135,397,465	\$ 2,504,716,070	\$ 24,360,818	\$ 80,213,809,579	\$ 82,878,283,932
6. Due To/(From) TDA	<u>6,166,657</u>	<u>109,882,427</u>	<u>2,576,442</u>	<u>1,589,379,204</u>	<u>1,708,004,730</u>
7. Total Accrued Liability (AL) (5. + 6.)	\$ 141,564,122	\$ 2,614,598,497	\$ 26,937,260	\$ 81,803,188,783	\$ 84,586,288,662
Present Value of Benefits					
1. Active Members	\$ 210,887,651	\$ 2,005,439,398	\$ 32,761,372	\$ 51,176,976,842	\$ 53,426,065,263
2. Terminated Nonvested Members	673,778	12,606,822	0	153,646,553	166,927,153
3. Deferred Vested Members	18,109,215	78,701,415	0	2,066,483,581	2,163,294,211
4. Retirees and Beneficiaries	<u>19,432,927</u>	<u>1,331,924,374</u>	<u>540,968</u>	<u>46,159,737,703</u>	<u>47,511,635,972</u>
5. Present Value of Benefits (1. to 4.)	\$ 249,103,571	\$ 3,428,672,009	\$ 33,302,340	\$ 99,556,844,679	\$ 103,267,922,599
6. Due To/(From) TDA	<u>6,166,657</u>	<u>109,882,427</u>	<u>2,576,442</u>	<u>1,589,379,204</u>	<u>1,708,004,730</u>
7. Total Present Value of Benefits (5. + 6.)	\$ 255,270,228	\$ 3,538,554,436	\$ 35,878,782	\$ 101,146,223,883	\$ 104,975,927,329

Table IV-3
Participant Data by Obligor

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM												
PARTICIPANT DATA BY OBLIGOR												
As of June 30, 2023 Fiscal Year 2025												
Charter School	Future Leaders	Harriet Tubman	Imagine Me Leadership	KIPP Academy	KIPP NYC	Opportunity	Renaissance	South Bronx Early College Academy	University Prep Charter HS	Voice	Wildcat	Charter School Subtotal
1. Active Members												
a. Number	37	58	12	80	24	55	58	42	99	74	23	562
b. Annual Salary ¹	\$ 3,473,347	\$ 5,079,584	\$ 1,120,628	\$ 8,139,592	\$ 4,043,835	\$ 5,971,747	\$ 6,009,284	\$ 3,958,034	\$ 10,128,552	\$ 7,809,728	\$ 2,669,205	\$ 58,403,536
c. Average Salary	\$ 93,874	\$ 87,579	\$ 93,386	\$ 101,745	\$ 168,493	\$ 108,577	\$ 103,608	\$ 94,239	\$ 102,309	\$ 105,537	\$ 116,052	\$ 103,921
2. Terminated Nonvested Members	3	6	0	15	1	7	1	16	12	10	0	71
3. Deferred Vested Members	9	14	2	50	42	22	6	7	10	23	6	191
4. Retirees and Beneficiaries												
a. Number	2	4	1	1	0	6	15	0	2	0	9	40
b. Total Annual Benefits	\$ 158,238	\$ 107,878	\$ 14,209	\$ 60,513	\$ 0	\$ 217,322	\$ 765,248	\$ 0	\$ 107,708	\$ 0	\$ 328,580	\$ 1,759,696
c. Average Annual Benefit	\$ 79,119	\$ 26,970	\$ 14,209	\$ 60,513	\$ 0	\$ 36,220	\$ 51,017	\$ 0	\$ 53,854	\$ 0	\$ 36,509	\$ 43,992
CUNY	Senior Colleges	Community Colleges / Others	CUNY Subtotal									
1. Active Members												
a. Number	4,531	2,270	6,801									
b. Annual Salary ¹	\$ 375,052,728	\$ 207,508,040	\$ 582,560,768									
c. Average Salary	\$ 82,775	\$ 91,413	\$ 85,658									
2. Terminated Nonvested Members	1,362	919	2,281									
3. Deferred Vested Members	403	381	784									
4. Retirees and Beneficiaries												
a. Number	2,039	894	2,933									
b. Total Annual Benefits	\$ 122,980,634	\$ 41,807,529	\$ 164,788,163									
c. Average Annual Benefit	\$ 60,314	\$ 46,765	\$ 56,184									
Obligor	Charter School	CUNY	UFT	Department of Education	Total							
1. Active Members												
a. Number	562	6,801	56	116,949	124,368							
b. Annual Salary ¹	\$ 58,403,536	\$ 582,560,768	\$ 6,421,230	\$ 11,599,967,923	\$ 12,247,353,457							
c. Average Salary	\$ 103,921	\$ 85,658	\$ 114,665	\$ 99,188	\$ 98,477							
2. Terminated Nonvested Members	71	2,281	0	27,387	29,739							
3. Deferred Vested Members	191	784	0	20,855	21,830							
4. Retirees and Beneficiaries												
a. Number	40	2,933	2	90,784	93,759							
b. Total Annual Benefits	\$ 1,759,696	\$ 164,788,163	\$ 61,652	\$ 4,708,405,671	\$ 4,875,015,182							
c. Average Annual Benefit	\$ 43,992	\$ 56,184	\$ 30,826	\$ 51,864	\$ 51,995							

SECTION V – (GAIN)/LOSS ANALYSIS

Table V-1
Development of Experience (Gain)/Loss

EXPERIENCE (GAIN) / LOSS as of June 30, 2023 (\$ Thousands)			
	Fixed	Variable	Total
1. Expected Accrued Liability (AL)			
a. AL at June 30, 2022	\$ 76,145,051	\$ 5,226,123	\$ 81,371,174
b. Total Normal Cost and Administrative Expenses at June 30, 2022	1,672,627	15	1,672,642
c. Interest on 1.a. and 1.b. to June 30, 2023	4,895,526	917,541	5,813,067
d. Fiscal Year 2023 Benefit Payments with Interest to June 30, 2023	(4,494,853)	(623,090)	(5,117,943)
e. Plan Change	190,536	0	190,536
f. Expected AL at June 30, 2023	\$ 78,408,887	\$ 5,520,589	\$ 83,929,476
2. Actual AL at June 30, 2023	\$ 79,126,252	\$ 5,460,037	\$ 84,586,289
3. Expected Actuarial Asset Value (AVA)			
a. AVA at June 30, 2022	\$ 64,312,555	\$ 5,285,200	\$ 69,597,755
b. Interest on 3.a. to June 30, 2023	3,943,932	927,911	4,871,843
c. Total Contributions Paid in Fiscal Year 2023	3,436,260	16	3,436,276
d. Interest on 3.c. to June 30, 2023	118,235	1	118,236
e. Fiscal Year 2023 Benefit Payments with Interest to June 30, 2023	(4,494,853)	(623,090)	(5,117,943)
f. Expected AVA at June 30, 2023	\$ 67,316,129	\$ 5,590,038	\$ 72,906,167
4. Actual AVA at June 30, 2023	\$ 66,604,921	\$ 5,590,038	\$ 72,194,959
5. Liability (Gain) / Loss (2. - 1.f)	\$ 717,365	\$ (60,552)	\$ 656,813
6. Asset (Gain) / Loss (3.f. - 4.)	\$ 711,208	\$ 0	\$ 711,208
7. Total Actuarial (Gain) / Loss (5. + 6.)	\$ 1,428,573	\$ (60,552)	\$ 1,368,021

SECTION VI – SCHEDULE OF FUNDING PROGRESS

A schedule of funding progress is provided below. This schedule of funding progress was previously required by GASB25, which has been superseded by GASB67, and is provided for historical context. These liability and asset measures are used to develop the Actuarial Contribution and are not suitable for other purposes including, but not limited to, settlement of plan obligations. For more information, see SECTION II – MARKET AND ACTUARIAL VALUES OF ASSETS.

Table VI-1
Schedule of Funding Progress

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM (\$ Thousands)						
June 30 Valuation Date	(1) Actuarial Value of Assets (AVA)	(2) Accrued Liability (AL)	(3) Unfunded AL (UAL) (2)-(1)	(4) Funded Ratio (1) / (2)	(5) Covered Payroll ¹	(6) UAL as a % of Covered Payroll (3) / (5)
2014	\$ 37,521,424	\$ 67,309,977	\$ 29,788,553	55.7%	\$ 8,274,686	360.0%
2015	39,290,072	69,625,608	30,335,536	56.4%	8,844,651	343.0%
2016	41,015,087	69,964,412	28,949,325	58.6%	9,224,268	313.8%
2017	44,381,706	69,552,380	25,170,674	63.8%	9,848,899	255.6%
2018	50,012,149	72,205,318	22,193,169	69.3%	10,404,404	213.3%
2019	57,990,211	73,938,547	15,948,336	78.4%	10,903,755	146.3%
2020	60,693,821	75,452,987	14,759,166	80.4%	11,203,878	131.7%
2021	66,328,295	79,153,122	12,824,827	83.8%	11,469,453	111.8%
2022	69,597,755	81,371,174	11,773,419	85.5%	11,825,124	99.6%
2023	72,194,959	84,586,289	12,391,330	85.4%	12,247,353	101.2%

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

SECTION VII – RISK AND UNCERTAINTY

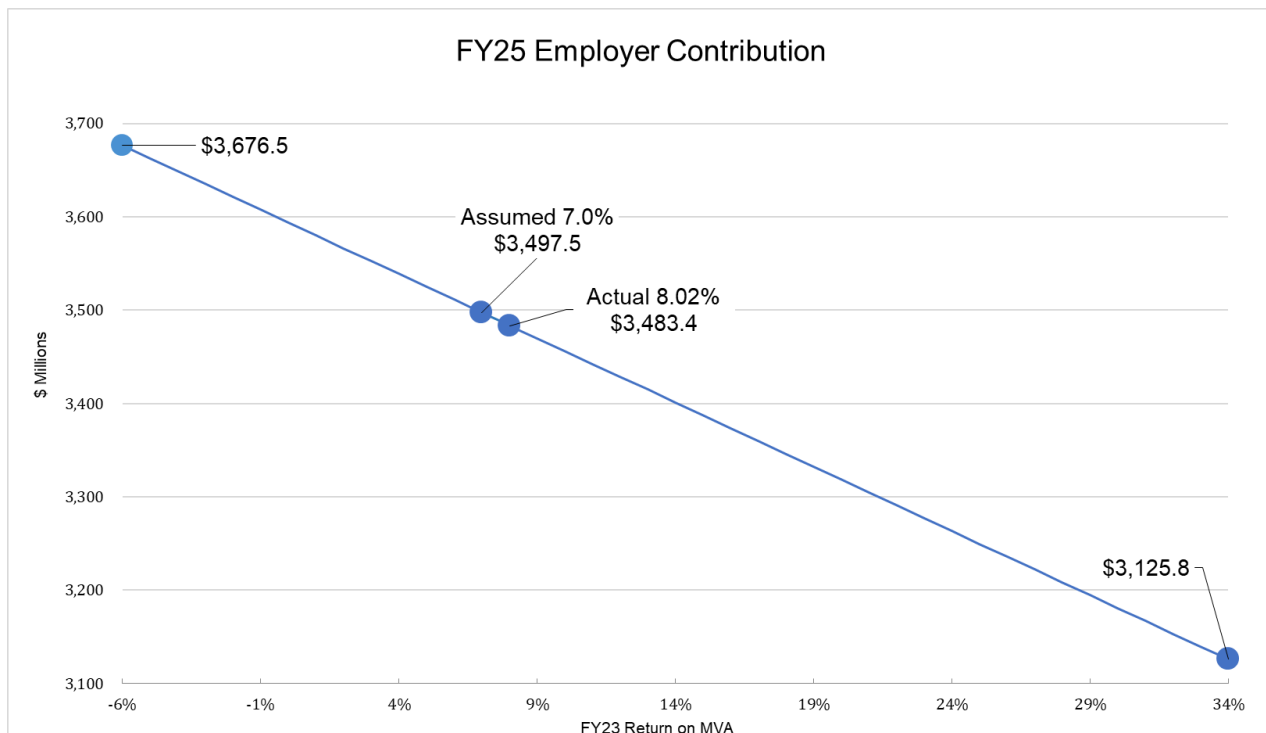
The funded status of TRS depends highly on the realization of the actuarial assumptions used, certain demographic characteristics of the Plan, and other factors. Risks faced by the Plan are described in this Section and have been separated into high, medium, and other risk categories.

High Risk Types

Investment Risk: The Risk of Not Realizing Expected Returns

The most substantial risk for most pension systems, TRS included, is the risk of investment returns being less than assumed. For NYCERS this assumed investment return is 7%.

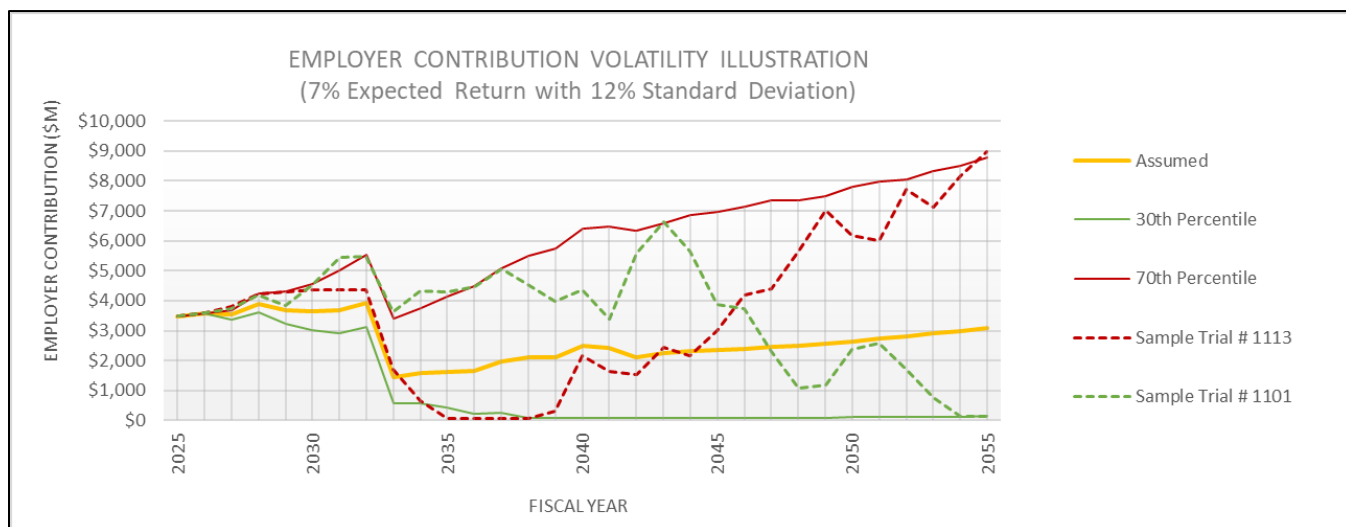
The graph below illustrates the potential FY25 employer contribution for a range of investment return outcomes if returns had differed from the assumed rate of return (i.e., from -6% to 34%). In addition, the actual investment return and employer contribution are shown.



