



June 30, 2022
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 2024



OFFICE OF THE ACTUARY

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MAREK TYSZKIEWICZ
CHIEF ACTUARY

December 12, 2024

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

Re: June 30, 2022 Actuarial Valuation Report (Report)

Dear Trustees:

This is the June 30, 2022 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 2024 - the period from July 1, 2023 to June 30, 2024;
- 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 2024 is \$3,161,752,125.

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 submitted by the Plan's administrative staff and the employers' payroll facilities; 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.

All 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 2024 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.

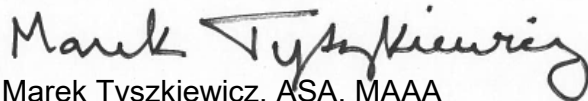
Actuarial Qualifications

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.

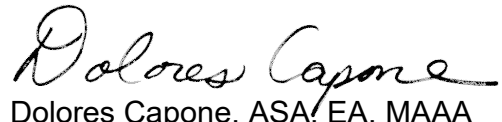
Actuaries' Statement of Opinion

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 decreased from 99.0% in the prior valuation to 78.7% as of June 30, 2022. The Plan's investment return for this period, based on the Market Value of Assets, was negative 16.8%.

Required Contribution Amount

The actuarially required contribution for Fiscal Year 2024 is \$3,161,752,125 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
- Interest on Late Payments: Interest at 7% for any late employer contributions.
- ASAF Credit: Estimated contribution made by the Department of Education to the Annuity Savings Accumulation fund.
- Gulino Charge: Cost for member contribution receivable amounts for cases processed through June 30, 2022 due to *Gulino vs. Department of Education*, 96 Civ. 8414 (KMW).
- Kipp Academy Charter School Deferred Overfunding Credit: Contribution limited to be no less than Administrative Expense.

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, 2022 actuarial valuation and, for comparative purposes, the June 30, 2021 actuarial valuation.

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2022	June 30, 2021
Fiscal Year	2024	2023
Funded Status		
1. Accrued Liability	\$ 81,371,174,344	\$ 79,153,121,519
2. Actuarial Value of Assets (AVA)	69,597,755,000	66,328,295,214
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 11,773,419,344	\$ 12,824,826,305
4. Market Value of Assets (MVA)	64,009,428,000	78,347,298,000
5. Unfunded Accrued Liability (MVA Basis) (1. - 4.)	\$ 17,361,746,344	\$ 805,823,519
6. Funded Ratio (MVA Basis) (4. / 1.)	78.7%	99.0%
Contribution		
1. Normal Cost	\$ 1,442,949,993	\$ 1,436,496,889
2. Unfunded Accrued Liability	1,678,668,140	1,620,032,951
3. Administrative Expenses	61,963,131	56,351,979
4. ASAF Credit	(26,300,000)	(26,800,000)
5. DOE Gulino Charges	4,419,008	N/A
6. Kipp Academy Charter School Deferred Overfunding Credit	51,853	0
7. Actuarial Required Contribution (1. + 2. + 3. + 4. + 5. + 6.)	\$ 3,161,752,125	\$ 3,086,081,819
Participant Data		
1. Active Members		
a. Number	123,674	123,211
b. Annual Salary ¹	\$ 11,825,123,918	\$ 11,469,452,986
c. Average Salary	\$ 95,615	\$ 93,088
2. Terminated Nonvested Members	5,106	4,574
3. Deferred Vested Members	19,604	15,128
4. Retirees and Beneficiaries		
a. Number	92,282	89,997
b. Total Annual Benefits	\$ 4,684,780,145	\$ 4,691,132,464
c. Average Benefit	\$ 50,766	\$ 52,125

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, 2022	June 30, 2021
Fiscal Year	2024	2023
Accrued Liability		
1. Active Members	\$ 31,559,841,787	\$ 31,394,224,447
2. Terminated Nonvested Members	38,341,496	56,077,750
3. Deferred Vested Members	2,041,086,961	1,521,504,637
4. Retirees and Beneficiaries	46,131,609,191	46,175,314,685
5. Accrued Liability (1. to 4.)	\$ 79,770,879,435	\$ 79,147,121,519
6. Other ¹	1,600,294,909	6,000,000
7. Total Accrued Liability (AL) (5. + 6.)	\$ 81,371,174,344	\$ 79,153,121,519
Present Value of Benefits		
1. Active Members	\$ 50,981,602,047	\$ 50,208,678,604
2. Terminated Nonvested Members	38,341,496	56,077,750
3. Deferred Vested Members	2,041,086,961	1,521,504,637
4. Retirees and Beneficiaries	46,131,609,191	46,175,342,609
5. Present Value of Benefits (1. to 4.)	\$ 99,192,639,695	\$ 97,961,603,600
6. Other ¹	1,600,294,909	6,000,000
7. Total Present Value of Benefits (5. + 6.)	\$ 100,792,934,604	\$ 97,967,603,600

¹ As of June 30, 2021, the liability shown is the reserve for adverse WTC experience; as of June 30, 2022 the liability shown is the amount due to/(from) the TDA. Please refer to Table I-4 for more information on the amount due to/(from) the TDA.

Graph I-3
Historical Funded Status

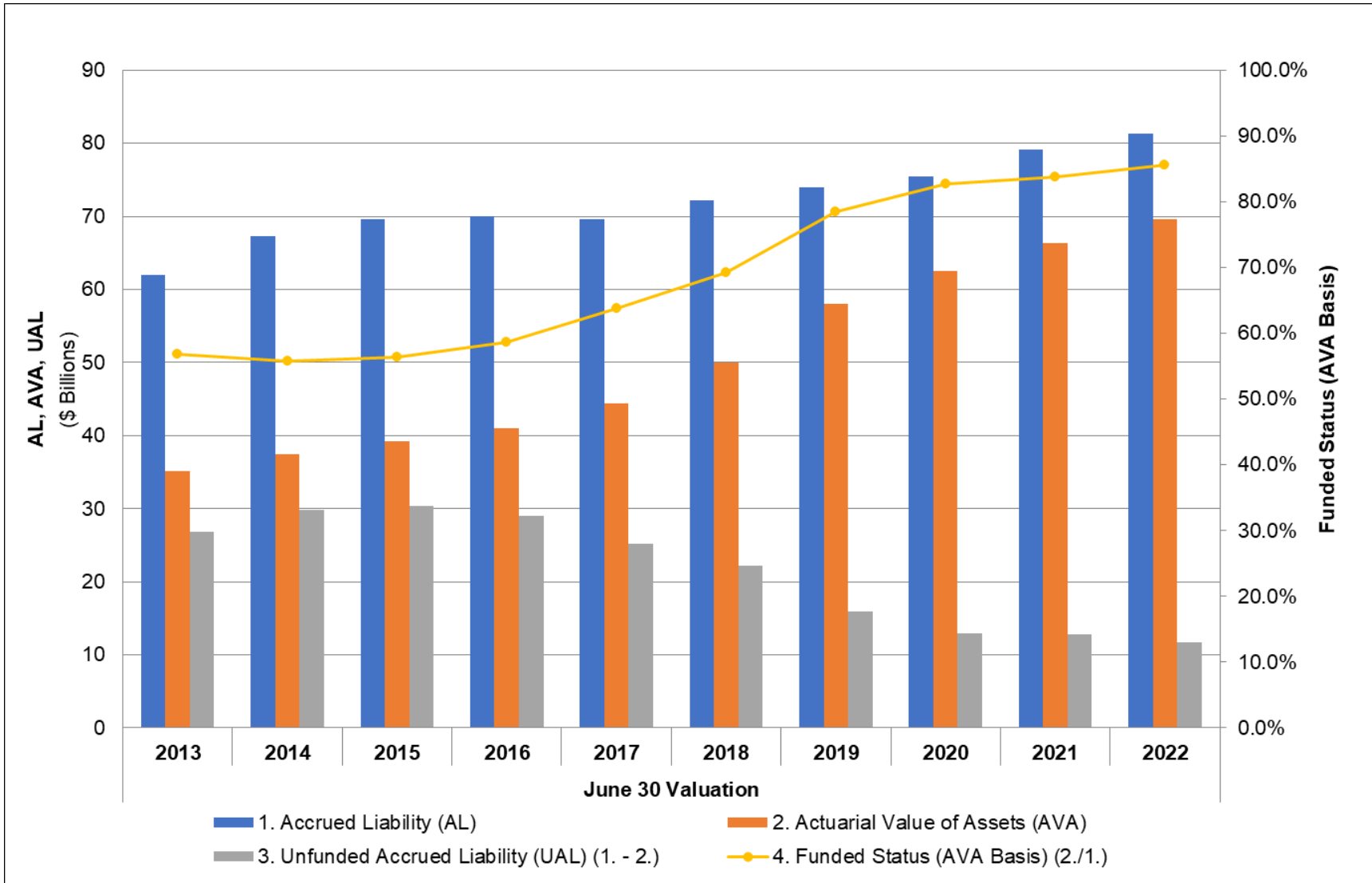


Table I-4
TDA Balances and Effect on the QPP

TRS' Tax-Deferred Annuity (TDA) Program was established and is administered pursuant to 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, 2022 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, 2022			
	TDA Liabilities	TDA Assets	Unfunded TDA Amount
UFT			
Fixed Balances	\$ 28,717,182,154	\$ 28,433,033,556	\$ 284,148,598
Variable Balances	6,306,693,490	6,244,317,538	62,375,952
Non-UFT			
Fixed Balances	6,589,344,835	5,366,708,427	1,222,636,408
Variable Balances	1,052,368,397	1,041,960,611	10,407,786
Annuitized Members	527,582,776	506,856,611	20,726,165
Other	611,192,073	611,192,073	0
TOTAL	\$ 43,804,363,725	\$ 42,204,068,816	\$ 1,600,294,909

The QPP Normal Cost has been increased by \$60,998,868 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, 2011 and 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, 2022	June 30, 2021
ASSETS		
Cash	\$ 86,489	\$ 74,742
Receivables		
Investment Securities Sold	1,544,209	3,560,628
Member Loans	301,958	310,380
Accrued Interest and Dividends	339,801	304,145
Pooled NYC Pension Fund Assets (Fixed-Return Fund)		
Short-Term Investments		
Commercial Paper	453,349	867,918
Short-term Investment Fund	812,986	1,028,743
U.S. Treasury Bills & Agencies	1,551,644	1,090,552
Discount Notes	52,418	0
Debt Securities		
U.S. Government	13,757,296	14,889,426
Corporate & Other	13,989,550	16,435,107
Treasury Inflation Protected Securities	3,403,952	3,594,216
Equity Securities		
Domestic Equity	23,674,370	30,992,669
International Equity	15,197,420	19,960,860
Alternative Investments	17,877,701	14,076,877
Variable-Return Funds		
Diversified Equity Fund		
Short-Term Investments	95,485	110,049
Equity Securities	5,217,721	6,901,203
Debt Securities	0	174,484
Balanced Fund		
Short-Term Investments	105	231
Equity Securities	42,523	55,650
International Equity Fund		
Short-Term Investments	106	114
International Equity	8,524	10,881
Sustainable Equity Fund		
Short-Term Investments	267	149
Equity Securities	13,620	16,272
U.S. Equity Index Fund		
Equity securities	4,092	4,797
International Equity Index Fund		
Equity Securities	444	117
Collateral from Securities Lending	828,300	1,242,351
Other Assets	166,039	46,194
TOTAL ASSETS	\$ 99,420,369	\$ 115,748,755
LIABILITIES		
Accounts Payable	\$ 308,685	\$ 349,820
Payable for Investment Securities Purchased	2,230,369	5,723,528
Accrued Benefits Payable	44,285	49,585
Due to TDA Program's Fixed Return Fund	31,868,042	30,036,173
Security Lending	828,300	1,242,351
Other Liabilities	131,260	0
TOTAL LIABILITIES	\$ 35,410,941	\$ 37,401,457
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 64,009,428	\$ 78,347,298

