



June 30, 2023 Actuarial Valuation Report

for the

New York City Fire Pension Fund

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

October 20, 2025

Board of Trustees
New York City Fire Pension Fund
One Battery Park Plaza, 9th Floor
New York, NY 10004

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

Dear Trustees:

This is the June 30, 2023 actuarial valuation report of the New York City FIRE Pension Fund (FIRE) 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 \$1,574,396,218.

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 FIRE 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. The benefits under the Plan have not changed from the prior valuation other than:

- 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 FIRE Tier 3 Modified and Tier 3 Enhanced members.

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 have not changed from those used in the previous valuation other than:

- The use of fair market value of assets to determine the Unfunded Accrued Liability for the Variable Supplements Funds (VSF).

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.
- Unless specifically noted, Variable Supplements Funds results.

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

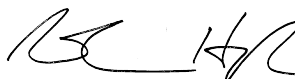
Marek Tyszkiewicz is an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries. Anderson Huynh is a Fellow of the Society of Actuaries, an Enrolled Actuary under the Employee Retirement Income Security Act of 1974, a Member of the American Academy of Actuaries, and a Fellow of the Conference of Consulting Actuaries.

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


Anderson Huynh, FSA, EA, MAAA, FCA
Assistant Deputy Chief Actuary

MT/eh

cc: LeRoy McGinnis - New York City Fire Pension Fund
Lei Tian - New York City Fire Pension Fund

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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 68.7% in the prior valuation to 70.3% as of June 30, 2023. The Plan's investment return for this period, based on the Market Value of Assets, was 7.9%.

Required Contribution Amount

The actuarially required contribution for Fiscal Year 2025 is \$1,574,396,218 and is derived as the sum of the:

- Normal Cost: The actuarial cost for the additional one year of service credit expected to be earned by current active members for the upcoming year; and
- Amortization of Unfunded Accrued Liabilities: The amortization of the unfunded actuarial accrued liabilities for past service earned prior to the valuation date; and
- Administrative Expense: The reimbursement to the Plan with interest for administrative expenses paid from Plan assets during the valuation year; and
- Interest on Late Payments: Interest at 7% for any late employer contributions.

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 FIRE PENSION FUND		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability ¹	\$ 26,524,739,801	\$ 25,423,190,980
2. Actuarial Value of Assets (AVA)	19,198,971,000	18,205,629,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 7,325,768,801	\$ 7,217,561,980
4. Market Value of Assets (MVA)	18,655,113,000	17,472,164,000
5. Unfunded Accrued Liability (MVA Basis) (1. - 4.)	\$ 7,869,626,801	\$ 7,951,026,980
6. Funded Ratio (MVA Basis) (4. / 1.)	70.3%	68.7%
Contribution²		
1. Normal Cost	\$ 632,215,691	\$ 615,055,409
2. Amortization of Unfunded Accrued Liability	927,273,929	850,006,562
3. Administrative Expenses	14,906,598	14,552,824
4. Interest on Late Employer Contributions	0	0
5. Actuarial Required Contribution (1. + 2. + 3. + 4.)	\$ 1,574,396,218	\$ 1,479,614,795
Participant Data		
1. Active Members		
a. Number	10,720	10,685
b. Annual Salary ³	\$ 1,494,537,065	\$ 1,444,043,876
c. Average Salary	\$ 139,416	\$ 135,147
d. Average Age	40.81	40.95
e. Average Service	13.89	14.19
2. Terminated Nonvested Members	1	0
3. Deferred Vested Members	59	71
4. Retirees and Beneficiaries		
a. Number	16,871	16,717
b. Total Annual Benefits	\$ 1,523,609,382	\$ 1,447,806,758
c. Average Annual Benefit	\$ 90,309	\$ 86,607
d. Average Age	67.62	67.55

¹ Includes unfunded Accrued Liability for VSFs, if any.

² Includes results for VSFs.

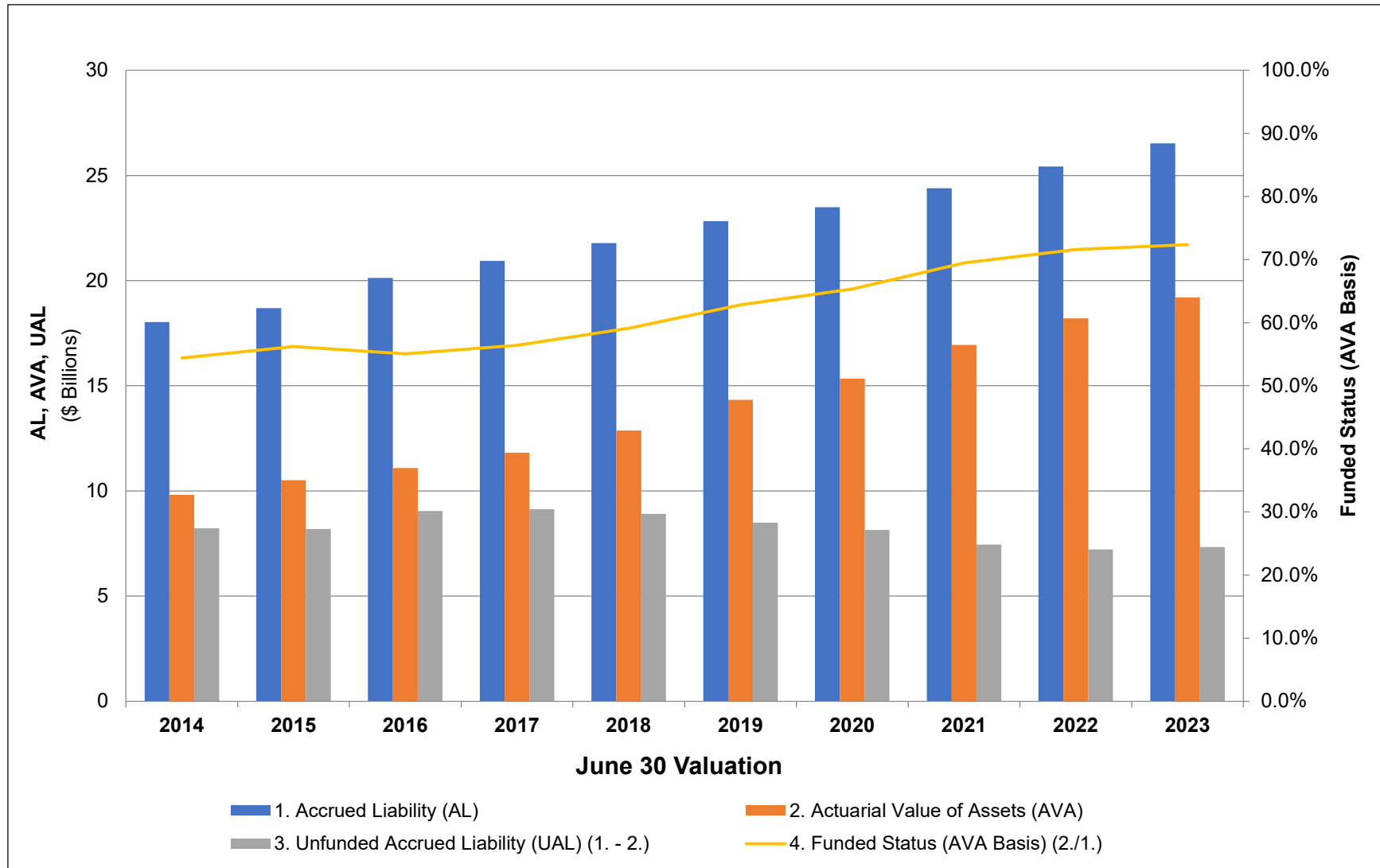
³ Salaries shown are the base salary plus assumed overtime paid and reflect certain salary increases with retroactive dates, if any, that are not yet reflected in census data.

Table I-2
Actuarial Liabilities

NEW YORK CITY FIRE PENSION FUND		
ACTUARIAL LIABILITIES BY STATUS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Accrued Liability		
1. Active Members	\$ 9,023,383,430	\$ 8,843,922,251
2. Terminated Nonvested Members	15,439	0
3. Deferred Vested Members	21,531,963	23,159,244
4. Retirees and Beneficiaries	17,463,846,145	16,556,109,485
5. Unfunded VSF Accrued Liability ¹	<u>15,962,824</u>	<u>0</u>
6. Plan Accrued Liability	\$ 26,524,739,801	\$ 25,423,190,980
Present Value of Benefits		
1. Active Members	\$ 15,140,258,486	\$ 14,612,132,638
2. Terminated Nonvested Members	15,439	0
3. Deferred Vested Members	21,531,963	23,159,244
4. Retirees and Beneficiaries	17,463,846,145	16,556,109,485
5. Unfunded VSF PVB	<u>126,876,241</u>	<u>79,555,424</u>
6. Total Present Value of Benefits	\$ 32,752,528,274	\$ 31,270,956,791

¹ For funding purposes, unfunded VSF benefits are an obligation of the Plan. Therefore, the Accrued Liability of the Plan includes any VSF unfunded accrued liabilities, not less than zero as VSF assets cannot be used to pay QPP benefits. See Table VI-1 for more information.

Graph I-3
Historical Funded Status



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	\$ 5,953	\$ 10,873
Receivables		
Investment Securities Sold	\$ 170,659	\$ 303,803
Member Loans	12,948	11,656
Accrued Interest and Dividends	60,680	59,230
Other Receivables	0	0
Total Receivables	\$ 244,287	\$ 374,689
INVESTMENTS AT FAIR VALUE		
Short-Term Investments		
Commercial Paper	\$ 21,994	\$ 150,480
Short-Term Investment Fund	207,493	178,943
U.S. Treasury Bills and Agencies	88,462	179,990
Debt Securities		
U.S. Government and Agencies	2,069,986	2,899,182
Mortgage Debt Security	671,797	796,717
Corporate and Other	1,745,068	1,546,553
Treasury Inflation Protected Securities	722,535	0
Bank Loans	65,191	46,620
Equity Securities		
Domestic Equity	5,664,574	4,973,935
International Equity	1,996,593	1,805,750
Alternative Investments	4,985,366	4,528,673
Collective Trust Funds		
Bank Loans	21,975	172
Corporate and Other	59,912	0
International Equity	392,325	393,822
Domestic Equity	8,558	11,101
Mortgage Debt Security	24,281	48,946
Opportunistic Fixed Income	0	53,999
Collateral From Securities Lending	2,062,901	1,905,756
Total Investments	\$20,809,011	\$19,520,639
OTHER ASSETS	11,704	14,644
TOTAL ASSETS	\$21,070,955	\$19,920,845
LIABILITIES		
Accounts Payable	\$ 96,210	\$ 90,612
Payable for Investment Securities Purchased	223,126	424,802
Accrued Benefits Payable	33,605	27,511
Accrued Transfers to VSFs	0	0
Security Lending	2,062,901	1,905,756
TOTAL LIABILITIES	\$ 2,415,842	\$ 2,448,681
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$18,655,113	\$17,472,164

Table II-2
Statement of Changes in Plan Net Assets

(\$ Thousands)		
	June 30, 2023	June 30, 2022
ADDITIONS		
Contributions		
Member Contributions	\$ 118,264	\$ 134,469
Employer Contributions ¹	1,423,679	1,446,992
Total Contributions	<u>\$ 1,541,943</u>	<u>\$ 1,581,461</u>
Investment Income (Loss)		
Interest Income	\$ 255,152	\$ 253,563
Dividend Income	205,475	209,174
Net Appreciation (Depreciation) in Fair Value	1,066,542	(1,781,277)
Total Investment Income (Loss)	<u>\$ 1,527,169</u>	<u>\$ (1,318,540)</u>
Less Investment Expenses	\$ 178,481	\$ 140,427
Net Income (Loss)	\$ 1,348,688	\$ (1,458,967)
Securities Lending Transactions		
Securities Lending Income	4,888	4,494
Securities Lending Fees	(449)	(445)
Net Securities Lending Income (Loss)	<u>\$ 4,439</u>	<u>\$ 4,049</u>
Other		
Net Receipts from Other Retirement Systems	0	0
Litigation Income	811	953
Other Total	<u>811</u>	<u>953</u>
Transferable Earnings due from VSFs to QPP	0	0
TOTAL ADDITIONS	\$ 2,895,881	\$ 127,496
DEDUCTIONS		
Benefit Payments and Withdrawals	\$ 1,699,912	\$ 1,551,182
Accrued Transfers to VSFs	0	0
Administrative Expenses	13,020	12,711
Payment to VSFs - Interest on SKIM	0	0
TOTAL DEDUCTIONS	<u>\$ 1,712,932</u>	<u>\$ 1,563,893</u>
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ 1,182,949	\$ (1,436,397)
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	\$ 17,472,164	\$18,908,561
End of Year	\$ 18,655,113	\$17,472,164

¹ The reported June 30, 2023 Employer Contributions include \$78 in contributions related to the Excess Benefit Plan.

Table II-3
Development of Actuarial Value of Assets

(\$ Thousands)		
Valuation Date	June 30, 2023	June 30, 2022
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY)	\$ 17,472,164	\$ 18,908,561
b. End of Year (EOY)	\$ 18,655,113	\$ 17,472,164
2. Contributions		
a. Employee	\$ 118,264	\$ 134,469
b. Employer	<u>1,423,679</u>	<u>1,446,992</u>
c. Total Contributions	\$ 1,541,943	\$ 1,581,461
3. Net Investment Income		
a. Investment Income	\$ 1,531,608	\$ (1,314,491)
b. Investment Expenses	<u>(178,481)</u>	<u>(140,427)</u>
c. Total Net Investment Income	\$ 1,353,127	\$ (1,454,918)
4. Benefit Payments and Other Cash Flow	\$ (1,712,121)	\$ (1,562,940)
5. Transferable Earnings from FIRE to VSFs - EOY	\$ 0	\$ 0
6. Net Cash Flow (2.c. + 4. + 5.)	\$ (170,178)	\$ 18,521
7. Expected Investment Return (EIR)	\$ 1,217,196	\$ 1,324,236
8. Unexpected Investment Return (UIR) (3.c. - 7.)	\$ 135,931	\$ (2,779,154)
9. Preliminary AVA @ EOY		
a. AVA @ BOY (prior to corridor limit)	\$ 18,205,629	\$ 16,943,734
b. Net Cash Flow (6.)	\$ (170,178)	\$ 18,521
c. Expected Investment Return (7.)	\$ 1,217,196	\$ 1,324,236
d. Phase in of UIR		
20% of UIR for prior year	\$ 27,186	\$ (555,832)
20% of UIR for second prior year	(555,832)	539,921
20% of UIR for third prior year	539,921	(64,951)
20% of UIR for fourth prior year	(64,951)	N/A
20% of UIR for fifth prior year	N/A	N/A
Total	\$ (53,676)	\$ (80,862)
e. Preliminary AVA (9.a. + 9.b. + 9.c. + 9.d.)	\$ 19,198,971	\$ 18,205,629
10. Corridor		
a. Lower Corridor Bound (80% of 1.b.)	\$ 14,924,090	\$ 13,977,731
b. Upper Corridor Bound (120% of 1.b.)	\$ 22,386,136	\$ 20,966,597
11. AVA @ EOY (9.e. bounded by 10.a. and 10.b.)	\$ 19,198,971	\$ 18,205,629

Graph II-4
Historical Market and Actuarial Value of Assets

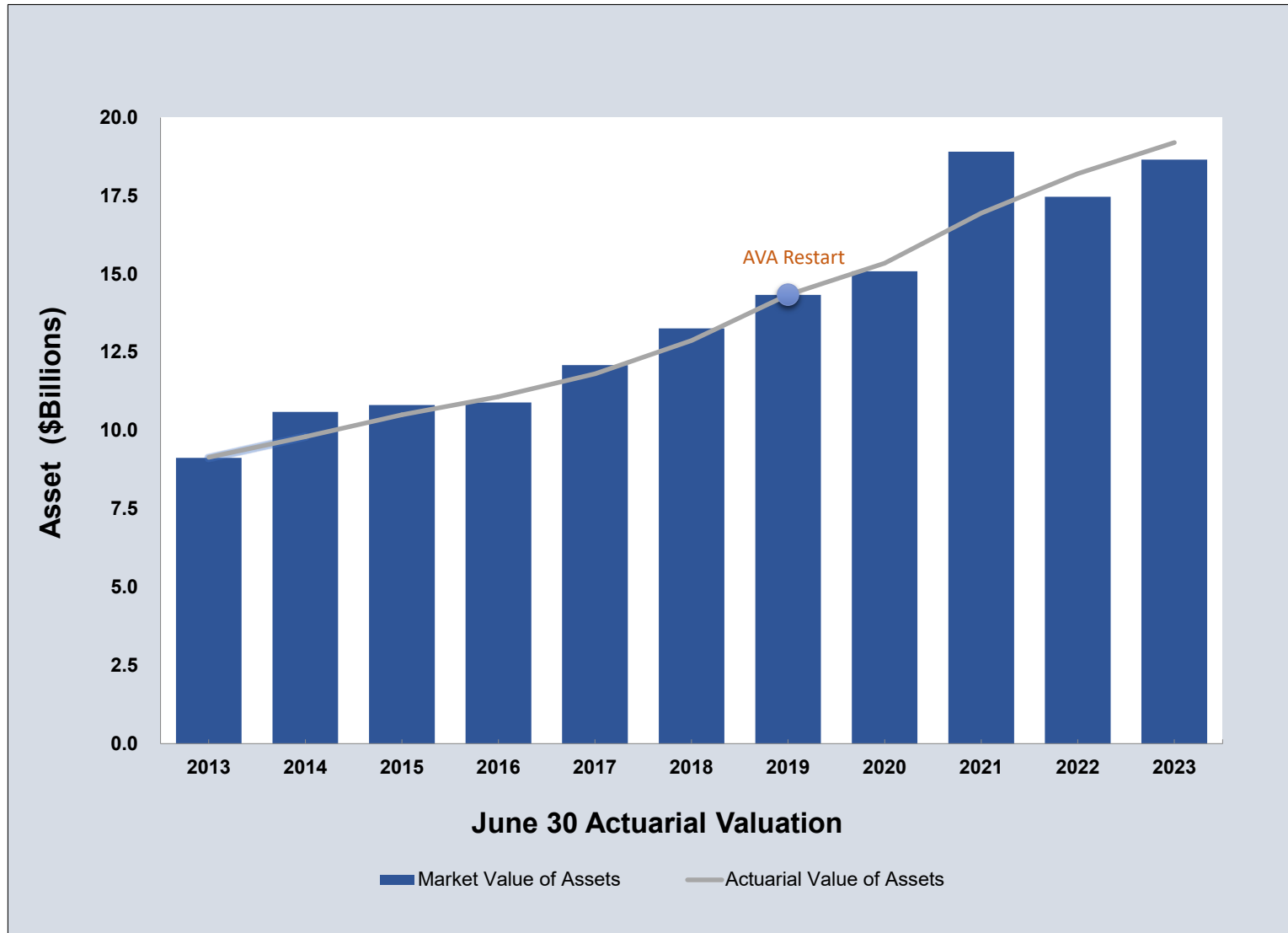


Table II-5
Future Recognition of Unexpected Investment Return

(\$ Thousands)

	June 30 Valuation				
	2024	2025	2026	2027	Total ¹
2020 Deferred Investment Gain/(Loss) Recognition	\$ (64,951)				\$ (64,951)
2021 Deferred Investment Gain/(Loss) Recognition	\$ 539,921	\$ 539,921			\$ 1,079,842
2022 Deferred Investment Gain/(Loss) Recognition	\$ (555,832)	\$ (555,832)	\$ (555,832)		\$ (1,667,496)
2023 Deferred Investment Gain/(Loss) Recognition	\$ 27,186	\$ 27,186	\$ 27,186	\$ 27,186	\$ 108,744
Total Deferred Investment Gain/(Loss) Recognition ¹	\$ (53,676)	\$ 11,275	\$ (528,646)	\$ 27,186	\$ (543,858)

¹ Total may not add due to rounding.

