



June 30, 2023 Actuarial Valuation Report

for the

New York City
Board of Education
Retirement System

prepared by the
New York City
Office of the Actuary

CONTRIBUTIONS REQUIRED FOR FISCAL YEAR 2025



OFFICE OF THE ACTUARY

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MAREK TYSZKIEWICZ
CHIEF ACTUARY

December 4, 2025

Board of Trustees
New York City Board of Education Retirement System
55 Water Street – 50th Floor
New York, NY 10041

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

Dear Trustees:

This is the June 30, 2023 actuarial valuation report of the New York City Board of Education Retirement System (BERS) Qualified Pension Plan (the Plan).

Purpose

The purpose of this actuarial valuation report is to:

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

Required Contribution

The actuarially required contribution for Fiscal Year 2025 is \$256,711,726.

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 BERS and the Office of the Comptroller.

The Office of the Actuary has reviewed this data for reasonableness, consistent with Actuarial Standards of Practice, but has not audited it. The accuracy of these results

depends on the accuracy of this data. If the data provided is materially inaccurate, these results require revision.

Benefit Changes

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

This valuation reflects:

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

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

Actuarial Assumptions and Methods

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

Items Excluded or Not Valued

Not included in this Report are:

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

Risks and Uncertainty

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

- Economic or demographic experience being different than what was assumed;
- Changes in actuarial assumption and methods; and

- Changes in statute and plan provisions.

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

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

Actuarial Qualifications

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

Actuaries' Statement of Opinion

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

Best Regards,



Marek Tyszkiewicz, ASA, MAAA
Chief Actuary



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

MT/eh

cc: Crag Lu, ASA - New York City Office of the Actuary
Sanford Rich - New York City Board of Education Retirement System

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SECTION I – SUMMARY OF VALUATION RESULTS

Funded Status

The funded status is the ratio of Plan assets to liabilities. The Plan's funded status based on the Market Value of Assets increased from 87.9% in the prior valuation to 90.1% as of June 30, 2023. The Plan's investment return for this period, based on the Market Value of Assets, was 8.1%.

Required Contribution Amount

The actuarially required contribution for Fiscal Year 2025 is \$256,711,726 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
- DOE Gulino Charges: Cost for member contribution receivable amounts for cases processed through June 30, 2023 due to *Gulino vs. Board of Education*, 96 Civ. 8414 (KMW); and
- Interest on Late Payments: Interest at 7% for any late employer contributions.

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

Table I-1
Valuation Results

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

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability	\$ 6,827,982,298	\$ 6,682,653,014
2. Actuarial Value of Assets (AVA)	6,471,991,000	6,303,743,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 355,991,298	\$ 378,910,014
4. Market Value of Assets (MVA)	6,149,484,000	5,876,084,000
5. Unfunded Accrued Liability (MVA Basis) (1. - 4.)	678,498,298	806,569,014
6. Funded Ratio (MVA Basis) (4. / 1.)	90.1%	87.9%
Contribution		
1. Normal Cost	\$ 164,036,696	\$ 163,082,524
2. Unfunded Accrued Liability	47,841,666	43,918,887
3. Administrative Expenses	42,037,293	40,719,512
4. DOE Gulino Charges	2,796,071	0
5. Actuarial Required Contribution (1. + 2. + 3. + 4.)	\$ 256,711,726	\$ 247,720,923
Participant Data		
1. Active Members		
a. Number	24,619	25,639
b. Annual Salary ¹	\$ 1,468,537,839	\$ 1,467,607,056
c. Average Salary	\$ 59,651	\$ 57,241
d. Average Age	51.39	51.25
e. Average Service	9.66	9.61
2. Terminated Nonvested Members	9,786	9,245
3. Deferred Vested Members	2,859	2,410
4. Retirees and Beneficiaries		
a. Number	21,216	20,481
b. Total Annual Benefits	\$ 341,569,638	\$ 318,685,212
c. Average Annual Benefit	\$ 16,100	\$ 15,560
d. Average Age	74.02	73.99

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 BOARD OF EDUCATION RETIREMENT SYSTEM		
ACTUARIAL LIABILITIES BY STATUS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Accrued Liability		
1. Active Members	\$ 2,780,204,397	\$ 2,734,068,312
2. Terminated Nonvested Members	42,714,923	39,149,076
3. Deferred Vested Members	180,602,840	148,891,302
4. Retirees and Beneficiaries	<u>3,470,812,425</u>	<u>3,286,048,841</u>
5. Accrued Liability (1. to 4.)	\$ 6,474,334,585	\$ 6,208,157,531
6. Due To/(From) TDA ¹	<u>353,647,713</u>	<u>474,495,483</u>
7. Total Accrued Liability (AL) (5. + 6.)	\$ 6,827,982,298	\$ 6,682,653,014
Present Value of Benefits		
1. Active Members	\$ 4,520,836,066	\$ 4,445,567,983
2. Terminated Nonvested Members	42,714,923	39,149,076
3. Deferred Vested Members	180,602,840	148,891,302
4. Retirees and Beneficiaries	<u>3,470,812,425</u>	<u>3,286,048,841</u>
5. Present Value of Benefits (1. to 4.)	\$ 8,214,966,254	\$ 7,919,657,202
6. Due To/(From) TDA ¹	<u>353,647,713</u>	<u>474,495,483</u>
7. Total Present Value of Benefits (5. + 6.)	\$ 8,568,613,967	\$ 8,394,152,685

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

Graph I-3
Historical Funded Status

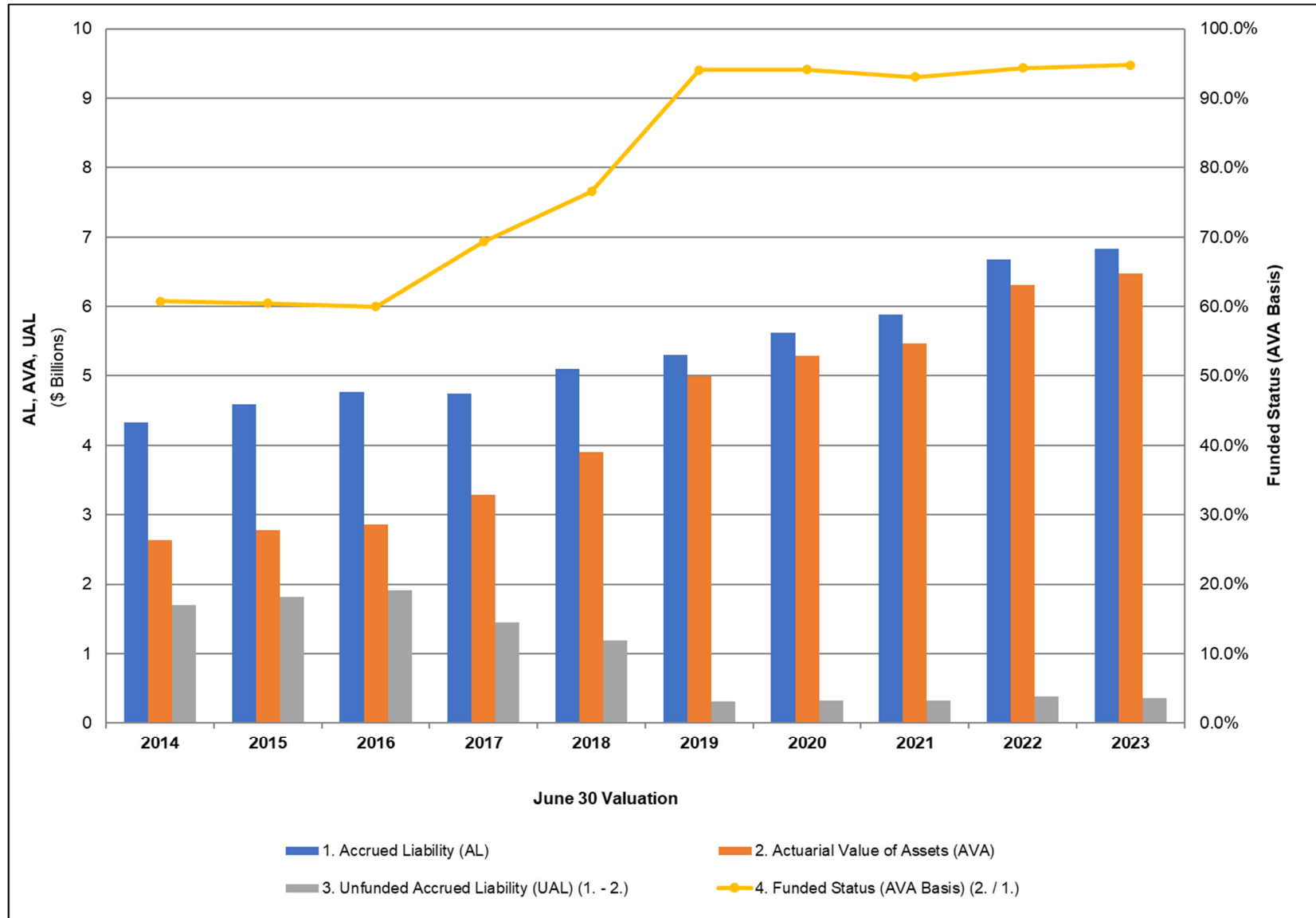


Table I-4
TDA Balances and Effect on the QPP

BERS' Tax-Deferred Annuity (TDA) Program was established and is administered pursuant to Internal Revenue Code (IRC) Section 403(b) and Administrative Code of the City of New York (ACCNYS) section 13-582, and became effective February 1, 1970. The TDA Program is a voluntary defined-contribution savings option available to BERS 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 BERS Pension Fund for investment purposes only. Differences between actual earnings and the TDA guaranteed Statutory Rates result in investment gains and losses for the QPP, which are reflected in the Actuarial Value of Assets. Annuitization of TDA balances result in QPP actuarial gains and losses as well. The TDA impact on QPP accrued liabilities as of June 30, 2023 is shown below, where the Unfunded TDA Amount is held as an additional QPP liability.

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM SUMMARY OF TDA BALANCES AND EFFECT ON THE QPP AS OF JUNE 30, 2023			
	TDA Liabilities	TDA Assets	Unfunded TDA Amount
UFT			
Fixed Balances	\$ 665,978,036	\$ 665,978,036	\$ 0
Non-UFT			
Fixed Balances	\$ 2,382,748,906	\$ 1,944,039,797	\$ 438,709,109
Annuitized Members	\$ 508,056,758	\$ 593,118,154	\$ (85,061,396)
Other	\$ (64,469,727)	\$ (64,469,727)	\$ 0
TOTAL	\$ 3,492,313,973	\$ 3,138,666,260	\$ 353,647,713

The QPP Normal Cost has been increased to \$ 25,059,053 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 Board of Education Retirement System of the City of New York Annual Comprehensive Financial Report includes more detailed TDA asset information.

SECTION II – MARKET AND ACTUARIAL VALUES OF ASSETS

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

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

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

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

Table II-1
Statement of Plan Net Assets

(\$ Thousands)		
	June 30, 2023	June 30, 2022
ASSETS		
Cash	\$ 2,864	\$ 7,556
Receivables		
Investment Securities Sold	\$ 91,786	\$ 138,290
Member Loans	50,845	48,461
Accrued Interest and Dividends	26,603	25,062
Other	421	417
Total Receivables	\$ 169,655	\$ 212,230
INVESTMENTS AT FAIR VALUE	\$ 9,084,690	\$ 8,533,039
Other Assets	199,888	319,776
TOTAL ASSETS	\$ 9,457,097	\$ 9,072,601
LIABILITIES		
Accounts Payable	\$ 65,414	\$ 63,581
Payable for Investment Securities Purchased	156,536	204,459
Accrued Benefits Payable	13,604	12,621
TDA Program's interest in the fixed return fund	2,552,317	2,374,096
Security Lending	519,742	541,760
TOTAL LIABILITIES	\$ 3,307,613	\$ 3,196,517
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 6,149,484	\$ 5,876,084

Table II-2
Statement of Changes in Plan Net Assets

(\$ Thousands)		
	June 30, 2023	June 30, 2022
ADDITIONS		
Contributions		
Member Contributions	\$ 49,810	\$ 49,591
Employer Contributions	233,546	262,404
Total Contributions	\$ 283,356	\$ 311,995
Investment Income (Loss)		
Interest Income	\$ 124,400	\$ 130,765
Dividend Income	100,229	101,584
Net Appreciation (Depreciation) in Fair Value	516,847	(976,018)
Total Investment Income (Loss)	\$ 741,476	\$ (743,669)
Less Investment Expenses	67,131	61,687
Net Income (Loss)	\$ 674,345	\$ (805,356)
Securities Lending Transactions		
Securities Lending Income	\$ 1,939	\$ 1,874
Securities Lending Fees	(192)	(182)
Net Securities Lending Income (Loss)	\$ 1,747	\$ 1,692
Net Investment Income (Loss)	\$ 676,092	\$ (803,664)
Other		
Payments to Other Retirement Systems &	\$ (88,699)	\$ (124,188)
TOTAL ADDITIONS	\$ 870,749	\$ (615,857)
DEDUCTIONS		
Benefit Payments and Withdrawals	\$ 359,271	\$ 325,679
Administrative Expenses	36,717	35,566
TDA Program's Interest Income in the Fixed Return Fund	\$ 201,361	\$ 191,054
TOTAL DEDUCTIONS	\$ 597,349	\$ 552,299
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ 273,400	\$ (1,168,156)
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	\$ 5,876,084	\$ 7,044,240
End of Year	\$ 6,149,484	\$ 5,876,084

Table II-3
Development of Actuarial Value of Assets

(\$ Thousands)		
Valuation Date	June 30, 2023	June 30, 2022
1. Market Value of Fixed Fund Assets		
a. Beginning of Year (BOY)	\$ 5,818,131	\$ 6,970,173
b. End of Year (EOY)	\$ 6,083,230	\$ 5,818,131
2. Contributions		
a. Employee	\$ 49,810	\$ 49,591
b. Employer	<u>233,546</u>	<u>262,404</u>
c. Total Contributions	\$ 283,356	\$ 311,995
3. Net Investment Income		
a. Investment Income	\$ 531,335	\$ (921,224)
b. Investment Expenses	<u>(66,949)</u>	<u>(61,541)</u>
c. Total Net Investment Income	\$ 464,386	\$ (982,765)
4. Benefit Payments and Other Cash Flow	\$ (482,643)	\$ (481,272)
5. Net Cash Flow (2.c. + 4.)	\$ (199,287)	\$ (169,277)
6. Expected Investment Return	\$ 400,412	\$ 482,088
7. Unexpected Investment Return (UIR) (3.c. - 6.)	\$ 63,974	\$ (1,464,853)
8. Preliminary Fixed AVA		
a. Preliminary Fixed AVA @ BOY	\$ 6,245,790	\$ 5,986,952
b. Net Cash Flow (5.)	(199,287)	(169,277)
c. Expected Investment Return (6.)	400,412	482,088
d. Phase in of UIR		
20% of UIR for prior year	\$ 12,795	\$ (292,971)
20% of UIR for second prior year	(292,971)	266,228
20% of UIR for third prior year	266,228	(27,230)
20% of UIR for fourth prior year	\$ (27,230)	N/A
20% of UIR for fifth prior year	N/A	N/A
Total	\$ (41,178)	\$ (53,973)
e. Lower Corridor Bound (80% of 1.b.)	4,866,584	4,654,505
f. Upper Corridor Bound (120% of 1.b.)	7,299,876	6,981,757
g. Preliminary Fixed AVA (a. through d., bounded by e. and f.)	6,405,737	6,245,790
9. Market Value of Variable Fund Assets	\$ 66,254	\$ 57,953
10. AVA (8.g. + 9.)	\$ 6,471,991	\$ 6,303,743

