



Fiscal Year 2021
Actuarial Valuation Report
for the
New York City
Employees' Retirement System

JUNE 30, 2019 (LAG) ACTUARIAL VALUATION

prepared by the
New York City
Office of the Actuary

2021



OFFICE OF THE ACTUARY

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SHERRY S. CHAN
CHIEF ACTUARY

December 29, 2021

Board of Trustees
New York City Employees' Retirement System
335 Adams Street, Suite 2300
Brooklyn, NY 11201-3751

Re: Fiscal Year 2021 Actuarial Valuation Report (Report)

Dear Trustees:

This Report presents the results of the June 30, 2019 (Lag) actuarial valuation of the benefits under both the New York City Employees' Retirement System (NYCERS) Qualified Pension Plan and Group Life Insurance Plan (collectively, the Plan). This valuation, known as the June 30, 2019 (Lag) valuation, forms the basis for determining the statutorily-required contribution (Statutory Contribution) of \$3,762,898,267 for Fiscal Year 2021 (i.e. for the period beginning July 1, 2020 and ending June 30, 2021). It is not intended, nor necessarily suitable, for other purposes. Calculations made for other purposes may differ significantly from those shown herein.

Results of the June 30, 2018 (Lag) actuarial valuation are shown in this Report for comparative purposes. Other historical information that the Actuary believes useful is also included.

The June 30, 2019 (Lag) and June 30, 2018 (Lag) 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 NYCERS and the Office of the Comptroller as of June 30, 2019 and June 30, 2018.

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 presented 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.

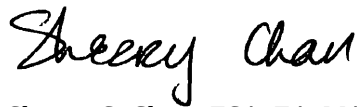
A summary of the benefits available under the terms of the Plan is shown in SECTION IX – SUMMARY OF PLAN PROVISIONS. The benefits under the Plan are unchanged from the prior valuation.

A summary of the actuarial assumptions and methods used in the valuation of the Plan is shown in SECTION XII – ACTUARIAL ASSUMPTIONS AND METHODS. The actuarial assumptions and methods used for the June 30, 2019 valuation have changed from the prior valuation and were presented in the memorandum titled “Proposed Changes to Actuarial Assumptions and Methods (Revised 2021 A&M)” dated July 27, 2021 and were adopted by the Board of Trustees at the August 12, 2021 Board meeting.

This Report does not present Governmental Accounting Standards Board (GASB) results. The Office of the Actuary published the Fiscal Year 2021 GASB67 and GASB68 results in a report dated September 24, 2021, which is available on the website of the Office of the Actuary (www.nyc.gov/actuary).

I, Sherry S. Chan, am the Chief Actuary for, and independent of, the New York City Retirement Systems and Pension Funds. I am a Fellow of the Society of Actuaries, an Enrolled Actuary under the Employee Retirement Income and Security Act of 1974, a Member of the American Academy of Actuaries, and a Fellow of the Conference of Consulting Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. To the best of my knowledge, the results contained herein have been prepared in accordance with generally accepted actuarial principles and procedures and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Best Regards,



Sherry S. Chan, FSA, EA, MAAA, FCA
Chief Actuary

SSC/eh

cc: Mr. Charles Barkley - New York City Employees' Retirement System
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SECTION I - EXECUTIVE SUMMARY

This Report presents the results of the June 30, 2019 (Lag) actuarial valuation of the New York City Employees' Retirement System (NYCERS) and Group Life Insurance Plan (collectively, the Plan).

The purposes of the valuation are:

- To determine the actuarially-required contribution (Actuarial Contribution) for Fiscal Year 2021 (i.e. July 1, 2020 to June 30, 2021),
- To measure the funding progress of the Plan,
- To disclose the census data and financial information used in the valuation, and
- To disclose the actuarial assumptions and actuarial methods used to determine the Actuarial Contribution.

The statutorily-required contribution (Statutory Contribution) is also shown and compared to the Actuarial Contribution in historical years.

This Report does not provide financial and accounting information required by current GASB standards. That information is provided in a separate report.

All results are based on preliminary SKIM amounts as determined by the Actuary in a letter dated August 29, 2019 to the Comptroller's Office. All results are without regard to the Variable Supplements Funds, unless specifically noted.

Future measurements of this information may differ from current measurements for many reasons including, but not limited to, experience differing from economic or demographic assumptions, changes in actuarial assumptions and methods, and changes in applicable statute and plan provisions. These and additional risks may be present for the Plan. A further discussion is presented in SECTION VIII - RISK AND UNCERTAINTY for consideration.

Table I-1
Executive Summary

Presented in **Table I-1** are the principal results of the June 30, 2019 (Lag) actuarial valuation and, for comparative purposes, the June 30, 2018 (Lag) actuarial valuation.

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2019 (Lag)	June 30, 2018 (Lag)
Fiscal Year	2021	2020
Funded Status		
1. Accrued Liability ¹	\$ 89,230,195,746	\$ 85,845,125,114
2. Actuarial Value of Assets (AVA) ²	<u>68,524,124,000</u>	<u>63,615,892,000</u>
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 20,706,071,746	\$ 22,229,233,114
4. Funded Ratio (AVA Basis) (2. / 1.)	76.8%	74.1%
5. Market Value of Assets (MVA) ²	68,524,124,000	65,206,752,000
6. Unfunded Accrued Liability (MVA Basis) (1. - 5.)	\$ 20,706,071,746	\$ 20,638,373,114
7. Funded Ratio (MVA Basis) (5. / 1.)	76.8%	76.0%
Contribution³		
1. Normal Cost	\$ 1,605,732,551	\$ 1,576,308,450
2. Amortization of Unfunded Accrued Liability	2,065,260,898	2,083,284,670
3. Administrative Expenses	91,904,818	66,237,028
4. Interest on Late Employer Contributions	<u>0</u>	<u>871,344</u>
5. Actuarial Contribution (1. + 2. + 3. + 4.)	\$ 3,762,898,267	\$ 3,726,701,492
6. Statutory Contribution (5)	\$ 3,762,898,267	\$ 3,726,701,492
Participant Data		
1. Active Members		
a. Number	191,501	190,572
b. Annual Salary ⁴	\$ 14,981,461,175	\$ 14,459,118,057
c. Average Salary	\$ 78,232	\$ 75,872
2. Active Off Payroll Members ⁵	31,273	28,483
3. Terminated Vested Members	21,788	21,389
4. Retirees and Beneficiaries		
a. Number	157,153	154,116
b. Total Annual Benefits	\$ 5,019,331,388	\$ 4,595,933,718
c. Average Annual Benefit	\$ 31,939	\$ 29,821

¹ Includes unfunded VSF Accrued Liability.

² Actuarial Value of Assets and Market Value of Assets are rounded to the nearest thousand.

³ Including results for Variable Supplements Funds.

⁴ Salaries shown are base salary 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.

⁵ Represents members no longer on payroll, but not otherwise classified.

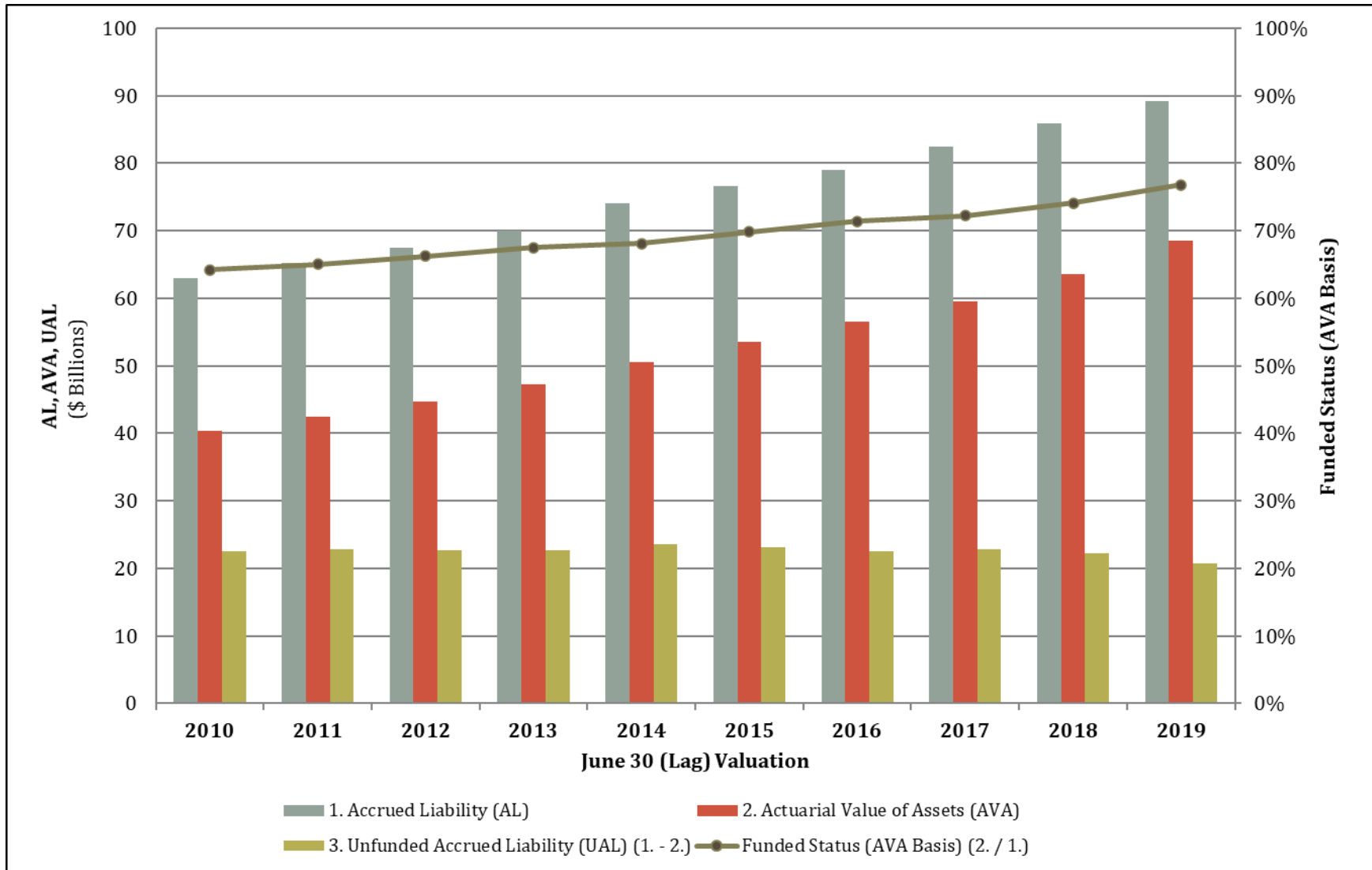
Table I-2
Actuarial Liabilities

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
ACTUARIAL LIABILITIES BY STATUS		
Valuation Date	June 30, 2019 (Lag)	June 30, 2018 (Lag)
Fiscal Year	2021	2020
Accrued Liability		
1. Active Members	\$ 36,063,771,633	\$ 35,130,554,574
2. Active Off Payroll Members ¹	585,381,310	520,444,383
3. Terminated Vested Members	2,141,922,616	1,965,733,141
4. Retirees and Beneficiaries	<u>49,113,326,305</u>	<u>46,845,749,071</u>
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 87,904,401,864	\$ 84,462,481,169
6. Actuarial Adjustments ²	<u>1,325,793,882</u>	<u>1,382,643,945</u>
7. Total Accrued Liability (5. + 6.)	\$ 89,230,195,746	\$ 85,845,125,114
Present Value of Benefits		
1. Active Members	\$ 55,246,741,975	\$ 53,468,657,745
2. Active Off Payroll Members ¹	585,381,310	520,444,383
3. Terminated Vested Members	2,141,922,616	1,965,733,141
4. Retirees and Beneficiaries	<u>49,113,326,305</u>	<u>46,845,749,071</u>
5. Present Value of Benefits (1. to 4.)	\$ 107,087,372,206	\$ 102,800,584,340
6. Actuarial Adjustments ²	<u>1,517,306,196</u>	<u>1,579,374,828</u>
7. Total Present Value of Benefits (5. + 6.)	\$ 108,604,678,402	\$ 104,379,959,168

¹ Represents members no longer on payroll, but not otherwise classified.

² Includes unfunded VSF liability and other actuarial loading adjustments.

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 Actuarial Asset Valuation Method (AAVM) is used to determine the Actuarial Value of Assets (AVA) of the Plan.

The Actuary reset the AVA to the market value as of June 30, 2011 and as of June 30, 2019. Beginning with the June 30, 2020 (Lag) actuarial valuation, the AAVM recognizes investment returns greater or less than expected over a period of five years. In accordance with this AAVM, the Unexpected Investment Returns (UIR) are phased into the AVA at rates of 20% per year.

UIR is defined as the excess of net investment return over the Expected Investment Return (EIR) based on the expected rate of return and the MVA, where EIR equals the sum of beginning-of-fiscal-year MVA plus one-half of net cash flow, multiplied by the expected rate of return.

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

Table II-1
Statement of Plan Net Assets

(\$ Thousands)		
	June 30, 2019	June 30, 2018
ASSETS		
Cash	\$ 64,699	\$ 19,139
Receivables		
Investment Securities Sold	\$ 1,177,445	\$ 494,566
Member Loans	1,150,018	1,129,906
Transferable Earnings due from QPP to VSFs	(153,411)	(234,000)
Accrued Interest and Dividends	338,691	326,006
Other	<u>0</u>	<u>0</u>
Total Receivables	\$ 2,512,743	\$ 1,716,478
INVESTMENTS AT FAIR VALUE		
Short-Term Investments		
U.S. Treasury Bills	\$ 40,309	\$ 40,216
Commercial Paper	608,362	644,809
Short-term Investment Fund	600,600	612,219
Discount Notes	153,810	71,958
Short term - Hedge Fund	0	0
Debt Securities		
U.S. Government and agency	12,467,550	11,612,008
Corporate and other	7,322,397	6,082,292
Promissory Notes	0	0
Equity Securities	20,979,595	17,979,085
Alternative Investments	11,021,419	10,176,771
Collective Trust Funds		
International Equity	13,129,539	13,315,724
Domestic Equity	0	0
Mortgage Debt Security	435,441	704,148
Treasury Inflation Protected Securities	736,640	2,858,313
Fixed Income	653,292	1,139,185
Collateral From Securities Lending	<u>6,406,505</u>	<u>9,918,700</u>
Total Investments	\$ 74,555,459	\$ 75,155,428
OTHER ASSETS	<u>128,259</u>	<u>109,895</u>
TOTAL ASSETS	\$ 77,261,160	\$ 77,000,940
LIABILITIES		
Accounts Payable	\$ 464,094	\$ 468,665
Payable for Investment Securities Purchased	1,406,303	1,023,260
Accrued Benefits Payable	454,936	377,156
Amount due to Variable Supplements Funds	4,581	4,995
Due to other Retirement Systems	617	1,412
Security Lending	6,406,505	9,918,700
Accrued Transfers to VSFs	<u>0</u>	<u>0</u>
TOTAL LIABILITIES	\$ 8,737,036	\$ 11,794,188
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	\$ 68,524,124	\$ 65,206,752

Table II-2
Statement of Changes in Plan Net Assets

(\$ Thousands)		
	June 30, 2019	June 30, 2018
ADDITIONS		
Contributions		
Member Contributions	\$ 547,807	\$ 523,535
Employer Contributions	<u>3,692,711</u>	<u>3,377,024</u>
Total Contributions	\$ 4,240,518	\$ 3,900,559
Investment Income (Loss)		
Interest Income	\$ 988,963	\$ 878,598
Dividend Income	914,719	897,873
Net Appreciation (Depreciation) in Fair Value	<u>2,728,030</u>	<u>3,591,521</u>
Total Investment Income (Loss)	\$ 4,631,712	\$ 5,367,992
Less Investment Expenses	240,544	241,818
Net Income (Loss)	\$ 4,391,168	\$ 5,126,174
Securities Lending Transactions		
Securities Lending Income	\$ 45,331	\$ 30,089
Securities Lending Fees	<u>4,573</u>	<u>3,009</u>
Net Securities Lending Income (Loss)	<u>\$ 40,758</u>	<u>\$ 27,080</u>
Net Investment Income (Loss)	\$ 4,431,926	\$ 5,153,254
Other		
Other Income	<u>\$ 3,258</u>	<u>\$ 3,410</u>
TOTAL ADDITIONS	\$ 8,675,702	\$ 9,057,223
DEDUCTIONS		
Benefit Payments and Withdrawals	\$ 5,152,588	\$ 4,882,612
Payments to other Retirement Systems	\$ 9,769	\$ 9,055
Amount due to Variable Supplements Fund	\$ 10,489	\$ 10,897
Accrued Transfer to VSFs	\$ 103,411	\$ 205,000
Administrative Expenses	<u>82,073</u>	<u>59,689</u>
TOTAL DEDUCTIONS	\$ 5,358,330	\$ 5,167,253
NET INCREASE (DECREASE) IN PLAN NET ASSETS	\$ 3,317,372	\$ 3,889,970
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	\$ 65,206,752	\$ 61,316,782
End of Year	\$ 68,524,124	\$ 65,206,752

Table II-3
Development of Actuarial Value of Assets

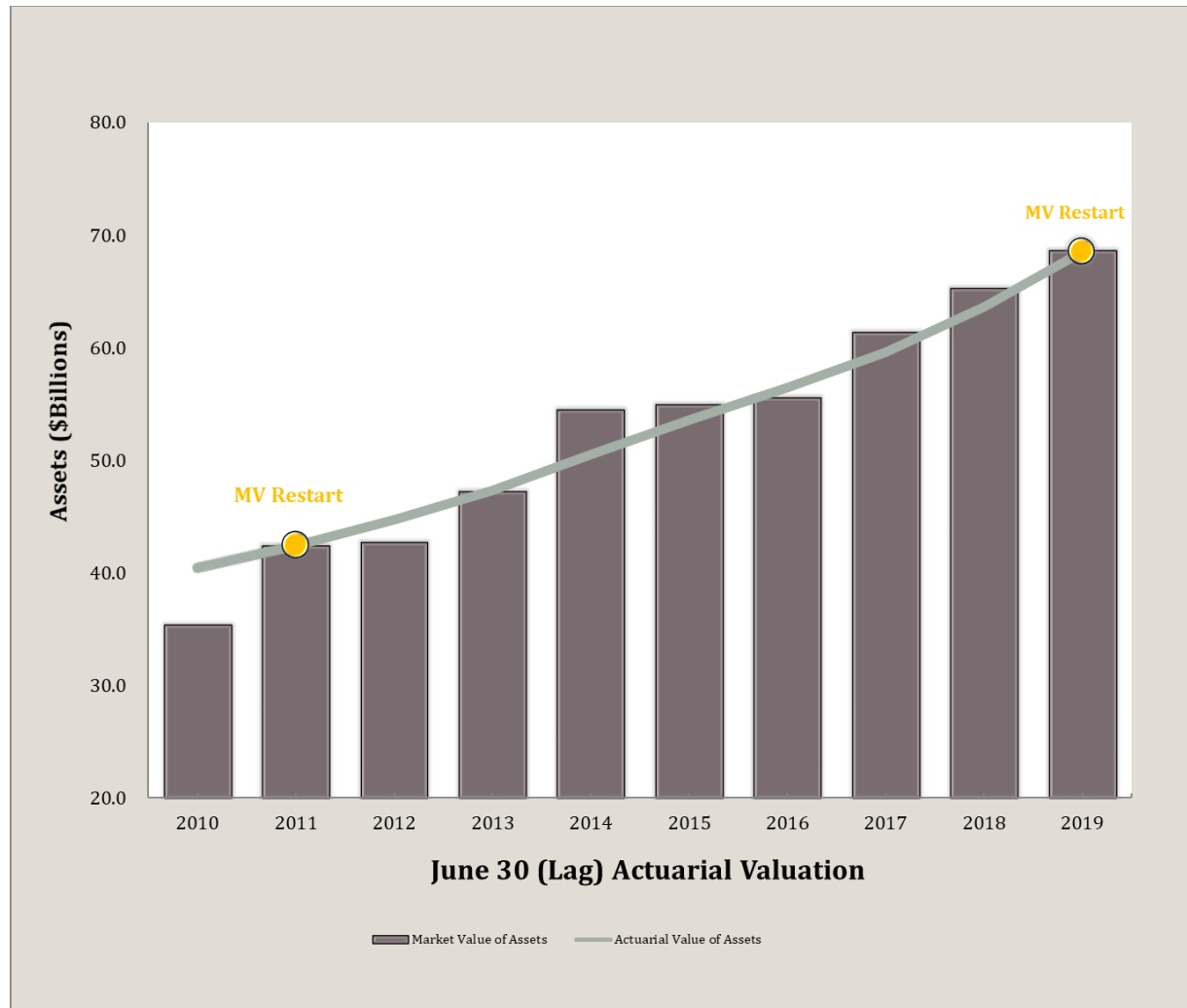
(\$ Thousands)		
Valuation Date	June 30, 2019 ¹	June 30, 2018
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY)	\$ 65,206,752	\$ 61,316,782
b. End of Year (EOY)	\$ 68,524,124	\$ 65,206,752
2. Contributions		
a. Employee	\$ 547,807	\$ 523,535
b. Employer	<u>3,692,711</u>	<u>3,377,024</u>
c. Total Contributions	\$ 4,240,518	\$ 3,900,559
3. Net Investment Income		
a. Investment Income	\$ 4,672,470	\$ 5,395,072
b. Investment Expenses	<u>(240,544)</u>	<u>(241,818)</u>
c. Total Net Investment Income	\$ 4,431,926	\$ 5,153,254
4. Benefit Payments and Other Cash Flow	\$ (5,251,661)	\$ (4,958,843)
5. Preliminary Transferable Earnings from NYCERS to COVSF - EOY	\$ (103,411)	\$ (205,000)
6. Net Cash Flow (2.c. + 4. + 5.)	\$ (1,114,554)	\$ (1,263,284)
7. Average Invested Assets		
a. AVA @ BOY	N/A	\$ 59,573,653
b. 1/2 Net Cash Flow before SKIM ((2.c. + 4.) / 2)	<u>N/A</u>	<u>(529,142)</u>
c. Total	N/A	\$ 59,044,511
8. Expected Rate of Return (AIR)	7.00%	7.00%
9. Expected Investment Return (EIR) (7.c. x 8.) ²	\$ 4,431,926	\$ 4,133,116
10. Unexpected Investment Return (UIR) (3.c. - 9.)	\$ 0	\$ 1,020,138
11. Preliminary AVA @ EOY		
a. AVA @ BOY (prior to corridor limit) ²	N/A	\$ 59,573,653
b. Net Cash Flow (6.)	N/A	(1,263,284)
c. Expected Investment Return (9.)	N/A	4,133,116
d. Phase in of UIR ³		
20%/15% * UIR for prior year	N/A	153,021
20%/15% * UIR for second prior year	N/A	458,744
20%/15% * UIR for third prior year	N/A	(383,488)
20%/15% * UIR for fourth prior year	N/A	(350,490)
20%/20% * UIR for fifth prior year	N/A	923,696
0%/20% * UIR for sixth prior year	<u>N/A</u>	<u>370,924</u>
Total	N/A	\$ 1,172,407
e. Preliminary AVA (11.a. + 11.b. + 11.c. + 11.d.)	N/A	\$ 63,615,892
12. Corridor		
a. 80% of MVA	\$ 54,819,299	\$ 52,165,402
b. 120% of MVA	\$ 82,228,949	\$ 78,248,102
13. Final AVA @ EOY (11.e. bounded by 12.)	\$ 68,524,124	\$ 63,615,892

¹ Calculations reflect the "Revised 2021 A&M," the actuarial assumptions and methods proposed in a memo dated July 27, 2021 and adopted by the Board at the August 12, 2021 Board meeting.

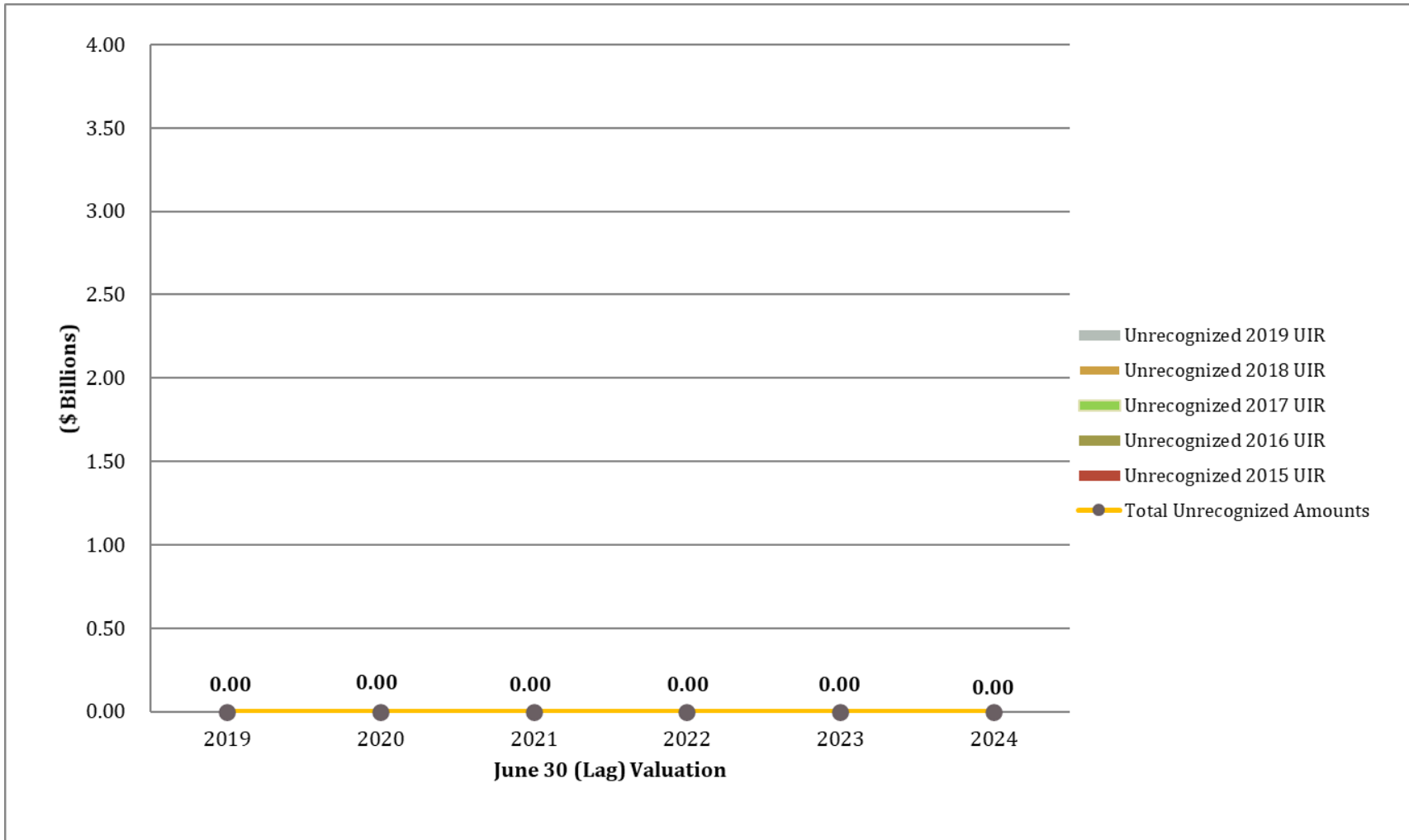
² Due to the "Revised 2021 A&M," AVA has been restarted by setting it equal to the MVA as of June 30, 2019 and Actual Investment Return rather than Expected Investment Return is used in the June 30, 2019 calculations.

³ Due to the "Revised 2021 A&M," the recognition of future asset performance has been changed from the previous six-year period, from 15% for the first four years and 20% for the last two years, to a five-year period at 20% per year.

Graph II-4
Historical Market and Actuarial Value of Assets



Graph II-5
Future Recognition of UIR as of June 30, 2019



As a result of the AVA restart as of June 30, 2019, all previous UIRs have been recognized.

SECTION III - CONTRIBUTION DEVELOPMENT AND HISTORY

Table III-1
Statutory Contributions

Table III-1 shows the components of the Fiscal Year 2021 and the Fiscal Year 2020 Statutory Contributions.

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR STATUTORY CONTRIBUTIONS		
Valuation Date	June 30, 2019 (Lag)	June 30, 2018 (Lag)
Fiscal Year	2021	2020
Normal Cost ¹	\$ 1,605,732,551	\$ 1,576,308,450
Amortization of Unfunded Accrued Liability		
- Initial UAL	1,972,099,363	1,921,976,034
- 2011 (Gain)/Loss	(28,843,284)	(29,666,882)
- 2012 (Gain)/Loss	(6,705,254)	(7,384,090)
- 2013 (Gain)/Loss	11,633,206	9,838,580
- 2014 (Gain)/Loss	(152,065,379)	(154,087,106)
- 2014 Assumption Change ²	232,084,732	233,084,501
- 2015 (Gain)/Loss	(47,048,222)	(50,393,431)
- 2016 (Gain)/Loss	(29,047,826)	(30,332,576)
- 2016 Assumption Change ³	1,925,414	1,925,414
- 2016 SADB	2,458,219	2,458,219
- 2016 SADB Sanitation Retirees	10,433,043	10,433,043
- 2016 SADB Sanitation Actives	667,208	667,208
- 2017 (Gain)/Loss	(2,117,957)	(3,085,886)
- 2017 COVSF Escalation Offset	154,027	154,027
- 2017 Assumption Change ⁴	(98,121,022)	(98,976,687)
- 2017 Method Change ⁴	81,105,543	81,714,634
- 2017 Census Data Update	222,285,839	223,201,197
- 2017 OTB - City of New York portion	6,367,440	6,367,440
- 2017 OTB - State of New York portion	6,367,440	6,367,440
- 2018 (Gain)/Loss	(38,953,294)	(40,976,409)
- 2019 (Gain)/Loss	16,479,183	N/A
- 2019 Assumption Change ⁵	(31,197,928)	N/A
- 2019 Method Change ⁵	(64,699,593)	N/A
Total	2,065,260,898	2,083,284,670
Administrative Expenses	91,904,818	66,237,028
Interest on Late Employer Contributions	0	871,344
Total Contribution to the New York City Employees' Retirement System	\$ 3,762,898,267	\$ 3,726,701,492

¹ Includes amounts necessary, if any, to provide for financing of the Excess Benefit Plan established by Chapter 623/04.

² Change in post retirement mortality assumptions including the change to the mortality improvement scale MP-2015.

³ Change in Accidental rates for Tier 3 22-year plan members of Sanitation and Correction using a more empirical methodology.

⁴ 2019 A&M.

⁵ Revised 2021 A&M.

Table III-2
Schedule of Unfunded Accrued Liability Bases

The Initial Unfunded Accrued Liability (UAL) is being amortized over a closed 22-year period using Increasing Dollar Payments (IDP). Under IDP, amortization payments increase by 3.0% per year, consistent with the assumed rate of General Wage Increases. Increments to the UAL established after June 30, 2010 are generally amortized using Level Dollar Payments (LDP) as follows:

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

Under the One-Year Lag methodology (OYLM), the number of payments is one less than the number of years in the amortization period (e.g. 14 payments over a closed 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, 2019.

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM SCHEDULE OF UNFUNDED ACCRUED LIABILITY BASES						
Amortization Base	Date Established	Original Amount	Amortization Years	Amortization Payment	Payments Remaining	OYLM UAL June 30, 2019
Initial UAL	6/30/10	\$ 20,194,114,494	22	\$ 1,972,099,363	12	\$ 17,556,357,817
(Gain)/Loss	6/30/11	\$ (250,820,523)	15	\$ (28,843,284)	6	\$ (136,704,631)
(Gain)/Loss	6/30/12	\$ (62,429,250)	15	\$ (6,705,254)	7	\$ (38,471,273)
(Gain)/Loss	6/30/13	\$ 83,180,893	15	\$ 11,633,206	8	\$ 56,794,897
(Gain)/Loss	6/30/14	\$ (1,302,739,151)	15	\$ (152,065,379)	9	\$ (970,519,605)
Assumption Change ¹	6/30/14	\$ 2,328,933,026	20	\$ 232,084,732	14	\$ 1,970,627,597
(Gain)/Loss	6/30/15	\$ (426,054,441)	15	\$ (47,048,222)	10	\$ (342,169,010)
(Gain)/Loss	6/30/16	\$ (256,448,676)	15	\$ (29,047,826)	11	\$ (219,888,187)
Assumption Change ²	6/30/16	\$ 19,238,347	20	\$ 1,925,414	16	\$ 17,583,690
SADB	6/30/16	\$ 20,783,169	15	\$ 2,458,219	11	\$ 17,820,227
SADB Sanitation Retirees	6/30/16	\$ 34,163,423	5	\$ 10,433,043	1	\$ 9,426,171
SADB Sanitation Actives	6/30/16	\$ 4,530,309	11	\$ 667,208	7	\$ 3,476,168
(Gain)/Loss	6/30/17	\$ (26,089,812)	15	\$ (2,117,957)	12	\$ (23,694,926)
COVSF Escalation Offset	6/30/17	\$ 1,497,838	19	\$ 154,027	16	\$ 1,406,644
Assumption Change ³	6/30/17	\$ (988,954,970)	20	\$ (98,121,022)	17	\$ (934,187,887)
Method Change ³	6/30/17	\$ 816,476,035	20	\$ 81,105,543	17	\$ 771,260,622
Census Data Update	6/30/17	\$ 730,881,413	5	\$ 222,285,839	2	\$ 390,128,268
OTB - City of New York portion	6/30/17	\$ 53,833,920	15	\$ 6,367,440	12	\$ 48,892,289
OTB - State of New York portion	6/30/17	\$ 53,833,920	15	\$ 6,367,440	12	\$ 48,892,289
(Gain)/Loss	6/30/18	\$ (346,437,644)	15	\$ (38,953,294)	13	\$ (331,074,889)
(Gain)/Loss	6/30/19	\$ 120,225,130	15	\$ 16,479,183	14	\$ 120,225,130
Assumption Change ⁴	6/30/19	\$ (312,415,373)	20	\$ (31,197,928)	19	\$ (312,415,373)
Method Change ⁴	6/30/19	\$ (707,283,121)	20	\$ (67,616,079)	19	\$ (707,283,121)
OTB - State of New York Portion	6/30/19	\$ 24,657,612	15	\$ 2,916,486	14	\$ 24,657,612

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

² Change in Accidental rates for Tier 3 22-year plan members of Sanitation and Correction using a more empirical methodology.

³ 2019 A&M.

⁴ Revised 2021 A&M.