	June 30, 2023
Actuarial Value of Assets	\$ 19,198,971
Deferred Investment Gain/(Loss) Future Recognition	\$ (543,858)
Market Value of Assets	\$ 18,655,113

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	\$ 632,215,691	\$ 615,055,409
Unfunded Accrued Liability Amortization ¹	\$ 927,273,929	\$ 850,006,562
Administrative Expenses	<u>\$ 14,906,598</u>	<u>\$ 14,552,824</u>
Total Contribution to the New York City Fire Pension Fund	\$ 1,574,396,218	\$ 1,479,614,795

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 using level dollars 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 FIRE PENSION FUND SCHEDULE OF UNFUNDED ACCRUED LIABILITY BASES				
Amortization Base	Date Established	Original \$ Amount	Amortization Years	Amortization \$ Payment
Initial UAL	6/30/10	7,095,864,159	22	782,914,921
(Gain)/Loss	6/30/11	(168,320,189)	15	(19,908,798)
(Gain)/Loss	6/30/12	26,297,732	15	3,110,478
(Gain)/Loss	6/30/13	61,311,940	15	7,251,935
(Gain)/Loss	6/30/14	84,382,762	15	9,980,736
Assumption Change ¹	6/30/14	327,575,238	20	32,784,417
(Gain)/Loss	6/30/15	4,282,552	15	506,537
(Gain)/Loss	6/30/16	158,483,315	15	18,745,299
SADB	6/30/16	820,067,832	15	96,997,069
Enhanced ADR	6/30/16	2,612,048	22	249,358
(Gain)/Loss	6/30/17	59,849,221	15	7,078,925
No VSF Escalation Offset	6/30/17	462,349	21	45,144
Non-Uniformed Service	6/30/17	2,645,107	20	264,728
Assumption Change ²	6/30/17	407,308,674	20	40,764,306
Method Change ²	6/30/17	(320,832,740)	20	(32,109,613)
(Gain)/Loss	6/30/18	(178,668,664)	15	(21,132,809)
(Gain)/Loss	6/30/19	(127,003,510)	15	(15,021,890)
Assumption Change ³	6/30/19	99,175,360	20	9,925,679
Method Change ³	6/30/19	(156,147,033)	20	(15,627,522)
(Gain)/Loss	6/30/20	(62,988,586)	15	(7,450,247)
(Gain)/Loss	6/30/21	(394,165,627)	15	(46,621,645)
SADB for Parents ⁴	6/30/21	30,992,336	15	3,665,752
(Gain)/Loss	6/30/22	138,630,725	15	16,397,148
(Gain)/Loss	6/30/23	413,683,811	15	48,930,242
Tier 3 FAS-3 ⁵	6/30/23	53,813,162	19	5,533,779
TOTAL				927,273,929

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

² 2019 A&M.

³ Revised 2021 A&M.

⁴ Chapter 782 of the Laws of 2022.

⁵ Chapter 56 of the Laws of 2024.

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

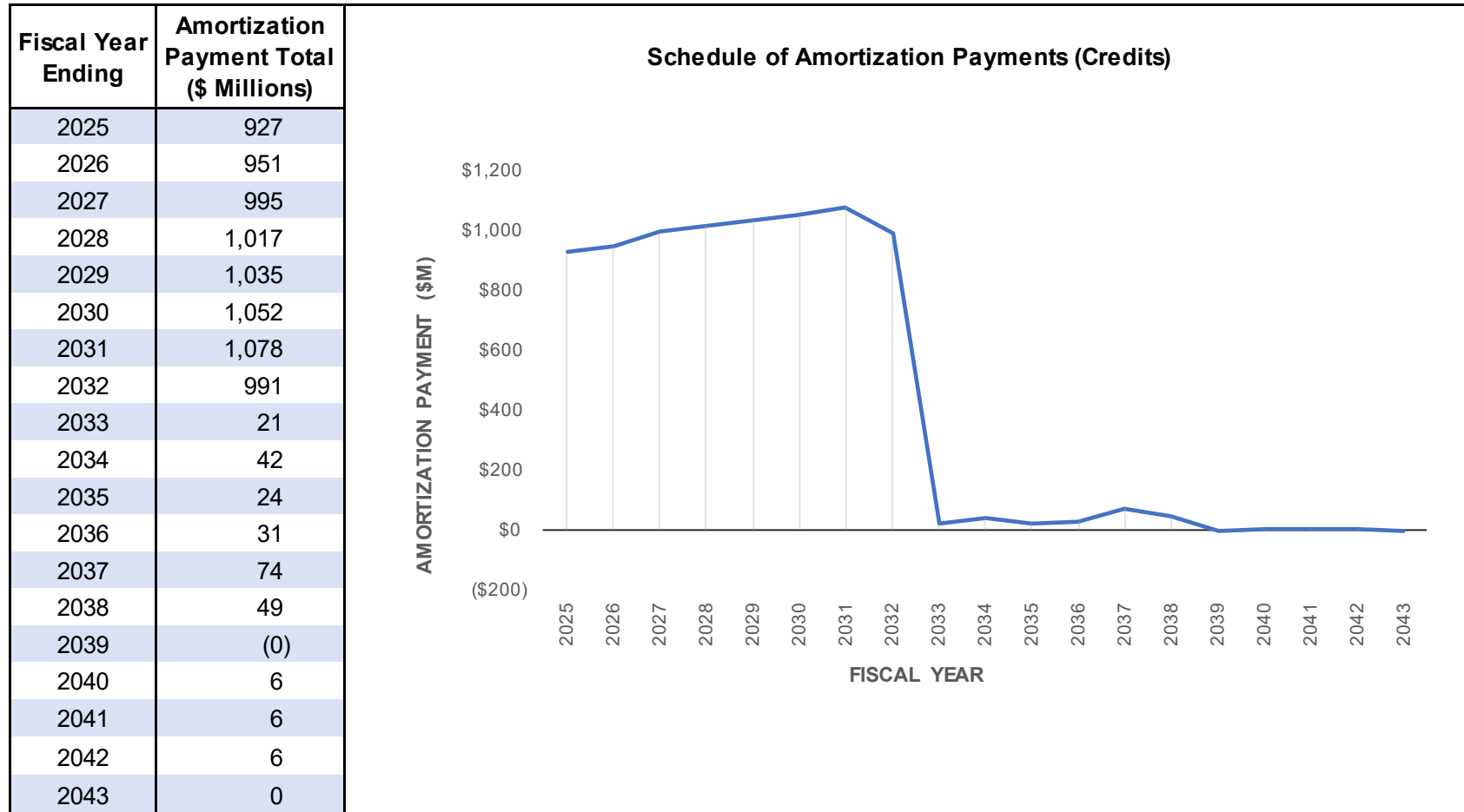


Table III-4
Reconciliation of Outstanding UAL Bases

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	6/30/10	\$7,095,864,159	22	\$5,706,122,325	\$760,111,575	\$5,319,285,362	\$782,914,921	7
(Gain)/Loss	6/30/11	(168,320,189)	15	(54,044,698)	(19,908,798)	(37,234,006)	(19,908,798)	1
(Gain)/Loss	6/30/12	26,297,732	15	10,898,361	3,110,478	8,443,743	3,110,478	2
(Gain)/Loss	6/30/13	61,311,940	15	30,757,464	7,251,935	25,409,027	7,251,935	3
(Gain)/Loss	6/30/14	84,382,762	15	49,210,487	9,980,736	42,331,067	9,980,736	4
Assumption Change	6/30/14	327,575,238	20	254,298,524	32,784,417	238,186,956	32,784,417	9
(Gain)/Loss	6/30/15	4,282,552	15	2,823,810	506,537	2,497,511	506,537	5
(Gain)/Loss	6/30/16	158,483,315	15	115,785,202	18,745,299	104,499,878	18,745,299	6
SADB	6/30/16	820,067,832	15	599,127,538	96,997,069	540,731,917	96,997,069	6
Enhanced ADR	6/30/16	2,612,048	22	2,349,272	249,358	2,255,783	249,358	13
(Gain)/Loss	6/30/17	59,849,221	15	47,707,773	7,078,925	43,724,820	7,078,925	7
No VSF Escalation Offset	6/30/17	462,349	21	425,317	45,144	408,392	45,144	13
Non-Uniformed Service	6/30/17	2,645,107	20	2,394,828	264,728	2,288,629	264,728	12
Assumption Change	6/30/17	407,308,674	20	368,769,503	40,764,306	352,416,442	40,764,306	12
Method Change	6/30/17	(320,832,740)	20	(290,475,844)	(32,109,613)	(277,594,711)	(32,109,613)	12
(Gain)/Loss	6/30/18	(178,668,664)	15	(153,535,122)	(21,132,809)	(142,422,633)	(21,132,809)	8
(Gain)/Loss	6/30/19	(127,003,510)	15	(116,520,123)	(15,021,890)	(109,137,768)	(15,021,890)	9
Assumption Change	6/30/19	99,175,360	20	96,990,637	9,925,679	93,512,779	9,925,679	14
Method Change	6/30/19	(156,147,033)	20	(152,707,295)	(15,627,522)	(147,231,571)	(15,627,522)	14
(Gain)/Loss	6/30/20	(62,988,586)	15	(61,211,074)	(7,450,247)	(57,789,254)	(7,450,247)	10
(Gain)/Loss	6/30/21	(394,165,627)	15	(403,054,422)	(46,621,645)	(383,042,427)	(46,621,645)	11
SADB for Parents	6/30/21	30,992,336	15	31,691,243	3,665,752	30,117,747	3,665,752	11
(Gain)/Loss	6/30/22	138,630,725	15	148,334,876	16,397,148	141,756,976	16,397,148	12
Admin Expenses	6/30/22	13,148,361	2	14,068,745	14,552,824	0	0	0
Normal Cost	7/1/22	555,697,670	2	594,596,507	615,055,409	0	0	0
(Gain)/Loss	6/30/23	413,683,811	15	413,683,811	0	442,641,678	48,930,242	13
Tier 3 FAS-3	6/30/23	53,813,162	19	53,813,162	0	57,580,083	5,533,779	17
Admin Expenses	6/30/23	13,467,994	2	13,467,994	0	14,410,752	14,906,598	0
Normal Cost	7/1/23	571,201,848	2	0	0	611,185,977	632,215,691	0
TOTAL				\$7,325,768,801	\$1,479,614,795	\$6,919,233,149	\$1,574,396,218	

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)

Cost Component	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	\$5,706,122,325	\$760,111,575	\$5,319,285,362	\$782,914,921
Method Change	(440,788,311)	(47,472,407)	(422,537,653)	(47,472,407)
Assumption Change	720,058,664	83,474,402	684,116,177	83,474,402
Plan Change	687,406,532	100,957,323	631,093,922	106,491,102
(Gain)/Loss	30,836,345	(47,064,331)	81,678,612	1,865,911
Normal Cost	594,596,507	615,055,409	611,185,977	632,215,691
Admin Expenses	27,536,739	14,552,824	14,410,752	14,906,598
TOTAL	\$7,325,768,801	\$1,479,614,795	\$6,919,233,149	\$1,574,396,218

	6/30/2023		FY 2025
(A) Actuarial Accrued Liability	\$ 26,524,739,801	Normal Cost	\$ 632,215,691
(B) Actuarial Value of Assets	19,198,971,000	UAL Payment	927,273,929
(C) Unfunded Accrued Liabilities (A) - (B)	\$ 7,325,768,801	Admin Expenses	14,906,598
		Total	\$ 1,574,396,218

Table III-5
Contribution History

Table III-5 compares the 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 Contribution
2016	\$ 1,054,478	\$ 1,054,478	100.0%
2017	1,061,170	1,061,170	100.0%
2018	1,200,417	1,200,417	100.0%
2019	1,398,565	1,398,565	100.0%
2020	1,419,270	1,419,270	100.0%
2021	1,436,977	1,436,977	100.0%
2022	1,446,992	1,446,992	100.0%
2023	1,423,601	1,423,601	100.0%
2024	1,479,615	1,479,615	100.0%
2025	1,574,396	1,574,396	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	\$ 1,054,478	\$ 1,129,470	93.4%
2017	1,061,170	1,145,919	92.6%
2018	1,200,417	1,164,528	103.1%
2019	1,398,565	1,272,490	109.9%
2020	1,419,270	1,326,177	107.0%
2021	1,436,977	1,362,579	105.5%
2022	1,446,992	1,372,178	105.5%
2023	1,423,601	1,419,221	100.3%
2024	1,479,615	1,461,945	101.2%
2025	1,574,396	1,511,053	104.2%

¹ Includes assumed overtime paid, 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 2	Tier 3 Modified	Tier 3 Enhanced	Total
Total	47.3%	24.2%	30.7%	41.0%
Employee	<u>(1.7%)</u>	<u>(2.6%)</u>	<u>(4.7%)</u>	<u>(2.8%)</u>
Employer	45.6%	21.6%	26.0%	38.2%

SECTION IV – (GAIN)/LOSS ANALYSIS

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

NEW YORK CITY FIRE PENSION FUND DEVELOPMENT OF EXPERIENCE (GAIN) / LOSS JUNE 30, 2023 (\$ Thousands)			
1. Expected Accrued Liability (AL)	QPP	VSF	Total
a. AL at June 30, 2022	\$ 25,423,191	\$ 765,889	\$ 26,189,080
b. Normal Cost and Administrative Expenses at June 30, 2022	668,948	13,741	682,689
c. Interest on 1.a. and 1.b. to June 30, 2023	1,826,450	54,574	1,881,024
d. Fiscal Year 2023 Benefit Payments	(1,699,912)	(76,860)	(1,776,772)
e. Interest on 1.d. to June 30, 2023	(58,491)	(2,645)	(61,136)
f. Plan Changes	53,813	0	53,813
g. Expected AL at June 30, 2023	\$ 26,213,999	\$ 754,699	\$ 26,968,698
2. Actual AL at June 30, 2023	\$ 26,508,777	\$ 763,020	\$ 27,271,797
3. Expected Actuarial Value of Assets (AVA)			
a. AVA at June 30, 2022	\$ 18,205,629	\$ 860,234	\$ 19,065,863
b. Interest on 3.a. to June 30, 2023	1,274,394	60,216	1,334,610
c. Total Contributions Paid in Fiscal Year 2023 ¹	1,541,943	0	1,541,943
d. Interest on 3.c. to June 30, 2023	53,055	0	53,055
e. Fiscal Year 2023 Benefit Payments	(1,699,912)	(76,860)	(1,776,772)
f. Interest on 3.e. to June 30, 2023	(58,491)	(2,645)	(61,136)
g. Change in VSF Assets in Excess of Liabilities at June 30, 2023	0	(64,320)	(64,320)
h. Expected AVA at June 30, 2023	\$ 19,316,618	\$ 776,625	\$ 20,093,243
4. Actual QPP AVA / VSF MVA at June 30, 2023²	\$ 19,198,971	\$ 783,687	\$ 19,982,658
5. Liability (Gain) / Loss (2. - 1.g.)	\$ 294,778	\$ 8,321	\$ 303,099
6. Actuarial Asset (Gain) / Loss (3.h. - 4.)	\$ 117,647	\$ (7,062)	\$ 110,585
7. Total Actuarial (Gain) / Loss (5. + 6.)	\$ 412,425	\$ 1,259	\$ 413,684

¹ Contributions include Transferable Earnings, if any, transferred from QPP to VSF.

² Fair market value of assets is used to determine VSF UAL beginning in June 30, 2023.