Table II-2
Statement of Changes in Plan Net Assets

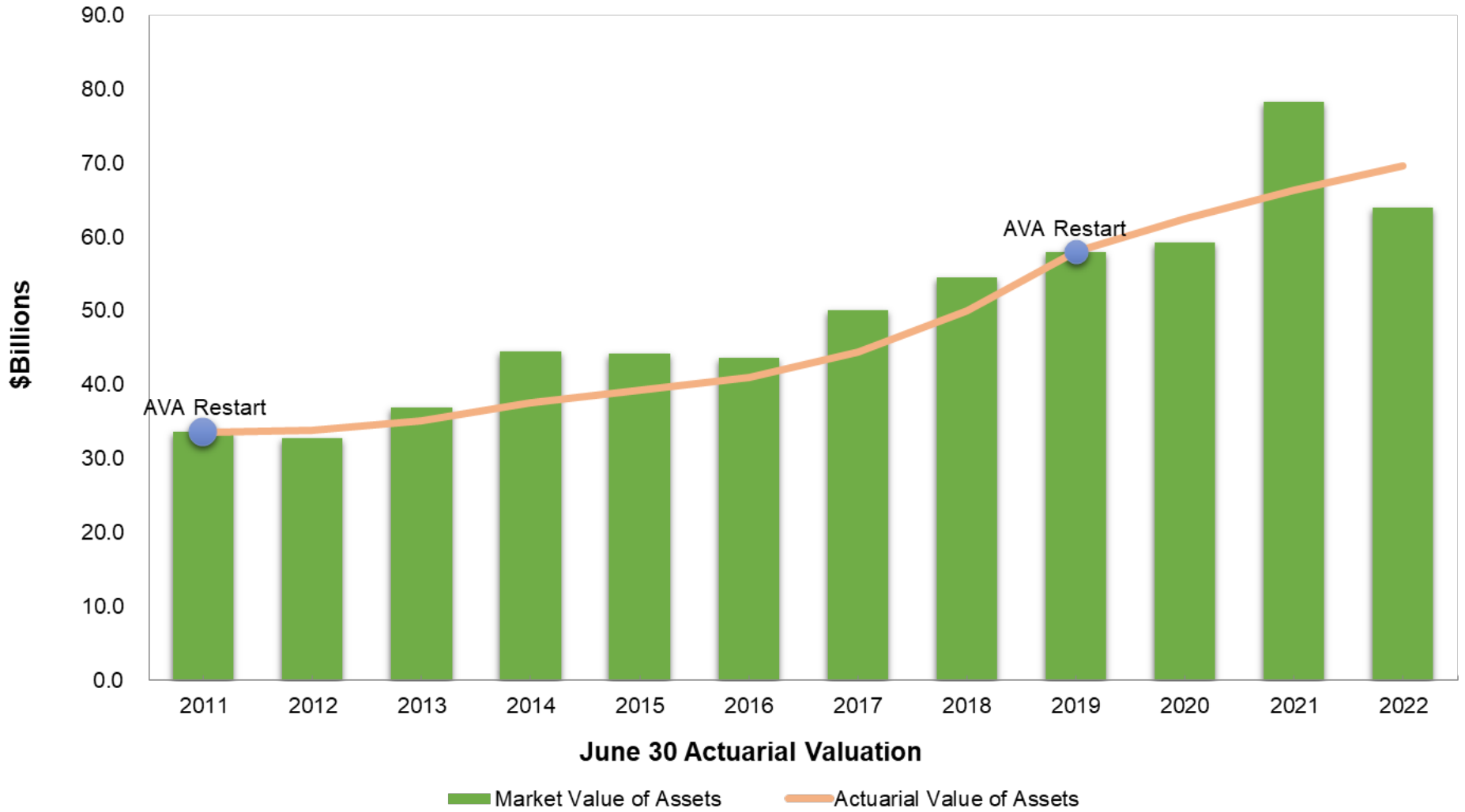
(\$ Thousands)		
	June 30, 2022	June 30, 2021
ADDITIONS		
Contributions		
Member Contributions	\$ 273,686	\$ 247,751
Employer Contributions	3,303,798	3,131,607
Other Employer Contributions ¹	<u>60,581</u>	<u>61,663</u>
Total Contributions	\$ 3,638,065	\$ 3,441,021
Investment Income		
Interest Income	\$ 1,412,618	\$ 1,197,604
Dividend Income	1,238,843	1,075,166
Net Appreciation in Fair Value of Investments	<u>(12,974,971)</u>	<u>20,489,535</u>
Total Investment Income	\$ (10,323,510)	\$ 22,762,305
Less:		
Investment Expenses	\$ 544,879	\$ 415,229
Net (Decrease) in Fair Variable Expense Provision	<u>(9,595)</u>	<u>(9,516)</u>
Net Investment Income	\$ (10,858,794)	\$ 22,356,592
Securities Lending Transactions		
Securities Lending Income	\$ 7,057	\$ 7,252
Securities Lending Fees	<u>(2,125)</u>	<u>(856)</u>
Net Securities Lending Income (Loss)	\$ 4,932	\$ 6,396
Other		
Net Receipts from (to) Other Retirement Systems	<u>\$ (2,993)</u>	<u>\$ (5,550)</u>
TOTAL ADDITIONS	\$ (7,218,790)	\$ 25,798,459
DEDUCTIONS		
Benefit Payments and Withdrawals	\$ 4,909,488	\$ 4,699,448
Administrative Expenses	71,490	68,100
Other		
Interest from (to) TDA Program's Fixed Return Fund	2,140,639	1,998,388
TDA Rebalance	<u>(2,537)</u>	<u>4,175</u>
TOTAL DEDUCTIONS	\$ 7,119,080	\$ 6,770,111
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ (14,337,870)	\$ 19,028,348
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	\$ 78,347,298	\$ 59,318,950
End of Year	\$ 64,009,428	\$ 78,347,298

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

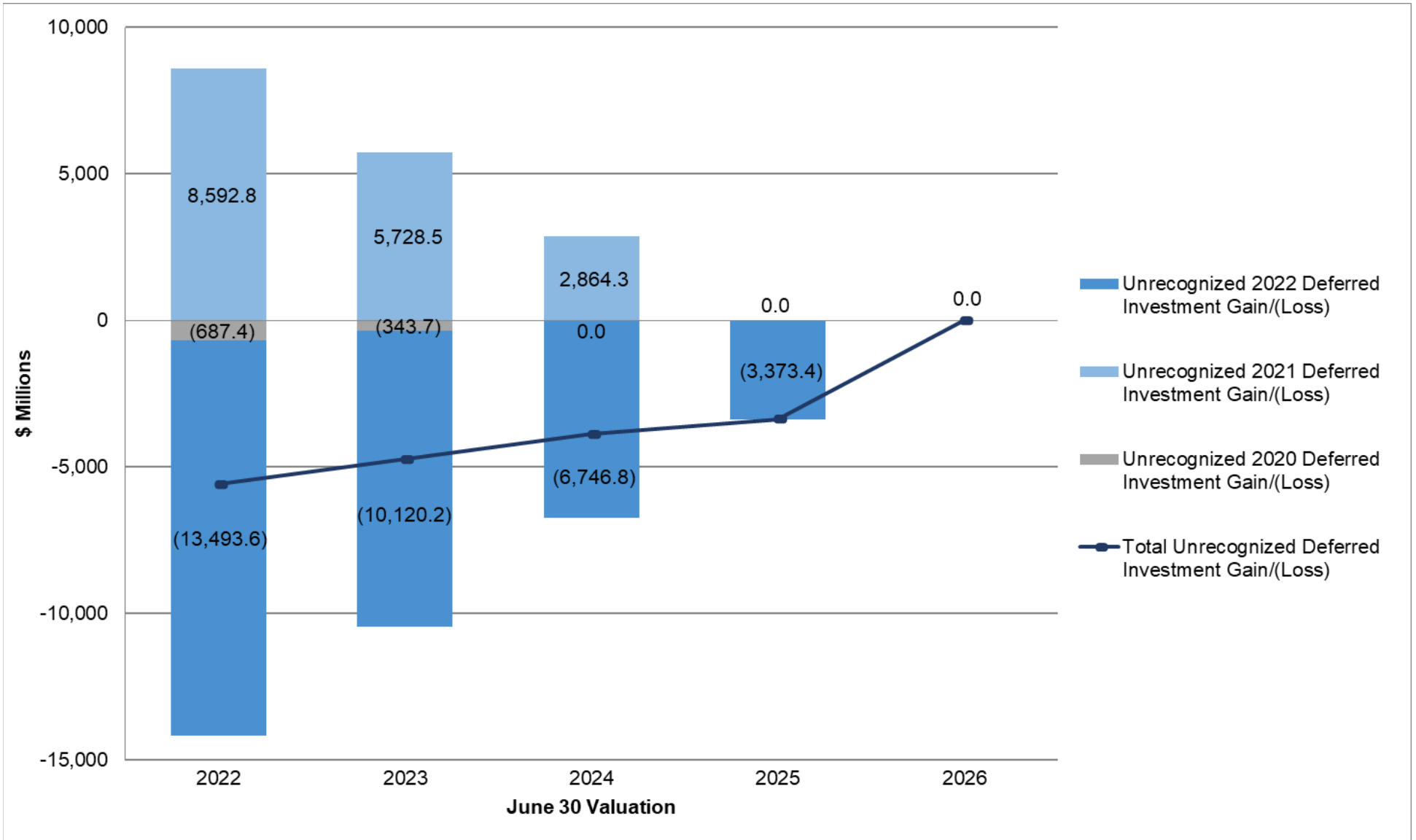
Table II-3
Development of Actuarial Value of Assets

(\$ Thousands)		
Valuation Date	June 30, 2022	June 30, 2021
1. Market Value of Fixed Fund Assets		
a. Beginning of Year (BOY)	\$ 71,185,752	\$ 53,732,776
b. End of Year (EOY)	\$ 58,724,228	\$ 71,185,752
2. Contributions		
a. Employee	\$ 273,503	\$ 247,535
b. Employer	3,303,798	3,131,607
c. Other	<u>60,574</u>	<u>61,651</u>
d. Total Contributions	\$ 3,637,875	\$ 3,440,793
3. Net Investment Income		
a. Investment Income	\$ (11,372,382)	\$ 18,465,548
b. Investment Expenses	<u>(530,878)</u>	<u>(403,943)</u>
c. Total Net Investment Income	\$ (11,903,260)	\$ 18,061,605
4. Benefit Payments and Other Cash Flow	\$ (4,196,139)	\$ (4,049,422)
5. Net Cash Flow (2.d. + 4.)	\$ (558,264)	\$ (608,629)
6. Expected Investment Return	\$ 4,963,794	\$ 3,740,352
7. Unexpected Investment Return (UIR) (3.c. - 6.)	\$ (16,867,054)	\$ 14,321,253
8. Preliminary Fixed Fund AVA		
a. Preliminary Fixed Fund AVA @ BOY	\$ 60,759,903	\$ 55,107,647
b. Net Cash Flow (5.)	\$ (558,264)	\$ (608,629)
c. Expected Investment Return (6.)	\$ 4,963,794	\$ 3,740,352
d. Phase in of UIR		
20% of UIR for prior year (20% of 7.)	\$ (3,373,411)	\$ 2,864,251
20% of UIR for second prior year	\$ 2,864,251	(343,718)
20% of UIR for third prior year	(343,718)	N/A
20% of UIR for fourth prior year	N/A	N/A
20% of UIR for fifth prior year	N/A	N/A
Total	\$ (852,878)	\$ 2,520,533
e. Lower Corridor Bound (80% of 1.b.)	\$ 46,979,382	\$ 56,948,602
f. Upper Corridor Bound (120% of 1.b.)	\$ 70,469,074	\$ 85,422,902
g. Preliminary Fixed AVA (a. through d., bounded by e. and f.)	\$ 64,312,555	\$ 60,759,903
9. Market Value of Variable Fund Assets	\$ 5,285,200	\$ 7,161,546
10. Amounts due (To)/From TDA	\$ 0	\$ (1,593,154)
11. AVA (8.g. + 9. + 10.)	\$ 69,597,755	\$ 66,328,295

Graph II-4
Historical Market and Actuarial Value of Assets



**Graph II-5
Future Recognition of Unexpected Investment Return**



SECTION III – CONTRIBUTION DEVELOPMENT AND HISTORY

Table III-1
Actuarial Required Contributions

Table III-1 shows the components of the Fiscal Year 2024 and the Fiscal Year 2023 Actuarial Required Contributions.

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR ACTUARIAL REQUIRED CONTRIBUTIONS		
Valuation Date	June 30, 2022	June 30, 2021
Fiscal Year	2024	2023
Normal Cost	\$ 1,442,949,993	\$ 1,436,496,889
Unfunded Accrued Liability Amortization ¹	\$ 1,678,668,140	\$ 1,620,032,951
Administrative Expenses	61,963,131	56,351,979
ASAF Credit ²	(26,300,000)	(26,800,000)
DOE Gulino Charges ³	4,419,008	N/A
Kipp Academy Charter School Deferred Overfunding Credit ⁴	51,853	0
Total Contribution to the New York City Teachers' Retirement System	\$ 3,161,752,125	\$ 3,086,081,819

¹ See Table III-2 for additional details.

² Estimated contribution made by the Department of Education to the Annuity Savings Accumulation Fund (ASAF) of certain eligible members for Fiscal Year 2024.

³ Cost for member contribution receivable amounts for cases processed through June 30, 2022 due to *Gulino vs. Department of Education*, 96 Civ. 8414(KMW)

⁴ Contribution limited to be no less than Administrative Expenses.

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, 2022.

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	2,198,540,876
(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)
Method Change ⁷	6/30/21	(54,358)	2	0
Plan Change ⁸	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	(12,804,884)
TOTAL				1,678,668,140

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 included as an adjustment to the Actuarial Value of Assets.

⁶ Older Workers Benefit Protection Act (OWBPA).

⁷ Change in payment process for benefits in excess of 415 limits.