Graph II-4
Historical Market and Actuarial Value of Assets

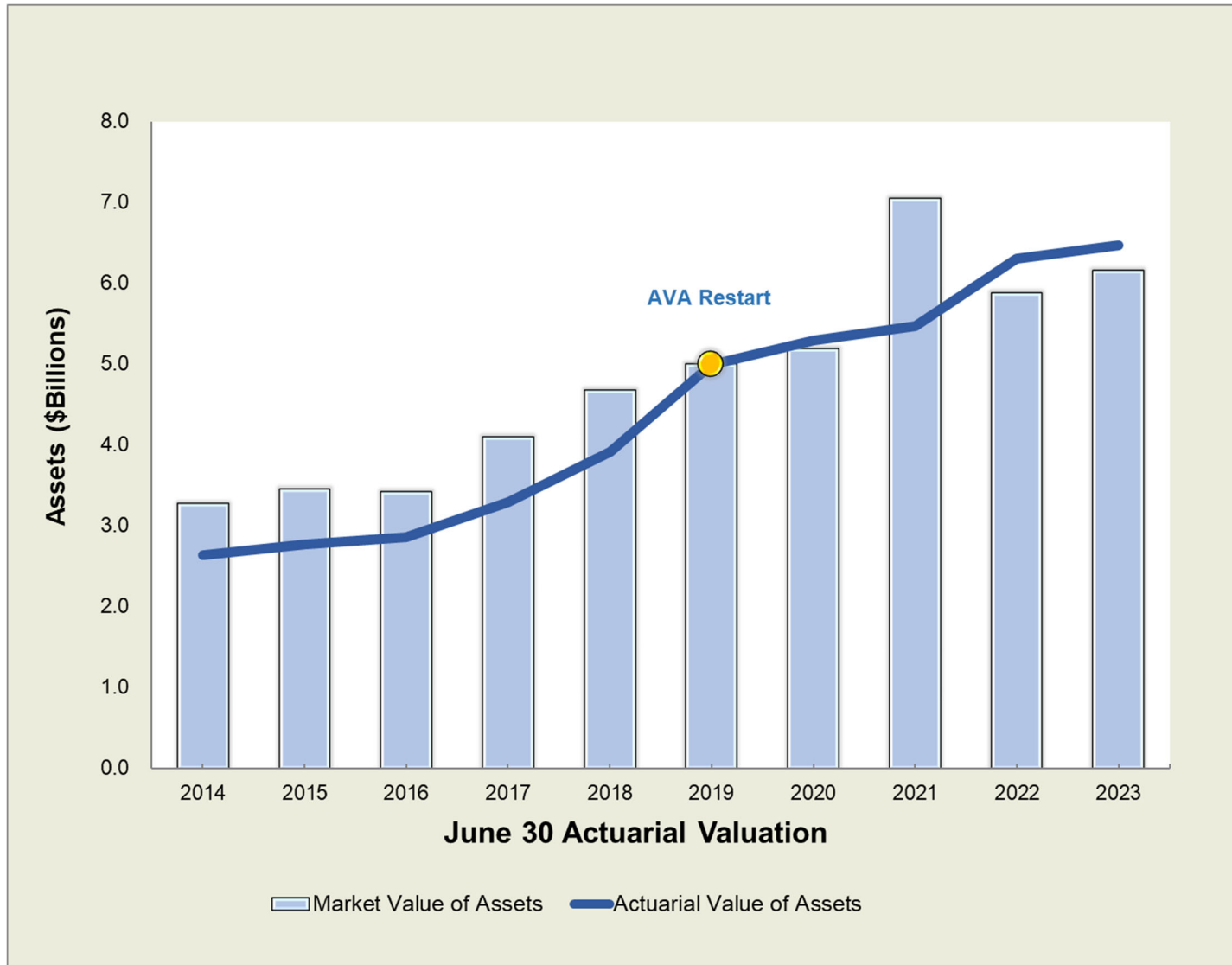


Table II-5
Future Recognition of Unexpected Investment Return

	(\$ Thousands)				
	June 30 Valuation				
	2024	2025	2026	2027	Total ¹
2020 Deferred Investment Gain/(Loss) Recognition	\$ (27,230)				\$ (27,230)
2021 Deferred Investment Gain/(Loss) Recognition	\$ 266,228	\$ 266,228			\$ 532,456
2022 Deferred Investment Gain/(Loss) Recognition	\$ (292,971)	\$ (292,971)	\$ (292,971)		\$ (878,913)
2023 Deferred Investment Gain/(Loss) Recognition	\$ 12,795	\$ 12,795	\$ 12,795	\$ 12,795	\$ 51,180
Total Deferred Investment Gain/(Loss) Recognition ¹	\$ (41,178)	\$ (13,948)	\$ (280,176)	\$ 12,795	\$ (322,507)

¹ Total may not add due to rounding.

	June 30, 2023
Actuarial Value of Assets	\$ 6,471,991
Deferred Investment Gain/(Loss) Future Recognition	\$ (322,507)
Market Value of Assets	\$ 6,149,484

SECTION III – CONTRIBUTION DEVELOPMENT AND HISTORY

Table III-1
Actuarial Required Contributions

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

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR ACTUARIAL REQUIRED CONTRIBUTIONS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Normal Cost	\$ 164,036,696	\$ 163,082,524
Unfunded Accrued Liability Amortization ¹	\$ 47,841,666	\$ 43,918,887
Administrative Expenses	42,037,293	40,719,512
DOE Gulino Charges	<u>2,796,071</u>	<u>0</u>
Total Contribution to the New York City Board of Education Retirement System	\$ 256,711,726	\$ 247,720,923

¹ See Table III-2 for additional details.

Table III-2
Schedule of Unfunded Accrued Liability Bases

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

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

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

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

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

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

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM SCHEDULE OF UNFUNDED ACCRUED LIABILITY BASES				
Amortization Base	Date Established	Original \$ Amount	Amortization Years	Amortization \$ Payment
Initial UAL	6/30/2010	1,312,067,636	22	144,765,642
(Gain)/Loss	6/30/2011	(182,268,307)	15	(21,558,572)
(Gain)/Loss	6/30/2012	36,911,124	15	4,365,823
(Gain)/Loss	6/30/2013	325,722,811	15	38,526,274
(Gain)/Loss	6/30/2014	84,146,947	15	9,952,844
Assumption Change ¹	6/30/2014	165,544,370	20	16,568,028
Method Change ²	6/30/2014	(275,445,000)	20	(27,567,113)
(Gain)/Loss	6/30/2015	128,325,391	15	15,178,241
(Gain)/Loss	6/30/2016	108,322,889	15	12,812,358
(Gain)/Loss	6/30/2017	(333,814,462)	15	(39,483,349)
Assumption Change ³	6/30/2017	(222,122,082)	20	(22,230,444)
Method Change ³	6/30/2017	109,985,516	20	11,007,581
(Gain)/Loss	6/30/2018	(66,597,775)	15	(7,877,140)
Method Change ⁴	6/30/2018	(112,583,000)	20	(11,267,543)
(Gain)/Loss	6/30/2019	(326,361,725)	15	(38,601,844)
Assumption Change ⁵	6/30/2019	(22,538,024)	20	(2,255,653)
Method Change ⁵	6/30/2019	(486,896,000)	20	(48,729,573)
(Gain)/Loss	6/30/2020	105,240,334	15	12,447,756
Method Change ⁶	6/30/2020	356,463,914	20	35,675,656
Plan Change ⁷	6/30/2020	18,363,811	7	3,985,213
(Gain)/Loss	6/30/2021	(351,811,429)	15	(41,612,018)
Plan Change ⁸	6/30/2021	17,400,840	13	2,266,182
(Gain)/Loss	6/30/2022	14,939,322	15	1,767,014
(Gain)/Loss	6/30/2023	(21,005,398)	15	(2,484,505)
Plan Change (Deferred Vested) ⁹	6/30/2023	24,436	2	27,046
Plan Change ⁹	6/30/2023	17,482,427	14	2,163,762
				47,841,666

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

² AVA constrained to a corridor of 80% to 120% of the market value.

³ 2019 A&M.

⁴ Change in method of characterizing interest credited on TDA Fixed Fund account balances.

⁵ Revised 2021 A&M.

⁶ TDA guaranteed interest credits reflected as a liability of the QPP.

⁷ Older Workers Benefit Protection Act (OWBPA).

⁸ Chapter 56 of the Laws of 2022

⁹ Chapter 56 of the Laws of 2024 and Chapter 55 of the Laws of 2024

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

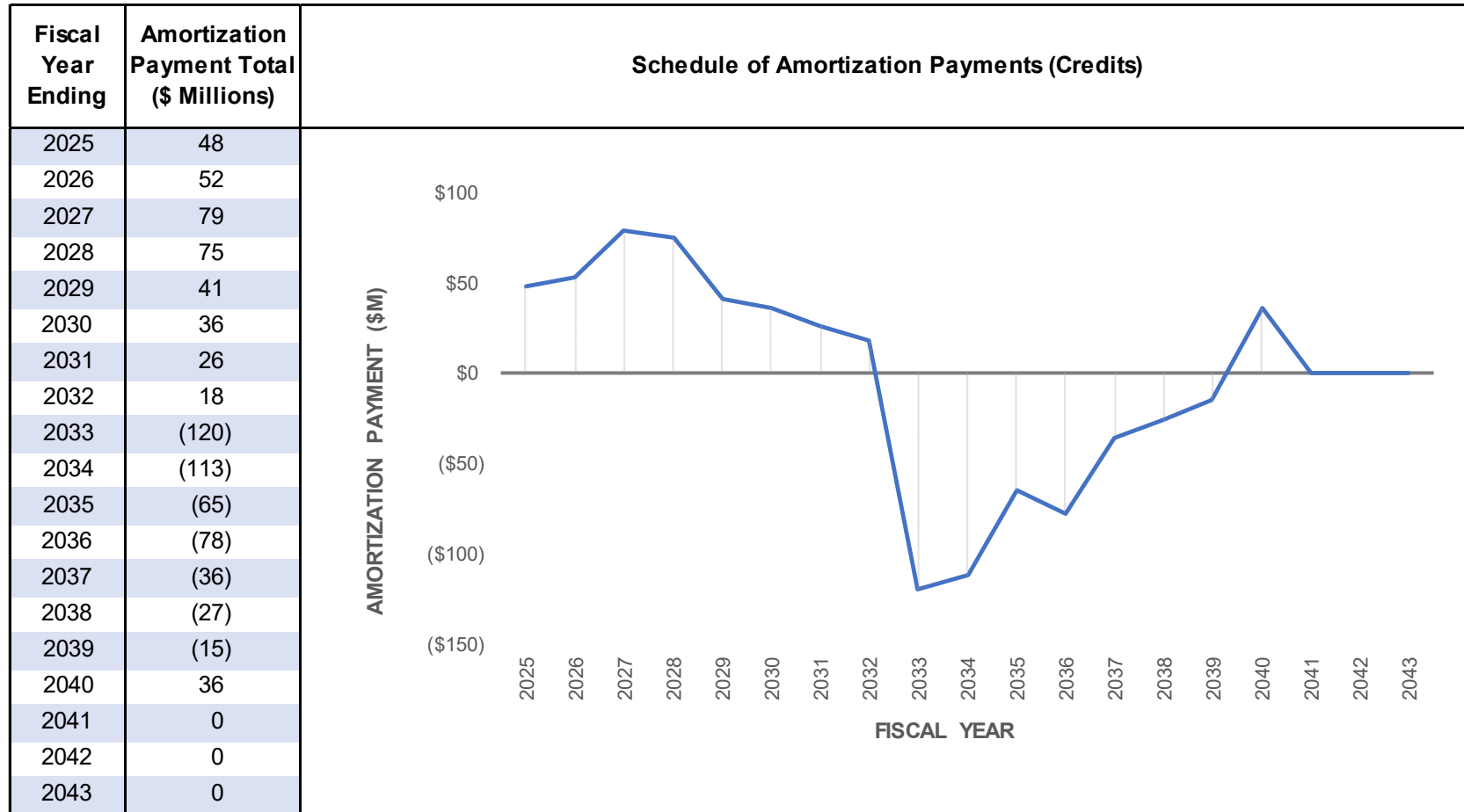


Table III-4
Reconciliation of Outstanding UAL Bases

Cost Component	Date Established	Original Amount	Amort Years	Outstanding Balance 6/30/2023	FY 2024 Payment on 12/31/2023	Outstanding Balance 6/30/2024	FY 2025 Payment on 12/31/2024	Additional Payments
Initial UAL	06/30/10	\$ 1,312,067,636	22	\$ 1,055,096,075	\$ 140,549,166	\$ 983,567,611	\$ 144,765,642	7
(Gain)/Loss	06/30/11	(182,268,307)	15	(58,523,192)	(21,558,572)	(40,319,457)	(21,558,572)	1
(Gain)/Loss	06/30/12	36,911,124	15	15,296,788	4,365,823	11,851,522	4,365,823	2
(Gain)/Loss	06/30/13	325,722,811	15	163,400,608	38,526,274	134,986,762	38,526,274	3
(Gain)/Loss	06/30/14	84,146,947	15	49,072,964	9,952,844	42,212,768	9,952,844	4
Assumption Change	06/30/14	165,544,370	20	128,513,037	16,568,028	120,370,848	16,568,028	9
Method Change	06/30/14	(275,445,000)	20	(213,829,525)	(27,567,113)	(200,281,948)	(27,567,113)	9
(Gain)/Loss	06/30/15	128,325,391	15	84,614,506	15,178,241	74,837,027	15,178,241	5
(Gain)/Loss	06/30/16	108,322,889	15	79,138,852	12,812,358	71,425,364	12,812,358	6
(Gain)/Loss	06/30/17	(333,814,462)	15	(266,094,423)	(39,483,349)	(243,879,140)	(39,483,349)	7
Assumption Change	06/30/17	(222,122,082)	20	(201,105,095)	(22,230,444)	(192,187,101)	(22,230,444)	12
Method Change	06/30/17	109,985,516	20	99,578,788	11,007,581	95,162,973	11,007,581	12
(Gain)/Loss	06/30/18	(66,597,775)	15	(57,229,385)	(7,877,140)	(53,087,265)	(7,877,140)	8
Method Change	06/30/18	(112,583,000)	20	(106,154,894)	(11,267,543)	(101,930,499)	(11,267,543)	13
(Gain)/Loss	06/30/19	(326,361,725)	15	(299,422,504)	(38,601,844)	(280,452,020)	(38,601,844)	9
Assumption Change	06/30/19	(22,538,024)	20	(22,041,540)	(2,255,653)	(21,251,181)	(2,255,653)	14
Method Change	06/30/19	(486,896,000)	20	(476,170,243)	(48,729,573)	(459,095,899)	(48,729,573)	14
(Gain)/Loss	06/30/20	105,240,334	15	102,270,494	12,447,756	96,553,370	12,447,756	10
Method Change	06/30/20	356,463,914	20	360,294,029	35,675,656	348,611,427	35,675,656	15
Plan Change	06/30/20	18,363,811	7	13,963,223	3,985,213	10,818,312	3,985,213	2
(Gain)/Loss	06/30/21	(351,811,429)	15	(359,745,097)	(41,612,018)	(341,883,447)	(41,612,018)	11
Plan Change	06/30/21	17,400,840	13	17,578,067	2,266,182	16,464,375	2,266,182	9
(Gain)/Loss	06/30/22	14,939,322	15	15,985,076	1,767,014	15,276,218	1,767,014	12
Admin Expenses	06/30/22	36,789,756	2	39,365,038	40,719,512	0	0	0
Normal Cost	07/01/22	147,343,763	2	157,657,826	163,082,524	0	0	0
(Gain)/Loss	06/30/23	(21,005,398)	15	(21,005,398)	0	(22,475,779)	(2,484,505)	13
Plan Change	06/30/23	17,482,427	14	17,482,427	0	18,706,196	2,163,762	12
Plan Change (Deferred Vested)	06/30/23	24,436	2	24,436	0	26,147	27,046	0
Admin Expenses	06/30/23	37,980,360	2	37,980,360	0	40,638,985	42,037,293	0
Normal Cost	07/01/23	148,205,850	2	0	0	158,580,260	164,036,696	0
DOE Gulino Charges	07/01/23	2,526,228	2	0	0	2,703,064	2,796,071	0
TOTAL				\$ 355,991,298	\$ 247,720,923	\$ 285,949,493	\$ 256,711,726	

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.

