



June 30, 2023 Actuarial Valuation Report

for the

New York City Police 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

November 5, 2025

Board of Trustees
New York City Police Pension Fund
233 Broadway, Room 2501
New York, NY 10279

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

Dear Trustees:

This is the June 30, 2023 actuarial valuation report of the New York City Police Pension Fund (POLICE) 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 \$2,475,227,906.

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 POLICE 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 previous year's 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 POLICE Tier 3 Revised 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 year's valuation other than:

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

Other Changes

The valuation reflects an update to POLICE's benefit administration, where the percentage of the estimated final pension paid to pensioners during the pre-finalization period changed.

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.
- This Employer Contribution does not include the cost of any pension payments that exceed the Internal Revenue Code (IRC) Section 415 Limit which are expected to be made from the Excess Benefit Plan (EBP), other than a one-year adjustment to the liabilities to account for EBP payments expected to be made in Calendar Year 2024/Fiscal Year 2025 from the Qualified Pension Plan (QPP) while the trust for the EBP is established.
- 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.

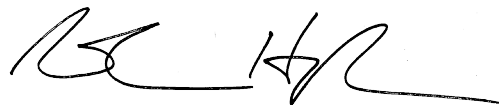
Actuaries' Statement of Opinion

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: Kevin Holloran - New York City Police Pension Fund
Keith Snow, Esq. – New York City Office of the Actuary
Stanley Thomas - New York City Police 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 82.6% in the prior valuation to 84.1% as of June 30, 2023. The Plan's investment return for this period, based on the Market Value of Assets, was 8.6%.

Required Contribution Amount

The actuarially required contribution for Fiscal Year 2025 is \$2,475,227,906 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 POLICE PENSION FUND		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability ¹	\$ 58,953,258,170	\$ 56,956,439,609
2. Actuarial Value of Assets (AVA)	<u>50,410,834,000</u>	<u>48,457,398,000</u>
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 8,542,424,170	\$ 8,499,041,609
4. Market Value of Assets (MVA)	49,608,515,000	47,043,387,000
5. Unfunded Accrued Liability (MVA Basis) (1. - 4.)	\$ 9,344,743,170	\$ 9,913,052,609
6. Funded Ratio (MVA Basis) (4. / 1.)	84.1%	82.6%
Contribution²		
1. Normal Cost	\$ 1,452,287,205	\$ 1,445,026,063
2. Amortization of Unfunded Accrued Liability	988,195,276	886,943,563
3. Administrative Expenses	34,745,425	27,822,215
4. Interest on Late Employer Contributions	<u>0</u>	<u>0</u>
5. Actuarial Required Contribution (1. + 2. + 3. + 4.)	\$ 2,475,227,906	\$ 2,359,791,841
Participant Data		
1. Active Members		
a. Number	33,800	34,655
b. Annual Salary ³	\$ 4,345,602,880	\$ 4,332,225,523
c. Average Salary	\$ 128,568	\$ 125,010
d. Average Age	37.55	37.43
e. Average Service	11.32	11.29
2. Terminated Nonvested Members	2,365	2,125
3. Deferred Vested Members	1,493	1,214
4. Retirees and Beneficiaries		
a. Number	54,321	53,608
b. Total Annual Benefits	\$ 3,359,671,401	\$ 3,196,498,320
c. Average Annual Benefit	\$ 61,848	\$ 59,627
d. Average Age	63.22	63.03

¹ Includes unfunded Accrued Liability for VSFs, if any.

² Includes results for VSFs.

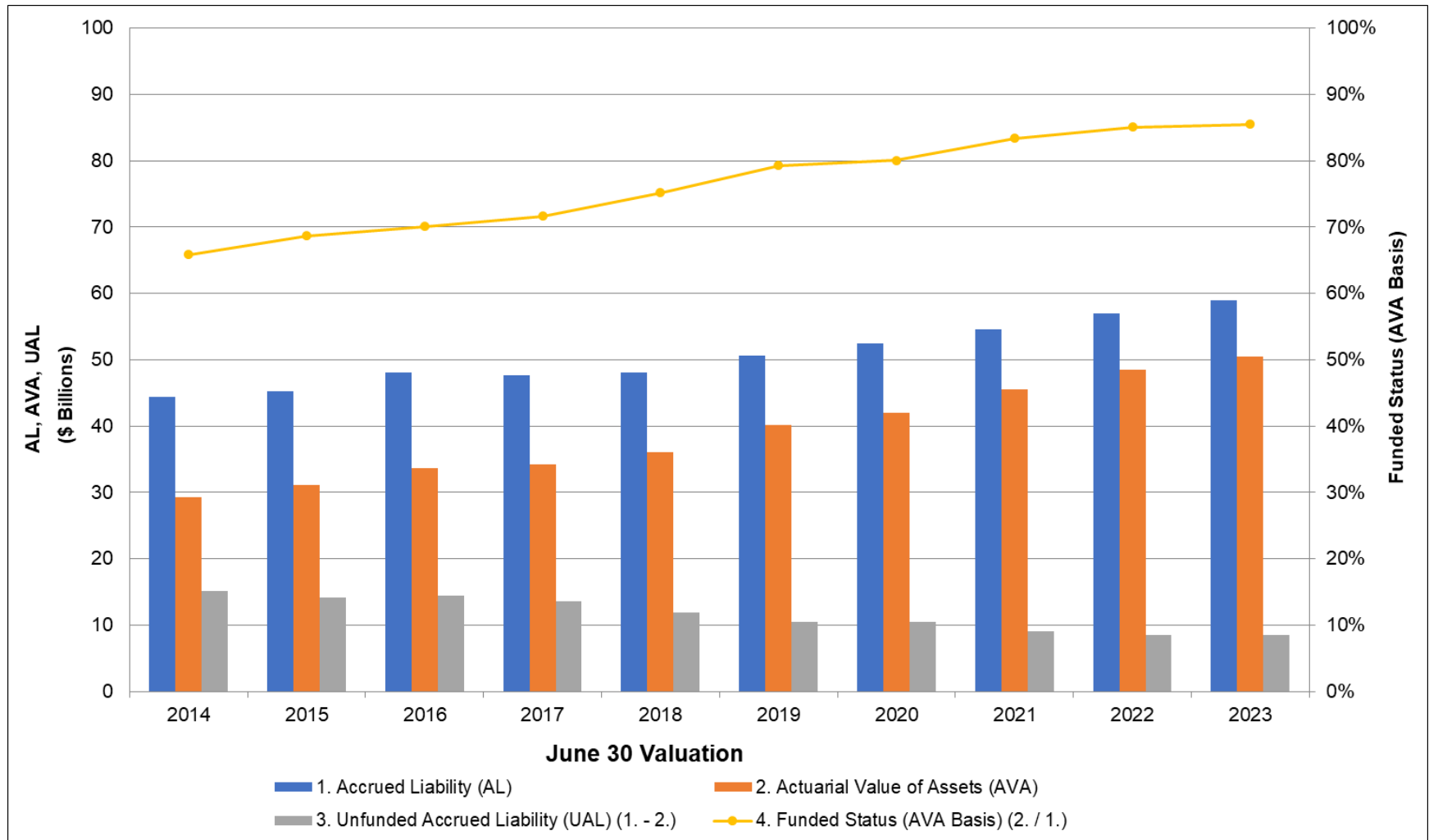
³ Salaries shown are the base salary plus assumed overtime paid and reflect certain salary increases with retroactive effective dates, if any, that are not yet reflected in census data.

Table I-2
Actuarial Liabilities

NEW YORK CITY POLICE PENSION FUND		
ACTUARIAL LIABILITIES BY STATUS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Accrued Liability		
1. Active Members	\$ 16,942,537,822	\$ 16,824,099,795
2. Terminated Nonvested Members	9,044,047	8,085,372
3. Deferred Vested Members	339,295,920	263,460,519
4. Retirees and Beneficiaries	40,408,629,261	39,009,136,259
5. Unfunded VSF Accrued Liability ¹	<u>1,253,751,120</u>	<u>851,657,664</u>
6. Plan Accrued Liability	\$ 58,953,258,170	\$ 56,956,439,609
Present Value of Benefits (PVB)		
1. Active Members	\$ 30,316,726,343	\$ 29,771,663,387
2. Terminated Nonvested Members	9,044,047	8,085,372
3. Deferred Vested Members	339,295,920	263,460,519
4. Retirees and Beneficiaries	40,408,629,261	39,009,136,258
5. Unfunded VSF PVB	<u>2,167,011,244</u>	<u>1,789,311,399</u>
6. Total Present Value of Benefits	\$ 73,240,706,815	\$ 70,841,656,935

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	\$ 18,819	\$ 35,684
Receivables		
Investment Securities Sold	\$ 507,491	\$ 731,877
Member Loans	162,151	162,050
Accrued Interest and Dividends	<u>145,504</u>	<u>134,866</u>
Total Receivables	\$ 815,146	\$ 1,028,793
INVESTMENTS AT FAIR VALUE		
Short-Term Investments		
Commercial Paper	\$ 45,475	\$ 280,668
Short-term Investment Fund	503,210	517,680
U.S. Treasury Bills and Agencies	167,159	369,797
Debt Securities	12,735,253	12,447,591
Equity Securities	20,349,286	19,061,483
Alternative Investments	14,528,773	13,347,237
Collective Trust Funds		
Fixed Income	0	148,230
Bank Loans	60,304	868
Corporate and Other	214,147	0
Domestic Equity	50,050	47,141
International Equity	896,421	856,180
Mortgage Debt Security	77,815	191,695
Collateral From Securities Lending	<u>3,689,545</u>	<u>4,697,443</u>
Total Investments	\$ 53,317,438	\$ 51,966,013
OTHER ASSETS	<u>26,142</u>	<u>9,918</u>
TOTAL ASSETS	\$ 54,177,545	\$ 53,040,408
LIABILITIES		
Accounts Payable	\$ 59,873	\$ 54,850
Payables for Investment Securities Purchased	629,877	1,117,344
Accrued Benefits Payable	173,804	127,384
Accrued Transfers to VSFs	0	0
Security Lending	3,689,545	4,697,443
Other Liabilities	<u>15,931</u>	<u>0</u>
TOTAL LIABILITIES	\$ 4,569,030	\$ 5,997,021
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 49,608,515	\$ 47,043,387

Table II-2
Statement of Changes in Plan Net Assets

(\$ Thousands)		
	June 30, 2023	June 30, 2022
ADDITIONS		
Contributions		
Member Contributions	\$ 267,720	\$ 281,185
Employer Contributions	2,333,707	2,490,134
Total Contributions	\$ 2,601,427	\$ 2,771,319
Investment Income (Loss)		
Interest Income	\$ 686,368	\$ 693,679
Dividend Income	566,715	740,464
Net Appreciation (Depreciation) in Fair Value	3,081,703	(4,711,781)
Total Investment Income (Loss)	\$ 4,334,786	\$ (3,277,638)
Less Investment Expenses	395,433	393,193
Net Income (Loss)	\$ 3,939,353	\$ (3,670,831)
Securities Lending Transactions		
Securities Lending Income	\$ 14,765	\$ 16,111
Securities Lending Fees	(1,388)	(1,575)
Net Securities Lending Income (Loss)	\$ 13,377	\$ 14,536
Other		
Net Receipts from Other Retirement Systems	\$ 1,463	\$ 1,810
Litigation Income	2,923	3,385
Other Total	\$ 4,386	\$ 5,195
Transferable Earnings due from VSFs to QPP	\$ 0	\$ 185
TOTAL ADDITIONS	\$ 6,558,543	\$ (879,596)
DEDUCTIONS		
Benefit Payments and Withdrawals	\$ 3,820,741	\$ 3,344,982
Accrued Transfers to VSFs	142,326	1,672
Administrative Expenses	30,348	24,301
TOTAL DEDUCTIONS	\$ 3,993,415	\$ 3,370,955
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ 2,565,128	\$ (4,250,551)
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	\$ 47,043,387	\$ 51,293,938
End of Year	\$ 49,608,515	\$ 47,043,387

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)	\$ 47,043,387	\$ 51,293,938
b. End of Year (EOY)	\$ 49,608,515	\$ 47,043,387
2. Contributions		
a. Employee	\$ 267,720	\$ 281,185
b. Employer	2,333,707	2,490,134
c. Total Contributions	\$ 2,601,427	\$ 2,771,319
3. Net Investment Income		
a. Investment Income	\$ 4,348,163	\$ (3,263,102)
b. Investment Expenses	(395,433)	(393,193)
c. Total Net Investment Income	\$ 3,952,730	\$ (3,656,295)
4. Benefit Payments and Other Cash Flow	\$ (3,846,703)	\$ (3,364,088)
5. Preliminary Transferable Earnings from POLICE to VSFs - EOY	\$ (142,326)	\$ (1,487)
6. Net Cash Flow (2.c. + 4. + 5.)	\$ (1,387,602)	\$ (594,256)
7. Expected Investment Return (EIR)	\$ 3,250,189	\$ 3,570,180
8. Unexpected Investment Return (UIR) (3.c. - 7.)	\$ 702,541	\$ (7,226,475)
9. Preliminary AVA @ EOY		
a. AVA @ BOY (prior to corridor limit)	\$ 48,457,398	\$ 45,531,133
b. Net Cash Flow (6.)	\$ (1,387,602)	\$ (594,256)
c. Expected Investment Return (7.)	\$ 3,250,189	\$ 3,570,180
d. Phase in of UIR		
20% of UIR for prior year	\$ 140,508	\$ (1,445,295)
20% of UIR for second prior year	\$ (1,445,295)	\$ 1,575,896
20% of UIR for third prior year	\$ 1,575,896	\$ (180,260)
20% of UIR for fourth prior year	\$ (180,260)	N/A
20% of UIR for fifth prior year	N/A	N/A
Total	\$ 90,849	\$ (49,659)
e. Preliminary AVA (9.a. + 9.b. + 9.c. + 9.d.)	\$ 50,410,834	\$ 48,457,398
10. Corridor		
a. Lower Corridor Bound (80% of 1.b.)	\$ 39,686,812	\$ 37,634,710
b. Upper Corridor Bound (120% of 1.b.)	\$ 59,530,218	\$ 56,452,064
11. AVA @EOY (9.e. bounded by 10.a. and 10.b.)	\$ 50,410,834	\$ 48,457,398

