



# **Fiscal Year 2020 Actuarial Valuation Report for the New York City Employees' Retirement System**

*JUNE 30, 2018 (LAG) ACTUARIAL VALUATION*

prepared by the  
**New York City  
Office of the Actuary**

**2020**



## OFFICE OF THE ACTUARY

255 GREENWICH STREET • 9<sup>TH</sup> FLOOR  
NEW YORK, NY 10007  
(212) 442-5775 • FAX: (212) 442-5777

SHERRY S. CHAN  
CHIEF ACTUARY

August 24, 2020

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

Re: Fiscal Year 2020 Actuarial Valuation Report (Report)

Dear Trustees:

This Report presents the results of the June 30, 2018 (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, 2018 (Lag) valuation, forms the basis for determining the statutorily-required contribution (Statutory Contribution) of \$3,726,701,492 for Fiscal Year 2020 (i.e. for the period beginning July 1, 2019 and ending June 30, 2020). 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, 2017 (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, 2018 (Lag) and June 30, 2017 (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, 2018 and June 30, 2017.

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, 2018 valuation were presented in the report titled, “Proposed Changes in Actuarial Assumptions and Methods Used in Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2018 for the New York City Employees’ Retirement System” dated December 31, 2018 which was adopted by the Board of Trustees at the February 14, 2019 Board meeting. There have been no changes since the prior year.

This Report does not present Governmental Accounting Standards Board (GASB) results. The Office of the Actuary will publish Fiscal Year 2020 GASB67 and GASB68 results in a report later this year, which will be available on the website of the Office of the Actuary ([www.nyc.gov/actuary](http://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  
Mr. Frankie Chen - New York City Office of the Actuary  
Mr. Craig Chu - New York City Office of the Actuary  
Ms. Chun Gong - New York City Employees’ Retirement System  
Mr. Michael Samet - New York City Office of the Actuary  
Keith Snow, Esq. - New York City Office of the Actuary  
Ms. Melanie Whinnery - New York City Employees’ Retirement System

## Table of Contents

<b>SECTION I – EXECUTIVE SUMMARY .....</b>	<b>1</b>
Table I-1 Executive Summary.....	2
Table I-2 Actuarial Liabilities.....	3
Graph I-3 Historical Funded Status .....	4
<b>SECTION II – MARKET AND ACTUARIAL VALUES OF ASSETS.....</b>	<b>5</b>
Table II-1 Statement of Plan Net Assets .....	6
Table II-2 Statement of Changes in Plan Net Assets .....	7
Table II-3 Development of Actuarial Value of Assets.....	8
Graph II-4 Historical Market and Actuarial Value of Assets.....	9
Graph II-5 Future Recognition of UIR as of June 30, 2018.....	10
<b>SECTION III – CONTRIBUTION DEVELOPMENT AND HISTORY.....</b>	<b>11</b>
Table III-1 Statutory Contributions.....	11
Table III-2 Schedule of Unfunded Accrued Liability Bases.....	12
Graph III-3 Remaining UAL Amortizations as of June 30, 2018.....	14
Table III-4 Reconciliation of Outstanding UAL Bases .....	15
Table III-5 Actuarial and Statutory Contribution History.....	16
Table III-6 City Rates: Contributions as a Percentage of Salary .....	17
<b>SECTION IV – RESULTS BY CONTRIBUTING ENTITY .....</b>	<b>18</b>
Table IV-1 Employer Contributions by Obligor: Transit Authority and Housing Authority	18
Table IV-2 Employer Contributions by Obligor: All.....	19
Table IV-3 Accrued Liabilities by Obligor: Transit Authority and Housing Authority .....	20
Table IV-4 Accrued Liabilities by Obligor: All.....	21
Table IV-5 Participant Data by Obligor: Transit Authority and Housing Authority .....	22
Table IV-6 Participant Data by Obligor: All .....	23
<b>SECTION V – (GAIN)/LOSS ANALYSIS.....</b>	<b>24</b>
Table V-1 Development of Experience (Gain)/Loss .....	24
<b>SECTION VI – SCHEDULE OF FUNDING PROGRESS .....</b>	<b>25</b>
Table VI-1 Schedule of Funding Progress.....	26
<b>SECTION VII – VARIABLE SUPPLEMENTS FUNDS (VSF) .....</b>	<b>27</b>
Table VII-1 VSF Accrued Liability .....	28
Table VII-2 VSF Member Data.....	29
Table VII-3 VSF Statement of Assets.....	30