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

Total of Cost Components Summarized by Type	Outstanding Balance 6/30/2023	FY 2024 Payment on 12/31/2023	Outstanding Balance 6/30/2024	FY 2025 Payment on 12/31/2024
Initial UAL	\$ 1,055,096,075	\$ 140,549,166	\$ 983,567,611	\$ 144,765,642
Method Changes	(336,281,845)	(40,880,992)	(317,533,946)	(40,880,992)
Assumption Changes	(94,633,598)	(7,918,069)	(93,067,434)	(7,918,069)
Plan Changes	49,048,153	6,251,395	46,015,030	8,442,203
(Gain)/Loss	(552,240,711)	(54,082,613)	(534,954,077)	(56,567,118)
Normal Cost	157,657,826	163,082,524	158,580,260	164,036,696
Admin Expenses	77,345,398	40,719,512	40,638,985	42,037,293
DOE Gulino Charges	0	0	2,703,064	2,796,071
TOTAL	\$ 355,991,298	\$ 247,720,923	\$ 285,949,493	\$ 256,711,726

	6/30/2023
(A) Actuarial Accrued Liability	\$ 6,827,982,298
(B) Actuarial Value of Assets	6,471,991,000
(C) Unfunded Accrued Liabilities (A) - (B)	\$ 355,991,298

	FY 2025
Normal Cost	\$ 164,036,696
UAL Payment	47,841,666
Admin Expenses	42,037,293
DOE Gulino Charges	2,796,071
Total	\$ 256,711,726

Table III-5
Contribution History

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

(\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution	Amount Contributed	Percentage of Required Contributed
2016	\$ 265,532	\$ 265,532	100.0%
2017	288,233	288,233	100.0%
2018	318,643	318,643	100.0%
2019	269,637	269,637	100.0%
2020	257,503	257,503	100.0%
2021	182,983	182,983	100.0%
2022	262,404	262,404	100.0%
2023	233,546	233,546	100.0%
2024	247,721	247,721	100.0%
2025	256,712	256,712	100.0%

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

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

CITY RATES (\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution	Salary ¹ at Beginning of Fiscal Year	City Rate
2016	\$ 265,532	\$ 1,008,056	26.3%
2017	288,233	1,052,171	27.4%
2018	318,643	1,102,184	28.9%
2019	269,637	1,180,855	22.8%
2020	257,503	1,258,395	20.5%
2021	182,983	1,330,996	13.7%
2022	262,404	1,453,042	18.1%
2023	233,546	1,457,420	16.0%
2024	247,721	1,442,913	17.2%
2025	256,712	1,444,410	17.8%

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

Table III-7
Normal Cost Rates by Tier

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

NORMAL COST RATES AS OF JUNE 30, 2023					
	Tier 1	Tier 2	Tier 3/4	Tier 6	Total
Total	20.0%	22.5%	13.1%	11.8%	12.5%
Employee	<u>(3.3%)</u>	<u>(4.9%)</u>	<u>(3.1%)</u>	<u>(4.8%)</u>	<u>(3.9%)</u>
Employer	16.7%	17.6%	10.0%	7.0%	8.6%

SECTION IV – RESULTS BY CONTRIBUTING ENTITY

Table IV-1
Employer Contributions by Obligor

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM					
EMPLOYER CONTRIBUTION BY OBLIGOR					
Valuation Date	June 30, 2023				
Fiscal Year	2025				
Obligor	Department of Education	NYC School Construction Authority	Renaissance Charter School	KIPP Charter School	Total
Contribution					
1. Normal Cost	\$ 155,764,060	\$ 8,227,167	\$ 45,469	\$ 0	\$ 164,036,696
2. Amortization of Unfunded Accrued Liability	44,552,632	3,255,721	25,043	8,270	47,841,666
3. Administrative Expenses	39,332,745	2,693,045	11,503	0	42,037,293
4. DOE Gulino Charges	2,796,071	0	0	0	2,796,071
5. Actuarial Contribution (1.+ 2.+ 3.+ 4.)	\$ 242,445,508	\$ 14,175,933	\$ 82,015	\$ 8,270	\$ 256,711,726

Table IV-2
Accrued Liabilities by Obligor

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM					
SUMMARY OF LIABILITY BY STATUS AND OBLIGOR					
Valuation Date	June 30, 2023				
Fiscal Year	2025				
Obligor	Department of Education	NYC School Construction Authority	Renaissance Charter School	KIPP Charter School	Total
Accrued Liability					
1. Active Members	\$ 2,602,482,143	\$ 176,461,113	\$ 1,261,141	\$ 0	\$ 2,780,204,397
2. Terminated Nonvested Members	41,795,804	827,180	12,572	79,367	42,714,923
3. Deferred Vested Members	174,830,509	5,716,223	18,570	37,538	180,602,840
4. Retirees and Beneficiaries	3,307,581,300	162,428,188	802,937	0	3,470,812,425
5. Accrued Liability SubTotal (1. to 4.)	\$ 6,126,689,756	\$ 345,432,704	\$ 2,095,220	\$ 116,905	\$ 6,474,334,585
6. Due To/(From) TDA	352,632,932	1,014,781	0	0	353,647,713
7. Total Accrued Liability (AL) (5. + 6.)	\$ 6,479,322,688	\$ 346,447,485	\$ 2,095,220	\$ 116,905	\$ 6,827,982,298
Present Value of Benefits					
1. Active Members	\$ 4,240,301,048	\$ 278,890,075	\$ 1,644,943	\$ 0	\$ 4,520,836,066
2. Terminated Nonvested Members	41,795,804	827,180	12,572	79,367	42,714,923
3. Deferred Vested Members	174,830,509	5,716,223	18,570	37,538	180,602,840
4. Retirees and Beneficiaries	3,307,581,300	162,428,188	802,937	0	3,470,812,425
5. Present Value of Benefits (1. to 4.)	\$ 7,764,508,661	\$ 447,861,666	\$ 2,479,022	\$ 116,905	\$ 8,214,966,254
6. Due To/(From) TDA	352,632,932	1,014,781	0	0	353,647,713
7. Total Present Value of Benefits (5. + 6.)	\$ 8,117,141,593	\$ 448,876,447	\$ 2,479,022	\$ 116,905	\$ 8,568,613,967

Table IV-3
Participant Data by Obligor

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM					
PARTICIPANT DATA BY OBLIGOR					
Valuation Date	June 30, 2023				
Fiscal Year	2025				
Obligor	Department of Education	NYC School Construction Authority	Renaissance Charter School	KIPP Charter School	Total
Participant Data					
1. Active Members					
a. Number	23,854	757	8	0	24,619
b. Annual Salary ¹	\$ 1,374,056,707	\$ 94,079,282	\$ 401,850	\$ 0	\$ 1,468,537,839
c. Average Salary	\$ 57,603	\$ 124,279	\$ 50,231	\$ 0	\$ 59,651
2. Terminated Nonvested Members	9,714	65	2	5	9,786
3. Deferred Vested Members	2,817	40	1	1	2,859
4. Retirees and Beneficiaries					
a. Number	20,806	405	5	0	21,216
b. Total Annual Benefits	\$ 325,638,999	\$ 15,856,000	\$ 74,638	\$ 0	\$ 341,569,638
c. Average Annual Benefit	\$ 15,651	\$ 39,151	\$ 14,928	\$ 0	\$ 16,100

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, 2023 (\$ Thousands)			
	Fixed	Variable	Total
1. Expected Accrued Liability (AL)			
a. AL at June 30, 2022	\$ 6,668,019	\$ 14,634	\$ 6,682,653
b. Total Normal Cost and Administrative Expenses at June 30, 2022	230,992	-	230,992
c. Interest on 1.a. and 1.b. to June 30, 2023	481,303	2,652	483,955
d. Fiscal Year 2023 Benefit Payments with Interest to June 30, 2023	(369,433)	(2,200)	(371,633)
e. Plan Change	17,507	-	17,507
f. Expected AL at June 30, 2023	\$ 7,028,388	\$ 15,086	\$ 7,043,474
2. Actual AL at June 30, 2023	\$ 6,812,662	\$ 15,320	\$ 6,827,982
3. Expected Actuarial Asset Value (AVA)			
a. AVA at June 30, 2022	\$ 6,245,790	\$ 57,953	\$ 6,303,743
b. Interest on 3.a. to June 30, 2023	430,761	10,501	441,262
c. Total Contributions Paid in Fiscal Year 2023	283,356	-	283,356
d. Interest on 3.c. to June 30, 2023	9,750	-	9,750
e. Fiscal Year 2023 Benefit Payments with Interest to June 30, 2023	(369,433)	(2,200)	(371,633)
f. Expected AVA at June 30, 2023	\$ 6,600,224	\$ 66,254	\$ 6,666,478
4. Actual AVA at June 30, 2023	\$ 6,405,737	\$ 66,254	\$ 6,471,991
5. Liability (Gain) / Loss (2. - 1.f.)	\$ (215,726)	\$ 234	\$ (215,492)
6. Asset (Gain) / Loss (3.f. - 4.)	\$ 194,487	\$ -	\$ 194,487
7. Total Actuarial (Gain) / Loss (5. + 6.)	\$ (21,239)	\$ 234	\$ (21,005)

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 BOARD OF EDUCATION RETIREMENT SYSTEM (\$ Thousands)						
June 30 Valuation Date	(1) Actuarial Value of Assets (AVA)	(2) Accrued Liability (AL)	(3) Unfunded AL (UAL) (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Covered Payroll ¹	(6) UAL as a % of Covered Payroll (3) / (5)
2014	\$ 2,632,922	\$ 4,335,746	\$ 1,702,824	60.7%	\$ 1,045,188	162.9%
2015	2,772,466	4,585,781	1,813,315	60.5%	1,093,962	165.8%
2016	2,858,737	4,767,760	1,909,023	60.0%	1,149,020	166.1%
2017	3,289,191	4,743,881	1,454,690	69.3%	1,201,926	121.0%
2018	3,908,833	5,103,583	1,194,750	76.6%	1,280,302	93.3%
2019	4,991,832	5,306,986	315,154	94.1%	1,353,266	23.3%
2020	5,291,811	5,620,897	329,086	94.1%	1,476,598	22.3%
2021	5,471,200	5,880,071	408,871	93.0%	1,484,264	27.5%
2022	6,303,743	6,682,653	378,910	94.3%	1,467,607	25.8%
2023	6,471,991	6,827,982	355,991	94.8%	1,468,538	24.2%

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

SECTION VII – RISK AND UNCERTAINTY

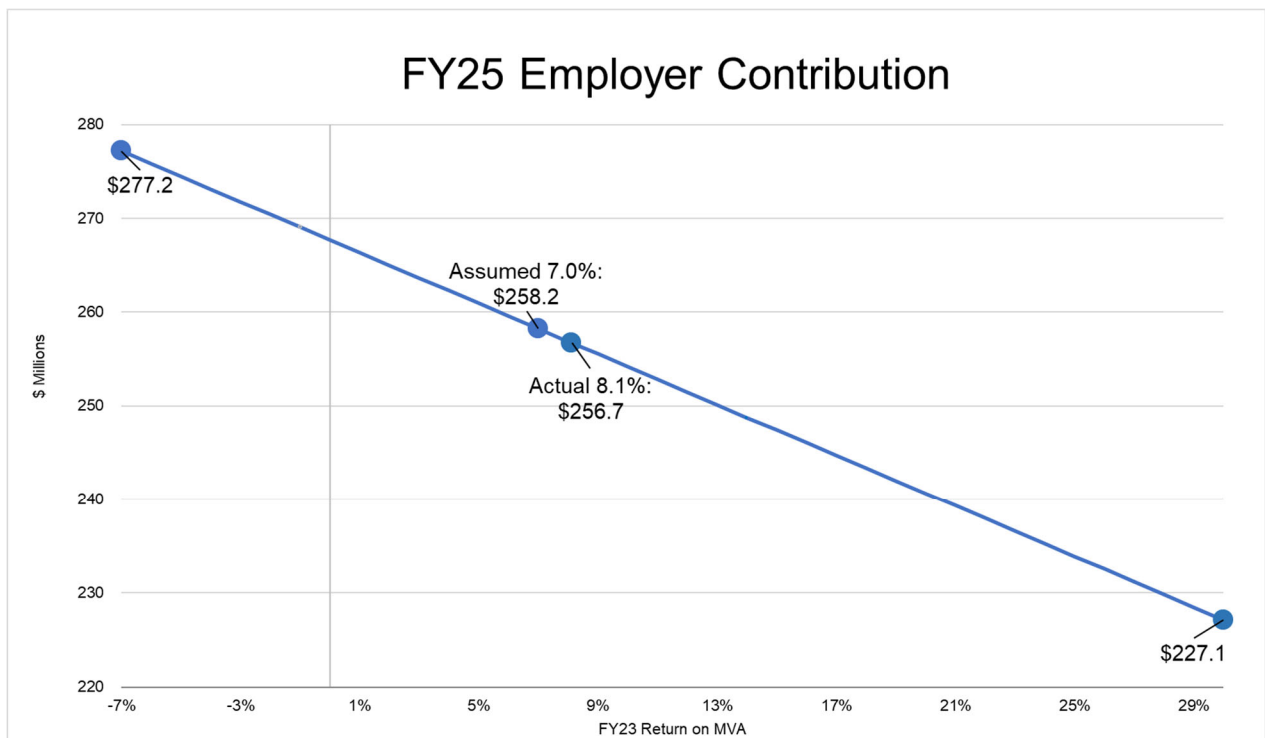
The funded status of BERS depends highly on the realization of the actuarial assumptions used, certain demographic characteristics of the Plan, and other factors. Risks faced by the Plan are described in this Section and have been separated into high, medium, and other risk categories.

High Risk Types

Investment Risk: The Risk of Not Realizing Expected Returns

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

The graph below illustrates the potential FY25 employer contribution for a range of investment return outcomes if returns had differed from the assumed rate of return (i.e., from -7% to 30%). In addition, the actual investment return and employer contribution are shown.

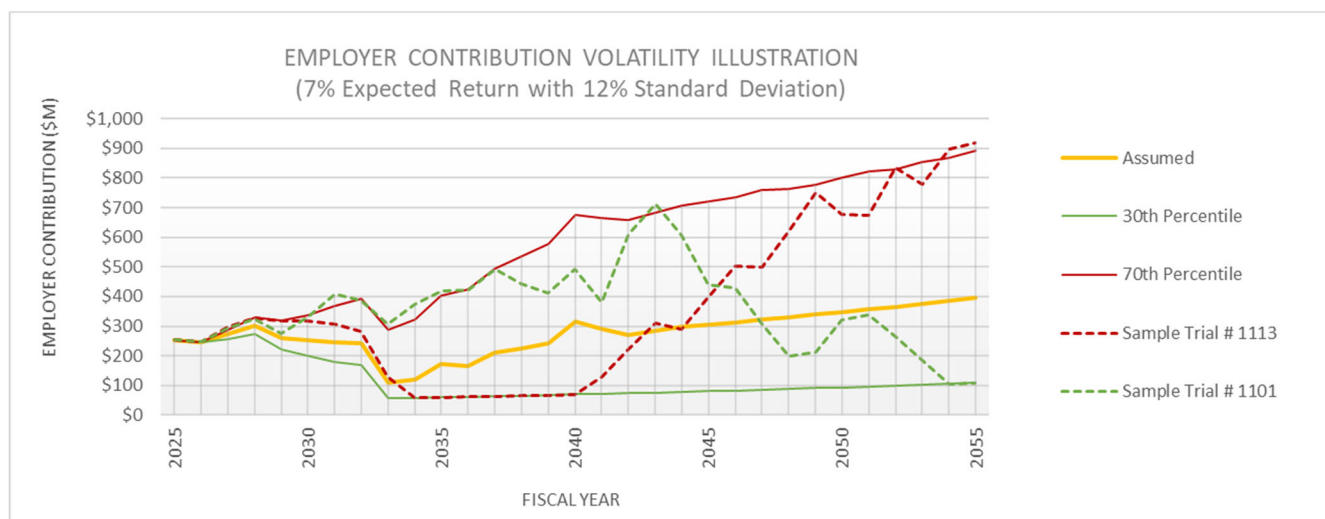


Investment Risk: The Risk of Volatile Realized Returns

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

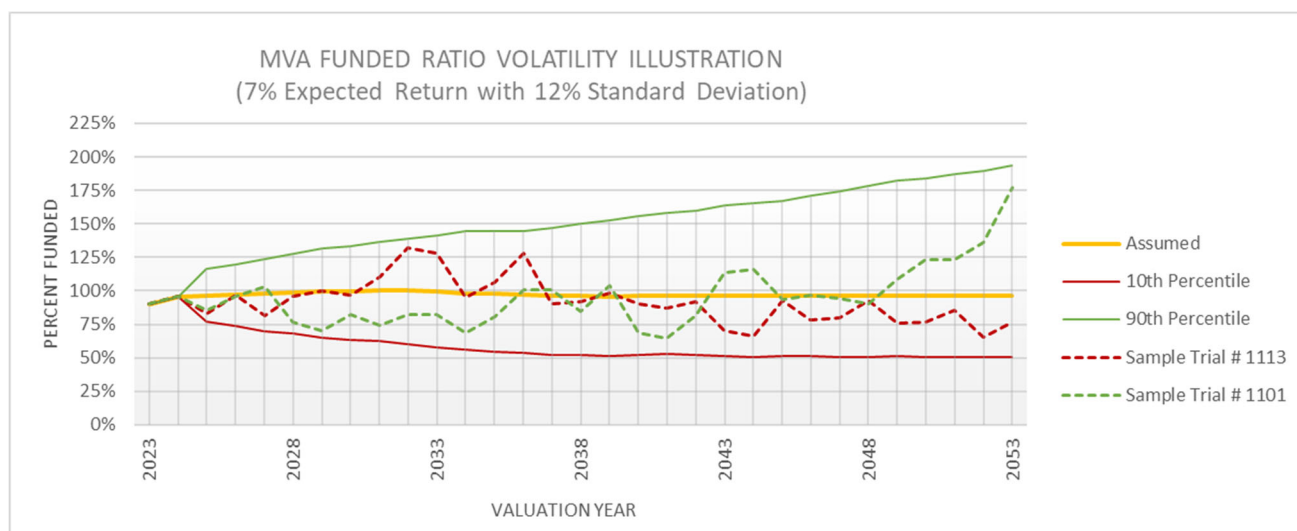
frame a range of results based on all 5,000 trials. The two dashed lines illustrate sample results from among the 5,000 trials.