SECTION V – 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 V-1
Schedule of Funding Progress

NEW YORK CITY FIRE PENSION FUND (\$ 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	\$ 9,808,854	\$ 18,028,695	\$ 8,219,841	54.4%	\$ 1,150,390	714.5%
2015	10,504,728	18,688,642	8,183,914	56.2%	1,164,994	702.5%
2016	11,082,451	20,125,429	9,042,978	55.1%	1,180,226	766.2%
2017	11,814,576	20,942,655	9,128,079	56.4%	1,256,001	726.8%
2018	12,876,671	21,787,888	8,911,217	59.1%	1,305,960	682.3%
2019	14,337,618	22,824,419	8,486,801	62.8%	1,336,843	634.8%
2020	15,346,377	23,491,617	8,145,240	65.3%	1,348,006	604.2%
2021	16,943,734	24,394,755	7,451,021	69.5%	1,401,378	531.7%
2022	18,205,629	25,423,191	7,217,562	71.6%	1,444,044	499.8%
2023	19,198,971	26,524,740	7,325,769	72.4%	1,494,537	490.2%

¹ Salaries shown are base salary plus assumed overtime paid and reflect certain salary increases with retroactive effective dates, if any, that are not yet reflected in the census data.

SECTION VI – VARIABLE SUPPLEMENTS FUNDS (VSF)

FIRE administers both the Firefighters' Variable Supplements Fund (FFVSF) and the Fire Officers' Variable Supplements Fund (FOVSF). The FFVSF and FOVSF (the Funds) operate pursuant to the provisions of Title 13, Chapter 3 of the Administrative Code of the City of New York (ACCNY) and provide supplemental benefits to retirees who were Firefighters and Fire Officers, respectively, of the New York City Fire Department, Subchapter One Pension Fund or New York City Fire Department, Subchapter Two Pension Fund and who retired for service with 20 or more years of service on or after October 1, 1968.

Beginning in the June 30, 2023 valuation, the VSF fair market value of assets replaces the VSF actuarial value of assets for purposes of determining the VSF unfunded accrued liability, which is an obligation of the Plan.

Table VI-1

Summary of VSF Valuation Results

NEW YORK CITY FIRE PENSION FUND		
SUMMARY OF VSF VALUATION RESULTS		
FFVSF		
Valuation Date	June 30, 2023 ¹	June 30, 2022 ²
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability	\$ 461,192,824	\$ 466,599,620
2. Actuarial Value of Assets (AVA) ³	NA	494,430,000
3. Unfunded Accrued Liability (AVA Basis), not less than zero (1. - 2.)	NA	\$ 0
4. Market Value of Assets (MVA) ⁴	445,230,000	452,127,000
5. Unfunded Accrued Liability (MVA Basis), not less than zero (1. - 4.)	\$ 15,962,824	\$ 14,472,620
6. Funded Ratio (MVA Basis) (4. / 1.)	96.5%	96.9%
Participant Data		
1. Active Members		
a. Number	8,245	8,159
b. Average Age	38.4	38.6
2. Retirees		
a. Number	3,099	3,121
b. Average Age	72.5	72.6

FOVSF		
Valuation Date	June 30, 2023 ¹	June 30, 2022 ²
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability	\$ 301,827,400	\$ 299,288,998
2. Actuarial Value of Assets (AVA)	NA	365,804,000
3. Unfunded Accrued Liability (AVA Basis), not less than zero (1. - 2.)	NA	\$ 0
4. Market Value of Assets (MVA) ⁵	338,457,000	333,347,000
5. Unfunded Accrued Liability (MVA Basis), not less than zero (1. - 4.)	\$ 0	\$ 0
6. Funded Ratio (MVA Basis) (4. / 1.)	112.1%	111.4%
Participant Data		
1. Active Members		
a. Number	2,475	2,526
b. Average Age	48.8	48.6
2. Retirees		
a. Number	1,519	1,514
b. Average Age	72.6	72.9

¹ Includes Transferable Earnings as determined by the Actuary in a letter dated August 31, 2023 to the Comptroller's Office.

² Includes preliminary Transferable Earnings as determined by the Actuary in a letter dated September 9, 2022 to the Comptroller's Office.

³ Beginning in the June 30, 2023 valuation, the fair market value of assets is used to determine the VSF Unfunded Accrued Liability.

⁴ Includes Accrued Benefits Payable for FFVSF of \$18,479,000 for 6/30/2023 and \$18,395,000 for 6/30/2022.

⁵ Includes Accrued Benefits Payable for FOVSF of \$8,932,000 for 6/30/2023 and \$8,793,000 for 6/30/2022.

Table VI-2
Statement of VSF Net Assets

(\$ Thousands)				
	June 30, 2023		June 30, 2022	
	FFVSF	FOVSF	FFVSF	FOVSF
ASSETS				
Cash	\$ 998	\$ 664	\$ 1,219	\$ 1,076
Receivables				
Investment Securities Sold	\$ 0	\$ 0	\$ 0	\$ 0
Member Loans	0	0	0	0
Transferrable Earnings from QPP	0	0	0	0
Accrued Interest and Dividends	121	326	139	339
Accounts receivable	<u>138</u>	<u>27</u>	<u>138</u>	<u>27</u>
Total Receivables	\$ 259	\$ 353	\$ 277	\$ 366
INVESTMENTS AT FAIR VALUE				
Short-Term Investments				
Commercial Paper	\$ 0	\$ 0	\$ 2,209	\$ 3,949
Short-term Investment Fund	100	147	17	69
U.S. Treasury Bills and Agencies	2,994	3,026	0	0
Debt Securities	0	0	0	0
Equity Securities	166,695	127,370	162,047	122,535
Alternative Investments	0	0	0	0
Collective Trust Funds				
Fixed Income	0	0	0	0
Bank Loans	0	0	0	0
Corporate and Other	44,814	33,379	39,467	27,316
Domestic Equity	12,113	11,668	113,642	10,917
International Equity	114,219	85,164	12,528	83,575
Mortgage Debt Security	40,083	29,856	42,762	29,596
U.S. government and agency	62,982	46,912	78,113	54,063
Collateral From Securities Lending	<u>43,281</u>	<u>31,386</u>	<u>57,655</u>	<u>41,110</u>
Total Investments	\$ 487,281	\$ 368,908	\$ 508,440	\$ 373,130
OTHER ASSETS	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL ASSETS	\$ 488,538	\$ 369,925	\$ 509,936	\$ 374,572
LIABILITIES				
Accounts Payable	\$ 27	\$ 19	\$ 154	\$ 115
Payables for Investment Securities Purchased	0	63	0	0
Accrued Benefits Payable	18,479	8,932	18,395	8,793
Securities Lending	43,281	31,386	57,655	41,110
Other Liabilities	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL LIABILITIES	\$ 61,787	\$ 40,400	\$ 76,204	\$ 50,018
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 426,751	\$ 329,525	\$ 433,732	\$ 324,554

Table VI-3
Statement of Changes in VSF Net Assets

(\$ Thousands)				
	June 30, 2023		June 30, 2022	
	FFVSF	FOVSF	FFVSF	FOVSF
ADDITIONS				
Contributions				
Member Contributions	\$ 0	\$ 0	\$ 0	\$ 0
Employer Contributions	0	0	0	0
Total Contributions	\$ 0	\$ 0	\$ 0	\$ 0
Investment Income (Loss)				
Interest Income	\$ 4,445	\$ 3,239	\$ 7,233	\$ 5,442
Dividend Income	6,826	5,194	7,666	5,728
Net Appreciation (Depreciation) in Fair Value	30,394	24,889	(87,273)	(66,479)
Total Investment Income (Loss)	\$ 41,665	\$ 33,322	\$ (72,374)	\$ (55,309)
Less Investment Expenses	242	176	292	210
Net Income (Loss)	\$ 41,423	\$ 33,146	\$ (72,666)	\$ (55,519)
Securities Lending Transactions				
Securities Lending Income	\$ 157	\$ 122	\$ 154	\$ 115
Securities Lending Fees	(14)	(11)	(13)	(10)
Net Securities Lending Income (Loss)	\$ 143	\$ 111	\$ 141	\$ 105
Other				
Net Receipts from Other Retirement Systems	0	0	0	0
Litigation Income	11	16	0	0
Other Total	11	16	0	0
Transferrable Earnings due from QPP	0	0	0	0
TOTAL ADDITIONS	\$ 41,577	\$ 33,273	\$ (72,525)	\$ (55,414)
DEDUCTIONS				
Benefit Payments and Withdrawals	\$ 48,558	\$ 28,302	\$ 43,559	\$ 25,664
Administrative Expenses	0	0	0	0
TOTAL DEDUCTIONS	\$ 48,558	\$ 28,302	\$ 43,559	\$ 25,664
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ (6,981)	\$ 4,971	\$ (116,084)	\$ (81,078)
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS				
Beginning of Year	\$ 433,732	\$ 324,554	\$ 549,816	\$ 405,632
End of Year	\$ 426,751	\$ 329,525	\$ 433,732	\$ 324,554

Table VI-4
Transferable Earnings Calculation as of June 30, 2023

For details, see Summary of VSF Actuarial Assumptions and Methods.

(\$ Thousands)		
Total FIRE Pension Fund		
1. FY2023 Equity Earnings	\$	1,286,508
2. FY2023 Hypothetical Earnings		467,222
3. FY2023 Excess Earnings (1. - 2.)		819,286
4. Deficit at June 30, 2022		1,204,999
5. Hypothetical Interest Rate (HIR)		4.076%
6. Deficit with interest (4. x (1+HIR))		1,254,115
7. Potential Transferable Earnings (3. - 6.), not less than zero	\$	0
	FFVSF	FOVSF
Allocations to VSF		
8. Allocation Percentage	65.028%	34.972%
9. Potential Transferable Earnings (7. x 8.)	\$ 0	\$ 0
10. APV of Accumulated Plan Benefits	434,442	276,188
11. MVA Prior to Transferable Earnings	445,230	338,457
12. Unfunded APV of Accumulated Plan Benefits (10. - 11.), not less than zero	0	0
13. Transferable Earnings Payable (Lesser of 9. and 12., not less than zero)	0	0
14. Rounded Estimate, for FY23 Financial Statements	\$ 0	\$ 0

Summary of VSF Plan Provisions

A. Eligibility

Service Retirement with at least 20 years of allowable service on or after October 1, 1968. This benefit is not payable to disability retirees, vested retirees, or beneficiaries of members who die while eligible for service retirement.

B. Benefits

The benefit is currently \$12,000 per year, prorated in the first year and in the year of death based on the number of full months of retirement. The month of retirement and the month of death are not included in these two prorations.

C. Cost-of-Living Benefits

Any AutoCOLA payable to a retiree reduces VSF benefits by an amount equal to such AutoCOLA until the attainment of age 62.

D. Form of Payment

Firefighters: Life annuity payable annually on or about December 15 for the current calendar year.

Fire Officers: Life annuity payable annually on or about January 31 for the prior calendar year.

E. VSF DROP

Firefighters who retire on and after January 1, 2002 with 20 or more years of service are entitled to an additional one-time special lump sum payment (VSF DROP) payable on or about December 15 succeeding the date of retirement equal to the cumulative Fund benefits that would have been paid after January 1, 2002 had the member retired at the completion of the 20th year of service.

Fire Officers who retire on and after January 1, 2002 with 20 or more years of service are entitled to an additional one-time special lump sum payment (VSF DROP) payable on or about January 31 of the calendar year succeeding the date of retirement equal to the cumulative Fund benefits that would have been paid after January 1, 2002 had the member retired at the completion of the 20th year of service.

Summary of VSF Actuarial Assumptions and Methods

Assumptions not detailed below are as described in SECTION XI – ACTUARIAL ASSUMPTIONS AND METHODS.

1. **FFVSF vs. FOVSF Membership:** Amongst current active members, 70% of members who become eligible for VSF benefits are assumed to retire as Firefighters, while the remaining 30% are assumed to retire as Fire Officers.
2. **COLA:** 1.5% per year for AutoCOLA, used to estimate future COLA on the first \$18,000 of FIRE benefits which, in general, reduces benefits payable by the Fund until age 62.
3. **Asset Method:** Information on the MVAs of the VSFs is provided by the Office of the Comptroller. The MVAs of the VSFs are used to determine each VSF's UAL. They include the reported Accrued Benefits Payable due to the timing in which VSF benefits are paid.
4. **Liability Method:** The obligations of FIRE to the FFVSF and the FOVSF are recognized through a methodology where the FFVSF and FOVSF UALs are included directly as part of the accrued liability of FIRE. Under Entry Age Normal (EAN) cost method, FFVSF and FOVSF normal costs and UALs are financed as part of the Employer Contribution.
5. **Transferable Earnings Calculation:** The ACCNY provides that FIRE transfer to the Funds a portion of the amount by which earnings on equity investments of FIRE exceed what the earnings would have been had such funds been invested at the Hypothetical Interest Rate, less any negative Cumulative Earnings Differentials and other limitations, determined as follows:
 - a. *Hypothetical Interest Rate:* 115% of the 12-month average of monthly 10-year U.S. Treasury Note yields
 - b. *Hypothetical Fixed Income Securities Earnings:* Investment earnings had equities been invested in fixed income securities earning the Hypothetical Interest Rate
 - c. *Earnings Differential:* Difference between actual equity investment earnings and Hypothetical Fixed Income Securities Earnings

- d. *Cumulative Earnings Differential*: The current year's Earnings Differential, offset by any negative Earnings Differentials from prior years, accumulated with interest at the corresponding year's Hypothetical Interest Rate
- e. *Proportionate Transferable Earnings*: The portion of the Cumulative Earnings Differential allocable to the VSFs based on the ratio of total contributions between Firefighters and Fire Officers, limited to not allow transfers to exceed the unfunded actuarial PV of accumulated plan benefits of the VSFs

SECTION VII – RISK AND UNCERTAINTY

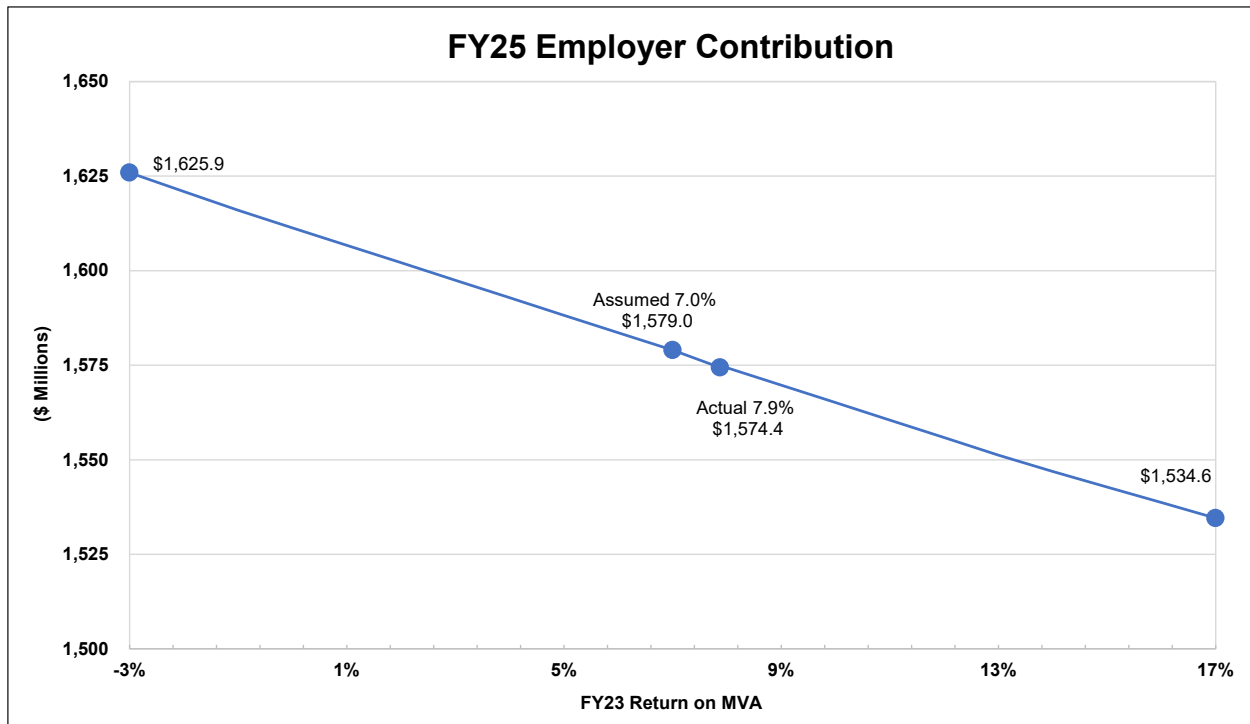
The funded status of FIRE depends highly on the realization of the actuarial assumptions used, certain demographic characteristics of the Plan, and other factors. Risks faced by the Plan are described in this Section and have been separated into high, medium, and other risk categories.

High Risk Types

Investment Risk: The Risk of Not Realizing Expected Returns

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

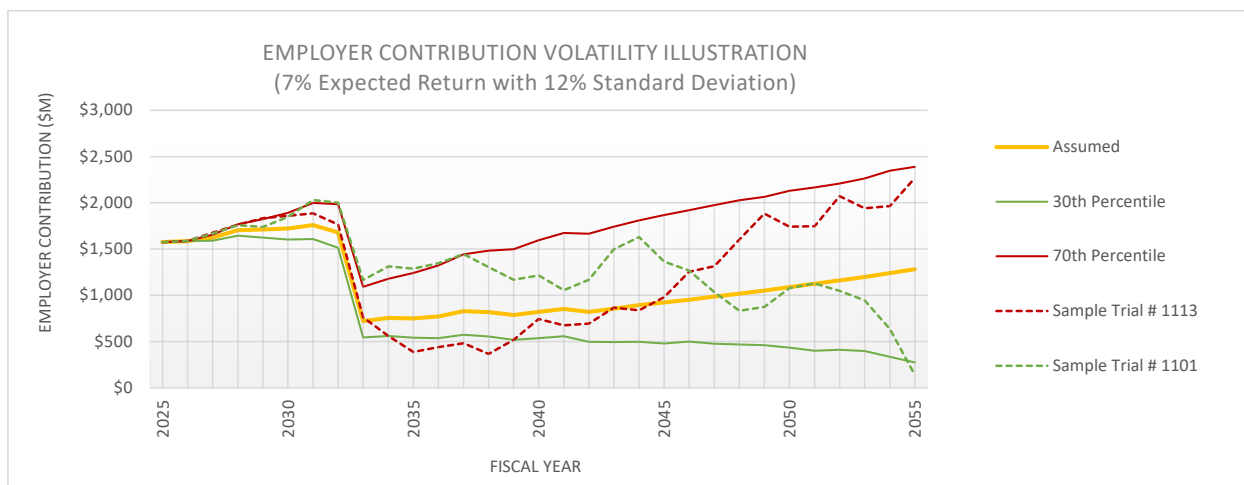
The graph below illustrates the potential FY25 employer contributions for a range of investment return outcomes if returns had differed from the assumed rate of return (i.e., from -3% to 17%). In addition, the actual investment return and employer contribution are shown.