Graph II-4
Historical Market and Actuarial Value of Assets

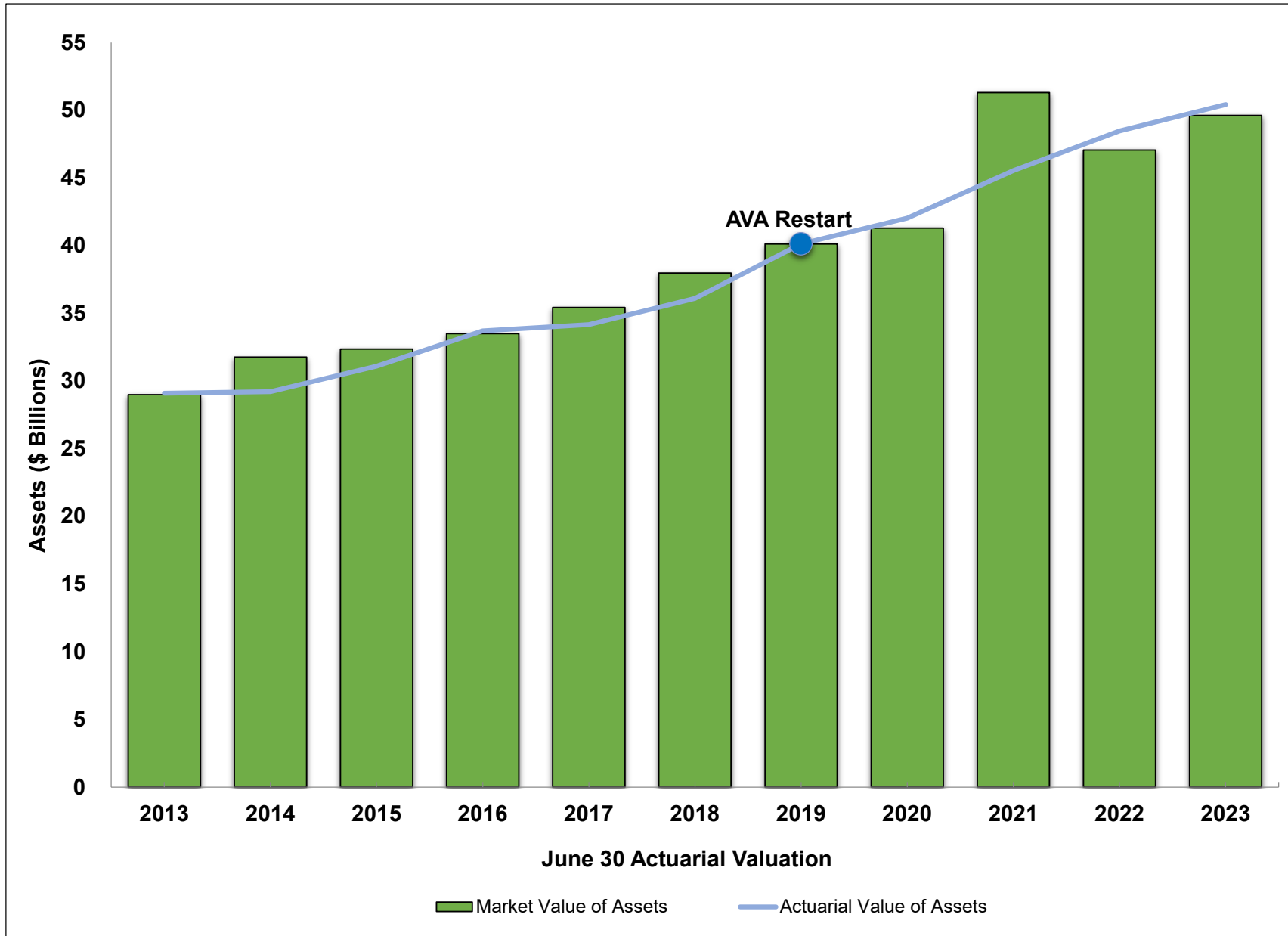


Table II-5
Future Recognition of Unexpected Investment Return

(\$ Thousands)

	June 30 Valuation				Total ¹
	2024	2025	2026	2027	
2020 Deferred Investment Gain/(Loss) Recognition	\$ (180,260)				\$ (180,260)
2021 Deferred Investment Gain/(Loss) Recognition	\$ 1,575,896	\$ 1,575,896			\$ 3,151,792
2022 Deferred Investment Gain/(Loss) Recognition	\$ (1,445,295)	\$ (1,445,295)	\$ (1,445,295)		\$ (4,335,885)
2023 Deferred Investment Gain/(Loss) Recognition	\$ 140,508	\$ 140,508	\$ 140,508	\$ 140,508	\$ 562,032
Total Deferred Investment Gain/(Loss) Recognition ¹	\$ 90,849	\$ 271,109	\$ (1,304,787)	\$ 140,508	\$ (802,319)

¹ Total may not add due to rounding.

	June 30, 2023
Actuarial Value of Assets	\$ 50,410,834
Deferred Investment Gain/(Loss) Future Recognition	\$ (802,319)
Market Value of Assets	\$ 49,608,515

SECTION III – CONTRIBUTION DEVELOPMENT AND HISTORY

Table III-1
Actuarial Required Contributions

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

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR ACTUARIAL REQUIRED CONTRIBUTIONS		
Valuation Date	June 30, 2023	June 30, 2022
Fiscal Year	2025	2024
Normal Cost	\$ 1,452,287,205	\$ 1,445,026,063
Unfunded Accrued Liability Amortization ¹	\$ 988,195,276	\$ 886,943,563
Administrative Expenses	\$ 34,745,425	\$ 27,822,215
Total Contribution to the New York City Police Pension Fund	\$ 2,475,227,906	\$ 2,359,791,841

¹ See Table III-2 for additional details.

Table III-2
Schedule of Unfunded Accrued Liability Bases

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

Increments to the UAL established after June 30, 2010 are amortized as level 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 POLICE PENSION FUND SCHEDULE OF UNFUNDED ACCRUED LIABILITY BASES				
Amortization Base	Date Established	Original \$ Amount	Amortization Years	Amortization \$ Payment
Initial UAL	6/30/10	13,211,374,581	22	1,457,663,516
(Gain)/Loss	6/30/11	276,060,031	15	32,652,194
(Gain)/Loss	6/30/12	(497,039,100)	15	(58,789,449)
(Gain)/Loss	6/30/13	(234,946,852)	15	(27,789,355)
(Gain)/Loss	6/30/14	(219,675,273)	15	(25,983,043)
Assumption Change ¹	6/30/14	706,645,098	20	70,722,523
(Gain)/Loss	6/30/15	(881,721,022)	15	(104,289,367)
(Gain)/Loss	6/30/16	21,224,294	15	2,510,395
SADB	6/30/16	395,717,583	15	46,805,208
Enhanced ADR	6/30/16	13,611,142	18	1,442,093
(Gain)/Loss	6/30/17	41,491,543	15	4,907,592
No VSF Escalation Offset	6/30/17	14,308,348	18	1,515,961
Non-Uniformed Service	6/30/17	55,368,731	20	5,541,419
Assumption Change ²	6/30/17	(392,660,331)	20	(39,298,270)
Method Change ²	6/30/17	(433,751,763)	20	(43,410,786)
(Gain)/Loss	6/30/18	(1,479,324,567)	15	(174,973,511)
(Gain)/Loss	6/30/19	(333,111,349)	15	(39,400,185)
Assumption Change ³	6/30/19	96,750,593	20	9,683,002
Method Change ³	6/30/19	(849,647,000)	20	(85,034,453)
(Gain)/Loss	6/30/20	275,639,445	15	32,602,448
(Gain)/Loss	6/30/21	(1,129,238,268)	15	(133,565,539)
SADB for Parents ⁴	6/30/21	42,593,036	15	5,037,875
(Gain)/Loss	6/30/22	(87,720,463)	15	(10,375,517)
Tier 3 Loans ⁵	6/30/22	11,562,407	18	1,225,031
(Gain)/Loss	6/30/23	332,211,863	15	39,293,795
Tier 3 FAS3 DV ⁶	6/30/23	6,740,207	2	7,460,173
Tier 3 FAS3 Actives ⁶	6/30/23	93,524,523	17	10,240,935
415 Limit	6/30/23	1,626,820	2	1,800,591
TOTAL				988,195,276

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 55 of the Laws of 2023.

⁶ Chapter 56 of the Laws of 2024.

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

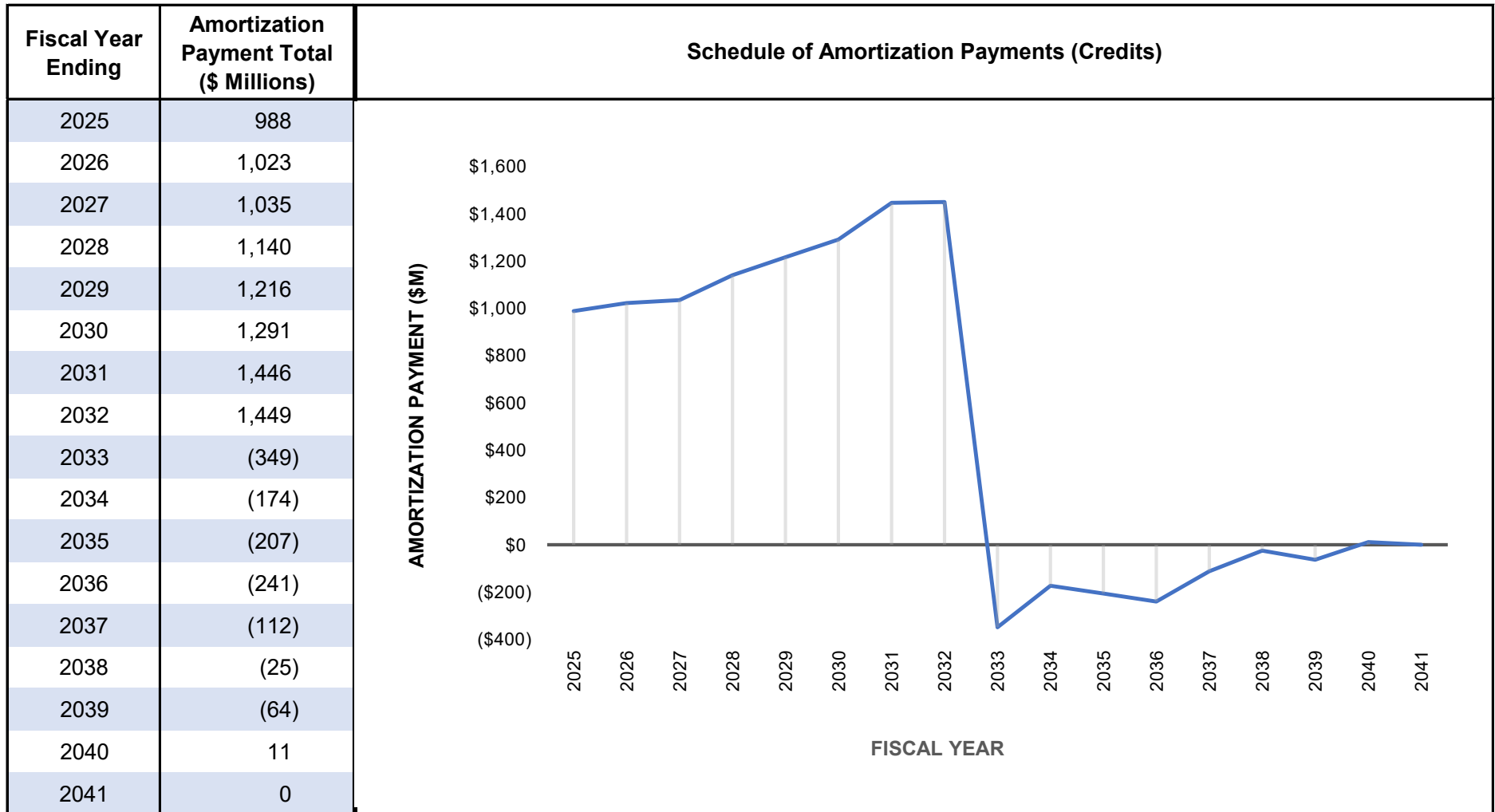


Table III-4
Reconciliation of Outstanding UAL Bases

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	\$13,211,374,581	22	\$10,623,895,520	\$1,415,207,297	\$9,903,666,395	\$1,457,663,516	7
(Gain)/Loss	6/30/11	276,060,031	15	88,638,088	32,652,194	61,067,062	32,652,194	1
(Gain)/Loss	6/30/12	(497,039,100)	15	(205,984,033)	(58,789,449)	(159,590,636)	(58,789,449)	2
(Gain)/Loss	6/30/13	(234,946,852)	15	(117,862,357)	(27,789,355)	(97,367,190)	(27,789,355)	3
(Gain)/Loss	6/30/14	(219,675,273)	15	(128,110,610)	(25,983,043)	(110,201,284)	(25,983,043)	4
Assumption Change	6/30/14	706,645,098	20	548,572,621	70,722,523	513,816,758	70,722,523	9
(Gain)/Loss	6/30/15	(881,721,022)	15	(581,384,465)	(104,289,367)	(514,203,617)	(104,289,367)	5
(Gain)/Loss	6/30/16	21,224,294	15	15,506,109	2,510,395	13,994,764	2,510,395	6
SADB	6/30/16	395,717,583	15	289,104,504	46,805,208	260,926,136	46,805,208	6
Enhanced ADR	6/30/16	13,611,142	18	11,185,866	1,442,093	10,477,164	1,442,093	9
(Gain)/Loss	6/30/17	41,491,543	15	33,074,264	4,907,592	30,313,010	4,907,592	7
No VSF Escalation Offset	6/30/17	14,308,348	18	12,455,110	1,515,961	11,758,845	1,515,961	10
Non-Uniformed Service	6/30/17	55,368,731	20	50,129,791	5,541,419	47,906,788	5,541,419	12
Assumption Change	6/30/17	(392,660,331)	20	(355,507,168)	(39,298,270)	(339,742,223)	(39,298,270)	12
Method Change	6/30/17	(433,751,763)	20	(392,710,571)	(43,410,786)	(375,295,845)	(43,410,786)	12
(Gain)/Loss	6/30/18	(1,479,324,567)	15	(1,271,226,157)	(174,973,511)	(1,179,217,981)	(174,973,511)	8
(Gain)/Loss	6/30/19	(333,111,349)	15	(305,614,986)	(39,400,185)	(286,252,167)	(39,400,185)	9
Assumption Change	6/30/19	96,750,593	20	94,619,290	9,683,002	91,226,465	9,683,002	14
Method Change	6/30/19	(849,647,000)	20	(830,930,258)	(85,034,453)	(801,135,054)	(85,034,453)	14
(Gain)/Loss	6/30/20	275,639,445	15	267,861,007	32,602,448	252,887,043	32,602,448	10
(Gain)/Loss	6/30/21	(1,129,238,268)	15	(1,154,703,625)	(133,565,539)	(1,097,371,611)	(133,565,539)	11
SADB for Parents	6/30/21	42,593,036	15	43,553,549	5,037,875	41,391,079	5,037,875	11
(Gain)/Loss	6/30/22	(87,720,463)	15	(93,860,895)	(10,375,517)	(89,698,639)	(10,375,517)	12
Tier 3 Loans	6/30/22	11,562,407	18	12,371,775	1,225,031	11,970,617	1,225,031	15
Admin Expenses	6/30/22	25,137,150	2	26,896,750	27,822,215	0	0	0
Normal Cost	7/1/22	1,305,569,554	2	1,396,959,423	1,445,026,063	0	0	0
(Gain)/Loss	6/30/23	332,211,863	15	332,211,863	0	355,466,693	39,293,795	13
Tier 3 FAS3 DV	6/30/23	6,740,207	2	6,740,207	0	7,212,021	7,460,173	0
Tier 3 FAS3 Actives	6/30/23	93,524,523	17	93,524,523	0	100,071,239	10,240,935	15
415 Limit	6/30/23	1,626,820	2	1,626,820	0	1,740,697	1,800,591	0
Admin Expenses	6/30/23	31,392,215	2	31,392,215	0	33,589,670	34,745,425	0
Normal Cost	7/1/23	1,312,129,938	2	0	0	1,403,979,034	1,452,287,205	0
TOTAL				\$8,542,424,170	\$2,359,791,841	\$8,103,385,233	\$2,475,227,906	

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	\$10,623,895,520	\$1,415,207,297	\$9,903,666,395	\$1,457,663,516
Method Change	(1,173,511,038)	(122,903,820)	(1,128,524,111)	(122,903,820)
Assumption Change	287,684,743	41,107,255	265,301,000	41,107,255
Plan Change	468,935,534	56,026,168	443,807,101	73,727,276
415 Limit	1,626,820	0	1,740,697	1,800,591
(Gain)/Loss	(3,121,455,797)	(502,493,337)	(2,820,174,553)	(463,199,542)
Normal Cost	1,396,959,423	1,445,026,063	1,403,979,034	1,452,287,205
Admin Expenses	58,288,965	27,822,215	33,589,670	34,745,425
TOTAL	\$8,542,424,170	\$2,359,791,841	\$8,103,385,233	\$2,475,227,906

	6/30/2023		FY 2025
(A) Actuarial Accrued Liability	\$ 58,953,258,170	Normal Cost	\$ 1,452,287,205
(B) Actuarial Value of Assets	50,410,834,000	UAL Payment	988,195,276
(C) Unfunded Accrued Liabilities (A) - (B)	\$ 8,542,424,170	Admin Expenses	34,745,425
		Total	\$ 2,475,227,906