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 approaches 175% funding at the end of the 30-year period (below) with a corresponding employer contribution approaching \$100M (above). The converse is shown in the red dotted line where at the end of the 30-year period, the employer contribution rate approaches \$900M (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 2030.

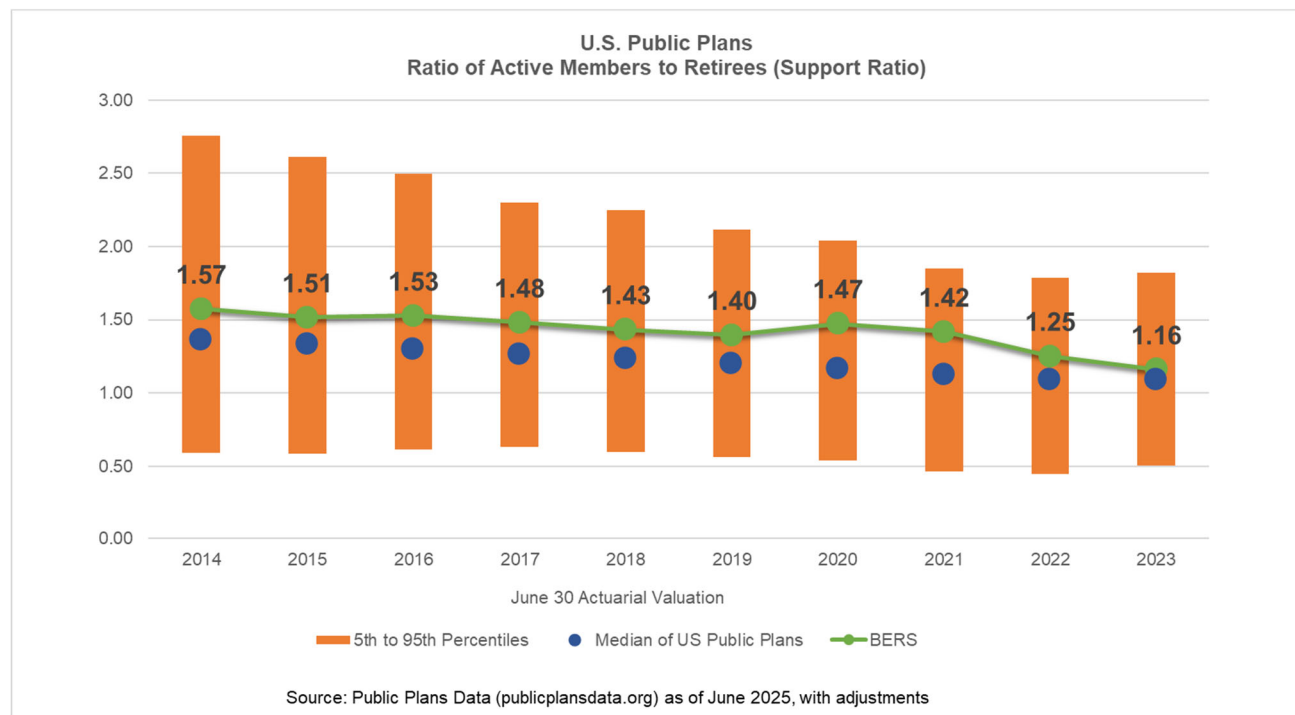


Maturity Risk: The Risk of Demographic Imbalance

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)

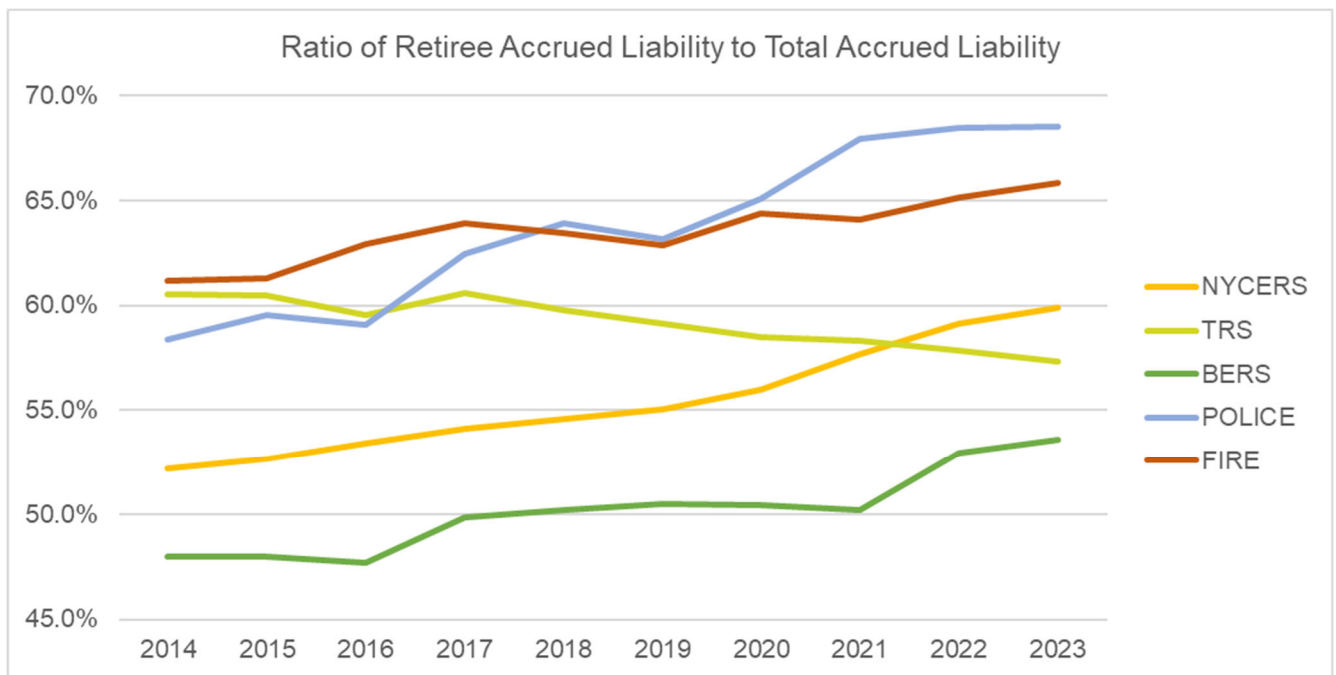
A plan's Support Ratio (i.e., the ratio of active members to retirees) is an indicator of the Plan's maturity level. Lower Support Ratios have higher contribution volatility. In a plan's early years, the ratio is very high as the plan contains mostly active members. As it matures, more active members transition to retirement, leading to a decrease in the Support Ratio over time that can result in a ratio near or below one. For BERS, as expected, this ratio has been declining over time as the Plan continues to mature.



The chart above shows U.S. public pension plan Support Ratios in comparison to the Plan's. The median Support Ratio amongst U.S. public pensions has declined from 1.36 in the 2014 valuation year to 1.09 in the 2023 valuation year. Likewise, over that same period, the Plan's Support Ratio declined from 1.57 to 1.16.

Ratio of Retiree Accrued Liability to Total Accrued Liability

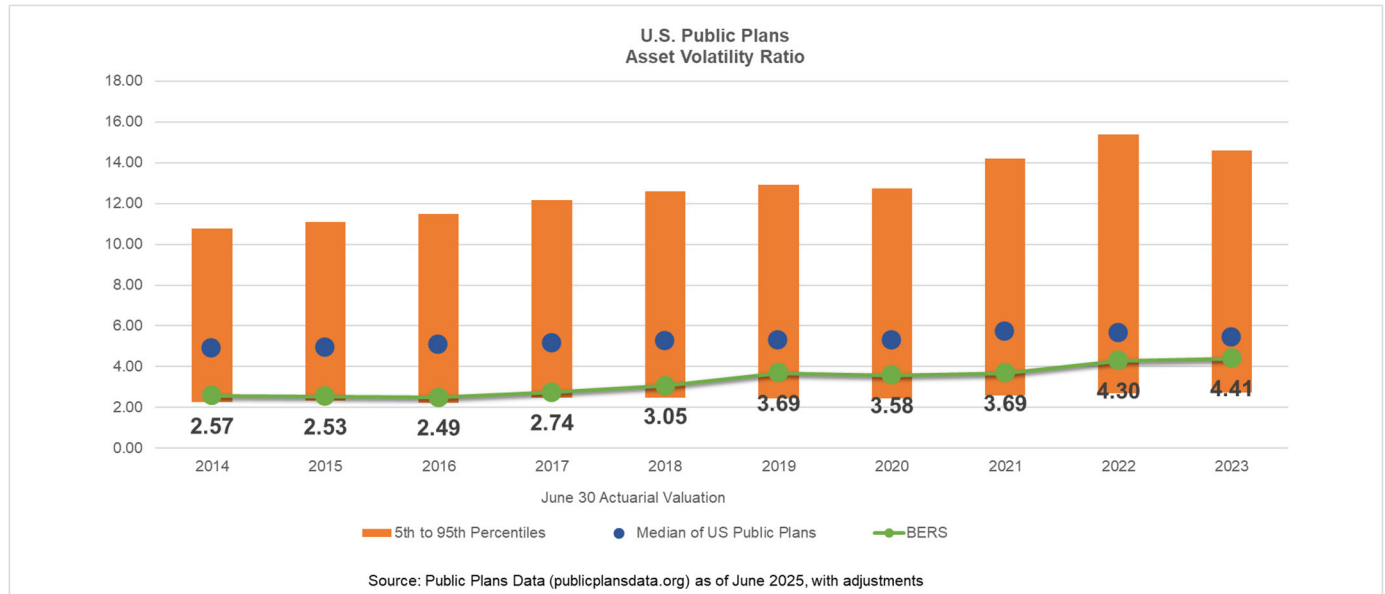
A plan's ratio of retiree liabilities to its total liabilities is also a measure of its maturity. A new pension plan begins with this ratio at zero; as the plan matures, the ratio increases. This ratio is shown in the graph below for BERS; the other New York City Retirement Systems¹ (NYCRS) are included for comparison. The ratio for BERS has been trending upward over time as expected as the Plan matures.



¹ New York City Employees' Retirement System (NYCERS); Teachers' Retirement System (TRS); 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 BERS to the population of public pension systems.



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

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

Medium Risk Types

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

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

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

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM	
SENSITIVITY ANALYSIS AS OF JUNE 30, 2023	
Valuation Date	June 30, 2023
Results at 7.0%	
1. Accrued Liability	\$ 6,827,982,298
2. Actuarial Value of Assets (AVA)	6,471,991,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 355,991,298
4. Normal Cost	\$ 164,036,696
Results at 6.0%	
1. Accrued Liability	\$ 8,231,748,367
2. Actuarial Value of Assets (AVA)	6,471,991,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 1,759,757,367
4. Normal Cost	\$ 255,227,756
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Accrued Liability	20.6%
2. Increase in Unfunded Accrued Liability	394.3%
3. Increase in Normal Cost	55.6%

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

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

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

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

LDROM as of June 30, 2023 (4.06%)	\$12,112,231,324
Plan's Accrued Liability as of June 30, 2023 (7.00%)	\$6,827,982,298

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

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

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

In either case, the \$5.3 billion difference between the LDROM and the Plan's Accrued Liability can be viewed as expected taxpayer savings from investing in the Plan's diversified portfolio compared to investing only in high quality bonds or purchasing that benefit security in the marketplace. Actual taxpayer savings are ultimately the difference between the bond portfolio returns and the Plan's current portfolio over the long term.

Longevity Risk: The Risk of Higher than Assumed Mortality Improvement

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

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

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

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

Litigation Risk: The Risk of Legal Claims and Lawsuits

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

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

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

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

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

In addition, BERS is a multiple-employer plan with several contributing entities. BERS 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

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

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

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

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

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

Agency/Political Risk: The Risk of Stakeholder Influences

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

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

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

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

SECTION VIII – SUMMARY OF PLAN PROVISIONS

A. Covered Employment

Membership in BERS is open to all employees of the Department of Education who are not eligible to participate in the New York City Teachers' Retirement System. In addition, employees of the New York City School Construction Authority, employees of the Office of the Special Commissioner of Investigation, School Crossing Guards employed by the New York City Police Department, and employees of NYC charter schools that have elected and are approved to participate in the plan may also be eligible for membership. Membership in BERS may be voluntary or mandated.

B. Tier Membership

Tier membership is based on the date that the member joined BERS. The tier status of earlier membership in BERS 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 BERS 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.nycbers.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 0.04% of active members as of June 30, 2023 are members of Tier 1 and Tier 2.

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

Lookback Wages	BMC 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 including AMCs for work in physically taxing employment (AMC-PT) 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 as a percentage of Salary varies by plan in accordance with the following schedule:

Plan Description	AMC Contribution Rate	Years Required
Chapter 96 55/25	1.85% ¹	30
Chapter 96 57/5		
Chapter 19 55/25	1.85%	25
Chapter 19 55/27	1.85%	27
Special Officers 25-yr plan	6.25%	30
Auto Mechanics 50/25-yr plan	4.83%	30
Chapter 504 55/27 plan	1.85%	All years

Tier 6: Members of the 63/5 plan do not make Additional Member Contributions. For members of the Special Officers 25-yr plan and Auto Mechanics 50/25-yr plan, AMC contributions of 6.25% and 4.83%, respectively, are required for the first 30 years of Credited Service.

¹ Members of Chapter 96 55/25 and 57/5 who work in physically taxing employment contribute an additional 1.98% on top of the 1.85%.

E. Credited Service

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

1. **Membership Service**: Service earned while a member of BERS.
2. **Part-time Service**: Service that is prorated based on the number of hours or days worked in the year.
3. **Prior Service**: Service earned prior to membership while employed by the Department of Education, the City of New York, the State of New York, or any of its political subdivisions, or by another covered employer.
4. **Transferred Service**: Service earned as a member of another public retirement system in the City or State of New York.
5. **Military Service**: Service for qualified time served in one of the armed forces of the United States.

Prior 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 FAS.

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

H. Service Retirement

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

Tier	Plan Description	Minimum Age	Minimum Service
4	Basic 62/5 plan	62	5
4	Chapter 96 55/25 plan	55	25
4	Chapter 96 55/25 plan Physically-Taxing	50	25
4	Chapter 96 57/5 plan	57	5
4	Chapter 96 57/5 plan Physically-Taxing	50	25
4	Chapter 19 55/25	55	25
4	Chapter 19 55/27	55	27
4	Special Officers 25-yr plan	N/A	25
4	Auto Mechanics 50/25-yr plan	50	25
4	Chapter 504 55/27 plan	55	27
6	Basic 63/5 Plan	63	5
6	Special Officers 25-yr plan	N/A	25
6	Auto Mechanics 50/25-yr plan	50	25

2. Benefits:

- a. Tier 4 Plans except for the Special Officers 25-year plan and Auto Mechanics 50/25-yr 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 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. Tier 4 and Tier 6 Special Officers 25-year and Auto Mechanics 50/25-yr plans:
 - i. 2.0% times FAS times Credited Service up to 30 years.