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.

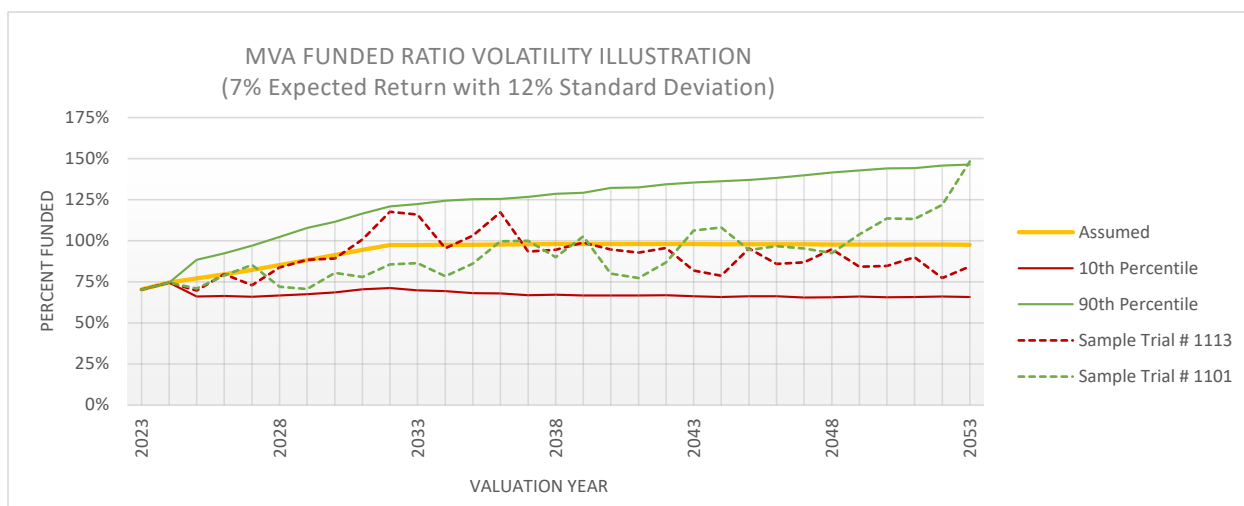
The yellow line in the charts show the results if investment returns were exactly 7% as expected. The two solid lines show results for the indicated percentile range and together frame a range of results based on all 5,000 trials. The two dashed lines illustrate sample results from among the 5,000 trials.



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 150% funding at the end of the 30-year period (below) with a corresponding employer contribution of approximately \$273M (above). The converse is shown in the red dotted line where at the end of the 30-year period, the employer contribution is approximately \$2.3B (above) with a corresponding funded ratio of approximately 84% (below).

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

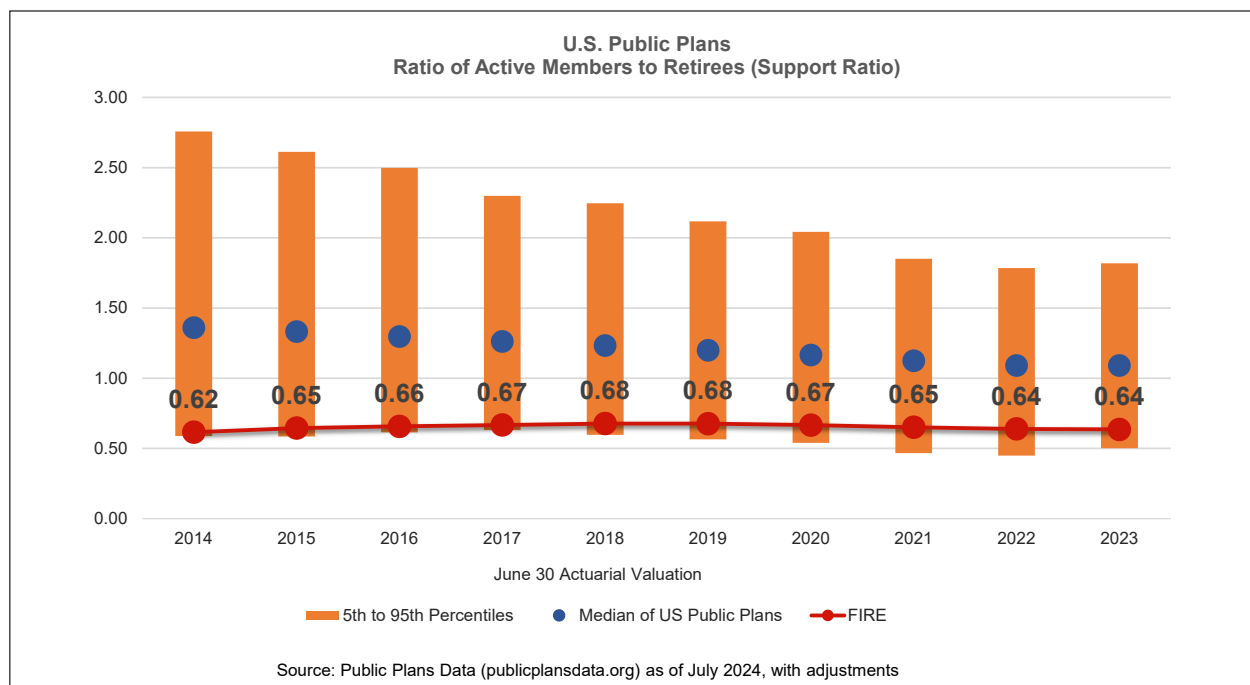


Maturity Risk: The Risk of Demographic Imbalance

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

Ratio of Active Members to Retirees (Support Ratio)

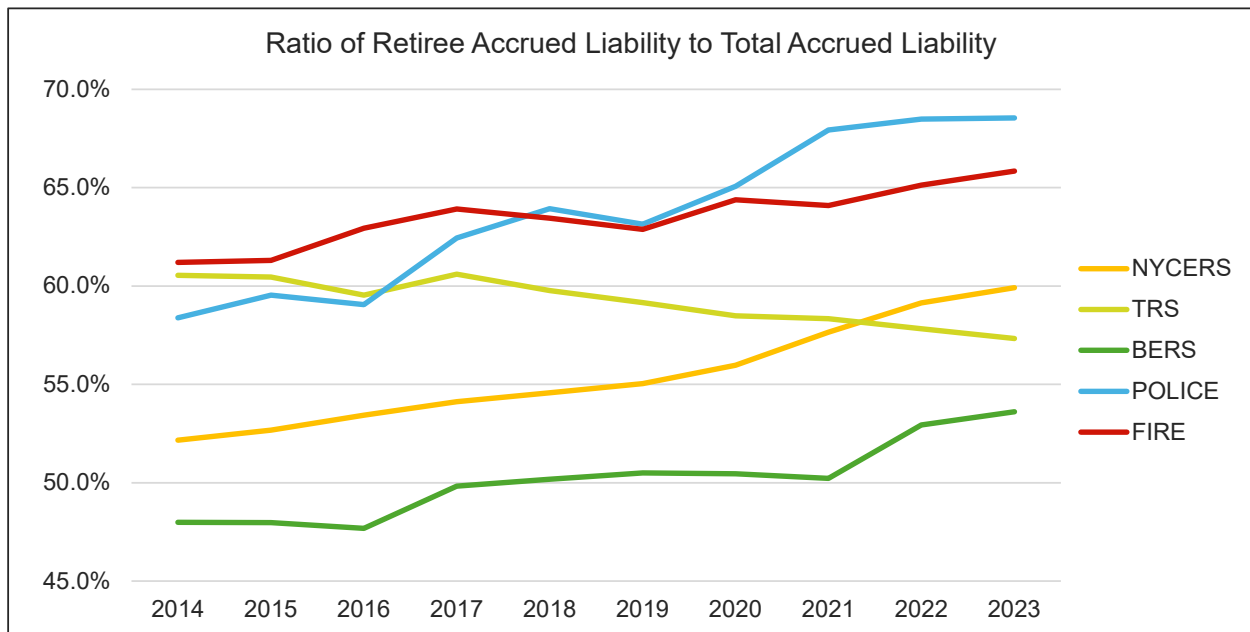
A plan's Support Ratio (i.e., the ratio of active members to retirees) is an indicator of the Plan's maturity level. Lower Support Ratios have higher contribution volatility. In a plan's early years, the ratio is very high as the plan contains mostly active members. As it matures, more active members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



The chart above shows U.S. public pension plan Support Ratios in comparison to the Plan's. The median Support Ratio amongst US public pensions has declined from 1.36 in the 2014 valuation year to 1.09 in the 2023 valuation year. Over that same period, the Plan's Support Ratio has remained relatively flat, ranging from 0.62 to 0.68.

Ratio of Retiree Accrued Liability to Total Accrued Liability

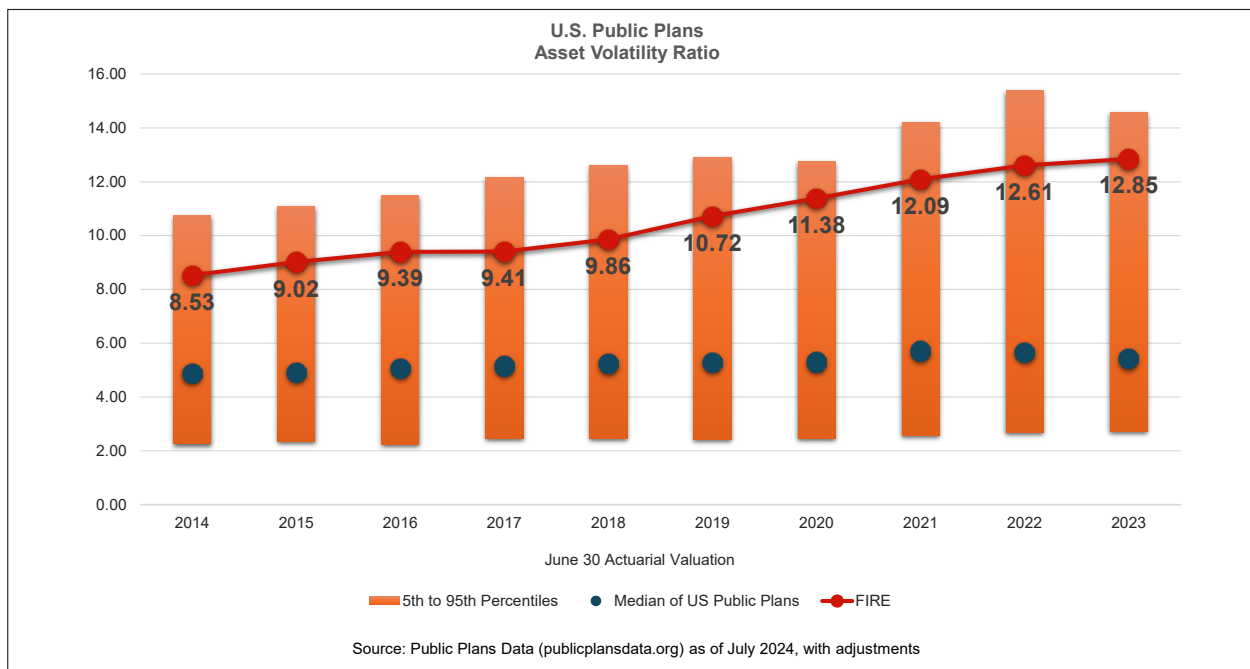
A plan's ratio of retiree liabilities to its total liabilities is also a measure of its maturity. A new pension plan begins with this ratio at zero; as the plan matures, the ratio increases. This ratio is shown in the graph below for FIRE; the other New York City Retirement Systems¹ (NYCRS) are included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



¹ New York City Employees' Retirement System (NYCERS); Teachers' Retirement System (TRS); Board of Education Retirement System (BERS); POLICE Pension Fund (PPF)

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 FIRE to the population of public pension systems.



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

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

Medium Risk Types

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

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

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

NEW YORK CITY FIRE PENSION FUND	
SENSITIVITY ANALYSIS AS OF JUNE 30, 2023	
Valuation Date	June 30, 2023
Results at 7.0%	
1. Accrued Liability (AL)	\$ 26,524,739,801
2. Actuarial Value of Assets (AVA)	19,198,971,000
3. Unfunded Accrued Liability (1. - 2.)	\$ 7,325,768,801
4. Normal Cost	\$ 632,215,691
Results at 6.0%	
1. Accrued Liability (AL)	\$ 29,551,171,318
2. Actuarial Value of Assets (AVA)	19,198,971,000
3. Unfunded Accrued Liability (1. - 2.)	\$ 10,352,200,318
4. Normal Cost	\$ 782,077,560
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Accrued Liability	11.4%
2. Increase in Unfunded Accrued Liability	41.3%
3. Increase in Normal Cost	23.7%

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 provide 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%)	\$ 37,354,322,892
Plan’s Accrued Liability as of June 30, 2023 (7.00%)	\$ 26,524,739,801

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 \$10.8 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

FIRE 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/reports/annual-claims-report>

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

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

Other Risk Types

Inflation Risk: The Risk of Higher than Assumed Inflation

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

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

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

The New York City Retirement Systems and Pension Funds face low contribution risk. Participating employers have historically contributed the actuarial contribution as certified by the Actuary. The Actuary believes the City 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. Effective Date

July 15, 1941.

B. Tier Membership

Tier 1: Prior to July 1, 1973

Tier 2: July 1, 1973 to June 30, 2009

Tier 3: July 1, 2009 to March 31, 2012 and did not elect to join Tier 3 Enhanced

Tier 3 Modified: April 1, 2012 to June 14, 2016 and did not elect to join Tier 3 Enhanced

Tier 3 Enhanced: On or after June 15, 2016 and those in Tier 3 and Tier 3 Modified who elected to join.

Eligible service includes City service in positions in the competitive class of the civil service for probationary periods or permanent appointments in the Fire Department.

C. Member Contributions

Tier 1 and Tier 2: Required Member Contributions – Based upon age at entry and elected retirement age, credited with interest at 8.25%. Contributions are required for the first 20 years.

Voluntary Member Contributions – Additional contributions to the Annuity Savings Fund credited with interest at 8.25%.

Tier 3, Tier 3 Modified, and Tier 3 Enhanced: Basic Member Contributions (BMC) - Members contribute 3.0% of salary for a maximum of 25 years. The Tier 3 interest rate is 5.0%.

Additional Member Contributions (AMC) – Effective September 8, 2022, Tier 3 Enhanced Plan members are required to contribute an additional 2.0% (previously 2.1%) of salary for a maximum of 25 years. Chapter 298/16 states that the AMC rate for Tier 3 Enhanced Plan members is required to be reviewed by the Actuary every 3 years.

D. Increased-Take-Home-Pay (ITHP) Contributions

Tier 1 and Tier 2: The City of New York pays a portion of member contributions. Effective October 1, 2000, the rate of ITHP contributions is 5.0% of salary, accumulated with regular and additional interest. The member may elect to waive the ITHP reduction from the full member rate and contribute at the full member rate, which results in additional benefits attributable to the ITHP contributions.

Tier 3, Tier 3 Modified, and Tier 3 Enhanced: The City of New York does not pay any portion of member contributions.

E. Credited Service

Credited Service is classified as Allowable Fire Service or certain other Credited Service:

- Members are credited with one year of service for two hundred fifty or more days of service and not more than one year for all service in any calendar year.
- **Tier 1 and Tier 2:** Allowable Fire Service includes service in the Uniformed Force of the New York City Police Department, Uniformed Transit Police Force, Uniformed Housing Police Force, Uniformed Correction Force, Uniformed Sanitation Force, and as an Emergency Medical Technician (EMT), provided all such service immediately precedes the Uniformed Fire Force service.
- **Tier 3, Tier 3 Modified, and Tier 3 Enhanced:** Fire Service includes service in the Uniformed Force of the New York City Police Department and the New York State and Local Fire and Police Retirement System, and as an EMT.
- Members may purchase, subject to limitations in the law, years of certain wartime military service, combined military service, and service as police officers in a foreign country for the United States Government, and authorized Child Care Leave.

F. Salary Base

Tier 1: Final Salary (FS): The contract rate of base pay and holiday pay on the last day paid, plus any overtime, night differential, and worked vacation earned in the previous 12 months, plus applicable longevity pay.

For members appointed on or after June 17, 1971, the pensionable compensation for the final year of service is limited by the Kingston Law to 120% of the pensionable compensation for the year immediately preceding the final year.

Tier 2: Final Average Salary (FAS): Total pensionable compensation (i.e., wages, overtime, night differential, worked vacation, etc.) a member earned during the 12 months preceding the date of retirement, not in excess of 120% of the immediate previous 12 months' pensionable compensation. If greater, FAS will equal the greatest

average three consecutive years' pensionable compensation, where each year's salary cannot exceed 120% of the average of the two previous years.