⁸ Chapter 56 of the Laws of 2022

Graph III-3
Remaining UAL Amortizations as of June 30, 2022

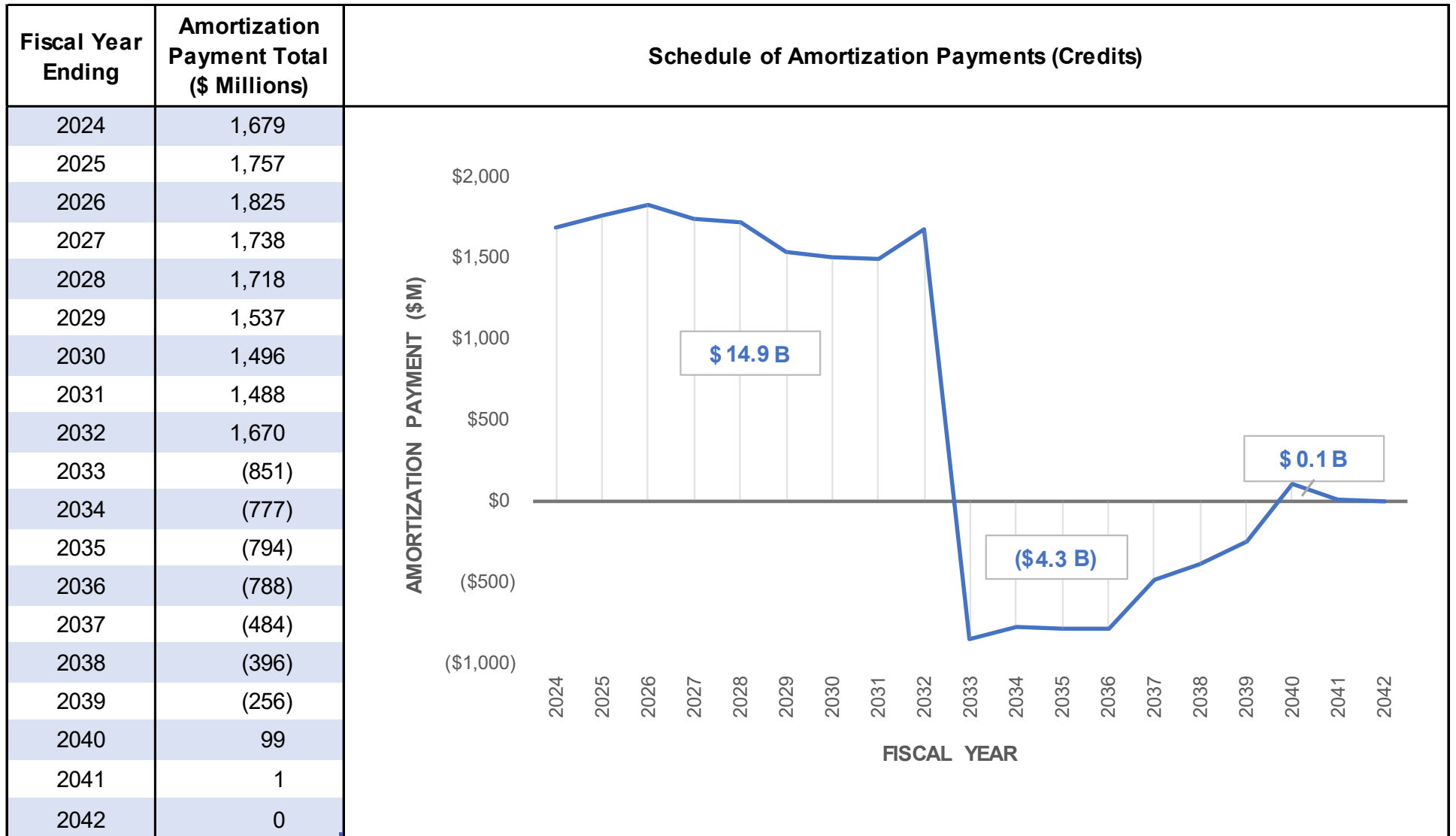


Table III-4
Reconciliation of Outstanding UAL Bases

Cost Component	Date Established	Original Amount	Amort Years	Outstanding Balance 6/30/2022	FY 2023 Payment on 12/31/2022	Outstanding Balance 6/30/2023	FY 2024 Payment on 12/31/2023	Additional Payments
Initial UAL	06/30/10	\$ 20,524,022,955	22	\$ 17,488,125,447	\$ 2,134,505,707	\$ 16,504,344,358	\$ 2,198,540,876	8
(Gain)/Loss	06/30/11	1,329,890,090	15	551,135,970	157,298,501	427,004,653	157,298,501	2
(Gain)/Loss	06/30/12	778,617,335	15	390,597,591	92,094,332	322,676,305	92,094,332	3
(Gain)/Loss	06/30/13	2,065,937,513	15	1,204,817,081	244,357,693	1,036,388,712	244,357,693	4
(Gain)/Loss	06/30/14	992,709,734	15	654,567,606	117,417,036	578,930,212	117,417,036	5
Assumption Change	06/30/14	2,239,586,352	20	1,841,549,967	224,142,498	1,738,603,660	224,142,498	10
(Gain)/Loss	06/30/15	734,444,345	15	536,572,482	86,869,581	484,273,963	86,869,581	6
(Gain)/Loss	06/30/16	(848,431,601)	15	(676,312,572)	(100,351,916)	(619,849,624)	(100,351,916)	7
(Gain)/Loss	06/30/17	(2,235,025,973)	15	(1,920,622,119)	(264,357,362)	(1,781,612,289)	(264,357,362)	8
ASAF Method Change	06/30/17	116,239,745	20	109,602,850	11,633,517	105,241,247	11,633,517	13
Assumption Change	06/30/17	(1,078,725,991)	20	(1,017,134,414)	(107,961,163)	(976,657,935)	(107,961,163)	13
Method Change	06/30/17	9,078,212	20	8,559,875	908,566	8,219,239	908,566	13
(Gain)/Loss	06/30/18	(622,129,323)	15	(570,776,247)	(73,585,040)	(534,613,629)	(73,585,040)	9
Method Change	06/30/18	(1,403,608,000)	20	(1,372,688,136)	(140,476,031)	(1,323,466,766)	(140,476,031)	14
(Gain)/Loss	06/30/19	(1,755,622,201)	15	(1,706,079,238)	(207,653,807)	(1,610,706,015)	(207,653,807)	10
Assumption Change	06/30/19	(383,977,377)	20	(388,103,119)	(38,429,261)	(375,518,799)	(38,429,261)	15
Method Change	06/30/19	(3,158,833,000)	20	(3,192,773,861)	(316,142,629)	(3,089,247,553)	(316,142,629)	15
(Gain)/Loss	06/30/20	(53,115,849)	15	(54,313,660)	(6,282,507)	(51,616,942)	(6,282,507)	11
Method Change	06/30/20	976,069,325	20	1,016,453,485	97,687,066	986,556,946	97,687,066	16
Plan Change	06/30/20	55,042,203	8	52,089,633	10,564,676	44,807,720	10,564,676	4
(Gain)/Loss	06/30/21	(2,563,963,216)	15	(2,743,440,646)	(303,263,841)	(2,621,782,941)	(303,263,841)	12
Method Change	06/30/21	(54,358)	2	(58,163)	(60,164)	0	0	0
Plan Change	06/30/21	11,165,833	20	11,947,442	1,117,499	11,627,810	1,117,499	17
Admin Expenses	06/30/21	50,913,565	2	54,477,514	56,351,979	0	0	0
Normal Cost	07/01/21	1,297,863,513	2	1,388,713,958	1,436,496,889	0	0	0
(Gain)/Loss	06/30/22	62,096,532	15	62,096,532	0	66,443,294	7,344,740	13
Death Audit	06/30/22	(11,569,110)	2	(11,569,110)	0	(12,378,949)	(12,804,884)	0
Deferred Overfunding Credit	06/30/22	46,849	0	46,849	0	50,128	51,853	0
Deferred Overfunding (Debit)	06/30/22	(46,849)	0	(46,849)	0	(50,128)	0	1
Admin Expenses	06/30/22	55,983,196	2	55,983,196	0	59,902,020	61,963,131	0
Normal Cost	07/01/22	1,303,693,841	2	0	0	1,394,952,409	1,442,949,993	0
ASAF Credit	12/31/22	0	0	0	(26,800,000)	0	0	0
ASAF Credit	12/31/23	0	0	0	0	0	(26,300,000)	0
DOE Gulino Charges	12/31/23	0	0	0	0	0	4,419,008	0
TOTAL				\$ 11,773,419,344	\$ 3,086,081,819	\$ 10,772,521,106	\$ 3,161,752,125	

Payment for amortization bases, normal costs 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 6/30/2022	FY 2023 Payment on 12/31/2022	Outstanding Balance 6/30/2023	FY 2024 Payment on 12/31/2023
Initial UAL	\$ 17,488,125,447	\$ 2,134,505,707	\$ 16,504,344,358	\$ 2,198,540,876
Method Changes	(3,442,473,060)	(346,449,675)	(3,325,075,836)	(359,194,395)
Assumption Changes	436,312,434	77,752,074	386,426,926	77,752,074
Plan Changes	64,037,075	11,682,175	56,435,530	11,682,175
(Gain)/Loss	(4,271,757,220)	(257,457,330)	(4,304,464,301)	(250,112,590)
Normal Cost	1,388,713,958	1,436,496,889	1,394,952,409	1,442,949,993
Admin Expenses	110,460,710	56,351,979	59,902,020	61,963,131
Deferred Overfunding Credit / (Debit)	0	0	0	51,853
ASAF Credit	0	(26,800,000)	0	(26,300,000)
DOE Gulino Charges	0	0	0	4,419,008
TOTAL	\$ 11,773,419,344	\$ 3,086,081,819	\$ 10,772,521,106	\$ 3,161,752,125

	6/30/2022
(A) Actuarial Accrued Liability	\$ 81,371,174,344
(B) Actuarial Value of Assets	69,597,755,000
(C) Unfunded Accrued Liabilities (A) - (B)	\$ 11,773,419,344

	FY 2024
Normal Cost	\$ 1,442,949,993
UAL Payment	1,678,668,140
Admin Expenses	61,963,131
Deferred Overfunding Credit / (Debit)	51,853
ASAF Credit	(26,300,000)
DOE Gulino Charges	4,419,008
Total	\$ 3,161,752,125

**Table III-5
Contribution History**

Table III-5 compares actual contributions to the Actuarial Required Contributions for Fiscal Years 2015 through 2024.

(\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution	Amount Contributed	Percentage of Required Contributed
2015	\$ 3,270,007	\$ 3,270,007	100.0%
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%

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 2015 through 2024.

CITY RATES (\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution¹	Salary² at Beginning of Fiscal Year	City Rate
2015	\$ 3,270,007	\$ 8,074,522	40.5%
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%

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 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, 2022					
	Tier 1	Tier 2	Tier 3/4	Tier 6	Total
Total	14.8%	21.2%	15.2%	12.1%	14.1%
Employee	<u>(1.5%)</u>	<u>(2.8%)</u>	<u>(2.5%)</u>	<u>(5.3%)</u>	<u>(3.5%)</u>
Employer	13.3%	18.4%	12.7%	6.8%	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, 2022 Fiscal Year 2024												
Charter School	Future Leaders	Harriet Tubman	Imagine Me Leadership	KIPP Academy ¹	KIPP NYC	Opportunity	Renaissance	South Bronx Early College Academy	University Prep Charter HS	Voice	Wildcat	Charter School Subtotal
1. Normal Cost	\$ 331,043	\$ 545,833	\$ 115,049	\$ 555,852	\$ 705,133	\$ 703,226	\$ 709,765	\$ 354,982	\$ 877,729	\$ 777,393	\$ 335,554	\$ 6,011,559
2. Amortization of Unfunded Accrued Liability	(10,801)	47,150	3,644	(607,705)	72,658	(49,992)	408,849	(47,024)	54,307	(12,577)	5,970	(135,521)
3. Administrative Expenses	16,655	24,603	5,587	38,744	22,170	31,470	28,657	17,783	46,886	39,483	11,981	284,019
4. Deferred Overfunding Credit	<u>0</u>	<u>0</u>	<u>0</u>	<u>51,853</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	51,853
5. Actuarial Contribution (1. + 2. + 3. + 4.)	<u>\$ 336,897</u>	<u>\$ 617,586</u>	<u>\$ 124,280</u>	<u>\$ 38,744</u>	<u>\$ 799,961</u>	<u>\$ 684,704</u>	<u>\$ 1,147,271</u>	<u>\$ 325,741</u>	<u>\$ 978,922</u>	<u>\$ 804,299</u>	<u>\$ 353,505</u>	\$ 6,211,910
CUNY	Senior Colleges	Community Colleges / Others	CUNY Subtotal									
1. Normal Cost	\$ 44,269,748	\$ 26,759,932	\$ 71,029,680									
2. Amortization of Unfunded Accrued Liability	51,654,836	18,310,418	69,965,254									
3. Administrative Expenses	<u>1,678,772</u>	<u>980,791</u>	2,659,563									
4. Actuarial Contribution (1. + 2. + 3.)	<u>\$ 97,603,356</u>	<u>\$ 46,051,141</u>	\$ 143,654,497									
¹ Contribution limited to be no less than Administrative Expenses.												
Obligor	Charter School	CUNY	UFT	Department of Education	Total							
1. Normal Cost	\$ 6,011,559	\$ 71,029,680	\$ 1,115,023	\$ 1,364,793,731	\$ 1,442,949,993							
2. Amortization of Unfunded Accrued Liability	(135,521)	69,965,254	832,079	1,608,006,328	1,678,668,140							
3. Administrative Expenses	284,019	2,659,563	33,068	58,986,481	61,963,131							
4. ASAF Credit	0	0	0	(26,300,000)	(26,300,000)							
5. DOE Gulino Charges	0	0	0	4,419,008	4,419,008							
6. Kipp Academy Charter School Deferred Overfunding Credit	<u>51,853</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>51,853</u>							
7. Actuarial Contribution (1. + 2. + 3. + 4. + 5. + 6.)	<u>\$ 6,211,910</u>	<u>\$ 143,654,497</u>	<u>\$ 1,980,170</u>	<u>\$ 3,009,905,548</u>	<u>\$ 3,161,752,125</u>							

**Table IV-2
Accrued Liabilities by Obligor**

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM												
SUMMARY OF LIABILITY BY STATUS AND OBLIGOR												
As of June 30, 2022 Fiscal Year 2024												
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	\$ 4,523,891	\$ 7,659,370	\$ 813,297	\$ 6,039,774	\$14,449,238	\$ 9,490,290	\$16,448,038	\$ 2,861,105	\$11,584,102	\$ 6,440,511	\$ 6,671,222	\$ 86,980,838
2. Terminated Nonvested Members	29,831	8,318	0	92,208	11,387	24,892	5,145	88,094	83,327	47,736	0	390,938
3. Deferred Vested Members	667,289	1,438,061	0	4,853,739	2,525,867	2,254,609	1,701,259	106,407	664,746	1,065,157	768,696	16,045,830
4. Retirees and Beneficiaries	1,549,477	1,188,282	0	525,929	0	2,343,369	7,618,345	0	586,391	0	3,728,114	17,539,907
5. Accrued Liability SubTotal (1. to 4.)	\$ 6,770,488	\$ 10,294,031	\$ 813,297	\$11,511,650	\$16,986,492	\$14,113,160	\$25,772,787	\$ 3,055,606	\$12,918,566	\$ 7,553,404	\$11,168,032	\$120,957,513
6. Due to/(from) TDA	223,707	342,412	5,325	139,976	2,134,599	428,550	850,525	213,566	209,213	728,610	250,911	5,527,394
7. Total Accrued Liability (AL) (5. + 6.)	\$ 6,994,195	\$ 10,636,443	\$ 818,622	\$11,651,626	\$19,121,091	\$14,541,710	\$26,623,312	\$ 3,269,172	\$13,127,779	\$ 8,282,014	\$11,418,943	\$126,484,907
Present Value of Benefits												
1. Active Members	\$ 11,631,110	\$ 15,977,432	\$ 2,854,617	\$22,180,741	\$21,331,910	\$20,295,255	\$24,738,979	\$ 9,652,805	\$29,443,607	\$23,681,524	\$ 9,894,300	\$191,682,280
2. Terminated Nonvested Members	29,831	8,318	0	92,208	11,387	24,892	5,145	88,094	83,327	47,736	0	390,938
3. Deferred Vested Members	667,289	1,438,061	0	4,853,739	2,525,867	2,254,609	1,701,259	106,407	664,746	1,065,157	768,696	16,045,830
4. Retirees and Beneficiaries	1,549,477	1,188,282	0	525,929	0	2,343,369	7,618,345	0	586,391	0	3,728,114	17,539,907
5. Present Value of Benefits (1. to 4.)	\$ 13,877,707	\$ 18,612,093	\$ 2,854,617	\$27,652,617	\$23,869,164	\$24,918,125	\$34,063,728	\$ 9,847,306	\$30,778,071	\$24,794,417	\$14,391,110	\$225,658,955
6. Due to/(from) TDA	223,707	342,412	5,325	139,976	2,134,599	428,550	850,525	213,566	209,213	728,610	250,911	5,527,394
7. Total Present Value of Benefits (5. + 6.)	\$ 14,101,414	\$ 18,954,505	\$ 2,859,942	\$27,792,593	\$26,003,763	\$25,346,675	\$34,914,253	\$10,060,872	\$30,987,284	\$25,523,027	\$14,642,021	\$231,186,349
CUNY												
	Senior Colleges	Community Colleges / Others	CUNY Subtotal									
Accrued Liability												
1. Active Members	\$ 626,558,653	\$ 344,118,265	\$ 970,676,918									
2. Terminated Nonvested Members	4,692,835	4,227,257	8,920,092									
3. Deferred Vested Members	43,182,410	28,277,704	71,460,114									
4. Retirees and Beneficiaries	965,623,535	351,373,776	1,316,997,311									
5. Accrued Liability SubTotal (1. to 4.)	\$1,640,057,433	\$ 727,997,002	\$2,368,054,435									
6. Due to/(from) TDA	63,821,793	35,901,094	99,722,887									
7. Total Accrued Liability (AL) (5. + 6.)	\$1,703,879,226	\$ 763,898,096	\$2,467,777,322									
Present Value of Benefits												
1. Active Members	\$1,109,206,640	\$ 639,446,323	\$1,748,652,963									
2. Terminated Nonvested Members	4,692,835	4,227,257	8,920,092									
3. Deferred Vested Members	43,182,410	28,277,704	71,460,114									
4. Retirees and Beneficiaries	965,623,535	351,373,776	1,316,997,311									
5. Present Value of Benefits (1. to 4.)	\$2,122,705,420	\$1,023,325,060	\$3,146,030,480									
6. Due to/(from) TDA	63,821,793	35,901,094	99,722,887									
7. Total Present Value of Benefits (5. + 6.)	\$2,186,527,213	\$1,059,226,154	\$3,245,753,367									