Investment Risk: The Risk of Volatile Realized Returns

Even when long-term investment returns meet actuarial assumptions, investment volatility can contribute substantially to contribution and funded status volatility. The following charts illustrate the impact of investment return volatility on employer contributions and funded ratios based on 5,000 30-year investment return trials. Each stochastic investment return within each 30-year trial was generated from a normal distribution with an expected return of 7% and a standard deviation of 12%. Note that individual asset classes within the portfolio were NOT separately modeled and no attempt was made to rebalance the asset classes during the 30-year trials. The actual investment return for the next valuation year was known prior to the publication of this report and was also incorporated into this projection.

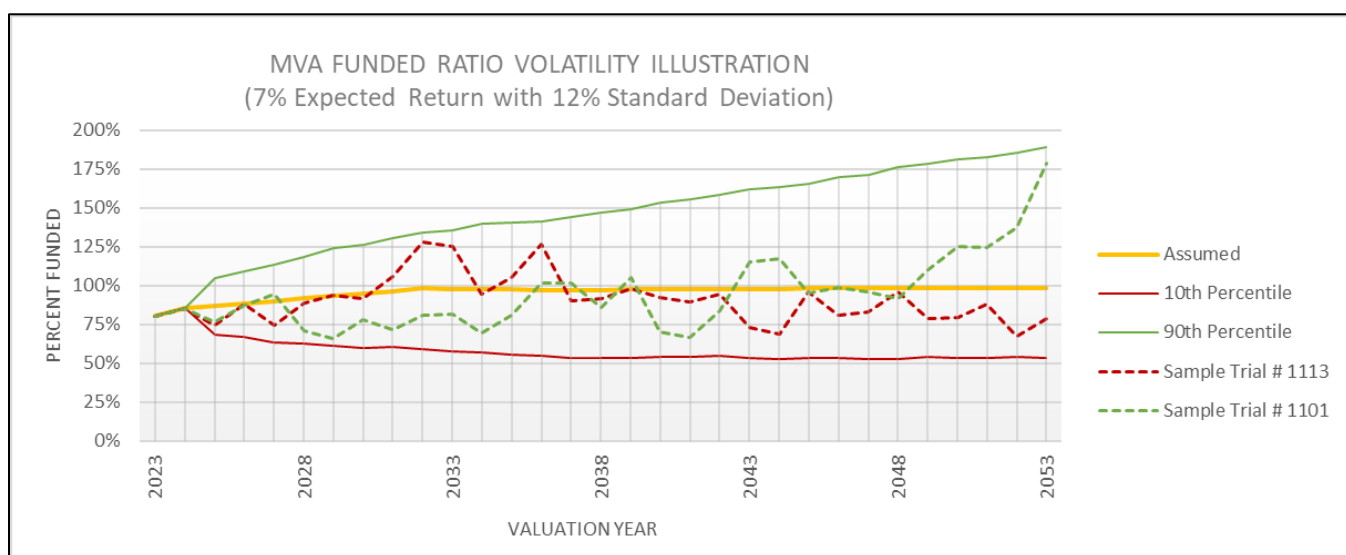
The yellow line in the charts shows the results if investment returns were exactly 7% as expected. The two solid lines show results for the indicated percentile range and together frame a range of results based on all 5,000 trials. The two dashed lines illustrate sample results from among the 5,000 trials.



Please note how in the two sample trials above (the dotted lines), the actual employer contribution fluctuates above and below the assumed contribution rate due to investment return volatility.

The impact on the funded status for these two trials can also be seen below, where for example, the green dotted line exceeds 175% funding at the end of the 30-year period (below) with a corresponding employer contribution approaching \$0 (above). The converse is shown in the red dotted line where at the end of the 30-year period, the employer contribution rate approaches \$9.0B (above) with a corresponding funded ratio of approximately 80% (below).

On average, the 5,000 trials result in the yellow assumed line with a funded status approaching 100% achieved around the fiscal year ending in 2032.

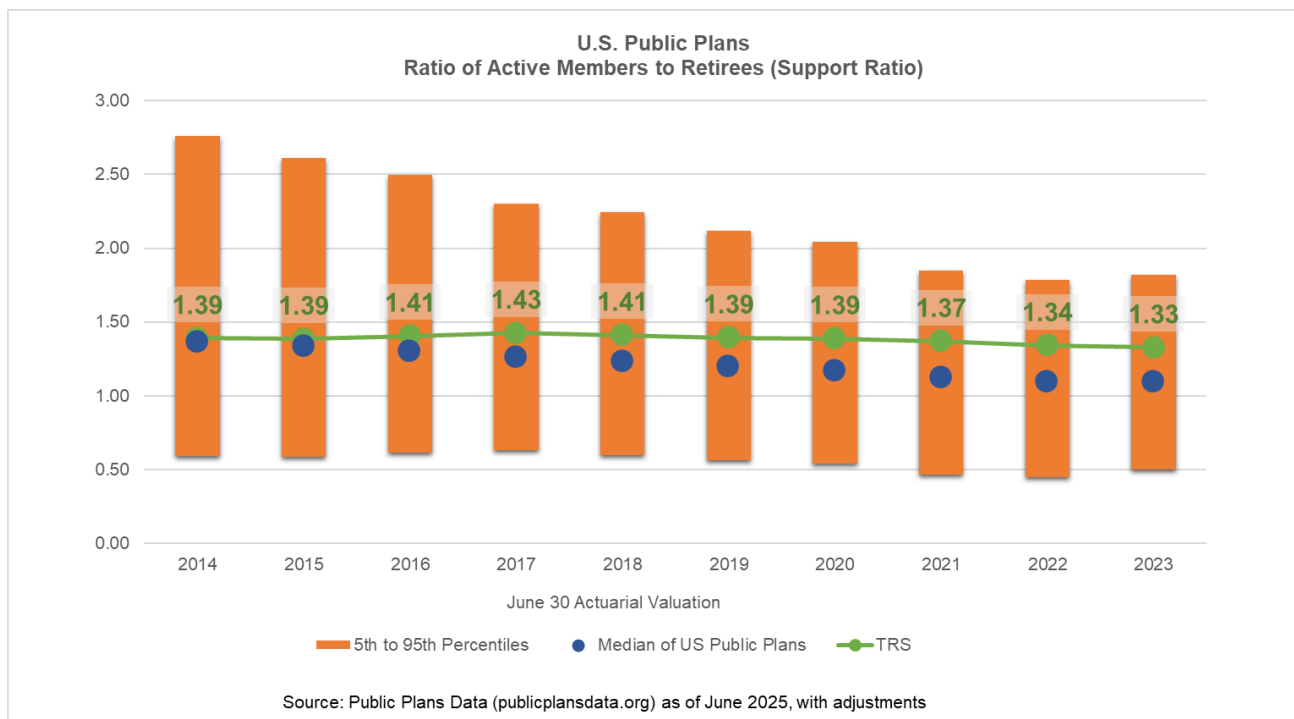


Maturity Risk: The Risk of Demographic Imbalance

As plans mature, contribution volatility can increase as retiree liabilities and total assets grow faster than active liabilities and payroll. In this subsection, the maturity of the Plan is examined with several metrics.

Ratio of Active Members to Retirees (Support Ratio)

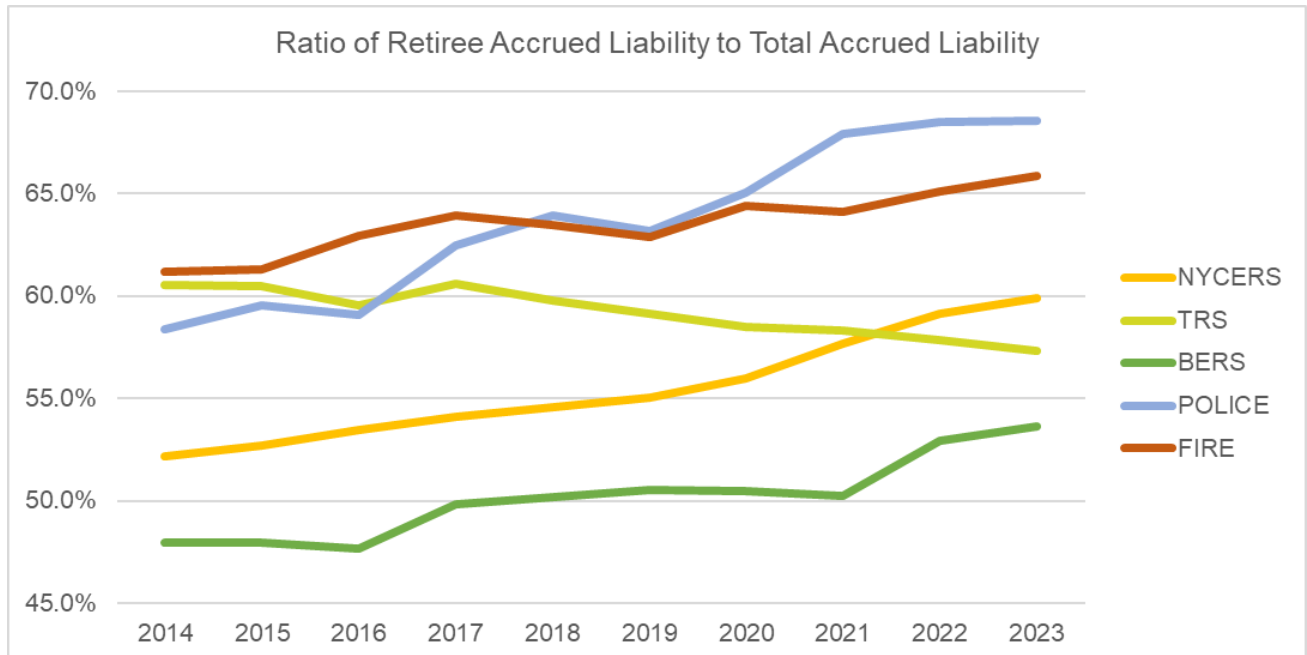
A plan's Support Ratio (i.e., the ratio of active members to retirees) is an indicator of the Plan's maturity level. Lower Support Ratios have higher contribution volatility. In a plan's early years, the ratio is very high as the plan contains mostly active members. As it matures, more active members transition to retirement, leading to a decrease in the Support Ratio over time that can result in a ratio near or below one. For TRS, this ratio has remained relatively stable in recent years, meaning that about the same number of active workers exist to support pensioner payments.



The chart above shows U.S. public pension plan Support Ratios in comparison to the Plan's. The median Support Ratio amongst U.S. public pensions has declined from 1.36 in the 2014 valuation year to 1.09 in the 2023 valuation year. Over that same period, the Plan's Support Ratio declined from 1.39 to 1.33, a less gradual decline compared to U.S. public plans overall, indicating TRS is maturing less rapidly than other plans in general.

Ratio of Retiree Accrued Liability to Total Accrued Liability

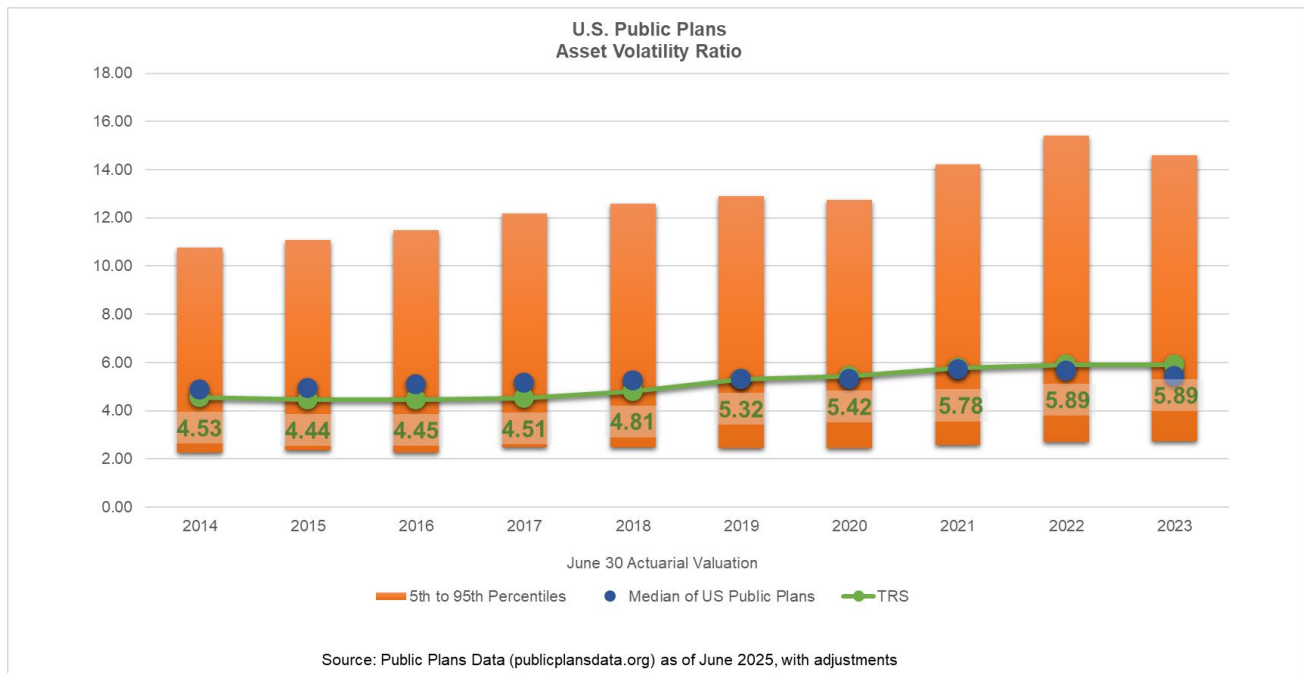
A plan's ratio of retiree liabilities to its total liabilities is also measure of its maturity. A new pension plan begins with this ratio at zero; as the plan matures, the ratio increases. This ratio is shown in the graph below for TRS; the other New York City Retirement Systems¹ (NYCRS) are included for comparison. The ratio for TRS has been relatively flat or decreasing in recent years consistent with the slower maturation rate observed in the Support Ratio on the previous page.