Table III-5
Contribution History

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

(\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Required Contribution	Amount Contributed	Percentage of Required Contributed
2016	\$ 2,393,940	\$ 2,393,940	100.0%
2017	2,293,840	2,293,840	100.0%
2018	2,415,153	2,415,153	100.0%
2019	2,558,256	2,558,256	100.0%
2020	2,458,907	2,458,907	100.0%
2021	2,437,728	2,437,728	100.0%
2022	2,490,134	2,490,134	100.0%
2023	2,333,707	2,333,707	100.0%
2024	2,359,792	2,359,792	100.0%
2025	2,475,228	2,475,228	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	Salary¹ at Beginning of Fiscal Year	City Rate
2016	\$ 2,393,940	\$ 3,540,326	67.6%
2017	2,293,840	3,509,985	65.4%
2018	2,415,153	3,673,054	65.8%
2019	2,558,256	3,994,618	64.0%
2020	2,458,907	4,084,569	60.2%
2021	2,437,728	4,288,264	56.8%
2022	2,490,134	4,349,379	57.3%
2023	2,333,707	4,324,289	54.0%
2024	2,359,792	4,365,101	54.1%
2025	2,475,228	4,387,296	56.4%

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	Tier 3 Revised	Tier 3 Enhanced	Total
Total	39.2%	25.3%	24.8%	26.9%	33.0%
Employee	<u>(1.8%)</u>	<u>(2.9%)</u>	<u>(2.8%)</u>	<u>(3.9%)</u>	<u>(2.8%)</u>
Employer	37.4%	22.4%	22.0%	23.0%	30.2%

SECTION IV - (GAIN)/LOSS ANALYSIS

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

NEW YORK CITY POLICE 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	\$ 56,104,782	\$ 6,085,339	\$ 62,190,121
b. Normal Cost and Administrative Expenses at June 30, 2022	1,491,623	99,043	1,590,666
c. Interest on 1.a. and 1.b. to June 30, 2023	4,031,748	432,907	4,464,655
d. Fiscal Year 2023 Benefit Payments	(3,820,741)	(475,516)	(4,296,257)
e. Interest on 1.d. to June 30, 2023	(131,464)	(16,362)	(147,826)
f. Plan Changes	<u>100,265</u>	<u>0</u>	<u>100,265</u>
g. Expected AL at June 30, 2023	\$ 57,776,213	\$ 6,125,411	\$ 63,901,624
2. Actual AL at June 30, 2023	\$ 57,699,507	\$ 6,125,502	\$ 63,825,009
3. Expected Actuarial Value of Assets (AVA)			
a. AVA at June 30, 2022	\$ 48,457,398	\$ 5,233,681	\$ 53,691,079
b. Interest on 3.a. to June 30, 2023	3,392,018	366,358	3,758,376
c. Total Contributions Paid in Fiscal Year 2023 ¹	2,459,101	142,326	2,601,427
d. Interest on 3.c. to June 30, 2023	84,613	0	84,613
e. Fiscal Year 2023 Benefit Payments	(3,820,741)	(475,516)	(4,296,257)
f. Interest on 3.e. to June 30, 2023	(131,464)	(16,362)	(147,826)
g. Change in VSF Assets in Excess of Liabilities at June 30, 2023	<u>0</u>	<u>0</u>	<u>0</u>
h. Expected AVA at June 30, 2023	\$ 50,440,925	\$ 5,250,487	\$ 55,691,412
4. Actual QPP AVA / VSF MVA at June 30, 2023²	\$ 50,410,834	\$ 4,871,751	\$ 55,282,585
5. Liability (Gain) / Loss (2. - 1.g.)	\$ (76,706)	\$ 91	\$ (76,615)
6. Actuarial Asset (Gain) / Loss (3.h. - 4.)	\$ 30,091	\$ 378,736	\$ 408,827
7. Total Actuarial (Gain) / Loss (5. + 6.)	\$ (46,615)	\$ 378,827	\$ 332,212

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 POLICE 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 Payroll¹	(6) UAL as a % of Covered Payroll (3) / (5)
2014	\$ 29,212,981	\$ 44,384,022	\$ 15,171,041	65.8%	\$ 3,618,095	419.3%
2015	31,092,977	45,297,561	14,204,584	68.6%	3,564,030	398.6%
2016	33,692,647	48,059,916	14,367,269	70.1%	3,717,425	386.5%
2017	34,162,505	47,696,250	13,533,745	71.6%	3,968,885	341.0%
2018	36,098,314	48,024,798	11,926,484	75.2%	4,053,205	294.2%
2019	40,119,424	50,614,796	10,495,372	79.3%	4,244,805	247.3%
2020	42,014,055	52,485,567	10,471,512	80.0%	4,299,649	243.5%
2021	45,531,133	54,611,094	9,079,961	83.4%	4,262,626	213.0%
2022	48,457,398	56,956,440	8,499,042	85.1%	4,332,226	196.2%
2023	50,410,834	58,953,258	8,542,424	85.5%	4,345,603	196.6%

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 Fund (VSF)

POLICE administers both the Police Officer's Variable Supplements Fund (POVSF) and the Police Superior Officers' Variable Supplements Fund (PSOVSF). The POVSF and PSOVSF (the Funds) operate pursuant to the provisions of Title 13, Chapter 2 of the Administrative Code of the City of New York (ACCNY) and provide supplemental benefits to retirees who were Police Officers and Police Superior Officers, respectively, of the New York City Police Department (NYPD), Subchapter One Pension Fund or NYPD, 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

POVSF		
Valuation Date	June 30, 2023 ¹	June 30, 2022 ²
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability	\$ 2,130,959,418	\$ 2,113,685,797
2. Actuarial Value of Assets (AVA) ³	N/A	2,081,484,000
3. Unfunded Accrued Liability (AVA Basis), not less than zero (1. - 2.)	N/A	\$ 32,201,797
4. Market Value of Assets (MVA) ⁴	1,861,020,000	1,860,558,000
5. Unfunded Accrued Liability (MVA Basis), not less than zero (1. - 4.)	\$ 269,939,418	\$ 253,127,797
6. Funded Ratio (MVA Basis) (4. / 1.)	87.3%	88.0%
Participant Data		
1. Active Members		
a. Number	21,905	22,523
b. Average Age	34.8	34.7
2. Retirees and Beneficiaries		
a. Number	13,950	13,693
b. Average Age	62.8	62.8

PSOVSF		
Valuation Date	June 30, 2023 ¹	June 30, 2022 ²
Fiscal Year	2025	2024
Funded Status		
1. Accrued Liability	\$ 3,994,542,702	\$ 3,971,652,867
2. Actuarial Value of Assets (AVA)	N/A	3,152,197,000
3. Unfunded Accrued Liability (AVA Basis), not less than zero (1. - 2.)	N/A	\$ 819,455,867
4. Market Value of Assets (MVA) ⁵	3,010,731,000	2,894,727,000
5. Unfunded Accrued Liability (MVA Basis), not less than zero (1. - 4.)	\$ 983,811,702	\$ 1,076,925,867
6. Funded Ratio (MVA Basis) (4. / 1.)	75.4%	72.9%
Participant Data		
1. Active Members		
a. Number	11,895	12,132
b. Average Age	42.7	42.4
2. Retirees and Beneficiaries		
a. Number	22,011	21,618
b. Average Age	62.9	62.6

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 POVSF of \$86,325,000 for 6/30/2023 and \$84,236,000 for 6/30/2022.

⁵ Includes Accrued Benefits Payable for PSOVSF of \$136,807,000 for 6/30/2023 and \$133,069,000 for 6/30/2022.

Table VI-2
Statement of VSF Net Assets

(\$ Thousands)				
	June 30, 2023		June 30, 2022	
	POVSF	PSOVSF	POVSF	PSOVSF
ASSETS				
Cash	\$ 1,193	\$ 7	\$ 1,053	\$ 15
Receivables				
Investment Securities Sold	\$ 0	\$ 0	\$ 1	\$ 1
Member Loans	0	0	0	0
Transferable Earnings due from QPP	0	0	0	0
Accrued Interest and Dividends	462	761	547	836
Total Receivables	\$ 462	\$ 761	\$ 548	\$ 837
INVESTMENTS AT FAIR VALUE				
Short-Term Investments				
Commercial Paper	\$ 0	\$ 0	\$ 5,542	\$ 5,098
Short-term Investment Fund	776	1,756	91	266
U.S. Treasury Bills and Agencies	7,974	0	0	0
Debt Securities	0	0	0	0
Equity Securities	704,878	1,119,299	672,741	1,040,345
Alternative Investments	0	0	0	0
Collective Trust Funds				
Fixed Income	0	0	0	0
Bank Loans	0	0	0	0
Corporate and Other	188,051	313,713	162,526	256,431
Domestic Equity	49,113	78,147	52,806	82,991
International Equity	476,578	777,829	468,129	726,264
Mortgage Debt Security	168,198	280,593	176,095	277,840
U.S. government and agency	264,290	440,896	321,671	507,527
Collateral From Securities Lending	185,735	306,770	213,782	359,969
Total Investments	\$ 2,045,593	\$ 3,319,003	\$ 2,073,383	\$ 3,256,731
OTHER ASSETS	0	0	0	0
TOTAL ASSETS	\$ 2,047,248	\$ 3,319,771	\$ 2,074,984	\$ 3,257,583
LIABILITIES				
Accounts Payable	\$ 111	\$ 2,270	\$ 644	\$ 2,887
Payables for Investment Securities Purchased	382	0	0	0
Accrued Benefits Payable	86,325	136,807	84,236	133,069
Security Lending	185,735	306,770	213,782	359,969
TOTAL LIABILITIES	\$ 272,553	\$ 445,847	\$ 298,662	\$ 495,925
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 1,774,695	\$ 2,873,924	\$ 1,776,322	\$ 2,761,658

Table VI-3
Statement of Changes in VSF Net Assets

(\$ Thousands)				
	June 30, 2023		June 30, 2022	
	POVSF	PSOVSF	POVSF	PSOVSF
ADDITIONS				
Contributions				
Member Contributions	\$ 0	\$ 0	\$ 0	\$ 0
Employer Contributions	0	0	0	0
Total Contributions	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>	<u>\$ 0</u>
Investment Income (Loss)				
Interest Income	\$ 18,305	\$ 28,413	\$ 28,506	\$ 46,145
Dividend Income	28,398	44,027	30,022	49,112
Net Appreciation (Depreciation) in Fair Value	127,152	197,069	(346,712)	(554,771)
Total Investment Income (Loss)	<u>\$ 173,855</u>	<u>\$ 269,509</u>	<u>\$ (288,184)</u>	<u>\$ (459,514)</u>
Less Investment Expenses	459	711	1,311	2,078
Net Income (Loss)	\$ 173,396	\$ 268,798	\$ (289,495)	\$ (461,592)
Securities Lending Transactions				
Securities Lending Income	\$ 669	\$ 1,049	\$ 621	\$ 998
Securities Lending Fees	(60)	(95)	(54)	(87)
Net Securities Lending Income (Loss)	<u>\$ 609</u>	<u>\$ 954</u>	<u>\$ 567</u>	<u>\$ 911</u>
Other				
Net Receipts from Other Retirement Systems	\$ 0	\$ 0	\$ 0	\$ 0
Litigation Income	35	37	67	39
Other Total	<u>\$ 35</u>	<u>\$ 37</u>	<u>\$ 67</u>	<u>\$ 39</u>
Transferable Earnings due from QPP	\$ 0	\$ 142,326	\$ 0	\$ 1,672
TOTAL ADDITIONS	<u>\$ 174,040</u>	<u>\$ 412,115</u>	<u>\$ (288,861)</u>	<u>\$ (458,970)</u>
DEDUCTIONS				
Benefit Payments and Withdrawals	\$ 175,667	\$ 299,849	\$ 176,425	\$ 299,966
Accrued Transfers to QPP	0	0	185	0
Administrative Expenses	0	0	0	0
TOTAL DEDUCTIONS	<u>\$ 175,667</u>	<u>\$ 299,849</u>	<u>\$ 176,610</u>	<u>\$ 299,966</u>
NET INCREASE (DECREASE) IN PLAN NET ASSETS	<u>\$ (1,627)</u>	<u>\$ 112,266</u>	<u>\$ (465,471)</u>	<u>\$ (758,936)</u>
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS				
Beginning of Year	\$ 1,776,322	\$ 2,761,658	\$ 2,241,793	\$ 3,520,594
End of Year	\$ 1,774,695	\$ 2,873,924	\$ 1,776,322	\$ 2,761,658

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

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

(\$ Thousands)		
Total POLICE Pension Fund		
1. FY2023 Equity Earnings	\$	3,393,782
2. FY2023 Hypothetical Earnings		1,304,085
3. FY2023 Excess Earnings (1. - 2.)		2,089,697
4. Deficit at June 30, 2022		2,839,234
5. Hypothetical Interest Rate (HIR)		4.076%
6. Deficit with interest (4. x (1+HIR))		2,954,961
7. Potential Transferable Earnings (3. - 6.), not less than zero	\$	0
	POVSF	PSOVSF
Allocations to VSF		
8. Allocation Percentage	48.103%	51.897%
9. Potential Transferable Earnings (7. x 8.)	\$ 0	\$ 0
10. APV of Accumulated Plan Benefits	2,057,447	3,870,514
11. MVA Prior to Transferable Earnings	1,861,020	3,010,731
12. Unfunded APV of Accumulated Plan Benefits (10. - 11.), not less than zero	196,427	859,783
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 Adjustment (COLA) 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

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

E. VSF DROP

Members 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.

Summary of VSF Actuarial Assumptions and Methods

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

1. **POVSF vs. PSOVSF Membership:** Amongst current active members, 40% of members who become eligible for VSF benefits are assumed to retire as Police Officers, while the remaining 60% are assumed to retire as Police Superior Officers.
2. **COLA:** 1.5% per year for AutoCOLA, used to estimate future COLA on the first \$18,000 of POLICE 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 POLICE to the POVSF and the PSOVSF are recognized through a methodology where the POVSF and PSOVSF UALs are included directly as part of the accrued liability of POLICE. Under Entry Age Normal (EAN) cost method, POVSF and PSOVSF normal costs and UALs are financed as part of the Employer Contribution.
5. **Transferable Earnings Calculation:** The ACCNY provides that POLICE transfer to the Funds a portion of the amount by which earnings on equity investments of POLICE 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 Police Officers and Police Superior Officers, limited to not allow assets to exceed the actuarial PV of accumulated plan benefits of the VSFs

SECTION VII – RISK AND UNCERTAINTY

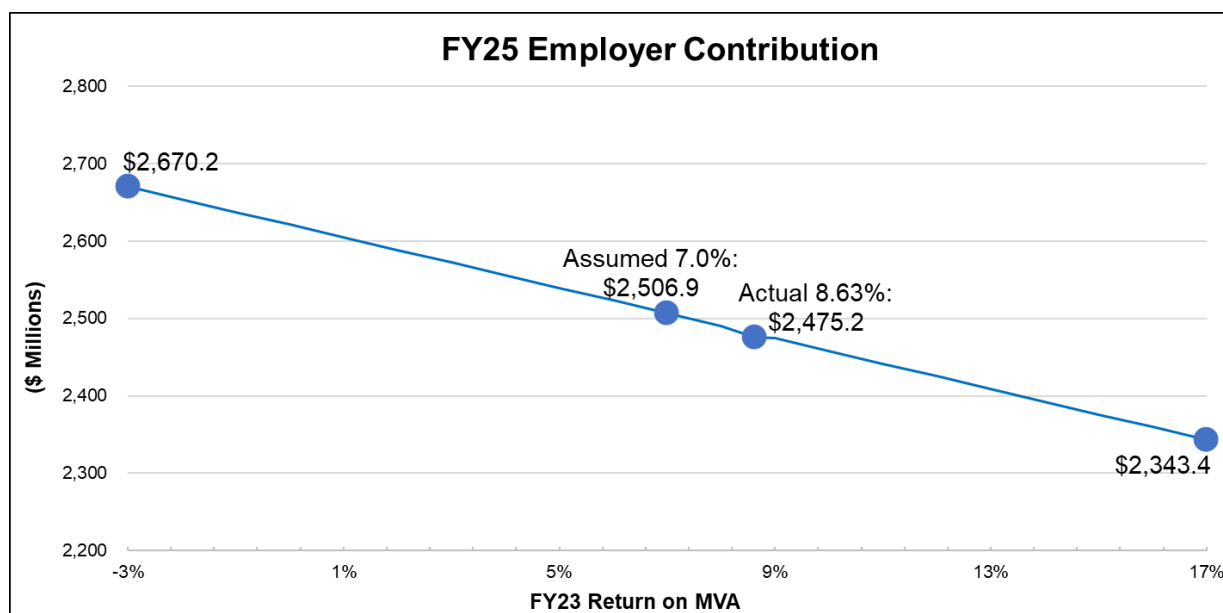
The funded status of POLICE depends highly on the realization of the actuarial assumptions used, certain demographic characteristics of the Plan, and other factors. Risks faced by the Plan are described in this Section and have been separated into high, medium, and other risk categories.