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

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM					
SUMMARY OF LIABILITY BY STATUS AND OBLIGOR					
As of June 30, 2022 Fiscal Year 2024					
Obligor	Charter School	CUNY	UFT	Department of Education	Total
Accrued Liability					
1. Active Members	\$ 86,980,838	\$ 970,676,918	\$ 22,101,557	\$ 30,480,082,474	\$ 31,559,841,787
2. Terminated Nonvested Members	390,938	8,920,092	0	29,030,466	38,341,496
3. Deferred Vested Members	16,045,830	71,460,114	0	1,953,581,017	2,041,086,961
4. Retirees and Beneficiaries	<u>17,539,907</u>	<u>1,316,997,311</u>	<u>0</u>	<u>44,797,071,973</u>	<u>46,131,609,191</u>
5. Accrued Liability SubTotal (1. to 4.)	\$ 120,957,513	\$ 2,368,054,435	\$ 22,101,557	\$ 77,259,765,930	\$ 79,770,879,435
6. Due to/(from) TDA	<u>5,527,394</u>	<u>99,722,887</u>	<u>1,922,971</u>	<u>1,493,121,657</u>	<u>1,600,294,909</u>
7. Total Accrued Liability (AL) (5. + 6.)	\$ 126,484,907	\$ 2,467,777,322	\$ 24,024,528	\$ 78,752,887,587	\$ 81,371,174,344
Present Value of Benefits					
1. Active Members	\$ 191,682,280	\$ 1,748,652,963	\$ 31,281,246	\$ 49,009,985,558	\$ 50,981,602,047
2. Terminated Nonvested Members	390,938	8,920,092	0	29,030,466	38,341,496
3. Deferred Vested Members	16,045,830	71,460,114	0	1,953,581,017	2,041,086,961
4. Retirees and Beneficiaries	<u>17,539,907</u>	<u>1,316,997,311</u>	<u>0</u>	<u>44,797,071,973</u>	<u>46,131,609,191</u>
5. Present Value of Benefits (1. to 4.)	\$ 225,658,955	\$ 3,146,030,480	\$ 31,281,246	\$ 95,789,669,014	\$ 99,192,639,695
6. Due to/(from) TDA	<u>5,527,394</u>	<u>99,722,887</u>	<u>1,922,971</u>	<u>1,493,121,657</u>	<u>1,600,294,909</u>
7. Total Present Value of Benefits (5. + 6.)	\$ 231,186,349	\$ 3,245,753,367	\$ 33,204,217	\$ 97,282,790,671	\$ 100,792,934,604

**Table IV-3
Participant Data by Obligor**

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM												
PARTICIPANT DATA BY OBLIGOR												
As of June 30, 2022 Fiscal Year 2024												
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	34	58	16	77	28	59	54	38	94	77	20	555
b. Annual Salary ¹	\$ 3,178,488	\$ 4,695,433	\$ 1,066,219	\$ 7,394,135	\$ 4,230,931	\$ 6,005,701	\$ 5,468,864	\$ 3,393,902	\$ 8,947,777	\$ 7,534,987	\$ 2,286,434	\$ 54,202,871
c. Average Salary	\$ 93,485	\$ 80,956	\$ 66,639	\$ 96,028	\$ 151,105	\$ 101,792	\$ 101,275	\$ 89,313	\$ 95,189	\$ 97,857	\$ 114,322	\$ 97,663
2. Terminated Nonvested Members	3	2	0	11	1	3	1	10	9	5	0	45
3. Deferred Vested Members	10	13	0	47	41	19	8	2	9	12	6	167
4. Retirees and Beneficiaries												
a. Number	2	4	0	1	0	5	13	0	1	0	9	35
b. Total Annual Benefits	\$ 151,201	\$ 106,798	\$ 0	\$ 58,429	\$ 0	\$ 202,510	\$ 678,236	\$ 0	\$ 48,832	\$ 0	\$ 327,500	\$ 1,573,506
c. Average Annual Benefit	\$ 75,601	\$ 26,700	\$ 0	\$ 58,429	\$ 0	\$ 40,502	\$ 52,172	\$ 0	\$ 48,832	\$ 0	\$ 36,389	\$ 44,957
CUNY	Senior Colleges	Community Colleges / Others	CUNY Subtotal									
1. Active Members												
a. Number	4,241	2,218	6,459									
b. Annual Salary ¹	\$ 320,378,941	\$ 187,175,465	\$ 507,554,406									
c. Average Salary	\$ 75,543	\$ 84,389	\$ 78,581									
2. Terminated Nonvested Members	792	677	1,469									
3. Deferred Vested Members	337	342	679									
4. Retirees and Beneficiaries												
a. Number	2,036	846	2,882									
b. Total Annual Benefits	\$ 121,360,260	\$ 39,529,871	\$ 160,890,131									
c. Average Annual Benefit	\$ 59,607	\$ 46,726	\$ 55,826									
Obligor	Charter School	CUNY	UFT	Department of Education	Total							
1. Active Members												
a. Number	555	6,459	59	116,601	123,674							
b. Annual Salary ¹	\$ 54,202,871	\$ 507,554,406	\$ 6,310,764	\$ 11,257,055,877	\$ 11,825,123,918							
c. Average Salary	\$ 97,663	\$ 78,581	\$ 106,962	\$ 96,543	\$ 95,615							
2. Terminated Nonvested Members	45	1,469	0	3,592	5,106							
3. Deferred Vested Members	167	679	0	18,758	19,604							
4. Retirees and Beneficiaries												
a. Number	35	2,882	0	89,365	92,282							
b. Total Annual Benefits	\$ 1,573,506	\$ 160,890,131	\$ 0	\$ 4,522,316,508	\$ 4,684,780,145							
c. Average Annual Benefit	\$ 44,957	\$ 55,826	\$ 0	\$ 50,605	\$ 50,766							

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

SECTION V – (GAIN)/LOSS ANALYSIS

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

EXPERIENCE (GAIN) / LOSS as of June 30, 2022 (\$ Thousands)			
	Fixed	Variable	Total
1. Expected Accrued Liability (AL)			
a. AL at June 30, 2021	\$ 72,122,196	\$ 7,030,926	\$ 79,153,122
b. Total Normal Cost and Administrative Expenses at June 30, 2021	1,647,988	209	1,648,197
c. Interest on 1.a. and 1.b. to June 30, 2022	6,860,051	(1,203,959)	5,656,092
d. Fiscal Year 2022 Benefit Payments with Interest to June 30, 2022	(4,428,184)	(650,230)	(5,078,414)
e. Death Audit	(11,569)	0	(11,569)
f. Expected AL at June 30, 2022	<u>\$ 76,190,482</u>	<u>\$ 5,176,946</u>	<u>\$ 81,367,428</u>
2. Actual AL at June 30, 2022	\$ 76,145,051	\$ 5,226,123	\$ 81,371,174
3. Expected Actuarial Asset Value (AVA)			
a. AVA at June 30, 2021	\$ 59,166,749	\$ 7,161,546	\$ 66,328,295
b. Interest on 3.a. to June 30, 2022	5,869,270	(1,226,289)	4,642,981
c. Total Contributions Paid in Fiscal Year 2022	3,637,875	190	3,638,065
d. Interest on 3.c. to June 30, 2022	125,196	(17)	125,179
e. Fiscal Year 2022 Benefit Payments with Interest to June 30, 2022	(4,428,184)	(650,230)	(5,078,414)
f. Expected AVA at June 30, 2022	<u>\$ 64,370,906</u>	<u>\$ 5,285,200</u>	<u>\$ 69,656,106</u>
4. Actual AVA at June 30, 2022	\$ 64,312,555	\$ 5,285,200	\$ 69,597,755
5. Liability (Gain) / Loss (2. - 1.f.)	\$ (45,431)	\$ 49,177	\$ 3,746
6. Asset (Gain) / Loss (3.f. - 4.)	\$ 58,351	\$ 0	\$ 58,351
7. Total Actuarial (Gain) / Loss (5. + 6.)	\$ 12,920	\$ 49,177	\$ 62,097

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)
2013	\$ 35,186,072	\$ 61,988,933	\$ 26,802,861	56.8%	\$ 8,128,378	329.7%
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%

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

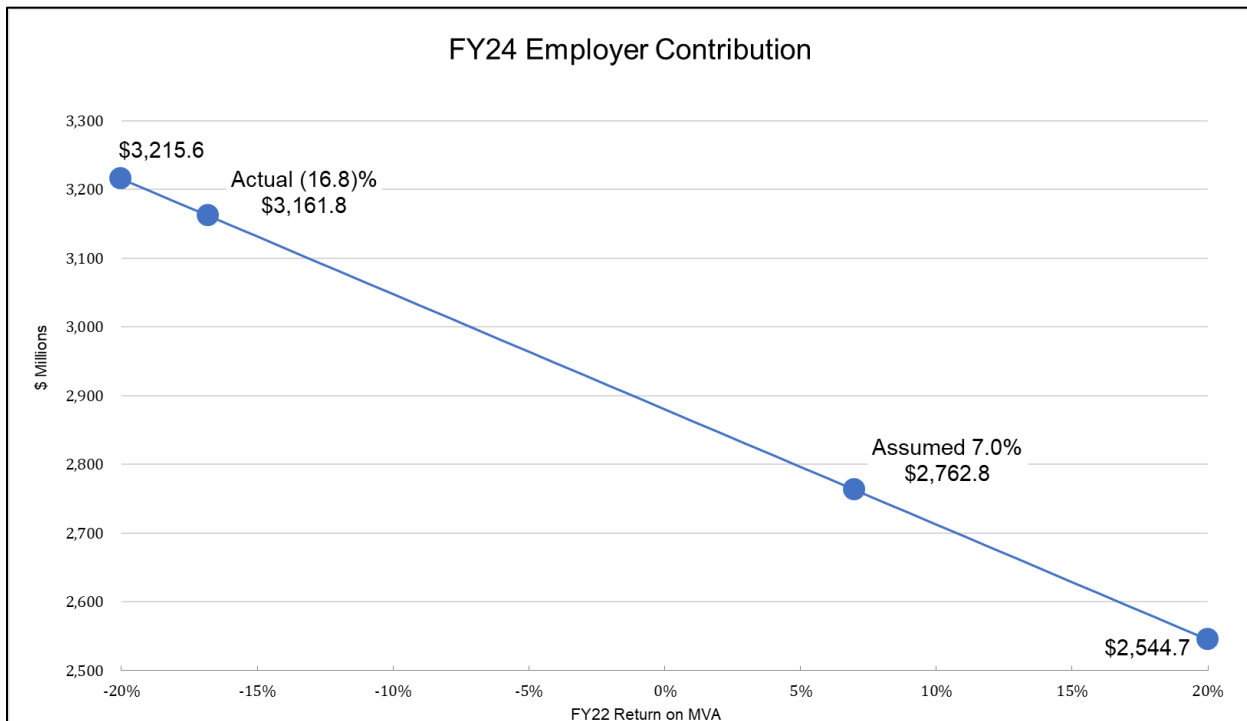
The funded status of TRS depends highly on the realization of the actuarial assumptions used, certain demographic characteristics of the Plan, and other factors. Risks faced by the Plan are described in this Section and have been separated into high, medium, and other risk categories.

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%.