¹ New York City Employees' Retirement System (NYCERS); Board of Education Retirement System (BERS); Police Pension Fund (POLICE); Fire Pension Fund (FIRE)

Asset Volatility Ratio

Another way to look at plan maturity is the Asset Volatility Ratio (AVR), or ratio of assets to payroll. This ratio tends to rise as plans mature because assets generally need to accumulate to provide for benefit payments. The chart below compares the AVR (on an AVA basis) for TRS to the population of public pension systems.



As a plan matures, AVRs tend to increase, and the plan's actuarially-determined contribution becomes more sensitive to investment losses. For example, the same percentage of investment losses in more mature plans with a larger asset base can increase contributions as a percentage of payroll more than in less mature plans. Likewise, large investment gains in more mature plans decrease contributions as a percentage of payroll more than comparable gains would in less mature plans. This leads to additional volatility.

Based on these metrics, the Plan is maturing as expected and contribution volatility will likely increase over time. If contribution volatility is of concern, asset allocation adjustments can be considered as a means of reducing this volatility.

Medium Risk Types

Interest Rate Risk: The Risk of Reduction in the Long-Term Rate of Return

The Accrued Liability for the Plan depends heavily on the actuarial assumption used for future investment returns. While the returns themselves can produce substantial volatility, as detailed in the Investment Risk subsection above, the long-term rate of return assumption of 7.0% is highly dependent on the allocation of Plan assets.

If market conditions and/or the allocation of Plan assets no longer support a long-term rate of return assumption of 7.0%, the Actuarial Interest Rate (AIR) may have to be reduced, which can significantly increase the Accrued Liability, Unfunded Accrued Liability, Normal Cost, and resulting contribution of the Plan. The sensitivity of the Accrued Liability, the Unfunded Accrued Liability, and the Normal Cost of the Plan are shown below:

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM	
SENSITIVITY ANALYSIS AS OF JUNE 30, 2023	
Valuation Date	June 30, 2023
Results at 7.0%	
1. Accrued Liability	\$ 84,586,288,662
2. Actuarial Value of Assets (AVA)	<u>72,194,959,000</u>
3. Unfunded Accrued Liability (AVA Basis) (1.-2.)	12,391,329,662
4. Normal Cost	1,502,009,318
Results at 6.0%	
1. Accrued Liability	\$ 100,600,600,109
2. Actuarial Value of Assets (AVA)	<u>72,194,959,000</u>
3. Unfunded Accrued Liability (AVA Basis) (1.-2.)	28,405,641,109
4. Normal Cost	2,453,964,790
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Accrued Liability	19%
2. Increase in Unfunded Accrued Liability	129%
3. Increase in Normal Cost	63%

Likewise, if the return assumption of 7.0% is too conservative, the Accrued Liability, Unfunded Accrued Liability, Normal Cost and resulting contributions to the Plan can be significantly overstated. The annual GASB reports published by the Office of the Actuary illustrate the interest rate sensitivity if the AIR is increased to 8.0%.

Another measure of the Plan's liabilities that illustrates Interest Rate Risk is the **Low-Default-Risk Obligation Measure (LDROM)** described in Actuarial Standard of Practice Number 4 (ASOP 4). In the Transmittal Memorandum for ASOP 4, the Actuarial Standards Board (ASB) indicates the following regarding LDROM:

"The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the "right" liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."

The LDROM was calculated below using the same assumptions and methods used to determine the Plan's Accrued Liability except for the Actuarial Interest Rate (AIR). The AIR for LDROM purposes is derived from low-default-risk fixed income securities. The LDROM AIR used was 4.06%, the 20-Year U.S. Treasury Constant Maturity yield as of June 30, 2023. The Plan's LDROM and Accrued Liability are:

LDROM as of June 30, 2023 (4.06%)	\$145,687,829,434
Plan's Accrued Liability as of June 30, 2023 (7.00%)	\$ 84,586,288,662

The LDROM can be viewed in multiple ways to provide insight into Interest Rate Risk as it relates to the Plan's asset allocation and the value of benefit security provided members.

One view is that this measure illustrates the cost of changing the Plan's asset allocation to an all-bond portfolio with low default risk. The lower AIR of 4.06% is consistent with the expected yield for that asset allocation. Reducing the AIR from 7.00% to 4.06% would result in higher Plan liabilities, lower expected future investment earnings, and higher employer contribution rates.

Another view is that LDROM represents the approximate value in the financial marketplace of the accrued benefits promised to members using financial instruments with payment security consistent with the members' benefit security. In New York, benefit security is guaranteed in the State's Constitution. Retirement benefits for New York public employees cannot be reduced, regardless of interest rate or other risks described in this section. LDROM illustrates the additional market value cost of providing this low-default-risk protection.

In either case, the \$61.1 billion difference between the LDROM and the Plan's Accrued Liability can be viewed as expected taxpayer savings from investing in the Plan's diversified portfolio compared to investing only in high quality bonds or purchasing that benefit security in the marketplace. Actual taxpayer savings are ultimately the difference between the bond portfolio returns and the Plan's current portfolio over the long term.

Longevity Risk: The Risk of Higher than Assumed Mortality Improvement

TRS faces risk in its assumption of future mortality rates. Actuarial experience studies were used to develop the base mortality rates assumed in the valuation; Society of Actuaries mortality improvement scale MP-2020 was subsequently applied to these base rates.¹

This scale MP-2020 is an assumption regarding the *improvement* of future mortality rates as compared to mortality when the experience studies were completed. The scale was developed using large amounts of historical data from the Social Security Administration. Risk therefore exists such that the mortality improvement inherent in the Plan population is higher than the improvement seen in the population provided by the Social Security Administration. When mortality improvement is higher than assumed, plan participants will live longer than expected, and the plan will pay more pension benefits than had been previously funded.

Furthermore, while the scale uses recent experience to develop short-term mortality improvement rates, an actuarial assumption is applied to long-term mortality improvement rates based on expert opinion. This long-term rate assumption varies based on age and was developed by the Society of Actuaries' Retirement Plans Experience Committee to reflect historical mortality improvement. Risk to the Plan exists, however, if Plan mortality experience shows higher levels of long-term mortality improvement; expert opinion can in some cases be flawed, particularly when past experience is not indicative or predictive of future experience.

In a letter dated June 28, 2019, Buck analyzed historical Plan experience and noted "it appears that historical mortality improvement in NYC pensioners has kept pace with, and in some cases may have exceeded slightly, the mortality improvement trends in historical Social Security Administration graduated rates that are based on a broad U.S. population" and that "continued use of MP-20xx mortality improvement scales seems reasonable." It may be prudent in future years, after longer trends can be observed, to quantify the effect of changing the ultimate mortality improvement rate to be higher than current levels.

Litigation Risk: The Risk of Legal Claims and Lawsuits

It is not uncommon for New York City to be a defendant in legal claims and lawsuits.² In its most recent claims report, the Comptroller reports that in FY2024, NYC settled 13,397 claims and lawsuits for \$1.94 billion. On occasion, these settlements involve NYCERS. The 1996 case *Gulino v. Board of Education* awards damages to plaintiffs that in some cases include counterfactual service and salary in NYCERS. It remains a continuing risk that litigation may expand the scope of pension benefits beyond what is intended or codified in statute.

¹ Retirement Plans Experience Committee. "Mortality Improvement Scale MP-2020 Report," Section 5. *Society of Actuaries*.

² <https://comptroller.nyc.gov/newsroom/comptroller-landers-new-dashboard-tracks-city-claims-city-paid-nearly-2b-in-settlements-last-fiscal-year/>

Credit/Solvency Risk: The Risk of Potential Insolvency of Contributing Entities

All public pension systems face credit risk in the event their sponsoring entities become unable to pay their debts and obligations. Credit rating agencies currently consider New York City bonds to be of high quality, and the Actuary believes the City faces low credit risk as a main contributing entity to TRS.

In addition, TRS is a multiple-employer plan with several contributing entities. TRS faces risk if contributing entities become insolvent while still carrying Unfunded Accrued Liability. Existing law and precedent transfer these amounts to other employers, creating imbalanced funding responsibility in the event of default. For example, in the final June 30, 2016 actuarial valuation for FY18, the Department of Education assumed responsibility for unfunded liabilities associated with the Beginning with Children Charter School, which closed in 2016.

Other Risk Types

Inflation Risk: The Risk of Higher than Assumed Inflation

TRS faces risk if inflation is higher than expected. Inflation is a key driver of the salary increase assumptions (affecting active members) and Cost of Living Adjustments (COLA) assumptions (affecting both active members and pensioners/beneficiaries). A quantitative analysis is not available at this time. Notably, however, the pensioner COLA is limited to half of CPI on the first \$18,000 of annual benefits, which limits the risk exposure to inflation.

Contribution Risk: The Risk that Future Contributions Are Less Than the Actuarially-Determined Contributions

Public pension systems can suffer from contribution risk when sponsoring governmental entities fail to make contributions as determined by the actuary under their funding policies.

The New York City Retirement Systems and Pension Funds face low contribution risk. City benefits are constitutionally protected and participating employers have historically contributed to the actuarial contribution as certified by the Actuary. The Actuary believes the City and other participating employers will continue to do so in future years. See Table III-5 - CONTRIBUTION HISTORY.

Contribution risk may also increase in future years if the actuarial contribution determined for the Plan grows to be a larger part of the City budget. The five New York City Retirement Systems and Pension Funds currently require contributions of approximately 10% of the City's annual budget, and contribution risk may increase if this contribution rate becomes untenable.

Agency/Political Risk: The Risk of Stakeholder Influences

With assumed long-term asset returns and gradual amortization of unfunded liabilities, the funded status of the Plan is expected to improve over time. Many public pension systems suffer from agency risk, wherein different stakeholders or agents want to influence the cost calculations in directions favorable to their interests. Agents may also downplay other risks (e.g., investment risk) to advance specific agendas. These situations create cases where promises for future funding can be disregarded for political expediency or other priorities. In other cases, certain plan provisions or administrative practices intended to provide occasional clarity or relief become commonplace or intentionally sought for the benefit of members at the expense of taxpayers.

Intergenerational Equity Risk: The Risk of Inequity in the Actuarially-Determined Contributions

Intergenerational inequity could exist for certain stakeholders (e.g., public taxpayers). If, for example, liabilities are valued using overly conservative assumptions, aggressive funding patterns may occur, thus causing current taxpayers to shoulder a disproportionately high share of the funding burden, as compared to past and future taxpayers. The reverse can also be true if aggressive or unrealistic assumptions are used. As the Plan is ongoing, taxpayers across all generations should be expected to offer similar funding contributions over the lifetime of the Plan.

Additionally, in future years of higher or lower funded status, changes in the statute may take place that can improve or diminish plan provisions. If so, intergenerational equity risk could increase as taxpayers and plan members at that time may receive preferential or less preferential treatment over the taxpayers and plan members prior to and subsequent to them.

SECTION VIII – SUMMARY OF PLAN PROVISIONS

A. Covered Employment

Membership in TRS is open to eligible teachers and administrative personnel employed by the Department of Education and certain employees of New York City Charter Schools and the City University of New York. Membership in TRS may be voluntary or mandated.

B. Tier Membership

Tier membership is based on the date that the member joined TRS. The tier status of earlier membership in TRS or another New York City or New York State public employee retirement system is reflected, but only if the service associated with that membership is purchased and included in Credited Service.

Tier 1: Prior to July 1, 1973

Tier 2: July 1, 1973 through July 26, 1976

Tier 4: July 27, 1976 through March 31, 2012

Tier 6: April 1, 2012

Tier 4 members who joined TRS before September 1, 1983 may elect a Tier 3 benefit. Unless otherwise noted, Tier 1 and Tier 2 provisions are hereafter omitted for brevity.¹ For more information about plan provisions, see the applicable Summary Plan Descriptions at www.trsnyc.org. In the event of a conflict between this summary and applicable law, the applicable laws will govern.

C. Basic Member Contributions (BMC)

Basic Member Contributions earn 5% interest per year, compounded annually.

Tier 4: The contribution rate is 3% of Salary. Tier 4 members contribute BMC for the first 10 years of Credited Service except members of the Chapter 504 55/27 plan contribute BMC for the first 27 years of Credited Service.

¹ Approximately 0.07% of active members as of June 30, 2023 are members of Tier 1 and Tier 2.

Tier 6: BMC are made for all years of Credited Service according to the following schedule:

Lookback Wages	BMC Rate
Up to \$45,000	3.00%
\$45,001 up to \$55,000	3.50%
\$55,001 up to \$75,000	4.50%
\$75,001 up to \$100,000	5.75%
Greater than \$100,000	6.00%

The lookback wages used for determining the Tier 6 BMC rate for a plan year are the actual wages earned two plan years prior to the plan year. A projected salary is used during the first three years of Credited Service. The BMC rate was limited to 3% from April 1, 2012 through March 31, 2013.

D. Additional Member Contributions (AMC)

Additional Member Contributions earn 5% interest per year, compounded annually.

Tier 4: Members of the Basic 62/5 plan do not make AMC. For other Tier 4 members, the AMC contribution rate is 1.85% of Salary and are made in accordance with the following schedule:

Plan Description	AMC Contribution Rate	Years Required
Chapter 19 55/25	1.85%	25
Chapter 19 55/27	1.85%	27
Chapter 504 55/27 plan	1.85%	All years

Tier 6: Members of the 63/5 plan do not make AMC.

E. Credited Service

Credited Service is comprised of Membership Service, Part-time Service, Prior Service, Amann Service, Transferred Service, and Military Service:

- **Membership Service:** Service earned while a member of TRS.
- **Part-time Service:** Service that is prorated based on the number of hours or days worked in the year.
- **Prior Service:** Any creditable service earned as an employee of New York City or New York State before joining TRS that was not transferred to TRS.
- **Amann Service:** Creditable service earned as a regular substitute teacher and/or for per diem employment during a leave of absence or after separating from service.