I. Early Retirement

1. Eligibility: Not all plans provide for early retirement. However, certain participants may be eligible for early retirement under the Tier 4 or Tier 6 Basic plans. The eligibility requirements for early retirement plans are summarized in the table below:

Tier	Plan Description	Minimum Age	Minimum Service
4	Basic 62/5 plan	55	5
4	Chapter 504 55/27 plan	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

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.

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 1/3 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.

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. Benefits
 - 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 if eligible, 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. All Tier 4 plans: 5 years of Credited Service.
- b. Tier 6 plans: 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 Special Officers 25-year plan: When the member would have earned 25 years of Credited Service if he or she had continued working in covered employment.
- b. Tier 4 Auto Mechanics 50/25-year plan: When the member would have earned 25 years of Credited Service if he or she had continued working in covered employment, but not prior to age 50.
- c. All other Tier 4 plans: Age 62.
- d. Tier 6 Plans: Age 63. In no case can the vested benefit be less than the annuity equivalent of the BMC.

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. AMC include Additional Member Contributions for work in physically taxing employment (AMC-PT). Only the employee portion of AMC is refunded.

- 1. Employee Portion of AMC: 50% for all plans that require AMC except for the Special Officers and Auto Mechanics plans, it is 100%.
- 2. Non-vested termination: BMC and employee portion of AMC are refunded with interest.
- 3. Vested termination:
 - a. A member may elect a refund of BMC and the employee portion of AMC with interest in lieu of a pension benefit, but only if he or she has less than 10 years of Credited Service.
 - b. A member of one of the Special Officer plans may elect a refund of AMC in lieu of remaining in the Special Officers 25-year plan if he or she leaves

service as a special officer prior to earning 15 years of Credited Service as a special officer.

- c. A member of one of the Auto Mechanics plans may elect a refund of AMC in lieu of remaining in the Auto Mechanics 50/25-year plan if he or she leaves service as an auto mechanic prior to earning 5 years of Credited Service as an auto mechanic.
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 is refunded with interest if the member retires on or after age 62. For retirement prior to age 62, the employee portion of AMC-PT are refunded if a member of the Chapter 96 55/25 plan retires on or after age 55 with 25 years of Credited Service or if a member of the Chapter 96 57/5 plan retires on or after age 57 with 25 years of Credited Service.

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 $\frac{1}{36}$ 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 BERS 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 a portion of the accumulated balance into an annuity upon retirement.

S. Others

None.

SECTION IX – CHAPTER AMENDMENTS

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

- **Chapter 55 of the Laws of 2024 (Chapter 55/24), Part KK**, enacted on April 20, 2024, extends Chapter 56/22 by excluding overtime and compensation earned for supplemental work from wages used to calculate Tier 6 Basic Member Contribution Rates for two additional years.
- **Chapter 56 of the Laws of 2024 (Chapter 56/24), Part QQ**, enacted on April 20, 2024, reduces the number of years used to calculate the Final Average Salary from 5 years to 3 years for certain Tier 6 members of NYCERS.
- **Chapter 708 of the Laws of 2023 (Chapter 708/23)**, enacted on December 8, 2023, exempts certain Tier 4 carpenter titles members, who would not benefit from their BERS Physically Taxing (PT) plan due to their age upon commencement, from paying PT AMCs, and provides a refund of 50% (the employee portion) of prior PT AMC contributions paid with interest.
- **Chapter 711 of the Laws of 2023 (Chapter 711/23)**, enacted on December 8, 2023, allows members of NYCERS, TRS or BERS to suspend their membership in such system and join a second city retirement system based on eligible dual employment.
- **Chapter 716 of the Laws of 2023 (Chapter 716/23)**, enacted on December 8, 2023, amends certain Tier 2, 3, 4 and 6 death benefit provisions for NYCERS, TRS and BERS to ensure continued compliance with OWBPA.
- **Chapter 717 of the Laws of 2023 (Chapter 717/23)**, enacted on December 8, 2023, reinstates the transfer of reserves between certain New York City and State retirement systems for members who transfer systems with 10 or more years of service.
- **Chapter 721 of the Laws of 2023 (Chapter 721/23)**, enacted December 8, 2023, will require certain new and existing New York City Board of Education Retirement System (BERS) eligible employees, who are non-provisional and who are not otherwise already a member in a public retirement system within the State, to be enrolled into BERS membership unless the employees timely opt out of such membership.
- **Chapter 56 of the Laws of 2022 (Chapter 56/22)**, enacted on April 9, 2022, reduces the Tier 6 vesting requirement from 10 years to 5 years and allows for retirement with 5 years of service, and excludes certain forms of overtime and extracurricular compensation from the salary used to determine Tier 6 Basic Member Contribution 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 from September 11, 2022 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 424 of the Laws of 2021 (Chapter 424/21)**, enacted on September 10, 2021, expands eligibility of certain public service employees for participation in the World Trade Center Rescue, Recovery, or Clean-up Operations.
- **Chapter 89 of the Laws of 2020 (Chapter 89/20)** provides death benefits to statutory beneficiaries of members whose death was a result of or was attributed to COVID-19. **Chapter 78 of the Laws of 2021 (Chapter 78/21)** amends Chapter 89/20 by extending the eligibility window of these death benefits through December 31, 2022. **Chapter 783 of the Laws of 2022 (Chapter 783/22)** extends the deadline for the COVID-19 Accidental Death Benefits from December 31, 2022 to December 31, 2024. These laws were enacted May 30, 2020, March 12, 2021 and December 23, 2022, respectively.

SECTION X – SUBSEQUENT EVENTS

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

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

SECTION XI – ACTUARIAL ASSUMPTIONS AND METHODS

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

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

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

Table XI-1
Active Retirement Rates

NEW YORK CITY BOARD OF EDUCATION 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
≤ 54	0.00%	15.00%	6.50%	35.00%	12.00%
55	2.50%	15.00%	6.50%	35.00%	12.00%
56	2.50%	15.00%	6.50%	35.00%	12.00%
57	2.50%	15.00%	6.50%	35.00%	12.00%
58	2.50%	15.00%	6.50%	35.00%	12.00%
59	3.75%	15.00%	6.50%	35.00%	12.00%
60	5.00%	15.00%	6.50%	35.00%	12.00%
61	6.25%	15.00%	10.00%	35.00%	12.00%
62	7.50% ¹	20.00%/15.00% ²	10.00%	50.00%	20.00%
63	0.00%	15.00%/20.00% ³	10.00%	35.00%	15.00%
64	0.00%	15.00%	10.00%	35.00%	15.00%
65	0.00%	20.00%	15.00%	50.00%	20.00%
66	0.00%	15.00%	10.00%	35.00%	15.00%
67	0.00%	15.00%	10.00%	35.00%	15.00%
68	0.00%	15.00%	10.00%	35.00%	15.00%
69	0.00%	15.00%	10.00%	35.00%	15.00%
70	0.00%	20.00%	20.00%	35.00%	15.00%
71	0.00%	20.00%	20.00%	35.00%	15.00%
72	0.00%	20.00%	20.00%	35.00%	15.00%
73	0.00%	20.00%	20.00%	35.00%	15.00%
74	0.00%	20.00%	20.00%	35.00%	15.00%
75	0.00%	20.00%	20.00%	35.00%	15.00%
76	0.00%	20.00%	20.00%	35.00%	15.00%
77	0.00%	20.00%	20.00%	35.00%	15.00%
78	0.00%	20.00%	20.00%	35.00%	15.00%
79	0.00%	20.00%	20.00%	35.00%	15.00%
≥ 80	N/A	100.00%	100.00%	100.00%	100.00%

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

² 20.00% for Tier 1, 2, & 4 members and 15.00% for Tier 6 members.

³ 15.00% for Tier 1, 2, & 4 members and 20.00% for Tier 6 members.

Table XI-2
Active Termination Rates

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM		
PROBABILITIES OF TERMINATION		
Years of Service	Males	Females
0	8.40%	5.60%
1	7.70%	5.30%
2	7.20%	5.00%
3	6.70%	4.70%
4	6.20%	4.50%
5	5.70%	4.20%
6	5.20%	3.90%
7	4.70%	3.60%
8	4.30%	3.30%
9	3.90%	3.00%
10	3.50%	2.80%
11	3.20%	2.60%
12	2.90%	2.50%
13	2.60%	2.40%
14	2.30%	2.20%
15	2.10%	2.10%
16	1.90%	1.90%
17	1.80%	1.80%
18	1.70%	1.70%
19	1.50%	1.50%
20+	1.40%	1.40%

Table XI-3
Active Disability Rates

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM				
PROBABILITIES OF DISABILITY RETIREMENT				
	Ordinary Disability		Accidental Disability	
Age	Males	Females	Males	Females
15	0.20%	0.20%	0.030%	0.025%
16	0.20%	0.20%	0.030%	0.025%
17	0.20%	0.20%	0.030%	0.025%
18	0.20%	0.20%	0.030%	0.025%
19	0.20%	0.20%	0.030%	0.025%
20	0.20%	0.20%	0.030%	0.025%
21	0.20%	0.20%	0.030%	0.025%
22	0.20%	0.20%	0.030%	0.025%
23	0.20%	0.20%	0.030%	0.025%
24	0.20%	0.20%	0.030%	0.025%
25	0.20%	0.20%	0.030%	0.025%
26	0.20%	0.20%	0.030%	0.025%
27	0.20%	0.20%	0.030%	0.025%
28	0.20%	0.20%	0.030%	0.025%
29	0.20%	0.20%	0.030%	0.025%
30	0.20%	0.20%	0.030%	0.025%
31	0.22%	0.20%	0.030%	0.025%
32	0.24%	0.20%	0.030%	0.025%
33	0.26%	0.20%	0.030%	0.025%
34	0.28%	0.20%	0.030%	0.025%
35	0.30%	0.20%	0.030%	0.025%
36	0.32%	0.21%	0.030%	0.025%
37	0.34%	0.22%	0.030%	0.025%
38	0.36%	0.23%	0.030%	0.025%
39	0.38%	0.24%	0.030%	0.025%
40	0.40%	0.25%	0.030%	0.025%
41	0.42%	0.26%	0.030%	0.025%
42	0.44%	0.27%	0.030%	0.025%
43	0.46%	0.28%	0.030%	0.025%
44	0.48%	0.29%	0.030%	0.025%
45	0.50%	0.30%	0.030%	0.025%
46	0.52%	0.34%	0.030%	0.025%
47	0.54%	0.38%	0.030%	0.025%
48	0.56%	0.42%	0.030%	0.025%
49	0.58%	0.46%	0.030%	0.025%
50	0.60%	0.50%	0.030%	0.025%
51	0.62%	0.54%	0.030%	0.025%
52	0.64%	0.58%	0.030%	0.025%
53	0.66%	0.62%	0.030%	0.025%
54	0.68%	0.66%	0.030%	0.025%
55	0.70%	0.70%	0.030%	0.025%
56	0.70%	0.70%	0.030%	0.025%
57	0.70%	0.70%	0.030%	0.025%
58	0.70%	0.70%	0.030%	0.025%
59	0.70%	0.70%	0.030%	0.025%
60	0.70%	0.70%	0.030%	0.025%
61	0.70%	0.70%	0.030%	0.025%
62	0.70%	0.70%	0.030%	0.025%
63	0.70%	0.70%	0.030%	0.025%
64	0.70%	0.70%	0.030%	0.025%
65	0.70%	0.70%	0.030%	0.025%
66	0.70%	0.70%	0.030%	0.025%
67	0.70%	0.70%	0.030%	0.025%
68	0.70%	0.70%	0.030%	0.025%
69	0.70%	0.70%	0.030%	0.025%
70	0.70%	0.70%	0.030%	0.025%
71	0.70%	0.70%	0.030%	0.025%
72	0.70%	0.70%	0.030%	0.025%
73	0.70%	0.70%	0.030%	0.025%
74	0.70%	0.70%	0.030%	0.025%
75	0.70%	0.70%	0.030%	0.025%
76	0.70%	0.70%	0.030%	0.025%
77	0.70%	0.70%	0.030%	0.025%
78	0.70%	0.70%	0.030%	0.025%
79	0.70%	0.70%	0.030%	0.025%
80+	N/A	N/A	N/A	N/A

Table XI-4
Active Mortality Rates

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM			
PROBABILITIES OF ACTIVE MEMBER MORTALITY			
	Ordinary Death		Accidental Death
Age	Males	Females	
15	0.027%	0.020%	0.000%
16	0.027%	0.020%	0.000%
17	0.027%	0.020%	0.000%
18	0.027%	0.020%	0.000%
19	0.027%	0.020%	0.000%
20	0.027%	0.020%	0.000%
21	0.027%	0.020%	0.000%
22	0.027%	0.020%	0.000%
23	0.027%	0.020%	0.000%
24	0.027%	0.020%	0.000%
25	0.027%	0.020%	0.000%
26	0.029%	0.021%	0.000%
27	0.032%	0.023%	0.000%
28	0.035%	0.024%	0.000%
29	0.037%	0.025%	0.000%
30	0.040%	0.027%	0.000%
31	0.043%	0.028%	0.000%
32	0.045%	0.029%	0.000%
33	0.048%	0.031%	0.000%
34	0.051%	0.032%	0.000%
35	0.053%	0.033%	0.000%
36	0.056%	0.035%	0.000%
37	0.059%	0.036%	0.000%
38	0.061%	0.037%	0.000%
39	0.064%	0.039%	0.000%
40	0.067%	0.040%	0.000%
41	0.073%	0.045%	0.000%
42	0.080%	0.051%	0.000%
43	0.087%	0.056%	0.000%
44	0.093%	0.061%	0.000%
45	0.100%	0.067%	0.000%
46	0.107%	0.073%	0.000%
47	0.113%	0.080%	0.000%
48	0.120%	0.087%	0.000%
49	0.127%	0.093%	0.000%
50	0.133%	0.100%	0.000%
51	0.147%	0.107%	0.000%
52	0.160%	0.113%	0.000%
53	0.173%	0.120%	0.000%
54	0.187%	0.127%	0.000%
55	0.200%	0.133%	0.000%
56	0.213%	0.140%	0.000%
57	0.227%	0.147%	0.000%
58	0.240%	0.153%	0.000%
59	0.253%	0.160%	0.000%
60	0.267%	0.167%	0.000%
61	0.280%	0.173%	0.000%
62	0.293%	0.180%	0.000%
63	0.307%	0.187%	0.000%
64	0.320%	0.193%	0.000%
65	0.333%	0.200%	0.000%
66	0.360%	0.213%	0.000%
67	0.387%	0.227%	0.000%
68	0.413%	0.240%	0.000%
69	0.440%	0.253%	0.000%
70	0.500%	0.300%	0.000%
71	0.580%	0.350%	0.000%
72	0.660%	0.400%	0.000%
73	0.740%	0.450%	0.000%
74	0.820%	0.500%	0.000%
75	0.900%	0.550%	0.000%
76	1.020%	0.640%	0.000%
77	1.140%	0.730%	0.000%
78	1.260%	0.820%	0.000%
79	1.380%	1.000%	0.000%
80+	N/A	N/A	N/A