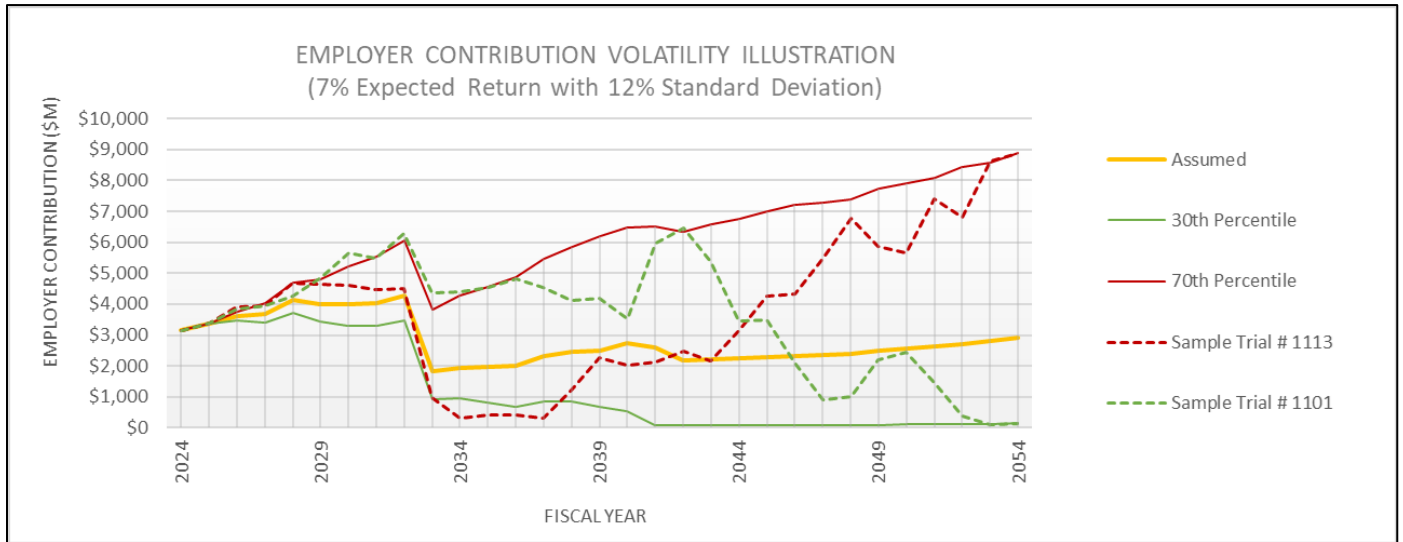
The graph below illustrates the potential FY24 employer contribution for a range of investment return outcomes if returns had differed from the assumed rate of return (i.e., from -20% to 20%). In addition, the actual investment return and employer contribution are shown.



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.

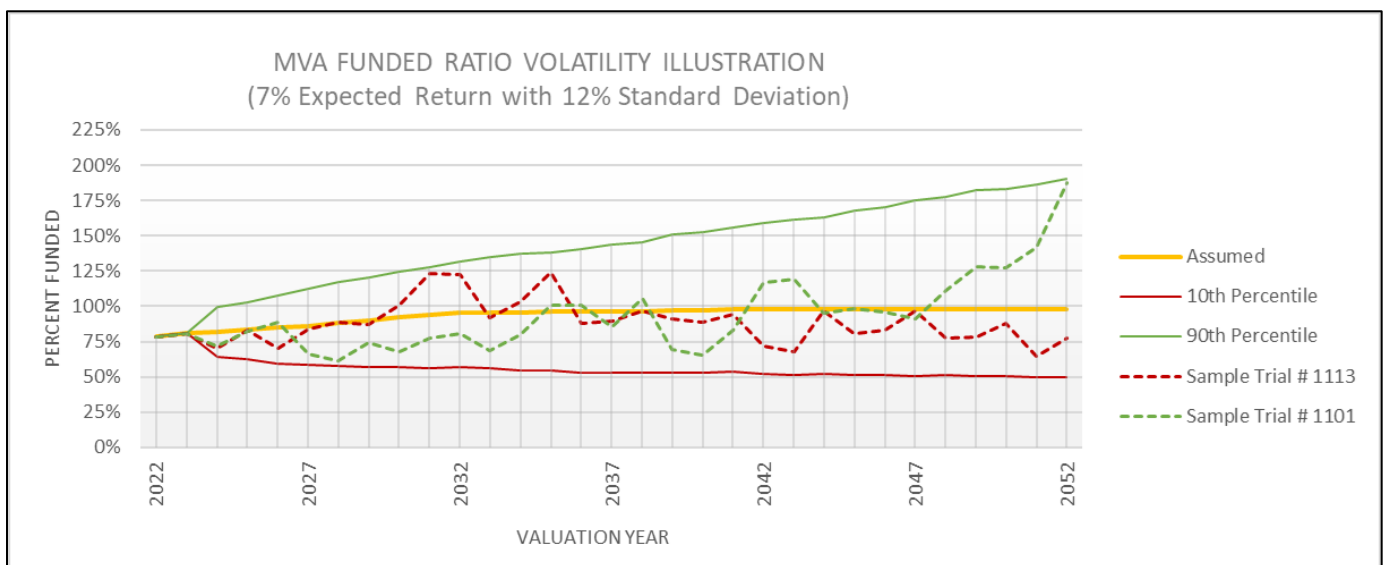
The yellow line in the charts shows the results if investment returns were exactly 7% as expected. The two solid lines show results for the indicated percentile range and together frame a range of results based on all 5,000 trials. The two dashed lines illustrate sample results from among the 5,000 trials.



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 75% (below).

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

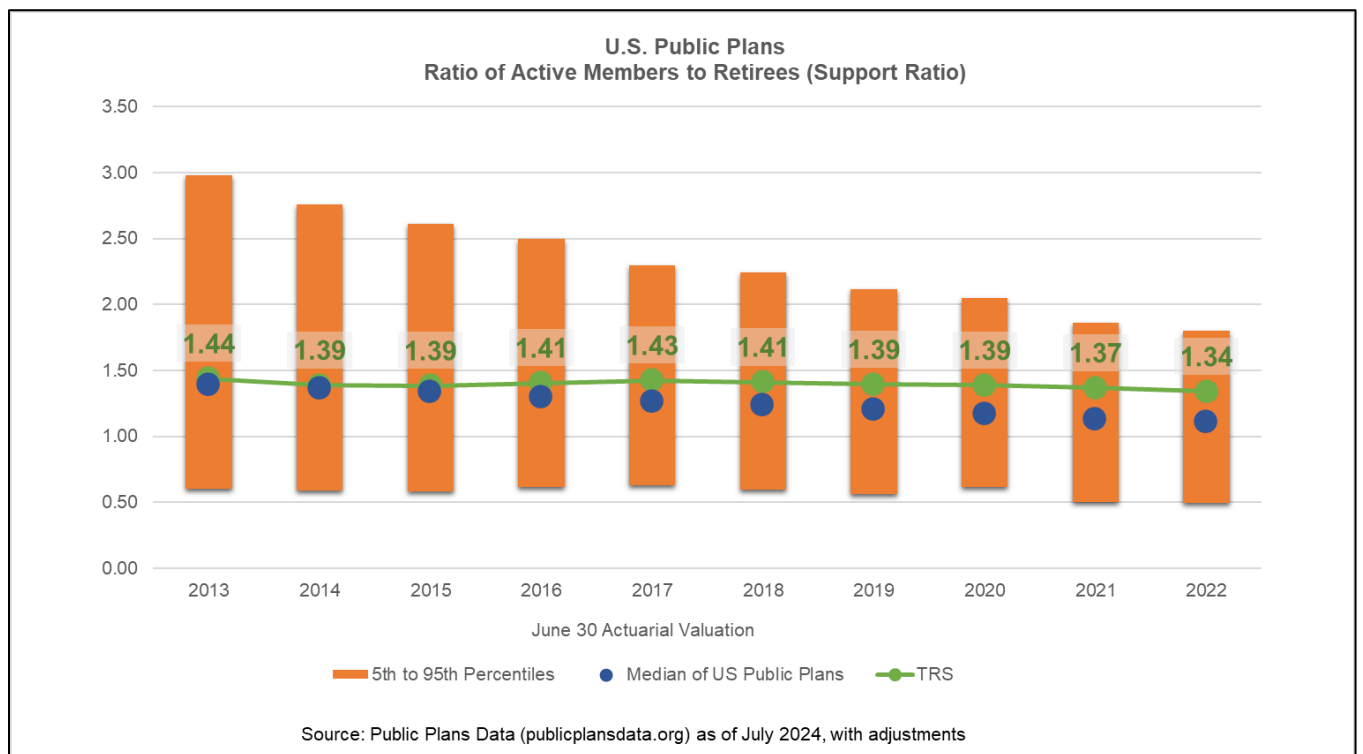


Maturity Risk: The Risk of Demographic Imbalance

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)

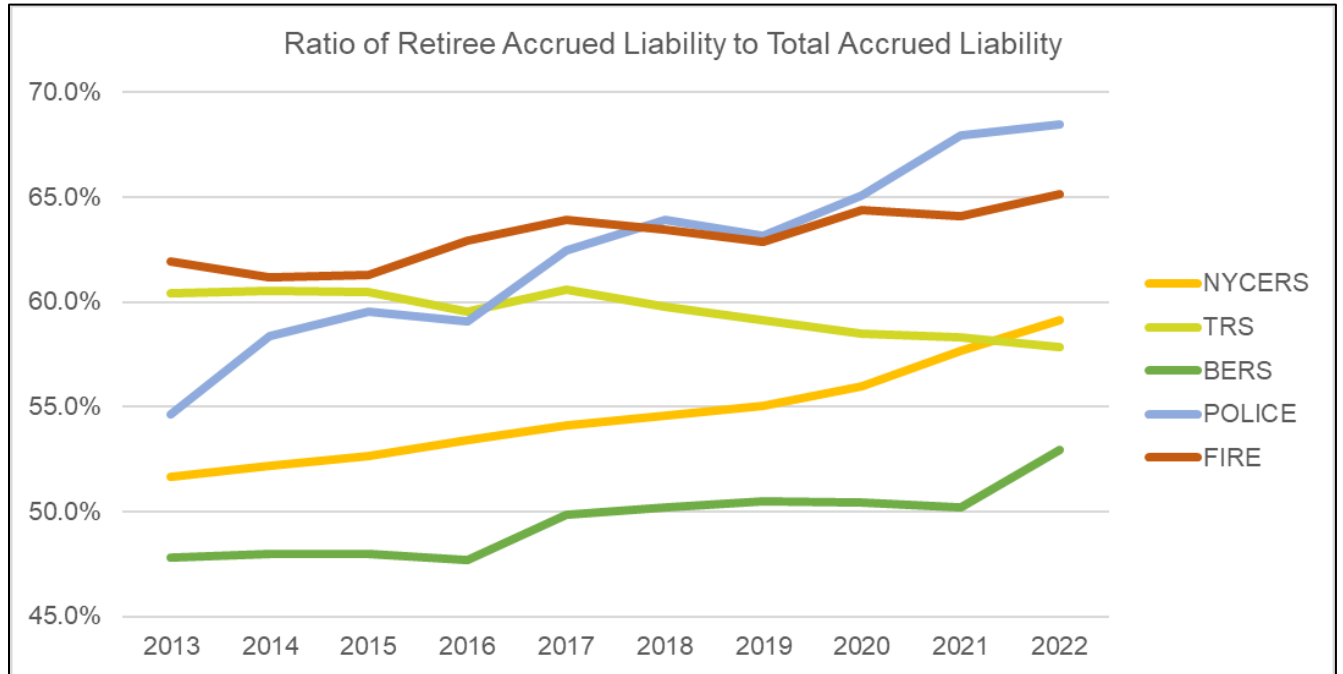
A plan's Support Ratio (i.e., the ratio of active members to retirees) is an indicator of the Plan's maturity level. Lower Support Ratios have higher contribution volatility. In a plan's early years, the ratio is very high as the plan contains mostly active members. As it matures, more active members 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 1.39 in the 2013 valuation year to 1.10 in the 2022 valuation year. Over that same period, the Plan's Support Ratio declined from 1.44 to 1.34, 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

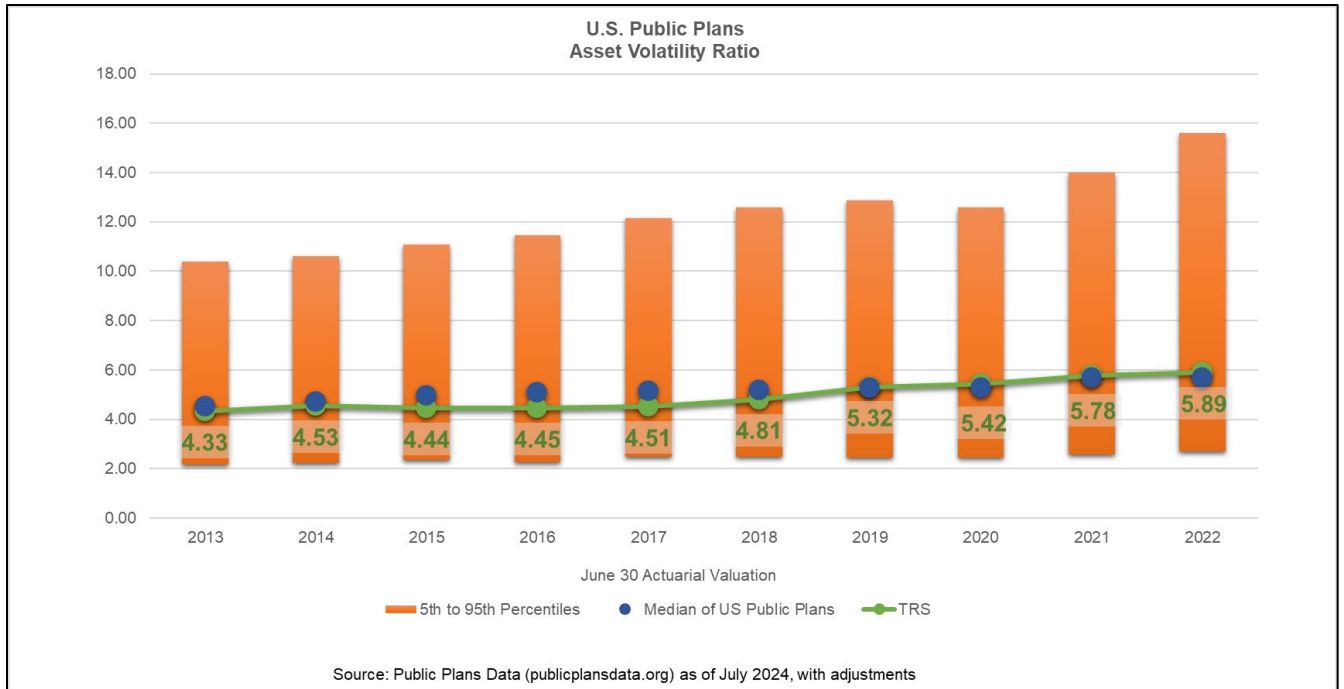
A plan's ratio of retiree liabilities to its total liabilities is also a measure of its maturity. A new pension plan begins with this ratio at zero; as the plan matures, the ratio increases. This ratio is shown in the graph below for TRS; the other New York City Retirement Systems¹ (NYCRS) are included 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 Normal Cost of the Plan are shown below:

NEW YORK CITY TEACHERS' RETIREMENT SYSTEM	
SENSITIVITY ANALYSIS AS OF JUNE 30, 2022	
Valuation Date	June 30, 2022
Results at 7.0%	
1. Accrued Liability	\$ 81,371,174,344
2. Actuarial Value of Assets (AVA)	<u>69,597,755,000</u>
3. Unfunded Accrued Liability (1.-2.)	11,773,419,344
4. Normal Cost	1,442,949,993
Results at 6.0%	
1. Accrued Liability	\$ 96,621,028,036
2. Actuarial Value of Assets (AVA)	<u>69,597,755,000</u>
3. Unfunded Accrued Liability (1.-2.)	27,023,273,036
4. Normal Cost	2,358,892,346
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Accrued Liability	19%
2. Increase in Unfunded Accrued Liability	130%
3. Increase in Normal Cost	63%

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. A rate of 1.0% is assumed, which the Society of Actuaries characterizes as “neither overly optimistic nor too pessimistic with respect to future longevity improvements.”² 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 1.0%.