Tier 3, Tier 3 Modified, and Tier 3 Enhanced: FAS: The average total pensionable compensation earned by a member during any three consecutive year period based on the month and day of retirement that provides the highest average wages. If the wages earned during any year included in the period exceed the average of the prior two years by more than 10%, the amount in excess of 10% shall be excluded. Additionally, if the member was on a leave of absence without pay (e.g., suspension) at any time during the three-year period, that time, not in excess of 12 months, will be excluded from the calculation and the same period of time immediately preceding the three-year period will be included for the FAS.

G. Service Retirement

1. Eligibility

The eligibility requirements for normal service retirement and early service retirement are summarized in the table below:

Tier	Minimum Service for Normal Retirement	Minimum Service for Early Retirement
1	20	NA
2	20	NA
3	22	20
3 Modified	22	20
3 Enhanced	22	20

2. Benefits

a. Tier 1 and Tier 2

- i. 50% of [FS (Tier 1) or FAS (Tier 2)] plus $1/60^{\text{th}}$ of the sum of all salary after 20 or 25 years, as applicable, of Credited Service.
- ii. The benefit is adjusted by the annuitized value of the net excess or deficit of accumulated member contributions and ITHP over or under the required amounts.

b. Tier 3, Tier 3 Modified, and Tier 3 Enhanced

- i. 2.1% of FAS times number of years of Credited Service for first 20 years plus 4.0% of FAS times number of years of Credited Service in excess of 20 years (total benefit limited to 50% of FAS), less 50% of the Primary Social Security Retirement benefit at age 62.

H. Disability Retirement

1. Accidental Disability (ADR)

a. Eligibility for all Tiers: Immediate. Must be found by the Medical Board and the Board of Trustees to be physically or mentally unable to perform regular job duties as a result of an injury received in the performance of duty and such disability was not the result of willful negligence on the part of the member.

b. Benefits

i. Tier 1 and Tier 2

75% of [FS (Tier 1) or FAS (Tier 2)] plus 1/60th of the sum of all salary after 20 or 25 years in accordance with the Member's selection of the minimum period of Credited Service, plus annuitized value of actual member accumulated contributions and ITHP.

ii. Tier 3 and Tier 3 Modified

50% of FAS less 50% of the Primary Social Security Disability Benefits.

iii. Tier 3 Enhanced Plan

75% of FAS.

2. Ordinary Disability (ODR)

a. Eligibility

i. Tier 1 and Tier 2

Immediate. Must be found by the Medical Board and the Board of Trustees to be physically or mentally unable to perform regular job duties as a result of an injury not received in the performance of duty.

ii. Tier 3, Tier 3 Modified and Tier 3 Enhanced

Five years of Credited Service and eligibility for Social Security disability benefit.

b. Benefits

i. Tier 1 and Tier 2

- (a) For members choosing 20 years as their minimum period of Membership service: 2.5% times [FS (Tier 1) or FAS (Tier 2)] times Credited Service.
- (b) For members choosing 25 years as their minimum period of Membership service: 2.0% times [FS (Tier 1) or FAS (Tier 2)] times Credited Service.

Minimum Benefit:

Less than 10 years of service: $\frac{1}{3}$ of [FS (Tier 1) or FAS (Tier 2)]

10 or more years of service: $\frac{1}{2}$ of [FS (Tier 1) or FAS (Tier 2)],

plus (regardless of service) the annuitized value of the net excess or deficit of member accumulated contributions and ITHP over or under the required amounts.

ii. Tier 3, Tier 3 Modified, and Tier 3 Enhanced

The greater of:

- (a) 33-1/3% of FAS
- (b) 2.0% of FAS times number of years of Credited Service (not in excess of 22 years),

less 50% of the Primary Social Security Disability Benefit (non-Enhanced Plan only).

I. Death Benefits:

1. Accidental Death Benefits (New York City-paid)

- a. Eligibility for all Tiers: No age or service requirement. Death due to the performance of duties while an active member.

b. Benefits

i. Tier 1 and Tier 2

50% of the average of the final salary as defined as the last 12 months of earnings, payable annually to surviving spouse or other eligible dependents for life.

In addition, a lump sum of accumulated member contributions and ITHP.

ii. Tier 3, Tier 3 Modified, and Tier 3 Enhanced

50% of FAS, payable annually to surviving spouse or other eligible dependents for life.

2. Special Accidental Death Benefits (New York State-paid)

- a. Eligibility: No age or service requirement. Death due to the performance of duties while an active member. Payable only to the surviving spouse, eligible parent, or children until age 18 (or age 23, if a full-time student), if there is no surviving spouse.
- b. Benefits: A monthly pension is payable to the beneficiary in an amount that when added to the New York City-paid Accidental Death Benefit (outlined in 1.) and any payable Social Security benefit is equal to the decedent's last year's wages including overtime and any other type of pensionable earnings.

3. Ordinary Death Benefit

a. Eligibility

i. Tier 1: Immediate

ii. Tier 2, Tier 3, Tier 3 Modified, and Tier 3 Enhanced: 90 days of service

b. Benefits

i. Tier 1

Less than 10 years of Credited Service: 50% of FS plus accumulated member contributions and ITHP with interest.

At least 10 years of Credited Service: 100% of FS plus accumulated member contributions and ITHP with interest.

However, if a member would have been eligible for a service retirement benefit at the date of death, the beneficiary may elect to receive the pension reserve had the member retired on the day before his or her death plus the accumulated member contributions. The beneficiary can also elect to receive the death benefit in the form of an annuity.

ii. Tier 2

Three times final year's salary raised to the next highest multiple of \$1,000 plus accumulated member contributions.

However, if a member would have been eligible for a service retirement benefit at the date of death, the beneficiary may elect to receive the pension reserve had the member retired on the day before his or her death plus the accumulated member contributions. The beneficiary can also elect to receive any death benefit and ITHP, if applicable, in the form of an annuity. The accumulated member contributions would still be paid as a lump sum.

iii. Tier 3, Tier 3 Modified, and Tier 3 Enhanced

Three times final year's salary raised to the next highest multiple of \$1,000 plus accumulated member contributions.

- c. Form of Payment: Lump sum. The first \$50,000 of benefit on account of death in active service will be paid from the Group Life Insurance Plan.

J. Vested Retirement After Termination

1. Eligibility: Five years of Credited Service for all Tiers
2. Benefits: A vestee may elect a refund of accumulated member contributions, but would then lose entitlement to a vested benefit. The Benefit at Service Retirement Date:

a. Tier 1 and Tier 2

2.5% for members choosing 20 years as their minimum period of Membership service, or 2.0% for members choosing 25 years as their minimum period of Membership service, times [FS (Tier 1) or FAS (Tier 2)] times number of years of Credited Service plus annuitized value of the net excess or deficit of accumulated member contributions and ITHP over or under the required amounts with interest to normal retirement date.

b. Tier 3, Tier 3 Modified, and Tier 3 Enhanced

2.1% of FAS times number of years of Credited Service payable at the Early Retirement Age (i.e., the earlier of the date when 20 years of Credited Service would have been completed or age 62) or at age 55. If the benefit commences before the Early Retirement Age, there are reductions.

In addition, the benefit is reduced by 50% of the Primary Social Security Retirement benefit at age 62 (non-Enhanced Plan only).

K. Forms of Payment

1. Normal Form of Payment: Single Life Annuity.

2. Optional Forms of Payment: Joint and Survivor Annuities, Certain and Life Annuities.

L. Loans

Applicable to Tier 1 and Tier 2 only.

1. Eligibility: After three years of membership and up to the day of retirement.
2. Amount: Up to 90% of accumulated member contributions with a limit of \$50,000 for tax-free treatment under Internal Revenue Code (IRC) Section 72(p).

M. 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 or beneficiaries of an Accidental Death benefit. 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 higher 0.1%. Such percentage shall not be less than 1.0% nor greater than 3.0%.

N. Escalation

1. Eligibility:

- a. Tier 3 and Tier 3 Modified members receiving service, vesting, disability retirement, and survivor benefits.
- b. Tier 3 Enhanced Plan members receiving vested or service retirement benefits.
- c. All members above receive COLA, if greater.

2. Full Escalation Date

- a. Vested and Service Pensions: The first day of the month following the day which a member completes or would have completed 25 years of service.
- b. Disability Pensions: The first day of the month following the day which a non-Enhanced Plan disability retiree first becomes eligible for ODR/ADR.
- c. Death Benefits: The first day of the month following the day which a beneficiary first becomes eligible for a death benefit paid other than in a lump sum.

3. Amount

If a member first begins receiving benefits on the same date as the Full Escalation Date, the member will receive Full Escalation which is the lesser of 3.0% or the Cost-of-Living Index increase, as computed on the December 31 of each prior year for benefits being escalated the following April.

In the event of a decrease in the Cost-of-Living Index, the current benefit will be decreased by the lesser of 3% or the Cost-of-Living Index. However, the benefit will not be reduced below the benefit payable at the initial commencement date.

In addition, Cost-of-Living Index changes are computed on a cumulative basis so that any increases or decreases not affected in an adjustment are carried forward and applied in subsequent years.

4. Partial Escalation

Partial Escalation is calculated on benefits that commence prior to the member's Full Escalation Date. For each month that the benefit commencement date succeeds the date when a member completes or would have completed 22 years of service, a member will receive 1/36th of the Full Escalation, to a maximum of Full Escalation at 25 years of service.

O. WTC Disability Benefits

Certain active, vested, and retired members of the Plan, who participated in the rescue, recovery, or clean-up operations at the WTC site, and who become disabled due to certain diseases (e.g., diseases in the respiratory tract, gastroesophageal tract, psychological axis, and skin), are presumed to have become disabled in the performance

of duty and therefore may be entitled to be reclassified with an Accidental Disability Retirement.

P. WTC Death Benefits

Certain active, vested, and retired members of the Plan, who participated in the rescue, recovery, or clean-up operations at the WTC site, and who die due to certain diseases (e.g., diseases in the respiratory tract, gastroesophageal tract, psychological axis, and skin) are presumed to have died in the performance of duty potentially entitling eligible beneficiaries to receive Accidental Death Benefits.

Q. Others

None.

SECTION IX – CHAPTER AMENDMENTS

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

- **Chapter 56 of the Laws of 2024** (Chapter 56/24), Part QQ, reduces the number of years used to calculate the Final Average Salary from 5 years to 3 years for FIRE Tier 3 Modified and Tier 3 Enhanced members.
- **Chapter 213 of the Laws of 2023** (Chapter 213/23) grants a 3% COLA increase to beneficiaries receiving Special Accidental Death Benefits pursuant to Section 208(f) of the General Municipal Law (GML). (Similar legislation was enacted in each of the previous years.)
- **Chapter 55 of the Laws of 2023** (Chapter 55/23) allows Tier 3 FIRE members to obtain service credit for EMT service immediately preceding their FIRE service.
- **Chapter 782 of the Laws of 2022** (Chapter 782/22) extends eligibility of Special Accidental Death Benefits to parents of certain deceased members who died in the line-of-duty.
- **Chapter 704 of the Laws of 2021** (Chapter 704/21) establishes a presumption with respect to Parkinson's Disease that results in death or disability for paid firefighters in New York State.
- **Chapter 540 of the Laws of 2021** (Chapter 540/21) amends Section 443 of the Retirement and Social Security Law to change the salary base for FIRE Tier 2 members who are hired on or after July 1, 2000 to a salary base used for such members who joined prior to July 1, 2000.
- **Chapter 424 of the Laws of 2021** (Chapter 424/21) 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 783 of the Laws of 2022** (Chapter 783/22) amends Chapter 89/20 by extending the eligibility window of these death benefits through December 31, 2024.
- **Chapter 250 of the Laws of 2019** (Chapter 250/19) relates to presumptive evidence of disability caused by cancer of firefighters who have been retired for five years or less.

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 55 of the Laws of 2025** (Chapter 55/25) removes the requirement that Tier 3 FIRE members must be eligible for primary social security disability benefit (SSDI) to receive ordinary disability retirement benefit.
- **Chapter 151 of the Laws of 2025** (Chapter 151/25) and **Chapter 162 of the Laws of 2024 (Chapter 162/24)** extends the 3% COLA increase to beneficiaries receiving the Special Accidental Death Benefit. Note that the June 30, 2023 valuation assumes that future legislation on this 3% COLA increase will continue to pass in subsequent years. For more information on this COLA assumption, see page 66.
- **Chapter 577 of the Laws of 2024** (Chapter 577/24) allows Tier 3 FIRE members to purchase prior service as a cadet in the NYPD and use their cadet appointment date for plan or tier eligibility purposes.

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 have been or 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-1a
Service Retirement, Unreduced with Full COLA/Escalation

NEW YORK CITY FIRE PENSION FUND		
PROBABILITIES OF SERVICE RETIREMENT RETIREMENT WITH FULL COLA/ESCALATION FOR THOSE ELIGIBLE FOR UNREDUCED		
Age	Years of Service Since First Eligible	
	Year 1	Ultimate
19	0.00%	0.00%
20	0.00%	0.00%
21	0.00%	0.00%
22	0.00%	0.00%
23	0.00%	0.00%
24	0.00%	0.00%
25	0.00%	0.00%
26	0.00%	0.00%
27	0.00%	0.00%
28	0.00%	0.00%
29	0.00%	0.00%
30	0.00%	0.00%
31	0.00%	0.00%
32	0.00%	0.00%
33	0.00%	0.00%
34	0.00%	0.00%
35	0.00%	0.00%
36	5.00%	0.00%
37	5.00%	1.50%
38	5.00%	1.50%
39	5.00%	1.50%
40	5.00%	1.50%
41	5.00%	1.50%
42	5.00%	1.50%
43	5.00%	1.50%
44	5.00%	1.50%
45	5.00%	1.50%
46	5.50%	1.50%
47	6.00%	1.50%
48	6.50%	1.50%
49	7.00%	1.50%
50	7.50%	1.50%
51	8.00%	1.50%
52	8.50%	2.25%
53	9.00%	3.00%
54	9.50%	3.75%
55	10.00%	4.50%
56	10.00%	5.25%
57	10.00%	6.00%
58	10.00%	6.75%
59	10.00%	7.50%
60	10.00%	9.00%
61	15.00%	11.25%
62	20.00% ¹	15.00% ¹
63	25.00% ¹	25.00% ¹
64	25.00% ¹	25.00% ¹
65	100.00%	100.00%

¹ 100% for Tier 3, Tier 3 Modified, and Tier 3
Enhanced members

Table XI-1b
Early Service Retirement

<p style="text-align: center;">NEW YORK CITY FIRE PENSION FUND</p> <p style="text-align: center;">PROBABILITIES OF EARLY SERVICE RETIREMENT FOR TIER 3, TIER 3 MODIFIED, AND TIER 3 ENHANCED MEMBERS</p>		
Years of Service	Reduced Service Retirement	Unreduced Before Full Escalation
20	5.00%	N/A
21	2.00%	N/A
22	N/A	5.00%
23	N/A	2.00%
24	N/A	2.00%

Table XI-2
Active Termination Rates

NEW YORK CITY FIRE PENSION FUND	
PROBABILITIES OF TERMINATION	
Years Of Service	Probability of Termination
0	2.00%
1	0.80%
2	0.40%
3	0.40%
4	0.40%
5	0.40%
6	0.36%
7	0.32%
8	0.28%
9	0.24%
10	0.20%
11	0.18%
12	0.16%
13	0.14%
14	0.12%
15	0.10%
16	0.10%
17	0.10%
18	0.10%
19	0.10%
20	N/A

Table XI-3
Active Disability Rates

NEW YORK CITY FIRE PENSION FUND				
PROBABILITIES OF DISABILITY RETIREMENT				
		Accidental Disability		
Age	Ordinary Disability	Tier 1 & Tier 2 Eligible for WTC Benefits	Tier 1 & Tier 2 Not Eligible for WTC AND Tier 3 Enhanced Plan	Tier 3 & Tier 3 Modified Non- Enhanced Plan
15	0.0025%	0.050%	0.035%	0.030%
16	0.0025%	0.050%	0.035%	0.030%
17	0.0025%	0.050%	0.035%	0.030%
18	0.0025%	0.050%	0.035%	0.030%
19	0.0025%	0.050%	0.035%	0.030%
20	0.0025%	0.050%	0.035%	0.030%
21	0.0025%	0.050%	0.035%	0.030%
22	0.0025%	0.050%	0.035%	0.030%
23	0.0025%	0.050%	0.035%	0.030%
24	0.0025%	0.050%	0.035%	0.030%
25	0.0025%	0.050%	0.035%	0.030%
26	0.0025%	0.090%	0.045%	0.040%
27	0.0050%	0.130%	0.055%	0.050%
28	0.0075%	0.170%	0.075%	0.070%
29	0.0100%	0.210%	0.115%	0.100%
30	0.0125%	0.250%	0.175%	0.150%
31	0.0150%	0.400%	0.275%	0.240%
32	0.0175%	0.550%	0.375%	0.330%
33	0.0200%	0.700%	0.475%	0.420%
34	0.0225%	0.850%	0.575%	0.510%
35	0.0250%	1.000%	0.700%	0.600%
36	0.0275%	1.200%	0.850%	0.720%
37	0.0300%	1.400%	1.000%	0.840%
38	0.0325%	1.600%	1.150%	0.960%
39	0.0350%	1.800%	1.300%	1.080%
40	0.0375%	2.000%	1.500%	1.200%
41	0.0400%	2.200%	1.650%	1.320%
42	0.0425%	2.400%	1.800%	1.440%
43	0.0450%	2.600%	1.950%	1.560%
44	0.0475%	2.800%	2.100%	1.680%
45	0.0500%	3.000%	2.300%	1.800%
46	0.0550%	3.400%	2.650%	1.920%
47	0.0600%	3.800%	3.000%	2.040%
48	0.0650%	4.200%	3.350%	2.160%
49	0.0700%	4.600%	3.700%	2.280%
50	0.0750%	5.000%	4.050%	2.400%
51	0.1100%	5.600%	4.400%	2.520%
52	0.1450%	6.200%	4.750%	2.640%
53	0.1800%	6.800%	5.100%	2.760%
54	0.2150%	7.400%	5.450%	2.880%
55	0.2500%	8.000%	5.800%	3.000%
56	0.5000%	10.000%	8.000%	4.000%
57	0.7500%	12.000%	10.000%	5.000%
58	1.0000%	15.000%	12.500%	6.000%
59	1.2500%	18.000%	15.000%	7.000%
60	1.5000%	21.000%	17.500%	8.000%
61	2.0000%	25.000%	20.000%	9.000%
62	2.5000% ¹	30.000%	22.000% ¹	N/A
63	2.5000% ¹	30.000%	22.000% ¹	N/A
64	2.5000% ¹	30.000%	22.000% ¹	N/A
65	N/A	N/A	N/A	N/A

¹N/A for Tier 3, Tier 3 Modified, and Tier 3 Enhanced members.