Table XI-5
Service Retiree Mortality Rates

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES					
BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0105%	0.0090%	68	1.6659%	0.9362%
16	0.0142%	0.0110%	69	1.7932%	1.0193%
17	0.0191%	0.0120%	70	1.9258%	1.1035%
18	0.0222%	0.0130%	71	2.0702%	1.2437%
19	0.0240%	0.0140%	72	2.2162%	1.3853%
20	0.0251%	0.0142%	73	2.3643%	1.5280%
21	0.0268%	0.0150%	74	2.5141%	1.6727%
22	0.0284%	0.0158%	75	2.6665%	1.8182%
23	0.0301%	0.0168%	76	3.0461%	2.0628%
24	0.0315%	0.0179%	77	3.4300%	2.3088%
25	0.0327%	0.0191%	78	3.8175%	2.5551%
26	0.0342%	0.0204%	79	4.2104%	2.8024%
27	0.0354%	0.0217%	80	4.6069%	3.0489%
28	0.0371%	0.0231%	81	5.1554%	3.4450%
29	0.0394%	0.0247%	82	5.7232%	3.8502%
30	0.0427%	0.0265%	83	6.3098%	4.2655%
31	0.0495%	0.0316%	84	6.9124%	4.6895%
32	0.0562%	0.0360%	85	7.5337%	5.1258%
33	0.0625%	0.0398%	86	8.3597%	5.8556%
34	0.0682%	0.0427%	87	9.1919%	6.5878%
35	0.0743%	0.0455%	88	10.0369%	7.3277%
36	0.0780%	0.0474%	89	10.8896%	8.0720%
37	0.0818%	0.0497%	90	11.7567%	8.8218%
38	0.0861%	0.0521%	91	13.4856%	10.1869%
39	0.0917%	0.0551%	92	15.2819%	11.5772%
40	0.0997%	0.0588%	93	17.1377%	13.0290%
41	0.1422%	0.0633%	94	19.0983%	14.4884%
42	0.1848%	0.0702%	95	21.2134%	16.0080%
43	0.2279%	0.0792%	96	23.2990%	17.8232%
44	0.2725%	0.0907%	97	25.4356%	19.4807%
45	0.3194%	0.1052%	98	27.7079%	20.8097%
46	0.3686%	0.1228%	99	29.9402%	21.7553%
47	0.4207%	0.1427%	100	32.1584%	22.1859%
48	0.4752%	0.1652%	101	33.7521%	23.0680%
49	0.5320%	0.1896%	102	35.1259%	24.0803%
50	0.5908%	0.2151%	103	36.3671%	25.2770%
51	0.6563%	0.2401%	104	37.3834%	26.6309%
52	0.7203%	0.2647%	105	38.1051%	28.0912%
53	0.7821%	0.2889%	106	38.4698%	29.6244%
54	0.8405%	0.3120%	107	38.6325%	31.1943%
55	0.8938%	0.3338%	108	38.8076%	32.7579%
56	0.9368%	0.3689%	109	38.9794%	34.2712%
57	0.9718%	0.4030%	110	50.0000%	50.0000%
58	0.9982%	0.4360%	111	50.0000%	50.0000%
59	1.0164%	0.4677%	112	50.0000%	50.0000%
60	1.0277%	0.4987%	113	50.0000%	50.0000%
61	1.0989%	0.5398%	114	50.0000%	50.0000%
62	1.1606%	0.5722%	115	50.0000%	50.0000%
63	1.2158%	0.6041%	116	50.0000%	50.0000%
64	1.2656%	0.6395%	117	50.0000%	50.0000%
65	1.3111%	0.6785%	118	50.0000%	50.0000%
66	1.4252%	0.7529%	119	50.0000%	50.0000%
67	1.5432%	0.8397%	120	100.0000%	100.0000%

Table XI-6
Disabled Retiree Mortality

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES					
BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.3309%	0.3302%	68	2.8866%	2.3870%
16	0.4477%	0.4467%	69	2.9926%	2.4723%
17	0.6034%	0.6020%	70	3.1133%	2.5721%
18	0.7007%	0.6521%	71	3.2494%	2.6887%
19	0.7591%	0.7023%	72	3.4007%	2.8231%
20	0.7745%	0.7242%	73	3.5688%	2.9757%
21	0.8177%	0.7766%	74	3.7535%	3.1493%
22	0.8636%	0.8321%	75	3.9565%	3.3428%
23	0.9115%	0.8806%	76	4.1960%	3.5573%
24	0.9623%	0.9414%	77	4.4576%	3.7722%
25	1.0128%	0.9950%	78	4.7400%	4.0056%
26	1.0629%	1.0450%	79	5.0460%	4.2512%
27	1.1121%	1.1039%	80	5.3741%	4.5399%
28	1.1590%	1.1437%	81	5.7241%	4.8505%
29	1.2025%	1.1849%	82	6.0991%	5.1822%
30	1.2403%	1.2276%	83	6.5012%	5.5379%
31	1.2721%	1.2719%	84	6.9293%	5.9081%
32	1.2964%	1.2906%	85	7.5490%	6.6447%
33	1.3125%	1.3095%	86	8.3752%	7.3415%
34	1.3230%	1.3220%	87	9.2076%	8.0805%
35	1.3497%	1.3314%	88	10.0528%	8.8285%
36	1.3769%	1.3388%	89	10.9057%	10.1243%
37	1.4047%	1.3459%	90	11.7730%	11.4944%
38	1.4330%	1.3555%	91	13.5023%	12.9995%
39	1.4619%	1.3700%	92	15.2987%	14.4425%
40	1.4914%	1.3831%	93	17.1548%	15.8488%
41	1.5215%	1.3968%	94	19.1157%	17.6512%
42	1.5522%	1.4199%	95	21.2311%	19.4304%
43	1.5835%	1.4535%	96	23.3168%	20.7560%
44	1.6154%	1.4910%	97	25.4537%	21.5692%
45	1.6480%	1.5473%	98	27.7263%	22.0007%
46	1.6812%	1.6100%	99	29.9589%	23.0087%
47	1.7151%	1.6774%	100	32.1584%	23.1230%
48	1.7497%	1.7359%	101	33.7521%	23.6022%
49	1.7850%	1.7789%	102	35.1259%	24.0803%
50	1.8210%	1.8069%	103	36.3671%	25.2770%
51	1.8577%	1.8265%	104	37.3834%	26.6309%
52	1.8952%	1.8400%	105	38.1051%	28.0912%
53	1.9838%	1.8414%	106	38.4698%	29.6244%
54	2.0700%	1.8419%	107	38.6325%	31.1943%
55	2.1499%	1.8425%	108	38.8076%	32.7579%
56	2.2301%	1.8428%	109	38.9794%	34.2712%
57	2.2996%	1.8478%	110	50.0000%	50.0000%
58	2.3571%	1.8725%	111	50.0000%	50.0000%
59	2.4033%	1.9054%	112	50.0000%	50.0000%
60	2.4415%	1.9416%	113	50.0000%	50.0000%
61	2.4758%	1.9833%	114	50.0000%	50.0000%
62	2.5090%	2.0209%	115	50.0000%	50.0000%
63	2.5475%	2.0671%	116	50.0000%	50.0000%
64	2.5926%	2.1353%	117	50.0000%	50.0000%
65	2.6476%	2.2013%	118	50.0000%	50.0000%
66	2.7148%	2.2603%	119	50.0000%	50.0000%
67	2.7940%	2.3165%	120	100.0000%	100.0000%

Table XI-7
Beneficiary Mortality

NEW YORK CITY BOARD OF EDUCATION RETIREMENT SYSTEM					
PROBABILITIES OF BENEFICIARY MORTALITY 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 BOARD OF EDUCATION RETIREMENT SYSTEM		
ANNUAL RATES OF MERIT AND SALARY INCREASE		
Years of Service	Merit Increase	Salary Increase ¹
0	6.00%	9.00%
1	5.00%	8.00%
2	4.00%	7.00%
3	3.00%	6.00%
4	2.50%	5.50%
5	2.00%	5.00%
6	1.90%	4.90%
7	1.80%	4.80%
8	1.70%	4.70%
9	1.60%	4.60%
10	1.50%	4.50%
11	1.50%	4.50%
12	1.50%	4.50%
13	1.50%	4.50%
14	1.50%	4.50%
15	1.50%	4.50%
16	1.45%	4.45%
17	1.40%	4.40%
18	1.35%	4.35%
19	1.30%	4.30%
20	1.25%	4.25%
21	1.20%	4.20%
22	1.15%	4.15%
23	1.10%	4.10%
24	1.05%	4.05%
25+	1.00%	4.00%

¹ Salary increase is the General Wage Increase of 3% 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	0.980	0.980
Disabled Retiree	0.980	0.980
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.
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 to Market Value as of June 30, 2019.

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

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

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

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

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

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

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

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

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

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

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

10. **Allowances for Administrative Expenses:** The Employer Contribution for a fiscal year is increased by the interest-adjusted amount of administrative expenses paid from BERS during the second prior fiscal year.
11. **One-Year Lag Methodology (OYLM):** The One-Year Lag Methodology uses a June 30, XX valuation date to determine the Fiscal Year XX+2 employer contributions as follows:

a. Normal Cost

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

b. Administrative Expenses

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

c. UAL Payments

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

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

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

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

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

- a. A cost is added to each year's Normal Cost for providing a guaranteed 8.25% return on the TDA Fixed Fund for non-UFT members.
- b. Active TDA members would contribute the currently elected percentage of compensation to the TDA fixed fund.
- c. TDA members would transfer 25% of their TDA variable fund to the TDA fixed fund.

- d. Active members in the QPP who have not joined the TDA would join and contribute 1% of pay to the TDA fixed fund.
- e. The probability that a member elects 4% per year withdrawals from the TDA fixed fund starting from the later of age 60 and the age at termination is 25%.
- f. The probability that a member elects required minimum distributions from the TDA fixed fund starting from the later of age 72 and the age at termination is 75%.
- g. The probability that a member elects a lump sum of the TDA fixed fund and the probability that a member elects to annuitize the TDA fixed fund is 0%.
- h. Beginning with the June 30, 2020 actuarial valuation, the liability of the TDA as of the valuation date reflects an actuarial projection of account balances with guaranteed interest credits.

14. **Group Life Insurance Plan:** The Employer Contribution includes an amount to fund the Group Life Insurance Plan. The Group Life Insurance amount used in the BERS valuation is \$36,000.

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

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

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

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

Actuarial Value of Assets are determined explicitly for each obligor.

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

The components of contribution are then determined for each Obligor.

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

SECTION XII – SUMMARY OF DEMOGRAPHIC DATA

The June 30, 2023 and June 30, 2022 actuarial valuations are based upon census data as of those dates 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, 2023 and June 30, 2022.

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

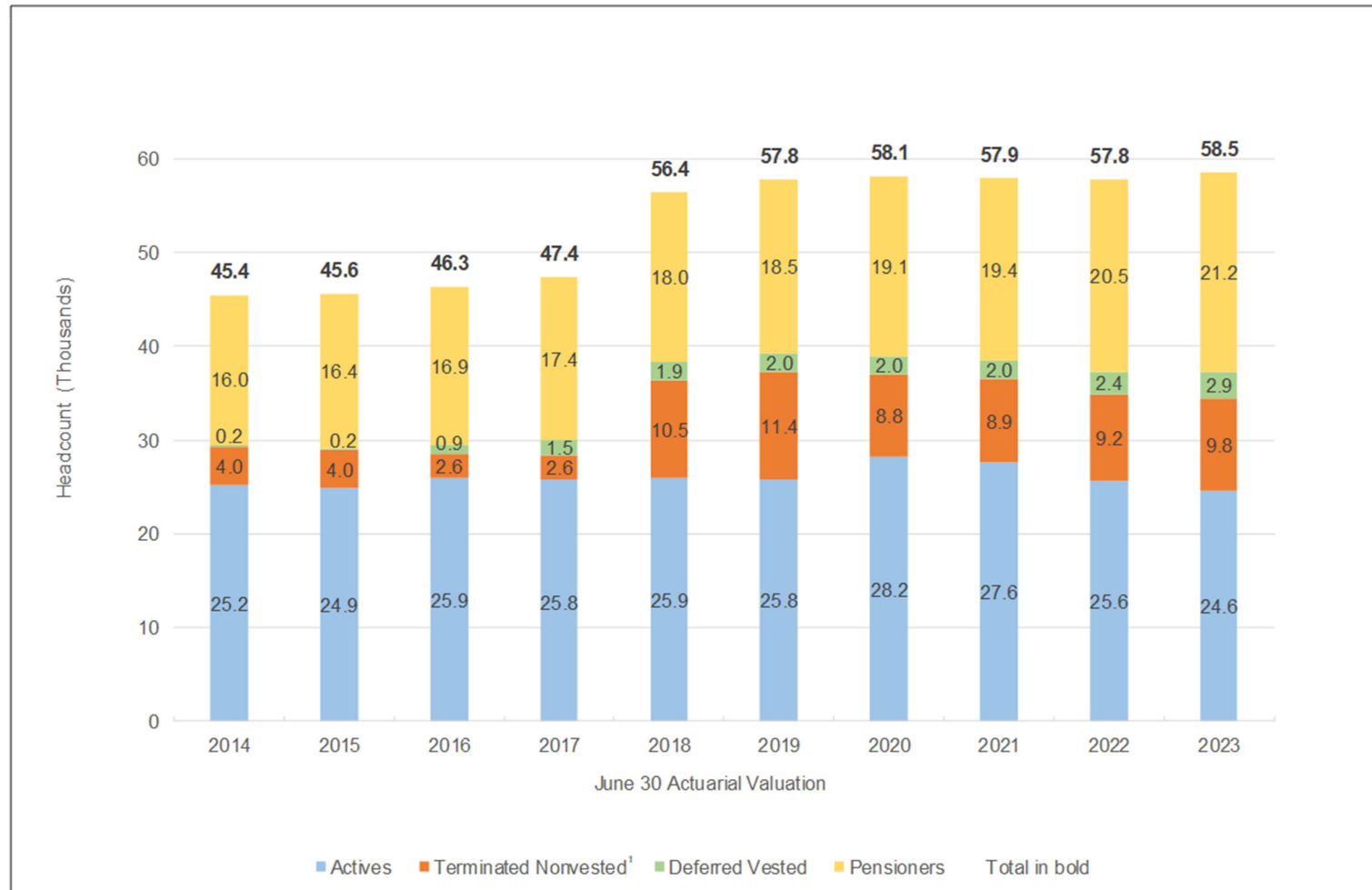
Where applicable, June 30, 2023 and June 20, 2022 salaries have been adjusted by the Actuary to reflect contract settlements with retroactive effect and the assumption of pattern bargaining. Estimates of liabilities attributable to the related additional benefits payable have been applied to the results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

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

Table XII-1
Status Reconciliation

CHANGES IN MEMBERSHIP DURING THE FISCAL YEAR CLASSIFIED BY STATUS										
Status	(1) Active Members	(2) Terminated Nonvested	(3) Deferred Vested	(4) Service Pension	(5) Ordinary Disability	(6) Accidental Disability	(7) Accidental Death	(8) Other Beneficiary	(9) Pensioners Subtotal (4) to (8)	(10) Grand Total (1) + (2) + (3) + (9)
Number at June 30, 2022	25,639	9,245	2,410	17,944	1,144	228	22	1,143	20,481	57,775
New Entrants / Pick-ups	1,958	49	1	0	0	0	0	0	0	2,008
Rehires	207	(151)	(56)	0	0	0	0	0	0	0
Non-Vested Termination not cashed out	(1,124)	1,162	(38)	0	0	0	0	0	0	0
Non-Vested Termination / Cashout	(77)	(457)	(18)	0	0	0	0	0	0	(552)
Vested Termination	(715)	(37)	752	0	0	0	0	0	0	0
Accidental Death (from Active)	0	0	0	0	0	0	0	0	0	0
Ordinary Death (from Active)	(37)	(16)	(41)	0	0	0	0	0	0	(94)
Service Retirement	(1,185)	(9)	(149)	1,343	0	0	0	0	1,343	0
Ordinary Disability Retirement	(46)	0	(2)	0	48	0	0	0	48	0
Accidental Disability Retirement	(1)	0	0	0	0	1	0	0	1	0
Death with Beneficiary	0	0	0	(96)	(9)	0	0	105	0	0
Death without Beneficiary	0	0	0	(536)	(22)	(4)	(7)	(105)	(674)	(674)
On/(Off) Pension Payroll	0	0	0	0	0	0	0	(2)	(2)	(2)
Net Adjustment for Pensioners	0	0	0	10	0	0	2	7	19	19
Data Correction	0	0	0	0	0	0	0	0	0	0
Net Change	(1,020)	541	449	721	17	(3)	(5)	5	735	705
Number at June 30, 2023	24,619	9,786	2,859	18,665	1,161	225	17	1,148	21,216	58,480

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 BOARD OF EDUCATION RETIREMENT SYSTEM		
ACTIVE MEMBERS INCLUDED IN THE JUNE 30, 2023 AND THE JUNE 30, 2022 ACTUARIAL VALUATIONS		
	June 30, 2023	June 30, 2022
Number		
Males	6,485	6,771
Females	18,134	18,868
Total	24,619	25,639
Annual Salary ¹		
Males	\$ 530,826,636	\$ 529,204,194
Females	937,711,203	938,402,862
Total	\$ 1,468,537,839	\$ 1,467,607,056
Average Salary ¹		
Males	\$ 81,855	\$ 78,157
Females	51,710	49,735
Total Average	\$ 59,651	\$ 57,241
Average Age		
Males	49.9	49.7
Females	51.9	51.8
Total Average	51.4	51.3
Average Past Service		
Males	10.4	10.2
Females	9.4	9.4
Total Average	9.7	9.6