Graph III-3
Remaining UAL Amortizations as of June 30, 2019

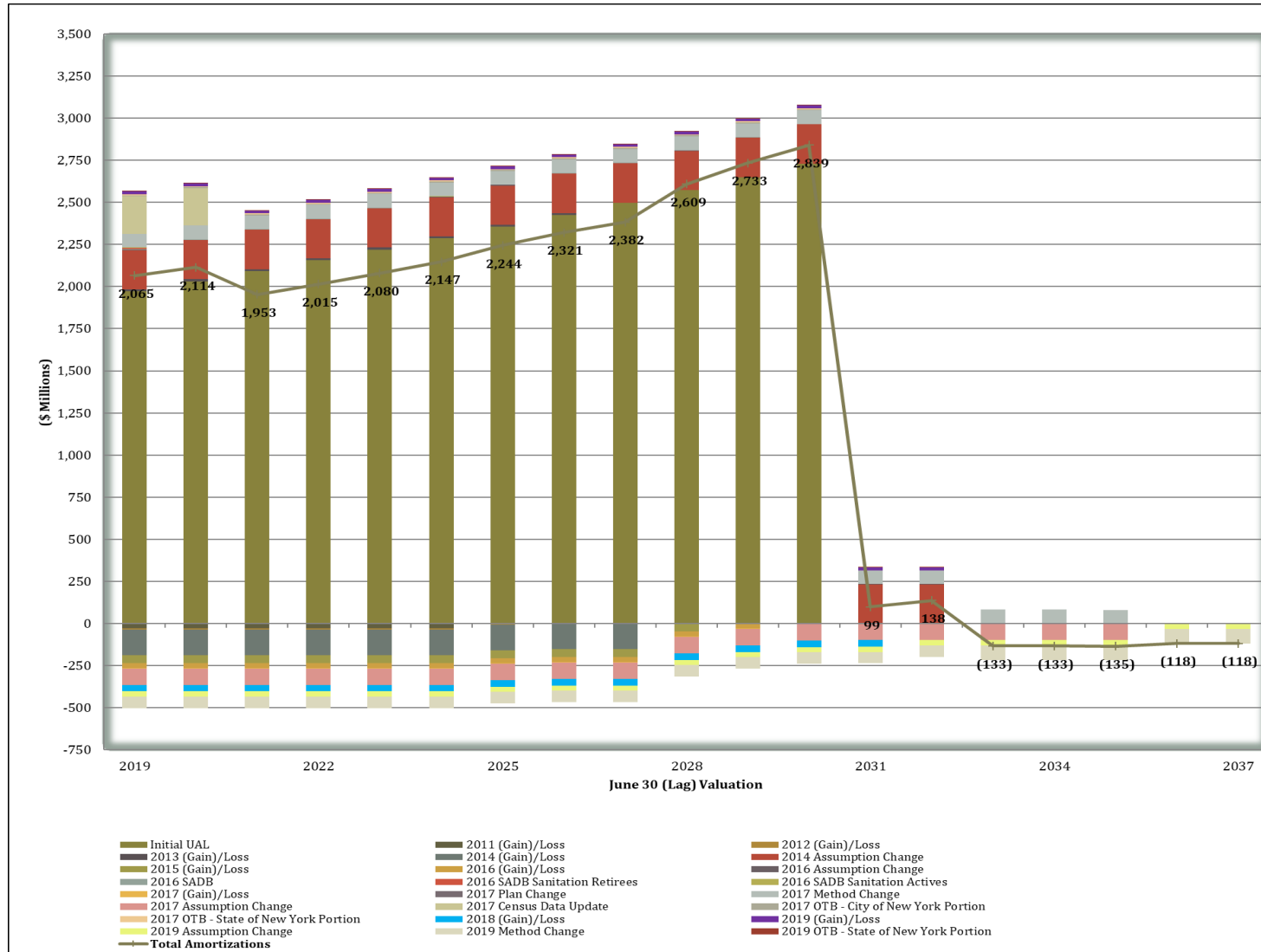


Table III-4
Reconciliation of Outstanding UAL Bases

June 30 (Lag) Valuation Date	Amounts (\$ Thousands) Remaining to be Amortized, as of									
	2010	2011	2012	2013	2014	2015	2016	2017 ¹	2018	2019
Unfunded Accrued Liability, June 30, 2010	\$ 20,194,114	\$ 21,607,703	\$ 21,550,811	\$ 21,442,855	\$ 21,278,846	\$ 21,053,406	\$ 20,760,737	\$ 18,643,203	\$ 18,144,301	\$ 17,556,358
2010 ERI		7,140	7,640	5,919	4,078	2,108	0	0	0	0
2011 (Gain)/Loss		(250,821)	(268,378)	(256,477)	(243,742)	(230,117)	(215,537)	(171,257)	(154,565)	(136,705)
2012 (Gain)/Loss			(62,429)	(66,799)	(63,837)	(60,668)	(57,276)	(46,509)	(42,626)	(38,471)
2013 (Gain)/Loss				83,181	89,004	85,057	80,834	66,803	61,968	56,795
2013 Transit Refunds				320	342	265	183	0	0	0
2014 (Gain)/Loss					(1,302,740)	(1,393,931)	(1,332,117)	(1,117,015)	(1,046,244)	(970,520)
2014 Assumption Change					2,328,933	2,491,958	2,425,291	2,128,626	2,052,298	1,970,628
2015 (Gain)/Loss						(426,054)	(455,878)	(386,945)	(365,314)	(342,169)
2016 (Gain)/Loss							(256,449)	(245,076)	(232,908)	(219,888)
2016 Assumption Change							19,238	18,724	18,173	17,584
2016 SADB							20,783	19,862	18,875	17,820
2016 SADB Sanitation Retirees							34,163	26,469	18,236	9,426
2016 SADB Sanitation Actives							4,530	4,202	3,852	3,476
2017 (Gain)/Loss								(26,090)	(24,933)	(23,695)
2017 Removal of COVSF Escalation Offset								1,498	1,454	1,407
2017 Assumption Change								(988,955)	(962,498)	(934,188)
2017 Method Change								816,476	794,633	771,261
2017 Census Data Update								730,881	566,266	390,128
2017 OTB - City of New York portion								53,834	51,447	48,892
2017 OTB - State of New York portion								53,834	51,447	48,892
2018 (Gain)/Loss									(346,438)	(331,075)
2019 (Gain)/Loss										120,225
2019 Assumption Change										(312,415)
2019 Method Change										(707,283)
2019 OTB - State of New York Portion										24,658
Sum of Outstanding Amortization Amounts	\$ 20,194,114	\$ 21,364,022	\$ 21,227,644	\$ 21,208,999	\$ 22,090,883	\$ 21,522,025	\$ 21,028,502	\$ 19,582,565	\$ 18,607,424	\$ 17,021,141

June 30 (Lag) Valuation Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Accrued Liability (AL)	\$ 62,935,267	\$ 65,269,251	\$ 67,417,018	\$ 70,028,252	\$ 74,123,437	\$ 76,678,220	\$ 79,081,183	\$ 82,462,951	\$ 85,845,125	\$ 89,230,196
2. Actuarial Value of Assets (AVA)	40,433,344	42,409,059	44,676,721	47,282,884	50,505,971	53,573,694	56,491,829	59,573,653	63,615,892	68,524,124
3. Unfunded Accrued Liability (UAL) (1. - 2.)	22,501,923	22,860,192	22,740,297	22,745,368	23,617,466	23,104,526	22,589,354	22,889,298	22,229,233	20,706,072
4. PV 1-year Adjusted Employer Contribution ²	2,307,809	1,397,601	1,411,790	1,433,172	1,424,839	1,474,561	1,446,072	3,246,879	3,561,964	3,601,896
5. PV Future Administrative Expense Reimbursement	0	98,569	100,863	103,197	101,743	107,940	114,780	59,854	59,845	83,035
6. Adjusted UAL (3. - 4. - 5.)	\$ 20,194,114	\$ 21,364,022	\$ 21,227,644	\$ 21,208,999	\$ 22,090,884	\$ 21,522,025	\$ 21,028,502	\$ 19,582,565	\$ 18,607,424	\$ 17,021,141

¹ Beginning at June 30, 2017, amounts remaining to be amortized have been reduced by the prior valuation year's amortization payments. When considered with (2) below, this change has no effect.

² Beginning at June 30, 2017, the PV 1-year Adjusted Employer Contribution includes amounts used to pay UAL bases and one year of administrative expenses. When considered with (1) above, this change has no effect.

Table III-5
Actuarial and Statutory Contribution History

Table III-5 compares the Statutory Contributions to the Actuarial Contributions for Fiscal Years 2012 through 2021.

(\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Contribution Certified	Statutory Contribution Contributed	Percentage of Actuarial Contribution Contributed
2012	3,017,004	3,017,004	100.0%
2013	3,046,845	3,046,845	100.0%
2014	3,114,068	3,114,068	100.0%
2015	3,160,258	3,160,258	100.0%
2016	3,365,454	3,365,454	100.0%
2017	3,328,193	3,328,193	100.0%
2018	3,377,024	3,377,024	100.0%
2019	3,694,365	3,681,747	99.7%
2020	3,726,701	3,713,825	99.7%
2021	3,762,898	3,762,898	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 2012 through 2021.

CITY RATES (\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Contribution	Salary ¹ at Beginning of Fiscal Year	City Rate
2012	3,017,004	11,813,062	25.5%
2013	3,046,845	11,955,093	25.5%
2014	3,114,068	12,183,011	25.6%
2015	3,160,258	12,314,958	25.7%
2016	3,365,454	12,336,979	27.3%
2017	3,328,193	12,555,242	26.5%
2018	3,377,024	12,834,130	26.3%
2019	3,694,365	13,845,279	26.7%
2020	3,726,701	14,164,068	26.3%
2021	3,762,898	14,784,245	25.5%

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

SECTION IV - RESULTS BY CONTRIBUTING ENTITY

Table IV-1
Employer Contributions by Obligor: Transit Authority and Housing Authority

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM							
SUMMARY OF EMPLOYER CONTRIBUTION BY OBLIGOR: TRANSIT AUTHORITY AND HOUSING AUTHORITY							
Valuation Date	June 30, 2019 (Lag)						
Fiscal Year	2021						
Obligor	NYC Transit Authority: CP Engineers	NYC Transit Authority: Transit Police	NYC Transit Authority: Others	NYC Transit Authority Subtotal	NYC Housing Authority: Housing Police	NYC Housing Authority: Others	NYC Housing Authority Subtotal
Contribution							
1. Normal Cost	\$ 7,806,893	\$ 0	\$ 392,159,379	\$ 399,966,272	\$ 0	\$ 51,414,877	\$ 51,414,877
2. Amortization of Unfunded Accrued Liability	21,382,046	23,570,587	358,419,840	403,372,473	10,253,202	94,497,800	104,751,002
3. Administrative Expenses	510,905	0	20,646,371	21,157,276	0	3,719,091	3,719,091
4. Interest on Late Employer Contributions	0	0	0	0	0	0	0
5. Actuarial Contribution (1. + 2. + 3. + 4.)	\$ 29,699,844	\$ 23,570,587	\$ 771,225,590	\$ 824,496,021	\$ 10,253,202	\$ 149,631,768	\$ 159,884,970

Table IV-2
Employer Contributions by Obligor: All

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM							
SUMMARY OF EMPLOYER CONTRIBUTION BY OBLIGOR							
Valuation Date	June 30, 2019 (Lag)						
Fiscal Year	2021						
Obligor	NYC Transit Authority Subtotal	NYC Housing Authority Subtotal	NYC Health and Hospitals Corporation	Triborough Bridge and Tunnel Authority	NYC Off-Track Betting Corporation	NYC Housing Development Corporation	NYC School Construction Authority
Contribution							
1. Normal Cost	\$ 399,966,272	\$ 51,414,877	\$ 217,120,083	\$ 12,667,915	\$ 0	\$ 954,890	\$ 780,210
2. Amortization of Unfunded Accrued Liability	403,372,473	104,751,002	272,407,532	21,676,461	25,528,497	1,237,176	2,990,231
3. Administrative Expenses	21,157,276	3,719,091	14,230,168	753,849	0	60,997	51,900
4. Interest on Late Employer Contributions	0	0	0	0	0	0	0
5. Actuarial Contribution (1. + 2. + 3. + 4.)	<u>\$ 824,496,021</u>	<u>\$ 159,884,970</u>	<u>\$ 503,757,783</u>	<u>\$ 35,098,225</u>	<u>\$ 25,528,497</u>	<u>\$ 2,253,063</u>	<u>\$ 3,822,341</u>
Obligor	State Judiciary Employees	NYC Municipal Water Authority	CUNY Senior Colleges	Correction	Sanitation	All Others (i.e. New York City)	Total
Contribution							
1. Normal Cost	\$ 0	\$ 98,209	\$ 24,091,662	\$ 241,016,309	\$ 122,280,681	\$ 535,341,443	\$ 1,605,732,551
2. Amortization of Unfunded Accrued Liability	1,411,146	95,907	15,669,789	253,045,750	131,544,062	831,530,872	\$ 2,065,260,898
3. Administrative Expenses	0	7,284	1,648,886	5,778,993	4,669,836	39,826,538	\$ 91,904,818
4. Interest on Late Employer Contributions	0	0	0	0	0	0	0
5. Actuarial Contribution (1. + 2. + 3. + 4.)	<u>\$ 1,411,146</u>	<u>\$ 201,400</u>	<u>\$ 41,410,337</u>	<u>\$ 499,841,052</u>	<u>\$ 258,494,579</u>	<u>\$ 1,406,698,853</u>	<u>\$ 3,762,898,267</u>

Table IV-3
Accrued Liabilities by Obligor: Transit Authority and Housing Authority

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM							
SUMMARY OF LIABILITY BY STATUS AND OBLIGOR: TRANSIT AUTHORITY AND HOUSING AUTHORITY							
Valuation Date	June 30, 2019 (Lag)						
Fiscal Year	2021						
Obligor	NYC Transit Authority: CP Engineers	NYC Transit Authority: Transit Police	NYC Transit Authority: Others	NYC Transit Authority Subtotal	NYC Housing Authority: Housing Police	NYC Housing Authority: Others	NYC Housing Authority Subtotal
Accrued Liability							
1. Active Members	\$ 316,050,755	\$ 0	\$ 8,081,002,650	\$ 8,397,053,405	\$ 0	\$ 1,724,771,361	\$ 1,724,771,361
2. Active Off Payroll Members ¹	676,261	0	111,213,328	111,889,589	0	26,290,918	26,290,918
3. Terminated Vested Members	13,643,994	0	223,762,040	237,406,034	0	161,552,845	161,552,845
4. Retirees and Beneficiaries	432,228,767	473,034,387	10,850,880,599	11,756,143,753	211,329,378	2,476,034,363	2,687,363,741
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 762,599,777	\$ 473,034,387	\$ 19,266,858,617	\$ 20,502,492,781	\$ 211,329,378	\$ 4,388,649,487	\$ 4,599,978,865
6. Actuarial Adjustments ²	34,174	47,777,665	34,614,111	82,425,950	32,584,344	249,663	32,834,007
7. Total Accrued Liability (5. + 6.)	\$ 762,633,951	\$ 520,812,052	\$ 19,301,472,728	\$ 20,584,918,731	\$ 243,913,722	\$ 4,388,899,150	\$ 4,632,812,872
Present Value of Future Benefits							
1. Active Members	\$ 376,543,566	\$ 0	\$ 12,817,460,010	\$ 13,194,003,576	\$ 0	\$ 2,321,807,074	\$ 2,321,807,074
2. Active Off Payroll Members ¹	676,261	0	111,213,328	111,889,589	0	26,290,918	26,290,918
3. Terminated Vested Members	13,643,994	0	223,762,040	237,406,034	0	161,552,845	161,552,845
4. Retirees and Beneficiaries	432,228,767	473,034,387	10,850,880,599	11,756,143,753	211,329,378	2,476,034,363	2,687,363,741
5. Present Value of Benefits (1. to 4.)	\$ 823,092,588	\$ 473,034,387	\$ 24,003,315,977	\$ 25,299,442,952	\$ 211,329,378	\$ 4,985,685,200	\$ 5,197,014,578
6. Actuarial Adjustments ²	34,174	47,777,665	34,614,111	82,425,950	32,584,344	249,663	32,834,007
7. Total Present Value of Future Benefits (5. + 6.)	\$ 823,126,762	\$ 520,812,052	\$ 24,037,930,088	\$ 25,381,868,902	\$ 243,913,722	\$ 4,985,934,863	\$ 5,229,848,585

¹ Represents members no longer on payroll, but not otherwise classified.

² Includes unfunded VSF liability and other actuarial loading adjustments.

**Table IV-4
Accrued Liabilities by Obligor: All**

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM							
SUMMARY OF LIABILITY BY STATUS AND OBLIGOR							
Valuation Date	June 30, 2019 (Lag)						
Fiscal Year	2021						
Obligor	NYC Transit Authority Subtotal	NYC Housing Authority Subtotal	NYC Health and Hospitals Corporation	Triborough Bridge and Tunnel Authority	NYC Off-Track Betting Corporation	NYC Housing Development Corporation	NYC School Construction Authority
Accrued Liability							
1. Active Members	\$ 8,397,053,405	\$ 1,724,771,361	\$ 4,866,033,483	\$ 347,400,073	\$ 0	\$ 23,085,799	\$ 31,179,408
2. Active Off Payroll Members ¹	111,889,589	26,290,918	59,509,789	6,574,030	541,520	224,713	34,677
3. Terminated Vested Members	237,406,034	161,552,845	432,692,809	18,129,622	30,219,909	1,947,984	1,747,746
4. Retirees and Beneficiaries	11,756,143,753	2,687,363,741	6,691,632,395	592,929,138	275,726,215	16,865,827	27,049,838
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 20,502,492,781	\$ 4,599,978,865	\$ 12,049,868,476	\$ 965,032,863	\$ 306,487,644	\$ 42,124,323	\$ 60,011,669
6. Actuarial Adjustments ²	82,425,950	32,834,007	773,938	23,228,725	122,448,762	14,446	244,739
7. Total Accrued Liability (5. + 6.)	\$ 20,584,918,731	\$ 4,632,812,872	\$ 12,050,642,414	\$ 988,261,588	\$ 428,936,406	\$ 42,138,769	\$ 60,256,408
Present Value of Future Benefits							
1. Active Members	\$ 13,194,003,576	\$ 2,321,807,074	\$ 7,336,567,126	\$ 481,107,402	\$ 0	\$ 33,794,472	\$ 37,848,653
2. Active Off Payroll Members ¹	111,889,589	26,290,918	59,509,789	6,574,030	541,520	224,713	34,677
3. Terminated Vested Members	237,406,034	161,552,845	432,692,809	18,129,622	30,219,909	1,947,984	1,747,746
4. Retirees and Beneficiaries	11,756,143,753	2,687,363,741	6,691,632,395	592,929,138	275,726,215	16,865,827	27,049,838
5. Present Value of Benefits (1. to 4.)	\$ 25,299,442,952	\$ 5,197,014,578	\$ 14,520,402,119	\$ 1,098,740,192	\$ 306,487,644	\$ 52,832,996	\$ 66,680,914
6. Actuarial Adjustments ²	82,425,950	32,834,007	773,938	23,228,725	122,448,762	14,446	244,739
7. Total Present Value of Future Benefits (5. + 6.)	\$ 25,381,868,902	\$ 5,229,848,585	\$ 14,521,176,057	\$ 1,121,968,917	\$ 428,936,406	\$ 52,847,442	\$ 66,925,653
Obligor	State Judiciary Employees	NYC Municipal Water Authority	CUNY Senior Colleges	Correction	Sanitation	All Others (i.e. New York City)	Total
Accrued Liability							
1. Active Members	\$ 0	\$ 3,071,792	\$ 536,806,477	\$ 2,482,394,063	\$ 2,211,023,163	\$ 15,440,952,609	\$ 36,063,771,633
2. Active Off Payroll Members ¹	0	6,797	7,378,009	73,549,461	28,094,657	271,287,150	585,381,310
3. Terminated Vested Members	0	388,146	36,005,242	99,884,869	13,238,522	1,108,708,888	2,141,922,616
4. Retirees and Beneficiaries	12,513,574	649,100	455,330,558	6,553,387,467	4,191,901,703	15,851,832,996	49,113,326,305
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 12,513,574	\$ 4,115,835	\$ 1,035,520,286	\$ 9,209,215,860	\$ 6,444,258,045	\$ 32,672,781,643	\$ 87,904,401,864
6. Actuarial Adjustments ²	51,264	0	5,863,378	957,392,516	93,801,265	6,714,892	1,325,793,882
7. Total Accrued Liability (5. + 6.)	\$ 12,564,838	\$ 4,115,835	\$ 1,041,383,664	\$ 10,166,608,376	\$ 6,538,059,310	\$ 32,679,496,535	\$ 89,230,195,746
Present Value of Future Benefits							
1. Active Members	\$ 0	\$ 4,389,033	\$ 829,583,761	\$ 5,003,523,383	\$ 3,603,347,855	\$ 22,400,769,640	\$ 55,246,741,975
2. Active Off Payroll Members ¹	0	6,797	7,378,009	73,549,461	28,094,657	271,287,150	585,381,310
3. Terminated Vested Members	0	388,146	36,005,242	99,884,869	13,238,522	1,108,708,888	2,141,922,616
4. Retirees and Beneficiaries	12,513,574	649,100	455,330,558	6,553,387,467	4,191,901,703	15,851,832,996	49,113,326,305
5. Present Value of Benefits (1. to 4.)	\$ 12,513,574	\$ 5,433,076	\$ 1,328,297,570	\$ 11,730,345,180	\$ 7,836,582,737	\$ 39,632,598,674	\$ 107,087,372,206
6. Actuarial Adjustments ²	51,264	0	5,863,378	1,148,904,830	93,801,265	6,714,892	1,517,306,196
7. Total Present Value of Future Benefits (5. + 6.)	\$ 12,564,838	\$ 5,433,076	\$ 1,334,160,948	\$ 12,879,250,010	\$ 7,930,384,002	\$ 39,639,313,566	\$ 108,604,678,402

¹ Represents members no longer on payroll, but not otherwise classified.

² Includes unfunded VSF liability and other actuarial loading adjustments.

Table IV-5
Participant Data by Obligor: Transit Authority and Housing Authority

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM							
SUMMARY OF PARTICIPANT DATA BY OBLIGOR: TRANSIT AUTHORITY AND HOUSING AUTHORITY							
Valuation Date	June 30, 2019 (Lag)						
Fiscal Year	2021						
Obligor	NYC Transit Authority: CP Engineers	NYC Transit Authority: Transit Police	NYC Transit Authority: Others	NYC Transit Authority Subtotal	NYC Housing Authority: Housing Police	NYC Housing Authority: Others	NYC Housing Authority Subtotal
Participant Data							
1. Active Members							
a. Number	767	0	39,998	40,765	0	8,831	8,831
b. Annual Salary ¹	\$ 83,283,061	\$ 0	\$ 3,365,577,829	\$ 3,448,860,890	\$ 0	\$ 606,251,360	\$ 606,251,360
c. Average Salary	\$ 108,583	\$ 0	\$ 84,144	\$ 84,603	\$ 0	\$ 68,650	\$ 68,650
2. Active Off Payroll Members ²	45	0	4,670	4,715	0	1,472	1,472
3. Terminated Vested Members	78	0	2,131	2,209	0	1,755	1,755
4. Retirees and Beneficiaries							
a. Number	1,058	1,895	32,579	35,532	809	9,744	10,553
b. Total Annual Benefits	\$ 45,136,488	\$ 64,170,221	\$ 1,124,474,476	\$ 1,233,781,185	\$ 30,556,111	\$ 245,635,231	\$ 276,191,342
c. Average Annual Benefit	\$ 42,662	\$ 33,863	\$ 34,515	\$ 34,723	\$ 37,770	\$ 25,209	\$ 26,172

¹ Salaries shown are base salary 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.

² Represents members no longer on payroll, but not otherwise classified.

Table IV-6
Participant Data by Obligor: All

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM							
SUMMARY OF PARTICIPANT DATA BY OBLIGOR							
Valuation Date	June 30, 2019 (Lag)						
Fiscal Year	2021						
Obligor	NYC Transit Authority Subtotal	NYC Housing Authority Subtotal	NYC Health and Hospitals Corporation	Triborough Bridge and Tunnel Authority	NYC Off-Track Betting Corporation	NYC Housing Development Corporation	NYC School Construction Authority
Participant Data							
1. Active Members							
a. Number	40,765	8,831	29,830	1,252	0	92	66
b. Annual Salary ¹	\$ 3,448,860,890	\$ 606,251,360	\$ 2,319,668,594	\$ 122,885,470	\$ 0	\$ 9,943,129	\$ 8,460,122
c. Average Salary	\$ 84,603	\$ 68,650	\$ 77,763	\$ 98,151	\$ 0	\$ 108,077	\$ 128,184
2. Active Off Payroll Members ²	4,715	6,418	209	99	10	1	1
3. Terminated Vested Members	2,209	1,755	4,531	108	329	10	10
4. Retirees and Beneficiaries							
a. Number	35,532	10,553	25,688	1,452	1,152	38	51
b. Total Annual Benefits	\$ 1,233,781,185	\$ 276,191,342	\$ 668,536,077	\$ 58,036,500	\$ 29,366,368	\$ 1,591,783	\$ 2,503,315
c. Average Annual Benefit	\$ 34,723	\$ 26,172	\$ 26,025	\$ 39,970	\$ 25,492	\$ 41,889	\$ 49,085
Obligor	State Judiciary Employees	NYC Municipal Water Authority	CUNY Senior Colleges	Correction	Sanitation	All Others (i.e. New York City)	Total
Participant Data							
1. Active Members							
a. Number	0	11	4,520	10,022	7,783	88,329	191,501
b. Annual Salary ¹	\$ 0	\$ 1,187,305	\$ 268,785,885	\$ 942,037,154	\$ 761,232,957	\$ 6,492,148,309	14,981,461,175
c. Average Salary	\$ 0	\$ 107,937	\$ 59,466	\$ 93,997	\$ 97,807	\$ 73,500	\$ 78,232
2. Active Off Payroll Members ²	2	1	1,541	1,916	382	14,507	31,273
3. Terminated Vested Members	0	1	523	496	201	11,615	21,788
4. Retirees and Beneficiaries							
a. Number	70	1	2,217	12,595	11,012	56,792	157,153
b. Total Annual Benefits	\$ 2,313,986	\$ 64,622	\$ 47,080,403	\$ 654,957,623	\$ 426,875,049	\$ 1,618,033,135	\$ 5,019,331,388
c. Average Annual Benefit	\$ 33,057	\$ 64,622	\$ 21,236	\$ 52,001	\$ 38,765	\$ 28,491	\$ 31,939

¹ Salaries shown are base salary 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.

² Represents members no longer on payroll, but not otherwise classified.

SECTION V - (GAIN)/LOSS ANALYSIS

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

Table V-1 develops the asset and liability (Gain)/Loss between the June 30, 2018 (Lag) actuarial valuation and the June 30, 2019 (Lag) actuarial valuation.¹

DEVELOPMENT OF EXPERIENCE (GAIN) / LOSS		
June 30, 2019		
(\$ Thousands)		
1.	Expected Accrued Liability (AL)	
	a. AL at June 30, 2018	\$ 86,326,623
	b. Total Normal Cost and Administrative Expenses at June 30, 2018	2,130,964
	c. Interest on 1.a. and 1.b. to June 30, 2019	6,192,031
	d. Fiscal Year 2019 Benefit Payments	(5,258,806)
	e. Interest on 1.d. to June 30, 2019	<u>(180,945)</u>
	f. Expected AL at June 30, 2019	\$ 89,209,867
2.	Actual AL at June 30, 2019 before Revised 2021 A&M	\$ 89,923,966
3.	Expected Total Actuarial Value of Assets (AVA)	
	a. Total AVA at June 30, 2018	\$ 64,097,390
	b. Interest on 3.a. to June 30, 2019	4,486,817
	c. Total Contributions Paid in Fiscal Year 2019	4,230,678
	d. Interest on 3.c. to June 30, 2019	145,569
	e. Fiscal Year 2019 Benefit Payments	(5,258,806)
	f. Interest on 3.e. to June 30, 2019	<u>(180,945)</u>
	g. Expected Total AVA at June 30, 2019	\$ 67,520,703
4.	Actual Total AVA at June 30, 2019 before Revised 2021 A&M	\$ 68,114,577
5.	Liability (Gain) / Loss (2. - 1.f.)	\$ 714,099
6.	Actuarial Asset (Gain) / Loss (3.g. - 4.)	\$ (593,874)
7.	Total Actuarial (Gain) / Loss (5. + 6.)	\$ 120,225

¹ Includes results for Variable Supplements Funds.

SECTION VI - SCHEDULE OF FUNDING PROGRESS

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

Table VI-1
Schedule of Funding Progress

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM (\$ Thousands)						
June 30 (Lag) Valuation Date	(1) Actuarial Value of Assets (AVA)	(2) Accrued Liability (AL)	(3) Unfunded AL (UAL) (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Covered Payroll	(6) UAL as a % of Covered Payroll (3) / (5)
2010	\$40,433,344	\$62,935,267	\$22,501,923	64.2%	\$12,101,417	185.9%
2011	42,409,059	65,269,251	22,860,192	65.0%	12,233,573	186.9%
2012	44,676,721	67,417,018	22,740,297	66.3%	12,478,130	182.2%
2013	47,282,884	70,028,252	22,745,368	67.5%	12,642,483	179.9%
2014	50,505,971	74,123,437	23,617,466	68.1%	12,672,387	186.4%
2015	53,573,694	76,678,220	23,104,526	69.9%	12,917,467	178.9%
2016	56,491,829	79,081,183	22,589,354	71.4%	13,216,539	170.9%
2017	59,573,653	82,462,951	22,889,298	72.2%	14,065,242	162.7%
2018	63,615,892	85,845,125	22,229,233	74.1%	14,459,118	153.7%
2019	68,524,124	89,230,196	20,706,072	76.8%	14,981,461	138.2%

Salaries shown are base salaries plus assumed overtime paid and reflect the impact of recent labor contract settlements and certain non-union salary increases with retroactive effective dates, if any.

SECTION VII - VARIABLE SUPPLEMENTS FUNDS (VSF)

NYCERS administers the Correction Officers' Variable Supplements Fund (COVSF), Housing Police Officer's Variable Supplements Fund (HPOVSF), Housing Police Superior Officers' Variable Supplements Fund (HPSOVSF), Transit Police Officer's Variable Supplements Fund (TPOVSF), and the Transit Police Superior Officers' Variable Supplements Fund (TPSOVSF).

They operate pursuant to the provisions of Title 13, Chapter 1 of the Administrative Code of the City of New York (ACCNYS), and provide supplemental benefits as follows:

- COVSF: Retired Members of the Uniformed Correction Force (UCF). To be eligible to receive benefits, members of the UCF must retire, on or after July 1, 1999 with at least 20 or 25 years of service depending on the underlying plan, and be receiving a service retirement benefit from NYCERS.
- HPOVSF: NYCERS retirees who retired for service, with 20 or more years of service as Housing Police Officers and who retired on or after July 1, 1987.
- HPSOVSF: NYCERS retirees who retired for service, with 20 or more years of service as Housing Police Superior Officers and who retired on or after July 1, 1987.
- TPOVSF: NYCERS retirees who retired for service, with 20 or more years of service as Transit Police Officers and who retired on or after July 1, 1987.
- TPSOVSF: NYCERS retirees who retired for service, with 20 or more years of service as Transit Police Superior Officers and who retired on or after July 1, 1987.

Table VII-1
VSF Accrued Liability

(\$ Thousands)		
Valuation Date	June 30, 2019	June 30, 2018
COVSF		
Active	\$ 284,443	\$ 291,742
Retiree	<u>1,112,911</u>	<u>1,087,050</u>
Total	\$ 1,397,354	\$ 1,378,792
HPOVSF		
Active	\$ 0	\$ 0
Retiree	<u>12,980</u>	<u>14,254</u>
Total	\$ 12,980	\$ 14,254
HPSOVSF		
Active	\$ 0	\$ 0
Retiree	<u>19,604</u>	<u>20,612</u>
Total	\$ 19,604	\$ 20,612
TPOVSF		
Active	\$ 0	\$ 0
Retiree	<u>26,487</u>	<u>28,558</u>
Total	\$ 26,487	28,558
TPSOVSF		
Active	\$ 0	\$ 0
Retiree	<u>21,291</u>	<u>22,910</u>
Total	\$ 21,291	\$ 22,910
Total VSF AL	\$ 1,477,716	\$ 1,465,126

Table VII-2
VSF Member Data

VARIABLE SUPPLEMENTS FUNDS		
MEMBERS INCLUDED IN THE JUNE 30, 2019 (Lag) AND THE JUNE 30, 2018 (Lag) ACTUARIAL VALUATIONS		
	June 30, 2019	June 30, 2018
COVSF		
Actives		
Number	10,022	10,384
Average Age	39.2	38.9
Retirees		
Number	8,257	7,971
Average Age	59.1	58.4
HPOVSF		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	141	149
Average Age	76.1	75.1
HPSOVSF		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	209	212
Average Age	75.5	74.6
TPOVSF		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	282	294
Average Age	75.5	74.7
TPSOVSF		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	229	238
Average Age	75.8	75.0

Table VII-3
VSF Statement of Assets

(\$ Thousands)				
Valuation Date	June 30, 2019 ¹		June 30, 2018 ²	
	MVA ³	AVA	MVA ⁴	AVA
COVSF	\$ 465,027	\$ 465,027	\$ 449,771	\$ 481,498
HPOVSF	0	0	0	0
HPSOVSF	0	0	0	0
TPOVSF	0	0	0	0
TPSOVSF	0	0	0	0
TOTAL	\$ 465,027	\$ 465,027	\$ 449,771	\$ 481,498

¹ The COVSF assets include preliminary SKIM amounts determined by the Actuary in a letter dated August 29, 2019 to the Comptroller's Office. AVA was restarted to equal MVA in the Revised 2021 A&M.

² The COVSF assets include preliminary SKIM amounts determined by the Actuary in a letter dated September 7, 2018 to the Comptroller's Office.

³ Includes Accrued Benefits Payable of \$48,799,000 for COVSF.

⁴ Includes Accrued Benefits Payable of \$47,529,000 for COVSF.