Table XI-4
Active Mortality Rates

NEW YORK CITY FIRE PENSION FUND			
PROBABILITIES OF MORTALITY FOR ACTIVE MEMBERS BASE RATES			
	Ordinary Death		Accidental Death
Age	Males	Females	All
15	0.020%	0.015%	0.010%
16	0.020%	0.015%	0.010%
17	0.020%	0.015%	0.010%
18	0.020%	0.015%	0.010%
19	0.020%	0.015%	0.010%
20	0.020%	0.015%	0.010%
21	0.020%	0.015%	0.010%
22	0.020%	0.015%	0.010%
23	0.020%	0.015%	0.010%
24	0.020%	0.015%	0.010%
25	0.020%	0.015%	0.010%
26	0.020%	0.015%	0.010%
27	0.020%	0.015%	0.010%
28	0.020%	0.015%	0.010%
29	0.020%	0.015%	0.010%
30	0.020%	0.015%	0.010%
31	0.020%	0.015%	0.010%
32	0.020%	0.015%	0.010%
33	0.020%	0.015%	0.010%
34	0.020%	0.015%	0.010%
35	0.020%	0.015%	0.010%
36	0.021%	0.016%	0.010%
37	0.022%	0.017%	0.010%
38	0.023%	0.018%	0.010%
39	0.024%	0.019%	0.010%
40	0.025%	0.020%	0.010%
41	0.030%	0.023%	0.013%
42	0.035%	0.026%	0.016%
43	0.040%	0.029%	0.019%
44	0.045%	0.032%	0.022%
45	0.050%	0.035%	0.025%
46	0.055%	0.038%	0.030%
47	0.060%	0.041%	0.035%
48	0.065%	0.044%	0.040%
49	0.070%	0.047%	0.045%
50	0.075%	0.050%	0.050%
51	0.080%	0.055%	0.060%
52	0.085%	0.060%	0.070%
53	0.090%	0.065%	0.080%
54	0.095%	0.070%	0.090%
55	0.100%	0.075%	0.100%
56	0.110%	0.080%	0.110%
57	0.120%	0.085%	0.120%
58	0.130%	0.090%	0.130%
59	0.140%	0.095%	0.140%
60	0.150%	0.100%	0.150%
61	0.160%	0.110%	0.200%
62	0.170% ¹	0.120% ¹	0.250% ¹
63	0.180% ¹	0.130% ¹	0.300% ¹
64	0.190% ¹	0.140% ¹	0.350% ¹
65	N/A	N/A	N/A

¹Probabilities are N/A for Tier 3 and Tier 3 Modified members.

Table XI-5
Service Retiree Mortality

NEW YORK CITY FIRE PENSION FUND					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0100%	0.0084%	68	1.2063%	0.7604%
16	0.0135%	0.0103%	69	1.2653%	0.8243%
17	0.0181%	0.0112%	70	1.4084%	0.9061%
18	0.0217%	0.0131%	71	1.5806%	0.9954%
19	0.0240%	0.0140%	72	1.7538%	1.0940%
20	0.0251%	0.0142%	73	1.9842%	1.2060%
21	0.0268%	0.0150%	74	2.2163%	1.3283%
22	0.0284%	0.0158%	75	2.4510%	1.4362%
23	0.0301%	0.0168%	76	2.6879%	1.6455%
24	0.0315%	0.0179%	77	2.9280%	1.8563%
25	0.0327%	0.0191%	78	3.3690%	2.0670%
26	0.0342%	0.0204%	79	3.8155%	2.3446%
27	0.0354%	0.0217%	80	4.2660%	2.6218%
28	0.0371%	0.0231%	81	4.7728%	2.8997%
29	0.0394%	0.0247%	82	5.2958%	3.1772%
30	0.0427%	0.0265%	83	6.2483%	3.4554%
31	0.0503%	0.0323%	84	7.2266%	3.9664%
32	0.0581%	0.0372%	85	8.2335%	4.4805%
33	0.0655%	0.0415%	86	9.2715%	4.9967%
34	0.0725%	0.0448%	87	10.3365%	5.5147%
35	0.0799%	0.0478%	88	11.2397%	6.0388%
36	0.0851%	0.0505%	89	12.1663%	7.0317%
37	0.0901%	0.0532%	90	13.1242%	8.0312%
38	0.0961%	0.0561%	91	14.6163%	9.4265%
39	0.1037%	0.0595%	92	16.2757%	10.8698%
40	0.1138%	0.0634%	93	18.9667%	12.3822%
41	0.1230%	0.0688%	94	21.5036%	13.7895%
42	0.1327%	0.0725%	95	23.9289%	15.2575%
43	0.1430%	0.0775%	96	25.8261%	16.7330%
44	0.1542%	0.0843%	97	27.5777%	18.2626%
45	0.1666%	0.0931%	98	29.2887%	19.6947%
46	0.1798%	0.1041%	99	30.8020%	21.1460%
47	0.1941%	0.1166%	100	32.1584%	22.1859%
48	0.2093%	0.1295%	101	33.7521%	23.0680%
49	0.2250%	0.1425%	102	35.1259%	24.0803%
50	0.2412%	0.1555%	103	36.3671%	25.2770%
51	0.2975%	0.1681%	104	37.3834%	26.6309%
52	0.3514%	0.1797%	105	38.1051%	28.0912%
53	0.4018%	0.1902%	106	38.4698%	29.6244%
54	0.4483%	0.1996%	107	38.6325%	31.1943%
55	0.4895%	0.2075%	108	38.8076%	32.7579%
56	0.5352%	0.2144%	109	38.9794%	34.2712%
57	0.5757%	0.2629%	110	50.0000%	50.0000%
58	0.6104%	0.3090%	111	50.0000%	50.0000%
59	0.6391%	0.3530%	112	50.0000%	50.0000%
60	0.6625%	0.3957%	113	50.0000%	50.0000%
61	0.7126%	0.4377%	114	50.0000%	50.0000%
62	0.7621%	0.4800%	115	50.0000%	50.0000%
63	0.8255%	0.5231%	116	50.0000%	50.0000%
64	0.9079%	0.5675%	117	50.0000%	50.0000%
65	0.9997%	0.6138%	118	50.0000%	50.0000%
66	1.0607%	0.6613%	119	50.0000%	50.0000%
67	1.1308%	0.7103%	120	100.0000%	100.0000%

Table XI-6
Disabled Retiree Mortality

NEW YORK CITY FIRE PENSION FUND					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES					
BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0238%	0.0098%	68	1.5909%	1.2517%
16	0.0321%	0.0120%	69	1.7622%	1.4342%
17	0.0433%	0.0131%	70	1.9120%	1.6327%
18	0.0517%	0.0153%	71	2.1153%	1.8400%
19	0.0573%	0.0164%	72	2.3101%	2.0561%
20	0.0608%	0.0173%	73	2.4968%	2.2946%
21	0.0660%	0.0191%	74	2.6752%	2.5649%
22	0.0716%	0.0211%	75	2.8786%	2.8625%
23	0.0772%	0.0234%	76	3.2717%	3.1737%
24	0.0831%	0.0259%	77	3.6597%	3.4562%
25	0.0886%	0.0282%	78	4.0420%	3.7889%
26	0.0936%	0.0307%	79	4.4200%	4.3087%
27	0.1008%	0.0332%	80	4.8490%	4.8485%
28	0.1089%	0.0359%	81	5.6563%	5.4107%
29	0.1170%	0.0386%	82	6.4729%	5.8954%
30	0.1254%	0.0412%	83	7.2988%	6.3864%
31	0.1342%	0.0438%	84	8.1300%	7.2278%
32	0.1426%	0.0464%	85	8.9696%	8.0743%
33	0.1544%	0.0491%	86	9.7646%	8.8707%
34	0.1602%	0.0506%	87	10.5803%	9.6600%
35	0.1670%	0.0528%	88	11.4245%	10.5768%
36	0.1696%	0.0551%	89	12.3269%	11.9527%
37	0.1721%	0.0580%	90	13.2834%	13.2782%
38	0.1754%	0.0608%	91	15.7515%	14.7506%
39	0.1792%	0.0648%	92	18.1410%	15.8458%
40	0.1836%	0.0709%	93	20.4240%	16.9974%
41	0.1891%	0.0790%	94	22.5700%	18.2075%
42	0.1957%	0.0892%	95	24.6643%	19.3408%
43	0.2038%	0.1023%	96	26.5127%	20.3502%
44	0.2134%	0.1184%	97	28.2029%	21.2709%
45	0.2247%	0.1371%	98	29.5441%	21.9254%
46	0.2374%	0.1586%	99	30.9728%	22.3227%
47	0.2518%	0.1824%	100	32.1584%	22.4341%
48	0.2672%	0.2079%	101	33.7521%	23.0680%
49	0.2837%	0.2388%	102	35.1259%	24.0803%
50	0.3022%	0.2719%	103	36.3671%	25.2770%
51	0.3597%	0.2959%	104	37.3834%	26.6309%
52	0.4188%	0.3426%	105	38.1051%	28.0912%
53	0.4788%	0.3791%	106	38.4698%	29.6244%
54	0.5392%	0.4326%	107	38.6325%	31.1943%
55	0.5986%	0.4868%	108	38.8076%	32.7579%
56	0.6556%	0.5294%	109	38.9794%	34.2712%
57	0.7090%	0.5421%	110	50.0000%	50.0000%
58	0.7577%	0.5621%	111	50.0000%	50.0000%
59	0.8017%	0.6003%	112	50.0000%	50.0000%
60	0.8498%	0.6343%	113	50.0000%	50.0000%
61	0.9095%	0.6687%	114	50.0000%	50.0000%
62	0.9862%	0.7391%	115	50.0000%	50.0000%
63	1.0698%	0.8094%	116	50.0000%	50.0000%
64	1.1631%	0.8897%	117	50.0000%	50.0000%
65	1.2477%	0.9710%	118	50.0000%	50.0000%
66	1.3403%	1.0569%	119	50.0000%	50.0000%
67	1.4168%	1.1551%	120	100.0000%	100.0000%

Table XI-7
Beneficiary Mortality

NEW YORK CITY FIRE PENSION FUND					
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 FIRE PENSION FUND		
ANNUAL RATES OF MERIT AND SALARY INCREASE		
Years of Service	Merit Increase	Salary Increase ¹
0	20.00%	23.00%
1	12.00%	15.00%
2	12.00%	15.00%
3	12.00%	15.00%
4	27.00%	30.00%
5	16.00%	19.00%
6	1.65%	4.65%
7	1.80%	4.80%
8	1.95%	4.95%
9	4.05%	7.05%
10	2.25%	5.25%
11	2.40%	5.40%
12	2.55%	5.55%
13	2.70%	5.70%
14	4.65%	7.65%
15	3.00%	6.00%
16	2.85%	5.85%
17	2.70%	5.70%
18	2.55%	5.55%
19	4.20%	7.20%
20	2.25%	5.25%
21	2.10%	5.10%
22	1.95%	4.95%
23	1.80%	4.80%
24	1.65%	4.65%
25	1.50%	4.50%
26	1.35%	4.35%
27	1.20%	4.20%
28	1.05%	4.05%
29	0.90%	3.90%
30+	0.75%	3.75%

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

Table XI-9
Overtime Assumptions

NEW YORK CITY FIRE PENSION FUND				
OVERTIME ASSUMPTION				
Years of Service	All Tiers Baseline	Tier 1 & Tier 2 Dual Service	Tier 3, Tier 3 Modified, & Tier 3 Enhanced Dual Service	All Tiers Dual Disability
0-13	20.00%	21.00%	21.00%	20.00%
14	20.00%	22.00%	21.00%	20.00%
15	20.00%	24.00%	21.00%	20.00%
16	20.00%	25.00%	22.00%	21.00%
17	20.00%	26.00%	24.00%	22.00%
18	21.00%	28.00%	25.00%	24.00%
19	22.00%	29.00%	26.00%	25.00%
20	24.00%	30.00%	28.00%	26.00%
21	22.00%	29.00%	26.00%	25.00%
22	21.00%	28.00%	25.00%	24.00%
23	20.00%	26.00%	24.00%	22.00%
24	19.00%	25.00%	22.00%	21.00%
25	17.00%	24.00%	21.00%	20.00%
26	16.00%	21.00%	19.00%	17.00%
27	15.00%	19.00%	18.00%	15.00%
28	13.00%	16.00%	15.00%	13.00%
29	12.00%	15.00%	13.00%	12.00%
30	11.00%	13.00%	12.00%	11.00%
31	9.00%	12.00%	11.00%	10.00%
32	8.00%	11.00%	9.00%	8.00%
33	7.00%	9.00%	8.00%	7.00%
34+	7.00%	8.00%	8.00%	7.00%

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 used are as follows:

	Adjustment Factor	
	Male	Female
Service Retiree	0.910	0.910
Disabled Retiree	0.830	0.830
Beneficiary	0.890	0.951

3. **Marital Assumption:** All active members are assumed to be married and females 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 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 2.5% per year. AutoCOLA is assumed to be 1.5% per year, and Escalation is assumed at 2.5% per year. Beneficiaries receiving Special Accidental Death Benefits, if any, are assumed to receive increases at 3.0% per year.
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 AAVM recognizes investment returns greater or less than expected over a period of five years.

In accordance with this AAVM, any investment return over or under the expected 7% return on the MVA is phased into the AVA over a five-year period at 20% per year.

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

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 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 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 Page 12.

Under EAN, the Normal Cost as a percentage of pay remains constant by individual and changes gradually over time for the entire plan as the characteristics of the group changes (e.g., more Tier 3 Enhanced 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 FIRE during the second prior fiscal year.
11. **WTC Disability and Death Benefits:** Obligations attributable to the WTC Disability Benefits Law and to the WTC Death Benefits Law are determined through estimation techniques for post-retirement reclassifications.
12. **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.

13. **Excess Benefit Plan:** The valuation excludes liabilities and costs, if any, associated with benefits in excess of the IRC Section 415 limitation.
14. **Group Life Insurance Plan:** The Employer Contribution includes an amount to fund the Group Life Insurance Plan. The Group Life Insurance amounts used in the FIRE valuation is \$50,000.

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 employer's payroll facilities. Financial information was provided by the Office of the Comptroller as of June 30, 2023 and June 30, 2022.

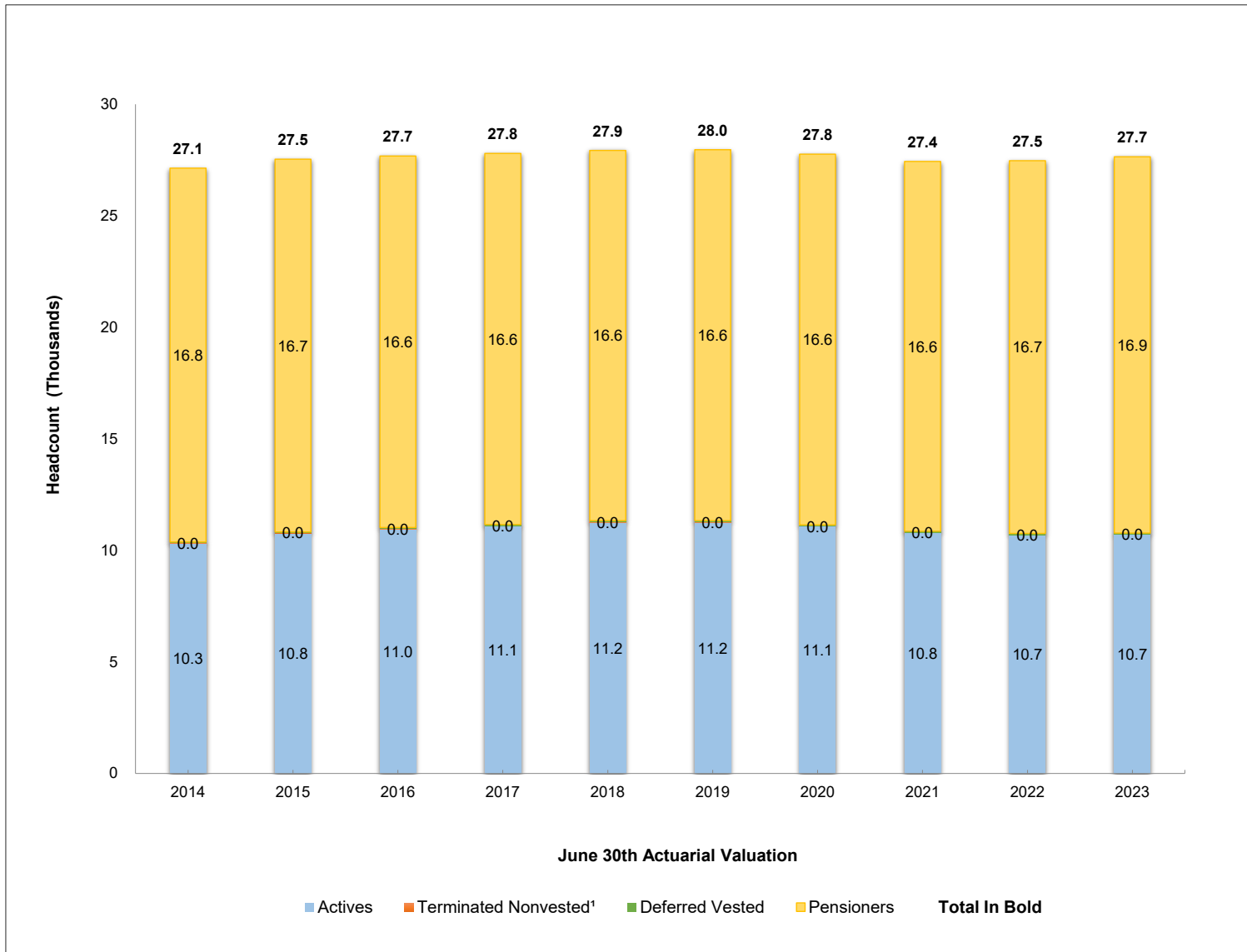
Beginning at June 30, 2020, FIRE members who are no longer on payroll but not otherwise classified have been classified as Active, Terminated Nonvested, or Deferred Vested members, using actuarial judgment and consideration of available data, including leave of absence data when available.