Table VII-4 Development of COVSF Actuarial Value of Assets.....	31
Table VII-5 SKIM Calculation as of June 30, 2018.....	32
Summary of VSF Plan Provisions .....	33
Summary of VSF Actuarial Assumptions and Methods .....	34
<b>SECTION VIII – RISK AND UNCERTAINTY .....</b>	<b>36</b>
High Risk Types.....	37
Investment Risk.....	37
Maturity Risk.....	39
Medium Risk Types .....	42
Interest Rate Risk.....	42
Longevity Risk .....	43
Litigation Risk.....	43
Other Risk Types.....	44
Credit/Solvency Risk.....	44
Inflation Risk .....	44
Contribution Risk .....	44
Agency/Political Risk .....	45
Intergenerational Equity Risk .....	45
<b>SECTION IX – SUMMARY OF PLAN PROVISIONS .....</b>	<b>46</b>
<b>SECTION X – CHAPTER AMENDMENTS.....</b>	<b>59</b>
<b>SECTION XI – SUBSEQUENT EVENTS .....</b>	<b>60</b>
<b>SECTION XII – ACTUARIAL ASSUMPTIONS AND METHODS .....</b>	<b>61</b>
Table XII-1 Active Retirement Rates.....	62
Table XII-2 Active Termination Rates.....	67
Table XII-3 Active Disability Rates .....	68
Table XII-4 Active Mortality Rates.....	71
Table XII-5 Service Retiree Mortality Rates .....	73
Table XII-6 Disabled Retiree Mortality Rates .....	75
Table XII-7 Beneficiary Mortality Rates .....	80
Table XII-8 Salary Scale .....	81
Table XII-9 Overtime.....	82
Additional Assumptions and Methods.....	84
<b>SECTION XIII – SUMMARY OF DEMOGRAPHIC DATA.....</b>	<b>87</b>
Table XIII-1 Status Reconciliation.....	88

Graph XIII-2 Headcount Summary by Status .....	89
Table XIII-3 Summary of Active Membership .....	90
Graph XIII-4 Active Membership by Tier.....	91
Table XIII-5 Schedule of Active Member Salary Data.....	92
Table XIII-6 Detailed Active Membership and Salaries by Obligor as of June 30, 2018 .....	93
Table XIII-7 Detailed Reconciliation of Active Membership .....	103
Table XIII-8 Summary of Non-Pensioner Membership as of June 30, 2018 .....	113
Table XIII-9 Summary of Pensioner Membership .....	114
Table XIII-10 Distribution of Pension Benefits by Cause and Age as of June 30, 2018.....	115
Graph XIII-11 Pensioner Average Benefits .....	117
Table XIII-12 Reconciliation of Pensioner and Beneficiary Data.....	118
<b>APPENDIX: ACRONYMS AND ABBREVIATIONS.....</b>	<b>119</b>

## SECTION I – EXECUTIVE SUMMARY

This Report presents the results of the June 30, 2018 (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 2020 (i.e. July 1, 2019 to June 30, 2020),
- 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 September 7, 2018 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, 2018 (Lag) actuarial valuation and, for comparative purposes, the June 30, 2017 (Lag) actuarial valuation.

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
SUMMARY OF VALUATION RESULTS		
Valuation Date	June 30, 2018 (Lag)	June 30, 2017 (Lag)
Fiscal Year	2020	2019
<b>Funded Status</b>		
1. Accrued Liability <sup>1</sup>	\$ 85,845,125,114	\$ 82,462,950,520
2. Actuarial Value of Assets (AVA) <sup>2</sup>	63,615,892,000	59,573,653,000
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 22,229,233,114	\$ 22,889,297,520
4. Funded Ratio (AVA Basis) (2. / 1.)	74.1%	72.2%
5. Market Value of Assets (MVA) <sup>2</sup>	65,206,752,000	61,316,782,000
6. Unfunded Accrued Liability (MVA Basis) (1. - 5.)	\$ 20,638,373,114	\$ 21,146,168,520
7. Funded Ratio (MVA Basis) (5. / 1.)	76.0%	74.4%
<b>Contribution<sup>3</sup></b>		
1. Normal Cost	\$ 1,576,308,450	\$ 1,549,996,638
2. Amortization of Unfunded Accrued Liability	2,083,284,670	2,068,281,195
3. Administrative Expenses	66,237,028	66,246,997
4. Interest on Late Employer Contributions	871,344	9,839,760
5. Actuarial Contribution (1. + 2. + 3. + 4.)	\$ 3,726,701,492	\$ 3,694,364,590
6. Statutory Contribution (5)	\$ 3,726,701,492	\$ 3,694,364,590
<b>Participant Data</b>		
1. Active Members		
a. Number	190,572	189,792
b. Annual Salary <sup>4</sup>	\$ 14,459,118,057	\$ 14,065,241,654
c. Average Salary	\$ 75,872	\$ 74,109
2. Active Off Payroll Members <sup>5</sup>	28,483	19,180
3. Terminated Vested Members	21,389	8,417
4. Retirees and Beneficiaries		
a. Number	154,116	150,419
b. Total Annual Benefits	\$ 4,595,933,718	\$ 4,381,985,938
c. Average Annual Benefit	\$ 29,821	\$ 29,132

<sup>1</sup> Includes unfunded VSF Accrued Liability.