Table VII-4
Development of COVSF Actuarial Value of Assets

(\$ Thousands)		
Valuation Date	June 30, 2019 ¹	June 30, 2018
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY) ²	\$ 449,771	\$ 332,683
b. End of Year (EOY) ³	\$ 465,027	\$ 449,771
2. Contributions		
a. Employee	\$ 0	\$ 0
b. Employer	0	0
c. Total Contributions	\$ 0	\$ 0
3. Benefit Payments and Other Cash Flow	\$ (94,460)	\$ (90,177)
4. Preliminary Transferable Earnings from NYCERS to COVSF - EOY ⁴	\$ 103,412	\$ 205,000
5. Net Cash Flow (2.c. + 3. + 4.)	\$ 8,952	\$ 114,823
6. Net Investment Income		
a. Investment Income	\$ 6,304	\$ 2,265
b. Investment Expenses	0	0
c. Total Net Investment Income	\$ 6,304	\$ 2,265
7. Average Invested Assets		
a. AVA @ BOY	N/A	\$ 353,442
b. 1/2 Net Cash Flow before SKIM ((2.c. + 3.) / 2)	N/A	(45,089)
c. Total	N/A	\$ 308,353
8. Expected Rate of Return (AIR)	7.00%	7.00%
9. Expected Investment Return (EIR) (7.c. x 8.) ⁵	\$ 6,304	\$ 21,585
10. Unexpected Investment Return (UIR) (6.c. - 9.)	\$ 0	\$ (19,320)
11. Preliminary AVA @ EOY		
a. AVA @ BOY ⁵	N/A	\$ 353,442
b. Net Cash Flow (5.)	N/A	114,823
c. Expected Investment Return (9.)	N/A	21,585
d. Phase in of UIR ⁶		
20%/15% * UIR for prior year	N/A	(2,898)
20%/15% * UIR for second prior year	N/A	(743)
20%/15% * UIR for third prior year	N/A	(1,603)
20%/15% * UIR for fourth prior year	N/A	(2,027)
20%/20% * UIR for fifth prior year	N/A	(555)
0%/20% * UIR for sixth prior year	N/A	(525)
Total	N/A	\$ (8,351)
e. AVA (11.a. + 11.b. + 11.c. + 11.d.)	N/A	\$ 481,498
12. Final AVA at EOY (11.e.)	\$ 465,027	\$ 481,498

¹ Calculations reflect the "Revised 2021 A&M," the actuarial assumptions and methods proposed in a memo dated July 27, 2021 and adopted by the Board at the August 12, 2021 Board meeting.

² Includes Accrued Benefits Payable for 6/30/2018 of \$47,529,000 and Accrued Benefits Payable for 6/30/2017 of \$44,519,000.

³ Includes Accrued Benefits Payable for 6/30/2019 of \$48,799,000 and Accrued Benefits Payable for 6/30/2018 of \$47,529,000.

⁴ Reflects preliminary SKIM amounts as determined by the Actuary in a letter dated August 29, 2019 for 6/30/2019 and a letter dated September 7, 2018 for 6/30/2018 to the Comptroller's Office.

⁵ Due to the "Revised 2021 A&M," AVA has been restarted by setting it equal to the MVA as of June 30, 2019 and Actual Investment Return rather than Expected Investment Return is used in the June 30, 2019 calculations.

⁶ Due to the "Revised 2021 A&M," the recognition of future asset performance has been changed from the previous six-year period, from 15% for the first four years and 20% for the last two years, to a five-year period at 20% per year.

Table VII-5
SKIM Calculation as of June 30, 2019

(\$ Thousands)	Preliminary
Total NYCERS Pension Fund	
1. FY2019 Equity Earnings	\$ 2,480,022
2. FY2019 Hypothetical Earnings	\$ 1,294,236
3. FY2019 Excess Earnings (1. - 2.)	\$ 1,185,786
4. Deficit at June 30, 2018	\$ 0
5. Hypothetical Interest Rate (HIR)	3.148%
6. Deficit with interest (4. x (1+HIR))	\$ 0
7. Potential SKIM (3. - 6.), not less than zero	\$ 1,185,786
	COVSF
Allocations to VSF	
8. Allocation Percentage	6.353%
9. Potential SKIM (7. x 8.)	\$ 75,333
10. Accumulated Benefit Obligation	\$ 1,391,513
11. MVA Prior to SKIM	\$ 390,027
12. ABO Gate = (10. - 11.), not less than zero	\$ 1,001,486
13. SKIM Payable (Lesser of 9. and 12., not less than zero)	\$ 75,333
14. Rounded Estimate, for FY19 Financial Statements ¹	\$ 75,000

¹ Included in MVA at June 30, 2019.

Summary of VSF Plan Provisions

A. Eligibility

Service Retirement with at least 20 or 25 years of allowable service, depending on the underlying plan, on or after July 1, 1999 for COVSF and on or after July 1, 1987 for HPOVSF, HPSOVSF, TPOVSF, and TPSOVSF. 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. COVSF payments prior to Calendar Year 2019 are only paid if the assets in the COVSF are sufficient to pay the full amount due to all eligible retirees.

C. Cost-of-Living Benefits

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

D. Form of Payment

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

Summary of VSF Actuarial Assumptions and Methods

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

1. **COLA:** 1.5% per year for Auto COLA, used to estimate future COLA on the first \$18,000 of NYCERS benefits which, in general, reduces benefits payable by the Fund until age 62.
2. **Actuarial Asset Valuation Method:** Information on the Market Value of Assets (MVA) of the Variable Supplements Funds (VSF) is provided by the Office of the Comptroller. The same Actuarial Asset Valuation Method (AAVM) is used to determine the Actuarial Value of Assets (AVA) of the COVSF, HPOVSF, HPSOVSF, TPOVSF, and TPSOVSF (referred to collectively as the NYCERS VSFs) as is used to determine the AVA of the Plan, except there is no corridor of 80% to 120% of the MVA for the VSFs. For more information, see SECTION II – MARKET AND ACTUARIAL VALUES OF ASSETS.
3. **Liability Method:** The obligations of NYCERS to the NYCERS VSFs are recognized through a methodology where the PV of future VSF transfers from NYCERS to the NYCERS VSFs is included directly as an actuarial liability of NYCERS. This amount is computed as the excess, if any, of the PV of benefits of each individual NYCERS VSF over the AVA of the respective, individual NYCERS VSF. Under EAN, a portion of the PV of future VSF transfers is reflected in the PV of future normal costs and a portion is reflected in the UAL.
4. **SKIM Calculation:** The ACCNY provides that NYCERS transfer to COVSF a portion of the amount by which earnings on equity investments of NYCERS 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 Notes 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

Under Chapter 255 of the Laws of 2000, NYCERS is required to make transfers to HPOVSF, HPSOVSF, TPOVSF, and TPSOVSF sufficient to meet their annual benefit payments.

SECTION VIII - RISK AND UNCERTAINTY

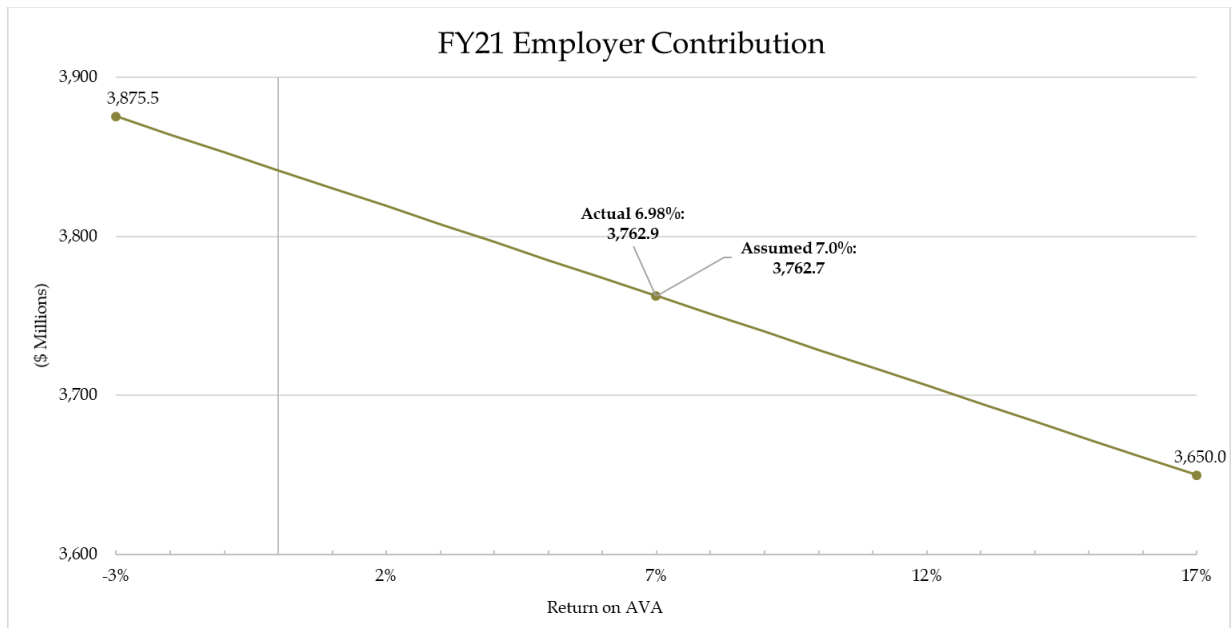
The funded status of NYCERS depends highly on the realization of the actuarial assumptions used, as well as certain demographic characteristics of the Plan and other exogenous factors. Risks faced by the Plan are described in this Section. These risks have been separated, based on the Actuary's professional judgement, into high, medium, and other risks.

High Risk Types

Investment Risk: The Risk of Not Realizing Expected Returns

The most substantial risk for most pension systems, NYCERS included, is the risk of investment returns being less than assumed. Generally speaking, as risk-free investment return rates have fallen in recent decades, more aggressive asset allocations have been taken to achieve long-term rates of return commensurate with the actuarial assumption of 7.0%.

The graph below illustrates the potential FY21 employer contributions if the annual investment returns had differed from the actual rate, by up to 10%.¹

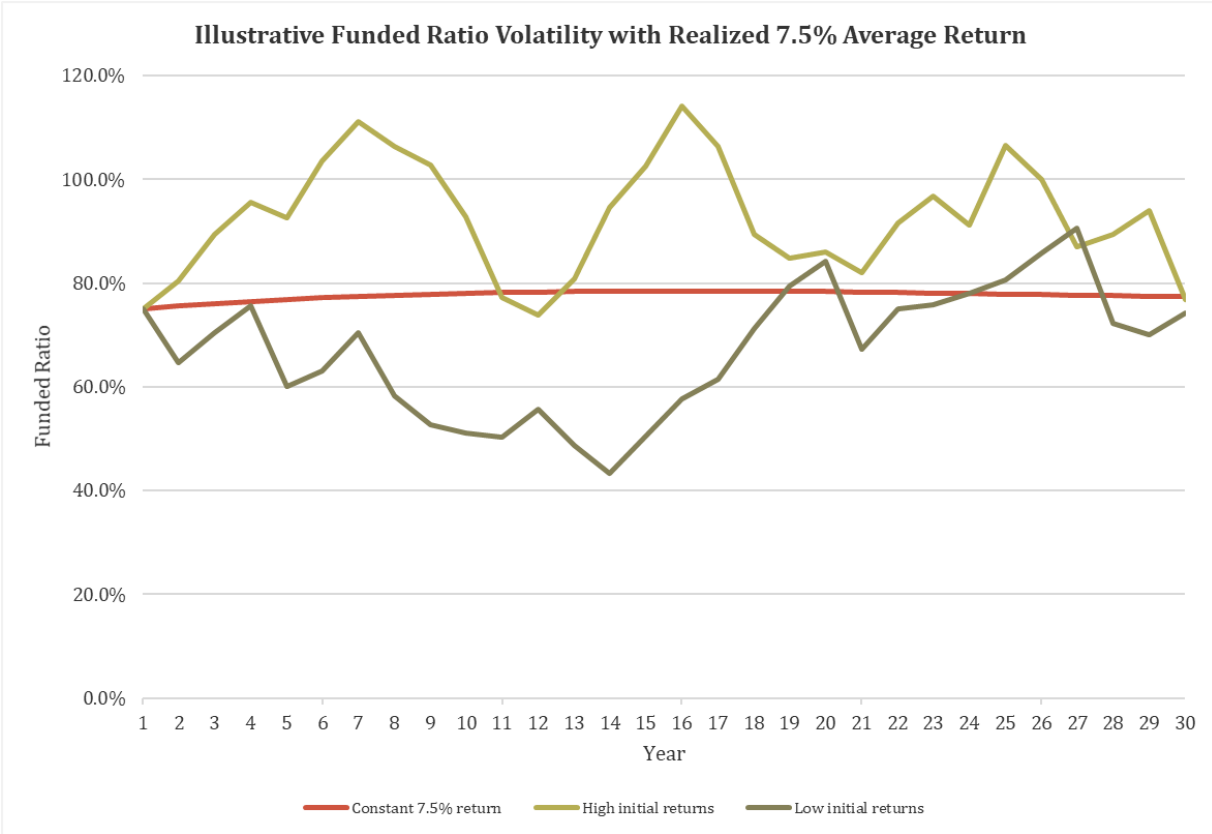
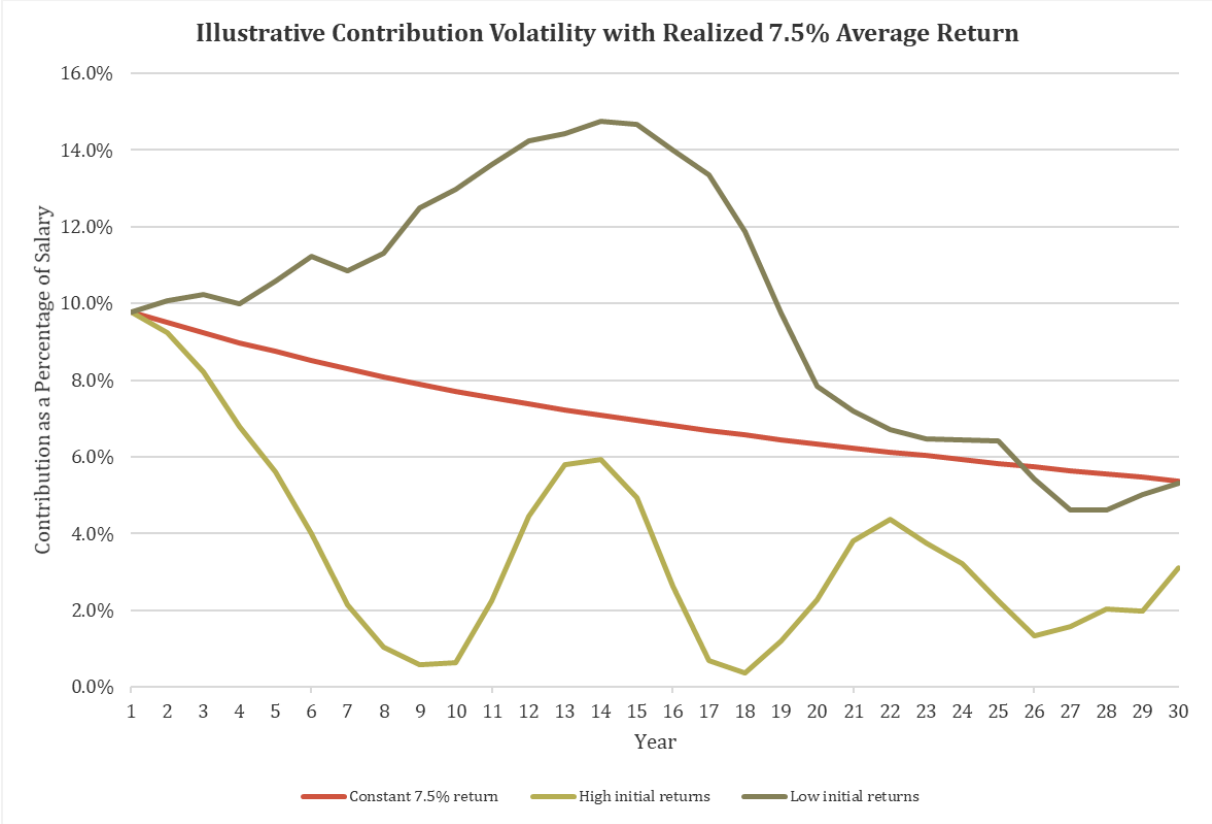


Investment Risk: The Risk of Volatile of Realized Returns

Even when long-term investment returns meet actuarial assumptions, investment return volatility can contribute substantially to contribution and funded status volatility. While not yet available specifically for the Plan at this time, recent research demonstrates this volatility based on a sample public plan with typical characteristics, a typical contribution policy, and a long-term return assumption of 7.5%, which can be realized in different patterns.²

¹ The actual rate of return displayed in this graph is calculated as the overall rate of return for NYCERS when combining the Plan and the VSFs together.

² Yin, Yimeng; Boyd, Don. Pension Simulation Project. *The Nelson A. Rockefeller Institute of Government*.

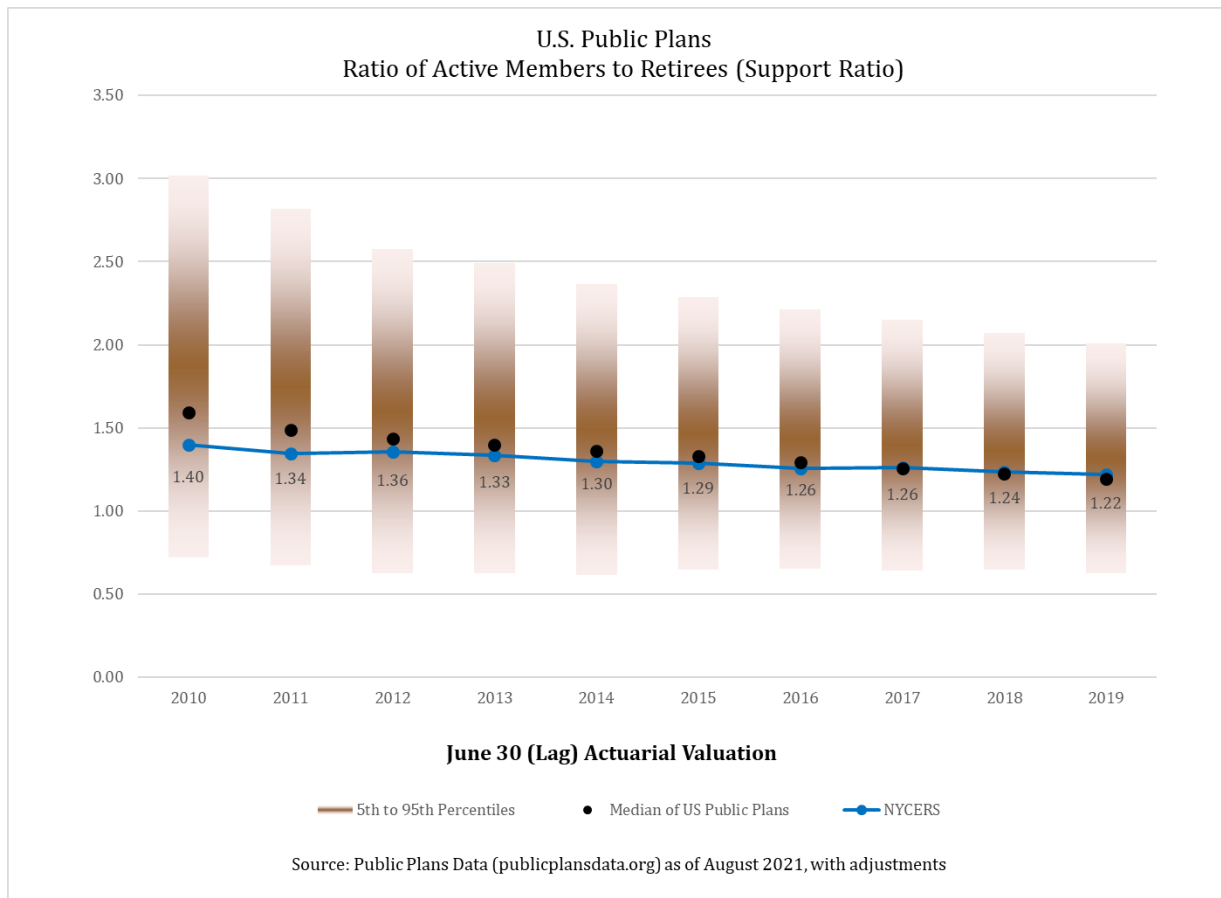


Maturity Risk: The Risk of Demographic Imbalance

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. 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 NYCERS, this ratio has been steadily declining in recent years, meaning that fewer active workers exist to support pensioner payments.

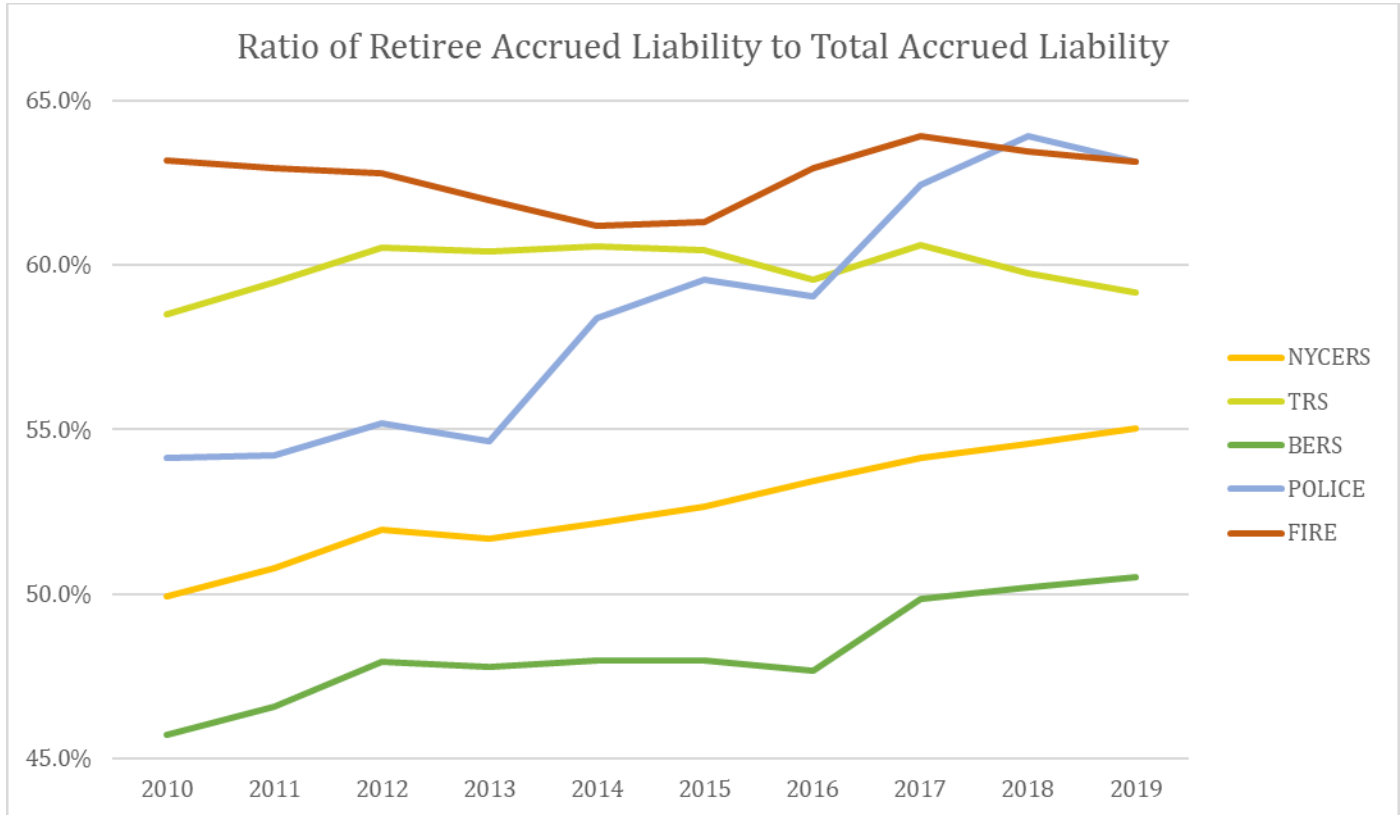


The chart above shows U.S. public pension plan Support Ratios in comparison to the Plan's. The median Support Ratio amongst U.S. public pensions has declined from 1.60 in the 2010 valuation year to 1.19 in the 2019 valuation year. Over that same period, the Plan's Support Ratio declined from 1.40 to 1.22, meaning fewer active workers exist to support guaranteed pensioner payments.

Because the Plan's Support Ratio is above the median in recent years, NYCERS' contributions for active members form a larger proportion of the total actuarial contribution than other pension funds in the U.S. with average maturity.

Ratio of Retiree Accrued Liability to Total Accrued Liability

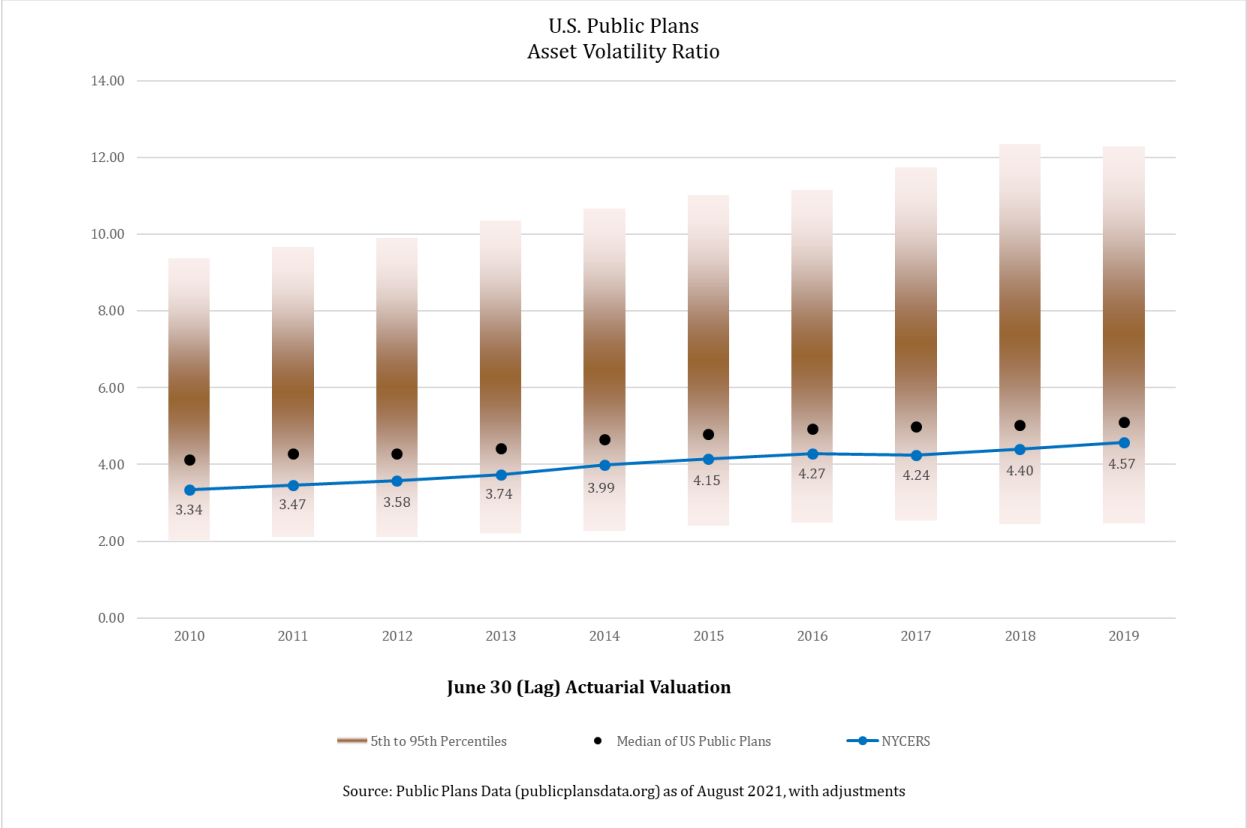
We can also consider the ratio of the Plan’s retiree liability to its total liability. A new pension plan begins with this ratio at zero; as the plan matures, the ratio increases. Mature plans often have ratios above 60%. This measure is shown in the graph below for NYCERS; the other New York City Retirement Systems¹ are included for comparison purposes. The ratio for NYCERS has been between 53-55% for the past few years, indicating that NYCERS is not yet a fully mature retirement system.



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 NYCERS to the population of public pension systems.

¹ Teachers’ Retirement System (TRS); Board of Education Retirement System (BERS); Police Pension Fund (POLICE); Fire Pension Fund (FIRE)



As a plan approaches maturity, AVRs tend to increase, and the plan’s actuarially-determined contribution becomes more sensitive to investment losses. For example, the same percentage of investment losses in more mature plans with a larger asset base can increase contributions as a percentage of payroll more than in less mature plans, leading to additional volatility. Therefore, mature plans may wish to consider more conservative investment strategies. Typical AVRs for a mature retirement system are between 5 and 6. As shown in the tables above, for NYCERS, since ratios are lower than the average, NYCERS is not considered a mature plan under this measure.

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

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM	
SENSITIVITY ANALYSIS AS OF JUNE 30, 2019	
Valuation Date	June 30, 2019
Results at 7.0%	
1. Accrued Liability (AL)	\$ 89,230,195,746
2. Actuarial Value of Assets (AVA)	68,524,124,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 20,706,071,746
4. Funded Ratio (AVA Basis) (2. / 1.)	76.8%
5. Normal Cost	\$ 1,605,732,551
Results at 6.0%	
1. Accrued Liability (AL)	\$ 99,199,436,052
2. Actuarial Value of Assets (AVA)	68,524,124,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 30,675,312,052
4. Funded Ratio (AVA Basis) (2. / 1.)	69.1%
5. Normal Cost	\$ 2,144,211,563
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Accrued Liability	11.2%
2. Increase in Unfunded Accrued Liability	48.1%
3. Decrease in Funded Ratio	7.7%
4. Increase in Normal Cost	33.5%

Longevity Risk: The Risk of Higher than Assumed Mortality Improvement

NYCERS 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 that the mortality improvement inherent in the Plan population is higher than the improvement seen in the population provided by the Social Security Administration. When mortality improvement is higher than assumed, plan participants will live longer than expected, and the plan will pay more pension benefits than had been previously funded.

Furthermore, while the scale uses recent experience to develop short-term mortality improvement rates, an actuarial assumption is applied to long-term mortality improvement rates based on expert opinion. A rate of 1.0% is assumed, which the Society of Actuaries characterizes as “neither overly optimistic nor too pessimistic with respect to future longevity improvements.”² Risk to the Plan exists, however, if Plan mortality experience shows higher levels of long-term mortality improvement; expert opinion can in some cases be flawed, particularly when past experience is not indicative or predictive of future experience.

In a letter dated June 28, 2019, Buck analyzed historical Plan experience and noted “it appears that historical mortality improvement in NYC pensioners has kept pace with, and in some cases may have exceeded slightly, the mortality improvement trends in historical Social Security Administration graduated rates that are based on a broad 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 1.0%.

Litigation Risk: The Risk of Legal Claims and Lawsuits

It is not uncommon for New York City to be a defendant in legal claims and lawsuits.³ In its most recent claims report, the Comptroller reports that in FY2020, NYC settled 13,741 claims and lawsuits for \$1.0 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,” “Mortality Improvement Scale MP-2018 Report,” and “Mortality Improvement Scale MP-2014 Report.” *Society of Actuaries*

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

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

Other Risk Types

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

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

In addition, NYCERS is a multiple-employer plan with several contributing entities. NYCERS faces risk if contributing entities become insolvent while still carrying Unfunded Accrued Liability. Existing law and precedent transfer these amounts to other employers, creating imbalanced funding responsibility in the event of default.

Inflation Risk: The Risk of Higher than Assumed Inflation

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

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

Public pension systems can suffer from contribution risk when sponsoring governmental entities fail to make contributions as determined by the actuary under their funding policies. A 2018 study¹ which used data from 50 states and 230 retirement systems, found that since 2007 the shortfall between actual contributions to state pension plans and minimum actuarial funding standards was \$200 billion.²

The New York City Retirement Systems and Pension Funds face low contribution risk. City benefits are constitutionally protected, and with the exception of OTB, participating employers have generally contributed to the actuarial contribution as certified by the Actuary. The Actuary believes the City and the other participating employers will continue to do so in future years. See Table III-5 – ACTUARIAL AND STATUTORY 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 over 10% of the City's annual budget, and contribution risk may increase if this contribution rate becomes untenable.

¹ The Pew Charitable Trusts. *"The State Pension Funding Gap: 2018."*

² Accounting standards changed in 2014. From 2007 to 2013, the shortfall is calculated between the actuarial recommended contribution and actual employer contributions. From 2014 to 2018, the shortfall represents the gap between the net amortization benchmark and employer contributions.

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 IX - SUMMARY OF PLAN PROVISIONS

A. Covered Employment

Membership in NYCERS is open to all employees of participating employers who are not eligible for membership in another retirement system. Membership in NYCERS may be voluntary or mandated. Participating Employers include the following:

Employer	Abbreviation
City of New York	NYC
City University of New York	CUNY
NYC Health and Hospitals Corporation	HHC
NYC Housing Authority	HA
NYC Housing Development Corporation	HDC
NYC Municipal Water Finance Authority	WFA
NYC School Construction Authority	SCA
NYC Transit Authority	TRN
NYC Triborough Bridge and Tunnel Authority	TBTA

NYCERS contains benefit plans that are grouped as follows:

Group	Eligible Employees	Abbreviation
General (GEN)	District Attorney Investigators	IDA
	Emergency Medical Technicians	EMT
	Fire Alarm Dispatchers	DIS
	Employed in a job title for special peace officers	SPO
	Employed in a job title for automotive service work	AUT
	Deputy Sheriffs	DSH
	Police Communication Technicians	PCT
	All others	OTH
Sanitation	Members of the uniformed force of the NYC Department of Sanitation (Uniformed Sanitation Force)	SAN
Transit	Employed in a Transit Operating Force position	TRN
TBTA	TBTA Officers, Sergeants, and Lieutenants employed in non-managerial positions	TBTA
Correction Officers	Members of the uniformed force of the NYC Department of Correction (Uniformed Correction Force)	COR

B. Tier Membership

Tier membership is based on the date that the member joined NYCERS. The tier status of earlier membership in NYCERS or another New York City or New York State public

employee retirement system is reflected, but only if the service associated with that membership is purchased and included in Credited Service.

Tier by Group and Hire Date	IDA	COR	SAN	All Other Groups
Prior to July 1, 1973	Tier 1			
July 1, 1973 to July 26, 1976	Tier 2			
July 27, 1976 to March 31, 2012	Tier 2	Tier 3	Tier 4	
April 1, 2012 or after	Tier 3 22-year plan ¹			Tier 6

Unless otherwise noted, Tier 1 and Tier 2 provisions are hereafter omitted for brevity², as well as Tier 3 provisions for all groups other than Correction Officers.

For more information about benefits, see the applicable summary plan descriptions. In the event of a conflict between this summary and applicable law, the applicable laws will govern.

C. Basic Member Contributions (BMC)

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

For COR Tier 3 members, all Tier 4 members, and Tier 3 22-year plan members, BMC details are shown in the table below:

Group/Plan(s)	Contribution Rate	Period
TRN 55/25 Tier 4 plans	2.0%	All service
Tier 3 and all other Tier 4 plans	3.0%	The first 10 years of service
Tier 3 22-year plans	3.0%	The first 25 years of service

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

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

¹ Sometimes denoted Tier 3R for clarity.

² Approximately 0.2% of active members as of June 30, 2019 are members of Tier 1 and Tier 2.