- **Transferred Service**: Service earned as a member of another public retirement system in the City or State of New York.
- **Military Service**: Service for qualified time served in one of the armed forces of the United States.

Prior Service, Amann Service, Transferred Service, and Military Service must be purchased to count as Credited Service. Payments made for purchasing Military Service are considered Employer contributions.

F. Salary

Salary is based on the annual wages earned in covered employment including overtime pay. Some limitations apply for the Salary used to determine Final Average Salary (FAS).

Tier 4: Wages greater than 110% of the average of the previous two years are excluded for purposes of determining FAS.

Tier 6: Wages greater than 110% of the average of the previous four years are excluded for purposes of determining FAS. In addition, the following payments are also excluded from wages for purposes of determining FAS:

1. Wages greater than the annual salary paid to the Governor of the State of New York;
2. Lump sum payments for deferred compensation, sick leave, accumulated vacation, or other credits for time not worked;
3. Overtime greater than the overtime ceiling of \$15,000, effective April 1, 2012 and indexed annually by the Consumer Price Index (CPI-U);
4. Any form of termination pay;
5. Any additional compensation paid in anticipation of retirement; and
6. In the case of employees who receive wages from three or more employers in a twelve-month period, the wages paid by the third and each successive employer.

G. Final Average Salary (FAS)

Service retirement, early retirement, disability retirement, and vested retirement benefits are based on Final Average Salary (FAS).

Tier 4 and Tier 6: FAS is the highest average Salary earned in any three consecutive years of Credited Service or in the final 36 months of Credited Service if greater.

H. Service Retirement

1. Eligibility: The eligibility requirements for an unreduced service retirement benefit are summarized in the table below:

Tier	Plan Description	Minimum Age	Minimum Service
4	Basic 62/5 Plan	Earlier of Age 55 with 30 years of Service And Age 62 with 5 years of Service	
4	Chapter 19 55/25	55	25
4	Chapter 19 55/27	55	27
4	Chapter 504 55/27 plan	55	27
6	Basic 63/5 Plan	63	5

2. Benefits:

- a. Tier 4 Plans:

- i. Less than 20 years of Credited Service: 1/60 times FAS times Credited Service;
- ii. 20 or more years of Credited Service: Sum of 2.0% times FAS times Credited Service up to 30 years plus 1.5% times FAS times Credited Service in excess of 30 years.

- b. Basic Tier 6 63/5 Plan:

- i. Less than 20 years of Credited Service: 1/60 times FAS times Credited Service;
- ii. 20 or more years of Credited Service: Sum of 35% times FAS plus 2.0% times FAS times Credited Service in excess of 20 years.

- c. Annuity Savings Accumulation Fund (ASAF):

- i. Annuitized value of the ASAF balance, if any, is added to the benefit.

I. Early Retirement

1. Eligibility: The eligibility requirements for early retirement plans are summarized in the table below:

Tier	Plan Description	Minimum Age	Minimum Service
4	All Tier 4 plans except the Chapter 504 55/27 plan	55	5
4	Chapter 504 55/27	55	5
6	Basic 63/5 plan	55	5

2. Benefits:

The service retirement benefit is reduced for early retirement based on the age at commencement.

a. Tier 4 Basic 62/5 Plan:

The service retirement benefit is reduced by 0.50% for each of the first 24 months that the age at commencement precedes age 62, and reduced 0.25% for each of the next 60 months that the age of commencement precedes age 60:

Age	Early Retirement Factor
61	0.94
60	0.88
59	0.85
58	0.82
57	0.79
56	0.76
55	0.73

Tier 4 members with Tier 3 rights may elect early retirement based on the provisions of the Tier 3 Basic 62/5 Plan.

b. Tier 6 Basic 63/5 Plan:

The service retirement benefit is reduced by 13/2400 for each month (i.e., 6.5% per year) that the age of commencement precedes age 63.

c. Annuity Savings Accumulation Fund (ASAF):

The annuitized value of the ASAF balance, if any, is added to the benefit.

J. Disability Retirement

1. Accidental Disability (ADR)

- a. Eligibility: No age or service requirement. Requires Medical Board determination that the active member is physically or mentally incapacitated due to an accident in the performance of duties and that the accident is not due to willful negligence of the member.
- b. Benefits: Greater of $\frac{1}{60}$ times FAS times Credited Service or $\frac{2}{3}$ times FAS. The member may elect a service retirement benefit, if eligible.

2. Ordinary Disability (ODR)

- a. Eligibility: 10 years of Credited Service. Requires Medical Board determination that the member is physically or mentally incapacitated while an active member.
- b. Benefits: Greater of $\frac{1}{60}$ times FAS times Credited Service or $\frac{1}{3}$ times FAS. The member may elect a service retirement benefit, if eligible.

3. Annuity Savings Accumulation Fund (ASAF)

The annuitized value of the ASAF balance, if any, is added to the benefit.

K. Death Benefits

1. Accidental Death Benefits

- a. Eligibility: No age or service requirement. Death due to the performance of duties while an active member.
- b. Benefits: A monthly pension is payable to the beneficiary equal to 50% of $\frac{1}{12}$ of annual wages earned during the year prior to death. The benefit is equal to 50% of $\frac{1}{12}$ of the annual wage rate if the member had less than one year of Credited Service.

2. Ordinary Death Benefits

- a. Eligibility:
 - i. Active members: No age or service requirement. Death during active employment while not in the performance of duties.
 - ii. Deferred vested members: Death after termination of employment and prior to benefit commencement.

iii. Retired Members: Death after benefit commencement.

b. Death benefit:

- i. Active members: Refund of BMC and the employee portion of AMC with interest plus a salary-based death benefit. The salary-based death benefit is equal to one year's wages times completed years of Credited Service up to 3 years. The salary-based portion of the death benefit is reduced 3% for each year the member remains in service beyond age 60 (to a maximum reduction of 30% at age 70).
- ii. Deferred vested members with 10 or more years of Credited Service: Refund of BMC and the employee portion of AMC, if any, with interest plus one half of the salary-based death benefit that would have been payable had the member died on the last day of active service as described above.
- iii. Deferred vested members with less than 10 years of Credited Service: Refund of BMC and the employee portion of AMC, if any, with interest.
- iv. Retirees: The pre-retirement, salary-based death benefit that would have been payable had the member died on the last day of active service times the Adjustment Factor described in the table below:

Year of Death	Adjustment Factor
1 st year after retirement	50%
2 nd year after retirement	25%
3 rd year or later after retirement	10%, or if greater, the benefit is 10% of the pre-retirement, salary-based death benefit in effect at age 60.

c. Form of Payment: Lump sum.

L. Vested Benefit After Termination

1. Eligibility:

- a. Tier 4 Chapter 504 55/27 plan: 5 years of Credited Service.
- b. All other Tier 4 plans: 5 years of Credited Service.
- c. Tier 6 plan: 5 years of Credited Service.

2. Benefits: The vested benefit is equal to the amount of the Service Retirement benefit (unless noted otherwise below), payable at the times specified below.
 - a. Tier 4 Plans: A vested member may elect a service retirement benefit payable at age 62 or an early retirement benefit payable as early as age 55. The eligibility and benefit provisions for a benefit that commences prior to age 62 are the same as those for early retirement except that benefits are unreduced at age 55 if the member has earned the minimum service required for a Service Retirement benefit shown in subsection H above.
 - b. Tier 6 Plan: Age 63. In no case can the vested benefit be less than the annuity equivalent of the BMC.
3. Annuity Savings Accumulation Fund (ASAF)

The annuitized value of the ASAF balance, if any, is added to the benefit.

M. Forms of Payment

1. Normal Form of Payment: Single Life Annuity.
2. Optional Forms of Payment: Joint and Survivor Annuities, Certain and Life Annuities, and Pop-up Annuities.

N. Cost of Living Adjustments (COLA)

Annuity payments are increased annually on September 1st, but only after a pensioner has attained the applicable eligibility threshold. Some beneficiaries are not eligible for COLA increases. The COLA increase is equal to a base benefit times a COLA percentage. The COLA increase for a spouse receiving a joint & survivor annuity is one half of the COLA increase that would have been applicable to the member had he or she survived.

1. Eligibility Thresholds:
 - a. Service Retirement and Vested Retirement: The earlier of (i) and (ii):
 - i. Attainment of age 62 and 5 years since commencement
 - ii. Attainment of age 55 and 10 years since commencement
 - b. Disability Retirement: 5 years since commencement
 - c. Beneficiaries of an Accidental Death benefit: 5 years since commencement

2. Eligible beneficiaries: Spouses receiving a joint & survivor annuity. All others are non-eligible.
3. Base Benefit: The lesser of \$18,000 and the maximum retirement allowance plus the sum of prior years' COLA increases.
4. COLA percentage: 50% of the Consumer Price Index (CPI-U) based upon the 12 months ending March 31 prior to each September 1 effective date, rounded to the next highest 0.1%. Such percentage shall not be less than 1.0% nor greater than 3.0%.

O. Refund of BMC and AMC

Refunded with interest under some circumstances. Only the employee portion of AMC is refunded.

1. Employee Portion of AMC: 50% for all plans that require AMC.
2. Non-vested termination: BMC and employee portion of AMC are refunded with interest.
3. Vested termination: A member may elect a refund of BMC and the employee portion of AMC with interest in lieu of a pension benefit, but only if he or she has less than 10 years of Credited Service.
4. Ordinary death: BMC and the employee portion of AMC are refunded with interest.
5. Accidental death: The employee portion of AMC are refunded with interest.
6. Disability retirement: The employee portion of AMC are refunded with interest.
7. Service retirement: The employee portion of AMC are refunded with interest if the member retires on or after age 62.

P. Service and Early Retirement for Tier 4 Members with Tier 3 Rights

1. Eligibility: Age 55 and 5 years of Credited Service.
2. Benefits: These members may elect a Tier 3 benefit instead of a Tier 4 benefit. The benefit formula for Tier 3 is the same as the benefit formula for the Tier 4 Basic 62/5 plan except:

- a. Credited Service under the Tier 3 benefit formula is capped at 30 years,
 - b. The Tier 3 benefit formula includes an offset starting at age 62 equal to 50% of the Primary Social Security benefit, and
 - c. The early retirement factors used to reduce benefits for early commencement are smaller and thus reduce benefits more for Tier 3 than the corresponding factors used under the Basic Tier 4 62/5 plan.
3. Cost of Living Adjustments: Tier 3 retirement benefits may be adjusted annually by Escalation. A Tier 3 retirement benefit cannot be less than the initial benefit payable at the commencement date.
- a. Full Escalation: Applicable for benefits commencing on or after age 65. Equal to the lesser of 3% and the Consumer Price Index (CPI-U) for positive increases in the CPI-U, and the greater of -3% and the Consumer Price Index (CPI-U) for negative increases in the CPI-U.
 - b. Partial Escalation: Applicable for benefits commencing after age 62 and prior to age 65. Equal to full escalation reduced by 1/36 times the number of months that the age at commencement precedes age 65.

Q. Loans

A member generally may borrow up to 75% of the accumulated BMC with interest. A member's unpaid loan balance will reduce his or her retirement benefit.

R. Tax-deferred Annuity Program (TDA)

Members may elect to make voluntary employee contributions to the TRS TDA. A member's contributions to a TDA account are capped by the dollar limitations under §402(g)(1) of the Internal Revenue Code (IRC) on the exclusion for elective deferrals described in §402(g)(3), and the dollar limitation under §414(v)(2)(B)(i) of the IRC for catch-up contributions for members who have attained aged 50.

A member may withdraw his or her TDA account balance as a lump sum or convert the total accumulated balance into an annuity upon retirement.

S. Others

None.

SECTION IX – CHAPTER AMENDMENTS

The June 30, 2023 actuarial valuation results reflect the following Chapter amendments from the prior five years.

- **Chapter 55 of the Laws of 2024 (Chapter 55/24), Part KK**, enacted on April 20, 2024, extends Chapter 56/22 by excluding overtime and compensation earned for supplemental work from wages used to calculate Tier 6 Basic Member Contribution Rates for two additional years.
- **Chapter 56 of the Laws of 2024 (Chapter 56/24), Part QQ**, enacted on April 20, 2024, reduces the number of years used to calculate the Final Average Salary from 5 years to 3 years for certain Tier 6 members of NYCERS.
- **Chapter 711 of the Laws of 2023 (Chapter 711/23)**, enacted on December 8, 2023, allows members of NYCERS, TRS or BERS to suspend their membership in such system and join a second city retirement system based on eligible dual employment.
- **Chapter 716 of the Laws of 2023 (Chapter 716/23)**, enacted on December 8, 2023, amends certain Tier 2, 3, 4 and 6 death benefit provisions for NYCERS, TRS and BERS to ensure continued compliance with Federal Older Workers' Benefit Protection Act (OWBPA).
- **Chapter 717 of the Laws of 2023 (Chapter 717/23)**, enacted on December 8, 2023, reinstates the transfer of reserves between certain New York City and State retirement systems for members who transfer systems with 10 or more years of service.
- **Chapter 56 of the Laws of 2022 (Chapter 56/22)**, enacted on April 9, 2022, reduces the Tier 6 vesting requirement from 10 years to 5 years and allows for retirement with 5 years of service, and excludes certain forms of overtime and extracurricular compensation from the salary used to determine Tier 6 Basic Member Contribution (BMC) Rates during the specified period from 2022 through 2024.
- **Chapter 561 of the Laws of 2022 (Chapter 561/22)**, enacted on September 9, 2022, extends the deadline for filing a Notice of Participation in the World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2026.
- **Chapter 585 of the Laws of 2022 (Chapter 585/22)**, enacted on November 10, 2022, expands the qualifications for military service buybacks.
- **Chapter 775 of the Laws of 2022 (Chapter 775/22)**, enacted on December 23, 2022, increased the asset allocation limits for "Basket Clause" investments from 25% to 35%.