High Risk Types

Investment Risk: The Risk of Not Realizing Expected Returns

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

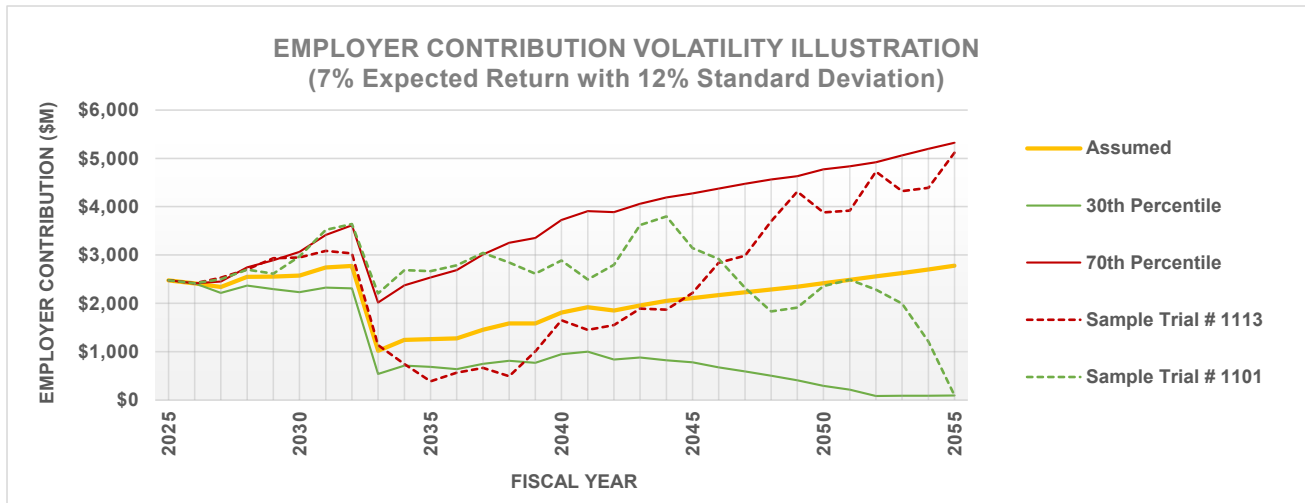
The graph below illustrates the potential FY25 employer contributions for a range of investment return outcomes if returns had differed from the assumed rate of return (i.e., from -3% to 17%). In addition, the actual investment return and employer contribution are shown.



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 incorporated into this projection.

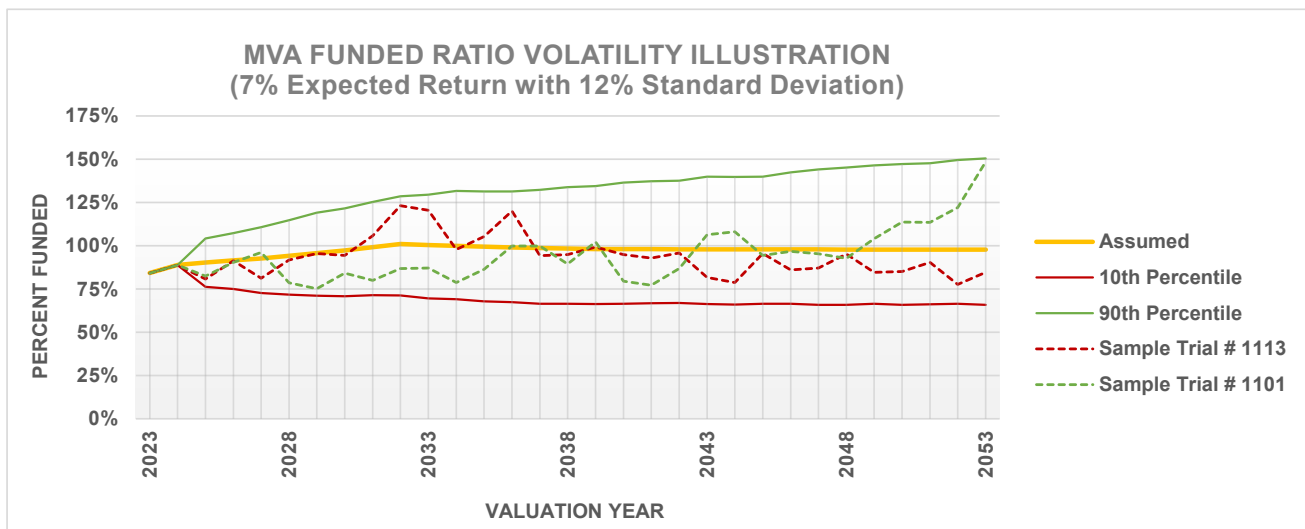
The yellow line in the charts show the results if investment returns were exactly 7% as expected. The two solid lines show results for the indicated percentile range and together frame a range of results based on all 5,000 trials. The two dashed lines illustrate sample results from among the 5,000 trials.



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 approaching \$0 (above). The converse is shown in the red dotted line where at the end of the 30-year period, the employer contribution rate approaches \$5.1B (above) with a corresponding funded ratio of 85% (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.

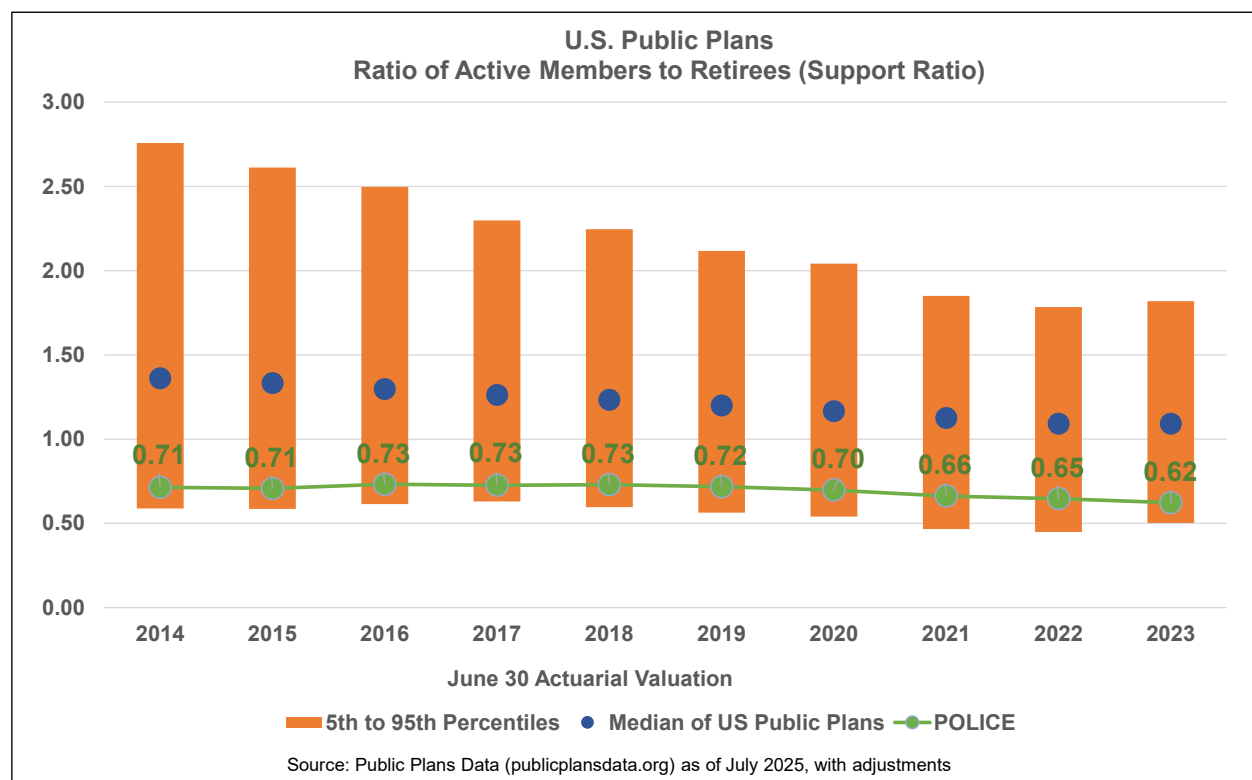


Maturity Risk: The Risk of Demographic Imbalance

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)

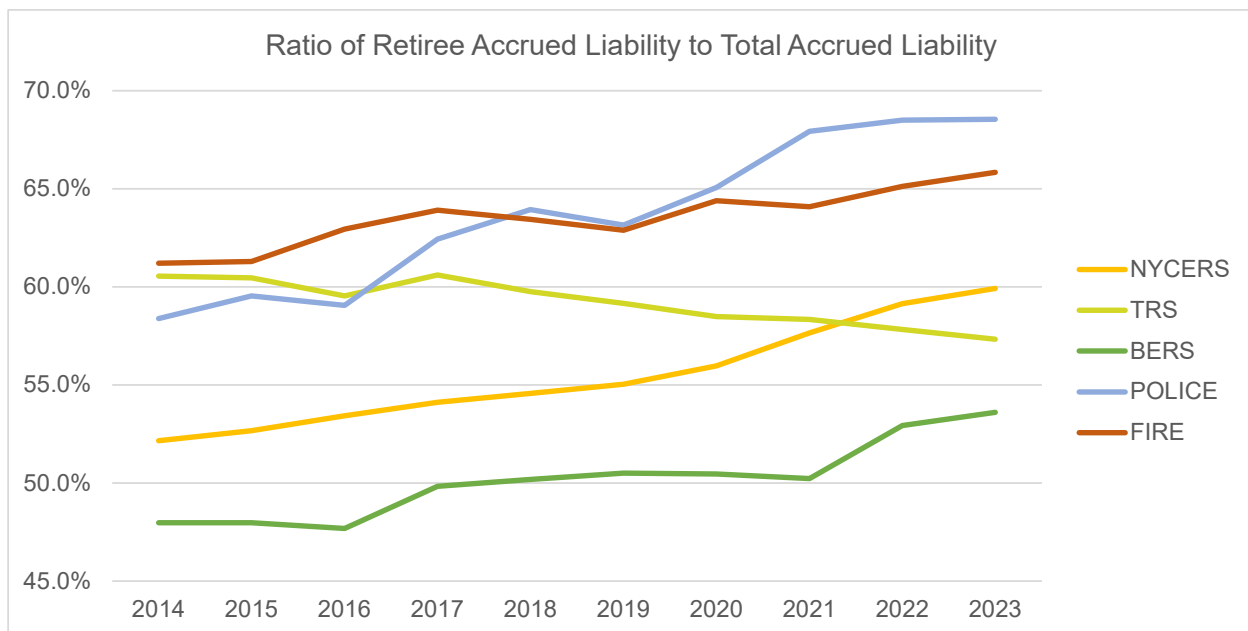
A plan's Support Ratio (i.e., the ratio of active members to retirees) is an indicator of the Plan's maturity level. Lower Support Ratios have higher contribution volatility. In a plan's early years, the ratio is very high as the plan contains mostly active members. As it matures, more active members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



The chart above shows U.S. public pension plan Support Ratios in comparison to the Plan's. The median Support Ratio amongst US public pensions has declined from 1.36 in the 2014 valuation year to 1.09 in the 2023 valuation year. Likewise, over that same period, the Plan's Support Ratio declined from 0.71 to 0.62.

Ratio of Retiree Accrued Liability to Total Accrued Liability

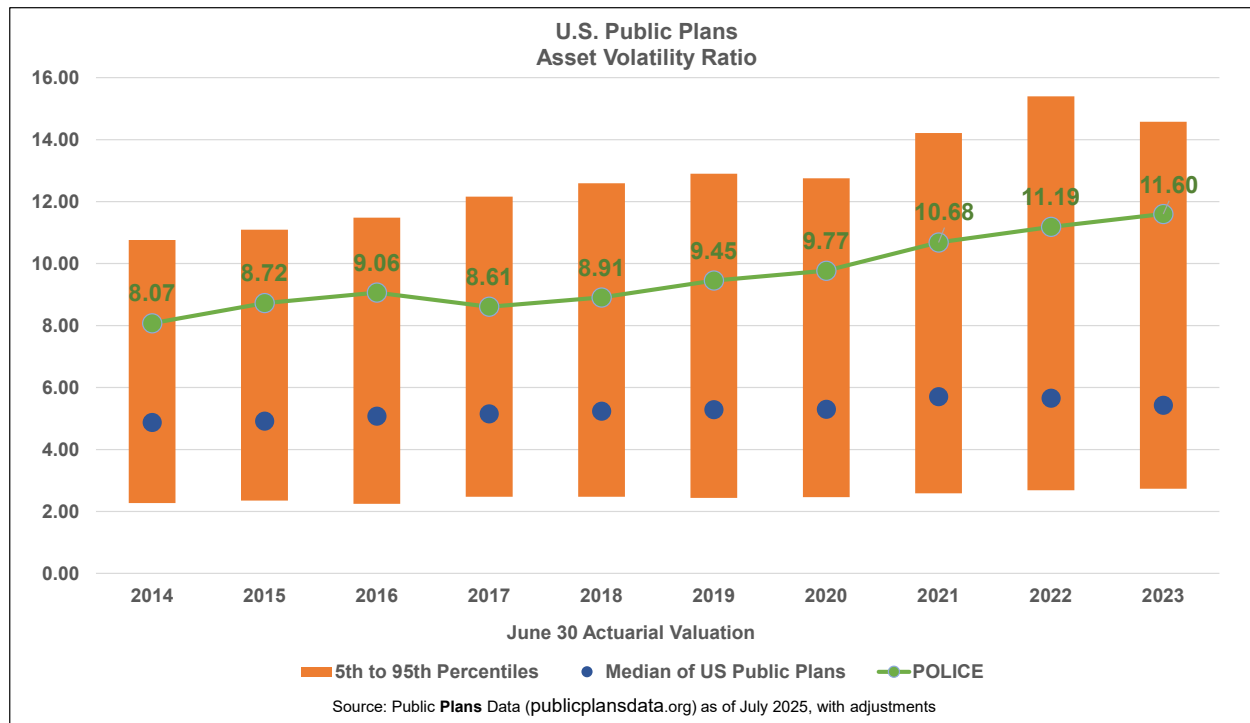
A plan's ratio of retiree liabilities to its total liabilities is also a measure of its maturity. A new pension plan begins with this ratio at zero; as the plan matures, the ratio increases. This ratio is shown in the graph below for POLICE; the other New York City Retirement Systems¹ (NYCRS) are included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

Asset Volatility Ratio

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



As a plan matures, AVR's 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, Unfunded Accrued Liability, and Normal Cost of the Plan are shown below:

NEW YORK CITY POLICE PENSION FUND	
SENSITIVITY ANALYSIS AS OF JUNE 30, 2023	
Valuation Date	June 30, 2023
Results at 7.0%	
1. Accrued Liability (AL)	\$ 58,953,258,170
2. Actuarial Value of Assets (AVA)	50,410,834,000
3. Unfunded Accrued Liability (1. - 2.)	\$ 8,542,424,170
4. Normal Cost	\$ 1,452,287,205
Results at 6.0%	
1. Accrued Liability (AL)	\$ 66,273,570,981
2. Actuarial Value of Assets (AVA)	50,410,834,000
3. Unfunded Accrued Liability (1. - 2.)	\$ 15,862,736,981
4. Normal Cost	\$ 1,798,580,430
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Accrued Liability	12.4%
2. Increase in Unfunded Accrued Liability	85.7%
3. Increase in Normal Cost	23.8%

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%)	\$85,347,272,789
Plan’s Accrued Liability as of June 30, 2023 (7.00%)	\$58,953,258,170

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 \$26.4 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

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

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

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

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

Litigation Risk: The Risk of Legal Claims and Lawsuits

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

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

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

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

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

Other Risk Types

Inflation Risk: The Risk of Higher than Assumed Inflation

POLICE 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 Consumer Price Index (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

March 29, 1940

B. Eligibility Requirements

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 Revised: April 1, 2012 to March 31, 2017 and did not elect to join Tier 3 Enhanced.