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

Table XII-1
Status Reconciliation

CHANGES IN THE NUMBER OF ACTIVES AND PENSIONERS DURING THE FISCAL YEAR CLASSIFIED BY STATUS										
Status	(1) Active Members	(2) Terminated Nonvested	(3) Terminated 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) +
Number at June 30, 2022	10,685	0	71	4,705	549	10,455	691	317	16,717	27,473
New Entrants	594	0	0	1	0	0	9	2	12	606
Rehires	9	0	(1)	(2)	0	0	0	0	(2)	6
Terminated Nonvested	(1)	1	0	0	0	0	0	0	0	0
Vested Termination	(7)	0	7	0	0	0	0	0	0	0
Withdrawal / Cashout	(27)	0	0	0	0	0	0	0	0	(27)
Accidental Death	(1)	0	0	0	0	0	1	0	1	0
Ordinary Death	(7)	0	0	0	0	0	0	0	0	(7)
Service Retirement	(197)	0	(18)	213	0	0	0	2	215	0
Ordinary Disability Retirement	(4)	0	0	0	4	0	0	0	4	0
Accidental Disability Retirement	(324)	0	0	0	0	324	0	0	324	0
Reclassifications	0	0	0	(47)	0	28	16	3	0	0
Pensioner Death with Beneficiary	0	0	0	(6)	0	(7)	0	13	0	0
Pensioner Death without Beneficiary	0	0	0	(162)	(41)	(165)	(10)	(21)	(399)	(399)
Pension Payroll Adjustments	0	0	0	0	0	0	0	(1)	(1)	(1)
Net Change	35	1	(12)	(3)	(37)	180	16	(2)	154	178
Number at June 30, 2023	10,720	1	59	4,702	512	10,635	707	315	16,871	27,651

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 FIRE PENSION FUND		
ACTIVE MEMBERS INCLUDED IN THE JUNE 30, 2023 AND JUNE 30, 2022 ACTUARIAL VALUATIONS		
	June 30, 2023	June 30, 2022
Number		
Males	10,548	10,527
Females	172	158
Total	<u>10,720</u>	<u>10,685</u>
Annual Salary ¹		
Males	\$1,474,157,579	\$1,426,311,231
Females	20,379,486	17,732,645
Total	<u>\$1,494,537,065</u>	<u>\$1,444,043,876</u>
Average Salary ¹		
Males	\$ 139,757	\$ 135,491
Females	118,485	112,232
Total Average	<u>\$ 139,416</u>	<u>\$ 135,147</u>
Average Age		
Males	40.9	41.0
Females	37.5	37.1
Total Average	40.8	41.0
Average Past Service		
Males	14.0	14.3
Females	8.0	8.0
Total Average	13.9	14.2

¹ Salaries shown are base salaries plus assumed overtime paid and 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

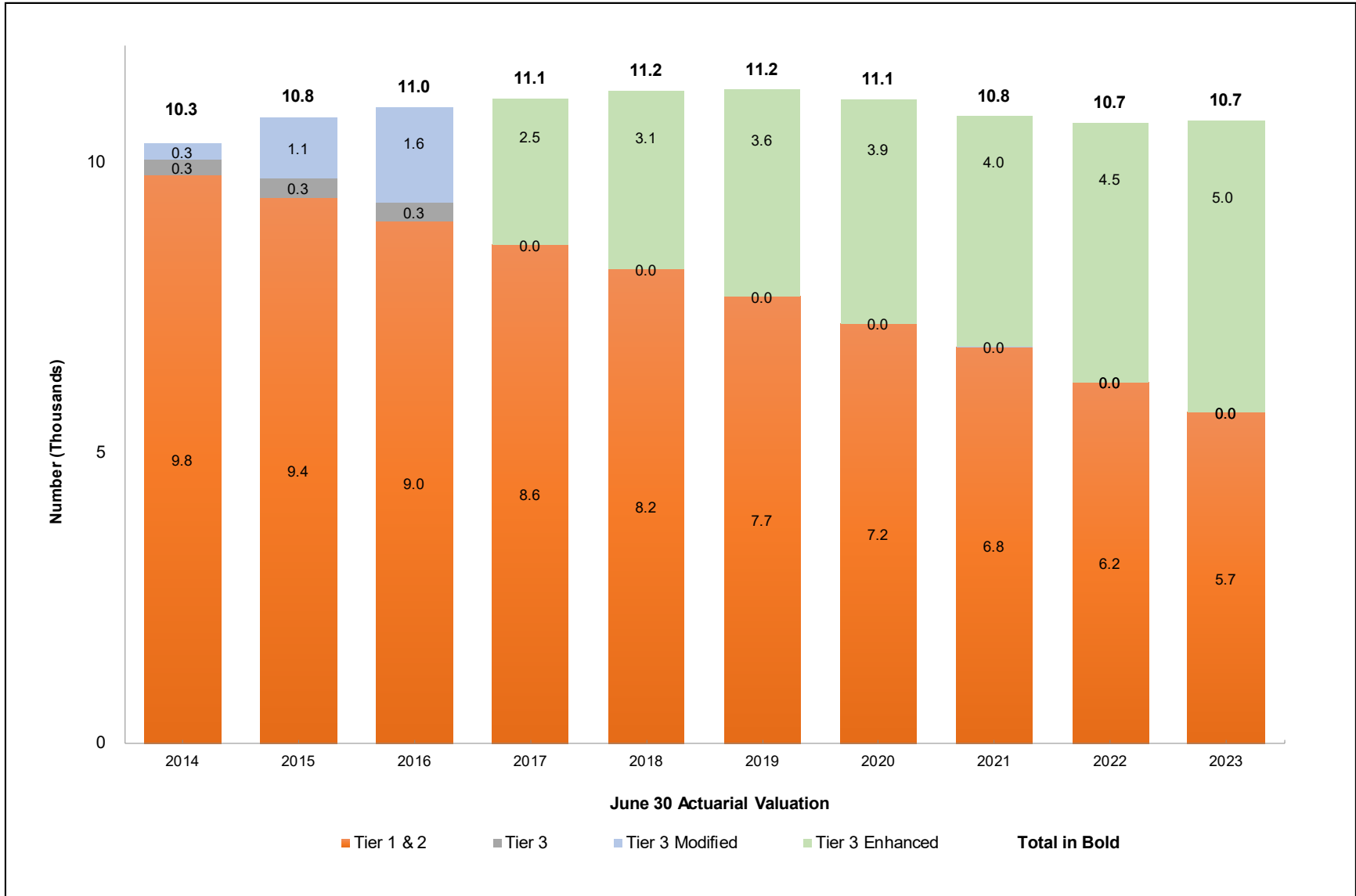


Table XII-5
Schedule of Active Member Salary Data

June 30 Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2014	10,319	\$ 1,150,389,645	\$ 111,483	0.5%
2015	10,780	1,164,994,036	108,070	(3.1%)
2016	10,951	1,180,226,281	107,773	(0.3%)
2017	11,091	1,256,001,332	113,245	5.1%
2018	11,237	1,305,960,137	116,220	2.6%
2019	11,244	1,336,843,002	118,894	2.3%
2020	11,079	1,348,006,398	121,672	2.3%
2021	10,793	1,401,377,517	129,841	6.7%
2022	10,685	1,444,043,876	135,147	4.1%
2023	10,720	1,494,537,065	139,416	3.2%

Salaries shown are base salaries plus assumed overtime paid and 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	0	0	0	0	0	0	0	0	0	0
20 TO 24	40	0	0	0	0	0	0	0	0	40
25 TO 29	653	114	0	0	0	0	0	0	0	767
30 TO 34	881	1,256	103	3	0	0	0	0	0	2,243
35 TO 39	163	1,074	339	357	5	0	0	0	0	1,938
40 TO 44	14	243	91	1,229	389	2	0	0	0	1,968
45 TO 49	0	20	11	616	928	135	0	0	0	1,710
50 TO 54	1	1	1	90	563	374	80	0	0	1,110
55 TO 59	1	1	0	2	106	213	165	41	0	529
60 TO 64	0	0	0	0	5	29	82	93	21	230
65 TO 69	0	0	0	0	0	0	2	2	6	10
70 & UP	0	0	0	1	1	0	1	0	0	3
TOTAL	1,753	2,709	545	2,298	1,997	753	330	136	27	10,548

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	2,523	0	0	0	0	0	0	0	0	2,523
25 TO 29	45,015	12,405	0	0	0	0	0	0	0	57,420
30 TO 34	63,738	166,051	14,148	427	0	0	0	0	0	244,364
35 TO 39	12,422	149,193	48,169	54,410	829	0	0	0	0	265,022
40 TO 44	1,198	34,119	12,935	191,084	64,687	290	0	0	0	304,313
45 TO 49	0	2,811	1,550	95,418	153,854	22,447	0	0	0	276,081
50 TO 54	59	211	188	13,719	91,484	65,955	14,828	0	0	186,444
55 TO 59	156	188	0	337	17,297	36,862	30,977	7,628	0	93,444
60 TO 64	0	0	0	0	783	4,588	14,988	17,858	3,850	42,068
65 TO 69	0	0	0	0	0	0	377	402	1,132	1,911
70 & UP	0	0	0	188	189	0	191	0	0	568
TOTAL ¹	125,110	364,978	76,991	355,583	329,122	130,143	61,361	25,888	4,982	1,474,158

AVERAGE SALARIES: ²

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	63,064	0	0	0	0	0	0	0	0	63,064
25 TO 29	68,935	108,815	0	0	0	0	0	0	0	74,863
30 TO 34	72,347	132,206	137,363	142,366	0	0	0	0	0	108,945
35 TO 39	76,206	138,913	142,092	152,408	165,701	0	0	0	0	136,750
40 TO 44	85,551	140,408	142,144	155,479	166,290	145,029	0	0	0	154,631
45 TO 49	0	140,543	140,948	154,900	165,791	166,275	0	0	0	161,451
50 TO 54	59,118	211,288	187,565	152,434	162,493	176,351	185,353	0	0	167,968
55 TO 59	155,785	188,207	0	168,395	163,176	173,063	187,738	186,040	0	176,643
60 TO 64	0	0	0	0	156,631	158,199	182,782	192,022	183,353	182,903
65 TO 69	0	0	0	0	0	0	188,449	201,143	188,672	191,122
70 & UP	0	0	0	188,454	188,646	0	190,852	0	0	189,317
TOTAL	71,369	134,728	141,267	154,736	164,808	172,832	185,942	190,353	184,535	139,757

Note: Age is nearest birthdate. 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)

		FEMALE 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	0	0	0	0	0	0	0	0	0	0
20 TO 24	1	0	0	0	0	0	0	0	0	1
25 TO 29	11	1	0	0	0	0	0	0	0	12
30 TO 34	45	28	1	0	0	0	0	0	0	74
35 TO 39	11	14	2	5	0	0	0	0	0	32
40 TO 44	0	8	1	6	2	0	0	0	0	17
45 TO 49	1	0	0	8	8	1	0	0	0	18
50 TO 54	1	0	2	1	7	1	0	0	0	12
55 TO 59	1	2	0	0	0	1	0	0	0	4
60 TO 64	0	0	1	0	0	0	0	0	0	1
65 TO 69	0	0	0	0	0	0	0	0	0	0
70 & UP	0	0	0	0	1	0	0	0	0	1
TOTAL	71	53	7	20	18	3	0	0	0	172

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	59	0	0	0	0	0	0	0	0	59
25 TO 29	797	141	0	0	0	0	0	0	0	938
30 TO 34	3,243	3,530	156	0	0	0	0	0	0	6,929
35 TO 39	949	1,956	281	725	0	0	0	0	0	3,911
40 TO 44	0	1,173	158	921	312	0	0	0	0	2,564
45 TO 49	155	0	0	1,282	1,247	170	0	0	0	2,854
50 TO 54	148	0	375	145	1,183	174	0	0	0	2,025
55 TO 59	141	408	0	0	0	172	0	0	0	722
60 TO 64	0	0	186	0	0	0	0	0	0	186
65 TO 69	0	0	0	0	0	0	0	0	0	0
70 & UP	0	0	0	0	191	0	0	0	0	191
TOTAL ¹	5,492	7,209	1,156	3,073	2,933	517	0	0	0	20,379

AVERAGE SALARIES: ²

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	59,118	0	0	0	0	0	0	0	0	59,118
25 TO 29	72,472	140,874	0	0	0	0	0	0	0	78,172
30 TO 34	72,066	126,077	156,178	0	0	0	0	0	0	93,639
35 TO 39	86,250	139,717	140,594	144,970	0	0	0	0	0	122,213
40 TO 44	0	146,621	158,316	153,551	155,927	0	0	0	0	150,850
45 TO 49	154,611	0	0	160,265	155,908	170,196	0	0	0	158,566
50 TO 54	148,494	0	187,255	144,979	168,979	174,169	0	0	0	168,750
55 TO 59	140,830	204,240	0	0	0	172,323	0	0	0	180,408
60 TO 64	0	0	186,056	0	0	0	0	0	0	186,056
65 TO 69	0	0	0	0	0	0	0	0	0	0
70 & UP	0	0	0	0	190,852	0	0	0	0	190,852
TOTAL	77,352	136,010	165,178	153,663	162,934	172,229	0	0	0	118,485

Note: Age is nearest birthdate. 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 (ALL TIERS, ALL MEMBERS)								
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	0	0	0	0	0	0	0	0	0	0
20 TO 24	41	0	0	0	0	0	0	0	0	41
25 TO 29	664	115	0	0	0	0	0	0	0	779
30 TO 34	926	1,284	104	3	0	0	0	0	0	2,317
35 TO 39	174	1,088	341	362	5	0	0	0	0	1,970
40 TO 44	14	251	92	1,235	391	2	0	0	0	1,985
45 TO 49	1	20	11	624	936	136	0	0	0	1,728
50 TO 54	2	1	3	91	570	375	80	0	0	1,122
55 TO 59	2	3	0	2	106	214	165	41	0	533
60 TO 64	0	0	1	0	5	29	82	93	21	231
65 TO 69	0	0	0	0	0	0	2	2	6	10
70 & UP	0	0	0	1	2	0	1	0	0	4
TOTAL	1,824	2,762	552	2,318	2,015	756	330	136	27	10,720

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	2,582	0	0	0	0	0	0	0	0	2,582
25 TO 29	45,812	12,546	0	0	0	0	0	0	0	58,358
30 TO 34	66,981	169,581	14,305	427	0	0	0	0	0	251,294
35 TO 39	13,370	151,149	48,450	55,134	829	0	0	0	0	268,933
40 TO 44	1,198	35,292	13,093	192,005	64,999	290	0	0	0	306,877
45 TO 49	155	2,811	1,550	96,700	155,102	22,617	0	0	0	278,935
50 TO 54	208	211	562	13,864	92,666	66,129	14,828	0	0	188,469
55 TO 59	297	597	0	337	17,297	37,035	30,977	7,628	0	94,166
60 TO 64	0	0	186	0	783	4,588	14,988	17,858	3,850	42,254
65 TO 69	0	0	0	0	0	0	377	402	1,132	1,911
70 & UP	0	0	0	188	379	0	191	0	0	759
TOTAL ¹	130,602	372,187	78,147	358,656	332,055	130,659	61,361	25,888	4,982	1,494,537

<i>AVERAGE SALARIES: ²</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	62,968	0	0	0	0	0	0	0	0	62,968
25 TO 29	68,994	109,094	0	0	0	0	0	0	0	74,914
30 TO 34	72,334	132,072	137,544	142,366	0	0	0	0	0	108,456
35 TO 39	76,841	138,924	142,083	152,305	165,701	0	0	0	0	136,514
40 TO 44	85,551	140,606	142,320	155,470	166,237	145,029	0	0	0	154,598
45 TO 49	154,611	140,543	140,948	154,969	165,707	166,304	0	0	0	161,421
50 TO 54	103,806	211,288	187,358	152,352	162,573	176,345	185,353	0	0	167,976
55 TO 59	148,308	198,896	0	168,395	163,176	173,059	187,738	186,040	0	176,671
60 TO 64	0	0	186,056	0	156,631	158,199	182,782	192,022	183,353	182,916
65 TO 69	0	0	0	0	0	0	188,449	201,143	188,672	191,122
70 & UP	0	0	0	188,454	189,749	0	190,852	0	0	189,701
TOTAL	71,602	134,753	141,571	154,727	164,791	172,830	185,942	190,353	184,535	139,416