- **Chapter 525 of the Laws of 2021 (Chapter 525/21)**, enacted on October 29, 2021, mandates certain Paraprofessionals into TRS and renders certain other titles ineligible to join TRS.
- **Chapter 424 of the Laws of 2021 (Chapter 424/21)**, enacted on September 10, 2021, expands eligibility of certain public service employees for participation in the World Trade Center Rescue, Recovery, or Clean-up Operations.
- **Chapter 89 of the Laws of 2020 (Chapter 89/20)** provides death benefits to statutory beneficiaries of members whose death was a result of or was attributed to COVID-19. **Chapter 78 of the Laws of 2021 (Chapter 78/21)** amends Chapter 89/20 by extending the eligibility window of these death benefits through December 31, 2022. **Chapter 783 of the Laws of 2022 (Chapter 783/22)** extends the deadline for the COVID-19 Accidental Death Benefits from December 31, 2022 to December 31, 2024. These laws were enacted May 30, 2020, March 12, 2021 and December 23, 2022, respectively.

SECTION X – SUBSEQUENT EVENTS

The following legislation was adopted after the June 30, 2023 valuation date and could have an impact on future years' valuations:

- **Chapter 551 of the Laws of 2024** (Chapter 551/24) enacted on December 11, 2024, allows UFT members in Board of Education Retirement System (BERS) to join or transfer into TRS.
- **Chapter 55 of the Laws of 2025** (Chapter 55/25) extends for two years the current waiver of Retirement and Social Security Law (RSSL) Section 211 and 212, eliminating income limitations on retiree earnings from re-employment in public schools.

SECTION XI – ACTUARIAL ASSUMPTIONS AND METHODS

The results in this valuation report are based upon standard actuarial models (including but not limited to Entry Age Normal and related parameters) that are widely used in actuarial practice. The models are intended to calculate the liabilities associated with these plan provisions using data and assumptions as of the measurement date and, using actuarial assumptions and methods further described below.

Most of this liability and cashflow modeling is currently implemented using ProVal, an actuarial valuation and projection software program developed by Winklevoss Technologies. These results are reviewed for accuracy, reasonability, and consistency with prior results, consistent with the requirements of Actuarial Standard of Practice 56. The model is also reviewed extensively when significant changes are made to the software and additionally typically biennially by outside actuarial auditors hired by the New York City Comptroller.

Pension payments that exceed the Internal Revenue Code Section 415 Limit which are expected to be made from the Excess Benefit Plan are excluded from this valuation. There were no other changes in actuarial assumptions and methods compared to the June 30, 2022 valuation.

Table XI-1
Active Retirement Rates

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

¹ 7.50% only applies to Tier 6 members; 0.00% otherwise.

² 27.00% for Tier 1, 2, & 4 members and 18.00% for Tier 6 members.

³ 18.00% for Tier 1, 2, & 4 members and 27.00% for Tier 6 members.

Table XI-2
Active Termination Rates

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

Table XI-3
Active Disability Rates

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

Table XI-4
Active Mortality Rates

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

Table XI-5
Service Retiree Mortality

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0108%	0.0105%	68	1.3827%	0.8399%
16	0.0146%	0.0128%	69	1.5070%	0.8992%
17	0.0197%	0.0140%	70	1.6306%	0.9855%
18	0.0222%	0.0145%	71	1.7953%	1.1072%
19	0.0235%	0.0151%	72	1.9579%	1.2311%
20	0.0246%	0.0153%	73	2.1191%	1.3549%
21	0.0263%	0.0162%	74	2.2784%	1.4775%
22	0.0278%	0.0171%	75	2.4370%	1.5961%
23	0.0295%	0.0181%	76	2.7233%	1.8356%
24	0.0309%	0.0193%	77	3.0074%	2.0765%
25	0.0320%	0.0206%	78	3.2885%	2.3162%
26	0.0335%	0.0220%	79	3.5677%	2.5533%
27	0.0347%	0.0234%	80	3.8824%	2.7842%
28	0.0364%	0.0249%	81	4.4474%	3.3221%
29	0.0386%	0.0267%	82	5.0193%	3.8708%
30	0.0418%	0.0286%	83	5.5977%	4.4089%
31	0.0476%	0.0348%	84	6.1798%	5.0027%
32	0.0532%	0.0401%	85	6.7676%	5.5878%
33	0.0583%	0.0449%	86	7.7139%	6.2981%
34	0.0629%	0.0489%	87	8.6843%	6.9333%
35	0.0673%	0.0527%	88	9.6857%	7.5758%
36	0.0698%	0.0557%	89	10.7135%	8.5620%
37	0.0720%	0.0591%	90	11.7744%	9.6778%
38	0.0745%	0.0626%	91	13.6049%	10.8390%
39	0.0782%	0.0672%	92	15.5105%	11.9717%
40	0.0837%	0.0726%	93	17.4679%	13.1425%
41	0.0941%	0.0775%	94	19.5105%	15.1670%
42	0.1051%	0.0838%	95	21.6689%	17.3761%
43	0.1167%	0.0918%	96	23.7343%	19.5275%
44	0.1294%	0.1013%	97	25.7571%	21.6213%
45	0.1432%	0.1132%	98	27.8633%	23.3643%
46	0.1582%	0.1271%	99	29.8272%	23.8705%
47	0.1744%	0.1429%	100	31.5152%	23.9898%
48	0.1918%	0.1597%	101	33.0771%	24.9134%
49	0.2102%	0.1774%	102	34.4234%	26.0067%
50	0.2317%	0.1950%	103	35.6398%	27.2992%
51	0.2657%	0.2130%	104	36.6357%	28.7614%
52	0.3011%	0.2304%	105	37.3430%	30.3385%
53	0.3373%	0.2472%	106	37.7004%	31.9944%
54	0.3744%	0.2638%	107	37.8599%	33.6898%
55	0.4112%	0.2806%	108	38.0314%	35.3785%
56	0.4578%	0.3034%	109	38.1998%	37.0129%
57	0.5025%	0.3264%	110	50.0000%	50.0000%
58	0.5448%	0.3498%	111	50.0000%	50.0000%
59	0.5843%	0.3732%	112	50.0000%	50.0000%
60	0.6211%	0.3973%	113	50.0000%	50.0000%
61	0.7018%	0.4321%	114	50.0000%	50.0000%
62	0.7804%	0.4686%	115	50.0000%	50.0000%
63	0.8588%	0.5072%	116	50.0000%	50.0000%
64	0.9371%	0.5479%	117	50.0000%	50.0000%
65	0.9994%	0.5912%	118	50.0000%	50.0000%
66	1.1295%	0.6619%	119	50.0000%	50.0000%
67	1.2569%	0.7367%	120	100.0000%	100.0000%

Table XI-6
Disabled Retiree Mortality

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

Table XI-7
Beneficiary Mortality

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

**Table XI-8
Salary Scale**

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM		
ANNUAL RATES OF MERIT AND SALARY INCREASE		
Years of Service	Merit Increase	Salary Increase ¹
0	10.00%	13.00%
1	8.00%	11.00%
2	6.00%	9.00%
3	5.00%	8.00%
4	6.00%	9.00%
5	5.00%	8.00%
6	5.00%	8.00%
7	4.00%	7.00%
8	2.00%	5.00%
9	5.00%	8.00%
10	1.00%	4.00%
11	1.00%	4.00%
12	3.00%	6.00%
13	1.00%	4.00%
14	5.00%	8.00%
15	1.00%	4.00%
16	1.00%	4.00%
17	2.00%	5.00%
18	1.00%	4.00%
19	9.00%	12.00%
20	1.00%	4.00%
21	5.00%	8.00%
22+	1.00%	4.00%

¹ Salary Increase is the General Wage Increase of 3.00% plus the Merit Increase.

Additional Assumptions and Methods

1. **Actuarial Interest Rate (AIR):** 7.0% per annum, net of investment expenses.
2. **Mortality Assumption:** The mortality base tables are projected from 2012 using mortality improvement table MP-2020. The post-commencement base tables are also multiplied by adjustment factors to convert them from lives-weighted to amounts-weighted tables to account for socioeconomic effects on mortality. The adjustment factors are used as follows:

	Adjustment Factor	
	Male	Female
Service Retiree	0.908	0.944
Disabled Retiree	0.940	0.962
Beneficiary	0.890	0.951

3. **Marital Assumption:** All active members are assumed to be married, male employees are assumed to be four years older than their female spouses, and female employees are assumed to be two years younger than their male spouses.
4. **Credited Service:** Calculated in whole year increments for valuation purposes. For CUNY participants, since updated service is not provided on the census data, estimated service is used to calculate liabilities.
5. **Loans:** Except for Death Benefits, it is assumed that eligible members take a loan at retirement equal to 25% of their member contribution balances.
6. **Inflation:** The long-term Consumer Price Index inflation rate is assumed to be 2.50% per year. AutoCOLA is assumed to be 1.50% per year, and Escalation is assumed at 2.50% per year. The assumed 30-year Treasury rate for annuitization of outstanding loans at retirement is 3.50%.
7. **Form of Payment:** Retiring members are assumed to elect the Maximum Retirement Allowance (i.e., single life annuity) form of payment.
8. **Actuarial Asset Valuation Method (AAVM):**

The Actuary reset the Actuarial Value of Assets (AVA) to the Market Value of Assets (MVA) as of June 30, 2019.

Beginning with the June 30, 2020 actuarial valuation, the asset smoothing method recognizes investment returns greater or less than expected over a

period of five years, phasing these gains and losses in AVA at a rate of 20% per year.

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

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

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

For more information, see SECTION II – MARKET AND ACTUARIAL VALUES OF ASSETS.

9. **Actuarial Cost Method:** The Entry Age Normal (EAN) cost method of funding is used by the Actuary to calculate the Employer Contribution.

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

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

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

The explicit UALs that are developed under EAN each year are financed over fixed periods. For more information see Table III-2 Schedule of Unfunded Accrued Liability Bases.

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

10. **Allowances for Administrative Expenses:** The Employer Contribution for a fiscal year is increased by the interest-adjusted amount of administrative expenses paid from TRS during the second prior fiscal year.

11. **One-Year Lag Methodology (OYLM):** The One-Year Lag Methodology uses a June 30, XX valuation date to determine the Fiscal Year XX+2 employer contributions as follows:

a. Normal Cost

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

b. Administrative Expenses

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

c. UAL Payments

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

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

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

12. **Excess Benefit Plan:** The valuation excludes liabilities and costs, if any, associated with benefits in excess of the Internal Revenue Code Section 415 limitation.

13. **Additional Assumptions and Methods used for the TDA fixed fund:** Actuarial Accrued Liability (AL) for the TDA Fixed Fund is calculated using the Unit Credit Cost Method. Under this cost allocation method, the AL is calculated by discounting the projected account balance from each assumed exit age to the valuation date. The following assumptions and methods are used to determine the cost of the TDA fixed fund to the QPP:

- a. A cost is added to each year's Normal Cost for providing a guaranteed 8.25% return on the TDA Fixed Fund for non-UFT members.
- b. Active TDA members would contribute 8.0% of compensation to the TDA fixed fund and 3.5% of compensation to the TDA variable fund.
- c. TDA members would transfer 25% of their TDA variable fund to the TDA fixed fund.
- d. Active members in the QPP who have not joined the TDA would join and contribute 2.0% of pay to the TDA fixed fund and approximately 0.9% to the variable fund.
- e. The probability that a member elects 4% per year withdrawals from the TDA fixed fund starting from the later of age 60 and the age at termination is 25%.
- f. The probability that a member elects required minimum distributions from the TDA fixed fund starting from the later of age 72 and the age at termination is 75%.
- g. Estimate techniques have been used to account for the difference in liabilities due to future annuitization of TDA funds.
- h. Beginning with the June 30, 2020 actuarial valuation, the liability of the TDA as of the valuation date reflects an actuarial projection of account balances with guaranteed interest credits.

14. **Group Life Insurance Plan:** The Employer Contribution includes an amount to fund the Group Life Insurance Plan. The Group Life Insurance amount used in the TRS valuation is \$32,000.

15. **Obligors Allocation:** By statute, employer contributions are determined for TRS in total.

For purposes of allocating the employer contributions to the Obligors, the following are determined explicitly for each Obligor:

- a. Present Value of Future Benefits
- b. Present Value of Future Salaries
- c. Entry Age Normal Accrued Liability
- d. Present Value of Future Normal Costs
- e. Present Value of Future Employee Contributions

f. Normal Cost

Administrative Expenses are allocated to each Obligor, pro-rata, in proportion to active member valuation salaries.

Actuarial Value of Assets are determined explicitly for each Obligor.

The AVA attributable to each Obligor is then adjusted for members who transferred between obligors during the prior Fiscal Year. These adjustments are based on the Accrued Liability as of the last valuation date before the date the member transferred.

The Accrued Liability for each Obligor is also adjusted for the differences between assets and liabilities of the TDA for annuitized accounts and non-annuitized accounts with guaranteed interest credits.

The components of contribution are then determined for each Obligor.

Finally, the Employer Contribution for an overfunded Obligor is limited to be no less than the Administrative Expenses allocated to that Obligor.

SECTION XII – SUMMARY OF DEMOGRAPHIC DATA

The June 30, 2023 and June 30, 2022 actuarial valuations are based upon census data as of those dates, including the data for the cost for certain cases processed through those dates due to the Gulino settlement, submitted by the Plan's administrative staff, by the participating employers' payroll facilities, by the Office of Payroll Administration, and by the Financial Information Services Agency. Financial information was provided by the Office of the Comptroller as of June 30, 2023 and June 30, 2022.

Beginning at June 30, 2020, TRS members who are no longer on payroll but not otherwise classified have been classified as Active, Terminated Nonvested, or Deferred Vested members, using actuarial judgment and consideration of available data, including leave of absence data when available.