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.³ In its most recent claims report, the Comptroller reports that in FY2023, NYC settled 13,227 claims and lawsuits for \$1.45 billion. On occasion, these settlements involve NYCRS. The 1996 case *Gulino v. Board of Education* awards damages to plaintiffs that in some cases include counterfactual service and salary in NYCRS. 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,” “Mortality Improvement Scale MP-2018 Report,” and “Mortality Improvement Scale MP-2014 Report.” *Society of Actuaries*.

² Retirement Plans Experience Committee. “Mortality Improvement Scale BB Report” 5.5 Selection of 1.0% Long-Term Rate of Mortality Improvement. *Society of Actuaries*.

³ <https://comptroller.nyc.gov/reports/annual-claims-report>

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 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 0.09% of active members as of June 30, 2022 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 Contribution 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 contribution 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 contribution 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: 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.

Tier 6: FAS is the highest average Salary earned in any five consecutive years of Credited Service or in the final 60 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 $1/60$ times FAS times Credited Service or $2/3$ 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 $1/60$ times FAS times Credited Service or $1/3$ 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 $1/12$ of annual wages earned during the year prior to death. The benefit is equal to 50% of $1/12$ 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 5 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, 2022 actuarial valuation results reflect the following Chapter amendments from the prior five years.

- **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 OWBPA.
- **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 BMC Contribution 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, 2022 valuation date and could have an impact on future years' valuations:

- **Chapter 55 of the Laws of 2024 (Chapter 55/24)** 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)** reduces the number of years used to calculate the Final Average Salary from 5 years to 3 years for certain Tier 3 and Tier 6 members of NYCRS.
- **Chapter 711 of the Laws of 2023 (Chapter 711/23)** 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 717 of the Laws of 2023 (Chapter 717/23)** 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.

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, 2021 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			
Age	Ordinary Death		Accidental Death
	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%

¹Salary 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 Market Value of Assets.

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. **TDA Fixed Fund Normal Cost:** 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.

14. Additional Assumptions used for the TDA fixed fund:

- a. Active TDA members would contribute 8.0% of compensation to the TDA fixed fund and 3.5% of compensation to the TDA variable fund.
- b. TDA members would transfer 25% of their TDA variable fund to the TDA fixed fund.
- c. 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.
- d. 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%.
- e. 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%.
- f. Estimate techniques have been used to account for the difference in liabilities due to future annuitization of TDA funds.
- g. 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.

15. 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.

16. 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 Salaries
- b. Entry Age Normal Accrued Liability
- c. Present Value of Future Normal Costs
- d. Present Value of Future Employee Contributions
- e. 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 components of contribution are then determined for each Obligor.

SECTION XII – SUMMARY OF DEMOGRAPHIC DATA

The June 30, 2022 and June 30, 2021 actuarial valuations are based upon census data as of those dates submitted by the Plan's administrative staff and the employers' payroll facilities. Financial information was provided by the Office of the Comptroller as of June 30, 2022 and June 30, 2021.

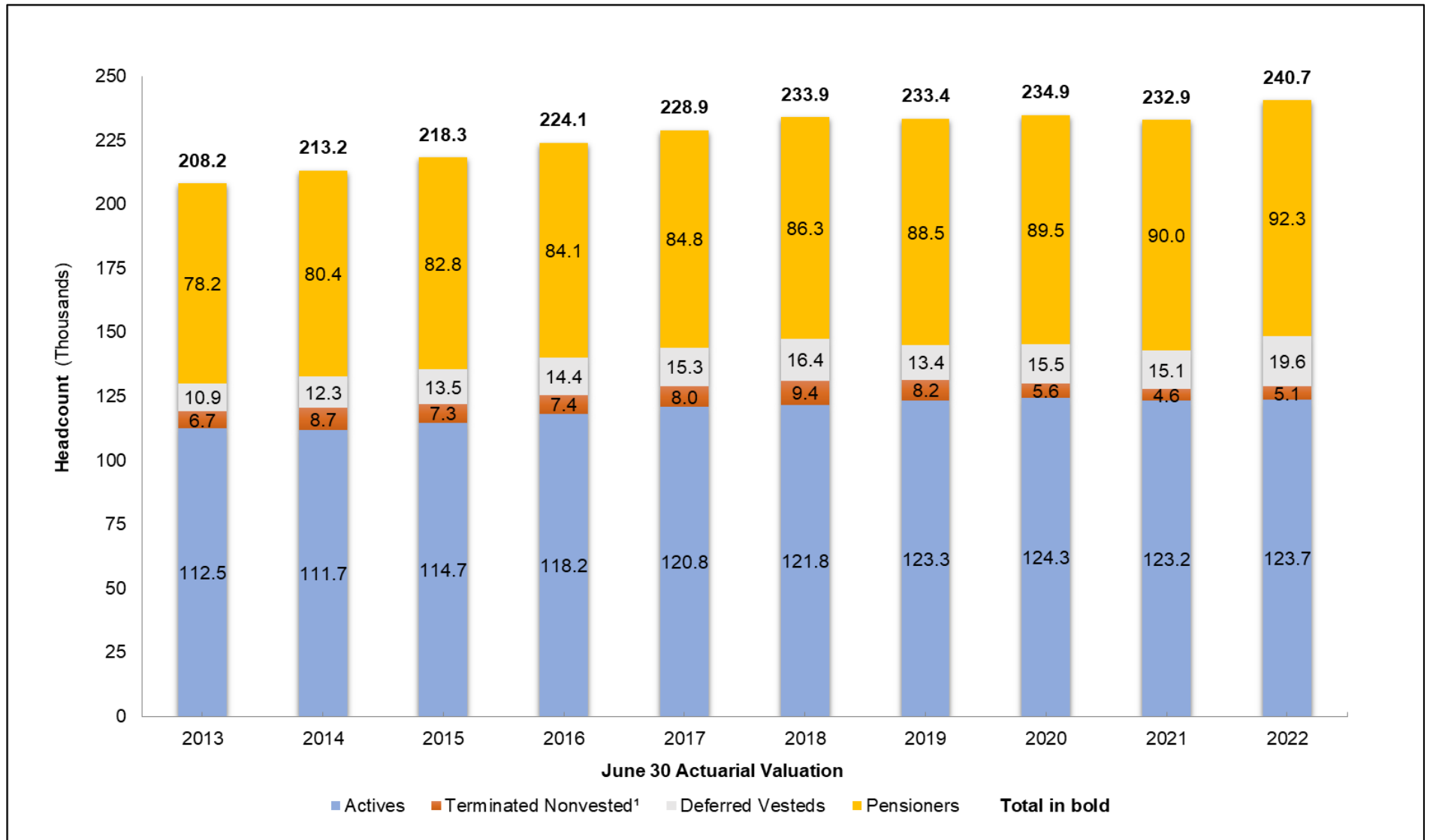
Beginning at June 30, 2020, TRS members who are no longer on payroll but not otherwise classified have been classified as Active, Terminated Nonvested, or Deferred Vested members, using actuarial judgment and consideration of available data, including leave of absence data when available.

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, 2021	123,211	4,574	15,128	81,213	2,655	758	35	5,336	89,997	232,910
New Entrants	11,920	400	0	0	0	0	0	0	0	12,320
Rehires	1,393	(606)	(352)	(5)	0	0	0	0	(5)	430
Leaving Active Payroll	(2,839)	2,839	0	0	0	0	0	0	0	0
Vested Termination	(5,079)	(517)	5,596	0	0	0	0	0	0	0
Non-Vested Termination / Cashout	(587)	(1,568)	(229)	0	0	0	0	0	0	(2,384)
Accidental Death	(2)	0	0	0	0	0	2	0	2	0
Ordinary Death	(113)	(12)	(69)	0	0	0	0	0	0	(194)
Service Retirement	(4,147)	(2)	(448)	4,597	0	0	0	0	4,597	0
Ordinary Disability Retirement	(77)	0	(21)	0	98	0	0	0	98	0
Accidental Disability Retirement	(6)	(2)	(1)	0	0	9	0	0	9	0
Reclassifications	0	0	0	1	(1)	0	0	0	0	0
Pensioner Death with Beneficiary	0	0	0	(635)	(31)	(4)	0	670	0	0
Pensioner Death without Beneficiary	0	0	0	(1,833)	(67)	(14)	0	(526)	(2,440)	(2,440)
On/(Off) Pension Payroll	0	0	0	25	0	0	0	(1)	24	24
Net Change	463	532	4,476	2,150	(1)	(9)	2	143	2,285	7,756
Number at June 30, 2022	123,674	5,106	19,604	83,363	2,654	749	37	5,479	92,282	240,666

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, 2022 AND THE JUNE 30, 2021 ACTUARIAL VALUATIONS		
	June 30, 2022	June 30, 2021
Number		
Males	27,906	27,308
Females	95,768	95,903
Total	123,674	123,211
Annual Salary ¹		
Males	\$ 2,802,192,922	\$ 2,655,542,864
Females	9,022,930,996	8,813,910,122
Total	\$ 11,825,123,918	\$ 11,469,452,986
Average Salary ¹		
Males	\$ 100,415	\$ 97,244
Females	94,217	91,904
Total Average	\$ 95,615	\$ 93,088
Average Age		
Males	44.2	44.6
Females	44.3	44.6
Total Average	44.3	44.6
Average Past Service		
Males	12.2	12.6
Females	12.2	12.5
Total Average	12.2	12.5

¹Salaries 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

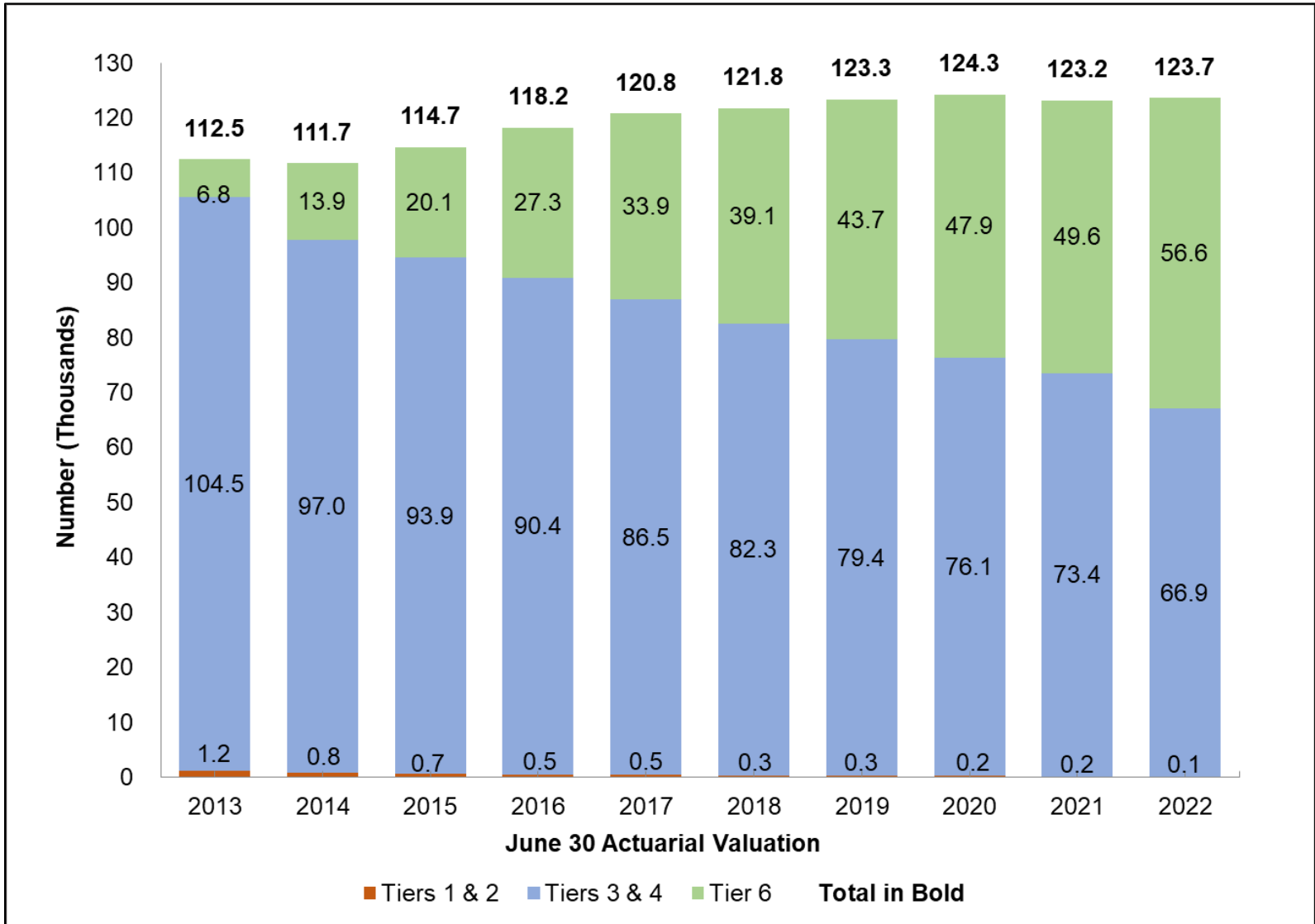


Table XII-5
Schedule of Active Member Salary Data

June 30 Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2013	112,481	\$ 8,128,378,071	\$ 72,264	1.4%
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%