Tier 3 Enhanced: On or after April 1, 2017 and those in Tier 3 and Tier 3 Revised 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 Police force; or City service in a position of Police Surgeon classified in the non-competitive class of civil service.

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 Revised, and Tier 3 Enhanced: Basic Member Contributions – 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 April 10, 2017, Tier 3 Enhanced Plan Members are required to contribute an additional 1.0% of salary for a maximum of 25 years. Chapter 59/17 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 Revised, 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 Police 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 Police Service includes service in Uniformed Transit Police Force, Uniformed Housing Police Force, Uniformed Correction Force, Uniformed Sanitation Force, and the New York City Fire Department, provided all such service immediately precedes the Uniformed Police Force service.
- **Tier 3, Tier 3 Revised, and Tier 3 Enhanced:** Police Service includes service in the uniformed force of the New York City Fire Department and the New York State and Local Police and Fire Retirement System.
- 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.

For members hired prior to July 1, 2000 (original Tier 2 members), 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 Revised, 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 Revised	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 1/60th 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 Revised, 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 Retirement (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 Revised

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

- iii. Tier 3 Enhanced Plan

75% of FAS.

2. Ordinary Disability Retirement (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 Revised, 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 Revised, 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: 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 FS 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 Revised, 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 Revised, 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 Revised, 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 Revised, 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

1. Tier 1 and Tier 2
 - a. Eligibility: After three years of membership and up to the day of retirement.
 - b. Amount: Up to 90% of accumulated member contributions with a limit of \$50,000 for tax-free treatment under IRC Section 72(p).
2. Tier 3, Tier 3 Revised, and Tier 3 Enhanced
 - a. For members with a date of membership before January 1, 2018, the members may take out a loan up to 75% of their total contributions plus accumulated interest.
 - b. For members with a date of membership on and after January 1, 2018, the loan is limited to 50% of their total member contributions plus accumulated interest or \$50,000, whichever is less.

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 Revised 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. World Trade Center (WTC) Disability Benefits

Certain active, vested, and retired members of the Plan, who participated in the Rescue, Recovery, or Cleanup 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 ADR.

P. WTC Death Benefits

Certain active, vested, and retired members of the Plan, who participated in the Rescue, Recovery, or Cleanup 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 POLICE Tier 3 Revised 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), Part JJ, permits Tier 3, Tier 3 Revised, and Tier 3 Enhanced members of POLICE to borrow from their accumulated total member contributions.
- **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 424 of the Laws of 2021** (Chapter 424/21) expands eligibility of certain public service employees for participation in the WTC 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 prior amendments by extending the eligibility window of these death benefits through December 31, 2024.
- **Chapter 431 of the Laws of 2019** (Chapter 431/19) allows New York City Police Pension Fund (POLICE) members subject to Article 14 of the RSSL (Tier 3, Tier 3 Revised, and Tier 3 Enhanced) to purchase prior service as a cadet in the NYPD and use the appointment date as a cadet to determine the initial date of POLICE membership for plan or tier eligibility provided such purchase of service is made within five years of the effective date.

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 390 of the Laws of 2025** (Chapter 390/25) removes existing World Trade Center verification requirements for Tier 1 and Tier 2 Police members.
- **Chapter 55 of the Laws of 2025** (Chapter 55/25), Part SS, allows Tier 3 POLICE members with 20 years of service to retire with an annual benefit equal to 50% of Final Average Salary.
- **Chapter 55 of the Laws of 2025** (Chapter 55/25), Part XX, increases the salary used in pension benefit calculation for detectives, sergeants, and lieutenants who retire with at least 25 years of NYPD service.
- **Chapter 151 of the Laws of 2025** (Chapter 151/25) and **Chapter 162 of the Laws of 2024** (Chapter 162/24) extend the 3% COLA increase to beneficiaries receiving Special Accidental Death Benefits. 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 55 of the Laws of 2024** (Chapter 55/24), Part II, increases the salary used for determining pension benefits for first grade NYPD officers who have served in such rank for 25 or 30 years, to salaries equivalent to detective 3rd grade or sergeant, respectively.

SECTION XI – ACTUARIAL ASSUMPTIONS AND METHODS

The results in this valuation report are based upon standard actuarial models (including but not limited to EAN 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 International Revenue Code Section 415 Limit which have been or are expected to be made from the Excess Benefit Plan are excluded from this valuation, other than a one-year adjustment to the liabilities to account for EBP payments expected to be made in Calendar Year 2024/Fiscal Year 2025 from the Qualified Pension Plan while the trust for the EBP is being established. 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 POLICE 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	45.00%	0.00%
37	45.00%	10.00%
38	45.00%	10.00%
39	45.00%	10.00%
40	45.00%	10.00%
41	45.00%	10.00%
42	45.00%	10.00%
43	45.00%	10.00%
44	45.00%	10.00%
45	45.00%	10.00%
46	45.00%	11.00%
47	45.00%	12.00%
48	45.00%	13.00%
49	45.00%	14.00%
50	45.00%	15.00%
51	45.00%	15.00%
52	45.00%	15.00%
53	45.00%	15.00%
54	45.00%	15.00%
55	45.00%	15.00%
56	45.00%	15.00%
57	45.00%	15.00%
58	45.00%	15.00%
59	45.00%	15.00%
60	45.00%	20.00%
61	45.00%	30.00%
62	45.00% ¹	50.00% ¹
63	100.00%	100.00%

¹100% for Tier 3, Tier 3 Revised, and Tier 3 Enhanced members.

Table XI-1b
Early Service Retirement

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF EARLY SERVICE RETIREMENT FOR TIER 3, TIER 3 REVISED, AND TIER 3 ENHANCED MEMBERS		
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 POLICE PENSION FUND	
PROBABILITIES OF TERMINATION	
Years Of Service	Probability of Termination
0	3.000%
1	2.250%
2	1.500%
3	1.500%
4	1.500%
5	1.500%
6	1.350%
7	1.200%
8	1.050%
9	0.900%
10	0.750%
11	0.600%
12	0.450%
13	0.380%
14	0.300%
15	0.230%
16	0.150%
17	0.150%
18	0.150%
19	0.150%
20	N/A

Table XI-3
Active Disability Rates

NEW YORK CITY POLICE 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 Revised Non-Enhanced Plan
15	0.0360%	0.168%	0.098%	0.098%
16	0.0360%	0.168%	0.098%	0.098%
17	0.0360%	0.168%	0.098%	0.098%
18	0.0360%	0.168%	0.098%	0.098%
19	0.0360%	0.168%	0.098%	0.098%
20	0.0400%	0.180%	0.105%	0.105%
21	0.0440%	0.192%	0.112%	0.112%
22	0.0480%	0.204%	0.119%	0.119%
23	0.0520%	0.216%	0.126%	0.126%
24	0.0560%	0.228%	0.133%	0.133%
25	0.0600%	0.240%	0.140%	0.140%
26	0.0640%	0.312%	0.182%	0.182%
27	0.0680%	0.384%	0.224%	0.224%
28	0.0720%	0.456%	0.266%	0.266%
29	0.0760%	0.528%	0.308%	0.308%
30	0.0800%	0.600%	0.350%	0.350%
31	0.0840%	0.720%	0.420%	0.420%
32	0.0880%	0.840%	0.490%	0.490%
33	0.0920%	0.960%	0.560%	0.560%
34	0.0960%	1.080%	0.630%	0.630%
35	0.1000%	1.200%	0.700%	0.700%
36	0.1040%	1.260%	0.735%	0.728%
37	0.1080%	1.320%	0.770%	0.756%
38	0.1120%	1.380%	0.805%	0.784%
39	0.1160%	1.440%	0.840%	0.812%
40	0.1200%	1.500%	0.875%	0.840%
41	0.1240%	1.560%	0.910%	0.854%
42	0.1280%	1.620%	0.945%	0.868%
43	0.1320%	1.680%	0.980%	0.882%
44	0.1360%	1.740%	1.015%	0.896%
45	0.1400%	1.800%	1.050%	0.910%
46	0.1440%	1.920%	1.120%	0.938%
47	0.1480%	2.040%	1.190%	0.966%
48	0.1520%	2.160%	1.260%	0.994%
49	0.1560%	2.280%	1.330%	1.022%
50	0.1600%	2.400%	1.400%	1.050%
51	0.2000%	2.640%	1.540%	1.120%
52	0.2400%	2.880%	1.680%	1.190%
53	0.3200%	3.120%	1.820%	1.260%
54	0.4800%	3.360%	1.960%	1.330%
55	0.6400%	3.600%	2.100%	1.400%
56	0.8000%	4.080%	2.380%	1.540%
57	1.6000%	4.560%	2.660%	1.680%
58	2.4000%	5.040%	2.940%	1.820%
59	3.2000%	5.520%	3.220%	1.960%
60	4.8000%	6.000%	3.500%	2.100%
61	6.4000%	7.200%	4.200%	2.240%
62	8.0000% ¹	8.4000% ¹	4.900% ¹	2.450% ¹
63	N/A	N/A	N/A	N/A

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

Table XI-4
Active Mortality Rates

NEW YORK CITY POLICE PENSION FUND			
PROBABILITIES OF MORTALITY FOR ACTIVE MEMBERS BASE RATES			
	Ordinary Death		Accidental Death
Age	Males	Females	All
15	0.040%	0.030%	0.010%
16	0.040%	0.030%	0.010%
17	0.040%	0.030%	0.010%
18	0.040%	0.030%	0.010%
19	0.040%	0.030%	0.010%
20	0.040%	0.030%	0.010%
21	0.040%	0.030%	0.010%
22	0.040%	0.030%	0.010%
23	0.040%	0.030%	0.010%
24	0.040%	0.030%	0.010%
25	0.040%	0.030%	0.010%
26	0.040%	0.030%	0.010%
27	0.040%	0.030%	0.010%
28	0.040%	0.030%	0.010%
29	0.040%	0.030%	0.010%
30	0.040%	0.030%	0.010%
31	0.040%	0.030%	0.011%
32	0.040%	0.030%	0.012%
33	0.040%	0.030%	0.013%
34	0.040%	0.030%	0.014%
35	0.040%	0.030%	0.015%
36	0.042%	0.032%	0.016%
37	0.044%	0.034%	0.017%
38	0.046%	0.036%	0.018%
39	0.048%	0.038%	0.019%
40	0.050%	0.040%	0.020%
41	0.060%	0.046%	0.021%
42	0.070%	0.052%	0.022%
43	0.080%	0.058%	0.023%
44	0.090%	0.064%	0.024%
45	0.100%	0.070%	0.025%
46	0.110%	0.076%	0.026%
47	0.120%	0.082%	0.027%
48	0.130%	0.088%	0.028%
49	0.140%	0.094%	0.029%
50	0.150%	0.100%	0.030%
51	0.160%	0.110%	0.031%
52	0.170%	0.120%	0.032%
53	0.180%	0.130%	0.033%
54	0.190%	0.140%	0.034%
55	0.200%	0.150%	0.035%
56	0.220%	0.160%	0.036%
57	0.240%	0.170%	0.037%
58	0.260%	0.180%	0.038%
59	0.280%	0.190%	0.039%
60	0.300%	0.200%	0.040%
61	0.320%	0.220%	0.041%
62	0.340% ¹	0.240% ¹	0.0420% ¹
63	N/A	N/A	N/A

¹ Probabilities are N/A for Tier 3, Tier 3 Revised, and Tier 3 Enhanced members.

Table XI-5
Service Retiree Mortality Rates

NEW YORK CITY POLICE PENSION FUND					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0100%	0.0084%	68	1.4988%	1.0632%
16	0.0135%	0.0103%	69	1.6917%	1.1644%
17	0.0181%	0.0112%	70	1.8929%	1.2629%
18	0.0217%	0.0131%	71	2.1028%	1.4563%
19	0.0240%	0.0140%	72	2.3212%	1.6586%
20	0.0251%	0.0142%	73	2.5833%	1.8689%
21	0.0268%	0.0150%	74	2.8558%	2.0889%
22	0.0284%	0.0158%	75	3.1397%	2.3314%
23	0.0301%	0.0168%	76	3.4343%	2.6045%
24	0.0315%	0.0179%	77	3.7415%	2.8700%
25	0.0327%	0.0191%	78	4.2304%	3.1787%
26	0.0342%	0.0204%	79	4.7399%	3.4795%
27	0.0354%	0.0217%	80	5.2682%	3.8105%
28	0.0371%	0.0231%	81	5.7202%	4.3289%
29	0.0394%	0.0247%	82	6.1782%	4.8678%
30	0.0427%	0.0265%	83	7.0179%	5.4288%
31	0.0492%	0.0316%	84	7.8631%	5.9122%
32	0.0556%	0.0360%	85	8.7167%	6.3661%
33	0.0616%	0.0398%	86	9.5810%	7.1650%
34	0.0669%	0.0427%	87	10.4516%	8.0050%
35	0.0724%	0.0455%	88	11.8437%	8.8541%
36	0.0755%	0.0474%	89	13.2486%	9.6498%
37	0.0779%	0.0497%	90	14.6752%	10.5687%
38	0.0808%	0.0521%	91	16.3354%	12.0267%
39	0.0845%	0.0551%	92	18.0374%	13.4340%
40	0.0901%	0.0588%	93	19.7642%	14.8636%
41	0.1003%	0.0633%	94	21.5622%	16.4543%
42	0.1106%	0.0702%	95	23.4692%	17.7952%
43	0.1212%	0.0792%	96	25.3619%	19.0707%
44	0.1323%	0.0907%	97	27.1816%	20.2419%
45	0.1439%	0.1052%	98	29.0095%	21.1759%
46	0.1563%	0.1228%	99	30.6920%	21.8544%
47	0.1693%	0.1427%	100	32.1584%	22.1859%
48	0.1827%	0.1652%	101	33.7521%	23.0680%
49	0.1964%	0.1865%	102	35.1259%	24.0803%
50	0.2104%	0.1992%	103	36.3671%	25.2770%
51	0.2802%	0.2104%	104	37.3834%	26.6309%
52	0.3506%	0.2186%	105	38.1051%	28.0912%
53	0.4209%	0.2250%	106	38.4698%	29.6244%
54	0.4903%	0.2863%	107	38.6325%	31.1943%
55	0.5297%	0.3409%	108	38.8076%	32.7579%
56	0.5857%	0.3910%	109	38.9794%	34.2712%
57	0.6387%	0.4376%	110	50.0000%	50.0000%
58	0.6875%	0.4613%	111	50.0000%	50.0000%
59	0.7316%	0.5005%	112	50.0000%	50.0000%
60	0.7720%	0.5393%	113	50.0000%	50.0000%
61	0.8439%	0.5785%	114	50.0000%	50.0000%
62	0.9155%	0.6152%	115	50.0000%	50.0000%
63	0.9888%	0.6536%	116	50.0000%	50.0000%
64	1.0644%	0.7279%	117	50.0000%	50.0000%
65	1.1433%	0.8032%	118	50.0000%	50.0000%
66	1.2263%	0.8884%	119	50.0000%	50.0000%
67	1.3135%	0.9736%	120	100.0000%	100.0000%