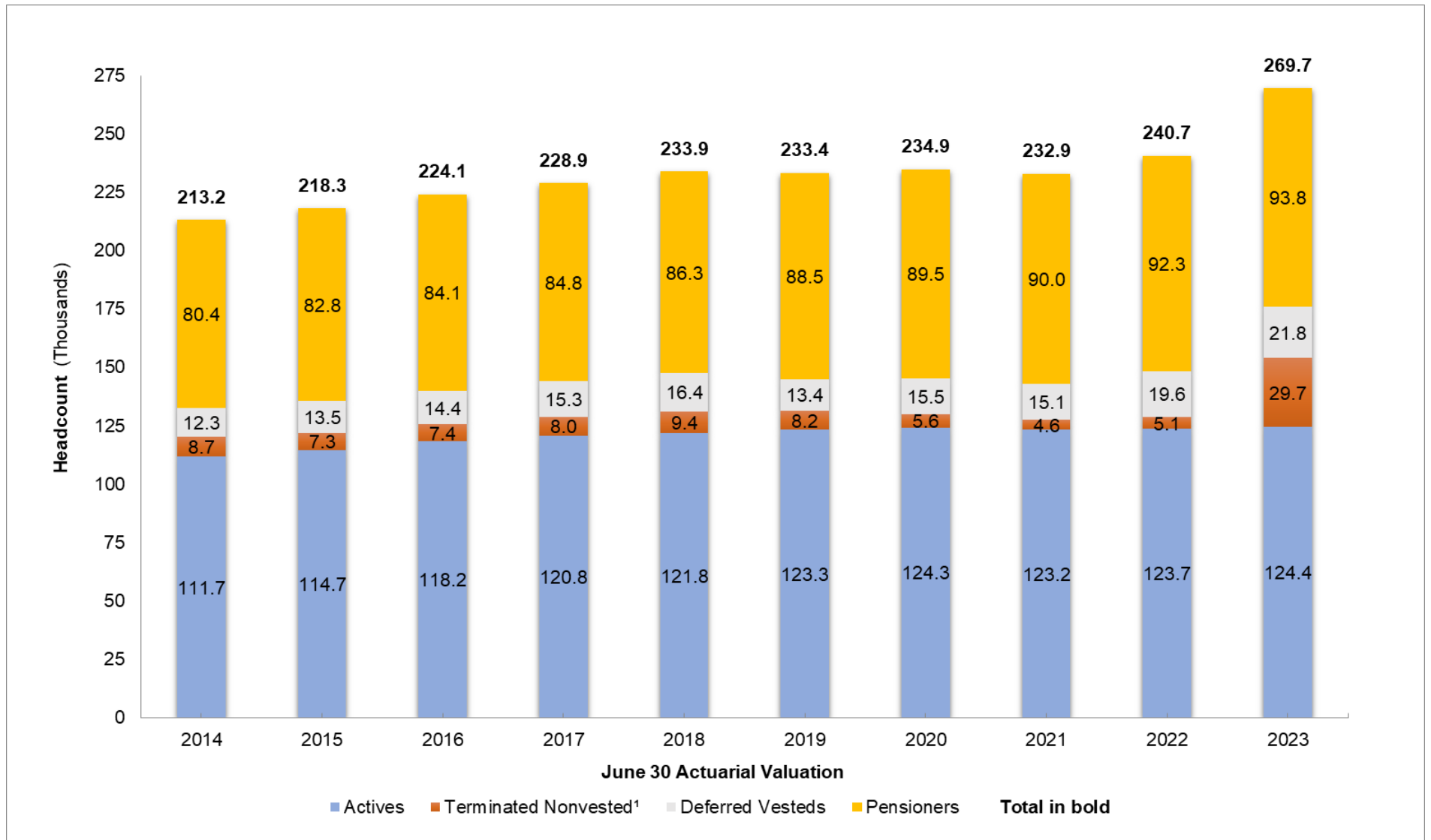
Where applicable, June 30, 2023 and June 20, 2022 salaries have been adjusted by the Actuary to reflect contract settlements with retroactive effect and the assumption of pattern bargaining. Estimates of liabilities attributable to the related additional benefits payable have been applied to the results contained herein.

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

Table XII-1
Status Reconciliation

CHANGES IN MEMBERSHIP DURING THE FISCAL YEAR CLASSIFIED BY STATUS										
Status	(1) Active Members	(2) Terminated Nonvested	(3) Deferred Vested	(4) Service Pension	(5) Ordinary Disability	(6) Accidental Disability	(7) Accidental Death	(8) Other Beneficiary	(9) Pensioners Subtotal (4) to (8)	(10) Grand Total (1) + (2) + (3) + (9)
Number at June 30, 2022	123,674	5,106	19,604	83,363	2,654	749	37	5,479	92,282	240,666
New Entrants	7,807	3,065	0	0	0	0	0	0	0	10,872
Rehires	2,135	19,571	301	(4)	0	0	0	0	(4)	22,003
Leaving Active Payroll	(2,459)	2,459	0	0	0	0	0	0	0	0
Vested Termination	(3,054)	(98)	3,152	0	0	0	0	0	0	0
Non-Vested Termination / Cashout	(475)	(352)	(481)	0	0	0	0	0	0	(1,308)
Accidental Death	(3)	0	0	0	0	0	3	0	3	0
Ordinary Death	(106)	(6)	(32)	0	0	0	0	0	0	(144)
Service Retirement	(3,071)	(5)	(639)	3,715	0	0	0	0	3,715	0
Ordinary Disability Retirement	(70)	0	(59)	0	129	0	0	0	129	0
Accidental Disability Retirement	(10)	(1)	(16)	0	0	27	0	0	27	0
Reclassifications	0	0	0	(69)	47	22	0	0	0	0
Pensioner Death with Beneficiary	0	0	0	(591)	(24)	(4)	0	619	0	0
Pensioner Death without Beneficiary	0	0	0	(1,804)	(91)	(17)	(1)	(534)	(2,447)	(2,447)
On/(Off) Pension Payroll	0	0	0	55	0	0	0	(1)	54	54
Net Change	694	24,633	2,226	1,302	61	28	2	84	1,477	29,030
Number at June 30, 2023	124,368	29,739	21,830	84,665	2,715	777	39	5,563	93,759	269,696

Graph XII-2
Headcount Summary by Status



¹ Active Off Payroll prior to June 30, 2020.

Table XII-3
Summary of Active Membership

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM		
ACTIVE MEMBERS INCLUDED IN THE JUNE 30, 2023 AND THE JUNE 30, 2022 ACTUARIAL VALUATIONS		
	June 30, 2023	June 30, 2022
Number		
Males	28,207	27,906
Females	96,161	95,768
Total	124,368	123,674
Annual Salary ¹		
Males	\$ 2,906,555,483	\$ 2,802,192,922
Females	9,340,797,974	9,022,930,996
Total	\$ 12,247,353,457	\$ 11,825,123,918
Average Salary ¹		
Males	\$ 103,044	\$ 100,415
Females	97,137	94,217
Total Average	\$ 98,477	\$ 95,615
Average Age		
Males	44.2	44.2
Females	44.4	44.3
Total Average	44.4	44.3
Average Past Service		
Males	12.3	12.2
Females	12.3	12.2
Total Average	12.3	12.2

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

Graph XII-4
Active Membership by Tier

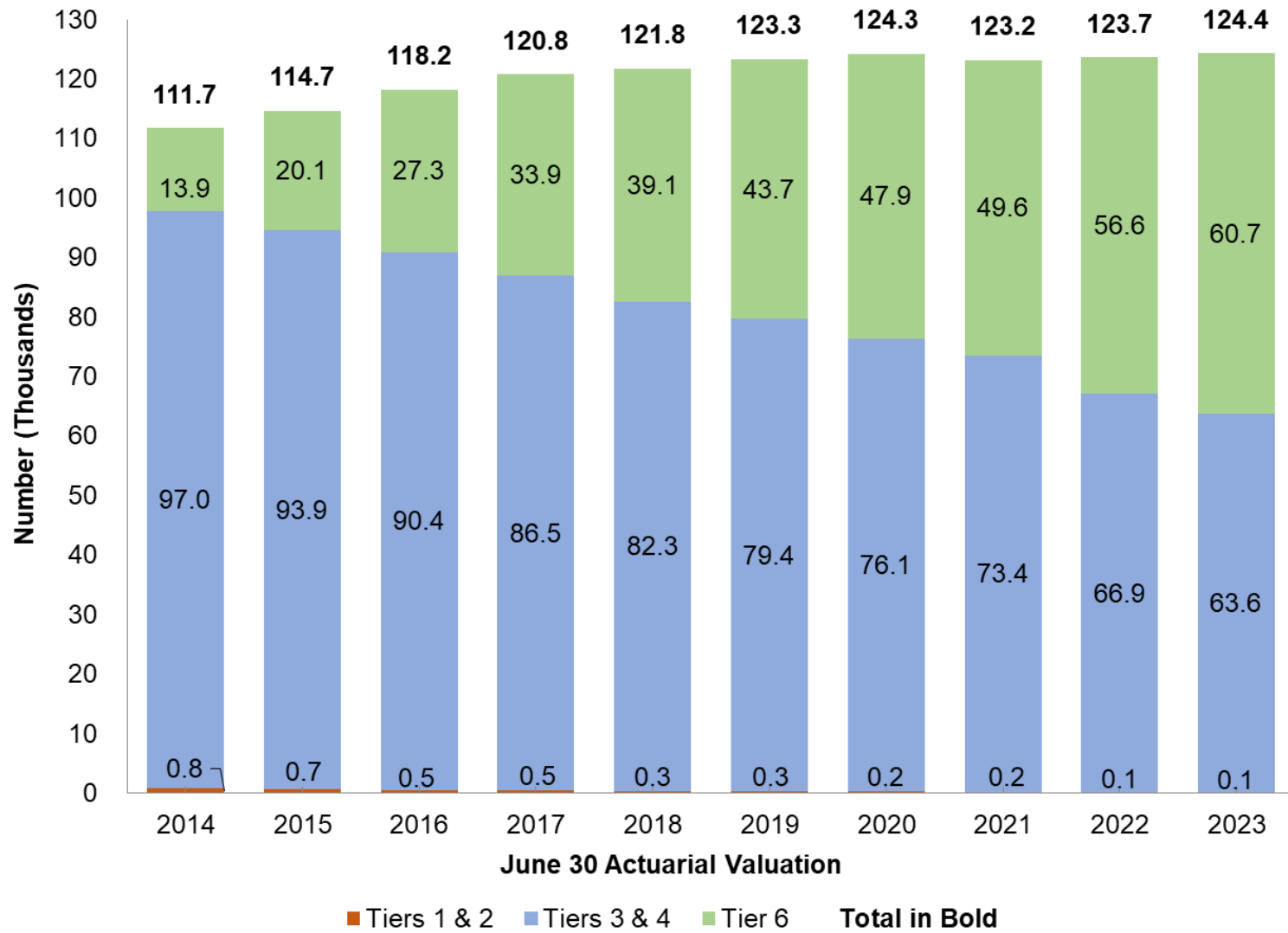


Table XII-5
Schedule of Active Member Salary Data

June 30 Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2014	111,726	\$ 8,274,685,657	\$ 74,062	2.5%
2015	114,652	8,844,650,633	77,143	4.2%
2016	118,201	9,224,267,647	78,039	1.2%
2017	120,826	9,848,899,232	81,513	4.5%
2018	121,764	10,404,403,684	85,447	4.8%
2019	123,336	10,903,755,059	88,407	3.5%
2020	124,276	11,203,878,026	90,153	2.0%
2021	123,211	11,469,452,986	93,088	3.3%
2022	123,674	11,825,123,918	95,615	2.7%
2023	124,368	12,247,353,457	98,477	3.0%

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

Table XII-6
Detailed Active Membership and Salaries as of June 30, 2023

		Male Total									
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS	
NUMBER:											
UNDER 20	1	0	0	0	0	0	0	0	0	1	
20 TO 24	366	0	0	0	0	0	0	0	0	366	
25 TO 29	1,832	313	1	0	0	0	0	0	0	2,146	
30 TO 34	1,768	1,873	273	3	0	0	0	0	0	3,917	
35 TO 39	1,033	1,549	1,336	373	2	0	0	0	0	4,293	
40 TO 44	651	862	938	1,569	322	1	0	0	0	4,343	
45 TO 49	392	482	565	1,069	1,230	189	5	0	0	3,932	
50 TO 54	328	384	399	676	1,002	792	155	6	0	3,742	
55 TO 59	245	263	283	413	596	452	305	43	0	2,600	
60 TO 64	142	145	199	312	345	232	123	81	4	1,583	
65 TO 69	47	77	133	152	171	98	61	45	24	808	
70 & UP	27	38	89	97	85	52	27	20	41	476	
TOTAL	6,832	5,986	4,216	4,664	3,753	1,816	676	195	69	28,207	

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	28	0	0	0	0	0	0	0	0	28
20 TO 24	18,583	0	0	0	0	0	0	0	0	18,583
25 TO 29	120,926	25,806	154	0	0	0	0	0	0	146,886
30 TO 34	123,942	171,171	29,686	422	0	0	0	0	0	325,221
35 TO 39	76,305	145,420	148,571	45,311	274	0	0	0	0	415,880
40 TO 44	49,211	81,613	100,250	194,194	43,794	68	0	0	0	469,129
45 TO 49	29,287	44,023	59,137	129,173	173,060	27,960	763	0	0	463,402
50 TO 54	23,686	35,456	37,402	80,529	137,192	116,353	23,630	709	0	454,956
55 TO 59	18,470	22,449	25,515	45,778	78,333	65,672	44,101	6,258	0	306,576
60 TO 64	10,758	11,561	16,219	33,461	44,313	30,216	17,083	11,622	462	175,695
65 TO 69	3,297	6,096	10,197	14,892	20,748	12,922	8,145	6,372	3,231	85,900
70 & UP	1,330	2,787	4,885	7,879	9,139	6,047	3,254	3,044	5,934	44,299
TOTAL ¹	475,823	546,381	432,017	551,639	506,852	259,238	96,976	28,004	9,628	2,906,555

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	28,032	0	0	0	0	0	0	0	0	28,032
20 TO 24	50,774	0	0	0	0	0	0	0	0	50,774
25 TO 29	66,007	82,447	154,049	0	0	0	0	0	0	68,446
30 TO 34	70,103	91,389	108,739	140,815	0	0	0	0	0	83,028
35 TO 39	73,867	93,880	111,206	121,477	137,003	0	0	0	0	96,874
40 TO 44	75,593	94,679	106,877	123,769	136,005	67,582	0	0	0	108,020
45 TO 49	74,712	91,333	104,667	120,835	140,699	147,938	152,566	0	0	117,854
50 TO 54	72,214	92,333	93,740	119,125	136,918	146,910	152,449	118,162	0	121,581
55 TO 59	75,388	85,356	90,160	110,843	131,431	145,292	144,595	145,538	0	117,914
60 TO 64	75,761	79,728	81,504	107,247	128,443	130,243	138,884	143,476	115,613	110,989
65 TO 69	70,149	79,171	76,673	97,972	121,335	131,853	133,524	141,595	134,632	106,312
70 & UP	49,250	73,348	54,888	81,231	107,512	116,293	120,518	152,181	144,730	93,064
TOTAL	69,646	91,276	102,471	118,276	135,052	142,752	143,455	143,610	139,529	103,044

Note: Age is nearest birthday. Service is nearest year.