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, 2022**

AGE \ SVC	Male Total									ALL YEARS
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	
<i>NUMBER:</i>										
UNDER 20	3	0	0	0	0	0	0	0	0	3
20 TO 24	289	4	0	0	0	0	0	0	0	293
25 TO 29	1,759	364	1	0	0	0	0	0	0	2,124
30 TO 34	1,863	1,946	285	6	0	0	0	0	0	4,100
35 TO 39	980	1,478	1,360	367	2	0	0	0	0	4,187
40 TO 44	640	798	984	1,620	274	1	0	0	0	4,317
45 TO 49	391	480	542	1,200	1,046	140	4	0	0	3,803
50 TO 54	300	374	429	760	921	768	138	5	0	3,695
55 TO 59	220	229	287	448	537	450	254	44	0	2,469
60 TO 64	116	149	211	348	327	241	130	77	9	1,608
65 TO 69	48	75	148	188	156	93	68	40	30	846
70 & UP	25	28	99	94	81	46	25	22	41	461
TOTAL	6,634	5,925	4,346	5,031	3,344	1,739	619	188	80	27,906

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	82	0	0	0	0	0	0	0	0	82
20 TO 24	14,388	132	0	0	0	0	0	0	0	14,519
25 TO 29	114,570	28,541	152	0	0	0	0	0	0	143,263
30 TO 34	127,509	176,130	30,384	774	0	0	0	0	0	334,797
35 TO 39	70,826	135,790	147,274	44,122	262	0	0	0	0	398,273
40 TO 44	46,769	73,731	102,526	197,134	36,154	187	0	0	0	456,501
45 TO 49	28,255	43,779	53,761	144,934	143,314	20,729	708	0	0	435,481
50 TO 54	21,851	32,428	39,083	88,405	122,524	110,551	19,838	780	0	435,459
55 TO 59	16,706	19,473	24,376	49,151	68,518	62,524	36,094	6,325	0	283,167
60 TO 64	7,985	12,510	15,812	36,294	39,555	31,389	18,296	10,631	1,374	173,845
65 TO 69	2,699	5,428	11,388	17,869	18,104	12,086	8,728	5,841	3,729	85,872
70 & UP	1,253	1,823	5,593	7,666	8,064	4,959	3,158	2,841	5,576	40,934
TOTAL ¹	452,891	529,766	430,348	586,349	436,494	242,426	86,822	26,418	10,679	2,802,193

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	27,173	0	0	0	0	0	0	0	0	27,173
20 TO 24	49,784	32,963	0	0	0	0	0	0	0	49,554
25 TO 29	65,133	78,410	151,900	0	0	0	0	0	0	67,450
30 TO 34	68,443	90,509	106,609	129,014	0	0	0	0	0	81,658
35 TO 39	72,271	91,874	108,290	120,223	130,791	0	0	0	0	95,121
40 TO 44	73,076	92,395	104,193	121,688	131,948	186,610	0	0	0	105,745
45 TO 49	72,263	91,207	99,191	120,778	137,011	148,068	177,094	0	0	114,510
50 TO 54	72,837	86,705	91,102	116,322	133,033	143,947	143,752	155,938	0	117,851
55 TO 59	75,938	85,037	84,933	109,712	127,593	138,943	142,103	143,743	0	114,689
60 TO 64	68,832	83,961	74,936	104,292	120,963	130,247	140,736	138,067	152,624	108,112
65 TO 69	56,239	72,370	76,944	95,047	116,054	129,954	128,356	146,025	124,305	101,504
70 & UP	50,105	65,120	56,490	81,557	99,561	107,804	126,302	129,154	136,007	88,793
TOTAL	68,268	89,412	99,022	116,547	130,531	139,405	140,262	140,521	133,488	100,415

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, 2022 (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	4	0	0	0	0	0	0	0	0	4
20 TO 24	799	3	0	0	0	0	0	0	0	802
25 TO 29	6,247	1,472	2	0	0	0	0	0	0	7,721
30 TO 34	5,431	7,214	1,032	2	0	0	0	0	0	13,679
35 TO 39	3,063	4,874	4,395	1,376	2	0	0	0	0	13,710
40 TO 44	2,195	2,799	3,167	5,237	1,161	5	0	0	0	14,564
45 TO 49	1,697	1,928	1,906	3,523	3,819	522	3	0	0	13,398
50 TO 54	1,283	1,594	1,574	2,371	3,215	2,287	458	7	0	12,789
55 TO 59	792	1,083	1,177	1,772	1,982	1,398	897	153	1	9,255
60 TO 64	387	582	760	1,287	1,626	861	423	210	21	6,157
65 TO 69	110	207	333	544	701	398	210	99	63	2,665
70 & UP	44	46	129	175	231	126	110	63	100	1,024
TOTAL	22,052	21,802	14,475	16,287	12,737	5,597	2,101	532	185	95,768

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	117	0	0	0	0	0	0	0	0	117
20 TO 24	43,707	117	0	0	0	0	0	0	0	43,824
25 TO 29	431,604	118,486	127	0	0	0	0	0	0	550,217
30 TO 34	381,822	651,965	107,181	210	0	0	0	0	0	1,141,178
35 TO 39	209,649	440,357	463,904	160,131	142	0	0	0	0	1,274,183
40 TO 44	144,876	241,929	317,987	610,798	144,651	560	0	0	0	1,460,802
45 TO 49	107,425	153,827	177,054	401,765	490,606	71,578	418	0	0	1,402,673
50 TO 54	78,376	118,854	132,596	249,095	397,215	308,180	60,716	986	0	1,346,019
55 TO 59	46,532	76,721	86,118	167,244	218,996	171,179	115,746	19,284	140	901,960
60 TO 64	22,604	39,270	51,302	115,894	164,788	93,855	49,759	27,363	2,518	567,354
65 TO 69	5,613	14,036	22,153	48,748	68,808	41,087	21,458	12,255	8,778	242,935
70 & UP	2,296	3,146	7,311	14,525	21,307	11,654	10,849	7,294	13,287	91,670
TOTAL ¹	1,474,621	1,858,709	1,365,733	1,768,411	1,506,513	698,093	258,946	67,181	24,723	9,022,931

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	29,152	0	0	0	0	0	0	0	0	29,152
20 TO 24	54,702	39,135	0	0	0	0	0	0	0	54,644
25 TO 29	69,090	80,493	63,522	0	0	0	0	0	0	71,262
30 TO 34	70,304	90,375	103,858	105,158	0	0	0	0	0	83,426
35 TO 39	68,446	90,348	105,553	116,374	70,954	0	0	0	0	92,938
40 TO 44	66,003	86,434	100,406	116,631	124,592	112,059	0	0	0	100,302
45 TO 49	63,303	79,786	92,893	114,041	128,464	137,122	139,402	0	0	104,693
50 TO 54	61,088	74,563	84,241	105,059	123,551	134,753	132,569	140,829	0	105,248
55 TO 59	58,753	70,841	73,167	94,381	110,492	122,446	129,037	126,039	140,461	97,457
60 TO 64	58,409	67,475	67,503	90,050	101,346	109,008	117,633	130,298	119,909	92,148
65 TO 69	51,025	67,806	66,526	89,611	98,157	103,233	102,179	123,783	139,328	91,158
70 & UP	52,189	68,389	56,678	82,998	92,238	92,492	98,630	115,774	132,873	89,521
TOTAL	66,870	85,254	94,351	108,578	118,278	124,726	123,249	126,279	133,640	94,217

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, 2022 (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	7	0	0	0	0	0	0	0	0	7
20 TO 24	1,088	7	0	0	0	0	0	0	0	1,095
25 TO 29	8,006	1,836	3	0	0	0	0	0	0	9,845
30 TO 34	7,294	9,160	1,317	8	0	0	0	0	0	17,779
35 TO 39	4,043	6,352	5,755	1,743	4	0	0	0	0	17,897
40 TO 44	2,835	3,597	4,151	6,857	1,435	6	0	0	0	18,881
45 TO 49	2,088	2,408	2,448	4,723	4,865	662	7	0	0	17,201
50 TO 54	1,583	1,968	2,003	3,131	4,136	3,055	596	12	0	16,484
55 TO 59	1,012	1,312	1,464	2,220	2,519	1,848	1,151	197	1	11,724
60 TO 64	503	731	971	1,635	1,953	1,102	553	287	30	7,765
65 TO 69	158	282	481	732	857	491	278	139	93	3,511
70 & UP	69	74	228	269	312	172	135	85	141	1,485
TOTAL	28,686	27,727	18,821	21,318	16,081	7,336	2,720	720	265	123,674

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	198	0	0	0	0	0	0	0	0	198
20 TO 24	58,094	249	0	0	0	0	0	0	0	58,344
25 TO 29	546,174	147,027	279	0	0	0	0	0	0	693,480
30 TO 34	509,331	828,095	137,565	984	0	0	0	0	0	1,475,976
35 TO 39	280,475	576,147	611,178	204,253	403	0	0	0	0	1,672,456
40 TO 44	191,645	315,660	420,513	807,932	180,805	747	0	0	0	1,917,302
45 TO 49	135,680	197,607	230,815	546,699	633,919	92,307	1,127	0	0	1,838,154
50 TO 54	100,227	151,282	171,679	337,500	519,739	418,732	80,554	1,765	0	1,781,477
55 TO 59	63,239	96,195	110,494	216,395	287,513	233,703	151,840	25,609	140	1,185,128
60 TO 64	30,589	51,781	67,114	152,188	204,343	125,245	68,055	37,994	3,892	741,199
65 TO 69	8,312	19,464	33,541	66,617	86,913	53,172	30,186	18,096	12,507	328,807
70 & UP	3,549	4,969	12,904	22,191	29,372	16,613	14,007	10,135	18,864	132,603
TOTAL ¹	1,927,512	2,388,475	1,796,081	2,354,760	1,943,007	940,519	345,768	93,598	35,403	11,825,124

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	28,304	0	0	0	0	0	0	0	0	28,304
20 TO 24	53,396	35,608	0	0	0	0	0	0	0	53,282
25 TO 29	68,221	80,080	92,981	0	0	0	0	0	0	70,440
30 TO 34	69,829	90,403	104,453	123,050	0	0	0	0	0	83,018
35 TO 39	69,373	90,703	106,200	117,184	100,872	0	0	0	0	93,449
40 TO 44	67,600	87,757	101,304	117,826	125,997	124,484	0	0	0	101,547
45 TO 49	64,981	82,063	94,287	115,753	130,302	139,437	160,940	0	0	106,863
50 TO 54	63,314	76,871	85,711	107,793	125,662	137,064	135,158	147,124	0	108,073
55 TO 59	62,489	73,319	75,474	97,475	114,138	126,463	131,920	129,993	140,461	101,086
60 TO 64	60,812	70,835	69,118	93,081	104,630	113,652	123,065	132,382	129,724	95,454
65 TO 69	52,609	69,020	69,732	91,007	101,415	108,294	108,582	130,184	134,482	93,651
70 & UP	51,434	67,152	56,596	82,494	94,139	96,587	103,754	119,237	133,784	89,295
TOTAL	67,193	86,143	95,430	110,459	120,826	128,206	127,121	129,998	133,594	95,615

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, 2022							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2021				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	29	4,085,345	140,874	79.5	47.4	36	4,776,831	132,690	78.4	46.9
1	F	45	5,917,987	131,511	77.0	51.1	74	9,540,147	128,921	75.8	48.4
		74	10,003,332	135,180	78.0	49.6	110	14,316,978	130,154	76.7	47.9
2	M	9	1,174,181	130,465	74.0	41.4	10	1,114,748	111,475	73.1	41.4
2	F	29	3,974,848	137,064	71.8	42.1	45	5,673,344	126,074	70.6	39.2
		38	5,149,029	135,501	72.3	42.0	55	6,788,092	123,420	71.0	39.6
4	M	15,158	1,795,922,923	118,480	49.9	18.5	16,383	1,826,880,514	111,511	49.5	17.9
4	F	51,790	5,655,390,475	109,199	49.9	18.5	57,021	5,918,778,089	103,800	49.6	17.9
		66,948	7,451,313,398	111,300	49.9	18.5	73,404	7,745,658,603	105,521	49.6	17.9
6	M	12,710	1,001,010,473	78,758	37.3	4.5	10,879	822,770,771	75,629	37.1	4.5
6	F	43,904	3,357,647,686	76,477	37.5	4.6	38,763	2,879,918,542	74,296	37.1	4.5
		56,614	4,358,658,159	76,989	37.5	4.6	49,642	3,702,689,313	74,588	37.1	4.5
ALL TIERS		123,674	11,825,123,918	95,615	44.3	12.2	123,211	11,469,452,986	93,088	44.6	12.5

MEMBERS ALSO PRESENT AS OF JUNE 30, 2022							MEMBERS ALSO PRESENT AS OF JUNE 30, 2021				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	29	4,085,345	140,874	79.5	47.4	29	3,951,536	136,260	78.5	46.4
1	F	45	5,917,987	131,511	77.0	51.1	45	5,665,488	125,900	76.0	50.1
		74	10,003,332	135,180	78.0	49.6	74	9,617,024	129,960	77.0	48.7
2	M	9	1,174,181	130,465	74.0	41.4	9	1,104,748	122,750	73.0	40.4
2	F	29	3,974,848	137,064	71.8	42.1	29	3,837,405	132,324	70.8	41.3
		38	5,149,029	135,501	72.3	42.0	38	4,942,153	130,057	71.3	41.1
4	M	14,964	1,777,818,022	118,806	49.9	18.6	14,964	1,670,109,662	111,609	48.9	17.6
4	F	50,906	5,572,659,651	109,470	50.0	18.7	50,906	5,307,792,687	104,267	49.0	17.6
		65,870	7,350,477,673	111,591	50.0	18.7	65,870	6,977,902,349	105,934	49.0	17.6
6	M	9,813	829,110,789	84,491	38.2	5.5	9,813	749,688,329	76,397	37.2	4.5
6	F	34,272	2,774,471,249	80,954	38.2	5.6	34,272	2,557,251,694	74,616	37.2	4.6
		44,085	3,603,582,038	81,742	38.2	5.6	44,085	3,306,940,023	75,013	37.2	4.6
ALL TIERS		110,067	10,969,212,072	99,659	45.3	13.4	110,067	10,299,401,549	93,574	44.3	12.4