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

D. Additional Member Contributions (AMC)

Additional Member Contributions including AMCs for work in physically taxing employment (AMC-PT) earn 5% interest per year, compounded annually. The AMC contribution rate as a percentage of Salary varies by plan in accordance with the following table:

Plan Description	AMC Rate	Years Required
Ch 96 55/25 plans	1.85% ¹	30
Ch 96 57/5 plans		
EMT 25-year plans	6.25%	30
DIS 25-year plans	6.00%	
PCT 25-year plans	6.00%	
DSH 25-year plans	6.75%	
SPO 25-year plans	6.25%	
AUT 25-year plans	4.83%	
SAN Tier 4	5.35%	
SAN Tier 3 22-year enhanced disability plan	1.30%	25
COR Tier 3 20-year plan ²	3.61% or 4.61%	20
COR Tier 3 22-year enhanced disability plan	0.80%	25
TBTA 50/20 plans ²	5.50% or 6.00%	20
All others	None	N/A

E. Credited Service

Credited Service is comprised of Membership Service, Part-time Service, Previous Service, Transferred Service, and Military Service.

- **Membership Service:** Service earned while a member of NYCERS.
- **Part-time Service:** Service that is prorated based on the number of hours or days worked in the year.
- **Previous Service:** Service earned prior to membership while employed by the City of New York, the State of New York, or any of its political subdivisions, or by another

¹ Members in physically-taxing classifications contribute an additional 1.98%, on top of the 1.85%.

² Contribution rate depends on member’s job title.

covered employer.

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

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

F. Salary

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

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

Tier 6 and Tier 3 22-year plans: Wages greater than 110% of the average of the previous four years are excluded for purposes of determining FAS. In addition, the following payments are also excluded from wages for purposes of determining FAS:

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

G. Final Average Salary

Service retirement, early retirement, disability retirement, and vested retirement benefits are based on FAS.

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

Tier 6 and Tier 3 22-year plans: FAS is the highest average Salary earned in any five consecutive years of Credited Service or in the final 60 months of Credited Service if greater (FAS5).

H. Service Retirement

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

Tier(s)	Plan Description	Minimum Age	Minimum Service
3	COR 20-year plan	N/A	20
3	COR 25-year plan	N/A	25
3	COR Basic 62/5 plan	62	5
4	Basic 62/5 plan	62	5
4	Chapter 96 55/25 plan ¹	55	25
4	Chapter 96 57/5 plan ¹	57	5
4	SAN Tier 4 regular	55	30
4	SAN 20-year plan	N/A	20
4 & 6	EMT, DIS, SPO, DSH, and PCT 25-year plans	N/A	25
4 & 6	AUT 25-year/age 50 plans	50	25
4 & 6	TRN 25-year/age 55 plans	55	25
4 & 6	TBT 20-year/age 50 plans	50	20
3R	22-year plans	N/A	20
6	Basic 63/10 plan	63	10

2. Benefits:

Tier	Plan Description	Benefit Formula
4	Basic 62/5 plan	<u>If less than 20 years of Credited Service:</u> 1/60 times FAS times Credited Service <u>If 20 or more years of Credited Service:</u> Sum of 2.0% times FAS times Credited Service up to 30 years, plus 1.5% times FAS times Credited Service greater than 30 years
4	Chapter 96 55/25	
4	Chapter 96 57/5	
4	SAN Tier 4 regular	
4 & 6	TRN 55/25 plan	
4	SAN 20-year plan	2.5% times FAS times Credited Service up to 20 years, plus 1.5% times Final Compensation ² times additional Credited Service up to 10 more years

¹ Members of Chapter 96 55/25 and 57/5 who work in a physically taxing employment are eligible for unreduced service retirement at age 50 with 25 years of service.

² Final Compensation here means FAS5 without the limitation that no year exceed 110% of the prior four-year average.

Tier	Plan Description	Benefit Formula
4 & 6	EMT, DIS, SPO, AUT, and PCT 25-year plans	2.0% times FAS times Credited Service up to 30 years
4 & 6	DSH 25-year plan	2.2% times FAS times Credited Service up to 25 years, plus 1.7% times FAS times additional Credited Service up to 5 more years
4 & 6	TBT 50/20 plan	2.5% times FAS times Credited Service up to 20 years, plus 1.5% times FAS times additional Credited Service up to 10 more years
3	COR 20-year plan	2.5% times FAS times Credited Service up to 20 years, plus 1.67% times FAS times additional Credited Service up to 10 more years
3	COR 25-year plan	50% times FAS
3	COR 62/5 plan	<u>If less than 20 years of Credited Service:</u> 1/60 times FAS times Credited Service, minus 50% of your Primary Social Security Benefit <u>If 20 or more years of Credited Service:</u> Sum of 2.0% times FAS times Credited Service up to 30 years, minus 50% of your Primary Social Security Benefit
3R	22-year plans	2.1% times FAS times Credited Service up to 20 years, plus 4.0% times FAS times additional Credited Service up to 2 more years
6	Basic 63/10 plan	<u>If less than 20 years of Credited Service:</u> 1/60 times FAS times Credited Service <u>If 20 or more years of Credited Service:</u> 35% times FAS, plus 2.0% times FAS times Credited Service greater than 20 years

I. Early Retirement

1. Eligibility: Not all plans provide for early retirement. However, certain participants may be eligible to elect early retirement under the Tier 3, Tier 4, or Tier 6 Basic plan. The eligibility requirements for early retirement plans are summarized in the table below:

Tier	Plan Description	Minimum Age	Minimum Service
3	COR Tier 3 Basic 62/5 Plan	55	5
4	Basic 62/5 plan	55	5
6	Basic 63/10 plan	55	10

2. Benefits:

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

- a. COR Tier 3 Basic 62/5 Plan:

The service retirement benefit is reduced by 1/180 for each of the first 24 months that the age at commencement precedes age 62, and reduced 1/360 for each of the next 60 months that the age of commencement precedes age 60.

- b. Tier 4 Basic 62/5 Plan:

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

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

- c. Tier 6 Basic 63/10 Plan:

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

J. Disability Retirement

1. Accidental Disability (ADR)

- a. Eligibility: No age or service requirement. Requires Medical Board determination that the active member is physically or mentally incapacitated due to an accident in the performance of duties and that the accident is not due to willful negligence of the member.
- b. Benefits:
 - i. All plans other than those specified below: Greater of 1/60 times FAS times Credited Service or 1/3 times FAS. The member may elect a service retirement benefit, if eligible.
 - ii. SAN, COR, and IDA Tier 3 22-year non-enhanced disability plan members: 50% x FAS
 - iii. EMT, DSH, SAN Tier 3 22-year enhanced disability plan members, and COR Tier 3 22-year enhanced disability plan members: 75% x FAS

2. Ordinary Disability (ODR)

- a. Eligibility: 10 years of Credited Service. Requires Medical Board determination that the active member is physically or mentally incapacitated due to an accident while not in performance of duties.
- b. Benefits: Greater of 1/60 times FAS times Credited Service or 1/3 times FAS. The member may elect a service retirement benefit, if eligible.

K. Death Benefits

1. Accidental Death Benefits

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

2. Ordinary Death Benefit

a. Eligibility:

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

b. Benefits:

- i. Active members: Refund of BMC and the employee portion of AMC, if any, with interest plus a salary-based death benefit. The salary-based death benefit is equal to one year's wages times completed years of Credited Service up to 3 years. The salary-based portion of the death benefit is reduced 5% for each year the member remains in service beyond age 60 (to a maximum reduction of 50% at age 70).
- ii. Terminated vested members with 10 or more years of Credited Service: Refund of BMC and the employee portion of AMC, if any, with interest plus one half of the salary-based death benefit that would have been payable had the member died on the last day of active service as described above.
- iii. Terminated vested members with less than 10 years of Credited Service: Refund of BMC and the employee portion of AMC, if any, with interest.
- iv. Retirees: The active salary-based death benefit, if eligible¹, that would have been payable had the member died on the last day of active service times the Adjustment Factor described in the table below:

Year of Death	Adjustment Factor
1 st year after retirement	50%
2 nd year after retirement	25%
3 rd year or later after retirement	10% times the benefit in effect at age 60 or at retirement if earlier

c. Form of Payment: Lump sum.

¹ SAN, COR, and Tier 3R IDA have a different benefit; other exclusions apply.

L. Vested Retirement After Termination

1. Eligibility:
 - a. Tier 4 plans: 5 years of Credited Service.
 - b. Tier 6 plans: 10 years of Credited Service.
2. Benefits: The vested benefit is equal to the amount of the Service Retirement benefit (unless noted otherwise below), payable at the times specified below.
 - a. Tier 4 EMT, DIS, SPO, DSH, AUT, PCT 25-year plans: When the member would have earned 25 years of Credited Service if he or she had continued working in covered employment.
 - b. All other Tier 4 plans: Age 62.
 - c. Tier 3 22-year plans: When the member would have earned 20 years of Credited Service if he or she had continued working in covered employment.
 - d. Tier 6 plans: Age 63. In no case can the vested benefit be less than the annuity equivalent of the BMC.

M. Forms of Payment

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

N. Cost-of-Living Adjustments (COLA)

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

1. Eligibility Thresholds:
 - a. Service Retirement and Vested Retirement: The earlier of (i) and (ii):
 - i. Attainment of age 62 and 5 years since commencement

- ii. Attainment of age 55 and 10 years since commencement
 - b. Disability Retirement: 5 years since commencement
 - c. Beneficiaries of an Accidental Death benefit: 5 years since commencement
2. Eligible beneficiaries: Spouses receiving a joint & survivor annuity. All others are non-eligible.
 3. Base Benefit: The lesser of \$18,000 and the maximum retirement allowance plus the sum of prior years' COLA increases.
 4. COLA percentage: 50% of the Consumer Price Index (CPI-U) based upon the 12 months ending March 31 prior to each September 1 effective date, rounded to the next higher 0.1%. Such percentage shall not be less than 1.0% nor greater than 3.0%.

O. Escalation

Applicable to Tier 3 22-year plan members who work past 22 years, with full escalation applicable after 25 years of service.

1. Eligibility: Service, vesting, disability retirement, and survivor benefits.
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.

P. Refund of BMC and AMC

Refunded with interest under some circumstances. AMC include Additional Member Contributions for work in physically taxing employment (AMC-PT). Only the employee portion of AMC is refunded.

1. Employee Portion of AMC: The employee portion of AMC is 50% for all plans that require AMC except for the EMT, DIS, SPO, DSH, AUT, and PCT plans, it is 100%.
2. Non-vested termination: BMC and employee portion of AMC are refunded with interest.
3. Vested termination:
 - a. A member may elect a refund of BMC and the employee portion of AMC with interest in lieu of a pension benefit, but only if he or she has less than 10 years of Credited Service.
 - b. A member of one of the EMT, DIS, SPO, DSH plans may elect a refund of AMC in lieu of remaining in their respective 25-year plan if he or she leaves service prior to earning 15 years of Credited Service as a member of their respective 25-year plan.
 - c. A member of one of the AUT, PCT plans may elect a refund of AMC in lieu of remaining in their respective 25-year plan if he or she leaves service prior to earning 5 years of Credited Service as a member of their respective 25-year plan.
4. Ordinary death: BMC and the employee portion of AMC are refunded with interest.
5. Accidental death: The employee portion of AMC are refunded with interest.
6. Disability Retirement: The employee portion of AMC are refunded with interest.

7. Service Retirement: The employee portion of AMC are refunded with interest if the member retires on or after age 62. For retirement prior to age 62, the employee portion of AMC-PT are refunded if a member of the Chapter 96 55/25 plan retires on or after age 55 with 25 years of Credited Service or if a member of the Chapter 96 57/5 plan retires on or after age 57 with 25 years of Credited Service.
8. For members who participate in the Sanitation and Correction Tier 3 22-year enhanced disability plans, AMC are not refundable.

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

1. Eligibility: Age 55 and 5 years of Credited Service.
2. Benefits: These members may elect a Tier 3 benefit instead of a Tier 4 benefit. The benefit formula for Tier 3 is the same as the benefit formula for the Tier 4 Basic 62/5 plan except:
 - a. Credited Service under the Tier 3 benefit formula is capped at 30 years,
 - b. The Tier 3 benefit formula includes an offset starting at age 62 equal to 50% of the Primary Social Security benefit, and
 - c. The early retirement factors used to reduce benefits for early commencement are smaller and thus reduce benefits more for Tier 3 than the corresponding factors used under the Basic Tier 4 62/5 plan.
3. Cost-of-Living Adjustments: Tier 3 retirement benefits may be adjusted annually by Escalation. A Tier 3 retirement benefit cannot be less than the initial benefit payable at the commencement date.
 - a. Full Escalation: Applicable for benefits commencing on or after age 65. Equal to the lesser of 3% and the Consumer Price Index (CPI-U) for positive increases in the CPI-U, and the greater of -3% and the Consumer Price Index (CPI-U) for negative increases in the CPI-U.
 - b. Partial Escalation: Applicable for benefits commencing after age 62 and prior to age 65. Equal to full escalation reduced by 1/36 times the number of months that the age at commencement precedes age 65.

R. Loans

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

S. Changes Since the Prior Valuation

None.

SECTION X - CHAPTER AMENDMENTS

The June 30, 2019 (Lag) actuarial valuation results reflect the following Chapter amendments from the prior five years.

- **Chapter 266 of the Laws of 2018** (Chapter 266/18) extends the deadline to file a Notice of Participation in the World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2022.
- **Chapter 179 of the Laws of 2018** (Chapter 179/18) grants a 3% COLA increase to beneficiaries receiving Special Accidental Death Benefits pursuant to Section 208(f) of the GML. (Similar legislation was enacted in each of the previous years.)
- **Chapter 457 of the Laws of 2017** (Chapter 457/17) provided Special Accidental Death Benefits for eligible beneficiaries of Sanitation members pursuant to Section 208-f of the General Municipal Law.
- **Chapter 438 of the Laws of 2016** (Chapter 438/16), enacted on November 14, 2016, amended Retirement and Social Security Law Section 43 to eliminate restrictions upon transferring between public retirement systems.
- **Chapter 41 of the Laws of 2016** (Chapter 41/16) provides up to three years of service credit to members of public retirement systems of the State of New York for military service. Chapter 41/16 removes the requirement that such military service occur during specified periods of hostilities.
- **Chapter 510 of the Laws of 2015** (Chapter 510/15), clarifies for Tier 6 the definition of multiple employers for the purpose of exclusion of wages and changes the plan year for contributions from April 1 - March 31 to January 1 - December 31.

SECTION XI - SUBSEQUENT EVENTS

The following legislation was adopted after the June 30, 2019 valuation date and could have a significant impact on future years' valuations:

Effective March 1, 2020, **Chapter 89 of the Laws of 2020** (Chapter 89/20) provides death benefits to statutory beneficiaries of members whose death was a result of or was attributed to COVID-19. **Chapter 78 of the Laws of 2021** (Chapter 78/21) amends Chapter 89/20 by extending the eligibility window of these death benefits through December 31, 2022.

Chapter 382 of the Laws of 2019 (Chapter 382/19), **Chapter 58 of the Laws of 2020** (Chapter 58/20), and **Chapter 327 of the Laws of 2021** (Chapter 327/21) extend the 3% COLA increase to beneficiaries receiving Special Accidental Death Benefits (SADB) for Fiscal Years 2020, 2021, and 2022, respectively. Note that the June 30, 2019 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 84.

SECTION XII - ACTUARIAL ASSUMPTIONS AND METHODS

The Actuary issued a Report titled, "Proposed Changes to Actuarial Assumptions and Methods (Revised 2021 A&M)" dated July 27, 2021. The actuarial assumptions and methods described in that report were adopted by the Board of Trustees at the August 12, 2021 Board meeting and are referred to as the "Revised 2021 A&M."

The Actuary reset the Actuarial Value of Assets (AVA) to the market value as of June 30, 2019. Beginning with the June 30, 2020 (Lag) actuarial valuation, the Actuarial Asset Valuation Method (AAVM) recognizes investment returns greater or less than expected over a period of five years. In accordance with this AAVM, Unexpected Investment Returns (UIR) are phased into the AVA at rates of 20% per year.

The post-commencement mortality improvement table was changed from the MP-2018 to MP-2020. The MP-2020 table was also applied to the base mortality rates for active members and terminated members prior to commencement.

The assumption for the amount of the basic member contribution balance elected by active members as a loan upon benefit commencement was changed from 75% of BMC for Tier 1 and 2 active members only to 25% of BMC for all active members.

The actuarial assumptions and a description of the actuarial methods follow.

Table XII-1
Active Retirement Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF SERVICE RETIREMENT: GENERAL					
Age	Reduced Service Retirement	Unreduced Service Retirement For Members Mandated Into Their Retirement Program		Unreduced Service Retirement For Members Who Elected an Improved Retirement Program	
		Year 1	Ultimate	Year 1	Ultimate
≤ 54	0.00%	8.00%	5.00%	40.00%	15.00%
55	3.50%	8.00%	5.00%	40.00%	15.00%
56	3.50%	8.00%	5.00%	40.00%	15.00%
57	3.50%	8.00%	5.00%	40.00%	15.00%
58	3.50%	8.00%	5.00%	40.00%	15.00%
59	5.25%	8.00%	5.00%	40.00%	15.00%
60	7.00%	8.00%	5.00%	40.00%	15.00%
61	8.00%	8.00%	7.50%	40.00%	15.00%
62	8.00% ¹	30.00%/8.00% ²	10.00%	60.00%	25.00%
63	0.00%	20.00%/30.00% ³	15.00%	40.00%	20.00%
64	0.00%	20.00%	15.00%	40.00%	20.00%
65	0.00%	30.00%	20.00%	60.00%	25.00%
66	0.00%	20.00%	15.00%	40.00%	20.00%
67	0.00%	20.00%	15.00%	40.00%	20.00%
68	0.00%	20.00%	15.00%	40.00%	20.00%
69	0.00%	20.00%	15.00%	40.00%	20.00%
70	0.00%	25.00%	25.00%	40.00%	25.00%
71	0.00%	25.00%	25.00%	40.00%	25.00%
72	0.00%	25.00%	25.00%	40.00%	25.00%
73	0.00%	25.00%	25.00%	40.00%	25.00%
74	0.00%	25.00%	25.00%	40.00%	25.00%
75	0.00%	25.00%	25.00%	40.00%	25.00%
76	0.00%	25.00%	25.00%	40.00%	25.00%
77	0.00%	25.00%	25.00%	40.00%	25.00%
78	0.00%	25.00%	25.00%	40.00%	25.00%
79	0.00%	25.00%	25.00%	40.00%	25.00%
≥ 80	N/A	100.00%	100.00%	100.00%	100.00%

¹ 8.00% only applies to Tier 6 members; 0.00% otherwise.

² 30.00% for Tiers 1-4 members and 8.00% for Tier 6 members.

³ 20.00% for Tiers 1-4 members and 30.00% for Tier 6 members.

Table XII-1
Active Retirement Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM				
PROBABILITIES OF SERVICE RETIREMENT: CORRECTION				
	Reduced Service Retirement Tiers 1-3		Reduced Service Retirement Tier 3R ¹	
	Age	Rate	Service	Rate
	≤ 54	0.00%	≤ 19	0.00%
55	2.00%	20	5.00%	
56	2.00%	21	2.00%	
57	2.00%	22	5.00%	
58	2.00%	23	2.00%	
59	3.00%	24	2.00%	
60	4.00%	≥ 25	N/A	
61	5.00%			
62	0.00%			
≥ 63	N/A			
Age	Unreduced Service Retirement For Members Mandated Into Their Retirement Program		Unreduced Service Retirement For Members Who Elected an Improved Retirement Program	
	Year 1	Ultimate	Year 1	Ultimate
≤ 54	60.00%	20.00%	70.00%	20.00%
55	60.00%	20.00%	70.00%	20.00%
56	60.00%	20.00%	70.00%	20.00%
57	60.00%	20.00%	70.00%	20.00%
58	60.00%	20.00%	70.00%	20.00%
59	60.00%	20.00%	70.00%	20.00%
60	60.00%	20.00%	70.00%	20.00%
61	60.00%	30.00%	70.00%	30.00%
62	60.00%	40.00%	70.00%	40.00%
≥ 63	100.00%	100.00%	100.00%	100.00%

¹ Assumption also used for IDA Tier 3R members.

Table XII-1
Active Retirement Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM				
PROBABILITIES OF SERVICE RETIREMENT: SANITATION				
	Reduced Service Retirement Tiers 1-4		Reduced Service Retirement Tier 3R	
	Age	Rate	Service	Rate
		≤ 54	0.00%	≤ 19
	55	4.00%	20	5.00%
	56	4.00%	21	2.00%
	57	4.00%	22	5.00%
	58	4.00%	23	2.00%
	59	6.00%	24	2.00%
	60	8.00%	≥ 25	N/A
	61	10.00%		
	62	0.00%		
	63	0.00%		
	64	0.00%		
	65	0.00%		
	66	0.00%		
	67	0.00%		
	68	0.00%		
	69	0.00%		
	≥ 70	N/A		
Age	Unreduced Service Retirement For Members Mandated Into Their Retirement Program		Unreduced Service Retirement For Members Who Elected an Improved Retirement Program	
	Year 1	Ultimate	Year 1	Ultimate
≤ 45	30.00%	10.00%	40.00%	15.00%
46	30.00%	10.00%	42.00%	15.00%
47	30.00%	10.00%	44.00%	15.00%
48	30.00%	10.00%	46.00%	15.00%
49	30.00%	10.00%	48.00%	15.00%
50	30.00%	10.00%	50.00%	15.00%
51	30.00%	10.00%	52.00%	15.00%
52	30.00%	10.00%	54.00%	15.00%
53	30.00%	10.00%	56.00%	15.00%
54	30.00%	10.00%	58.00%	15.00%
55	30.00%	10.00%	60.00%	15.00%
56	30.00%	10.00%	60.00%	16.00%
57	30.00%	10.00%	60.00%	17.00%
58	30.00%	10.00%	60.00%	18.00%
59	30.00%	10.00%	60.00%	19.00%
60	30.00%	10.00%	60.00%	20.00%
61	30.00%	15.00%	60.00%	25.00%
62	45.00%/30.00% ¹	20.00%/15.00% ²	60.00%	30.00%
63	30.00%	15.00%	40.00%	20.00%
64	30.00%	15.00%	40.00%	20.00%
65	45.00%	20.00%	60.00%	30.00%
66	30.00%	15.00%	40.00%	20.00%
67	30.00%	15.00%	40.00%	20.00%
68	30.00%	15.00%	40.00%	20.00%
69	30.00%	15.00%	40.00%	20.00%
≥ 70	100.00%	100.00%	100.00%	100.00%

¹ 45.00% for Tier 1-4 members and 30.00% for Tier 3R members.

² 20.00% for Tier 1-4 members and 15.00% for Tier 3R members.

Table XII-1
Active Retirement Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF SERVICE RETIREMENT: TBTA					
Age	Members Mandated Into Their Retirement Program			Members Who Elected an Improved Retirement Program	
	Reduced Service Retirement	Unreduced Service Retirement		Unreduced Service Retirement	
		Year 1	Ultimate	Year 1	Ultimate
≤ 54	0.00%	30.00%	20.00%	60.00%	30.00%
55	2.00%	30.00%	20.00%	60.00%	30.00%
56	2.00%	30.00%	20.00%	60.00%	30.00%
57	2.00%	30.00%	20.00%	60.00%	30.00%
58	2.00%	30.00%	20.00%	60.00%	30.00%
59	3.00%	30.00%	20.00%	60.00%	30.00%
60	4.00%	30.00%	20.00%	60.00%	30.00%
61	5.00%	30.00%	30.00%	60.00%	30.00%
62	0.00%	40.00%	40.00%	60.00%	40.00%
63	0.00%	30.00%	30.00%	40.00%	30.00%
64	0.00%	30.00%	30.00%	40.00%	30.00%
65	0.00%	40.00%	40.00%	60.00%	40.00%
66	0.00%	30.00%	30.00%	40.00%	30.00%
67	0.00%	30.00%	30.00%	40.00%	30.00%
68	0.00%	30.00%	30.00%	40.00%	30.00%
69	0.00%	30.00%	30.00%	40.00%	30.00%
70	0.00%	30.00%	30.00%	40.00%	30.00%
71	0.00%	30.00%	30.00%	40.00%	30.00%
72	0.00%	30.00%	30.00%	40.00%	30.00%
73	0.00%	30.00%	30.00%	40.00%	30.00%
74	0.00%	30.00%	30.00%	40.00%	30.00%
75	0.00%	30.00%	30.00%	40.00%	30.00%
76	0.00%	30.00%	30.00%	40.00%	30.00%
77	0.00%	30.00%	30.00%	40.00%	30.00%
78	0.00%	30.00%	30.00%	40.00%	30.00%
79	0.00%	30.00%	30.00%	40.00%	30.00%
≥ 80	N/A	100.00%	100.00%	100.00%	100.00%

Table XII-1
Active Retirement Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF SERVICE RETIREMENT: TRANSIT					
Age	Reduced Service Retirement	Unreduced Service Retirement For Members Mandated Into Their Retirement Program		Unreduced Service Retirement For Members Who Elected an Improved Retirement Program	
		Year 1	Ultimate	Year 1	Ultimate
≤ 54	0.00%	30.00%	15.00%	25.00%	15.00%
55	2.00%	30.00%	15.00%	25.00%	15.00%
56	2.00%	30.00%	15.00%	25.00%	15.00%
57	2.00%	30.00%	15.00%	25.00%	15.00%
58	2.00%	30.00%	15.00%	25.00%	15.00%
59	3.00%	30.00%	15.00%	25.00%	15.00%
60	4.00%	35.00%	15.00%	30.00%	15.00%
61	5.00%	45.00%	20.00%	40.00%	20.00%
62	5.00% ¹	20.00%	20.00%	50.00%	40.00%
63	0.00%	20.00%	20.00%	40.00%	30.00%
64	0.00%	20.00%	20.00%	40.00%	30.00%
65	0.00%	25.00%	25.00%	50.00%	40.00%
66	0.00%	20.00%	20.00%	40.00%	30.00%
67	0.00%	20.00%	20.00%	40.00%	30.00%
68	0.00%	20.00%	20.00%	40.00%	30.00%
69	0.00%	20.00%	20.00%	40.00%	30.00%
70	0.00%	25.00%	25.00%	40.00%	30.00%
71	0.00%	25.00%	25.00%	40.00%	30.00%
72	0.00%	25.00%	25.00%	40.00%	30.00%
73	0.00%	25.00%	25.00%	40.00%	30.00%
74	0.00%	25.00%	25.00%	40.00%	30.00%
75	0.00%	25.00%	25.00%	40.00%	30.00%
76	0.00%	25.00%	25.00%	40.00%	30.00%
77	0.00%	25.00%	25.00%	40.00%	30.00%
78	0.00%	25.00%	25.00%	40.00%	30.00%
79	0.00%	25.00%	25.00%	40.00%	30.00%
≥ 80	N/A	100.00%	100.00%	100.00%	100.00%

¹ 5.00% only applies to Tier 6 members; 0.00% otherwise.

Table XII-2
Active Termination Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF TERMINATION					
Probabilities of Termination					
Years of Service	General	Correction	Sanitation	TBTA	Transit
0	8.40%	7.50%	4.00%	9.00%	9.00%
1	7.00%	6.00%	2.00%	4.50%	4.50%
2	5.60%	4.50%	1.00%	2.00%	2.00%
3	4.20%	3.00%	1.00%	1.50%	1.50%
4	4.20%	2.25%	1.00%	1.25%	1.25%
5	4.20%	1.50%	1.00%	1.10%	1.10%
6	4.00%	1.35%	0.90%	1.10%	1.10%
7	3.80%	1.20%	0.80%	1.10%	1.10%
8	3.60%	1.05%	0.70%	1.10%	1.10%
9	3.40%	0.90%	0.60%	1.10%	1.10%
10	3.20%	0.75%	0.50%	1.10%	1.10%
11	3.00%	0.75%	0.50%	1.00%	1.00%
12	2.80%	0.75%	0.50%	0.90%	0.90%
13	2.60%	0.75%	0.50%	0.80%	0.80%
14	2.40%	0.75%	0.50%	0.70%	0.70%
15	2.20%	0.75%	0.50%	0.55%	0.55%
16	2.00%	0.75%	0.50%	0.55%	0.55%
17	1.80%	0.75%	0.50%	0.55%	0.55%
18	1.60%	0.75%	0.50%	0.55%	0.55%
19	1.40%	0.75%	0.50%	0.55%	0.55%
20+	1.40%	0.75%	0.50%	0.55%	0.55%

Table XII-3
Active Disability Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM				
PROBABILITIES OF DISABILITY FOR ACTIVE MEMBERS: GENERAL				
	Ordinary Disability		Accidental Disability	
Age	Males	Females	Males	Females
15	0.140%	0.140%	0.028%	0.014%
16	0.140%	0.140%	0.028%	0.014%
17	0.140%	0.140%	0.028%	0.014%
18	0.140%	0.140%	0.028%	0.014%
19	0.140%	0.140%	0.028%	0.014%
20	0.140%	0.140%	0.028%	0.014%
21	0.140%	0.140%	0.028%	0.014%
22	0.140%	0.140%	0.028%	0.014%
23	0.140%	0.140%	0.028%	0.014%
24	0.140%	0.140%	0.028%	0.014%
25	0.140%	0.140%	0.028%	0.014%
26	0.140%	0.140%	0.028%	0.014%
27	0.140%	0.140%	0.028%	0.014%
28	0.140%	0.140%	0.028%	0.014%
29	0.140%	0.140%	0.028%	0.014%
30	0.140%	0.140%	0.028%	0.014%
31	0.154%	0.140%	0.028%	0.014%
32	0.168%	0.140%	0.028%	0.014%
33	0.182%	0.140%	0.028%	0.014%
34	0.196%	0.140%	0.028%	0.014%
35	0.210%	0.140%	0.028%	0.014%
36	0.224%	0.147%	0.028%	0.014%
37	0.238%	0.154%	0.028%	0.014%
38	0.252%	0.161%	0.028%	0.014%
39	0.266%	0.168%	0.028%	0.014%
40	0.280%	0.175%	0.028%	0.014%
41	0.294%	0.182%	0.028%	0.014%
42	0.308%	0.189%	0.028%	0.014%
43	0.322%	0.196%	0.028%	0.014%
44	0.336%	0.203%	0.028%	0.014%
45	0.350%	0.210%	0.028%	0.014%
46	0.364%	0.238%	0.028%	0.014%
47	0.378%	0.266%	0.028%	0.014%
48	0.392%	0.294%	0.028%	0.014%
49	0.406%	0.322%	0.028%	0.014%
50	0.420%	0.350%	0.028%	0.014%
51	0.434%	0.378%	0.028%	0.014%
52	0.448%	0.406%	0.028%	0.014%
53	0.462%	0.434%	0.028%	0.014%
54	0.476%	0.462%	0.028%	0.014%
55	0.490%	0.490%	0.028%	0.014%
56	0.490%	0.490%	0.028%	0.014%
57	0.490%	0.490%	0.028%	0.014%
58	0.490%	0.490%	0.028%	0.014%
59	0.490%	0.490%	0.028%	0.014%
60	0.490%	0.490%	0.028%	0.014%
61	0.490%	0.490%	0.028%	0.014%
62	0.490%	0.490%	0.028%	0.014%
63	0.490%	0.490%	0.028%	0.014%
64	0.490%	0.490%	0.028%	0.014%
65	0.490%	0.490%	0.028%	0.014%
66	0.490%	0.490%	0.028%	0.014%
67	0.490%	0.490%	0.028%	0.014%
68	0.490%	0.490%	0.028%	0.014%
69	0.490%	0.490%	0.028%	0.014%
70	0.490%	0.490%	0.028%	0.014%
71	0.490%	0.490%	0.028%	0.014%
72	0.490%	0.490%	0.028%	0.014%
73	0.490%	0.490%	0.028%	0.014%
74	0.490%	0.490%	0.028%	0.014%
75	0.490%	0.490%	0.028%	0.014%
76	0.490%	0.490%	0.028%	0.014%
77	0.490%	0.490%	0.028%	0.014%
78	0.490%	0.490%	0.028%	0.014%
79	0.490%	0.490%	0.028%	0.014%
≥ 80	N/A	N/A	N/A	N/A

Table XII-3
Active Disability Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM						
PROBABILITIES OF DISABILITY FOR ACTIVE MEMBERS: UNIFORMED GROUPS						
Age	Correction			Sanitation		
	Ordinary Disability	Accidental Disability: Tier 3R Non-enhanced Plan	Accidental Disability: All Other Plans	Ordinary Disability	Accidental Disability: Tier 3R Non-enhanced Plan	Accidental Disability: All Other Plans
15	0.100%	0.125%	0.250%	0.100%	0.050%	0.100%
16	0.100%	0.125%	0.250%	0.100%	0.050%	0.100%
17	0.100%	0.125%	0.250%	0.100%	0.050%	0.100%
18	0.100%	0.125%	0.250%	0.100%	0.050%	0.100%
19	0.100%	0.125%	0.250%	0.100%	0.050%	0.100%
20	0.100%	0.125%	0.250%	0.100%	0.050%	0.100%
21	0.100%	0.138%	0.263%	0.100%	0.050%	0.100%
22	0.100%	0.138%	0.275%	0.100%	0.050%	0.100%
23	0.100%	0.150%	0.288%	0.100%	0.050%	0.100%
24	0.100%	0.150%	0.300%	0.100%	0.050%	0.100%
25	0.100%	0.163%	0.313%	0.100%	0.050%	0.100%
26	0.100%	0.163%	0.325%	0.120%	0.055%	0.110%
27	0.100%	0.175%	0.338%	0.140%	0.060%	0.120%
28	0.100%	0.175%	0.350%	0.160%	0.065%	0.130%
29	0.100%	0.188%	0.363%	0.180%	0.070%	0.140%
30	0.100%	0.188%	0.375%	0.200%	0.075%	0.150%
31	0.120%	0.200%	0.388%	0.220%	0.080%	0.160%
32	0.140%	0.200%	0.400%	0.240%	0.085%	0.170%
33	0.160%	0.213%	0.413%	0.260%	0.090%	0.180%
34	0.180%	0.213%	0.425%	0.280%	0.095%	0.190%
35	0.200%	0.225%	0.438%	0.300%	0.100%	0.200%
36	0.220%	0.225%	0.450%	0.320%	0.105%	0.210%
37	0.240%	0.238%	0.463%	0.340%	0.110%	0.220%
38	0.260%	0.238%	0.475%	0.360%	0.115%	0.230%
39	0.280%	0.250%	0.488%	0.380%	0.120%	0.240%
40	0.300%	0.250%	0.500%	0.400%	0.125%	0.250%
41	0.320%	0.263%	0.513%	0.420%	0.130%	0.260%
42	0.340%	0.263%	0.525%	0.440%	0.135%	0.270%
43	0.360%	0.275%	0.538%	0.460%	0.140%	0.280%
44	0.380%	0.275%	0.550%	0.480%	0.145%	0.290%
45	0.400%	0.288%	0.563%	0.500%	0.150%	0.300%
46	0.420%	0.288%	0.575%	0.520%	0.170%	0.340%
47	0.440%	0.300%	0.588%	0.540%	0.190%	0.380%
48	0.460%	0.300%	0.600%	0.560%	0.210%	0.420%
49	0.480%	0.313%	0.613%	0.580%	0.230%	0.460%
50	0.500%	0.313%	0.625%	0.600%	0.250%	0.500%
51	0.520%	0.325%	0.650%	0.620%	0.280%	0.560%
52	0.540%	0.338%	0.675%	0.640%	0.310%	0.620%
53	0.560%	0.350%	0.700%	0.660%	0.340%	0.680%
54	0.580%	0.363%	0.725%	0.680%	0.370%	0.740%
55	0.600%	0.375%	0.750%	0.700%	0.400%	0.800%
56	0.620%	0.388%	0.775%	0.720%	0.440%	0.880%
57	0.640%	0.400%	0.800%	0.740%	0.480%	0.960%
58	0.660%	0.413%	0.825%	0.760%	0.520%	1.040%
59	0.680%	0.425%	0.850%	0.780%	0.560%	1.120%
60	0.700%	0.438%	0.875%	0.800%	0.600%	1.200%
61	0.720%	0.450%	0.900%	0.820%	0.650%	1.300%
62	0.740%	0.463%	0.925%	0.840%	0.700%	1.400%
63	N/A	N/A	N/A	0.860%	0.750%	1.500%
64	N/A	N/A	N/A	0.880%	0.800%	1.600%
65	N/A	N/A	N/A	0.900%	0.850%	1.700%
66	N/A	N/A	N/A	0.920%	0.910%	1.820%
67	N/A	N/A	N/A	0.940%	0.970%	1.940%
68	N/A	N/A	N/A	0.960%	1.030%	2.060%
69	N/A	N/A	N/A	0.980%	1.090%	2.180%
≥ 70	N/A	N/A	N/A	N/A	N/A	N/A