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

Table XII-6
Detailed Active Membership and Salaries as of June 30, 2023 (cont'd)

AGE \ SVC	Female Total									
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	2	0	0	0	0	0	0	0	0	2
20 TO 24	955	0	0	0	0	0	0	0	0	955
25 TO 29	6,013	1,286	1	0	0	0	0	0	0	7,300
30 TO 34	5,142	6,884	1,050	2	0	0	0	0	0	13,078
35 TO 39	3,206	4,937	4,446	1,224	2	0	0	0	0	13,815
40 TO 44	2,237	2,882	3,065	5,172	1,316	2	0	0	0	14,674
45 TO 49	1,860	2,041	1,871	3,422	4,241	676	4	0	0	14,115
50 TO 54	1,362	1,658	1,432	2,206	3,230	2,665	499	7	0	13,059
55 TO 59	896	1,083	1,201	1,691	2,013	1,559	925	128	2	9,498
60 TO 64	391	637	749	1,213	1,515	950	383	240	29	6,107
65 TO 69	143	193	313	505	674	404	189	107	52	2,580
70 & UP	42	52	117	155	202	147	98	69	96	978
TOTAL	22,249	21,653	14,245	15,590	13,193	6,403	2,098	551	179	96,161

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	56	0	0	0	0	0	0	0	0	56
20 TO 24	52,759	0	0	0	0	0	0	0	0	52,759
25 TO 29	426,024	106,488	100	0	0	0	0	0	0	532,612
30 TO 34	372,448	635,476	111,414	219	0	0	0	0	0	1,119,557
35 TO 39	224,697	455,228	483,227	146,032	253	0	0	0	0	1,309,437
40 TO 44	152,775	256,797	317,695	615,574	170,167	198	0	0	0	1,513,206
45 TO 49	119,229	170,318	182,646	393,444	563,346	94,481	427	0	0	1,523,891
50 TO 54	85,411	127,933	124,581	236,474	413,828	366,274	70,357	853	0	1,425,710
55 TO 59	54,033	79,222	93,066	161,988	233,600	196,207	123,072	15,907	191	957,286
60 TO 64	23,599	44,398	53,161	108,886	160,676	106,495	44,354	32,177	3,522	577,269
65 TO 69	7,983	13,338	21,659	44,636	69,434	42,060	18,405	12,653	8,017	238,184
70 & UP	2,233	3,680	6,738	13,047	20,080	13,571	10,090	8,114	13,279	90,832
TOTAL ¹	1,521,247	1,892,878	1,394,287	1,720,299	1,631,384	819,286	266,705	69,703	25,009	9,340,798

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	28,059	0	0	0	0	0	0	0	0	28,059
20 TO 24	55,245	0	0	0	0	0	0	0	0	55,245
25 TO 29	70,850	82,806	99,875	0	0	0	0	0	0	72,961
30 TO 34	72,432	92,312	106,108	109,523	0	0	0	0	0	85,606
35 TO 39	70,087	92,207	108,688	119,307	126,365	0	0	0	0	94,784
40 TO 44	68,295	89,104	103,652	119,020	129,306	99,176	0	0	0	103,122
45 TO 49	64,102	83,448	97,620	114,975	132,833	139,765	106,650	0	0	107,962
50 TO 54	62,710	77,161	86,998	107,196	128,120	137,439	140,996	121,792	0	109,175
55 TO 59	60,305	73,150	77,491	95,794	116,046	125,854	133,050	124,274	95,401	100,788
60 TO 64	60,357	69,698	70,976	89,766	106,057	112,100	115,808	134,071	121,458	94,526
65 TO 69	55,825	69,111	69,197	88,387	103,018	104,108	97,381	118,250	154,169	92,320
70 & UP	53,163	70,764	57,588	84,176	99,406	92,323	102,960	117,592	138,323	92,875
TOTAL	68,374	87,419	97,879	110,346	123,655	127,953	127,123	126,503	139,714	97,137

Note: Age is nearest birthday. Service is nearest year.

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

Table XII-6
Detailed Active Membership and Salaries as of June 30, 2023 (cont'd)

AGE \ SVC	Total									
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	3	0	0	0	0	0	0	0	0	3
20 TO 24	1,321	0	0	0	0	0	0	0	0	1,321
25 TO 29	7,845	1,599	2	0	0	0	0	0	0	9,446
30 TO 34	6,910	8,757	1,323	5	0	0	0	0	0	16,995
35 TO 39	4,239	6,486	5,782	1,597	4	0	0	0	0	18,108
40 TO 44	2,888	3,744	4,003	6,741	1,638	3	0	0	0	19,017
45 TO 49	2,252	2,523	2,436	4,491	5,471	865	9	0	0	18,047
50 TO 54	1,690	2,042	1,831	2,882	4,232	3,457	654	13	0	16,801
55 TO 59	1,141	1,346	1,484	2,104	2,609	2,011	1,230	171	2	12,098
60 TO 64	533	782	948	1,525	1,860	1,182	506	321	33	7,690
65 TO 69	190	270	446	657	845	502	250	152	76	3,388
70 & UP	69	90	206	252	287	199	125	89	137	1,454
TOTAL	29,081	27,639	18,461	20,254	16,946	8,219	2,774	746	248	124,368

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	84	0	0	0	0	0	0	0	0	84
20 TO 24	71,343	0	0	0	0	0	0	0	0	71,343
25 TO 29	546,950	132,294	254	0	0	0	0	0	0	679,498
30 TO 34	496,389	806,647	141,099	641	0	0	0	0	0	1,444,777
35 TO 39	301,002	600,648	631,798	191,342	527	0	0	0	0	1,725,317
40 TO 44	201,986	338,410	417,945	809,768	213,960	266	0	0	0	1,982,335
45 TO 49	148,516	214,340	241,783	522,616	736,406	122,441	1,189	0	0	1,987,292
50 TO 54	109,097	163,389	161,983	317,003	551,020	482,627	93,986	1,562	0	1,880,666
55 TO 59	72,503	101,670	118,582	207,766	311,933	261,879	167,173	22,165	191	1,263,862
60 TO 64	34,358	55,958	69,380	142,347	204,989	136,711	61,437	43,799	3,985	752,964
65 TO 69	11,280	19,435	31,856	59,527	90,183	54,981	26,550	19,025	11,248	324,085
70 & UP	3,563	6,467	11,623	20,927	29,218	19,619	13,344	11,157	19,213	135,131
TOTAL ¹	1,997,070	2,439,259	1,826,303	2,271,938	2,138,236	1,078,524	363,680	97,707	34,636	12,247,353

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	28,050	0	0	0	0	0	0	0	0	28,050
20 TO 24	54,006	0	0	0	0	0	0	0	0	54,006
25 TO 29	69,720	82,736	126,962	0	0	0	0	0	0	71,935
30 TO 34	71,836	92,115	106,651	128,298	0	0	0	0	0	85,012
35 TO 39	71,008	92,607	109,270	119,814	131,684	0	0	0	0	95,279
40 TO 44	69,940	90,387	104,408	120,126	130,623	88,645	0	0	0	104,240
45 TO 49	65,948	84,954	99,254	116,370	134,602	141,551	132,159	0	0	110,118
50 TO 54	64,554	80,014	88,467	109,994	130,203	139,609	143,710	120,117	0	111,938
55 TO 59	63,544	75,535	79,907	98,748	119,560	130,223	135,913	129,621	95,401	104,469
60 TO 64	64,461	71,558	73,186	93,342	110,209	115,661	121,417	136,444	120,750	97,915
65 TO 69	59,368	71,980	71,426	90,605	106,725	109,524	106,200	125,161	147,999	95,657
70 & UP	51,632	71,855	56,421	83,043	101,807	98,586	106,752	125,365	140,240	92,937
TOTAL	68,673	88,254	98,928	112,172	126,179	131,223	131,103	130,975	139,663	98,477

Note: Age is nearest birthday. Service is nearest year.

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

Table XII-7
Detailed Reconciliation of Active Membership

TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2023							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2022				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	23	3,428,602	149,070	79.8	49.4	29	4,085,345	140,874	79.5	47.4
1	F	34	4,696,518	138,133	78.2	52.5	45	5,917,987	131,511	77.0	51.1
		57	8,125,120	142,546	78.8	51.2	74	10,003,332	135,180	78.0	49.6
2	M	6	974,539	162,423	75.5	40.7	9	1,174,181	130,465	74.0	41.4
2	F	23	3,367,184	146,399	72.9	41.8	29	3,974,848	137,064	71.8	42.1
		29	4,341,723	149,715	73.5	41.6	38	5,149,029	135,501	72.3	42.0
4	M	14,397	1,773,111,916	123,158	50.4	19.3	15,158	1,795,922,923	118,480	49.9	18.5
4	F	46,222	5,606,785,268	113,908	50.4	19.2	51,790	5,655,390,475	109,199	49.9	18.5
		60,619	7,379,897,184	116,001	50.4	19.2	66,948	7,451,313,398	111,300	49.9	18.5
6	M	13,781	1,129,040,426	81,927	37.7	4.9	12,710	1,001,010,473	78,758	37.3	4.5
6	F	46,882	3,725,949,004	79,475	38.2	5.0	43,904	3,357,647,686	76,477	37.5	4.6
		60,663	4,854,989,430	80,032	38.1	5.0	56,614	4,358,658,159	76,989	37.5	4.6
ALL TIERS		124,368	12,247,353,457	98,477	44.4	12.3	123,674	11,825,123,918	95,615	44.3	12.2

MEMBERS ALSO PRESENT AS OF JUNE 30, 2023							MEMBERS ALSO PRESENT AS OF JUNE 30, 2022				
1	M	22	3,317,579	150,799	80.0	49.2	22	3,161,128	143,688	79.0	48.2
1	F	34	4,696,518	138,133	78.2	52.5	34	4,526,210	133,124	77.2	51.5
		56	8,014,097	143,109	78.9	51.2	56	7,687,338	137,274	77.9	50.2
2	M	6	974,539	162,423	75.5	40.7	6	927,238	154,540	74.5	39.5
2	F	22	3,221,070	146,412	72.9	43.6	22	3,114,181	141,554	71.9	42.6
		28	4,195,609	149,843	73.4	42.9	28	4,041,419	144,336	72.4	41.9
4	M	14,146	1,747,966,730	123,566	50.4	19.4	14,146	1,678,429,943	118,650	49.4	18.3
4	F	48,030	5,487,450,759	114,250	50.5	19.4	48,030	5,257,472,661	109,462	49.5	18.3
		62,176	7,235,417,489	116,370	50.5	19.4	62,176	6,935,902,604	111,553	49.5	18.3
6	M	11,625	989,646,192	85,131	38.3	5.6	11,625	923,299,642	79,424	37.3	4.5
6	F	40,176	3,296,841,050	82,060	38.6	5.6	40,176	3,079,121,728	76,641	37.6	4.6
		51,801	4,286,487,242	82,749	38.5	5.6	51,801	4,002,421,370	77,265	37.5	4.6
ALL TIERS		114,061	11,534,114,437	101,122	45.1	13.1	114,061	10,950,052,731	96,002	44.1	12.1

ADDITIONS DURING THE YEAR ¹							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR ¹				
1	M	1	111,023	111,023	76.0	53.0	7	924,217	132,031	81.3	44.7
1	F	0	0	0	0.0	0.0	11	1,391,777	126,525	76.5	49.9
		1	111,023	111,023	76.0	53.0	18	2,315,994	128,666	78.3	47.9
2	M	0	0	0	0.0	0.0	3	246,943	82,314	73.0	45.3
2	F	1	146,114	146,114	74.0	3.0	7	860,667	122,952	71.6	40.9
		1	146,114	146,114	74.0	3.0	10	1,107,610	110,761	72.0	42.2
4	M	251	25,145,186	100,180	49.3	13.3	1,012	117,492,980	116,100	56.5	22.0
4	F	1,192	119,334,509	100,113	46.7	12.6	3,760	397,917,814	105,829	56.1	21.7
		1,443	144,479,695	100,125	47.1	12.8	4,772	515,410,794	108,007	56.2	21.7
6	M	2,156	139,394,234	64,654	34.8	1.1	1,085	77,710,831	71,623	37.4	4.0
6	F	6,706	429,107,954	63,989	35.3	1.4	3,728	278,525,958	74,712	36.7	4.2
		8,862	568,502,188	64,151	35.2	1.3	4,813	356,236,789	74,016	36.9	4.2
ALL TIERS		10,307	713,239,020	69,199	36.9	2.9	9,613	875,071,187	91,030	46.6	13.0

Note: Age is nearest birthday. Service is nearest year. The member is considered also present if active with the same tier and gender as of both valuation dates.

¹ Separations and additions do not include members who joined after June 30, 2022 and are no longer members on June 30, 2023. Members are included in separations and additions if the tier or gender has changed.