Table XI-6
Disabled Retiree Mortality Rates

NEW YORK CITY POLICE PENSION FUND					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES BASE RATES					
Age	Males	Females	Age	Males	Females
15	0.0138%	0.0095%	68	1.8368%	1.2141%
16	0.0187%	0.0117%	69	2.0342%	1.3912%
17	0.0252%	0.0127%	70	2.2544%	1.5837%
18	0.0301%	0.0148%	71	2.5045%	1.7848%
19	0.0334%	0.0159%	72	2.7644%	1.9944%
20	0.0347%	0.0168%	73	3.0535%	2.2258%
21	0.0371%	0.0185%	74	3.3359%	2.4880%
22	0.0402%	0.0205%	75	3.6300%	2.7766%
23	0.0431%	0.0227%	76	4.1253%	3.0785%
24	0.0467%	0.0251%	77	4.6178%	3.3525%
25	0.0503%	0.0274%	78	5.1289%	3.6752%
26	0.0544%	0.0298%	79	5.5682%	4.1794%
27	0.0586%	0.0322%	80	6.0116%	4.7030%
28	0.0633%	0.0348%	81	6.7832%	5.2484%
29	0.0681%	0.0374%	82	7.6009%	5.7185%
30	0.0730%	0.0400%	83	8.4279%	6.1948%
31	0.0781%	0.0425%	84	9.2040%	7.0110%
32	0.0830%	0.0450%	85	10.1002%	7.8321%
33	0.0898%	0.0476%	86	11.5115%	8.6046%
34	0.0933%	0.0491%	87	12.7944%	9.3702%
35	0.0972%	0.0512%	88	14.1662%	10.2595%
36	0.1019%	0.0534%	89	15.7578%	11.5941%
37	0.1080%	0.0563%	90	17.3856%	12.9378%
38	0.1153%	0.0590%	91	19.0388%	14.3081%
39	0.1286%	0.0629%	92	20.6360%	15.3704%
40	0.1417%	0.0688%	93	22.5718%	16.4875%
41	0.1550%	0.0766%	94	24.4562%	17.6613%
42	0.1690%	0.0865%	95	26.1404%	18.7606%
43	0.1838%	0.0992%	96	28.0695%	19.7397%
44	0.1997%	0.1148%	97	29.6855%	20.6328%
45	0.2170%	0.1330%	98	30.9177%	21.2676%
46	0.2279%	0.1538%	99	32.6552%	21.8544%
47	0.2387%	0.1769%	100	33.9880%	22.1859%
48	0.2492%	0.2017%	101	34.9681%	23.0680%
49	0.3237%	0.2316%	102	35.9346%	24.0803%
50	0.3948%	0.2637%	103	36.6434%	25.2770%
51	0.4620%	0.2870%	104	37.3834%	26.6309%
52	0.5249%	0.3323%	105	38.1051%	28.0912%
53	0.5528%	0.3677%	106	38.4698%	29.6244%
54	0.5891%	0.4196%	107	38.6325%	31.1943%
55	0.6260%	0.4722%	108	38.8076%	32.7579%
56	0.6814%	0.5135%	109	38.9794%	34.2712%
57	0.7288%	0.5258%	110	50.0000%	50.0000%
58	0.7710%	0.5452%	111	50.0000%	50.0000%
59	0.8525%	0.5823%	112	50.0000%	50.0000%
60	0.9273%	0.6153%	113	50.0000%	50.0000%
61	1.0007%	0.6486%	114	50.0000%	50.0000%
62	1.0735%	0.7169%	115	50.0000%	50.0000%
63	1.1411%	0.7851%	116	50.0000%	50.0000%
64	1.2250%	0.8630%	117	50.0000%	50.0000%
65	1.3055%	0.9419%	118	50.0000%	50.0000%
66	1.4653%	1.0252%	119	50.0000%	50.0000%
67	1.6473%	1.1204%	120	100.0000%	100.0000%

Table XI-7
Beneficiary Mortality Rates

NEW YORK CITY POLICE 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 POLICE PENSION FUND		
ANNUAL RATES OF MERIT AND SALARY INCREASE		
Years of Service	Merit Increase	Salary Increase ¹
0	0.00%	3.00%
1	5.00%	8.00%
2	11.00%	14.00%
3	14.00%	17.00%
4	20.00%	23.00%
5	38.00%	41.00%
6	1.60%	4.60%
7	1.80%	4.80%
8	2.00%	5.00%
9	3.60%	6.60%
10	2.30%	5.30%
11	2.20%	5.20%
12	2.10%	5.10%
13	2.00%	5.00%
14	3.30%	6.30%
15	1.70%	4.70%
16	1.60%	4.60%
17	1.50%	4.50%
18	1.40%	4.40%
19	2.70%	5.70%
20	1.20%	4.20%
21	1.00%	4.00%
22	0.90%	3.90%
23	0.80%	3.80%
24	0.70%	3.70%
25	0.60%	3.60%
26	0.50%	3.50%
27	0.50%	3.50%
28	0.50%	3.50%
29	0.50%	3.50%
30+	0.50%	3.50%

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

Table XI-9
Overtime Assumptions

NEW YORK CITY POLICE PENSION FUND					
OVERTIME ASSUMPTION					
Years of Service	All Tiers Baseline	Tier 1 & Tier 2 Dual Service	Tier 1 & Tier 2 Dual Disability	Tier 3, Tier 3 Revised, & Tier 3 Enhanced Dual Service	Tier 3, Tier 3 Revised, & Tier 3 Enhanced Dual Disability
0-15	17.00%	21.00%	8.00%	20.00%	12.00%
16	17.00%	21.00%	9.00%	20.00%	12.00%
17	17.00%	21.00%	10.00%	20.00%	13.00%
18	17.00%	21.00%	11.00%	20.00%	13.00%
19	17.00%	21.00%	12.00%	20.00%	14.00%
20	17.00%	21.00%	12.00%	20.00%	14.00%
21	17.00%	21.00%	12.00%	20.00%	14.00%
22	17.00%	21.00%	12.00%	20.00%	14.00%
23	16.00%	20.00%	11.00%	18.00%	13.00%
24	15.00%	18.00%	10.00%	17.00%	12.00%
25	14.00%	17.00%	9.00%	16.00%	11.00%
26	13.00%	16.00%	8.00%	15.00%	10.00%
27	12.00%	15.00%	7.00%	14.00%	9.00%
28	10.00%	14.00%	6.00%	13.00%	8.00%
29	9.00%	13.00%	6.00%	12.00%	7.00%
30	8.00%	12.00%	6.00%	10.00%	6.00%
31	7.00%	10.00%	6.00%	9.00%	6.00%
32	7.00%	9.00%	6.00%	9.00%	6.00%
33	7.00%	9.00%	6.00%	9.00%	6.00%
34+	7.00%	9.00%	6.00%	9.00%	6.00%

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	0.876	0.876
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 CPI 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 AVA to the 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 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 PVFNC or future member contributions is the Accrued Liability.

The excess, if any, of the AL over the AVA is the 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 POLICE 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:** 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, other than a one-year adjustment to the liabilities to account for EBP payments expected to be made in Calendar Year 2024/Fiscal Year 2025 from the Qualified Pension Plan while the trust for the EBP is being established.
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 POLICE 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.

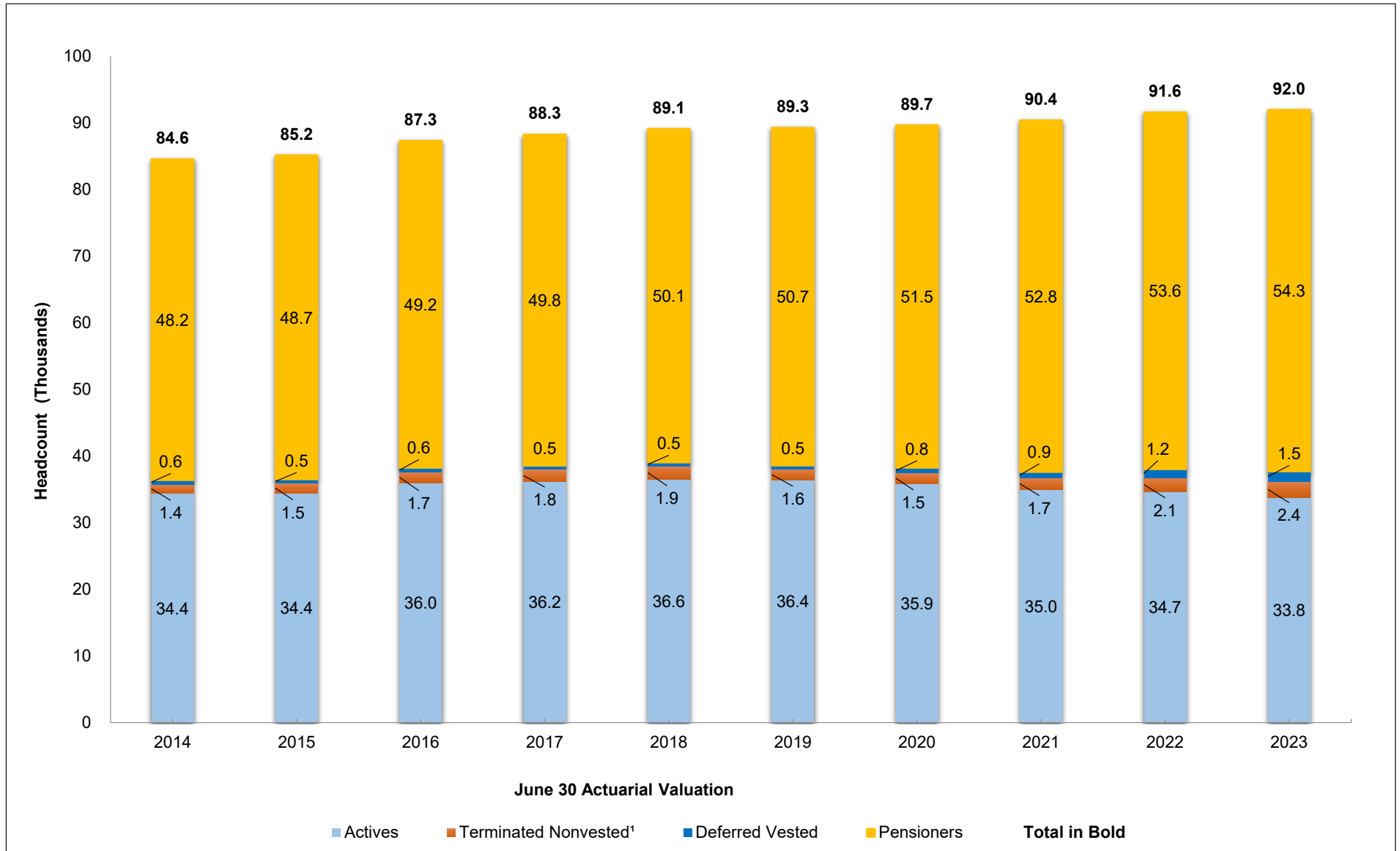
Beginning on June 30, 2020, POLICE members who are no longer on payroll but not otherwise classified have been classified as Active, Terminated Nonvested, or Deferred Vested members, using actuarial judgment and consideration of available data, including leave of absence data when available.

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) + (9)
Number at June 30, 2022	34,655	2,125	1,214	37,092	2,433	12,589	569	925	53,608	91,602
New Entrants	2,087	111	2	0	0	0	35	7	42	2,242
Rehires	99	(71)	(22)	(3)	0	0	0	0	(3)	3
Terminated Nonvested	(491)	491	0	0	0	0	0	0	0	0
Vested Termination	(468)	0	468	0	0	0	0	0	0	0
Withdrawal / Cashout	(447)	(291)	(101)	0	0	0	0	0	0	(839)
Accidental Death	(2)	0	0	0	0	0	2	0	2	0
Ordinary Death	(20)	0	0	0	0	0	0	0	0	(20)
Service Retirement	(1,392)	0	(62)	1,454	0	0	0	0	1,454	0
Ordinary Disability Retirement	(22)	0	(3)	0	25	0	0	0	25	0
Accidental Disability Retirement	(199)	0	(3)	0	0	202	0	0	202	0
Reclassifications	0	0	0	(136)	(2)	136	7	(5)	0	0
Pensioner Death with Beneficiary	0	0	0	(60)	(2)	(13)	0	75	0	0
Pensioner Death without Beneficiary	0	0	0	(598)	(100)	(250)	(11)	(46)	(1,005)	(1,005)
Pension Payroll Adjustments	0	0	0	0	0	0	(2)	(2)	(4)	(4)
Net Change	(855)	240	279	657	(79)	75	31	29	713	377
Number at June 30, 2023	33,800	2,365	1,493	37,749	2,354	12,664	600	954	54,321	91,979

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 POLICE PENSION FUND		
ACTIVE MEMBERS INCLUDED IN THE JUNE 30, 2023 AND THE JUNE 30, 2022 ACTUARIAL VALUATIONS		
	June 30, 2023	June 30, 2022
Number		
Males	26,994	27,901
Females	6,806	6,754
Total	33,800	34,655
Annual Salary¹		
Males	\$ 3,534,097,189	\$ 3,543,365,381
Females	811,505,691	788,860,142
Total	\$ 4,345,602,880	\$ 4,332,225,523
Average Salary¹		
Males	\$ 130,922	\$ 126,998
Females	119,234	116,799
Total Average	\$ 128,568	\$ 125,010
Average Age		
Males	37.8	37.6
Females	36.7	36.8
Total Average	37.6	37.4
Average Past Service		
Males	11.7	11.6
Females	9.9	10.0
Total Average	11.3	11.3

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

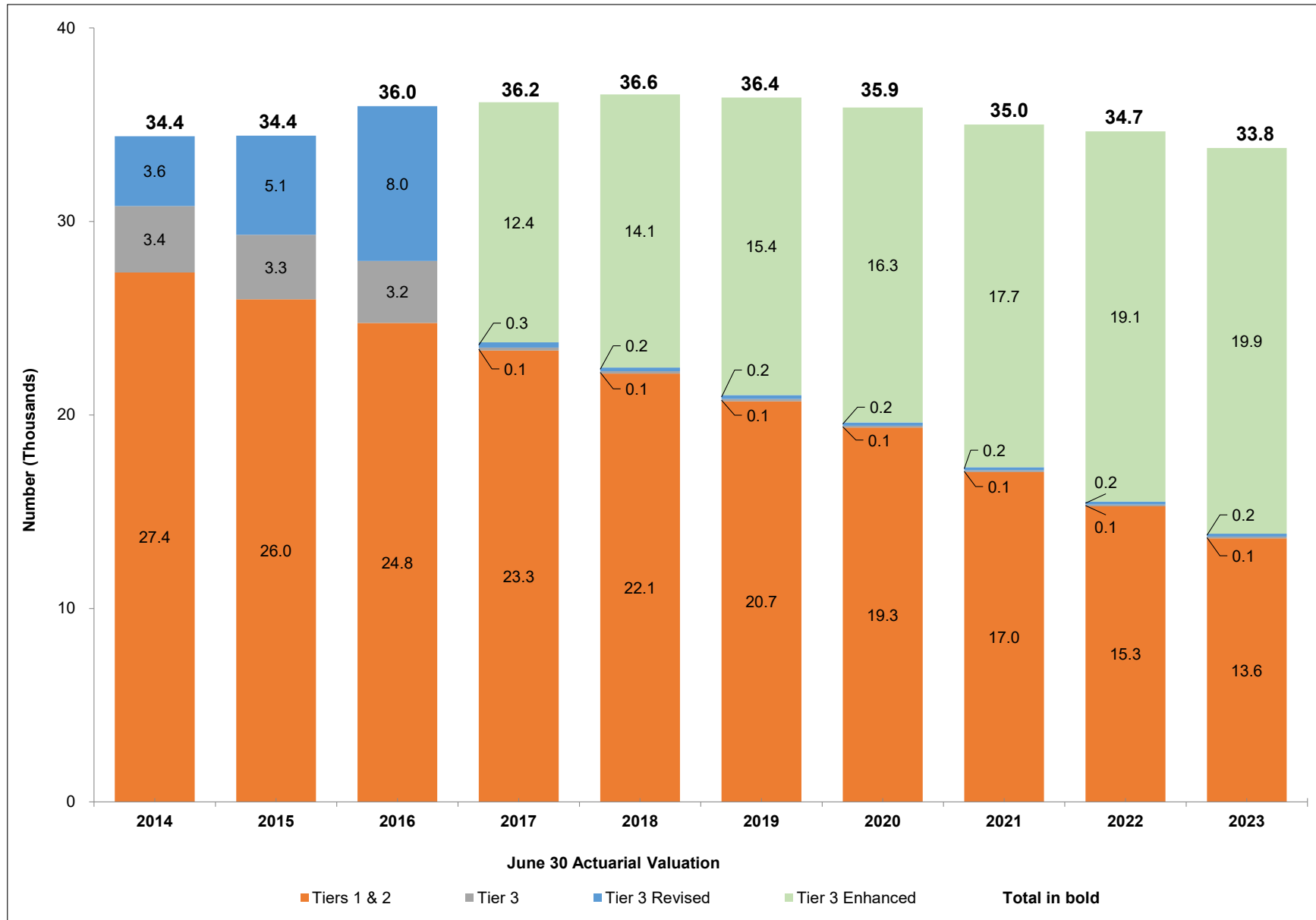


Table XII-5
Schedule of Active Member Salary Data

June 30 Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2014	34,402	\$ 3,618,095,284	\$ 105,171	1.4%
2015	34,435	3,564,029,659	103,500	(1.6%)
2016	35,961	3,717,425,239	103,374	(0.1%)
2017	36,165	3,968,885,246	109,744	6.2%
2018	36,562	4,053,204,563	110,858	1.0%
2019	36,401	4,244,805,002	116,612	5.2%
2020	35,895	4,299,648,848	119,784	2.7%
2021	35,006	4,262,625,521	121,768	1.7%
2022	34,655	4,332,225,523	125,010	2.7%
2023	33,800	4,345,602,880	128,568	2.8%