Table XII-3
Active Disability Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM				
PROBABILITIES OF DISABILITY FOR ACTIVE MEMBERS: OTHERS				
	TBTA		Transit	
Age	Ordinary Disability	Accidental Disability	Ordinary Disability	Accidental Disability
15	0.100%	0.020%	0.100%	0.020%
16	0.100%	0.020%	0.100%	0.020%
17	0.100%	0.020%	0.100%	0.020%
18	0.100%	0.020%	0.100%	0.020%
19	0.100%	0.020%	0.100%	0.020%
20	0.100%	0.020%	0.100%	0.020%
21	0.100%	0.020%	0.100%	0.020%
22	0.100%	0.020%	0.100%	0.020%
23	0.100%	0.020%	0.100%	0.020%
24	0.100%	0.020%	0.100%	0.020%
25	0.100%	0.020%	0.100%	0.020%
26	0.100%	0.020%	0.100%	0.020%
27	0.100%	0.020%	0.100%	0.020%
28	0.100%	0.020%	0.100%	0.020%
29	0.100%	0.020%	0.100%	0.020%
30	0.100%	0.020%	0.100%	0.020%
31	0.120%	0.020%	0.120%	0.020%
32	0.140%	0.020%	0.140%	0.020%
33	0.160%	0.020%	0.160%	0.020%
34	0.180%	0.020%	0.180%	0.020%
35	0.200%	0.020%	0.200%	0.020%
36	0.220%	0.020%	0.220%	0.020%
37	0.240%	0.020%	0.240%	0.020%
38	0.260%	0.020%	0.260%	0.020%
39	0.280%	0.020%	0.280%	0.020%
40	0.300%	0.020%	0.300%	0.020%
41	0.320%	0.020%	0.320%	0.020%
42	0.340%	0.020%	0.340%	0.020%
43	0.360%	0.020%	0.360%	0.020%
44	0.380%	0.020%	0.380%	0.020%
45	0.400%	0.020%	0.400%	0.020%
46	0.420%	0.020%	0.420%	0.020%
47	0.440%	0.020%	0.440%	0.020%
48	0.460%	0.020%	0.460%	0.020%
49	0.480%	0.020%	0.480%	0.020%
50	0.500%	0.020%	0.500%	0.020%
51	0.520%	0.020%	0.520%	0.020%
52	0.540%	0.020%	0.540%	0.020%
53	0.560%	0.020%	0.560%	0.020%
54	0.580%	0.020%	0.580%	0.020%
55	0.600%	0.020%	0.600%	0.020%
56	0.600%	0.020%	0.600%	0.020%
57	0.600%	0.020%	0.600%	0.020%
58	0.600%	0.020%	0.600%	0.020%
59	0.600%	0.020%	0.600%	0.020%
60	0.600%	0.020%	0.600%	0.020%
61	0.600%	0.020%	0.600%	0.020%
62	0.600%	0.020%	0.600%	0.020%
63	0.600%	0.020%	0.600%	0.020%
64	0.600%	0.020%	0.600%	0.020%
65	0.600%	0.020%	0.600%	0.020%
66	0.600%	0.020%	0.600%	0.020%
67	0.600%	0.020%	0.600%	0.020%
68	0.600%	0.020%	0.600%	0.020%
69	0.600%	0.020%	0.600%	0.020%
70	0.600%	0.020%	0.600%	0.020%
71	0.600%	0.020%	0.600%	0.020%
72	0.600%	0.020%	0.600%	0.020%
73	0.600%	0.020%	0.600%	0.020%
74	0.600%	0.020%	0.600%	0.020%
75	0.600%	0.020%	0.600%	0.020%
76	0.600%	0.020%	0.600%	0.020%
77	0.600%	0.020%	0.600%	0.020%
78	0.600%	0.020%	0.600%	0.020%
79	0.600%	0.020%	0.600%	0.020%
≥ 80	N/A	N/A	N/A	N/A

Table XII-4
Active Mortality Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM						
PROBABILITIES OF MORTALITY FOR ACTIVE MEMBERS: CORRECTION AND SANITATION						
	Correction			Sanitation		
	Ordinary Death		Accidental Death	Ordinary Death		Accidental Death
Age	Males	Females	All	Males	Females	All
15	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
16	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
17	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
18	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
19	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
20	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
21	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
22	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
23	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
24	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
25	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
26	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
27	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
28	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
29	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
30	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
31	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
32	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
33	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
34	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
35	0.025%	0.015%	0.005%	0.050%	0.030%	0.010%
36	0.030%	0.018%	0.005%	0.060%	0.036%	0.010%
37	0.035%	0.021%	0.005%	0.070%	0.042%	0.010%
38	0.040%	0.024%	0.005%	0.080%	0.048%	0.010%
39	0.045%	0.027%	0.005%	0.090%	0.054%	0.010%
40	0.050%	0.030%	0.005%	0.100%	0.060%	0.010%
41	0.055%	0.033%	0.005%	0.110%	0.066%	0.010%
42	0.060%	0.036%	0.005%	0.120%	0.072%	0.010%
43	0.065%	0.039%	0.005%	0.130%	0.078%	0.010%
44	0.070%	0.042%	0.005%	0.140%	0.084%	0.010%
45	0.075%	0.045%	0.005%	0.150%	0.090%	0.010%
46	0.080%	0.048%	0.005%	0.160%	0.096%	0.010%
47	0.085%	0.051%	0.005%	0.170%	0.102%	0.010%
48	0.090%	0.054%	0.005%	0.180%	0.108%	0.010%
49	0.095%	0.057%	0.005%	0.190%	0.114%	0.010%
50	0.100%	0.060%	0.005%	0.200%	0.120%	0.010%
51	0.105%	0.064%	0.005%	0.210%	0.128%	0.010%
52	0.110%	0.068%	0.005%	0.220%	0.136%	0.010%
53	0.115%	0.072%	0.005%	0.230%	0.144%	0.010%
54	0.120%	0.076%	0.005%	0.240%	0.152%	0.010%
55	0.125%	0.080%	0.005%	0.250%	0.160%	0.010%
56	0.130%	0.084%	0.005%	0.260%	0.168%	0.010%
57	0.135%	0.088%	0.005%	0.270%	0.176%	0.010%
58	0.140%	0.092%	0.005%	0.280%	0.184%	0.010%
59	0.145%	0.096%	0.005%	0.290%	0.192%	0.010%
60	0.150%	0.100%	0.005%	0.300%	0.200%	0.010%
61	0.160%	0.105%	0.005%	0.320%	0.210%	0.010%
62	0.170%	0.110%	0.005%	0.340%	0.220%	0.010%
63	N/A	N/A	N/A	0.360%	0.230%	0.010%
64	N/A	N/A	N/A	0.380%	0.240%	0.010%
65	N/A	N/A	N/A	0.400%	0.250%	0.010%
66	N/A	N/A	N/A	0.440%	0.280%	0.010%
67	N/A	N/A	N/A	0.480%	0.310%	0.010%
68	N/A	N/A	N/A	0.520%	0.340%	0.010%
69	N/A	N/A	N/A	0.560%	0.370%	0.010%
≥ 70	N/A	N/A	N/A	N/A	N/A	N/A

Table XII-4
Active Mortality Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM						
PROBABILITIES OF MORTALITY FOR ACTIVE MEMBERS: PLAN GROUPS OTHER THAN CORRECTION AND SANITATION						
	General			Transit and TBTA		
	Ordinary Death		Accidental Death	Ordinary Death		Accidental Death
Age	Males	Females	All	Males	Females	All
15	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
16	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
17	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
18	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
19	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
20	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
21	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
22	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
23	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
24	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
25	0.0240%	0.0180%	0.0000%	0.0240%	0.0180%	0.0060%
26	0.0264%	0.0192%	0.0000%	0.0264%	0.0192%	0.0060%
27	0.0288%	0.0204%	0.0000%	0.0288%	0.0204%	0.0060%
28	0.0312%	0.0216%	0.0000%	0.0312%	0.0216%	0.0060%
29	0.0336%	0.0228%	0.0000%	0.0336%	0.0228%	0.0060%
30	0.0360%	0.0240%	0.0000%	0.0360%	0.0240%	0.0060%
31	0.0384%	0.0252%	0.0000%	0.0384%	0.0252%	0.0060%
32	0.0408%	0.0264%	0.0000%	0.0408%	0.0264%	0.0060%
33	0.0432%	0.0276%	0.0000%	0.0432%	0.0276%	0.0060%
34	0.0456%	0.0288%	0.0000%	0.0456%	0.0288%	0.0060%
35	0.0480%	0.0300%	0.0000%	0.0480%	0.0300%	0.0060%
36	0.0504%	0.0312%	0.0000%	0.0504%	0.0312%	0.0060%
37	0.0528%	0.0324%	0.0000%	0.0528%	0.0324%	0.0060%
38	0.0552%	0.0336%	0.0000%	0.0552%	0.0336%	0.0060%
39	0.0576%	0.0348%	0.0000%	0.0576%	0.0348%	0.0060%
40	0.0600%	0.0360%	0.0000%	0.0600%	0.0360%	0.0060%
41	0.0660%	0.0408%	0.0000%	0.0660%	0.0408%	0.0060%
42	0.0720%	0.0456%	0.0000%	0.0720%	0.0456%	0.0060%
43	0.0780%	0.0504%	0.0000%	0.0780%	0.0504%	0.0060%
44	0.0840%	0.0552%	0.0000%	0.0840%	0.0552%	0.0060%
45	0.0900%	0.0600%	0.0000%	0.0900%	0.0600%	0.0060%
46	0.0960%	0.0660%	0.0000%	0.0960%	0.0660%	0.0060%
47	0.1020%	0.0720%	0.0000%	0.1020%	0.0720%	0.0060%
48	0.1080%	0.0780%	0.0000%	0.1080%	0.0780%	0.0060%
49	0.1140%	0.0840%	0.0000%	0.1140%	0.0840%	0.0060%
50	0.1200%	0.0900%	0.0000%	0.1200%	0.0900%	0.0060%
51	0.1320%	0.0960%	0.0000%	0.1320%	0.0960%	0.0060%
52	0.1440%	0.1020%	0.0000%	0.1440%	0.1020%	0.0060%
53	0.1560%	0.1080%	0.0000%	0.1560%	0.1080%	0.0060%
54	0.1680%	0.1140%	0.0000%	0.1680%	0.1140%	0.0060%
55	0.1800%	0.1200%	0.0000%	0.1800%	0.1200%	0.0060%
56	0.1920%	0.1260%	0.0000%	0.1920%	0.1260%	0.0060%
57	0.2040%	0.1320%	0.0000%	0.2040%	0.1320%	0.0060%
58	0.2160%	0.1380%	0.0000%	0.2160%	0.1380%	0.0060%
59	0.2280%	0.1440%	0.0000%	0.2280%	0.1440%	0.0060%
60	0.2400%	0.1500%	0.0000%	0.2400%	0.1500%	0.0060%
61	0.2520%	0.1560%	0.0000%	0.2520%	0.1560%	0.0060%
62	0.2640%	0.1620%	0.0000%	0.2640%	0.1620%	0.0060%
63	0.2760%	0.1680%	0.0000%	0.2760%	0.1680%	0.0060%
64	0.2880%	0.1740%	0.0000%	0.2880%	0.1740%	0.0060%
65	0.3000%	0.1800%	0.0000%	0.3000%	0.1800%	0.0060%
66	0.3240%	0.1920%	0.0000%	0.3240%	0.1920%	0.0060%
67	0.3480%	0.2040%	0.0000%	0.3480%	0.2040%	0.0060%
68	0.3720%	0.2160%	0.0000%	0.3720%	0.2160%	0.0060%
69	0.3960%	0.2280%	0.0000%	0.3960%	0.2280%	0.0060%
70	0.4000%	0.2400%	0.0000%	0.4000%	0.2400%	0.0060%
71	0.4240%	0.2580%	0.0000%	0.4240%	0.2580%	0.0060%
72	0.4480%	0.2760%	0.0000%	0.4480%	0.2760%	0.0060%
73	0.4720%	0.2940%	0.0000%	0.4720%	0.2940%	0.0060%
74	0.4960%	0.3120%	0.0000%	0.4960%	0.3120%	0.0060%
75	0.5200%	0.3300%	0.0000%	0.5200%	0.3300%	0.0060%
76	0.5680%	0.3660%	0.0000%	0.5680%	0.3660%	0.0060%
77	0.6160%	0.4020%	0.0000%	0.6160%	0.4020%	0.0060%
78	0.6640%	0.4380%	0.0000%	0.6640%	0.4380%	0.0060%
79	0.7120%	0.4740%	0.0000%	0.7120%	0.4740%	0.0060%
≥ 80	N/A	N/A	N/A	N/A	N/A	N/A

Table XII-5
Service Retiree Mortality Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES: PLAN GROUPS OTHER THAN HOUSING POLICE AND TRANSIT POLICE BASE TABLE					
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 XII-5
Service Retiree Mortality Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES: HOUSING POLICE AND TRANSIT POLICE BASE TABLE					
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 XII-6
Disabled Retiree Mortality Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES: GENERAL PLANS					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.2163%	0.1980%	68	3.8171%	2.9280%
16	0.2927%	0.2680%	69	3.8682%	2.9997%
17	0.3945%	0.3612%	70	3.9318%	3.0865%
18	0.4581%	0.3913%	71	4.1518%	3.1548%
19	0.4963%	0.4214%	72	4.3957%	3.4254%
20	0.5178%	0.4416%	73	4.6660%	3.7295%
21	0.5589%	0.4807%	74	4.9632%	3.9658%
22	0.6029%	0.5231%	75	5.2904%	4.2453%
23	0.6500%	0.5662%	76	5.7355%	4.5234%
24	0.7005%	0.6186%	77	6.2253%	4.7961%
25	0.7524%	0.6680%	78	6.7606%	5.1502%
26	0.8054%	0.7165%	79	7.3471%	5.5873%
27	0.8591%	0.7727%	80	7.9843%	6.0964%
28	0.9126%	0.8346%	81	8.6745%	6.6521%
29	0.9647%	0.9008%	82	9.4240%	7.2551%
30	1.0136%	0.9373%	83	10.2386%	7.9112%
31	1.0584%	0.9629%	84	11.1186%	8.6209%
32	1.0978%	0.9955%	85	12.0742%	9.3370%
33	1.1310%	1.0289%	86	12.8184%	10.0511%
34	1.1597%	1.0577%	87	13.3550%	10.8029%
35	1.1838%	1.0841%	88	14.0470%	11.4531%
36	1.2035%	1.1092%	89	14.7705%	12.5564%
37	1.2211%	1.1344%	90	15.5356%	14.1031%
38	1.2388%	1.1618%	91	17.3803%	15.7291%
39	1.2591%	1.1939%	92	19.4620%	17.1860%
40	1.2846%	1.2249%	93	21.5002%	18.5029%
41	1.3114%	1.2570%	94	23.5320%	19.6588%
42	1.3750%	1.2982%	95	25.5906%	20.8223%
43	1.4416%	1.3497%	96	27.4494%	21.5778%
44	1.5115%	1.4058%	97	29.1839%	21.9133%
45	1.5849%	1.4809%	98	30.8635%	22.0663%
46	1.6617%	1.5639%	99	32.2842%	23.0087%
47	1.7422%	1.6535%	100	33.4447%	23.1230%
48	1.8267%	1.7359%	101	35.1022%	23.6022%
49	1.9153%	1.8218%	102	36.5309%	24.5619%
50	2.0462%	1.8919%	103	37.8218%	25.7825%
51	2.2291%	1.9830%	104	38.8787%	27.1635%
52	2.4215%	2.0502%	105	39.6293%	28.6530%
53	2.6231%	2.1047%	106	40.0086%	30.2169%
54	2.8293%	2.1904%	107	40.1778%	31.8182%
55	3.0344%	2.2636%	108	40.3599%	33.4131%
56	3.1146%	2.3429%	109	40.5386%	34.9566%
57	3.1774%	2.4285%	110	50.0000%	50.0000%
58	3.2218%	2.5412%	111	50.0000%	50.0000%
59	3.2493%	2.5588%	112	50.0000%	50.0000%
60	3.2648%	2.5795%	113	50.0000%	50.0000%
61	3.3472%	2.6067%	114	50.0000%	50.0000%
62	3.4295%	2.6272%	115	50.0000%	50.0000%
63	3.5199%	2.6579%	116	50.0000%	50.0000%
64	3.6208%	2.7759%	117	50.0000%	50.0000%
65	3.7368%	2.8107%	118	50.0000%	50.0000%
66	3.7511%	2.8328%	119	50.0000%	50.0000%
67	3.7776%	2.8725%	120	100.0000%	100.0000%

Table XII-6
Disabled Retiree Mortality Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES: CORRECTION					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.1529%	0.1504%	68	2.0976%	1.9435%
16	0.2068%	0.2034%	69	2.2316%	2.0901%
17	0.2788%	0.2742%	70	2.3817%	2.2370%
18	0.3328%	0.3273%	71	2.5774%	2.3979%
19	0.3687%	0.3507%	72	2.7948%	2.5741%
20	0.3762%	0.3604%	73	3.0370%	2.7665%
21	0.3973%	0.3851%	74	3.3054%	3.0122%
22	0.4195%	0.4042%	75	3.6032%	3.3026%
23	0.4428%	0.4278%	76	3.9499%	3.6022%
24	0.4673%	0.4574%	77	4.3346%	3.9080%
25	0.4920%	0.4832%	78	4.7588%	4.2919%
26	0.5163%	0.5076%	79	5.2279%	4.7080%
27	0.5402%	0.5362%	80	5.7433%	5.1937%
28	0.5630%	0.5555%	81	6.3425%	5.7290%
29	0.5840%	0.5755%	82	6.9496%	6.3165%
30	0.6026%	0.5962%	83	7.5636%	6.9627%
31	0.6179%	0.6177%	84	8.1812%	7.7122%
32	0.6297%	0.6268%	85	8.8050%	8.4245%
33	0.6376%	0.6361%	86	9.7703%	9.0849%
34	0.6427%	0.6422%	87	10.8005%	9.7986%
35	0.6554%	0.6466%	88	12.0443%	10.5221%
36	0.6683%	0.6504%	89	13.3397%	11.5771%
37	0.6814%	0.6538%	90	14.6958%	12.7805%
38	0.6949%	0.6583%	91	16.4185%	14.0140%
39	0.7086%	0.6655%	92	18.1416%	15.1826%
40	0.7225%	0.6718%	93	19.8574%	16.3730%
41	0.7368%	0.6785%	94	21.6187%	18.3891%
42	0.7513%	0.6898%	95	23.5884%	20.4768%
43	0.7661%	0.7059%	96	25.4266%	21.5778%
44	0.7812%	0.7241%	97	27.2119%	21.9133%
45	0.7966%	0.7516%	98	29.0202%	22.0663%
46	0.8123%	0.7820%	99	30.6654%	23.0087%
47	0.8283%	0.8124%	100	32.1584%	23.1230%
48	0.8446%	0.8431%	101	33.7521%	23.6022%
49	0.8613%	0.8604%	102	35.1259%	24.5619%
50	0.8782%	0.8758%	103	36.3671%	25.7825%
51	0.8956%	0.8871%	104	37.3834%	27.1635%
52	0.9574%	0.8938%	105	38.1051%	28.6530%
53	1.0214%	0.8945%	106	38.4698%	30.2169%
54	1.0859%	0.9896%	107	38.6325%	31.8182%
55	1.1487%	1.0949%	108	38.8076%	33.4131%
56	1.2131%	1.1161%	109	38.9794%	34.9566%
57	1.2733%	1.1402%	110	50.0000%	50.0000%
58	1.3280%	1.1770%	111	50.0000%	50.0000%
59	1.3775%	1.2195%	112	50.0000%	50.0000%
60	1.4231%	1.2648%	113	50.0000%	50.0000%
61	1.4854%	1.3147%	114	50.0000%	50.0000%
62	1.5489%	1.3627%	115	50.0000%	50.0000%
63	1.6175%	1.4176%	116	50.0000%	50.0000%
64	1.6924%	1.5072%	117	50.0000%	50.0000%
65	1.7762%	1.5987%	118	50.0000%	50.0000%
66	1.8712%	1.7097%	119	50.0000%	50.0000%
67	1.9777%	1.8212%	120	100.0000%	100.0000%

Table XII-6
Disabled Retiree Mortality Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES: SANITATION					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.1891%	0.1809%	68	2.4678%	1.9435%
16	0.2558%	0.2447%	69	2.6254%	2.0901%
17	0.3448%	0.3299%	70	2.8020%	2.2370%
18	0.4004%	0.3831%	71	3.0322%	2.3979%
19	0.4338%	0.4126%	72	3.2880%	2.5741%
20	0.4426%	0.4240%	73	3.5729%	2.7665%
21	0.4674%	0.4530%	74	3.8887%	3.0122%
22	0.4935%	0.4755%	75	4.2391%	3.3026%
23	0.5209%	0.5033%	76	4.6469%	3.6022%
24	0.5498%	0.5381%	77	5.0995%	3.9080%
25	0.5788%	0.5685%	78	5.5986%	4.2919%
26	0.6074%	0.5972%	79	6.1505%	4.7080%
27	0.6355%	0.6308%	80	6.7568%	5.1937%
28	0.6623%	0.6535%	81	7.4618%	5.7290%
29	0.6871%	0.6771%	82	8.1760%	6.3165%
30	0.7089%	0.7014%	83	8.8984%	6.9627%
31	0.7269%	0.7267%	84	9.6249%	7.7122%
32	0.7408%	0.7374%	85	10.3588%	8.4245%
33	0.7501%	0.7484%	86	11.4945%	9.0849%
34	0.7561%	0.7555%	87	12.6389%	9.7986%
35	0.7710%	0.7607%	88	13.8008%	10.5221%
36	0.7862%	0.7652%	89	14.9732%	11.5771%
37	0.8017%	0.7692%	90	16.1654%	12.7805%
38	0.8175%	0.7745%	91	18.1783%	14.0140%
39	0.8336%	0.7829%	92	20.1433%	15.1826%
40	0.8500%	0.7904%	93	22.0331%	16.3730%
41	0.8668%	0.7982%	94	23.8872%	18.3891%
42	0.8839%	0.8115%	95	25.7371%	20.4768%
43	0.9013%	0.8305%	96	27.1672%	21.5778%
44	0.9191%	0.8519%	97	28.5248%	21.9133%
45	0.9372%	0.8842%	98	29.8950%	22.0663%
46	0.9556%	0.9200%	99	31.1005%	23.0087%
47	0.9745%	0.9558%	100	32.1584%	23.1230%
48	0.9937%	0.9919%	101	33.7521%	23.6022%
49	1.0133%	1.0122%	102	35.1259%	24.5619%
50	1.0332%	1.0303%	103	36.3671%	25.7825%
51	1.0536%	1.0437%	104	37.3834%	27.1635%
52	1.1263%	1.0515%	105	38.1051%	28.6530%
53	1.2016%	1.0523%	106	38.4698%	30.2169%
54	1.2775%	1.0767%	107	38.6325%	31.8182%
55	1.3514%	1.0949%	108	38.8076%	33.4131%
56	1.4272%	1.1161%	109	38.9794%	34.9566%
57	1.4980%	1.1402%	110	50.0000%	50.0000%
58	1.5624%	1.1770%	111	50.0000%	50.0000%
59	1.6206%	1.2195%	112	50.0000%	50.0000%
60	1.6742%	1.2648%	113	50.0000%	50.0000%
61	1.7475%	1.3147%	114	50.0000%	50.0000%
62	1.8222%	1.3627%	115	50.0000%	50.0000%
63	1.9029%	1.4176%	116	50.0000%	50.0000%
64	1.9910%	1.5072%	117	50.0000%	50.0000%
65	2.0897%	1.5987%	118	50.0000%	50.0000%
66	2.2014%	1.7097%	119	50.0000%	50.0000%
67	2.3267%	1.8212%	120	100.0000%	100.0000%

Table XII-6
Disabled Retiree Mortality Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES: TRANSIT AND TBTA					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.2122%	0.1981%	68	3.7437%	2.9280%
16	0.2871%	0.2680%	69	3.7938%	2.9997%
17	0.3869%	0.3612%	70	3.8562%	3.0865%
18	0.4493%	0.3913%	71	4.0719%	3.1548%
19	0.4867%	0.4214%	72	4.3111%	3.4254%
20	0.5079%	0.4416%	73	4.5762%	3.7295%
21	0.5481%	0.4807%	74	4.8677%	3.9658%
22	0.5913%	0.5231%	75	5.1886%	4.2453%
23	0.6375%	0.5662%	76	5.6252%	4.5234%
24	0.6871%	0.6186%	77	6.1056%	4.7961%
25	0.7380%	0.6680%	78	6.6306%	5.1502%
26	0.7899%	0.7165%	79	7.2058%	5.5873%
27	0.8426%	0.7727%	80	7.8307%	6.0964%
28	0.8951%	0.8346%	81	8.5077%	6.6521%
29	0.9462%	0.9008%	82	9.2427%	7.2551%
30	0.9941%	0.9373%	83	10.0417%	7.9112%
31	1.0381%	0.9629%	84	10.9048%	8.6209%
32	1.0767%	0.9955%	85	11.8420%	9.3370%
33	1.1093%	1.0289%	86	12.5719%	10.0511%
34	1.1374%	1.0577%	87	13.0981%	10.8029%
35	1.1611%	1.0841%	88	13.7768%	11.4531%
36	1.1803%	1.1092%	89	14.4864%	12.5564%
37	1.1976%	1.1344%	90	15.2369%	14.1031%
38	1.2150%	1.1618%	91	17.0460%	15.7291%
39	1.2349%	1.1939%	92	19.0878%	17.1860%
40	1.2599%	1.2249%	93	21.0868%	18.5029%
41	1.2862%	1.2570%	94	23.0794%	19.6588%
42	1.3485%	1.2982%	95	25.0984%	21.1183%
43	1.4139%	1.3497%	96	26.9216%	22.4310%
44	1.4825%	1.4058%	97	28.6226%	23.5901%
45	1.5544%	1.4809%	98	30.2699%	24.4460%
46	1.6298%	1.5639%	99	31.6634%	24.9756%
47	1.7087%	1.6535%	100	32.8016%	25.0896%
48	1.7915%	1.7359%	101	34.4271%	26.0668%
49	1.8784%	1.8218%	102	35.8284%	27.2107%
50	2.0069%	1.8919%	103	37.0944%	28.5630%
51	2.1863%	1.9830%	104	38.1311%	30.0929%
52	2.3750%	2.0502%	105	38.8672%	31.7431%
53	2.5726%	2.1047%	106	39.2392%	33.4756%
54	2.7749%	2.1904%	107	39.4052%	35.2496%
55	2.9761%	2.2636%	108	39.5838%	37.0164%
56	3.0547%	2.3429%	109	39.7590%	38.7265%
57	3.1163%	2.4285%	110	50.0000%	50.0000%
58	3.1599%	2.5412%	111	50.0000%	50.0000%
59	3.1868%	2.5588%	112	50.0000%	50.0000%
60	3.2020%	2.5795%	113	50.0000%	50.0000%
61	3.2829%	2.6067%	114	50.0000%	50.0000%
62	3.3636%	2.6272%	115	50.0000%	50.0000%
63	3.4522%	2.6579%	116	50.0000%	50.0000%
64	3.5511%	2.7759%	117	50.0000%	50.0000%
65	3.6650%	2.8107%	118	50.0000%	50.0000%
66	3.6789%	2.8328%	119	50.0000%	50.0000%
67	3.7049%	2.8725%	120	100.0000%	100.0000%

Table XII-6
Disabled Retiree Mortality Rates (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES: HOUSING POLICE AND TRANSIT POLICE BASE TABLE					
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 XII-7
Beneficiary Mortality Rates

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM					
PROBABILITIES OF MORTALITY FOR BENEFICIARIES: ALL PLAN GROUPS					
BASE TABLE					
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 XII-8
Salary Scale**

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM
ANNUAL RATES OF MERIT AND SALARY INCREASE

Years of Service	General		Correction		Sanitation		TBTA		Transit	
	Merit Increase	Salary Increase ¹	Merit Increase	Salary Increase ¹	Merit Increase	Salary Increase ¹	Merit Increase	Salary Increase ¹	Merit Increase	Salary Increase ¹
0	6.00%	9.00%	11.00%	14.00%	4.00%	7.00%	8.00%	11.00%	16.00%	19.00%
1	5.00%	8.00%	10.00%	13.00%	6.00%	9.00%	7.00%	10.00%	11.00%	14.00%
2	4.00%	7.00%	9.00%	12.00%	8.00%	11.00%	6.00%	9.00%	7.00%	10.00%
3	3.00%	6.00%	8.00%	11.00%	13.00%	16.00%	5.00%	8.00%	6.00%	9.00%
4	2.50%	5.50%	46.00%	49.00%	22.00%	25.00%	4.00%	7.00%	3.00%	6.00%
5	2.00%	5.00%	1.20%	4.20%	15.00%	18.00%	3.00%	6.00%	2.00%	5.00%
6	1.90%	4.90%	1.40%	4.40%	1.00%	4.00%	2.00%	5.00%	1.50%	4.50%
7	1.80%	4.80%	1.60%	4.60%	1.10%	4.10%	1.00%	4.00%	1.50%	4.50%
8	1.70%	4.70%	1.80%	4.80%	1.20%	4.20%	0.80%	3.80%	1.50%	4.50%
9	1.60%	4.60%	3.20%	6.20%	2.10%	5.10%	0.60%	3.60%	1.50%	4.50%
10	1.50%	4.50%	2.00%	5.00%	1.40%	4.40%	0.50%	3.50%	1.50%	4.50%
11	1.50%	4.50%	1.90%	4.90%	1.30%	4.30%	0.50%	3.50%	1.50%	4.50%
12	1.50%	4.50%	1.80%	4.80%	1.20%	4.20%	0.50%	3.50%	1.50%	4.50%
13	1.50%	4.50%	1.70%	4.70%	1.10%	4.10%	0.50%	3.50%	1.50%	4.50%
14	1.50%	4.50%	2.90%	5.90%	2.00%	5.00%	0.50%	3.50%	1.50%	4.50%
15	1.50%	4.50%	1.50%	4.50%	1.00%	4.00%	0.50%	3.50%	1.50%	4.50%
16	1.45%	4.45%	1.40%	4.40%	1.00%	4.00%	0.50%	3.50%	1.50%	4.50%
17	1.40%	4.40%	1.30%	4.30%	0.90%	3.90%	0.50%	3.50%	1.50%	4.50%
18	1.35%	4.35%	1.20%	4.20%	0.80%	3.80%	0.50%	3.50%	1.50%	4.50%
19	1.30%	4.30%	2.40%	5.40%	1.60%	4.60%	0.50%	3.50%	1.50%	4.50%
20	1.25%	4.25%	1.00%	4.00%	0.70%	3.70%	0.50%	3.50%	1.50%	4.50%
21	1.20%	4.20%	0.90%	3.90%	0.60%	3.60%	0.50%	3.50%	1.50%	4.50%
22	1.15%	4.15%	0.80%	3.80%	0.50%	3.50%	0.50%	3.50%	1.50%	4.50%
23	1.10%	4.10%	0.70%	3.70%	0.50%	3.50%	0.50%	3.50%	1.00%	4.00%
24	1.05%	4.05%	0.60%	3.60%	0.50%	3.50%	0.50%	3.50%	1.00%	4.00%
≥ 25	1.00%	4.00%	0.50%	3.50%	0.50%	3.50%	0.50%	3.50%	1.00%	4.00%

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

Table XII-9
Overtime

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
OVERTIME ASSUMPTION: GROUPS OTHER THAN CORRECTION		
Plan Group	Overtime Type	Assumption
General	All Overtime	5.00%
Sanitation	Baseline	12.00%
	Dual Service	16.00%
	Dual Disability	8.00%
TBTA	Baseline	20.00%
	Dual Service	24.00%
	Dual Disability	18.00%
Transit	Baseline	8.00%
	Dual Service	10.00%
	Dual Disability	6.00%

Table XII-9
Overtime (cont'd)

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM OVERTIME ASSUMPTION: CORRECTION		
	Correction	
Years of Service	Baseline and Dual Service	Dual Disability
0-15	15.00%	8.00%
16	16.50%	9.00%
17	18.00%	10.00%
18	19.50%	11.00%
19	21.00%	12.00%
20+	22.50%	13.00%

Additional Assumptions and Methods

1. **Mortality Assumption:** Improvement scales are applied to actives, terminated vesteds, and pensioners using mortality improvement scale MP-2020. The base tables for pensioners 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:

Group	Service Retiree Adjustment Factor		Disabled Retiree Adjustment Factor		Beneficiary Adjustment Factor	
	Male	Female	Male	Female	Male	Female
General	0.890	0.951	0.962	1.000	0.890	0.951
Correction	0.890	0.873	0.835	0.770	0.890	0.951
Sanitation	0.940	0.922	1.000	1.000	0.890	0.951
Transit/TBTA	0.950	1.098	1.010	0.900	0.890	0.951
Housing Police/Transit Police	0.910	0.910	0.876	0.876	0.890	0.951

2. **Marital Assumption:** All active members are assumed to be married, males are assumed to be four years older than their female spouses, and females are assumed to be two years younger than their male spouses.
3. **Credited Service:** Calculated in whole year increments for valuation purposes.
4. **Loans:** Except for Death Benefits, it is assumed that eligible members take a loan at retirement equal to 25% of their member contribution balances.
5. **Actuarial Interest Rate (AIR):** 7.0% per annum, net of investment expenses.
6. **COLA:** Based on an assumed long-term Consumer Price Index inflation rate of 2.5% per year, 1.5% per year for COLA, 2.5% per year for Escalation. For beneficiaries receiving Special Accidental Death Benefits, 3.0% COLA per year is assumed in the future.
7. **Actuarial Asset Valuation Method (AAVM):**

The Actuary rest the Actuarial Value of Assets to Market value as of June 30, 2019.