ADDITIONS DURING THE YEAR ¹							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR ¹				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	0	0	0	0.0	0.0	7	825,295	117,899	78.1	48.9
1	F	0	0	0	0.0	0.0	29	3,874,659	133,609	75.6	45.7
		0	0	0	0.0	0.0	36	4,699,954	130,554	76.1	46.3
2	M	0	0	0	0.0	0.0	1	10,000	10,000	74.0	50.0
2	F	0	0	0	0.0	0.0	16	1,835,939	114,746	70.1	35.4
		0	0	0	0.0	0.0	17	1,845,939	108,585	70.4	36.3
4	M	194	18,104,901	93,324	46.9	11.5	1,419	156,770,852	110,480	55.6	21.1
4	F	884	82,730,824	93,587	45.0	10.8	6,115	610,985,402	99,916	54.4	20.5
		1,078	100,835,725	93,540	45.4	11.0	7,534	767,756,254	101,906	54.7	20.6
6	M	2,897	171,899,684	59,337	34.3	1.0	1,066	73,082,442	68,558	36.5	4.0
6	F	9,632	583,176,437	60,546	35.2	1.0	4,491	322,666,848	71,847	36.1	4.4
		12,529	755,076,121	60,266	35.0	1.0	5,557	395,749,290	71,216	36.2	4.3
ALL TIERS		13,607	855,911,846	62,902	35.8	1.8	13,144	1,170,051,437	89,018	46.9	13.8

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, 2021 and are no longer members on June 30, 2022. 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, 2022

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	679	43,493,123	64,055	2,213	130,462,937	58,953	2,892	173,956,060	60,151
60 TO 64	1,700	95,810,093	56,359	5,528	283,541,655	51,292	7,228	379,351,748	52,484
65 TO 69	2,733	139,066,680	50,884	10,342	478,173,327	46,236	13,075	617,240,007	47,208
70 TO 74	4,534	263,235,851	58,058	14,497	748,419,033	51,626	19,031	1,011,654,884	53,158
75 TO 79	6,381	426,477,966	66,836	12,708	681,790,699	53,651	19,089	1,108,268,665	58,058
80 TO 84	3,206	200,952,194	62,680	7,821	369,243,893	47,212	11,027	570,196,087	51,709
85 TO 89	1,751	107,510,850	61,400	4,398	186,295,177	42,359	6,149	293,806,027	47,781
90 & UP	1,170	68,749,104	58,760	3,702	152,053,840	41,073	4,872	220,802,944	45,321
TOTAL	22,154	1,345,295,861	60,725	61,209	3,029,980,561	49,502	83,363	4,375,276,422	52,485
<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	1	27,658	27,658	2	47,664	23,832	3	75,322	25,107
40 TO 44	7	178,779	25,540	26	799,778	30,761	33	978,557	29,653
45 TO 49	17	461,821	27,166	70	1,800,685	25,724	87	2,262,506	26,006
50 TO 54	36	1,184,820	32,912	152	4,321,645	28,432	188	5,506,465	29,290
55 TO 59	45	1,321,785	29,373	258	7,005,109	27,152	303	8,326,894	27,481
60 TO 64	79	2,166,189	27,420	365	8,874,171	24,313	444	11,040,360	24,866
65 TO 69	93	2,299,597	24,727	374	8,641,466	23,106	467	10,941,063	23,428
70 TO 74	107	2,928,015	27,365	407	9,645,291	23,699	514	12,573,306	24,462
75 TO 79	98	2,794,638	28,517	253	5,825,308	23,025	351	8,619,946	24,558
80 TO 84	32	801,288	25,040	133	2,490,882	18,728	165	3,292,170	19,953
85 TO 89	8	201,357	25,170	57	1,111,713	19,504	65	1,313,070	20,201
90 & UP	6	130,657	21,776	28	587,435	20,980	34	718,092	21,120
TOTAL	529	14,496,604	27,404	2,125	51,151,147	24,071	2,654	65,647,751	24,735
<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	2	104,633	52,317	3	116,176	38,725	5	220,809	44,162
40 TO 44	1	60,161	60,161	8	417,196	52,150	9	477,357	53,040
45 TO 49	9	432,111	48,012	11	514,911	46,810	20	947,022	47,351
50 TO 54	9	553,969	61,552	22	962,589	43,754	31	1,516,558	48,921
55 TO 59	5	278,902	55,780	51	2,241,075	43,943	56	2,519,977	45,000
60 TO 64	13	642,118	49,394	78	3,572,242	45,798	91	4,214,360	46,312
65 TO 69	23	1,279,189	55,617	98	4,041,670	41,242	121	5,320,859	43,974
70 TO 74	37	1,733,487	46,851	118	5,150,103	43,645	155	6,883,590	44,410
75 TO 79	55	2,765,581	50,283	98	3,968,540	40,495	153	6,734,121	44,014
80 TO 84	15	778,617	51,908	38	1,822,879	47,971	53	2,601,496	49,085
85 TO 89	10	476,112	47,611	28	887,995	31,714	38	1,364,107	35,898
90 & UP	4	159,655	39,914	13	568,628	43,741	17	728,283	42,840
TOTAL	183	9,264,535	50,626	566	24,264,004	42,869	749	33,528,539	44,764

Table XII-8
Distribution of Pension Benefits as of June 30, 2022 (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	3	94,326	31,442	4	116,927	29,232
30 TO 34	1	21,346	21,346	0	0	0	1	21,346	21,346
35 TO 39	0	0	0	1	48,176	48,176	1	48,176	48,176
40 TO 44	1	58,442	58,442	1	60,031	60,031	2	118,473	59,237
45 TO 49	0	0	0	1	48,435	48,435	1	48,435	48,435
50 TO 54	3	167,097	55,699	3	181,630	60,543	6	348,727	58,121
55 TO 59	1	53,607	53,607	4	239,946	59,987	5	293,553	58,711
60 TO 64	6	260,250	43,375	8	345,320	43,165	14	605,570	43,255
65 TO 69	1	54,416	54,416	1	26,564	26,564	2	80,980	40,490
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	0	0	0	0	0	0
85 TO 89	0	0	0	0	0	0	0	0	0
90 & UP	0	0	0	0	0	0	0	0	0
TOTAL	14	637,759	45,554	23	1,083,428	47,106	37	1,721,187	46,519
<i>OTHER BENEFICIARIES:</i>									
UNDER 30	7	181,226	25,889	13	281,397	21,646	20	462,623	23,131
30 TO 34	8	251,932	31,492	12	267,916	22,326	20	519,848	25,992
35 TO 39	13	205,489	15,807	15	330,814	22,054	28	536,303	19,154
40 TO 44	24	665,304	27,721	24	667,850	27,827	48	1,333,154	27,774
45 TO 49	23	704,608	30,635	32	808,944	25,280	55	1,513,552	27,519
50 TO 54	38	843,867	22,207	43	981,201	22,819	81	1,825,068	22,532
55 TO 59	51	882,727	17,308	77	1,495,702	19,425	128	2,378,429	18,581
60 TO 64	78	2,107,879	27,024	174	4,645,279	26,697	252	6,753,158	26,798
65 TO 69	113	3,664,484	32,429	223	8,163,296	36,607	336	11,827,780	35,202
70 TO 74	219	7,287,227	33,275	500	21,993,087	43,986	719	29,280,314	40,724
75 TO 79	300	10,820,855	36,070	692	32,092,653	46,377	992	42,913,508	43,260
80 TO 84	297	10,152,841	34,185	727	32,516,243	44,727	1,024	42,669,084	41,669
85 TO 89	208	6,204,418	29,829	570	25,031,750	43,915	778	31,236,168	40,149
90 & UP	300	8,669,559	28,899	698	26,687,698	38,235	998	35,357,257	35,428
TOTAL	1,679	52,642,416	31,353	3,800	155,963,830	41,043	5,479	208,606,246	38,074
<i>ALL PENSIONERS AND BENEFICIARIES:</i>									
UNDER 30	8	203,827	25,478	16	375,723	23,483	24	579,550	24,148
30 TO 34	9	273,278	30,364	12	267,916	22,326	21	541,194	25,771
35 TO 39	16	337,780	21,111	21	542,830	25,849	37	880,610	23,800
40 TO 44	33	962,686	29,172	59	1,944,855	32,964	92	2,907,541	31,604
45 TO 49	49	1,598,540	32,623	114	3,172,975	27,833	163	4,771,515	29,273
50 TO 54	86	2,749,753	31,974	220	6,447,065	29,305	306	9,196,818	30,055
55 TO 59	781	46,030,144	58,937	2,603	141,444,769	54,339	3,384	187,474,913	55,400
60 TO 64	1,876	100,986,529	53,831	6,153	300,978,667	48,916	8,029	401,965,196	50,064
65 TO 69	2,963	146,364,366	49,397	11,038	499,046,323	45,212	14,001	645,410,689	46,097
70 TO 74	4,897	275,184,580	56,195	15,523	785,246,514	50,586	20,420	1,060,431,094	51,931
75 TO 79	6,834	442,859,040	64,802	13,751	723,677,200	52,627	20,585	1,166,536,240	56,669
80 TO 84	3,550	212,684,940	59,911	8,719	406,073,897	46,573	12,269	618,758,837	50,433
85 TO 89	1,977	114,392,737	57,862	5,053	213,326,635	42,218	7,030	327,719,372	46,617
90 & UP	1,480	77,708,975	52,506	4,441	179,897,601	40,508	5,921	257,606,576	43,507
TOTAL	24,559	1,422,337,175	57,915	67,723	3,262,442,970	48,173	92,282	4,684,780,145	50,766

**Graph XII-9
Pensioner Average Benefits**

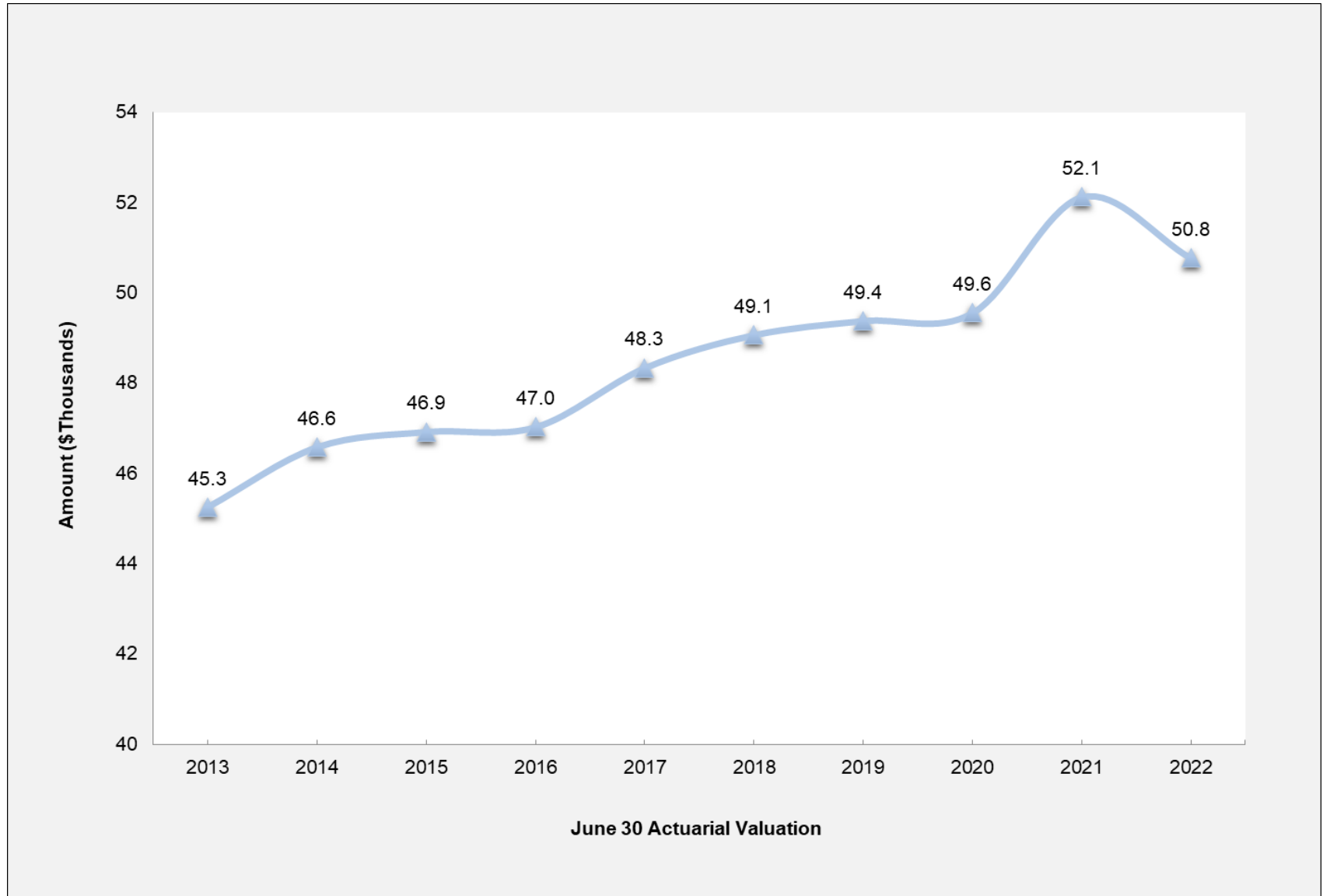


Table XII-10
Reconciliation of Pensioner and Beneficiary Data

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		
2013	4,078	\$ 248,087,233	2,440	\$ 77,107,240	78,177	\$ 3,537,880,567	5.1%	\$ 45,255
2014	4,356	275,947,759	2,114	67,585,789	80,419	3,746,242,537	5.9%	46,584
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

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
FS	Final Salary
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
WTC	World Trade Center