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	1,038	0	0	0	0	0	0	0	0	1,038
25 TO 29	2,726	1,011	0	0	0	0	0	0	0	3,737
30 TO 34	1,362	2,890	841	6	0	0	0	0	0	5,099
35 TO 39	637	1,330	2,555	1,677	3	0	0	0	0	6,202
40 TO 44	71	485	919	3,351	645	3	0	0	0	5,474
45 TO 49	4	100	363	1,391	979	262	1	0	0	3,100
50 TO 54	2	4	30	508	431	436	170	1	0	1,582
55 TO 59	1	1	2	43	133	153	180	91	0	604
60 TO 64	0	0	2	1	5	31	39	43	22	143
65 TO 69	1	2	0	1	2	1	0	0	0	7
70 & UP	0	0	1	2	3	1	0	1	0	8
TOTAL	5,842	5,823	4,713	6,980	2,201	887	390	136	22	26,994

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	65,872	0	0	0	0	0	0	0	0	65,872
25 TO 29	184,232	112,050	0	0	0	0	0	0	0	296,282
30 TO 34	96,417	374,678	122,066	840	0	0	0	0	0	594,001
35 TO 39	46,231	173,988	373,715	263,126	479	0	0	0	0	857,539
40 TO 44	5,336	63,067	130,425	531,042	107,076	501	0	0	0	837,448
45 TO 49	393	13,500	50,989	213,321	163,457	46,768	168	0	0	488,597
50 TO 54	301	578	4,245	77,677	69,873	76,339	31,706	180	0	260,899
55 TO 59	153	187	304	6,518	21,312	25,650	33,383	17,597	0	105,104
60 TO 64	0	0	365	174	877	5,049	6,790	8,027	4,396	25,678
65 TO 69	145	331	0	174	364	178	0	0	0	1,192
70 & UP	0	0	180	347	521	175	0	263	0	1,487
TOTAL¹	399,079	738,378	682,289	1,093,221	363,958	154,660	72,047	26,069	4,396	3,534,097

<i>AVERAGE SALARIES:²</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	63,461	0	0	0	0	0	0	0	0	63,461
25 TO 29	67,583	110,831	0	0	0	0	0	0	0	79,283
30 TO 34	70,791	129,646	145,144	140,068	0	0	0	0	0	116,494
35 TO 39	72,576	130,818	146,268	156,903	159,576	0	0	0	0	138,268
40 TO 44	75,162	130,034	141,921	158,473	166,009	167,043	0	0	0	152,986
45 TO 49	98,368	134,996	140,466	153,358	166,964	178,504	168,234	0	0	157,612
50 TO 54	150,554	144,440	141,488	152,908	162,117	175,090	186,503	180,354	0	164,917
55 TO 59	152,620	186,811	152,086	151,572	160,239	167,646	185,463	193,378	0	174,012
60 TO 64	0	0	182,656	174,166	175,309	162,855	174,105	186,682	199,808	179,564
65 TO 69	144,511	165,501	0	173,904	182,121	178,133	0	0	0	170,256
70 & UP	0	0	179,677	173,650	173,785	175,270	0	263,467	0	185,884
TOTAL	68,312	126,804	144,767	156,622	165,360	174,363	184,736	191,680	199,808	130,922

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

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

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

		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	278	0	0	0	0	0	0	0	0	278
25 TO 29	875	221	0	0	0	0	0	0	0	1,096
30 TO 34	578	778	133	0	0	0	0	0	0	1,489
35 TO 39	266	458	507	280	0	0	0	0	0	1,511
40 TO 44	29	183	183	764	102	0	0	0	0	1,261
45 TO 49	2	33	95	388	202	27	0	0	0	747
50 TO 54	1	0	6	152	108	60	7	0	0	334
55 TO 59	1	0	0	5	32	18	12	4	0	72
60 TO 64	0	1	0	1	0	5	3	4	4	18
65 TO 69	0	0	0	0	0	0	0	0	0	0
70 & UP	0	0	0	0	0	0	0	0	0	0
TOTAL	2,030	1,674	924	1,590	444	110	22	8	4	6,806

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	17,436	0	0	0	0	0	0	0	0	17,436
25 TO 29	57,885	22,243	0	0	0	0	0	0	0	80,128
30 TO 34	40,118	97,384	18,654	0	0	0	0	0	0	156,157
35 TO 39	18,250	58,079	72,647	42,443	0	0	0	0	0	191,419
40 TO 44	2,097	23,774	25,610	116,824	16,692	0	0	0	0	184,998
45 TO 49	211	4,473	13,110	58,275	33,311	4,844	0	0	0	114,224
50 TO 54	133	0	803	22,752	17,234	10,014	1,255	0	0	52,191
55 TO 59	156	0	0	694	5,012	3,113	2,008	637	0	11,620
60 TO 64	0	172	0	173	0	888	558	722	820	3,333
65 TO 69	0	0	0	0	0	0	0	0	0	0
70 & UP	0	0	0	0	0	0	0	0	0	0
TOTAL¹	136,288	206,125	130,825	241,161	72,248	18,858	3,821	1,359	820	811,506

AVERAGE SALARIES:²

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	62,718	0	0	0	0	0	0	0	0	62,718
25 TO 29	66,154	100,646	0	0	0	0	0	0	0	73,109
30 TO 34	69,409	125,173	140,258	0	0	0	0	0	0	104,874
35 TO 39	68,611	126,810	143,288	151,582	0	0	0	0	0	126,684
40 TO 44	72,327	129,915	139,944	152,911	163,648	0	0	0	0	146,707
45 TO 49	105,695	135,534	138,005	150,193	164,905	179,405	0	0	0	152,911
50 TO 54	133,198	0	133,892	149,684	159,572	166,895	179,326	0	0	156,261
55 TO 59	156,483	0	0	138,773	156,611	172,957	167,303	159,231	0	161,384
60 TO 64	0	172,030	0	173,086	0	177,531	185,997	180,524	204,975	185,153
65 TO 69	0	0	0	0	0	0	0	0	0	0
70 & UP	0	0	0	0	0	0	0	0	0	0
TOTAL	67,137	123,133	141,585	151,674	162,721	171,441	173,677	169,878	204,975	119,234

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

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

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

		TOTAL (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	1,316	0	0	0	0	0	0	0	0	1,316
25 TO 29	3,601	1,232	0	0	0	0	0	0	0	4,833
30 TO 34	1,940	3,668	974	6	0	0	0	0	0	6,588
35 TO 39	903	1,788	3,062	1,957	3	0	0	0	0	7,713
40 TO 44	100	668	1,102	4,115	747	3	0	0	0	6,735
45 TO 49	6	133	458	1,779	1,181	289	1	0	0	3,847
50 TO 54	3	4	36	660	539	496	177	1	0	1,916
55 TO 59	2	1	2	48	165	171	192	95	0	676
60 TO 64	0	1	2	2	5	36	42	47	26	161
65 TO 69	1	2	0	1	2	1	0	0	0	7
70 & UP	0	0	1	2	3	1	0	1	0	8
TOTAL	7,872	7,497	5,637	8,570	2,645	997	412	144	26	33,800

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	83,308	0	0	0	0	0	0	0	0	83,308
25 TO 29	242,117	134,293	0	0	0	0	0	0	0	376,410
30 TO 34	136,535	472,062	140,720	840	0	0	0	0	0	750,158
35 TO 39	64,481	232,067	446,362	305,569	479	0	0	0	0	1,048,958
40 TO 44	7,434	86,841	156,035	647,866	123,768	501	0	0	0	1,022,446
45 TO 49	605	17,972	64,100	271,596	196,768	51,612	168	0	0	602,821
50 TO 54	434	578	5,048	100,429	87,106	86,353	32,961	180	0	313,090
55 TO 59	309	187	304	7,211	26,323	28,763	35,391	18,234	0	116,723
60 TO 64	0	172	365	347	877	5,936	7,348	8,749	5,216	29,010
65 TO 69	145	331	0	174	364	178	0	0	0	1,192
70 & UP	0	0	180	347	521	175	0	263	0	1,487
TOTAL¹	535,368	944,503	813,114	1,334,382	436,207	173,519	75,868	27,428	5,216	4,345,603

AVERAGE SALARIES:²

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	63,304	0	0	0	0	0	0	0	0	63,304
25 TO 29	67,236	109,004	0	0	0	0	0	0	0	77,883
30 TO 34	70,379	128,698	144,476	140,068	0	0	0	0	0	113,867
35 TO 39	71,408	129,792	145,775	156,142	159,576	0	0	0	0	135,999
40 TO 44	74,340	130,001	141,593	157,440	165,687	167,043	0	0	0	151,811
45 TO 49	100,811	135,130	139,955	152,668	166,611	178,588	168,234	0	0	156,699
50 TO 54	144,769	144,440	140,222	152,166	161,607	174,099	186,219	180,354	0	163,408
55 TO 59	154,552	186,811	152,086	150,239	159,535	168,205	184,328	191,940	0	172,667
60 TO 64	0	172,030	182,656	173,626	175,309	164,894	174,954	186,158	200,603	180,189
65 TO 69	144,511	165,501	0	173,904	182,121	178,133	0	0	0	170,256
70 & UP	0	0	179,677	173,650	173,785	175,270	0	263,467	0	185,884
TOTAL	68,009	125,984	144,246	155,704	164,917	174,041	184,146	190,469	200,603	128,568

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

¹ Total may not add up due to rounding.

² Average based on unrounded salary.

Table XII-7
Detailed Reconciliation of Active Membership

TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2023							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2022				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
1	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
2	M	11,207	1,801,098,124	160,712	44.7	19.2	12,569	1,951,713,606	155,280	44.2	18.6
2	F	2,417	372,494,577	154,114	44.3	18.1	2,711	403,235,780	148,741	43.8	17.5
		13,624	2,173,592,701	159,541	44.7	19.0	15,280	2,354,949,386	154,120	44.1	18.4
3	M	76	11,417,149	150,226	38.8	12.4	76	11,087,102	145,883	37.8	11.5
3	F	11	1,561,098	141,918	41.4	12.0	11	1,536,340	139,667	40.4	11.0
		87	12,978,247	149,175	39.1	12.4	87	12,623,442	145,097	38.1	11.4
3 Revised	M	131	18,214,237	139,040	35.7	8.6	135	18,317,137	135,682	34.8	7.6
3 Revised	F	20	2,672,825	133,641	35.9	8.7	22	2,887,603	131,255	35.0	7.8
		151	20,887,062	138,325	35.7	8.6	157	21,204,740	135,062	34.8	7.7
3 Enhanced	M	15,580	1,703,367,679	109,330	32.7	6.3	15,121	1,562,247,536	103,316	32.1	5.8
3 Enhanced	F	4,358	434,777,191	99,765	32.5	5.3	4,010	381,200,419	95,062	32.1	5.0
		19,938	2,138,144,870	107,240	32.7	6.1	19,131	1,943,447,955	101,586	32.1	5.6
ALL TIERS		33,800	4,345,602,880	128,568	37.6	11.3	34,655	4,332,225,523	125,010	37.4	11.3

JUNE 30, 2023 MEMBERS ALSO PRESENT AS OF JUNE 30, 2022							JUNE 30, 2022 MEMBERS ALSO PRESENT AS OF JUNE 30, 2023				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	TIER	GENDER	NUMBER	SALARY	AVG SAL
1	M	0	0	0	0.0	0.0			0	0	0.0
1	F	0	0	0	0.0	0.0			0	0	0.0
		0	0	0	0.0	0.0			0	0	0.0
2	M	11,191	1,799,038,652	160,758	44.7	19.2	2	M	11,191	1,735,245,724	155,057
2	F	2,412	371,897,848	154,187	44.3	18.1	2	F	2,412	358,624,287	148,683
		13,603	2,170,936,500	159,592	44.7	19.0			13,603	2,093,870,011	153,927
3	M	76	11,417,149	150,226	38.8	12.4	3	M	76	11,087,102	145,883
3	F	11	1,561,098	141,918	41.4	12.0	3	F	11	1,536,340	139,667
		87	12,978,247	149,175	39.1	12.4			87	12,623,442	145,097
3 Revised	M	129	18,032,420	139,786	35.8	8.7	3 Revised	M	129	17,519,752	135,812
3 Revised	F	20	2,672,825	133,641	35.9	8.7	3 Revised	F	20	2,611,994	130,600
		149	20,705,245	138,961	35.8	8.7			149	20,131,746	135,112
3 Enhanced	M	14,121	1,612,731,469	114,208	33.3	6.9	3 Enhanced	M	14,121	1,476,378,933	104,552
3 Enhanced	F	3,785	399,429,919	105,530	33.2	6.0	3 Enhanced	F	3,785	362,296,881	95,719
		17,906	2,012,161,388	112,374	33.3	6.7			17,906	1,838,675,814	102,685
ALL TIERS		31,745	4,216,781,380	132,833	38.2	12.0	ALL TIERS		31,745	3,965,301,013	124,911

ADDITIONS DURING THE YEAR ¹							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR ¹				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	TIER	GENDER	NUMBER	SALARY	AVG SAL
1	M	0	0	0	0.0	0.0			0	0	0.0
1	F	0	0	0	0.0	0.0			0	0	0.0
		0	0	0	0.0	0.0			0	0	0.0
2	M	16	2,059,472	128,717	43.4	16.2	2	M	1,378	216,467,882	157,088
2	F	5	596,729	119,346	40.6	10.8	2	F	299	44,611,493	149,202
		21	2,656,201	126,486	42.7	14.9			1,677	261,079,375	155,682
3	M	0	0	0	0.0	0.0	3	M	0	0	0.0
3	F	0	0	0	0.0	0.0	3	F	0	0	0.0
		0	0	0	0.0	0.0			0	0	0.0
3 Revised	M	2	181,817	90,909	28.5	2.5	3 Revised	M	6	797,385	132,898
3 Revised	F	0	0	0	0.0	0.0	3 Revised	F	2	275,609	137,805
		2	181,817	90,909	28.5	2.5			8	1,072,994	134,124
3 Enhanced	M	1,459	90,636,210	62,122	27.5	0.6	3 Enhanced	M	1,000	85,868,603	85,869
3 Enhanced	F	573	35,347,272	61,688	28.1	0.6	3 Enhanced	F	225	18,903,538	84,016
		2,032	125,983,482	62,000	27.7	0.6			1,225	104,772,141	85,528
ALL TIERS		2,055	128,821,500	62,687	27.8	0.8	ALL TIERS		2,910	366,924,510	126,091