Beginning with the June 30, 2020 (Lag) actuarial valuation, the AAVM recognizes investment returns greater or less than expected over a period of five years.

In accordance with this AAVM, the Unexpected Investment Returns (UIR) are phased into the Actuarial Value of Assets (AVA) over 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.

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

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

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

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

The explicit UALs that are developed under EAN each year are generally 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 6 active members decrease the average Normal Cost as a percentage of pay).

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

This methodology requires adjustments to certain components used to determine the Fiscal Year XX employer contributions as follows:

a. Normal Cost

The normal cost as of June 30, XX-2 is rolled forward with the assumed AIR of 7.0% to derive the normal cost as of December 31, XX-1.

b. UAL Payments

For determining the UAL payments for Fiscal Year XX, and to be consistent with the OYLM, the UAL as of June 30, XX-2 is adjusted by the discounted value of employer normal cost and UAL payments paid during Fiscal Year XX-1 and the discounted value of Administrative Expenses reimbursed during Fiscal Years XX-1 and XX.

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

SECTION XIII - SUMMARY OF DEMOGRAPHIC DATA

The June 30, 2019 (Lag) and June 30, 2018 (Lag) actuarial valuations are based upon census data as of those dates submitted by the Plan's administrative staff and the employers' payroll facilities. Financial information was provided by the Office of the Comptroller as of June 30, 2019 and June 30, 2018.

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 XIII-1
Status Reconciliation**

CHANGES IN THE NUMBER OF ACTIVES AND PENSIONERS DURING THE FISCAL YEAR CLASSIFIED BY STATUS										
Status	(1) Active Members	(2) Active Off Payroll	(3) Deferred Vested	(4) Service Pension	(5) Ordinary Disability	(6) Accidental Disability	(7) Accidental Death	(8) Other Beneficiary	(9) Pensioners Subtotal (4) to (8)	(10) Grand Total (1) + (2) + (3) + (9)
Number at June 30, 2018	190,572	28,483	21,389	124,627	9,815	4,697	200	14,777	154,116	394,560
New Entrants	11,828	846	53	73	11	5	17	200	306	13,033
Rehire	4,763	785	(2,848)	0	0	0	0	0	0	2,700
Leaving Active Payroll	(5,866)	5,866	0	0	0	0	0	0	0	0
Vested Termination	(2,441)	(2,309)	4,750	0	0	0	0	0	0	0
Non-Vested Termination / Cashout	(1,167)	(1,530)	(430)	0	0	0	0	0	0	(3,127)
Accidental Death (from Active)	(1)	0	0	0	0	0	1	0	1	0
Ordinary Death (from Active)	(2)	0	0	0	0	0	0	0	0	(2)
Service Retirement	(5,976)	(790)	(981)	7,747	0	0	0	0	7,747	0
Ordinary Disability Retirement	(139)	(59)	(127)	0	325	0	0	0	325	0
Accidental Disability Retirement	(70)	(19)	(18)	0	0	107	0	0	107	0
Reclassifications	0	0	0	(45)	30	14	7	(6)	0	0
Death with Beneficiary	0	0	0	(844)	(109)	(11)	0	964	0	0
Death without Beneficiary	0	0	0	(4,012)	(309)	(138)	(3)	(980)	(5,442)	(5,442)
Off Pension Payroll	0	0	0	(7)	0	0	0	0	(7)	(7)
Net Change	929	2,790	399	2,912	(52)	(23)	22	178	3,037	7,155
Number at June 30, 2019	191,501	31,273	21,788	127,539	9,763	4,674	222	14,955	157,153	401,715

**Graph XIII-2
Headcount Summary by Status**

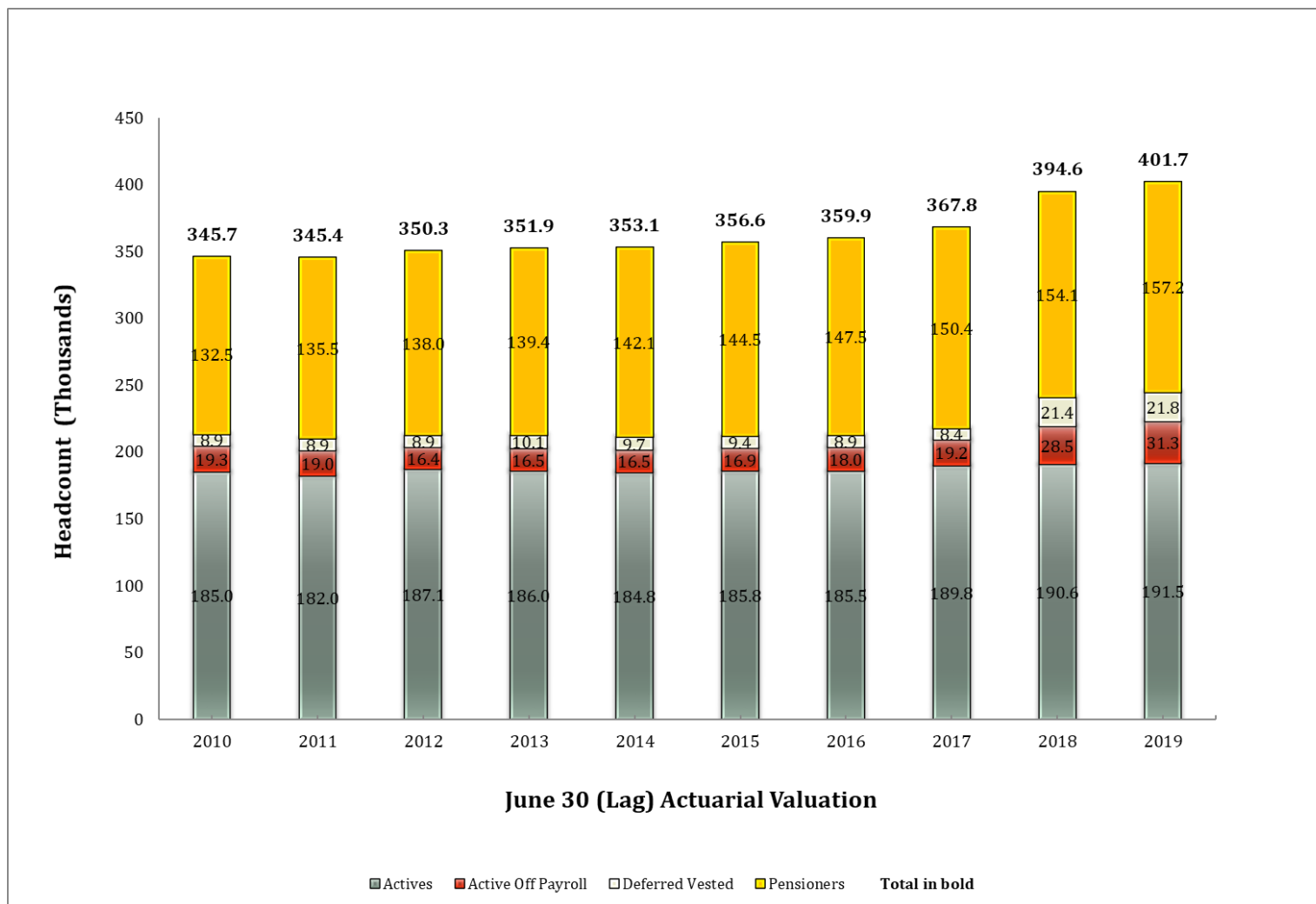


Table XIII-3
Summary of Active Membership

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
ACTIVE MEMBERS INCLUDED IN THE JUNE 30, 2019 (LAG) AND THE JUNE 30, 2018 (LAG) ACTUARIAL VALUATIONS		
	June 30, 2019 (Lag)	June 30, 2018 (Lag)
Number		
Males	105,729	105,339
Females	85,772	85,233
Total	191,501	190,572
Annual Salary ¹		
Males	\$ 8,792,955,050	\$ 8,529,342,102
Females	6,188,506,125	5,929,775,955
Total	\$ 14,981,461,175	\$ 14,459,118,057
Average Salary ¹		
Males	\$ 83,165	\$ 80,970
Females	72,151	69,571
Total Average	\$ 78,232	\$ 75,872
Average Age		
Males	47.6	47.7
Females	47.8	47.9
Total Average	47.7	47.8
Average Past Service		
Males	12.2	12.4
Females	12.1	12.3
Total Average	12.2	12.4

¹Salaries shown are base salary 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 XIII-4
Active Membership by Tier

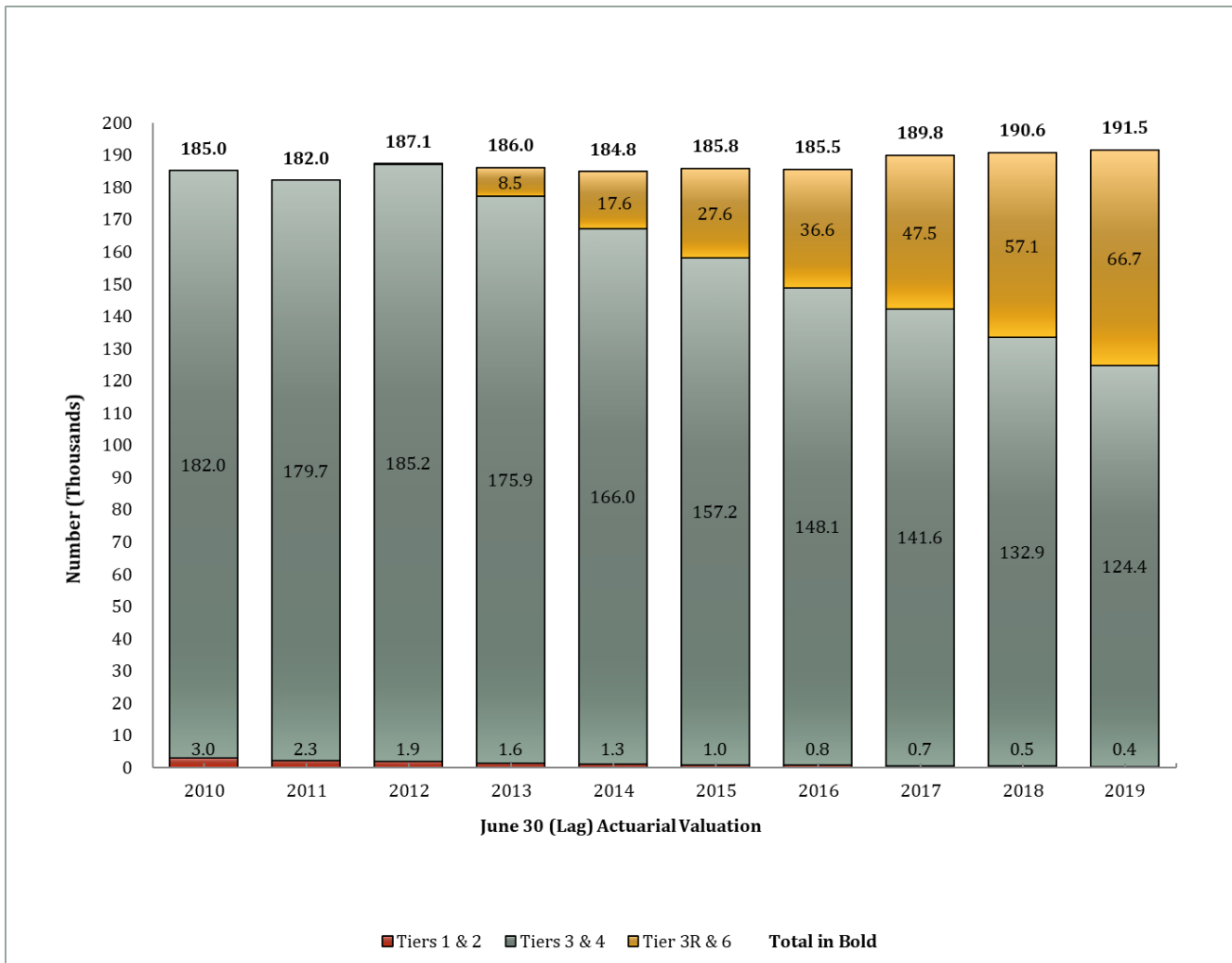


Table XIII-5
Schedule of Active Member Salary Data

June 30 (Lag) Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2010	184,982	\$12,101,416,579	\$65,419	2.6%
2011	182,021	12,233,572,536	67,210	2.7%
2012	187,114	12,478,129,812	66,687	(0.8%)
2013	185,971	12,642,482,697	67,981	1.9%
2014	184,762	12,672,386,846	68,588	0.9%
2015	185,758	12,917,466,528	69,539	1.4%
2016	185,481	13,216,539,355	71,255	2.5%
2017	189,792	14,065,241,654	74,109	4.0%
2018	190,572	14,459,118,057	75,872	2.4%
2019	191,501	14,981,461,175	78,232	3.1%

Salaries shown are base salary 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 XIII-6
Detailed Active Membership and Salaries by Obligor as of June 30, 2019

AGE \ SVC	Transit Authority									
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	34	0	0	0	0	0	0	0	0	34
20 TO 24	306	0	0	0	0	0	0	0	0	306
25 TO 29	1,193	120	32	0	0	0	0	0	0	1,345
30 TO 34	2,163	891	150	4	0	0	0	0	0	3,208
35 TO 39	2,083	1,341	607	126	6	0	0	0	0	4,163
40 TO 44	1,620	1,257	1,080	534	105	2	0	0	0	4,598
45 TO 49	1,281	1,150	1,244	1,020	679	153	7	0	0	5,534
50 TO 54	1,051	1,015	1,336	1,398	1,199	908	360	21	0	7,288
55 TO 59	703	829	1,155	1,278	1,278	1,065	773	130	1	7,212
60 TO 64	330	487	699	893	836	631	522	219	27	4,644
65 TO 69	87	176	274	386	377	208	159	94	32	1,793
70 & UP	7	36	98	149	149	76	51	37	37	640
TOTAL	10,858	7,302	6,675	5,788	4,629	3,043	1,872	501	97	40,765

<i>SALARIES (IN THOUSANDS):</i>										
UNDER 20	1,791	0	0	0	0	0	0	0	0	1,791
20 TO 24	18,817	0	0	0	0	0	0	0	0	18,817
25 TO 29	77,912	9,455	2,933	0	0	0	0	0	0	90,300
30 TO 34	145,736	72,692	12,900	382	0	0	0	0	0	231,710
35 TO 39	147,160	111,391	52,446	11,999	597	0	0	0	0	323,593
40 TO 44	115,609	104,712	93,029	49,182	9,872	191	0	0	0	372,595
45 TO 49	91,889	96,734	107,079	93,614	64,348	15,356	736	0	0	469,756
50 TO 54	76,055	85,417	115,734	127,701	112,459	89,502	37,246	2,263	0	646,377
55 TO 59	51,822	68,849	100,252	115,120	119,124	104,146	77,885	13,986	112	651,296
60 TO 64	24,239	41,027	59,933	80,598	77,382	61,540	52,363	22,660	2,880	422,622
65 TO 69	6,405	14,612	23,514	34,472	34,503	19,582	15,508	9,908	3,388	161,892
70 & UP	521	3,060	8,340	13,476	13,483	7,073	4,831	3,600	3,728	58,112
TOTAL *	757,956	607,949	576,160	526,544	431,768	297,390	188,569	52,417	10,108	3,448,861

<i>AVERAGE SALARIES: **</i>										
UNDER 20	52,676	0	0	0	0	0	0	0	0	52,676
20 TO 24	61,493	0	0	0	0	0	0	0	0	61,493
25 TO 29	65,308	78,792	91,656	0	0	0	0	0	0	67,138
30 TO 34	67,377	81,585	86,000	95,500	0	0	0	0	0	72,229
35 TO 39	70,648	83,066	86,402	95,230	99,500	0	0	0	0	77,731
40 TO 44	71,364	83,303	86,138	92,101	94,019	95,500	0	0	0	81,034
45 TO 49	71,732	84,117	86,076	91,778	94,769	100,366	105,143	0	0	84,885
50 TO 54	72,364	84,155	86,627	91,345	93,794	98,570	103,461	107,762	0	88,691
55 TO 59	73,716	83,051	86,798	90,078	93,211	97,790	100,757	107,585	112,000	90,307
60 TO 64	73,452	84,244	85,741	90,255	92,562	97,528	100,312	103,470	106,667	91,004
65 TO 69	73,621	83,023	85,818	89,306	91,520	94,144	97,535	105,404	105,875	90,291
70 & UP	74,429	85,000	85,102	90,443	90,490	93,066	94,725	97,297	100,757	90,800
TOTAL	69,806	83,258	86,316	90,972	93,275	97,729	100,731	104,625	104,206	84,603

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

AGE \ SVC	Housing Authority									
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	1	0	0	0	0	0	0	0	0	1
20 TO 24	50	3	0	0	0	0	0	0	0	53
25 TO 29	221	132	1	0	0	0	0	0	0	354
30 TO 34	264	313	97	0	0	0	0	0	0	674
35 TO 39	238	300	137	70	0	0	0	0	0	745
40 TO 44	218	270	179	225	128	6	0	0	0	1,026
45 TO 49	150	225	161	295	289	170	3	0	0	1,293
50 TO 54	165	232	165	286	323	418	129	4	0	1,722
55 TO 59	109	157	152	282	292	337	246	43	3	1,621
60 TO 64	58	109	79	174	152	149	134	68	22	945
65 TO 69	15	32	39	57	62	47	23	10	13	298
70 & UP	12	10	8	22	17	10	8	7	5	99
TOTAL	1,501	1,783	1,018	1,411	1,263	1,137	543	132	43	8,831

SALARIES (IN THOUSANDS):

UNDER 20	34	0	0	0	0	0	0	0	0	34
20 TO 24	1,916	143	0	0	0	0	0	0	0	2,059
25 TO 29	10,139	6,995	48	0	0	0	0	0	0	17,182
30 TO 34	13,182	17,511	5,607	0	0	0	0	0	0	36,300
35 TO 39	12,814	18,382	9,212	4,641	0	0	0	0	0	45,049
40 TO 44	11,976	17,262	13,090	15,182	9,367	514	0	0	0	67,391
45 TO 49	9,410	15,573	11,111	20,204	21,696	13,539	233	0	0	91,766
50 TO 54	10,242	15,962	11,653	19,488	24,640	32,588	10,930	383	0	125,886
55 TO 59	6,636	10,357	10,387	19,216	22,375	26,432	20,713	4,011	288	120,415
60 TO 64	3,545	7,034	5,629	12,765	11,679	11,749	11,404	5,862	1,684	71,351
65 TO 69	707	2,420	2,538	4,140	4,911	3,426	1,874	741	978	21,735
70 & UP	362	787	582	1,707	1,351	727	611	566	390	7,083
TOTAL *	80,963	112,426	69,857	97,343	96,019	88,975	45,765	11,563	3,340	606,251

*AVERAGE SALARIES: ***

UNDER 20	34,000	0	0	0	0	0	0	0	0	34,000
20 TO 24	38,320	47,667	0	0	0	0	0	0	0	38,849
25 TO 29	45,878	52,992	48,000	0	0	0	0	0	0	48,537
30 TO 34	49,932	55,946	57,804	0	0	0	0	0	0	53,858
35 TO 39	53,840	61,273	67,241	66,300	0	0	0	0	0	60,468
40 TO 44	54,936	63,933	73,128	67,476	73,180	85,667	0	0	0	65,683
45 TO 49	62,733	69,213	69,012	68,488	75,073	79,641	77,667	0	0	70,971
50 TO 54	62,073	68,802	70,624	68,140	76,285	77,962	84,729	95,750	0	73,105
55 TO 59	60,881	65,968	68,336	68,142	76,627	78,433	84,199	93,279	96,000	74,284
60 TO 64	61,121	64,532	71,253	73,362	76,836	78,852	85,104	86,206	76,545	75,504
65 TO 69	47,133	75,625	65,077	72,632	79,210	72,894	81,478	74,100	75,231	72,936
70 & UP	30,167	78,700	72,750	77,591	79,471	72,700	76,375	80,857	78,000	71,545
TOTAL	53,939	63,054	68,622	68,989	76,025	78,254	84,282	87,598	77,674	68,650

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

Health and Hospitals Corporation										
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	1	0	0	0	0	0	0	0	0	1
20 TO 24	69	1	0	0	0	0	0	0	0	70
25 TO 29	782	45	1	0	0	0	0	0	0	828
30 TO 34	1,571	438	72	0	0	0	0	0	0	2,081
35 TO 39	1,570	830	437	52	1	0	0	0	0	2,890
40 TO 44	1,348	966	715	271	38	0	0	0	0	3,338
45 TO 49	1,201	953	934	510	163	43	2	0	0	3,806
50 TO 54	1,066	994	1,026	737	478	358	77	0	0	4,736
55 TO 59	968	911	1,081	827	633	632	290	52	2	5,396
60 TO 64	516	642	830	710	527	642	400	197	23	4,487
65 TO 69	146	273	341	278	176	191	140	57	28	1,630
70 & UP	33	77	108	86	73	77	58	25	30	567
TOTAL	9,271	6,130	5,545	3,471	2,089	1,943	967	331	83	29,830

SALARIES (IN THOUSANDS):

UNDER 20	51	0	0	0	0	0	0	0	0	51
20 TO 24	4,525	42	0	0	0	0	0	0	0	4,567
25 TO 29	53,609	3,276	46	0	0	0	0	0	0	56,931
30 TO 34	110,996	32,760	5,077	0	0	0	0	0	0	148,833
35 TO 39	112,369	62,564	32,949	3,584	73	0	0	0	0	211,539
40 TO 44	98,034	72,147	55,566	21,357	3,096	0	0	0	0	250,200
45 TO 49	86,258	70,145	76,656	43,014	14,719	3,423	226	0	0	294,441
50 TO 54	74,851	72,851	80,595	60,416	43,394	35,186	6,240	0	0	373,533
55 TO 59	68,471	67,274	81,779	65,603	55,776	58,366	28,328	4,469	109	430,175
60 TO 64	39,838	48,792	62,878	55,459	44,848	59,569	37,809	19,009	2,148	370,350
65 TO 69	12,904	19,704	25,694	22,262	15,564	16,043	13,124	5,573	3,200	134,068
70 & UP	2,868	6,160	8,183	5,921	6,059	6,309	4,135	2,315	3,031	44,981
TOTAL *	664,774	455,715	429,423	277,616	183,529	178,896	89,862	31,366	8,488	2,319,669

*AVERAGE SALARIES: ***

UNDER 20	51,000	0	0	0	0	0	0	0	0	51,000
20 TO 24	65,580	42,000	0	0	0	0	0	0	0	65,243
25 TO 29	68,554	72,800	46,000	0	0	0	0	0	0	68,757
30 TO 34	70,653	74,795	70,514	0	0	0	0	0	0	71,520
35 TO 39	71,573	75,378	75,398	68,923	73,000	0	0	0	0	73,197
40 TO 44	72,726	74,686	77,715	78,808	81,474	0	0	0	0	74,955
45 TO 49	71,822	73,604	82,073	84,341	90,301	79,605	113,000	0	0	77,362
50 TO 54	70,217	73,291	78,553	81,976	90,782	98,285	81,039	0	0	78,871
55 TO 59	70,735	73,846	75,651	79,326	88,114	92,351	97,683	85,942	54,500	79,721
60 TO 64	77,205	76,000	75,757	78,111	85,101	92,787	94,523	96,492	93,391	82,538
65 TO 69	88,384	72,176	75,349	80,079	88,432	83,995	93,743	97,772	114,286	82,250
70 & UP	86,909	80,000	75,769	68,849	83,000	81,935	71,293	92,600	101,033	79,332
TOTAL	71,705	74,342	77,443	79,982	87,855	92,072	92,929	94,761	102,265	77,763

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

Triborough Bridge and Tunnel Authority										
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	7	0	0	0	0	0	0	0	0	7
25 TO 29	30	3	0	0	0	0	0	0	0	33
30 TO 34	35	30	6	0	0	0	0	0	0	71
35 TO 39	42	48	24	7	0	0	0	0	0	121
40 TO 44	37	43	81	31	3	0	0	0	0	195
45 TO 49	16	48	85	81	31	6	1	0	0	268
50 TO 54	19	27	56	45	35	17	4	0	0	203
55 TO 59	16	26	37	37	24	26	24	8	0	198
60 TO 64	6	6	16	30	16	17	10	3	0	104
65 TO 69	2	1	7	10	4	6	6	1	2	39
70 & UP	0	1	0	3	2	2	3	2	0	13
TOTAL	210	233	312	244	115	74	48	14	2	1,252

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	379	0	0	0	0	0	0	0	0	379
25 TO 29	1,975	230	0	0	0	0	0	0	0	2,205
30 TO 34	2,616	2,750	602	0	0	0	0	0	0	5,968
35 TO 39	3,209	4,597	2,543	804	0	0	0	0	0	11,153
40 TO 44	2,871	4,056	8,144	3,314	266	0	0	0	0	18,651
45 TO 49	1,395	4,572	8,329	8,260	3,324	780	111	0	0	26,771
50 TO 54	1,599	2,540	5,467	4,458	3,691	1,823	434	0	0	20,012
55 TO 59	1,281	2,766	3,762	3,880	2,649	3,191	2,818	923	0	21,270
60 TO 64	712	561	1,522	2,825	1,884	1,975	1,158	415	0	11,052
65 TO 69	174	143	726	988	383	613	570	120	214	3,931
70 & UP	0	152	0	296	332	183	371	159	0	1,493
TOTAL *	16,211	22,367	31,095	24,825	12,529	8,565	5,462	1,617	214	122,885

*AVERAGE SALARIES: ***

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	54,143	0	0	0	0	0	0	0	0	54,143
25 TO 29	65,833	76,667	0	0	0	0	0	0	0	66,818
30 TO 34	74,743	91,667	100,333	0	0	0	0	0	0	84,056
35 TO 39	76,405	95,771	105,958	114,857	0	0	0	0	0	92,174
40 TO 44	77,595	94,326	100,543	106,903	88,667	0	0	0	0	95,646
45 TO 49	87,188	95,250	97,988	101,975	107,226	130,000	111,000	0	0	99,892
50 TO 54	84,158	94,074	97,625	99,067	105,457	107,235	108,500	0	0	98,581
55 TO 59	80,063	106,385	101,676	104,865	110,375	122,731	117,417	115,375	0	107,424
60 TO 64	118,667	93,500	95,125	94,167	117,750	116,176	115,800	138,333	0	106,269
65 TO 69	87,000	143,000	103,714	98,800	95,750	102,167	95,000	120,000	107,000	100,795
70 & UP	0	152,000	0	98,667	166,000	91,500	123,667	79,500	0	114,846
TOTAL	77,195	95,996	99,663	101,742	108,948	115,743	113,792	115,500	107,000	98,151

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

CUNY Senior Colleges										
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	33	1	0	0	0	0	0	0	0	34
25 TO 29	192	15	0	0	0	0	0	0	0	207
30 TO 34	291	93	22	0	0	0	0	0	0	406
35 TO 39	223	132	94	11	0	0	0	0	0	460
40 TO 44	162	110	120	69	8	0	0	0	0	469
45 TO 49	168	125	116	105	39	9	1	0	0	563
50 TO 54	182	93	135	107	79	37	4	0	0	637
55 TO 59	144	111	134	117	104	52	34	5	0	701
60 TO 64	127	74	92	90	80	39	32	18	1	553
65 TO 69	67	42	57	52	53	28	15	9	3	326
70 & UP	19	25	42	25	14	13	13	2	11	164
TOTAL	1,608	821	812	576	377	178	99	34	15	4,520

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	1,224	38	0	0	0	0	0	0	0	1,262
25 TO 29	8,269	878	0	0	0	0	0	0	0	9,147
30 TO 34	13,886	5,362	1,459	0	0	0	0	0	0	20,707
35 TO 39	11,584	8,118	6,499	728	0	0	0	0	0	26,929
40 TO 44	8,475	7,243	8,145	4,825	735	0	0	0	0	29,423
45 TO 49	9,164	8,315	7,526	7,302	2,711	678	79	0	0	35,775
50 TO 54	9,202	5,665	8,595	7,578	6,101	2,955	367	0	0	40,463
55 TO 59	7,187	6,305	7,882	7,726	7,672	4,439	2,842	408	0	44,461
60 TO 64	6,237	4,124	5,119	5,476	5,741	2,815	2,319	1,321	59	33,211
65 TO 69	3,571	2,389	2,946	2,999	3,288	1,864	836	658	247	18,798
70 & UP	1,213	997	2,120	1,189	738	711	758	107	777	8,610
TOTAL *	80,012	49,434	50,291	37,823	26,986	13,462	7,201	2,494	1,083	268,786

*AVERAGE SALARIES: ***

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	37,091	38,000	0	0	0	0	0	0	0	37,118
25 TO 29	43,068	58,533	0	0	0	0	0	0	0	44,188
30 TO 34	47,718	57,656	66,318	0	0	0	0	0	0	51,002
35 TO 39	51,946	61,500	69,138	66,182	0	0	0	0	0	58,541
40 TO 44	52,315	65,845	67,875	69,928	91,875	0	0	0	0	62,736
45 TO 49	54,548	66,520	64,879	69,543	69,513	75,333	79,000	0	0	63,544
50 TO 54	50,560	60,914	63,667	70,822	77,228	79,865	91,750	0	0	63,521
55 TO 59	49,910	56,802	58,821	66,034	73,769	85,365	83,588	81,600	0	63,425
60 TO 64	49,110	55,730	55,641	60,844	71,763	72,179	72,469	73,389	59,000	60,056
65 TO 69	53,299	56,881	51,684	57,673	62,038	66,571	55,733	73,111	82,333	57,663
70 & UP	63,842	39,880	50,476	47,560	52,714	54,692	58,308	53,500	70,636	52,500
TOTAL	49,759	60,212	61,935	65,665	71,581	75,629	72,737	73,353	72,200	59,466

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

AGE \ SVC	All Other Non-NYC Entities										
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS	
<i>NUMBER:</i>											
UNDER 20	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	2	0	0	0	0	0	0	0	0	0	2
30 TO 34	1	3	0	0	0	0	0	0	0	0	4
35 TO 39	2	2	5	2	0	0	0	0	0	0	11
40 TO 44	5	3	5	1	0	0	0	0	0	0	14
45 TO 49	5	2	14	1	3	0	0	0	0	0	25
50 TO 54	8	1	5	10	8	5	1	0	0	0	38
55 TO 59	5	1	5	3	3	9	6	1	0	0	33
60 TO 64	2	0	4	2	2	5	7	2	0	0	24
65 TO 69	0	2	0	3	2	1	4	1	0	0	13
70 & UP	1	0	0	2	1	0	0	0	1	0	5
TOTAL	31	14	38	24	19	20	18	4	1	1	169

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	148	0	0	0	0	0	0	0	0	0	148
30 TO 34	99	289	0	0	0	0	0	0	0	0	388
35 TO 39	232	262	465	179	0	0	0	0	0	0	1,138
40 TO 44	512	406	464	58	0	0	0	0	0	0	1,440
45 TO 49	534	292	1,701	128	452	0	0	0	0	0	3,107
50 TO 54	696	134	638	1,184	1,221	631	117	0	0	0	4,621
55 TO 59	417	240	573	226	327	1,381	799	147	0	0	4,110
60 TO 64	151	0	272	212	279	577	769	254	0	0	2,514
65 TO 69	0	290	0	295	182	179	464	151	0	0	1,561
70 & UP	47	0	0	256	139	0	0	0	122	0	564
TOTAL *	2,836	1,913	4,113	2,538	2,600	2,768	2,149	552	122	1	19,591

*AVERAGE SALARIES: ***

UNDER 20	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	74,000	0	0	0	0	0	0	0	0	0	74,000
30 TO 34	99,000	96,333	0	0	0	0	0	0	0	0	97,000
35 TO 39	116,000	131,000	93,000	89,500	0	0	0	0	0	0	103,455
40 TO 44	102,400	135,333	92,800	58,000	0	0	0	0	0	0	102,857
45 TO 49	106,800	146,000	121,500	128,000	150,667	0	0	0	0	0	124,280
50 TO 54	87,000	134,000	127,600	118,400	152,625	126,200	117,000	0	0	0	121,605
55 TO 59	83,400	240,000	114,600	75,333	109,000	153,444	133,167	147,000	0	0	124,545
60 TO 64	75,500	0	68,000	106,000	139,500	115,400	109,857	127,000	0	0	104,750
65 TO 69	0	145,000	0	98,333	91,000	179,000	116,000	151,000	0	0	120,077
70 & UP	47,000	0	0	128,000	139,000	0	0	0	122,000	0	112,800
TOTAL	91,484	136,643	108,237	105,750	136,842	138,400	119,389	138,000	122,000	1	115,920

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

New York City: Sanitation										
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	48	0	0	0	0	0	0	0	0	48
25 TO 29	358	13	0	0	0	0	0	0	0	371
30 TO 34	489	425	128	8	0	0	0	0	0	1,050
35 TO 39	326	459	494	182	3	0	0	0	0	1,464
40 TO 44	179	344	450	539	75	1	0	0	0	1,588
45 TO 49	104	207	306	502	204	44	1	0	0	1,368
50 TO 54	48	96	193	337	194	93	28	0	0	989
55 TO 59	19	47	82	150	132	88	73	3	0	594
60 TO 64	5	5	26	65	42	38	37	16	2	236
65 TO 69	0	2	4	15	12	7	16	4	3	63
70 & UP	0	0	1	0	3	1	3	0	4	12
TOTAL	1,576	1,598	1,684	1,798	665	272	158	23	9	7,783

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	2,609	0	0	0	0	0	0	0	0	2,609
25 TO 29	19,714	1,060	0	0	0	0	0	0	0	20,774
30 TO 34	28,432	39,977	13,425	997	0	0	0	0	0	82,831
35 TO 39	19,549	44,194	52,490	20,669	454	0	0	0	0	137,356
40 TO 44	10,934	33,795	47,601	62,243	9,396	111	0	0	0	164,080
45 TO 49	6,552	19,929	32,124	56,425	24,297	5,447	112	0	0	144,886
50 TO 54	3,013	9,287	20,356	37,433	22,377	11,702	3,793	0	0	107,961
55 TO 59	1,205	4,508	8,510	16,714	15,149	10,653	8,439	320	0	65,498
60 TO 64	469	505	2,685	7,163	4,860	4,486	4,352	2,131	221	26,872
65 TO 69	0	200	420	1,595	1,327	750	1,960	455	342	7,049
70 & UP	0	0	96	0	351	141	311	0	418	1,317
TOTAL *	92,477	153,455	177,707	203,239	78,211	33,290	18,967	2,906	981	761,233