Table XII-8
Distribution of Pension Benefits as of June 30, 2023

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>SERVICE RETIREMENT:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	0	0	0	0	0	0
40 TO 44	0	0	0	0	0	0	0	0	0
45 TO 49	0	0	0	0	0	0	0	0	0
50 TO 54	0	0	0	0	0	0	0	0	0
55 TO 59	705	45,803,348	64,969	2,300	138,165,023	60,072	3,005	183,968,371	61,221
60 TO 64	1,714	99,258,445	57,910	5,664	296,625,977	52,370	7,378	395,884,422	53,657
65 TO 69	2,704	140,635,522	52,010	10,220	473,910,156	46,371	12,924	614,545,678	47,551
70 TO 74	3,932	217,177,724	55,233	13,865	703,374,665	50,730	17,797	920,552,389	51,725
75 TO 79	6,561	451,436,442	68,806	13,483	751,617,788	55,746	20,044	1,203,054,230	60,021
80 TO 84	3,518	231,773,575	65,882	8,545	432,424,313	50,606	12,063	664,197,888	55,061
85 TO 89	1,845	118,700,096	64,336	4,669	208,898,672	44,742	6,514	327,598,768	50,291
90 & UP	1,154	72,772,583	63,061	3,786	163,914,561	43,295	4,940	236,687,144	47,912
TOTAL	22,133	1,377,557,735	62,240	62,532	3,168,931,155	50,677	84,665	4,546,488,890	53,700
<i>ORDINARY DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	4	107,556	26,889	4	107,556	26,889
40 TO 44	7	196,555	28,079	26	839,453	32,287	33	1,036,008	31,394
45 TO 49	16	461,978	28,874	74	1,997,697	26,996	90	2,459,675	27,330
50 TO 54	41	1,370,727	33,432	176	5,083,790	28,885	217	6,454,517	29,744
55 TO 59	49	1,477,346	30,150	223	5,990,449	26,863	272	7,467,795	27,455
60 TO 64	74	2,050,499	27,709	350	8,960,936	25,603	424	11,011,435	25,970
65 TO 69	87	2,298,259	26,417	407	9,604,618	23,599	494	11,902,877	24,095
70 TO 74	108	2,994,365	27,726	398	9,611,976	24,151	506	12,606,341	24,914
75 TO 79	99	2,948,304	29,781	294	7,192,778	24,465	393	10,141,082	25,804
80 TO 84	45	1,296,879	28,820	143	2,856,331	19,974	188	4,153,210	22,092
85 TO 89	11	279,992	25,454	57	1,141,966	20,034	68	1,421,958	20,911
90 & UP	3	63,854	21,285	23	515,910	22,431	26	579,764	22,299
TOTAL	540	15,438,758	28,590	2,175	53,903,460	24,783	2,715	69,342,218	25,540
<i>ACCIDENTAL DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	1	66,157	66,157	2	93,030	46,515	3	159,187	53,062
40 TO 44	2	99,177	49,589	8	412,352	51,544	10	511,529	51,153
45 TO 49	6	289,721	48,287	13	583,738	44,903	19	873,459	45,972
50 TO 54	9	487,841	54,205	29	1,396,979	48,172	38	1,884,820	49,601
55 TO 59	9	644,731	71,637	48	2,123,861	44,247	57	2,768,592	48,572
60 TO 64	15	651,306	43,420	76	3,412,799	44,905	91	4,064,105	44,660
65 TO 69	23	1,363,027	59,262	100	4,257,562	42,576	123	5,620,589	45,696
70 TO 74	30	1,409,915	46,997	116	5,211,178	44,924	146	6,621,093	45,350
75 TO 79	57	3,065,392	53,779	113	4,756,296	42,091	170	7,821,688	46,010
80 TO 84	19	949,428	49,970	48	2,334,474	48,635	67	3,283,902	49,013
85 TO 89	7	351,083	50,155	25	770,101	30,804	32	1,121,184	35,037
90 & UP	5	238,241	47,648	16	684,041	42,753	21	922,282	43,918
TOTAL	183	9,616,019	52,547	594	26,036,411	43,832	777	35,652,430	45,885

Table XII-8
Distribution of Pension Benefits as of June 30, 2023 (cont'd)

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>ACCIDENTAL DEATH:</i>									
UNDER 30	1	22,601	22,601	2	71,924	35,962	3	94,525	31,508
30 TO 34	2	63,106	31,553	0	0	0	2	63,106	31,553
35 TO 39	0	0	0	1	48,176	48,176	1	48,176	48,176
40 TO 44	0	0	0	0	0	0	0	0	0
45 TO 49	1	58,442	58,442	2	108,466	54,233	3	166,908	55,636
50 TO 54	3	167,097	55,699	4	246,184	61,546	7	413,281	59,040
55 TO 59	1	53,607	53,607	3	189,444	63,148	4	243,051	60,763
60 TO 64	4	201,094	50,274	7	314,331	44,904	11	515,425	46,857
65 TO 69	3	113,572	37,857	3	101,935	33,978	6	215,507	35,918
70 TO 74	0	0	0	1	39,000	39,000	1	39,000	39,000
75 TO 79	0	0	0	0	0	0	0	0	0
80 TO 84	0	0	0	1	66,049	66,049	1	66,049	66,049
85 TO 89	0	0	0	0	0	0	0	0	0
90 & UP	0	0	0	0	0	0	0	0	0
TOTAL	15	679,519	45,301	24	1,185,509	49,396	39	1,865,028	47,821
<i>OTHER BENEFICIARIES:</i>									
UNDER 30	4	95,420	23,855	14	302,923	21,637	18	398,343	22,130
30 TO 34	8	292,165	36,521	17	407,825	23,990	25	699,990	28,000
35 TO 39	14	301,059	21,504	15	285,885	19,059	29	586,944	20,239
40 TO 44	23	555,051	24,133	28	823,553	29,413	51	1,378,604	27,031
45 TO 49	26	766,326	29,474	37	920,028	24,866	63	1,686,354	26,768
50 TO 54	36	924,324	25,676	39	885,656	22,709	75	1,809,980	24,133
55 TO 59	49	972,760	19,852	79	1,628,467	20,614	128	2,601,227	20,322
60 TO 64	88	2,335,846	26,544	162	4,365,497	26,948	250	6,701,343	26,805
65 TO 69	119	3,613,650	30,367	206	7,384,383	35,847	325	10,998,033	33,840
70 TO 74	200	7,013,458	35,067	484	21,334,138	44,079	684	28,347,596	41,444
75 TO 79	325	12,325,786	37,925	709	33,928,839	47,854	1,034	46,254,625	44,734
80 TO 84	314	11,290,555	35,957	775	36,652,277	47,293	1,089	47,942,832	44,025
85 TO 89	224	6,775,998	30,250	615	29,368,463	47,754	839	36,144,461	43,080
90 & UP	282	8,714,972	30,904	671	27,401,312	40,837	953	36,116,284	37,897
TOTAL	1,712	55,977,370	32,697	3,851	165,689,246	43,025	5,563	221,666,616	39,847
<i>ALL PENSIONERS AND BENEFICIARIES:</i>									
UNDER 30	5	118,021	23,604	16	374,847	23,428	21	492,868	23,470
30 TO 34	10	355,271	35,527	17	407,825	23,990	27	763,096	28,263
35 TO 39	15	367,216	24,481	22	534,647	24,302	37	901,863	24,375
40 TO 44	32	850,783	26,587	62	2,075,358	33,474	94	2,926,141	31,129
45 TO 49	49	1,576,467	32,173	126	3,609,929	28,650	175	5,186,396	29,637
50 TO 54	89	2,949,989	33,146	248	7,612,609	30,696	337	10,562,598	31,343
55 TO 59	813	48,951,792	60,211	2,653	148,097,244	55,823	3,466	197,049,036	56,852
60 TO 64	1,895	104,497,190	55,144	6,259	313,679,540	50,117	8,154	418,176,730	51,285
65 TO 69	2,936	148,024,030	50,417	10,936	495,258,654	45,287	13,872	643,282,684	46,373
70 TO 74	4,270	228,595,462	53,535	14,864	739,570,957	49,756	19,134	968,166,419	50,599
75 TO 79	7,042	469,775,924	66,711	14,599	797,495,701	54,627	21,641	1,267,271,625	58,559
80 TO 84	3,896	245,310,437	62,965	9,512	474,333,444	49,867	13,408	719,643,881	53,673
85 TO 89	2,087	126,107,169	60,425	5,366	240,179,202	44,759	7,453	366,286,371	49,146
90 & UP	1,444	81,789,650	56,641	4,496	192,515,824	42,819	5,940	274,305,474	46,179
TOTAL	24,583	1,459,269,401	59,361	69,176	3,415,745,781	49,378	93,759	4,875,015,182	51,995

Graph XII-9
Pensioner Average Benefits

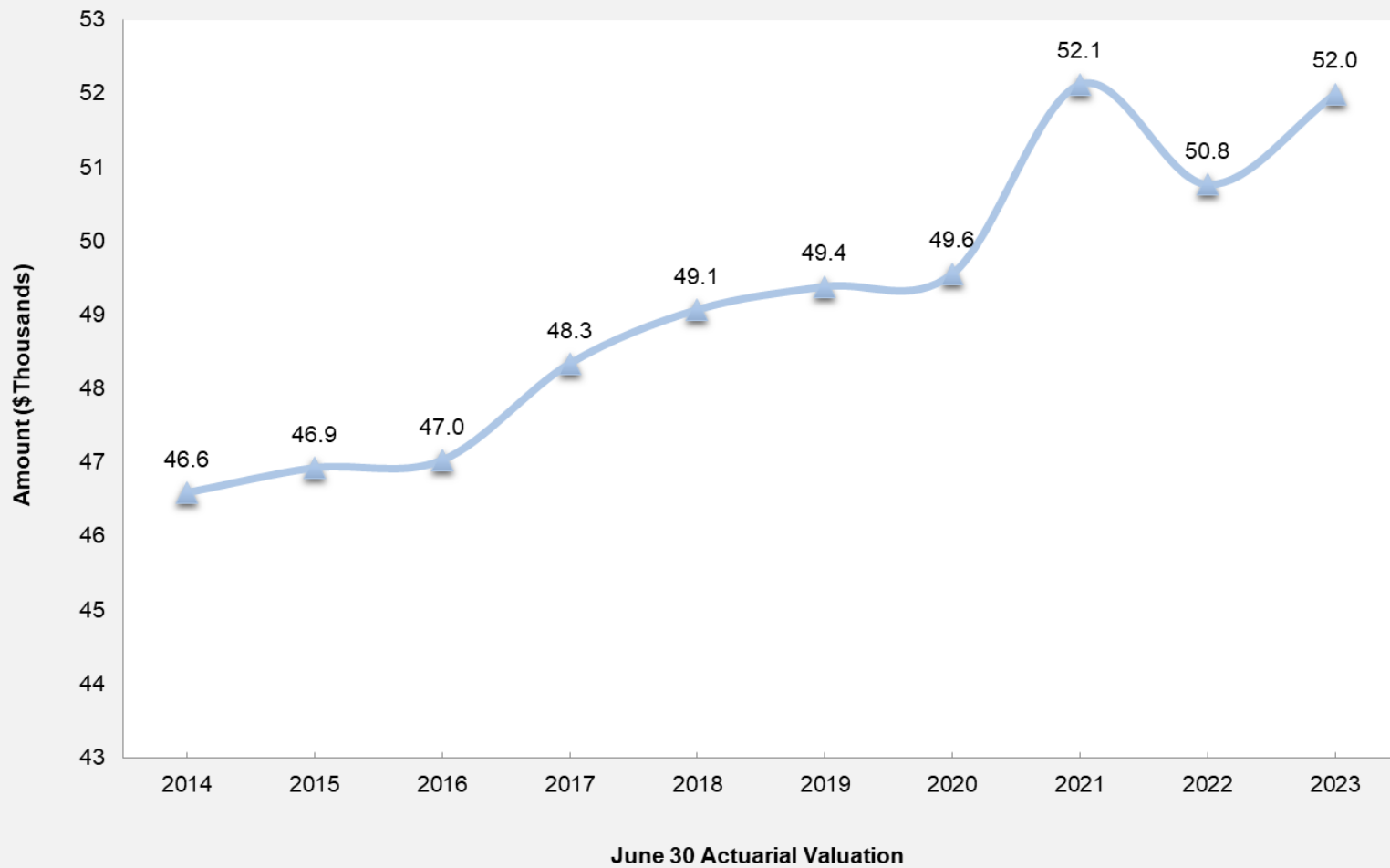


Table XII-10
Reconciliation of Pensioner and Beneficiary Data

SCHEDULE OF PENSIONERS AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS								
June 30 Actuarial Valuation	Added to Rolls		Removed from Rolls		End of Year Rolls		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances ¹	Number	Annual Allowances	Number	Annual Allowances ²		
2014	4,356	\$ 275,947,759	2,114	\$ 67,585,789	80,419	\$ 3,746,242,537	5.9%	\$ 46,584
2015	4,728	219,769,491	2,370	81,986,287	82,777	3,884,025,741	3.7%	46,922
2016	3,808	157,518,432	2,492	86,890,450	84,093	3,954,653,723	1.8%	47,027
2017	3,519	254,567,439	2,842	111,573,800	84,770	4,097,647,362	3.6%	48,338
2018	4,107	240,586,776	2,582	103,957,220	86,295	4,234,276,918	3.3%	49,067
2019	4,921	249,898,766	2,709	113,559,733	88,507	4,370,615,951	3.2%	49,382
2020	4,144	201,792,665	3,115	135,202,307	89,536	4,437,206,309	1.5%	49,558
2021	3,540	386,120,726	3,079	132,194,571	89,997	4,691,132,464	5.7%	52,125
2022	5,392	138,630,390	3,107	144,982,709	92,282	4,684,780,145	(0.1%)	50,766
2023	4,549	332,185,877	3,072	141,950,840	93,759	4,875,015,182	4.1%	51,995

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

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

APPENDIX: ACRONYMS AND ABBREVIATIONS

Revised 2021 A&M	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 2021
2019 A&M	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 2019
AAVM	Actuarial Asset Valuation Method
ACCNY	Administrative Code of the City of New York
AIR	Actuarial Interest Rate
AL	Accrued Liability
AMC	Additional Member Contributions
ASAF	Annuity Savings Accumulation Fund
AVA	Actuarial Value of Assets
BERS	Board of Education Retirement System
BMC	Basic Member Contributions
COLA	Cost-of-Living Adjustment
EAN	Entry Age Normal cost method
FAS	Final Average Salary
FIRE	Fire Pension Fund
GASB	Governmental Accounting Standards Board
IRC	Internal Revenue Code
MVA	Market Value of Assets
NYCERS	New York City Employees' Retirement System
NYCRS	New York City Retirement Systems
OWBPA	Older Workers Benefit Protection Act
OYLM	One-Year Lag Methodology
POLICE	Police Pension Fund
PV	Present Value
PVFB	Present Value of Future Benefits
PVFNC	Present Value of Future Normal Costs
PVFS	Present Value of Future Salary
TDA	Tax-Deferred Annuity Program
TRS	Teachers' Retirement System
UAL	Unfunded Accrued Liability