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

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

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

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>SERVICE RETIREMENT:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	3	210,916	70,305	0	0	0	3	210,916	70,305
40 TO 44	428	30,363,897	70,944	82	5,413,886	66,023	510	35,777,783	70,153
45 TO 49	1,881	137,735,576	73,225	489	33,218,459	67,931	2,370	170,954,035	72,133
50 TO 54	4,747	374,436,048	78,878	1,046	69,645,337	66,583	5,793	444,081,385	76,658
55 TO 59	6,694	484,789,943	72,422	1,401	87,210,487	62,249	8,095	572,000,430	70,661
60 TO 64	6,401	384,554,386	60,077	1,366	71,969,587	52,686	7,767	456,523,973	58,777
65 TO 69	3,580	197,823,242	55,258	707	34,541,663	48,857	4,287	232,364,905	54,202
70 TO 74	2,022	96,219,785	47,586	209	8,963,130	42,886	2,231	105,182,915	47,146
75 TO 79	2,478	106,095,549	42,815	81	3,142,918	38,801	2,559	109,238,467	42,688
80 TO 84	2,515	95,614,612	38,018	53	1,978,996	37,340	2,568	97,593,608	38,004
85 TO 89	1,026	34,204,085	33,337	20	762,293	38,115	1,046	34,966,378	33,429
90 & UP	505	15,500,896	30,695	15	433,754	28,917	520	15,934,650	30,644
TOTAL	32,280	1,957,548,935	60,643	5,469	317,280,510	58,014	37,749	2,274,829,445	60,262
<i>ORDINARY DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	1	38,880	38,880	0	0	0	1	38,880	38,880
35 TO 39	29	1,453,787	50,131	8	336,487	42,061	37	1,790,274	48,386
40 TO 44	73	3,338,733	45,736	38	1,675,690	44,097	111	5,014,423	45,175
45 TO 49	83	3,798,743	45,768	48	2,052,478	42,760	131	5,851,221	44,666
50 TO 54	195	7,704,368	39,510	95	3,518,371	37,035	290	11,222,739	38,699
55 TO 59	202	7,069,702	34,999	130	4,124,221	31,725	332	11,193,923	33,717
60 TO 64	169	5,058,983	29,935	99	2,800,062	28,283	268	7,859,045	29,325
65 TO 69	81	2,239,956	27,654	56	1,536,535	27,438	137	3,776,491	27,566
70 TO 74	119	4,119,682	34,619	25	630,830	25,233	144	4,750,512	32,990
75 TO 79	294	7,789,601	26,495	13	304,015	23,386	307	8,093,616	26,364
80 TO 84	318	10,007,446	31,470	7	169,865	24,266	325	10,177,311	31,315
85 TO 89	127	5,536,539	43,595	4	92,150	23,038	131	5,628,689	42,967
90 & UP	136	6,747,888	49,617	4	157,724	39,431	140	6,905,612	49,326
TOTAL	1,827	64,904,308	35,525	527	17,398,428	33,014	2,354	82,302,736	34,963
<i>ACCIDENTAL DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	27	1,448,457	53,647	6	271,649	45,275	33	1,720,106	52,124
35 TO 39	168	13,434,858	79,969	36	2,563,006	71,195	204	15,997,864	78,421
40 TO 44	408	34,524,677	84,619	91	7,399,372	81,312	499	41,924,049	84,016
45 TO 49	619	57,232,428	92,459	131	11,012,751	84,067	750	68,245,179	90,994
50 TO 54	1,444	131,262,566	90,902	236	18,927,964	80,203	1,680	150,190,530	89,399
55 TO 59	2,047	175,926,956	85,944	344	25,864,278	75,187	2,391	201,791,234	84,396
60 TO 64	1,895	137,578,004	72,601	334	22,594,014	67,647	2,229	160,172,018	71,858
65 TO 69	1,009	69,324,129	68,706	149	8,440,667	56,649	1,158	77,764,796	67,154
70 TO 74	810	43,069,633	53,172	53	2,859,415	53,951	863	45,929,048	53,220
75 TO 79	1,260	58,379,362	46,333	34	1,417,149	41,681	1,294	59,796,511	46,211
80 TO 84	1,056	48,692,550	46,110	22	996,664	45,303	1,078	49,689,214	46,094
85 TO 89	351	16,719,409	47,634	6	239,672	39,945	357	16,959,081	47,504
90 & UP	127	6,224,883	49,015	1	28,316	28,316	128	6,253,199	48,853
TOTAL	11,221	793,817,912	70,744	1,443	102,614,917	71,112	12,664	896,432,829	70,786

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	6	760,845	126,808	15	2,074,796	138,320	21	2,835,641	135,031
30 TO 34	0	0	0	2	216,998	108,499	2	216,998	108,499
35 TO 39	0	0	0	2	276,229	138,115	2	276,229	138,115
40 TO 44	1	138,713	138,713	10	1,332,782	133,278	11	1,471,495	133,772
45 TO 49	1	121,773	121,773	40	5,319,923	132,998	41	5,441,696	132,724
50 TO 54	3	312,868	104,289	49	6,918,569	141,195	52	7,231,437	139,066
55 TO 59	9	1,166,473	129,608	96	12,936,234	134,752	105	14,102,707	134,311
60 TO 64	9	1,122,453	124,717	86	11,239,819	130,696	95	12,362,272	130,129
65 TO 69	6	569,050	94,842	61	8,190,631	134,273	67	8,759,681	130,742
70 TO 74	4	438,674	109,669	49	5,550,036	113,266	53	5,988,710	112,995
75 TO 79	3	366,131	122,044	60	6,769,807	112,830	63	7,135,938	113,269
80 TO 84	1	138,686	138,686	54	5,954,893	110,276	55	6,093,579	110,792
85 TO 89	3	365,859	121,953	13	1,558,251	119,865	16	1,924,110	120,257
90 & UP	4	382,152	95,538	13	1,175,072	90,390	17	1,557,224	91,601
TOTAL	50	5,883,677	117,674	550	69,514,040	126,389	600	75,397,717	125,663
OTHER BENEFICIARIES:									
UNDER 30	10	493,152	49,315	10	655,191	65,519	20	1,148,343	57,417
30 TO 34	4	120,480	30,120	8	243,201	30,400	12	363,681	30,307
35 TO 39	5	144,040	28,808	5	293,913	58,783	10	437,953	43,795
40 TO 44	0	0	0	11	480,548	43,686	11	480,548	43,686
45 TO 49	3	106,874	35,625	22	1,140,944	51,861	25	1,247,818	49,913
50 TO 54	6	312,206	52,034	33	1,444,573	43,775	39	1,756,779	45,046
55 TO 59	4	123,879	30,970	65	2,638,695	40,595	69	2,762,574	40,037
60 TO 64	7	275,112	39,302	76	3,081,948	40,552	83	3,357,060	40,447
65 TO 69	2	58,625	29,313	85	2,671,951	31,435	87	2,730,576	31,386
70 TO 74	3	88,400	29,467	94	2,741,775	29,168	97	2,830,175	29,177
75 TO 79	2	41,110	20,555	144	4,198,701	29,158	146	4,239,811	29,040
80 TO 84	2	109,617	54,809	163	4,475,262	27,456	165	4,584,879	27,787
85 TO 89	0	0	0	92	2,705,061	29,403	92	2,705,061	29,403
90 & UP	0	0	0	98	2,063,416	21,055	98	2,063,416	21,055
TOTAL	48	1,873,495	39,031	906	28,835,179	31,827	954	30,708,674	32,189
ALL PENSIONERS AND BENEFICIARIES:									
UNDER 30	16	1,253,997	78,375	25	2,729,987	109,199	41	3,983,984	97,170
30 TO 34	32	1,607,817	50,244	16	731,848	45,741	48	2,339,665	48,743
35 TO 39	205	15,243,601	74,359	51	3,469,635	68,032	256	18,713,236	73,099
40 TO 44	910	68,366,020	75,127	232	16,302,278	70,268	1,142	84,668,298	74,140
45 TO 49	2,587	198,995,394	76,921	730	52,744,555	72,253	3,317	251,739,949	75,894
50 TO 54	6,395	514,028,056	80,380	1,459	100,454,814	68,852	7,854	614,482,870	78,238
55 TO 59	8,956	669,076,953	74,707	2,036	132,773,915	65,213	10,992	801,850,868	72,949
60 TO 64	8,481	528,588,938	62,326	1,961	111,685,430	56,953	10,442	640,274,368	61,317
65 TO 69	4,678	270,015,002	57,720	1,058	55,381,447	52,345	5,736	325,396,449	56,729
70 TO 74	2,958	143,936,174	48,660	430	20,745,186	48,245	3,388	164,681,360	48,607
75 TO 79	4,037	172,671,753	42,772	332	15,832,590	47,689	4,369	188,504,343	43,146
80 TO 84	3,892	154,562,911	39,713	299	13,575,680	45,404	4,191	168,138,591	40,119
85 TO 89	1,507	56,825,892	37,708	135	5,357,427	39,685	1,642	62,183,319	37,870
90 & UP	772	28,855,819	37,378	131	3,858,282	29,453	903	32,714,101	36,228
TOTAL	45,426	2,824,028,327	62,168	8,895	535,643,074	60,218	54,321	3,359,671,401	61,848

Graph XII-9
Pensioner Average Benefits

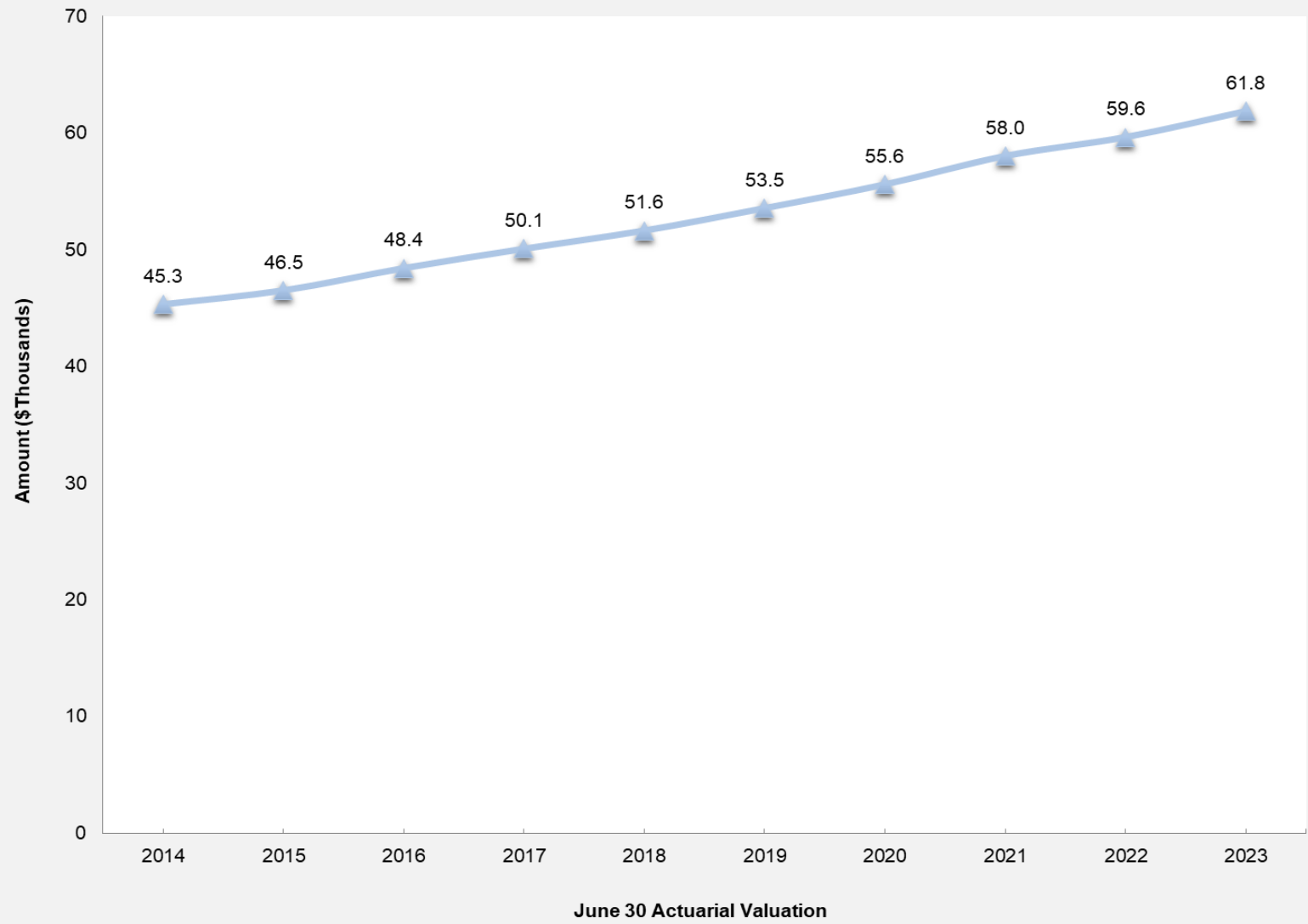


Table XII-10
Reconciliation of Pensioner and Beneficiary Data

SCHEDULE OF PENSIONERS AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS								
June 30 Actuarial Valuation	Added to Rolls		Removed from Rolls		End of Year Rolls		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances ¹	Number	Annual Allowances	Number	Annual Allowances ¹		
2014	2,220	\$ 144,660,995	958	\$ 32,759,640	48,212	\$ 2,183,965,721	5.4%	\$ 45,299
2015	1,574	117,371,844	1,083	37,069,856	48,703	2,264,267,709	3.7%	46,491
2016	1,458	151,061,292	1,010	36,517,652	49,151	2,378,811,349	5.1%	48,398
2017	1,681	153,211,878	1,033	38,982,214	49,799	2,493,041,013	4.8%	50,062
2018	1,401	137,291,868	1,076	42,965,087	50,124	2,587,367,794	3.8%	51,619
2019	1,729	170,887,518	1,126	42,117,897	50,727	2,716,137,415	5.0%	53,544
2020	1,905	190,247,384	1,167	46,219,834	51,465	2,860,164,965	5.3%	55,575
2021	2,523	251,377,662	1,151	46,434,345	52,837	3,065,108,282	7.2%	58,011
2022	1,937	181,486,638	1,166	50,096,600	53,608	3,196,498,320	4.3%	59,627
2023	1,948	217,584,825	1,235	54,411,744	54,321	3,359,671,401	5.1%	61,848

¹ Allowances shown are those presented in 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
AMC	Additional Member Contributions
ASOP	Actuarial Standard of Practice Number 4
AVA	Actuarial Value of Assets
AVR	Asset Volatility Ratio
BERS	Board of Education Retirement System
COLA	Cost-of-Living Adjustment
CPI	Consumer Price Index
EAN	Entry Age Normal cost method
EBP	Excess Benefit Plan
FAS	Final Average Salary
FIRE	Fire Pension Fund
FS	Final Salary
GASB	Governmental Accounting Standards Board
IRC	Internal Revenue Code
ITHP	Increased-Take-Home-Pay
LDRM	Low-Default-Risk Obligation Measure
MVA	Market Value of Assets
NYCERS	New York City Employees' Retirement System
NYCRS	New York City Retirement Systems
NYPD	New York City Police Department
ODR	Ordinary Disability Retirement
OYLM	One-Year Lag Methodology
POLICE	Police Pension Fund
POVSF	Police Officer's Variable Supplements Fund
PSOVSF	Police Superior Officers' Variable Supplements 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