*AVERAGE SALARIES: ***

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	54,354	0	0	0	0	0	0	0	0	54,354
25 TO 29	55,067	81,538	0	0	0	0	0	0	0	55,995
30 TO 34	58,143	94,064	104,883	124,625	0	0	0	0	0	78,887
35 TO 39	59,966	96,283	106,255	113,566	151,333	0	0	0	0	93,822
40 TO 44	61,084	98,241	105,780	115,479	125,280	111,000	0	0	0	103,325
45 TO 49	63,000	96,275	104,980	112,400	119,103	123,795	112,000	0	0	105,911
50 TO 54	62,771	96,740	105,472	111,077	115,345	125,828	135,464	0	0	109,162
55 TO 59	63,421	95,915	103,780	111,427	114,765	121,057	115,603	106,667	0	110,266
60 TO 64	93,800	101,000	103,269	110,200	115,714	118,053	117,622	133,188	110,500	113,864
65 TO 69	0	100,000	105,000	106,333	110,583	107,143	122,500	113,750	114,000	111,889
70 & UP	0	0	96,000	0	117,000	141,000	103,667	0	104,500	109,750
TOTAL	58,678	96,029	105,527	113,036	117,611	122,390	120,044	126,348	109,000	97,807

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

New York City: Correction										
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	234	0	0	0	0	0	0	0	0	234
25 TO 29	1,292	82	0	0	0	0	0	0	0	1,374
30 TO 34	1,197	607	213	0	0	0	0	0	0	2,017
35 TO 39	601	550	732	79	1	0	0	0	0	1,963
40 TO 44	322	278	551	413	27	0	0	0	0	1,591
45 TO 49	130	175	369	385	167	23	0	0	0	1,249
50 TO 54	70	77	232	229	162	75	32	1	0	878
55 TO 59	30	37	109	125	70	56	59	5	0	491
60 TO 64	3	15	28	53	27	17	21	16	0	180
65 TO 69	1	0	6	9	1	7	5	7	4	40
70 & UP	0	0	0	4	0	0	0	1	0	5
TOTAL	3,880	1,821	2,240	1,297	455	178	117	30	4	10,022

SALARIES (IN THOUSANDS):

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	13,400	0	0	0	0	0	0	0	0	13,400
25 TO 29	79,017	7,039	0	0	0	0	0	0	0	86,056
30 TO 34	74,936	60,205	23,107	0	0	0	0	0	0	158,248
35 TO 39	37,980	56,768	82,570	9,344	122	0	0	0	0	186,784
40 TO 44	20,487	28,688	62,391	50,187	3,578	0	0	0	0	165,331
45 TO 49	8,438	18,603	42,217	47,218	21,795	2,921	0	0	0	141,192
50 TO 54	4,872	8,330	27,065	27,792	21,035	9,858	4,544	121	0	103,617
55 TO 59	2,023	4,127	12,676	15,535	9,198	7,241	7,958	693	0	59,451
60 TO 64	195	1,597	3,256	6,558	3,419	2,440	2,749	2,079	0	22,293
65 TO 69	63	0	719	1,044	124	918	734	911	503	5,016
70 & UP	0	0	0	522	0	0	0	127	0	649
TOTAL *	241,411	185,357	254,001	158,200	59,271	23,378	15,985	3,931	503	942,037

*AVERAGE SALARIES: ***

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	57,265	0	0	0	0	0	0	0	0	57,265
25 TO 29	61,159	85,841	0	0	0	0	0	0	0	62,632
30 TO 34	62,603	99,185	108,484	0	0	0	0	0	0	78,457
35 TO 39	63,195	103,215	112,801	118,278	122,000	0	0	0	0	95,152
40 TO 44	63,624	103,194	113,232	121,518	132,519	0	0	0	0	103,916
45 TO 49	64,908	106,303	114,409	122,644	130,509	127,000	0	0	0	113,044
50 TO 54	69,600	108,182	116,659	121,362	129,846	131,440	142,000	121,000	0	118,015
55 TO 59	67,433	111,541	116,294	124,280	131,400	129,304	134,881	138,600	0	121,081
60 TO 64	65,000	106,467	116,286	123,736	126,630	143,529	130,905	129,938	0	123,850
65 TO 69	63,000	0	119,833	116,000	124,000	131,143	146,800	130,143	125,750	125,400
70 & UP	0	0	0	130,500	0	0	0	127,000	0	129,800
TOTAL	62,219	101,789	113,393	121,974	130,266	131,337	136,624	131,033	125,750	93,997

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

All Other New York City										
AGE \ SVC	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	4	0	0	0	0	0	0	0	0	4
20 TO 24	1,060	2	0	0	0	0	0	0	0	1,062
25 TO 29	5,124	499	2	0	0	0	0	0	0	5,625
30 TO 34	5,577	2,897	577	3	0	0	0	0	0	9,054
35 TO 39	3,997	3,398	2,651	357	4	0	0	0	0	10,407
40 TO 44	2,929	2,525	3,005	1,735	245	4	0	0	0	10,443
45 TO 49	2,247	2,033	2,569	2,187	1,135	258	15	0	0	10,444
50 TO 54	1,870	1,783	2,218	2,250	1,967	1,581	586	17	0	12,272
55 TO 59	1,406	1,534	1,919	1,981	1,936	2,244	2,147	341	6	13,514
60 TO 64	797	1,008	1,302	1,445	1,245	1,386	1,769	858	92	9,902
65 TO 69	285	432	574	617	458	475	569	315	156	3,881
70 & UP	82	166	220	305	218	185	232	143	170	1,721
TOTAL	25,378	16,277	15,037	10,880	7,208	6,133	5,318	1,674	424	88,329

SALARIES (IN THOUSANDS):

UNDER 20	96	0	0	0	0	0	0	0	0	96
20 TO 24	46,817	103	0	0	0	0	0	0	0	46,920
25 TO 29	275,097	31,314	116	0	0	0	0	0	0	306,527
30 TO 34	338,652	198,243	41,362	219	0	0	0	0	0	578,476
35 TO 39	255,536	250,238	204,765	30,009	391	0	0	0	0	740,939
40 TO 44	188,125	189,282	234,698	144,844	23,298	421	0	0	0	780,668
45 TO 49	151,244	151,148	196,188	174,972	102,730	22,774	1,458	0	0	800,514
50 TO 54	124,210	128,495	165,039	169,296	164,171	142,386	55,458	1,914	0	950,969
55 TO 59	94,636	108,823	141,428	148,562	152,411	190,157	200,895	34,673	692	1,072,277
60 TO 64	53,185	68,749	93,644	106,874	96,367	112,121	157,039	82,402	9,138	779,519
65 TO 69	19,965	29,755	42,004	46,055	35,172	38,972	49,213	28,834	15,569	305,539
70 & UP	4,653	10,496	15,339	22,421	16,338	14,747	18,822	11,965	14,923	129,704
TOTAL *	1,552,216	1,166,646	1,134,583	843,252	590,878	521,578	482,885	159,788	40,322	6,492,148

*AVERAGE SALARIES: ***

UNDER 20	24,000	0	0	0	0	0	0	0	0	24,000
20 TO 24	44,167	51,500	0	0	0	0	0	0	0	44,181
25 TO 29	53,688	62,754	58,000	0	0	0	0	0	0	54,494
30 TO 34	60,723	68,430	71,685	73,000	0	0	0	0	0	63,892
35 TO 39	63,932	73,643	77,241	84,059	97,750	0	0	0	0	71,196
40 TO 44	64,228	74,963	78,102	83,484	95,094	105,250	0	0	0	74,755
45 TO 49	67,309	74,347	76,367	80,005	90,511	88,271	97,200	0	0	76,648
50 TO 54	66,422	72,067	74,409	75,243	83,463	90,061	94,638	112,588	0	77,491
55 TO 59	67,309	70,941	73,699	74,993	78,725	84,740	93,570	101,680	115,333	79,346
60 TO 64	66,731	68,203	71,923	73,961	77,403	80,895	88,773	96,040	99,326	78,723
65 TO 69	70,053	68,877	73,178	74,643	76,795	82,046	86,490	91,537	99,801	78,727
70 & UP	56,744	63,229	69,723	73,511	74,945	79,714	81,129	83,671	87,782	75,365
TOTAL	61,164	71,675	75,453	77,505	81,975	85,045	90,802	95,453	95,099	73,500

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-6

Detailed Active Membership and Salaries by Obligor as of June 30, 2019 (cont'd)

AGE \ SVC	Total									
	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
<i>NUMBER:</i>										
UNDER 20	40	0	0	0	0	0	0	0	0	40
20 TO 24	1,807	7	0	0	0	0	0	0	0	1,814
25 TO 29	9,194	909	36	0	0	0	0	0	0	10,139
30 TO 34	11,588	5,697	1,265	15	0	0	0	0	0	18,565
35 TO 39	9,082	7,060	5,181	886	15	0	0	0	0	22,224
40 TO 44	6,820	5,796	6,186	3,818	629	13	0	0	0	23,262
45 TO 49	5,302	4,918	5,798	5,086	2,710	706	30	0	0	24,550
50 TO 54	4,479	4,318	5,366	5,399	4,445	3,492	1,221	43	0	28,763
55 TO 59	3,400	3,653	4,674	4,800	4,472	4,509	3,652	588	12	29,760
60 TO 64	1,844	2,346	3,076	3,462	2,927	2,924	2,932	1,397	167	21,075
65 TO 69	603	960	1,302	1,427	1,145	970	937	498	241	8,083
70 & UP	154	315	477	596	477	364	368	217	258	3,226
TOTAL	54,313	35,979	33,361	25,489	16,820	12,978	9,140	2,743	678	191,501

SALARIES (IN THOUSANDS):

UNDER 20	1,972	0	0	0	0	0	0	0	0	1,972
20 TO 24	89,687	326	0	0	0	0	0	0	0	90,013
25 TO 29	525,880	60,247	3,143	0	0	0	0	0	0	589,270
30 TO 34	728,535	429,789	103,539	1,598	0	0	0	0	0	1,263,461
35 TO 39	600,433	556,514	443,939	81,957	1,637	0	0	0	0	1,684,480
40 TO 44	457,023	457,591	523,128	351,192	59,608	1,237	0	0	0	1,849,779
45 TO 49	364,884	385,311	482,931	451,137	256,072	64,918	2,955	0	0	2,008,208
50 TO 54	304,740	328,681	435,142	455,346	399,089	326,631	119,129	4,681	0	2,373,439
55 TO 59	233,678	273,249	367,249	392,582	384,681	406,006	350,677	59,630	1,201	2,468,953
60 TO 64	128,571	172,389	234,938	277,930	246,459	257,272	269,962	136,133	16,130	1,739,784
65 TO 69	43,789	69,513	98,561	113,850	95,454	82,347	84,283	47,351	24,441	659,589
70 & UP	9,664	21,652	34,660	45,788	38,791	29,891	29,839	18,839	23,389	252,513
TOTAL *	3,488,856	2,755,262	2,727,230	2,171,380	1,481,791	1,168,302	856,845	266,634	65,161	14,981,461

*AVERAGE SALARIES: ***

UNDER 20	49,300	0	0	0	0	0	0	0	0	49,300
20 TO 24	49,633	46,571	0	0	0	0	0	0	0	49,621
25 TO 29	57,198	66,278	87,306	0	0	0	0	0	0	58,119
30 TO 34	62,870	75,441	81,849	106,533	0	0	0	0	0	68,056
35 TO 39	66,112	78,826	85,686	92,502	109,133	0	0	0	0	75,796
40 TO 44	67,012	78,949	84,566	91,983	94,766	95,154	0	0	0	79,519
45 TO 49	68,820	78,347	83,293	88,702	94,492	91,952	98,500	0	0	81,801
50 TO 54	68,038	76,119	81,092	84,339	89,784	93,537	97,567	108,860	0	82,517
55 TO 59	68,729	74,801	78,573	81,788	86,020	90,043	96,023	101,412	100,083	82,962
60 TO 64	69,724	73,482	76,378	80,280	84,202	87,986	92,074	97,447	96,587	82,552
65 TO 69	72,619	72,409	75,700	79,783	83,366	84,894	89,950	95,082	101,415	81,602
70 & UP	62,753	68,737	72,662	76,826	81,323	82,118	81,084	86,816	90,655	78,274
TOTAL	64,236	76,580	81,749	85,189	88,097	90,022	93,747	97,205	96,108	78,232

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

* Total may not add up due to rounding.

** Average based on unrounded salary.

Table XIII-7
Detailed Reconciliation of Active Membership

Transit Authority											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	17	1,817,282	106,899	76.5	44.6	22	2,311,425	105,065	75.6	45.5
1	F	4	342,208	85,552	73.8	45.8	5	435,560	87,112	71.8	47.4
		21	2,159,490	102,833	76.0	44.8	27	2,746,985	101,740	74.9	45.9
2	M	7	730,553	104,365	70.6	40.7	14	1,404,677	100,334	70.3	42.7
2	F	2	138,480	69,240	69.0	45.0	5	358,119	71,624	68.0	39.0
		9	869,033	96,559	70.2	41.7	19	1,762,796	92,779	69.7	41.7
4	M	21,481	1,984,725,373	92,394	53.8	18.2	22,968	2,072,087,848	90,216	53.3	18.6
4	F	4,379	365,136,692	83,384	51.5	17.0	4,687	381,050,361	81,299	51.1	18.0
		25,860	2,349,862,065	90,869	53.4	18.0	27,655	2,453,138,209	88,705	52.9	18.5
6	M	12,225	920,324,299	75,282	41.7	3.2	10,728	777,671,922	72,490	41.2	2.7
6	F	2,650	175,646,003	66,282	39.8	3.0	2,362	152,460,608	64,547	39.4	2.6
		14,875	1,095,970,302	73,679	41.3	3.2	13,090	930,132,530	71,057	40.9	2.7
ALL		40,765	3,448,860,890	84,603	49.0	12.6	40,791	3,387,780,520	83,052	49.1	13.4

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018							JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
1	M	17	1,817,282	106,899	76.5	44.0	17	1,752,751	103,103	75.5	44.0
1	F	4	342,208	85,552	73.8	45.0	4	337,946	84,487	72.8	47.0
		21	2,159,490	102,833	76.0	44.2	21	2,090,697	99,557	75.0	44.6
2	M	6	643,412	107,235	71.0	43.0	6	627,339	104,557	70.0	44.0
2	F	2	138,480	69,240	69.0	45.0	2	135,430	67,715	68.0	45.0
		8	781,892	97,737	70.5	43.5	8	762,769	95,346	69.5	44.3
4	M	21,108	1,956,429,272	92,687	53.9	18.0	21,108	1,905,499,355	90,274	52.9	18.0
4	F	4,192	351,494,796	83,849	51.7	17.0	4,192	341,797,248	81,536	50.7	17.0
		25,300	2,307,924,068	91,222	53.5	17.8	25,300	2,247,296,603	88,826	52.5	17.8
6	M	10,174	782,172,712	76,880	42.3	3.0	10,174	738,612,343	72,598	41.3	2.0
6	F	2,117	144,234,513	68,132	40.5	3.0	2,117	137,298,938	64,855	39.5	2.0
		12,291	926,407,225	75,373	42.0	3.0	12,291	875,911,281	71,264	41.0	2.0
ALL		37,620	3,237,272,675	86,052	49.8	13.0	37,620	3,126,061,350	83,096	48.8	12.7

ADDITIONS DURING THE YEAR *							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	0	0	0	0.0	0.0	5	558,674	111,735	75.8	49.0
1	F	0	0	0	0.0	0.0	1	97,614	0	68.0	47.0
		0	0	0	0.0	0.0	6	656,288	109,381	74.5	48.7
2	M	1	87,141	87,141	68.0	27.0	8	777,338	97,167	70.5	41.0
2	F	0	0	0	0.0	0.0	3	222,689	0	68.0	35.0
		1	87,141	87,141	68.0	27.0	11	1,000,027	90,912	69.8	39.4
4	M	373	28,296,101	75,861	50.5	12.0	1,860	166,588,493	89,564	58.5	23.0
4	F	187	13,641,896	72,951	47.6	11.0	495	39,253,113	79,299	54.1	19.0
		560	41,937,997	74,889	49.5	11.7	2,355	205,841,606	87,406	57.6	22.2
6	M	2,051	138,151,587	67,358	38.5	1.0	554	39,059,579	70,505	39.7	2.0
6	F	533	31,411,490	58,933	36.8	1.0	245	15,161,670	61,884	39.1	2.0
		2,584	169,563,077	65,620	38.1	1.0	799	54,221,249	67,861	39.5	2.0
ALL		3,145	211,588,215	67,278	40.2	2.9	3,171	261,719,170	82,535	53.1	17.2

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

**Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)**

Housing Authority											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019						TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	2	182,822	91,411	73.0	43.0	3	227,786	75,929	73.0	37.7
1	F	2	129,163	64,582	70.0	48.5	3	174,980	58,327	70.3	47.3
		4	311,985	77,996	71.5	45.8	6	402,766	67,128	71.7	42.5
2	M	2	125,961	62,981	66.5	34.5	4	284,165	71,041	65.3	39.5
2	F	4	220,542	55,136	69.8	41.8	5	271,358	54,272	67.4	40.6
		6	346,503	57,751	68.7	39.3	9	555,523	61,725	66.4	40.1
4	M	3,889	301,669,117	77,570	51.8	19.7	4,255	321,402,362	75,535	51.5	19.1
4	F	2,573	168,302,574	65,411	51.9	18.7	2,787	176,041,684	63,165	51.4	17.9
		6,462	469,971,691	72,729	51.8	19.3	7,042	497,444,046	70,640	51.4	18.7
6	M	1,437	89,186,036	62,064	41.7	3.8	1,314	79,205,004	60,278	41.0	3.3
6	F	922	46,435,145	50,363	39.2	3.5	799	38,573,578	48,277	38.7	3.1
		2,359	135,621,181	57,491	40.7	3.7	2,113	117,778,582	55,740	40.1	3.2
ALL		8,831	606,251,360	68,650	48.9	15.2	9,170	616,180,917	67,195	48.8	15.1

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018							JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
1	M	2	182,822	91,411	73.0	43.0	2	178,560	89,280	72.0	30.0
1	F	2	129,163	64,582	70.0	48.0	2	129,219	64,610	69.0	48.0
		4	311,985	77,996	71.5	45.5	4	307,779	76,945	70.5	39.0
2	M	2	125,961	62,981	66.5	34.0	2	125,450	62,725	65.5	42.0
2	F	4	220,542	55,136	69.8	41.0	4	212,976	53,244	68.8	40.0
		6	346,503	57,751	68.7	38.7	6	338,426	56,404	67.7	40.7
4	M	3,831	297,711,680	77,711	51.8	19.0	3,831	289,594,743	75,592	50.8	18.0
4	F	2,506	164,162,798	65,508	52.0	18.0	2,506	158,573,543	63,278	51.0	17.0
		6,337	461,874,478	72,885	51.9	18.6	6,337	448,168,286	70,722	50.9	17.6
6	M	1,184	76,575,095	64,675	42.2	4.0	1,184	71,979,490	60,793	41.2	3.0
6	F	689	35,937,318	52,159	39.9	4.0	689	33,469,313	48,577	38.9	3.0
		1,873	112,512,413	60,071	41.3	4.0	1,873	105,448,803	56,299	40.3	3.0
ALL		8,220	575,045,379	69,957	49.5	15.3	8,220	554,263,294	67,429	48.5	14.3

ADDITIONS DURING THE YEAR *							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	0	0	0	0.0	0.0	1	49,226	49,226	75.0	52.0
1	F	0	0	0	0.0	0.0	1	45,761	45,761	73.0	45.0
		0	0	0	0.0	0.0	2	94,987	47,494	74.0	48.5
2	M	0	0	0	0.0	0.0	2	158,715	79,358	65.0	36.0
2	F	0	0	0	0.0	0.0	1	58,382	58,382	62.0	42.0
		0	0	0	0.0	0.0	3	217,097	72,366	64.0	38.0
4	M	58	3,957,437	68,232	48.7	14.0	424	31,807,619	75,018	57.1	22.0
4	F	67	4,139,776	61,788	46.1	12.0	281	17,468,141	62,164	54.4	18.0
		125	8,097,213	64,778	47.3	12.9	705	49,275,760	69,895	56.0	20.4
6	M	253	12,610,941	49,846	39.3	1.0	130	7,225,514	55,581	39.4	2.0
6	F	233	10,497,827	45,055	37.2	1.0	110	5,104,265	46,402	37.9	2.0
		486	23,108,768	47,549	39.3	1.0	240	12,329,779	51,374	38.7	2.0
ALL		611	31,205,981	51,074	40.9	3.5	950	61,917,623	65,176	51.7	15.9

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

Health and Hospitals											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019						TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	6	532,557	88,760	69.7	46.7	12	1,020,052	85,004	69.3	41.9
1	F	18	1,784,970	99,165	74.1	38.4	21	1,834,570	87,360	72.4	43.0
		24	2,317,527	96,564	73.0	40.5	33	2,854,622	86,504	71.2	42.6
2	M	5	606,260	121,252	69.2	25.2	12	1,245,656	103,805	67.8	36.8
2	F	11	1,027,107	93,373	68.6	33.0	13	1,122,208	86,324	68.2	40.7
		16	1,633,367	102,085	68.8	30.6	25	2,367,864	94,715	68.0	38.8
4	M	6,247	492,137,130	78,780	53.4	14.3	6,775	515,352,786	76,067	52.9	14.3
4	F	15,070	1,184,306,052	78,587	53.3	14.5	16,224	1,212,640,830	74,744	52.8	14.5
		21,317	1,676,443,182	78,643	53.3	14.4	22,999	1,727,993,616	75,133	52.8	14.5
6	M	2,420	195,646,056	80,845	42.9	2.5	1,964	153,247,672	78,028	42.6	2.7
6	F	6,053	443,628,462	73,291	42.3	2.2	4,761	334,046,127	70,163	42.1	2.7
		8,473	639,274,518	75,448	42.5	2.3	6,725	487,293,799	72,460	42.2	2.7
ALL		29,830	2,319,668,594	77,763	50.3	11.0	29,782	2,220,509,901	74,559	50.5	11.9

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018						JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019					
1	M	5	482,149	96,430	69.6	46.0	5	468,080	93,616	68.6	45.0
1	F	17	1,605,756	94,456	73.8	40.0	17	1,560,500	91,794	72.8	43.0
		22	2,087,905	94,905	72.9	41.4	22	2,028,580	92,208	71.9	43.5
2	M	5	606,260	121,252	69.2	25.0	5	561,226	112,245	68.2	28.0
2	F	11	1,027,107	93,373	68.6	33.0	11	989,901	89,991	67.6	40.0
		16	1,633,367	102,085	68.8	30.5	16	1,551,127	96,945	67.8	36.3
4	M	6,157	484,556,892	78,700	53.5	14.0	6,157	466,133,662	75,708	52.5	14.0
4	F	14,752	1,159,853,365	78,623	53.4	14.0	14,752	1,099,383,316	74,524	52.4	14.0
		20,909	1,644,410,257	78,646	53.4	14.0	20,909	1,565,516,978	74,873	52.4	14.0
6	M	1,757	144,740,597	82,379	43.8	2.0	1,757	137,063,687	78,010	42.8	2.0
6	F	4,228	314,323,661	74,343	43.4	2.0	4,228	294,843,005	69,736	42.5	2.0
		5,985	459,064,258	76,702	43.5	2.0	5,985	431,906,692	72,165	42.5	2.0
ALL		26,932	2,107,195,787	78,241	51.3	11.4	26,932	2,001,003,377	74,298	50.3	11.4

ADDITIONS DURING THE YEAR *						SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *					
1	M	1	50,408	50,408	70.0	46.0	7	551,972	78,853	69.7	39.0
1	F	1	179,214	179,214	78.0	1.0	4	274,070	68,518	70.5	42.0
		2	229,622	114,811	74.0	23.5	11	826,042	75,095	70.0	40.1
2	M	0	0	0	0.0	0.0	7	684,430	97,776	67.6	42.0
2	F	0	0	0	0.0	0.0	2	132,307	66,154	71.0	42.0
		0	0	0	0.0	0.0	9	816,737	90,749	68.3	42.0
4	M	90	7,580,238	84,225	49.5	9.0	618	49,219,124	79,643	56.8	16.0
4	F	318	24,452,687	76,895	46.7	8.0	1,472	113,257,514	76,941	56.8	16.0
		408	32,032,925	78,512	47.3	8.2	2,090	162,476,638	77,740	56.8	16.0
6	M	663	50,905,459	76,780	40.7	1.0	207	16,183,985	78,184	41.5	2.0
6	F	1,825	129,304,801	70,852	39.7	1.0	533	39,203,122	73,552	38.9	2.0
		2,488	180,210,260	72,432	40.0	1.0	740	55,387,107	74,847	39.6	2.0
ALL		2,898	212,472,807	73,317	41.0	2.0	2,850	219,506,524	77,020	52.4	12.5

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

Triborough Bridge and Tunnel Authority											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019						TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	2	246,936	123,468	66.0	42.0	2	247,252	123,626	65.0	43.0
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		2	246,936	123,468	66.0	42.0	2	247,252	123,626	65.0	43.0
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
4	M	814	84,181,748	103,417	49.7	15.2	864	88,279,576	102,175	49.1	16.0
4	F	213	21,003,615	98,609	51.0	16.3	226	22,190,079	98,186	50.2	16.7
		1,027	105,185,363	102,420	50.0	15.4	1,090	110,469,655	101,348	49.3	16.1
6	M	183	14,391,346	78,641	39.4	2.6	137	12,066,429	88,076	38.6	2.6
6	F	40	3,061,825	76,546	43.0	3.1	47	4,100,168	87,238	40.0	3.0
		223	17,453,171	78,265	40.1	2.7	184	16,166,597	87,862	39.0	2.7
ALL		1,252	122,885,470	98,151	48.3	13.2	1,276	126,883,504	99,438	47.9	14.3

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018						JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019					
1	M	2	246,936	123,468	66.0	42.0	2	247,252	123,626	65.0	43.0
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		2	246,936	123,468	66.0	42.0	2	247,252	123,626	65.0	43.0
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
4	M	809	83,512,046	103,229	49.8	15.0	809	82,827,602	102,383	48.8	15.0
4	F	210	20,764,478	98,878	51.1	16.0	210	20,543,543	97,826	50.1	16.0
		1,019	104,276,524	102,332	50.0	15.2	1,019	103,371,145	101,444	49.0	15.2
6	M	125	10,526,374	84,211	40.1	3.0	125	11,128,590	89,029	39.1	2.0
6	F	34	2,563,752	75,404	42.3	3.0	34	2,842,762	83,611	41.3	2.0
		159	13,090,126	82,328	40.5	3.0	159	13,971,352	87,870	39.5	2.0
ALL		1,180	117,613,586	99,673	48.8	13.6	1,180	117,589,749	99,652	47.8	13.5

ADDITIONS DURING THE YEAR *						SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *					
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	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
4	M	5	669,702	133,940	47.2	5.0	55	5,451,974	99,127	54.2	18.0
4	F	3	239,137	79,712	44.3	6.0	16	1,646,536	102,909	52.3	18.0
		8	908,839	113,605	46.1	5.4	71	7,098,510	99,979	53.7	18.0
6	M	58	3,864,972	66,637	38.1	1.0	12	937,839	78,153	34.3	1.0
6	F	6	498,073	83,012	47.0	1.0	13	1,257,406	96,724	36.7	3.0
		64	4,363,045	68,173	38.9	1.0	25	2,195,245	87,810	35.5	2.0
ALL		72	5,271,884	73,221	39.7	1.5	96	9,293,755	96,810	49.0	13.8

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

CUNY Senior College

		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	5	345,638	69,128	73.0	42.0	5	340,323	68,065	72.0	40.0
1	F	5	287,088	57,418	75.6	42.2	6	337,485	56,248	73.0	37.0
		10	632,726	63,273	74.3	42.1	11	677,808	61,619	72.5	38.4
2	M	1	114,184	114,184	72.0	44.0	1	114,951	114,951	71.0	42.0
2	F	3	208,411	69,470	68.0	38.3	3	202,148	67,383	67.3	33.7
		4	322,595	80,649	69.0	39.7	4	317,099	79,275	68.2	35.7
4	M	1,545	110,911,831	71,788	51.9	14.1	1,631	113,916,872	69,845	51.2	14.3
4	F	1,522	83,909,860	55,131	54.2	13.3	1,614	85,857,185	53,195	53.7	14.3
		3,067	194,821,691	63,522	53.1	13.7	3,245	199,774,057	61,564	52.4	14.3
6	M	782	44,549,163	56,968	41.9	2.5	683	37,454,183	54,838	41.0	2.6
6	F	657	28,459,710	43,318	41.7	1.9	609	25,467,326	41,818	40.3	2.4
		1,439	73,008,873	50,736	41.8	2.2	1,292	62,921,509	48,701	40.7	2.5
ALL		4,520	268,785,885	59,466	49.5	10.1	4,552	263,690,473	57,928	49.2	11.1

		JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
1	M	5	345,638	69,128	73.0	42.0	5	340,323	68,065	72.0	40.0
1	F	5	287,088	57,418	75.6	42.0	5	282,165	56,433	74.6	41.0
		10	632,726	63,273	74.3	42.0	10	622,488	62,249	73.3	40.5
2	M	1	114,184	114,184	72.0	44.0	1	114,951	114,951	71.0	42.0
2	F	2	116,261	58,131	68.5	42.0	2	114,267	57,134	67.5	39.0
		3	230,445	76,815	69.7	42.7	3	229,218	76,406	68.7	40.0
4	M	1,507	108,060,136	71,705	52.0	14.0	1,507	104,887,475	69,600	51.0	14.0
4	F	1,484	81,895,753	55,186	54.4	13.0	1,484	79,059,515	53,275	53.5	14.0
		2,991	189,955,889	63,509	53.2	13.5	2,991	183,946,990	61,500	52.2	14.0
6	M	595	34,737,185	58,382	42.5	2.0	595	32,959,203	55,394	41.5	2.0
6	F	500	22,107,090	44,214	42.3	2.0	500	20,789,626	41,579	41.3	2.0
		1,095	56,844,275	51,913	42.4	2.0	1,095	53,748,829	49,086	41.4	2.0
ALL		4,099	247,663,335	60,420	50.4	10.5	4,099	238,547,525	58,197	49.4	10.9

		ADDITIONS DURING THE YEAR *					SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
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	1	55,320	0	65.0	17.0
		0	0	0	0.0	0.0	1	55,320	0	65.0	17.0
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	F	1	92,150	92,150	67.0	30.0	1	87,881	87,881	67.0	22.0
		1	92,150	92,150	67.0	30.0	1	87,881	87,881	67.0	22.0
4	M	38	2,851,695	75,045	50.1	11.0	124	9,029,397	72,818	53.8	15.0
4	F	38	2,014,107	53,003	46.6	9.0	130	6,797,670	52,290	56.0	14.0
		76	4,865,802	64,024	48.3	10.0	254	15,827,067	62,311	54.9	14.5
6	M	187	9,811,978	52,470	40.1	1.0	88	4,494,980	51,079	37.6	2.0
6	F	157	6,352,620	40,463	39.5	1.0	109	4,677,700	42,915	35.9	2.0
		344	16,164,598	46,990	39.9	1.0	197	9,172,680	46,562	36.6	2.0
ALL		421	21,122,550	50,172	41.5	2.7	453	25,142,948	55,503	47.0	9.1

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

All Other Non-NYC Contributing Entities											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
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	1	139,200	139,200	73.0	21.0	1	128,947	128,947	72.0	20.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	139,200	139,200	73.0	21.0	1	128,947	128,947	72.0	20.0
4	M	66	8,869,221	134,382	54.3	19.7	71	9,099,427	128,161	53.7	17.1
4	F	90	9,291,607	103,240	53.0	14.7	94	9,292,047	98,852	52.1	13.3
		156	18,160,828	116,416	53.6	16.8	165	18,391,474	111,463	52.8	15.0
6	M	7	783,543	111,935	39.6	2.9	5	539,387	107,877	35.8	3.2
6	F	5	506,985	101,397	38.4	2.0	3	298,582	99,527	42.0	1.0
		12	1,290,528	107,544	39.1	2.5	8	837,969	104,746	38.1	2.4
ALL		169	19,590,556	115,920	52.7	15.8	174	19,358,390	111,255	52.2	14.4

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018							JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
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	1	139,200	139,200	73.0	21.0	1	128,947	128,947	72.0	20.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	139,200	139,200	73.0	21.0	1	128,947	128,947	72.0	20.0
4	M	64	8,533,908	133,342	54.4	19.0	64	8,205,246	128,207	53.4	16.0
4	F	88	8,968,988	101,920	53.0	14.0	88	8,557,664	97,246	52.0	13.0
		152	17,502,896	115,151	53.6	16.1	152	16,762,910	110,282	52.6	14.3
6	M	5	565,668	113,134	36.8	3.0	5	539,387	107,877	35.8	3.0
6	F	2	231,886	115,943	46.5	1.0	2	218,164	109,082	45.5	1.0
		7	797,554	113,936	39.6	2.4	7	757,551	108,222	38.6	2.4
ALL		160	18,439,650	115,248	53.1	15.5	160	17,649,408	110,309	52.1	13.8

ADDITIONS DURING THE YEAR *							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
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	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
4	M	2	335,313	167,657	51.0	21.0	7	894,181	127,740	56.4	19.0
4	F	2	322,619	161,310	53.5	3.0	6	734,383	122,397	53.0	14.0
		4	657,932	164,483	52.3	12.0	13	1,628,564	125,274	54.8	16.7
6	M	2	217,875	108,938	46.5	1.0	0	0	0	0.0	0.0
6	F	3	275,099	91,700	33.0	2.0	1	80,418	80,418	35.0	1.0
		5	492,974	98,595	38.4	1.6	1	80,418	80,418	35.0	1.0
ALL		9	1,150,906	127,878	44.6	6.2	14	1,708,982	122,070	53.4	15.6

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

**Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)**

New York City: Sanitation

		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	4	396,065	99,016	73.5	47.8	4	384,185	96,046	72.5	47.8
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	396,065	99,016	73.5	47.8	4	384,185	96,046	72.5	47.8
2	M	4	475,195	118,799	65.3	35.3	5	549,335	109,867	65.8	31.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	475,195	118,799	65.3	35.3	5	549,335	109,867	65.8	31.0
4	M	4,794	534,398,504	111,472	46.5	16.6	5,084	544,540,613	107,109	46.0	15.9
4	F	122	13,799,894	113,114	48.3	17.1	130	14,036,155	107,970	47.9	16.7
		4,916	548,198,398	111,513	46.5	16.6	5,214	558,576,768	107,130	46.0	15.9
3R	M	2,721	203,134,097	74,654	36.9	4.4	2,178	152,175,017	69,869	37.0	4.1
3R	F	138	9,029,202	65,429	37.4	4.5	96	6,076,516	63,297	37.7	4.6
		2,859	212,163,299	74,209	36.9	4.4	2,274	158,251,533	69,592	37.0	4.1
ALL		7,783	761,232,957	97,807	43.0	12.1	7,497	717,761,821	95,740	43.3	12.4