Note: Age is nearest birthdate. 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
I	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
I	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
II	M	5,647	922,090,683	163,289	47.3	21.3	6,172	960,301,826	155,590	46.8	20.7
II	F	43	6,869,534	159,757	46.8	19.3	44	6,634,383	150,781	46.0	18.3
		5,690	928,960,217	163,262	47.3	21.3	6,216	966,936,209	155,556	46.8	20.6
III	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
III	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
III Modified	M	2	281,880	140,940	37.5	10.0	2	272,078	136,039	36.5	9.0
III Modified	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		2	281,880	140,940	37.5	10.0	2	272,078	136,039	36.5	9.0
III Enhanced	M	4,899	551,785,016	112,632	33.4	5.6	4,353	465,737,327	106,992	32.9	5.2
III Enhanced	F	129	13,509,952	104,728	34.5	4.2	114	11,098,262	97,353	33.7	4.0
		5,028	565,294,968	112,429	33.4	5.5	4,467	476,835,589	106,746	32.9	5.2
ALL TIERS		10,720	1,494,537,065	139,416	40.8	13.9	10,685	1,444,043,876	135,147	41.0	14.2

JUNE 30, 2023 MEMBERS ALSO PRESENT AS OF JUNE 30, 2022							JUNE 30, 2022 MEMBERS ALSO PRESENT AS OF JUNE 30, 2023				
I	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
I	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
II	M	5,642	921,376,185	163,307	47.3	21.3	5,642	876,645,624	155,379	46.3	20.3
II	F	43	6,869,534	159,757	46.8	19.3	43	6,446,907	149,928	45.8	18.1
		5,685	928,245,719	163,280	47.3	21.3	5,685	883,092,531	155,337	46.3	20.3
III	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
III	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
III Modified	M	2	281,880	140,940	37.5	10.0	2	272,078	136,039	36.5	9.0
III Modified	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		2	281,880	140,940	37.5	10.0	2	272,078	136,039	36.5	9.0
III Enhanced	M	4,318	516,819,487	119,690	33.9	6.3	4,318	462,730,351	107,163	32.9	5.3
III Enhanced	F	110	12,211,887	111,017	34.7	4.9	110	10,706,536	97,332	33.7	4.0
		4,428	529,031,374	119,474	33.9	6.2	4,428	473,436,887	106,919	32.9	5.2
ALL TIERS		10,115	1,457,558,973	144,099	41.4	14.7	10,115	1,356,801,496	134,138	40.4	13.7

ADDITIONS DURING THE YEAR ¹							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR ¹				
I	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
I	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
II	M	5	714,498	142,900	42.6	16.2	530	83,656,202	157,842	51.4	24.7
II	F	0	0	0	0.0	0.0	1	187,476	187,476	55.0	25.0
		5	714,498	142,900	42.6	16.2	531	83,843,678	157,898	51.4	24.7
III	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
III	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
III Modified	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
III Modified	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0	0.0	0.0
III Enhanced	M	581	34,965,529	60,182	30.0	0.5	35	3,006,976	85,914	31.9	3.3
III Enhanced	F	19	1,298,065	68,319	33.2	0.4	4	391,726	97,932	33.5	5.3
		600	36,263,594	60,439	30.1	0.5	39	3,398,702	87,146	32.0	3.5
ALL TIERS		605	36,978,092	61,121	30.2	0.6	570	87,242,380	153,057	50.1	23.2

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.

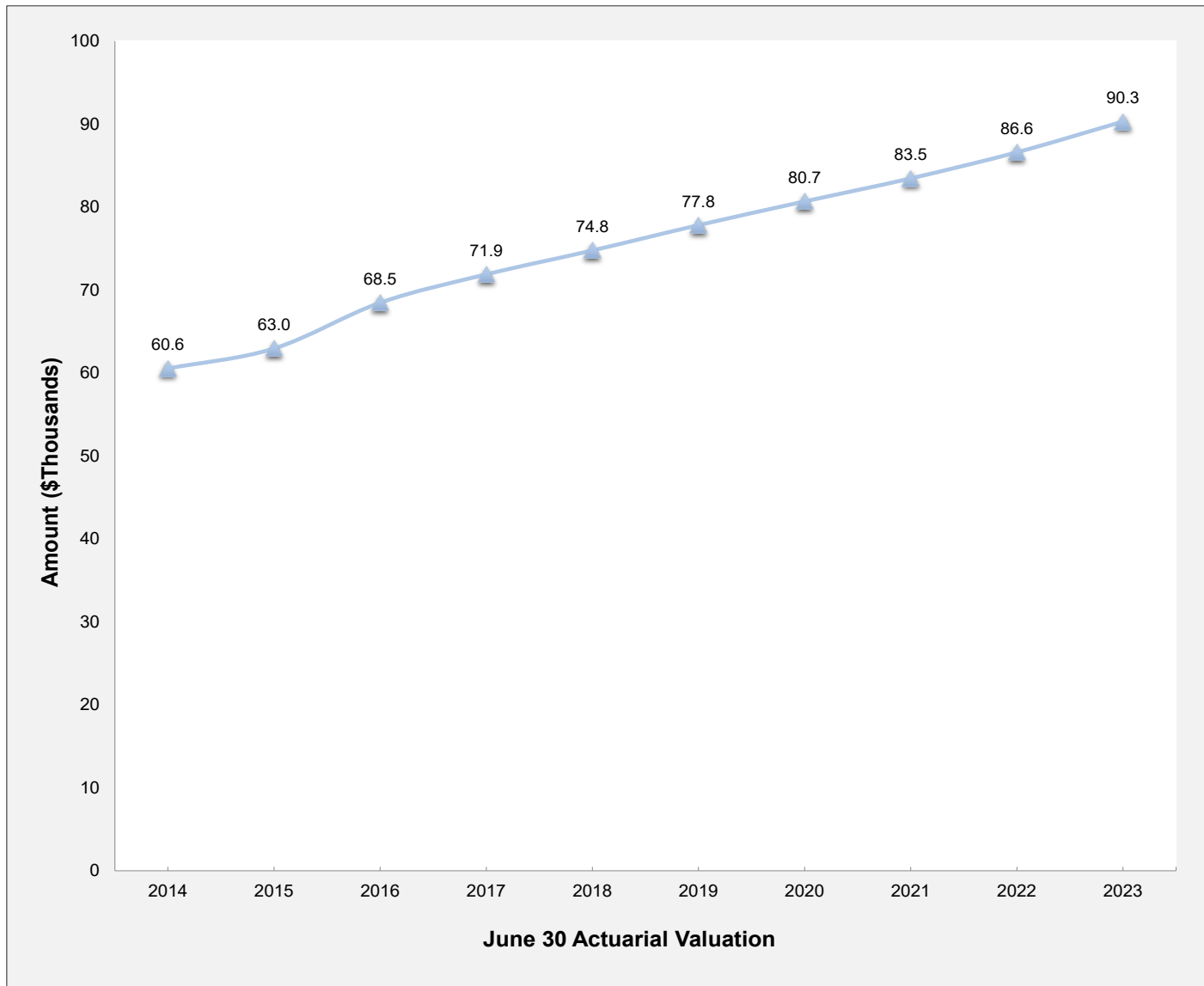
Table XII-8
Distribution of Pension Benefits as of June 30, 2023

AGE	MALE			FEMALE			BOTH MALE & FEMALE		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
SERVICE RETIREMENT:									
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	27	2,112,342	78,235	0	0	0	27	2,112,342	78,235
45 TO 49	119	9,490,288	79,750	2	93,711	46,856	121	9,583,999	126,606
50 TO 54	218	19,113,869	87,678	3	203,866	67,955	221	19,317,735	155,634
55 TO 59	355	33,922,040	95,555	1	167,698	167,698	356	34,089,738	263,253
60 TO 64	488	44,211,663	90,598	1	109,696	109,696	489	44,321,359	200,294
65 TO 69	793	63,343,875	79,879	4	191,110	47,778	797	63,534,985	127,656
70 TO 74	550	34,335,269	62,428	3	281,666	93,889	553	34,616,935	156,316
75 TO 79	602	31,537,249	52,387	0	0	0	602	31,537,249	52,387
80 TO 84	715	32,337,177	45,227	0	0	0	715	32,337,177	45,227
85 TO 89	539	22,000,873	40,818	0	0	0	539	22,000,873	40,818
90 & UP	282	10,413,611	36,928	0	0	0	282	10,413,611	36,928
TOTAL	4,688	302,818,256	64,594	14	1,047,747	74,839	4,702	303,866,003	64,625
ORDINARY DISABILITY:									
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	3	198,953	66,318	0	0	0	3	198,953	66,318
40 TO 44	9	490,571	54,508	0	0	0	9	490,571	54,508
45 TO 49	12	601,660	50,138	0	0	0	12	601,660	50,138
50 TO 54	6	290,084	48,347	0	0	0	6	290,084	48,347
55 TO 59	13	529,517	40,732	0	0	0	13	529,517	40,732
60 TO 64	12	357,091	29,758	0	0	0	12	357,091	29,758
65 TO 69	43	1,162,358	27,032	1	30,732	30,732	44	1,193,090	57,764
70 TO 74	29	905,598	31,228	0	0	0	29	905,598	31,228
75 TO 79	48	3,565,318	74,277	0	0	0	48	3,565,318	74,277
80 TO 84	117	7,623,239	65,156	0	0	0	117	7,623,239	65,156
85 TO 89	142	9,101,680	64,096	0	0	0	142	9,101,680	64,096
90 & UP	77	4,657,492	60,487	0	0	0	77	4,657,492	60,487
TOTAL	511	29,483,561	57,698	1	30,732	30,732	512	29,514,293	57,645
ACCIDENTAL DISABILITY:									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	2	158,443	79,222	0	0	0	2	158,443	79,222
35 TO 39	30	2,770,774	92,359	0	0	0	30	2,770,774	92,359
40 TO 44	269	28,702,301	106,700	3	259,848	86,616	272	28,962,149	193,316
45 TO 49	655	72,559,118	110,777	2	212,364	106,182	657	72,771,482	216,959
50 TO 54	1,062	122,655,845	115,495	2	169,023	84,512	1,064	122,824,868	200,007
55 TO 59	1,495	177,843,365	118,959	0	0	0	1,495	177,843,365	118,959
60 TO 64	1,859	215,303,310	115,817	3	232,401	77,467	1,862	215,535,711	193,284
65 TO 69	2,116	226,979,390	107,268	5	535,388	107,078	2,121	227,514,778	214,346
70 TO 74	1,025	96,867,215	94,505	6	597,926	99,654	1,031	97,465,141	194,159
75 TO 79	729	56,699,319	77,777	0	0	0	729	56,699,319	77,777
80 TO 84	683	44,452,928	65,085	0	0	0	683	44,452,928	65,085
85 TO 89	522	28,989,519	55,535	0	0	0	522	28,989,519	55,535
90 & UP	167	8,160,823	48,867	0	0	0	167	8,160,823	48,867
TOTAL	10,614	1,082,142,350	101,954	21	2,006,950	95,569	10,635	1,084,149,300	101,942

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
ACCIDENTAL DEATH:									
UNDER 30	1	71,210	71,210	8	846,606	105,826	9	917,816	177,036
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	4	527,623	131,906	4	527,623	131,906
40 TO 44	0	0	0	4	556,152	139,038	4	556,152	139,038
45 TO 49	0	0	0	15	1,967,730	131,182	15	1,967,730	131,182
50 TO 54	0	0	0	60	8,286,335	138,106	60	8,286,335	138,106
55 TO 59	0	0	0	91	12,617,693	138,656	91	12,617,693	138,656
60 TO 64	0	0	0	138	19,464,807	141,049	138	19,464,807	141,049
65 TO 69	2	242,750	121,375	116	16,338,661	140,851	118	16,581,411	262,226
70 TO 74	3	321,976	107,325	76	10,420,224	137,108	79	10,742,200	244,434
75 TO 79	0	0	0	69	9,435,325	136,744	69	9,435,325	136,744
80 TO 84	0	0	0	58	7,399,500	127,578	58	7,399,500	127,578
85 TO 89	0	0	0	39	4,226,784	108,379	39	4,226,784	108,379
90 & UP	0	0	0	23	2,269,389	98,669	23	2,269,389	98,669
TOTAL	6	635,936	105,989	701	94,356,829	134,603	707	94,992,765	134,360
OTHER BENEFICIARIES:									
UNDER 30	1	56,989	56,989	1	80,045	80,045	2	137,034	137,034
30 TO 34	0	0	0	4	252,683	63,171	4	252,683	63,171
35 TO 39	0	0	0	5	344,791	68,958	5	344,791	68,958
40 TO 44	0	0	0	5	199,694	39,939	5	199,694	39,939
45 TO 49	0	0	0	2	148,898	74,449	2	148,898	74,449
50 TO 54	1	122,869	122,869	5	359,104	71,821	6	481,973	194,690
55 TO 59	0	0	0	10	702,401	70,240	10	702,401	70,240
60 TO 64	1	23,535	23,535	22	1,213,584	55,163	23	1,237,119	78,698
65 TO 69	0	0	0	33	1,362,777	41,296	33	1,362,777	41,296
70 TO 74	0	0	0	32	1,244,565	38,893	32	1,244,565	38,893
75 TO 79	0	0	0	35	1,287,277	36,779	35	1,287,277	36,779
80 TO 84	0	0	0	49	1,483,645	30,278	49	1,483,645	30,278
85 TO 89	0	0	0	51	1,383,558	27,129	51	1,383,558	27,129
90 & UP	0	0	0	58	820,606	14,148	58	820,606	14,148
TOTAL	3	203,393	67,798	312	10,883,628	34,883	315	11,087,021	35,197
ALL PENSIONERS AND BENEFICIARIES:									
UNDER 30	2	128,199	64,100	9	926,651	102,961	11	1,054,850	167,061
30 TO 34	2	158,443	79,222	4	252,683	63,171	6	411,126	142,392
35 TO 39	33	2,969,727	89,992	9	872,414	96,935	42	3,842,141	186,927
40 TO 44	305	31,305,214	102,640	12	1,015,694	84,641	317	32,320,908	187,281
45 TO 49	786	82,651,066	105,154	21	2,422,703	115,367	807	85,073,769	220,521
50 TO 54	1,287	142,182,667	110,476	70	9,018,328	128,833	1,357	151,200,995	239,309
55 TO 59	1,863	212,294,922	113,953	102	13,487,792	132,233	1,965	225,782,714	246,187
60 TO 64	2,360	259,895,599	110,125	164	21,020,488	128,174	2,524	280,916,087	238,299
65 TO 69	2,954	291,728,373	98,757	159	18,458,668	116,092	3,113	310,187,041	214,849
70 TO 74	1,607	132,430,058	82,408	117	12,544,381	107,217	1,724	144,974,439	189,625
75 TO 79	1,379	91,801,886	66,571	104	10,722,602	103,102	1,483	102,524,488	169,673
80 TO 84	1,515	84,413,344	55,718	107	8,883,145	83,020	1,622	93,296,489	138,738
85 TO 89	1,203	60,092,072	49,952	90	5,610,342	62,337	1,293	65,702,414	112,289
90 & UP	526	23,231,926	44,167	81	3,089,995	38,148	607	26,321,921	82,315
TOTAL	15,822	1,415,283,496	89,450	1,049	108,325,886	103,266	16,871	1,523,609,382	90,309

Graph XII-9
Pensioner Average Benefits



¹ Disclosed 2020 allowances updated to reflect only allowances presented in census data.

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 ¹		
2014	490	\$ 54,256,974	534	\$ 23,299,539	16,763	\$1,015,150,510	3.1%	\$ 60,559
2015	500	59,578,951	553	22,526,507	16,710	1,052,202,954	3.6%	62,968
2016	498	110,481,515	561	22,667,718	16,647	1,140,016,751	8.3%	68,482
2017	497	77,245,492	508	21,127,518	16,636	1,196,134,725	4.9%	71,900
2018	456	65,902,484	499	21,226,999	16,593	1,240,810,210	3.7%	74,779
2019	559	78,160,361	524	24,799,933	16,628	1,294,170,638	4.3%	77,831
2020	560	75,661,961	564	28,481,496	16,624	1,341,351,103	3.6%	80,688
2021	482	69,949,959	528	27,631,628	16,578	1,383,669,434	3.2%	83,464
2022	689	91,913,729	550	27,776,405	16,717	1,447,806,758	4.6%	86,607
2023	632	104,105,293	478	28,302,669	16,871	1,523,609,382	5.2%	90,309

¹ Allowances shown are those presented in the census data. Beginning 2016, SADB payments to beneficiaries are included.

APPENDIX: ACRONYMS AND ABBREVIATIONS

Revised 2021 A&M	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 2021
2019 A&M	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 2019
AAVM	Actuarial Asset Valuation Method
ACCNY	Administrative Code of the City of New York
ADR	Accidental Disability Retirement
AIR	Actuarial Interest Rate
AL	Accrued Liability
AMC	Additional Member Contributions
ASOP	Actuarial Standard of Practice
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
EBP	Excess Benefit Plan
EMT	Emergency Medical Technician
FAS	Final Average Salary
FIRE	Fire Pension Fund
FFVSF	Firefighters' Variable Supplements Fund
FOVSF	Fire Officers' Variable Supplements Fund
FS	Final Salary
GASB	Governmental Accounting Standards Board
IRC	Internal Revenue Code
ITHP	Increased-Take-Home-Pay
LDROM	Low-Default-Risk Obligation Measure
MVA	Market Value of Assets
NYCERS	New York City Employees' Retirement System
NYCRS	New York City Retirement Systems
ODR	Ordinary Disability Retirement
OYLM	One-Year Lag Methodology
POLICE	Police Pension Fund
PV	Present Value
PVFB	Present Value of Future Benefits
PVFNC	Present Value of Future Normal Costs
QPP	Qualified Pension Plan
TRS	Teachers' Retirement System
UAL	Unfunded Accrued Liability
VSF	Variable Supplements Fund
WTC	World Trade Center