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

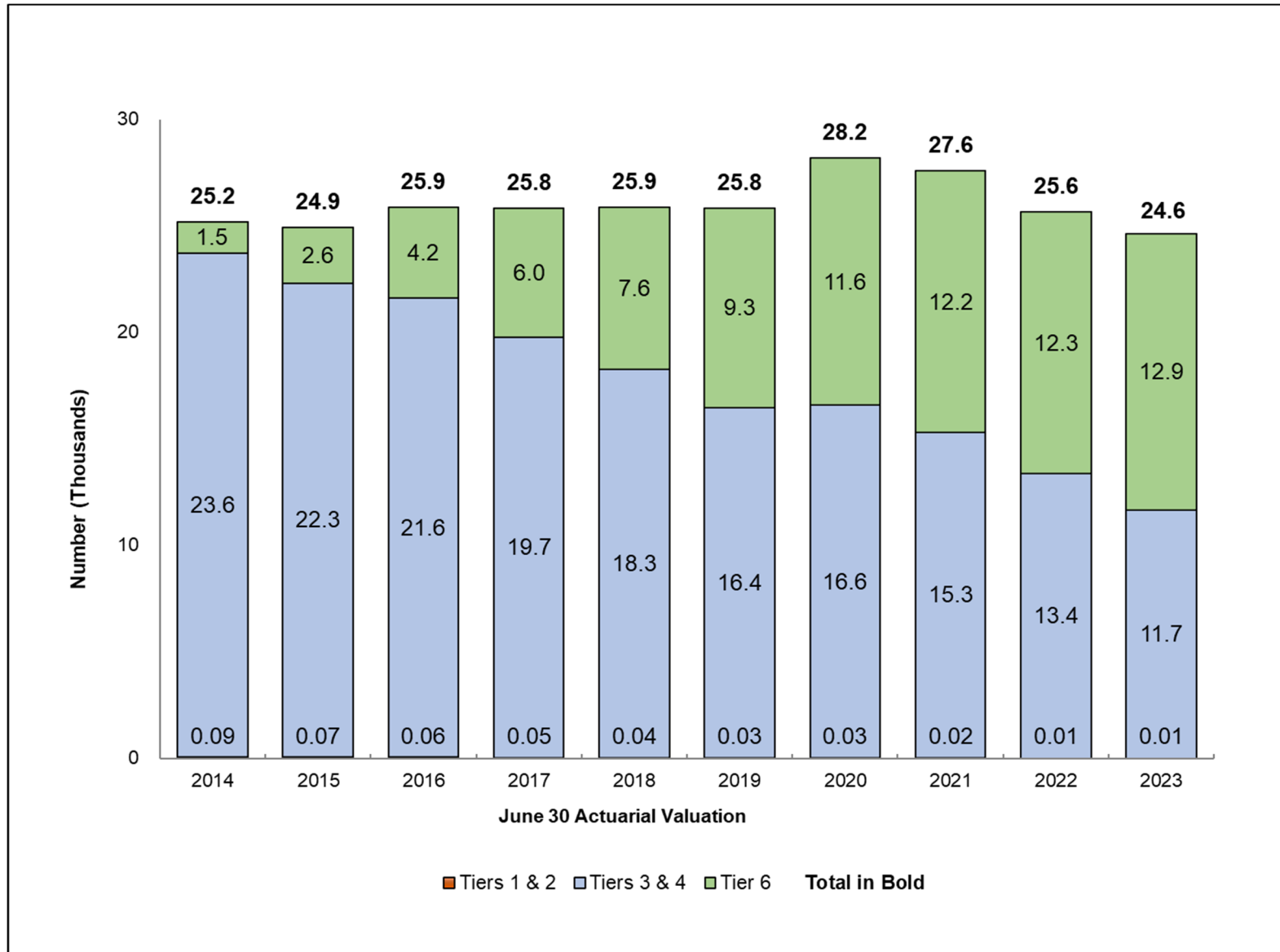


Table XII-5
Schedule of Active Member Salary Data

June 30 Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2014	25,182	\$ 1,045,187,738	\$ 41,505	2.0%
2015	24,903	1,093,962,316	43,929	5.8%
2016	25,864	1,149,019,892	44,425	1.1%
2017	25,794	1,201,925,550	46,597	4.9%
2018	25,864	1,280,302,470	49,501	6.2%
2019	25,825	1,353,266,355	52,401	5.9%
2020	28,183	1,476,597,629	52,393	0.0%
2021	27,556	1,484,264,302	53,864	2.8%
2022	25,639	1,467,607,056	57,241	6.3%
2023	24,619	1,468,537,839	59,651	4.2%

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

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

		Male Total								
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
NUMBER:										
UNDER 20	3	0	0	0	0	0	0	0	0	3
20 TO 24	42	1	0	0	0	0	0	0	0	43
25 TO 29	170	6	0	0	0	0	0	0	0	176
30 TO 34	306	129	9	0	0	0	0	0	0	444
35 TO 39	333	249	95	17	0	0	0	0	0	694
40 TO 44	300	230	150	72	16	0	0	0	0	768
45 TO 49	250	241	177	158	55	5	0	0	0	886
50 TO 54	235	221	189	195	114	34	6	0	0	994
55 TO 59	191	221	169	183	128	89	40	8	1	1,030
60 TO 64	154	209	138	121	88	63	60	31	2	866
65 TO 69	71	102	65	51	43	23	24	14	9	402
70 & UP	30	41	25	31	24	8	7	7	6	179
TOTAL	2,085	1,650	1,017	828	468	222	137	60	18	6,485

SALARIES (IN THOUSANDS):

UNDER 20	122	0	0	0	0	0	0	0	0	122
20 TO 24	1,256	48	0	0	0	0	0	0	0	1,304
25 TO 29	9,124	533	0	0	0	0	0	0	0	9,657
30 TO 34	19,881	9,666	723	0	0	0	0	0	0	30,270
35 TO 39	24,036	21,935	7,170	1,720	0	0	0	0	0	54,861
40 TO 44	22,189	20,022	12,389	7,588	1,260	0	0	0	0	63,448
45 TO 49	15,449	22,152	15,399	17,542	5,919	523	0	0	0	76,984
50 TO 54	13,932	18,944	14,177	22,651	13,097	3,565	824	0	0	87,190
55 TO 59	12,029	17,293	12,660	20,058	14,464	10,448	3,945	751	120	91,768
60 TO 64	7,900	15,692	9,948	11,416	8,871	6,646	6,914	3,401	176	70,964
65 TO 69	4,044	7,175	4,245	4,787	4,451	1,966	2,675	1,224	966	31,533
70 & UP	1,040	2,265	1,918	2,621	1,848	810	760	794	670	12,726
TOTAL ¹	131,002	135,725	78,629	88,383	49,910	23,958	15,118	6,170	1,932	530,827

AVERAGE SALARIES: ²

UNDER 20	40,667	0	0	0	0	0	0	0	0	40,667
20 TO 24	29,905	48,000	0	0	0	0	0	0	0	30,326
25 TO 29	53,671	88,833	0	0	0	0	0	0	0	54,869
30 TO 34	64,971	74,930	80,333	0	0	0	0	0	0	68,176
35 TO 39	72,180	88,092	75,474	101,176	0	0	0	0	0	79,050
40 TO 44	73,963	87,052	82,593	105,389	78,750	0	0	0	0	82,615
45 TO 49	61,796	91,917	87,000	111,025	107,618	104,600	0	0	0	86,889
50 TO 54	59,285	85,719	75,011	116,159	114,886	104,853	137,333	0	0	87,716
55 TO 59	62,979	78,249	74,911	109,607	113,000	117,393	98,625	93,875	120,000	89,095
60 TO 64	51,299	75,081	72,087	94,347	100,807	105,492	115,233	109,710	88,000	81,945
65 TO 69	56,958	70,343	65,308	93,863	103,512	85,478	111,458	87,429	107,333	78,440
70 & UP	34,667	55,244	76,720	84,548	77,000	101,250	108,571	113,429	111,667	71,095
TOTAL	62,831	82,258	77,315	106,743	106,645	107,919	110,350	102,833	107,333	81,855

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

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

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

AGE \ SVC	Female Total									
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	61	0	0	0	0	0	0	0	0	61
25 TO 29	373	19	0	0	0	0	0	0	0	392
30 TO 34	723	258	2	0	0	0	0	0	0	983
35 TO 39	808	495	147	11	0	0	0	0	0	1,461
40 TO 44	815	477	310	143	11	0	0	0	0	1,756
45 TO 49	938	601	393	297	100	12	1	0	0	2,342
50 TO 54	1020	723	529	327	212	53	8	0	0	2,872
55 TO 59	787	879	728	460	271	105	55	23	2	3,310
60 TO 64	547	693	622	496	336	85	56	29	8	2,872
65 TO 69	212	301	307	296	188	77	33	12	11	1,437
70 & UP	63	134	135	152	80	51	14	11	8	648
TOTAL	6,347	4,580	3,173	2,182	1,198	383	167	75	29	18,134

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	2,223	0	0	0	0	0	0	0	0	2,223
25 TO 29	23,006	1,030	0	0	0	0	0	0	0	24,036
30 TO 34	46,262	21,034	230	0	0	0	0	0	0	67,526
35 TO 39	43,377	38,887	13,584	899	0	0	0	0	0	96,747
40 TO 44	32,775	33,230	26,181	12,710	1,073	0	0	0	0	105,969
45 TO 49	36,671	34,305	28,575	27,537	9,001	1,222	202	0	0	137,513
50 TO 54	35,194	32,511	30,813	23,804	17,032	4,721	877	0	0	144,952
55 TO 59	25,066	34,090	33,840	25,110	15,457	8,058	4,903	2,351	149	149,024
60 TO 64	17,345	24,800	25,133	25,219	17,470	5,674	4,655	2,352	721	123,369
65 TO 69	6,480	10,471	13,314	14,077	9,524	4,209	2,506	988	904	62,473
70 & UP	1,472	3,962	4,604	5,854	3,520	2,344	773	589	761	23,879
TOTAL ¹	269,871	234,320	176,274	135,210	73,077	26,228	13,916	6,280	2,535	937,711

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	36,443	0	0	0	0	0	0	0	0	36,443
25 TO 29	61,678	54,211	0	0	0	0	0	0	0	61,316
30 TO 34	63,986	81,527	115,000	0	0	0	0	0	0	68,694
35 TO 39	53,684	78,560	92,408	81,727	0	0	0	0	0	66,220
40 TO 44	40,215	69,665	84,455	88,881	97,545	0	0	0	0	60,347
45 TO 49	39,095	57,080	72,710	92,717	90,010	101,833	202,000	0	0	58,716
50 TO 54	34,504	44,967	58,248	72,795	80,340	89,075	109,625	0	0	50,471
55 TO 59	31,850	38,783	46,484	54,587	57,037	76,743	89,145	102,217	74,500	45,022
60 TO 64	31,709	35,786	40,407	50,845	51,994	66,753	83,125	81,103	90,125	42,956
65 TO 69	30,566	34,787	43,368	47,557	50,660	54,662	75,939	82,333	82,182	43,475
70 & UP	23,365	29,567	34,104	38,513	44,000	45,961	55,214	53,545	95,125	36,850
TOTAL	42,519	51,162	55,554	61,966	60,999	68,480	83,329	83,733	87,414	51,710

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

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

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

		Total									
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS	
NUMBER:											
UNDER 20	3	0	0	0	0	0	0	0	0	3	
20 TO 24	103	1	0	0	0	0	0	0	0	104	
25 TO 29	543	25	0	0	0	0	0	0	0	568	
30 TO 34	1,029	387	11	0	0	0	0	0	0	1,427	
35 TO 39	1,141	744	242	28	0	0	0	0	0	2,155	
40 TO 44	1,115	707	460	215	27	0	0	0	0	2,524	
45 TO 49	1,188	842	570	455	155	17	1	0	0	3,228	
50 TO 54	1,255	944	718	522	326	87	14	0	0	3,866	
55 TO 59	978	1,100	897	643	399	194	95	31	3	4,340	
60 TO 64	701	902	760	617	424	148	116	60	10	3,738	
65 TO 69	283	403	372	347	231	100	57	26	20	1,839	
70 & UP	93	175	160	183	104	59	21	18	14	827	
TOTAL	8,432	6,230	4,190	3,010	1,666	605	304	135	47	24,619	

SALARIES (IN THOUSANDS):

UNDER 20	122	0	0	0	0	0	0	0	0	122
20 TO 24	3,479	48	0	0	0	0	0	0	0	3,527
25 TO 29	32,130	1,563	0	0	0	0	0	0	0	33,693
30 TO 34	66,143	30,700	953	0	0	0	0	0	0	97,796
35 TO 39	67,413	60,822	20,754	2,619	0	0	0	0	0	151,608
40 TO 44	54,964	53,252	38,570	20,298	2,333	0	0	0	0	169,417
45 TO 49	52,120	56,457	43,974	45,079	14,920	1,745	202	0	0	214,497
50 TO 54	49,126	51,455	44,990	46,455	30,129	8,286	1,701	0	0	232,142
55 TO 59	37,095	51,383	46,500	45,168	29,921	18,506	8,848	3,102	269	240,792
60 TO 64	25,245	40,492	35,081	36,635	26,341	12,320	11,569	5,753	897	194,333
65 TO 69	10,524	17,646	17,559	18,864	13,975	6,175	5,181	2,212	1,870	94,006
70 & UP	2,512	6,227	6,522	8,475	5,368	3,154	1,533	1,383	1,431	36,605
TOTAL ¹	400,873	370,045	254,903	223,593	122,987	50,186	29,034	12,450	4,467	1,468,538

AVERAGE SALARIES: ²

UNDER 20	40,667	0	0	0	0	0	0	0	0	40,667
20 TO 24	33,777	48,000	0	0	0	0	0	0	0	33,913
25 TO 29	59,171	62,520	0	0	0	0	0	0	0	59,319
30 TO 34	64,279	79,328	86,636	0	0	0	0	0	0	68,533
35 TO 39	59,082	81,750	85,760	93,536	0	0	0	0	0	70,352
40 TO 44	49,295	75,321	83,848	94,409	86,407	0	0	0	0	67,122
45 TO 49	43,872	67,051	77,147	99,075	96,258	102,647	202,000	0	0	66,449
50 TO 54	39,144	54,507	62,660	88,994	92,420	95,241	121,500	0	0	60,047
55 TO 59	37,929	46,712	51,839	70,246	74,990	95,392	93,137	100,065	89,667	55,482
60 TO 64	36,013	44,891	46,159	59,376	62,125	83,243	99,733	95,883	89,700	51,988
65 TO 69	37,187	43,787	47,202	54,363	60,498	61,750	90,895	85,077	93,500	51,118
70 & UP	27,011	35,583	40,763	46,311	51,615	53,458	73,000	76,833	102,214	44,262
TOTAL	47,542	59,397	60,836	74,283	73,822	82,952	95,507	92,222	95,043	59,651

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

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

Table XII-7
Detailed Reconciliation of Active Membership

TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2023							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2022				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	4	576,843	144,211	76.3	42.7	4	560,347	140,087	75.3	41.8
1	F	4	156,487	39,122	75.5	41.1	7	504,603	72,086	73.7	41.7
		8	733,330	91,666	75.9	41.9	11	1,064,950	96,814	74.3	41.7
2	M	1	155,164	155,164	72.0	22.0	2	239,464	119,732	68.5	17.0
2	F	2	52,329	26,165	71.0	23.8	1	45,964	45,964	73.0	47.0
		3	207,493	69,164	71.3	23.2	3	285,428	95,143	70.0	27.0
4	M	3,039	271,576,785	89,364	54.5	17.2	3,441	291,012,366	84,572	54.1	16.3
4	F	8,633	469,076,403	54,335	56.9	15.4	9,920	506,492,794	51,058	56.4	14.5
		11,672	740,653,188	63,456	56.3	15.9	13,361	797,505,160	59,689	55.8	15.0
6	M	3,441	258,517,844	75,129	45.8	4.3	3,324	237,392,017	71,418	45.1	3.9
6	F	9,495	468,425,984	49,334	47.3	4.0	8,940	431,359,501	48,251	46.7	3.7
		12,936	726,943,828	56,195	46.9	4.1	12,264	668,751,518	54,530	46.3	3.7
ALL		24,619	1,468,537,839	59,651	51.4	9.7	25,639	1,467,607,056	57,241	51.3	9.6