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019

1	M	4	396,065	99,016	73.5	47.0	4	384,185	96,046	72.5	47.0
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	396,065	99,016	73.5	47.0	4	384,185	96,046	72.5	47.0
2	M	4	475,195	118,799	65.3	35.0	4	454,677	113,669	64.3	27.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	475,195	118,799	65.3	35.0	4	454,677	113,669	64.3	27.0
4	M	4,780	533,141,727	111,536	46.5	16.0	4,780	511,760,517	107,063	45.5	15.0
4	F	122	13,799,894	113,114	48.3	17.0	122	13,181,659	108,046	47.3	16.0
		4,902	546,941,621	111,575	46.5	16.0	4,902	524,942,176	107,087	45.5	15.0
3R	M	2,142	172,861,293	80,701	38.0	5.0	2,142	149,942,159	70,001	37.0	4.0
3R	F	94	6,842,623	72,794	38.7	5.0	94	5,973,417	63,547	37.7	4.0
		2,236	179,703,916	80,368	38.0	5.0	2,236	155,915,576	69,730	37.0	4.0
ALL		7,146	727,516,797	101,808	43.9	12.6	7,146	681,696,614	95,396	42.9	11.6

ADDITIONS DURING THE YEAR *

SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *

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	0	0	0	0.0	0.0	1	94,658	94,658	72.0	45.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	1	94,658	94,658	72.0	45.0
4	M	14	1,256,777	89,770	46.1	11.0	304	32,780,096	107,829	53.4	21.0
4	F	0	0	0	0.0	0.0	8	854,496	106,812	57.3	24.0
		14	1,256,777	89,770	46.1	11.0	312	33,634,592	107,803	53.5	21.1
3R	M	579	30,272,804	52,285	32.9	1.0	36	2,232,858	62,024	36.2	3.0
3R	F	44	2,186,579	49,695	34.5	1.0	2	103,099	51,550	37.5	2.0
		623	32,459,383	52,102	33.0	1.0	38	2,335,957	61,473	36.3	2.9
ALL		637	33,716,160	52,930	33.3	1.2	351	36,065,207	102,750	51.7	19.2

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

New York City: Correction

TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	2	251,740	125,870	67.5	45.0	1	124,177	124,177	67.0	46.0
1	F	0	0	0	0.0	0.0	1	124,703	124,703	68.0	45.0
		2	251,740	125,870	67.5	45.0	2	248,880	124,440	67.5	45.5
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
3	M	2,784	317,891,255	114,185	44.1	13.6	3,084	331,383,617	107,453	43.6	13.1
3	F	2,505	291,455,140	116,349	43.8	14.2	2,771	305,280,500	110,170	43.5	13.8
		5,289	609,346,395	115,210	44.0	13.9	5,855	636,664,117	108,739	43.6	13.5
3R	M	2,887	202,655,834	70,196	33.8	3.3	2,875	177,546,715	61,755	32.8	2.4
3R	F	1,844	129,783,185	70,381	33.8	3.8	1,652	104,193,096	63,071	33.1	3.0
		4,731	332,439,019	70,268	33.8	3.5	4,527	281,739,811	62,235	32.9	2.6
ALL		10,022	942,037,154	93,997	39.2	9.0	10,384	918,652,808	88,468	38.9	8.7

JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018							JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
1	M	1	129,057	129,057	68.0	46.0	1	124,177	124,177	67.0	46.0
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	129,057	129,057	68.0	46.0	1	124,177	124,177	67.0	46.0
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
3	M	2,750	315,113,823	114,587	44.2	13.0	2,750	293,817,581	106,843	43.2	12.0
3	F	2,473	288,613,914	116,706	43.9	14.0	2,473	269,545,856	108,995	42.9	13.0
		5,223	603,727,737	115,590	44.0	13.5	5,223	563,363,437	107,862	43.0	12.5
3R	M	2,410	176,227,521	73,123	34.4	3.0	2,410	151,827,449	62,999	33.4	2.0
3R	F	1,509	111,036,917	73,583	34.3	4.0	1,509	95,926,700	63,570	33.3	3.0
		3,919	287,264,438	73,300	34.3	3.4	3,919	247,754,149	63,219	33.3	2.4
ALL		9,143	891,121,232	97,465	39.9	9.2	9,143	811,241,763	88,728	38.9	8.2

ADDITIONS DURING THE YEAR *							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	1	122,683	122,683	67.0	44.0	0	0	0	0.0	0.0
1	F	0	0	0	0.0	0.0	1	124,703	124,703	68.0	45.0
		1	122,683	122,683	67.0	44.0	1	124,703	124,703	68.0	45.0
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	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
3	M	34	2,777,432	81,689	37.7	8.0	334	37,566,036	112,473	47.5	17.0
3	F	32	2,841,226	88,788	39.1	8.0	298	35,734,644	119,915	48.5	19.0
		66	5,618,658	85,131	38.4	8.0	632	73,300,680	115,982	47.9	17.9
3R	M	477	26,428,313	55,405	31.1	1.0	465	25,719,266	55,310	30.2	1.0
3R	F	335	18,746,268	55,959	31.7	1.0	143	8,266,396	57,807	30.6	1.0
		812	45,174,581	55,634	31.3	1.0	608	33,985,662	55,897	30.3	1.0
ALL		879	50,915,922	57,925	31.9	1.6	1,241	107,411,045	86,552	39.3	9.7

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

All Other New York City

		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	78	7,340,289	94,106	73.2	45.4	98	9,056,144	92,410	72.7	46.2
1	F	87	6,395,133	73,507	72.3	45.7	103	7,532,800	73,134	71.4	46.1
		165	13,735,422	83,245	72.7	45.5	201	16,588,944	82,532	72.0	46.2
2	M	83	8,316,238	100,196	59.4	29.2	89	8,607,275	96,711	58.9	29.5
2	F	73	5,798,696	79,434	62.3	30.3	91	6,900,212	75,827	62.1	33.9
		156	14,114,934	90,480	60.8	29.7	180	15,507,487	86,153	60.6	31.7
4	M	25,466	2,217,516,775	87,078	52.4	17.8	27,129	2,271,479,644	83,729	51.9	16.4
4	F	30,793	2,237,881,846	72,675	51.8	17.6	32,545	2,264,912,373	69,593	51.2	16.5
		56,259	4,455,398,621	79,194	52.1	17.7	59,674	4,536,392,017	76,020	51.5	16.4
3R/6	M	15,762	1,048,362,802	66,512	39.0	3.0	13,321	845,846,674	63,497	38.4	2.5
3R/6	F	15,987	960,536,530	60,082	38.9	2.9	13,570	773,964,601	57,035	38.2	2.4
		31,749	2,008,899,332	63,274	39.0	2.9	26,891	1,619,811,275	60,236	38.3	2.4
ALL		88,329	6,492,148,309	73,500	47.4	12.5	86,946	6,188,299,723	71,174	47.5	12.2

		JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
1	M	78	7,340,289	94,106	73.2	45.0	78	7,170,584	91,931	72.2	46.0
1	F	86	6,321,195	73,502	72.2	45.0	86	6,119,939	71,162	71.2	46.0
		164	13,661,484	83,302	72.7	45.0	164	13,290,523	81,040	71.7	46.0
2	M	77	7,928,768	102,971	60.0	30.0	77	7,462,728	96,919	59.0	29.0
2	F	70	5,629,811	80,426	62.5	31.0	70	5,303,694	75,767	61.5	32.0
		147	13,558,579	92,235	61.2	30.5	147	12,766,422	86,846	60.2	30.4
4	M	25,078	2,189,159,799	87,294	52.5	17.0	25,078	2,102,815,018	83,851	51.5	16.0
4	F	30,099	2,194,504,388	72,910	52.0	17.0	30,099	2,099,972,033	69,769	51.0	16.0
		55,177	4,383,664,187	79,447	52.2	17.0	55,177	4,202,787,051	76,169	51.2	16.0
3R/6	M	11,929	829,482,607	69,535	39.8	3.0	11,929	766,523,617	64,257	38.8	2.0
3R/6	F	11,935	740,136,104	62,014	39.6	3.0	11,935	683,841,652	57,297	38.6	2.0
		23,864	1,569,618,711	65,773	39.7	3.0	23,864	1,450,365,269	60,776	38.7	2.0
ALL		79,352	5,980,502,961	75,367	48.5	12.9	79,352	5,679,209,265	71,570	47.5	11.9

		ADDITIONS DURING THE YEAR *					SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	0	0	0	0.0	0.0	20	1,885,560	94,278	74.5	45.0
1	F	1	73,938	73,938	75.0	30.0	17	1,412,861	83,109	72.1	44.0
		1	73,938	73,938	75.0	30.0	37	3,298,421	89,147	73.4	44.5
2	M	6	387,470	64,578	52.2	8.0	12	1,144,547	95,379	58.8	27.0
2	F	3	168,885	56,295	57.3	6.0	21	1,596,518	76,025	64.2	39.0
		9	556,355	61,817	53.9	7.3	33	2,741,065	83,063	62.2	34.6
4	M	388	28,356,976	73,085	48.5	12.0	2,051	168,664,626	82,235	57.1	20.0
4	F	694	43,377,458	62,504	46.7	10.0	2,446	164,940,340	67,433	54.1	18.0
		1,082	71,734,434	66,298	47.4	10.7	4,497	333,604,966	74,184	55.5	18.9
3R/6	M	3,833	218,880,195	57,104	36.6	1.0	1,392	79,323,057	56,985	34.6	2.0
3R/6	F	4,052	220,400,426	54,393	36.7	1.0	1,635	90,122,949	55,121	35.3	2.0
		7,885	439,280,621	55,711	36.7	1.0	3,027	169,446,006	55,978	35.0	2.0
ALL		8,977	511,645,348	56,995	38.0	2.2	7,594	509,090,458	67,039	47.4	12.4

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-7
Detailed Reconciliation of Active Membership (cont'd)

		Total									
		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2019					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	116	11,113,329	95,805	73.3	45.2	147	13,711,344	93,274	72.7	45.4
1	F	116	8,938,562	77,057	72.7	44.4	139	10,440,098	75,109	71.6	45.3
		232	20,051,891	86,431	73.0	44.8	286	24,151,442	84,446	72.1	45.3
2	M	103	10,507,591	102,015	61.3	30.2	126	12,335,006	97,897	61.7	32.0
2	F	93	7,393,236	79,497	63.7	31.7	117	8,854,045	75,676	63.4	35.2
		196	17,900,827	91,331	62.4	30.9	243	21,189,051	87,198	62.5	33.5
3/4	M	67,086	6,052,300,954	90,217	52.1	17.3	71,861	6,267,542,745	87,218	51.6	16.8
3/4	F	57,267	4,375,087,280	76,398	51.9	16.5	61,078	4,471,301,214	73,206	51.3	16.0
		124,353	10,427,388,234	83,853	52.0	17.0	132,939	10,738,843,959	80,780	51.5	16.4
3R/6	M	38,424	2,719,033,176	70,764	39.7	3.2	33,205	2,235,753,003	67,332	39.1	2.7
3R/6	F	28,296	1,797,087,047	63,510	39.5	2.8	23,899	1,439,180,602	60,219	38.8	2.5
		66,720	4,516,120,223	67,688	39.6	3.0	57,104	3,674,933,605	64,355	39.0	2.6
ALL		191,501	14,981,461,175	78,232	47.7	12.2	190,572	14,459,118,057	75,872	47.8	12.4

		JUNE 30, 2019 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2019				
1	M	114	10,940,238	95,967	73.4	45.2	114	10,665,912	93,561	72.4	45.5
1	F	114	8,685,410	76,188	72.6	44.9	114	8,429,769	73,945	71.6	45.8
		228	19,625,648	86,077	73.0	45.1	228	19,095,681	83,753	72.0	45.6
2	M	96	10,032,980	104,510	61.8	31.6	96	9,475,318	98,701	60.8	30.8
2	F	89	7,132,201	80,137	63.9	32.5	89	6,756,268	75,913	62.9	34.1
		185	17,165,181	92,785	62.8	32.0	185	16,231,586	87,738	61.8	32.4
3/4	M	66,084	5,976,219,283	90,434	52.1	17.4	66,084	5,765,541,199	87,246	51.1	16.5
3/4	F	55,926	4,284,058,374	76,602	52.0	16.7	55,926	4,090,614,377	73,143	51.0	15.8
		122,010	10,260,277,657	84,094	52.1	17.1	122,010	9,856,155,576	80,782	51.1	16.2
3R/6	M	30,321	2,227,889,052	73,477	40.5	3.7	30,321	2,060,575,925	67,959	39.5	2.8
3R/6	F	21,108	1,377,413,864	65,256	40.2	3.3	21,108	1,275,203,577	60,413	39.2	2.6
		51,429	3,605,302,916	70,103	40.3	3.5	51,429	3,335,779,502	64,862	39.3	2.7
ALL		173,852	13,902,371,402	79,967	48.7	13.1	173,852	13,227,262,345	76,083	47.7	12.2

		ADDITIONS DURING THE YEAR *					SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	2	173,091	86,546	68.5	45.0	33	3,045,432	92,286	73.7	45.0
1	F	2	253,152	126,576	76.5	15.5	25	2,010,329	80,413	71.3	43.2
		4	426,243	106,561	72.5	30.3	58	5,055,761	87,168	72.7	44.2
2	M	7	474,611	67,802	54.4	11.1	30	2,859,688	95,323	64.8	36.1
2	F	4	261,035	65,259	59.8	12.5	28	2,097,777	74,921	65.1	38.4
		11	735,646	66,877	56.4	11.6	58	4,957,465	85,474	65.0	37.2
3/4	M	1,002	76,081,671	75,930	49.0	12.1	5,777	502,001,546	86,897	56.7	20.9
3/4	F	1,341	91,028,906	67,881	46.7	10.1	5,152	380,686,837	73,891	54.6	18.0
		2,343	167,110,577	71,323	47.7	11.0	10,929	882,688,383	80,766	55.7	19.5
3R/6	M	8,103	491,144,124	60,613	37.0	1.3	2,884	175,177,078	60,741	35.7	2.1
3R/6	F	7,188	419,673,183	58,385	37.3	1.3	2,791	163,977,025	58,752	36.2	2.2
		15,291	910,817,307	59,566	37.2	1.3	5,675	339,154,103	59,763	35.9	2.2
ALL		17,649	1,079,089,773	61,142	38.6	2.6	16,720	1,231,855,712	73,676	49.1	13.8

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

* Separations and additions do not include members who joined after June 30, 2018 and are no longer members on June 30, 2019.

Table XIII-8
Summary of Non-Pensioner Membership as of June 30, 2019

STATUS	TIER 1		TIER 2		TIER 3/4		TIER 3R/6		ALL TIERS	
	NUMBER	SALARY ¹	NUMBER	SALARY ¹	NUMBER	SALARY ¹	NUMBER	SALARY ¹	NUMBER	SALARY ¹
<i>MALES:</i>										
ACTIVES	116	11,113,329	103	10,507,591	67,086	6,052,300,954	38,424	2,719,033,176	105,729	8,792,955,050
ACTIVE OFF PAYROLL ²	5	230,336	25	1,074,623	7,147	336,778,944	6,273	323,771,775	13,450	661,855,678
VESTED	22	709,405	36	1,964,236	9,654	564,233,618	19	1,601,667	9,731	568,508,926
ALL STATUS	143	12,053,070	164	13,546,450	83,887	6,953,313,516	44,716	3,044,406,618	128,910	10,023,319,654
<i>FEMALES:</i>										
ACTIVES	116	8,938,562	93	7,393,236	57,267	4,375,087,280	28,296	1,797,087,047	85,772	6,188,506,125
ACTIVE OFF PAYROLL ²	9	517,905	14	560,651	8,084	377,207,151	6,565	354,984,522	14,672	733,270,229
VESTED	23	944,279	23	842,059	11,990	668,797,384	21	1,635,434	12,057	672,219,156
ALL STATUS	148	10,400,746	130	8,795,946	77,341	5,421,091,815	34,882	2,153,707,003	112,501	7,593,995,510
<i>TOTAL:</i>										
ACTIVES	232	20,051,891	196	17,900,827	124,353	10,427,388,234	66,720	4,516,120,223	191,501	14,981,461,175
ACTIVE OFF PAYROLL ²	14	748,241	39	1,635,274	15,231	713,986,095	12,838	678,756,297	28,122	1,395,125,907
VESTED	45	1,653,684	59	2,806,295	21,644	1,233,031,002	40	3,237,101	21,788	1,240,728,082
ALL STATUS	291	22,453,816	294	22,342,396	161,228	12,374,405,331	79,598	5,198,113,621	241,411	17,617,315,164

¹ Salary shown for Active Off Payroll and Vested members is the salary when last on payroll and has been assumed to be \$5,000 where unavailable.

² This table does not include members who are not vested and have either withdrawn or been off payroll for five years, and therefore are solely eligible to receive a refund of their member contributions. There are 3,151 such members who are otherwise included in the active off payroll category elsewhere in the report.

Table XIII-9
Summary of Pensioner Membership

Group	June 30, 2019 (Lag)					June 30, 2018 (Lag)				
	Number	Annual Amounts Payable				Number	Annual Amounts Payable			
		Pensioners	Designated Annuitants	Supplementation	Total		Pensioners	Designated Annuitants	Supplementation	Total
Service Pensioners	127,539	\$ 4,165,704,716	\$ 0	\$ 224,287,376	\$ 4,389,992,092	124,627	\$ 3,768,876,916	\$ 0	\$ 224,366,137	\$ 3,993,243,053
Ordinary Disability Pensioners	9,763	172,225,783	0	22,138,085	\$ 194,363,868	9,815	164,094,096	0	21,794,842	185,888,938
Accidental Disability Pensioners	4,674	158,996,638	0	22,001,599	\$ 180,998,237	4,697	152,349,791	0	22,263,712	174,613,503
Accidental Death Pensioners	222	9,500,286	0	592,572	\$ 10,092,858	200	8,358,399	0	476,243	8,834,642
Other Beneficiaries	14,955	214,365,533	2,804,960	26,713,840	\$ 243,884,333	14,777	202,832,268	2,858,510	27,662,804	233,353,582
Total	157,153	\$ 4,720,792,956	\$ 2,804,960	\$ 295,733,472	\$ 5,019,331,388	154,116	\$ 4,296,511,470	\$ 2,858,510	\$ 296,563,738	\$ 4,595,933,718

Table XIII-10
Distribution of Pension Benefits by Cause and Age as of June 30, 2019

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>SERVICE RETIREMENT:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	0	0	0	0	0	0	0	0	0
40 TO 44	14	952,002	68,000	19	1,229,167	64,693	33	2,181,169	66,096
45 TO 49	296	18,514,131	62,548	172	11,924,884	69,331	468	30,439,015	65,041
50 TO 54	1,606	97,272,024	60,568	777	47,519,809	61,158	2,383	144,791,833	60,760
55 TO 59	5,667	301,889,207	53,271	2,416	108,611,264	44,955	8,083	410,500,471	50,786
60 TO 64	10,150	451,555,282	44,488	6,332	215,863,532	34,091	16,482	667,418,814	40,494
65 TO 69	15,754	631,803,057	40,104	10,394	319,038,637	30,695	26,148	950,841,694	36,364
70 TO 74	15,518	576,542,036	37,153	10,747	301,944,905	28,096	26,265	878,486,941	33,447
75 TO 79	12,474	420,704,510	33,727	7,879	202,151,526	25,657	20,353	622,856,036	30,603
80 TO 84	8,354	252,308,253	30,202	5,308	117,440,810	22,125	13,662	369,749,063	27,064
85 TO 89	4,615	127,008,803	27,521	3,171	60,842,815	19,187	7,786	187,851,618	24,127
90 & UP	2,947	76,922,439	26,102	2,929	47,952,999	16,372	5,876	124,875,438	21,252
TOTAL	77,395	2,955,471,744	38,187	50,144	1,434,520,348	28,608	127,539	4,389,992,092	34,421
<i>ORDINARY DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	1	7,346	7,346	0	0	0	1	7,346	7,346
35 TO 39	11	251,783	22,889	5	97,255	19,451	16	349,038	21,815
40 TO 44	36	965,477	26,819	48	976,872	20,352	84	1,942,349	23,123
45 TO 49	142	3,654,847	25,738	97	1,833,516	18,902	239	5,488,363	22,964
50 TO 54	418	9,761,925	23,354	313	6,509,263	20,796	731	16,271,188	22,259
55 TO 59	904	21,112,539	23,355	702	13,649,574	19,444	1,606	34,762,113	21,645
60 TO 64	1,151	24,952,434	21,679	827	15,671,338	18,950	1,978	40,623,772	20,538
65 TO 69	1,046	21,399,474	20,458	718	12,788,783	17,812	1,764	34,188,257	19,381
70 TO 74	1,049	20,653,616	19,689	488	7,826,533	16,038	1,537	28,480,149	18,530
75 TO 79	740	14,848,401	20,065	300	4,419,484	14,732	1,040	19,267,885	18,527
80 TO 84	341	6,591,556	19,330	154	1,946,060	12,637	495	8,537,616	17,248
85 TO 89	119	2,131,471	17,912	61	703,738	11,537	180	2,835,209	15,751
90 & UP	62	1,277,967	20,612	30	332,616	11,087	92	1,610,583	17,506
TOTAL	6,020	127,608,836	21,197	3,743	66,755,032	17,835	9,763	194,363,868	19,908
<i>ACCIDENTAL DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	8	361,909	45,239	5	139,368	27,874	13	501,277	38,560
35 TO 39	50	2,706,674	54,133	9	442,224	49,136	59	3,148,898	53,371
40 TO 44	118	6,457,726	54,726	33	1,705,280	51,675	151	8,163,006	54,060
45 TO 49	202	10,733,937	53,138	70	3,429,649	48,995	272	14,163,586	52,072
50 TO 54	420	20,745,884	49,395	126	5,094,467	40,432	546	25,840,351	47,327
55 TO 59	567	25,889,492	45,660	145	5,528,353	38,127	712	31,417,845	44,126
60 TO 64	497	20,021,099	40,284	108	4,019,035	37,213	605	24,040,134	39,736
65 TO 69	518	19,982,346	38,576	70	1,832,278	26,175	588	21,814,624	37,100
70 TO 74	624	20,468,956	32,803	53	1,235,791	23,317	677	21,704,747	32,060
75 TO 79	513	15,438,760	30,095	41	738,160	18,004	554	16,176,920	29,200
80 TO 84	238	7,339,160	30,837	32	498,731	15,585	270	7,837,891	29,029
85 TO 89	124	3,533,024	28,492	14	219,315	15,665	138	3,752,339	27,191
90 & UP	79	2,275,797	28,808	10	160,822	16,082	89	2,436,619	27,378
TOTAL	3,958	155,954,764	39,402	716	25,043,473	34,977	4,674	180,998,237	38,724

Table XIII-10
Distribution of Pension Benefits by Cause and Age as of June 30, 2019 (cont'd)

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>ACCIDENTAL DEATH:</i>									
UNDER 30	1	33,779	33,779	1	37,953	37,953	2	71,732	35,866
30 TO 34	2	3,474	1,737	1	1,733	1,733	3	5,207	1,736
35 TO 39	3	80,021	26,674	3	107,226	35,742	6	187,247	31,208
40 TO 44	2	17,401	8,701	3	71,972	23,991	5	89,373	17,875
45 TO 49	2	13,958	6,979	15	686,488	45,766	17	700,446	41,203
50 TO 54	4	197,813	49,453	22	1,282,870	58,312	26	1,480,683	56,949
55 TO 59	2	110,665	55,333	23	1,399,315	60,840	25	1,509,980	60,399
60 TO 64	1	37,651	37,651	31	1,385,349	44,689	32	1,423,000	44,469
65 TO 69	1	36,725	36,725	34	1,601,705	47,109	35	1,638,430	46,812
70 TO 74	2	71,753	35,877	27	1,350,076	50,003	29	1,421,829	49,029
75 TO 79	3	119,427	39,809	23	1,032,880	44,908	26	1,152,307	44,320
80 TO 84	0	0	0	8	204,135	25,517	8	204,135	25,517
85 TO 89	0	0	0	4	108,578	27,145	4	108,578	27,145
90 & UP	0	0	0	4	99,911	24,978	4	99,911	24,978
TOTAL	23	722,667	31,420	199	9,370,191	47,086	222	10,092,858	45,463
<i>OTHER BENEFICIARIES:</i>									
UNDER 30	90	1,213,586	13,484	117	1,658,023	14,171	207	2,871,609	13,873
30 TO 34	74	884,139	11,948	95	1,293,727	13,618	169	2,177,866	12,887
35 TO 39	100	1,249,337	12,493	125	1,470,590	11,765	225	2,719,927	12,089
40 TO 44	122	1,691,238	13,863	202	2,616,988	12,955	324	4,308,226	13,297
45 TO 49	135	1,508,500	11,174	242	3,059,148	12,641	377	4,567,648	12,116
50 TO 54	154	1,633,485	10,607	365	5,042,904	13,816	519	6,676,389	12,864
55 TO 59	174	1,733,014	9,960	551	8,365,022	15,182	725	10,098,036	13,928
60 TO 64	170	1,709,095	10,054	863	15,124,260	17,525	1,033	16,833,355	16,296
65 TO 69	187	2,215,127	11,846	1,230	24,800,902	20,163	1,417	27,016,029	19,066
70 TO 74	166	1,971,743	11,878	1,637	31,626,671	19,320	1,803	33,598,414	18,635
75 TO 79	146	1,952,046	13,370	1,895	35,820,432	18,903	2,041	37,772,478	18,507
80 TO 84	114	1,453,143	12,747	1,861	32,327,259	17,371	1,975	33,780,402	17,104
85 TO 89	76	759,749	9,997	1,764	29,328,296	16,626	1,840	30,088,045	16,352
90 & UP	72	800,224	11,114	2,228	30,575,685	13,723	2,300	31,375,909	13,642
TOTAL	1,780	20,774,426	11,671	13,175	223,109,907	16,934	14,955	243,884,333	16,308
<i>ALL PENSIONERS AND BENEFICIARIES:</i>									
UNDER 30	91	1,247,365	13,707	118	1,695,976	14,373	209	2,943,341	14,083
30 TO 34	85	1,256,868	14,787	101	1,434,828	14,206	186	2,691,696	14,471
35 TO 39	164	4,287,815	26,145	142	2,117,295	14,911	306	6,405,110	20,932
40 TO 44	292	10,083,844	34,534	305	6,600,279	21,640	597	16,684,123	27,947
45 TO 49	777	34,425,373	44,305	596	20,933,685	35,124	1,373	55,359,058	40,320
50 TO 54	2,602	129,611,131	49,812	1,603	65,449,313	40,829	4,205	195,060,444	46,388
55 TO 59	7,314	350,734,917	47,954	3,837	137,553,528	35,849	11,151	488,288,445	43,789
60 TO 64	11,969	498,275,561	41,631	8,161	252,063,514	30,886	20,130	750,339,075	37,275
65 TO 69	17,506	675,436,729	38,583	12,446	360,062,305	28,930	29,952	1,035,499,034	34,572
70 TO 74	17,359	619,708,104	35,700	12,952	343,983,976	26,558	30,311	963,692,080	31,793
75 TO 79	13,876	453,063,144	32,651	10,138	244,162,482	24,084	24,014	697,225,626	29,034
80 TO 84	9,047	267,692,112	29,589	7,363	152,416,995	20,700	16,410	420,109,107	25,601
85 TO 89	4,934	133,433,047	27,044	5,014	91,202,742	18,190	9,948	224,635,789	22,581
90 & UP	3,160	81,276,427	25,720	5,201	79,122,033	15,213	8,361	160,398,460	19,184
TOTAL	89,176	3,260,532,437	36,563	67,977	1,758,798,951	25,873	157,153	5,019,331,388	31,939

Graph XIII-11
Pensioner Average Benefits

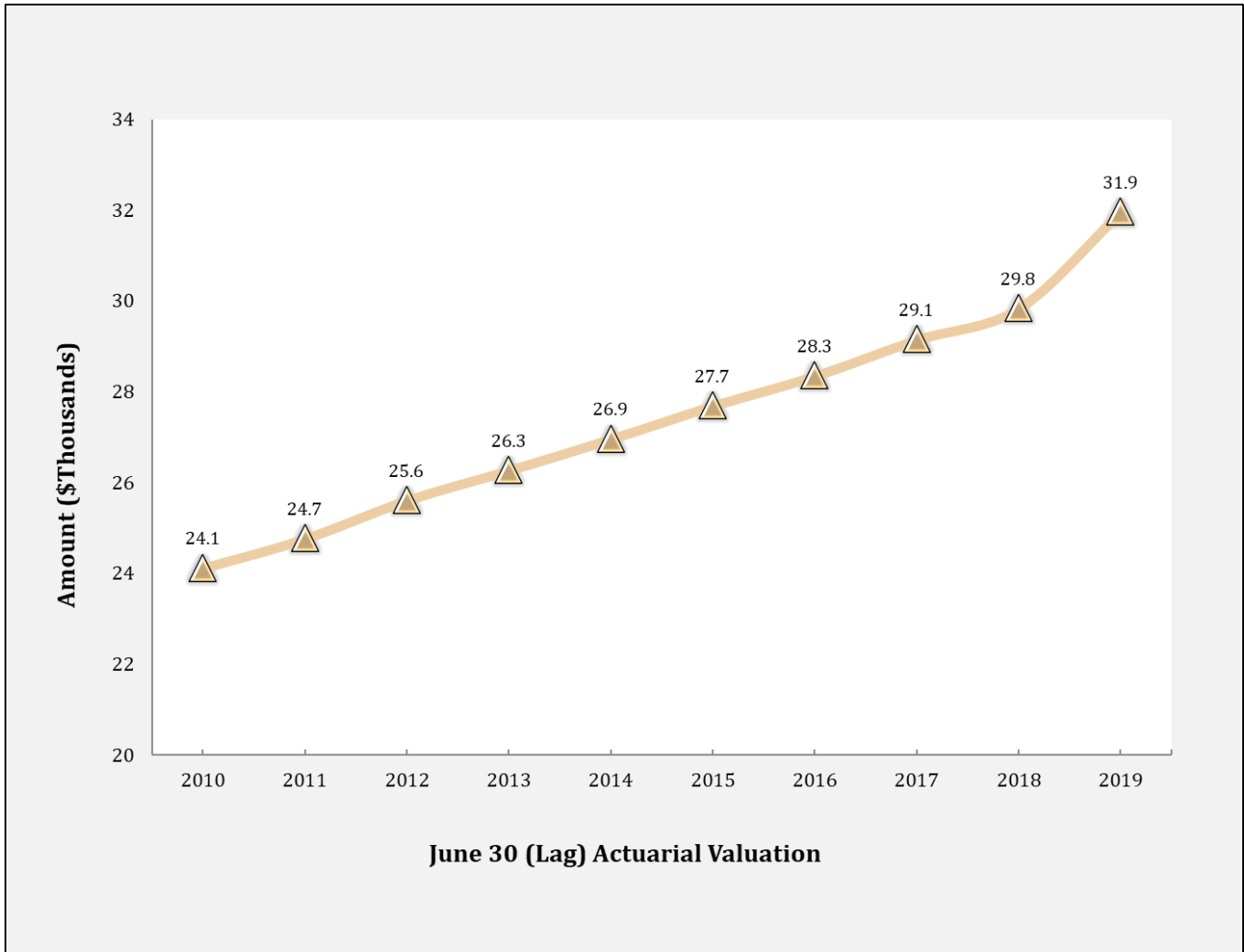


Table XIII-12
Reconciliation of Pensioner and Beneficiary Data

SCHEDULE OF PENSIONERS AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS								
June 30 (Lag) Actuarial Valuation	Added to Rolls		Removed from Rolls		End of Year Rolls		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances ¹	Number	Annual Allowances	Number	Annual Allowances ²		
2010	6,997	201,129,110	5,541	72,297,965	132,487	3,192,685,832	4.2%	24,098
2011	8,564	261,133,473	5,583	101,421,090	135,468	3,352,398,215	5.0%	24,747
2012	7,628	274,865,758	5,109	95,823,182	137,987	3,531,440,791	5.3%	25,593
2013	7,334	244,447,724	5,922	116,360,332	139,399	3,659,528,183	3.6%	26,252
2014	8,132	276,606,560	5,436	107,547,552	142,095	3,828,587,191	4.6%	26,944
2015	8,219	289,143,851	5,788	117,910,540	144,526	3,999,820,502	4.5%	27,675
2016	8,407	295,570,322	5,419	115,894,203	147,514	4,179,496,621	4.5%	28,333
2017	8,756	329,831,284	5,851	127,341,967	150,419	4,381,985,938	4.8%	29,132
2018	9,606	345,164,441	5,909	131,216,661	154,116	4,595,933,718	4.9%	29,821
2019	9,431	570,731,545	6,394	147,333,875	157,153	5,019,331,388	9.2%	31,939

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

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

APPENDIX: ACRONYMS AND ABBREVIATIONS

2019 A&M	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 2019
Revised 2021 A&M	Actuarial Assumptions and Methods proposed by the Actuary and adopted by the Board of Trustees during Fiscal Year 2021
AAVM	Actuarial Asset Valuation Method
ABO	Accumulated Benefit Obligation
ACCNYS	Administrative Code of the City of New York
AIR	Actuarial Interest Rate
AL	Accrued Liability
AMC	Additional Member Contributions
AMC-PT	Additional Member Contributions for Physically-Taxing Employment
AVA	Actuarial Value of Assets
BMC	Basic Member Contributions
COLA	Cost-of-Living Adjustment
EAN	Entry Age Normal cost method
EIR	Expected Investment Return
FAS	Final Average Salary
FS	Final Salary
GASB	Governmental Accounting Standards Board
GASB25	Governmental Accounting Standards Board Statement No. 25
GASB67	Governmental Accounting Standards Board Statement No. 67
GASB68	Governmental Accounting Standards Board Statement No. 68
IRC	Internal Revenue Code
ITHP	Increased-Take-Home-Pay
MVA	Market Value of Assets
NYCERS	New York City Employees' Retirement System
OYLM	One-Year Lag Methodology
PT	Physically-Taxing Employment
PV	Present Value
PVFB	Present Value of Future Benefits
PVFNC	Present Value of Future Normal Costs
PVFS	Present Value of Future Salary
UAL	Unfunded Accrued Liability
UIR	Unexpected Investment Return
VSF	Variable Supplements Fund
WTC	World Trade Center