JUNE 30, 2023 MEMBERS ALSO PRESENT AS OF JUNE 30, 2022							JUNE 30, 2022 MEMBERS ALSO PRESENT AS OF JUNE 30, 2023				
1	M	4	576,843	144,211	76.3	42.7	4	560,347	140,087	75.3	41.7
1	F	4	156,487	39,122	75.5	41.1	4	148,471	37,118	74.5	40.2
		8	733,330	91,666	75.9	41.9	8	708,818	88,602	74.9	41.0
2	M	1	155,164	155,164	72.0	22.0	1	150,649	150,649	71.0	21.1
2	F	1	47,329	47,329	74.0	47.5	1	45,964	45,964	73.0	46.5
		2	202,493	101,247	73.0	34.8	2	196,613	98,307	72.0	33.8
4	M	3,008	269,551,542	89,612	54.6	17.3	3,008	259,624,169	86,311	53.6	16.2
4	F	8,550	464,832,005	54,366	57.0	15.5	8,550	448,045,952	52,403	56.0	14.5
		11,558	734,383,547	63,539	56.3	16.0	11,558	707,670,121	61,228	55.3	14.9
6	M	2,963	231,609,614	78,167	46.4	4.9	2,963	219,450,231	74,064	45.3	4.0
6	F	7,863	404,891,575	51,493	48.1	4.7	7,863	385,379,947	49,012	47.1	3.8
		10,826	636,501,189	58,794	47.6	4.7	10,826	604,830,178	55,868	46.6	3.8
ALL		22,394	1,371,820,559	61,258	52.1	10.5	22,394	1,313,405,730	58,650	51.1	9.6

ADDITIONS DURING THE YEAR ¹							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR ¹				
1	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
1	F	0	0	0	0.0	0.0	3	356,132	118,711	72.7	43.7
		0	0	0	0.0	0.0	3	356,132	118,711	72.7	43.7
2	M	0	0	0	0.0	0.0	1	88,815	88,815	66.0	12.9
2	F	1	5,000	5,000	68.0	0.0	0	0	0	0.0	0.0
		1	5,000	5,000	68.0	0.0	1	88,815	88,815	66.0	12.9
4	M	31	2,025,243	65,330	50.9	7.7	433	31,388,197	72,490	57.6	16.8
4	F	83	4,244,398	51,137	52.5	9.9	1,370	58,446,842	42,662	59.4	14.9
		114	6,269,641	54,997	52.1	9.3	1,803	89,835,039	49,825	58.9	15.3
6	M	478	26,908,230	56,293	42.5	0.7	361	17,941,786	49,700	43.0	3.3
6	F	1,632	63,534,409	38,930	43.7	0.6	1,077	45,979,554	42,692	43.8	2.9
		2,110	90,442,639	42,864	43.4	0.7	1,438	63,921,340	44,452	43.6	3.0
ALL		2,225	96,717,280	43,468	43.9	1.1	3,245	154,201,326	47,520	52.2	9.9

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

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

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

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>SERVICE RETIREMENT:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	0	0	0	0	0	0
40 TO 44	0	0	0	0	0	0	0	0	0
45 TO 49	0	0	0	0	0	0	0	0	0
50 TO 54	2	102,880	51,440	0	0	0	2	102,880	51,440
55 TO 59	92	3,119,960	33,913	311	4,054,621	13,037	403	7,174,581	17,803
60 TO 64	417	14,357,988	34,432	1,458	21,321,944	14,624	1,875	35,679,932	19,029
65 TO 69	772	26,450,997	34,263	2,924	42,468,451	14,524	3,696	68,919,448	18,647
70 TO 74	790	25,089,116	31,758	3,359	45,287,125	13,482	4,149	70,376,241	16,962
75 TO 79	618	18,740,459	30,324	2,908	35,487,897	12,204	3,526	54,228,356	15,380
80 TO 84	436	13,497,794	30,958	2,018	22,634,097	11,216	2,454	36,131,892	14,724
85 TO 89	258	7,405,595	28,704	1,196	11,519,851	9,632	1,454	18,925,446	13,016
90 & UP	146	3,982,461	27,277	960	9,035,489	9,412	1,106	13,017,950	11,770
TOTAL	3,531	112,747,251	31,931	15,134	191,809,475	12,674	18,665	304,556,726	16,317
<i>ORDINARY DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	0	0	0	0	0	0
40 TO 44	0	0	0	2	40,193	20,097	2	40,193	20,097
45 TO 49	7	137,942	19,706	6	93,538	15,590	13	231,480	17,806
50 TO 54	6	125,795	20,966	16	263,757	16,485	22	389,552	17,707
55 TO 59	21	478,683	22,794	89	1,317,785	14,807	110	1,796,468	16,332
60 TO 64	41	757,667	18,480	175	2,278,596	13,021	216	3,036,263	14,057
65 TO 69	54	895,642	16,586	226	2,600,904	11,508	280	3,496,546	12,488
70 TO 74	51	923,521	18,108	169	1,928,593	11,412	220	2,852,114	12,964
75 TO 79	28	503,860	17,995	139	1,496,570	10,767	167	2,000,430	11,979
80 TO 84	17	234,636	13,802	79	855,766	10,832	96	1,090,402	11,358
85 TO 89	4	87,731	21,933	20	183,041	9,152	24	270,772	11,282
90 & UP	3	41,565	13,855	8	66,516	8,315	11	108,081	9,826
TOTAL	232	4,187,042	18,048	929	11,125,259	11,976	1,161	15,312,301	13,189
<i>ACCIDENTAL DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	1	32,910	32,910	0	0	0	1	32,910	32,910
40 TO 44	0	0	0	1	24,869	24,869	1	24,869	24,869
45 TO 49	0	0	0	2	21,221	10,611	2	21,221	10,611
50 TO 54	2	23,596	11,798	3	31,333	10,444	5	54,929	10,986
55 TO 59	1	41,519	41,519	7	70,635	10,091	8	112,154	14,019
60 TO 64	13	367,452	28,266	29	292,419	10,083	42	659,871	15,711
65 TO 69	8	170,568	21,321	38	501,024	13,185	46	671,592	14,600
70 TO 74	12	184,463	15,372	40	457,572	11,439	52	642,035	12,347
75 TO 79	5	158,450	31,690	23	201,017	8,740	28	359,467	12,838
80 TO 84	5	102,833	20,567	15	133,085	8,872	20	235,918	11,796
85 TO 89	2	47,337	23,669	12	99,768	8,314	14	147,105	10,508
90 & UP	2	77,593	38,797	4	30,643	7,661	6	108,236	18,039
TOTAL	51	1,206,721	23,661	174	1,863,586	10,710	225	3,070,307	13,646

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

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>ACCIDENTAL DEATH:</i>									
UNDER 30	3	9,666	3,222	1	18,206	18,206	4	27,872	6,968
30 TO 34	0	0	0	1	4,176	4,176	1	4,176	4,176
35 TO 39	2	30,166	15,083	0	0	0	2	30,166	15,083
40 TO 44	1	10,484	10,484	1	9,540	9,540	2	20,024	10,012
45 TO 49	1	3,222	3,222	0	0	0	1	3,222	3,222
50 TO 54	0	0	0	0	0	0	0	0	0
55 TO 59	1	13,452	13,452	0	0	0	1	13,452	13,452
60 TO 64	3	32,254	10,751	0	0	0	3	32,254	10,751
65 TO 69	1	17,226	17,226	1	51,707	51,707	2	68,933	34,467
70 TO 74	0	0	0	0	0	0	0	0	0
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	1	10,402	10,402	0	0	0	1	10,402	10,402
90 & UP	0	0	0	0	0	0	0	0	0
TOTAL	13	126,872	9,759	4	83,629	20,907	17	210,501	12,382
<i>OTHER BENEFICIARIES:</i>									
UNDER 30	4	26,318	6,580	2	12,994	6,497	6	39,312	6,552
30 TO 34	6	60,840	10,140	2	9,248	4,624	8	70,088	8,761
35 TO 39	11	199,995	18,181	5	48,169	9,634	16	248,164	15,510
40 TO 44	6	105,659	17,610	11	146,003	13,273	17	251,662	14,804
45 TO 49	8	81,631	10,204	25	215,885	8,635	33	297,516	9,016
50 TO 54	10	132,008	13,201	36	265,237	7,368	46	397,245	8,636
55 TO 59	19	126,284	6,647	45	243,819	5,418	64	370,103	5,783
60 TO 64	34	464,010	13,647	57	447,663	7,854	91	911,673	10,018
65 TO 69	48	672,460	14,010	68	973,282	14,313	116	1,645,742	14,187
70 TO 74	57	1,168,378	20,498	66	1,106,036	16,758	123	2,274,414	18,491
75 TO 79	90	1,959,411	21,771	83	1,093,305	13,172	173	3,052,715	17,646
80 TO 84	79	1,506,347	19,068	83	1,720,995	20,735	162	3,227,342	19,922
85 TO 89	52	952,573	18,319	96	1,918,092	19,980	148	2,870,665	19,396
90 & UP	42	908,196	21,624	103	1,854,966	18,009	145	2,763,162	19,056
TOTAL	466	8,364,109	17,949	682	10,055,694	14,744	1,148	18,419,803	16,045
<i>ALL PENSIONERS AND BENEFICIARIES:</i>									
UNDER 30	7	35,984	5,141	3	31,200	10,400	10	67,184	6,718
30 TO 34	6	60,840	10,140	3	13,424	4,475	9	74,264	8,252
35 TO 39	14	263,071	18,791	5	48,169	9,634	19	311,240	16,381
40 TO 44	7	116,143	16,592	15	220,605	14,707	22	336,748	15,307
45 TO 49	16	222,795	13,925	33	330,644	10,020	49	553,439	11,295
50 TO 54	20	384,279	19,214	55	560,327	10,188	75	944,606	12,595
55 TO 59	134	3,779,898	28,208	452	5,686,860	12,582	586	9,466,758	16,155
60 TO 64	508	15,979,371	31,455	1,719	24,340,622	14,160	2,227	40,319,993	18,105
65 TO 69	883	28,206,893	31,944	3,257	46,595,368	14,306	4,140	74,802,261	18,068
70 TO 74	910	27,365,478	30,072	3,634	48,779,326	13,423	4,544	76,144,804	16,757
75 TO 79	741	21,362,180	28,829	3,153	38,278,789	12,140	3,894	59,640,969	15,316
80 TO 84	537	15,341,611	28,569	2,195	25,343,943	11,546	2,732	40,685,554	14,892
85 TO 89	317	8,503,637	26,825	1,324	13,720,752	10,363	1,641	22,224,389	13,543
90 & UP	193	5,009,815	25,958	1,075	10,987,614	10,221	1,268	15,997,429	12,616
TOTAL	4,293	126,631,995	29,497	16,923	214,937,643	12,701	21,216	341,569,638	16,100

Graph XII-9
Pensioner Average Benefits

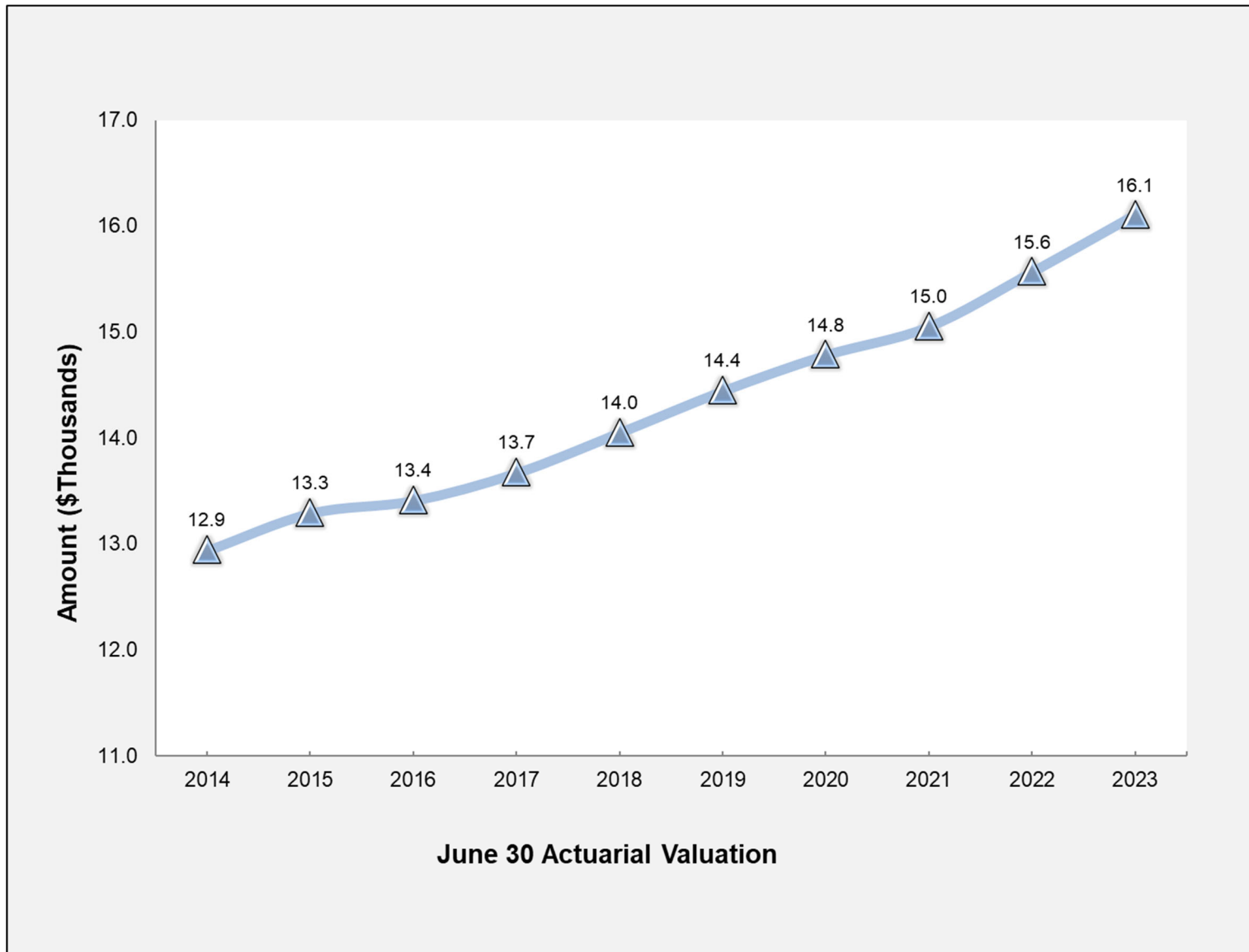


Table XII-10
Reconciliation of Pensioner and Beneficiary Data

SCHEDULE OF PENSIONERS AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS								
June 30 Actuarial Valuation	Added to Rolls		Removed from Rolls		End of Year Rolls		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances ¹	Number	Annual Allowances	Number	Annual Allowances ²		
2014	1,094	\$ 13,701,890	554	\$ 5,306,812	15,995	\$ 206,929,375	4.2%	\$ 12,937
2015	1,002	16,482,509	559	4,979,621	16,438	218,432,263	5.6%	13,288
2016	1,075	14,412,852	576	5,776,541	16,937	227,068,574	4.0%	13,407
2017	1,061	17,321,922	573	6,234,174	17,425	238,156,322	4.9%	13,668
2018	1,179	20,878,837	563	5,613,557	18,041	253,421,602	6.4%	14,047
2019	1,216	22,617,426	755	8,877,194	18,502	267,161,833	5.4%	14,440
2020	1,326	23,003,553	708	8,604,426	19,120	281,560,960	5.4%	14,726
2021	1,066	18,952,419	738	7,909,902	19,448	292,603,477	3.9%	15,045
2022	1,792	35,161,651	759	9,079,916	20,481	318,685,212	8.9%	15,560
2023	1,411	27,627,958	676	4,743,532	21,216	341,569,638	7.2%	16,100

¹ Amounts shown include 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	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 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
AMC-PT	Additional Member Contributions for Physically-Taxing Employment
AVA	Actuarial Value of Assets
BERS	Board of Education Retirement System
BMC	Basic Member Contributions
COLA	Cost-of-Living Adjustment
EAN	Entry Age Normal cost method
FAS	Final Average Salary
FIRE	Fire Pension Fund
GASB	Governmental Accounting Standards Board
IRC	Internal Revenue Code
MVA	Market Value of Assets
NYCERS	New York City Employees' Retirement System
NYCRS	New York City Retirement Systems
OWBPA	Older Workers Benefit Protection Act
OYLM	One-Year Lag Methodology
POLICE	Police Pension Fund
PT	Physically-Taxing Employment
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