<sup>2</sup> Actuarial Value of Assets and Market Value of Assets are rounded to the nearest thousand.

<sup>3</sup> Including results for Variable Supplements Funds.

<sup>4</sup> 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.

<sup>5</sup> Represents members no longer on payroll, but not otherwise classified.



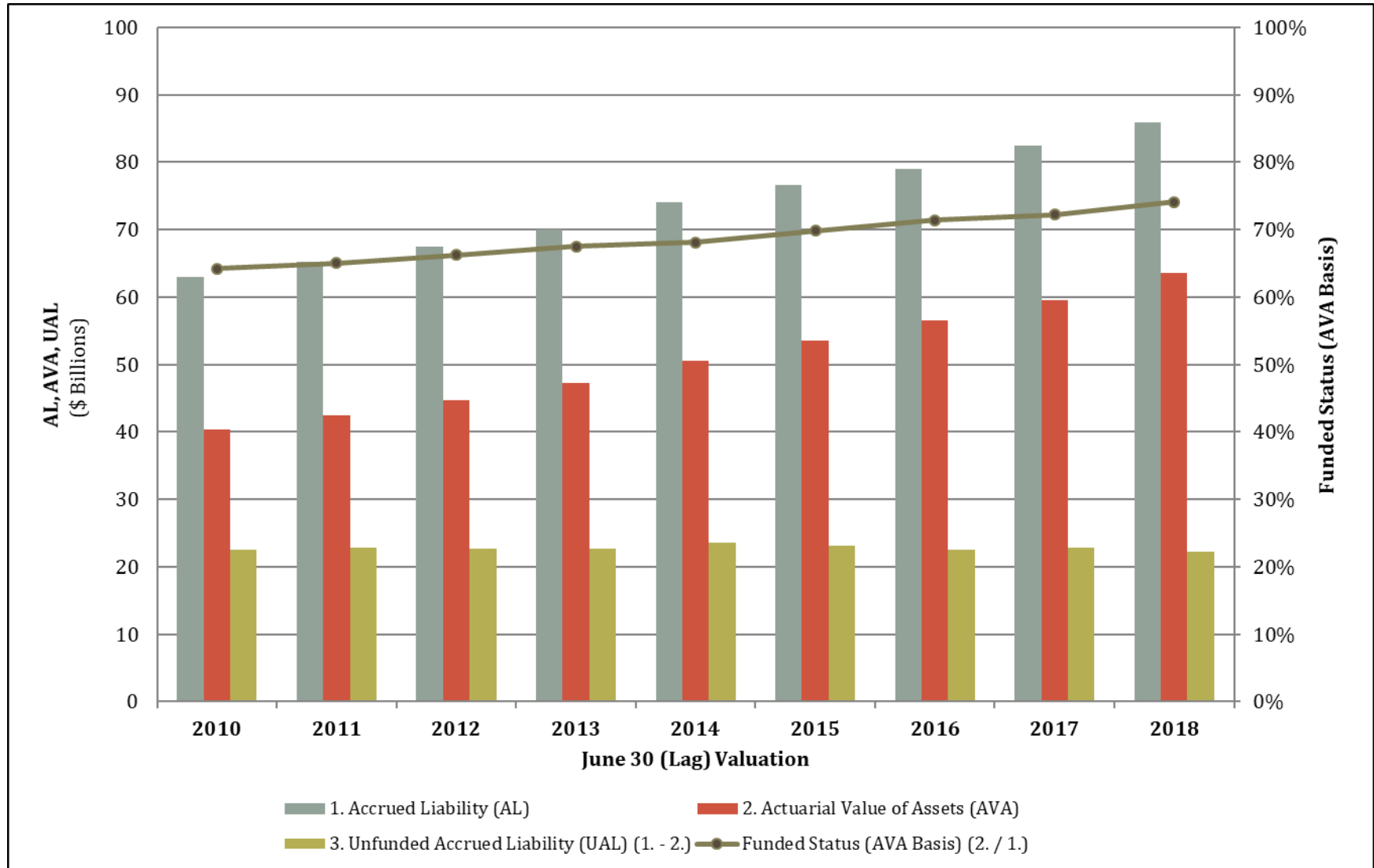
**Table I-2**  
**Actuarial Liabilities**

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
ACTUARIAL LIABILITIES BY STATUS		
Valuation Date	June 30, 2018 (Lag)	June 30, 2017 (Lag)
Fiscal Year	2020	2019
<b>Accrued Liability</b>		
1. Active Members	\$ 35,130,554,574	\$ 34,700,754,747
2. Active Off Payroll Members <sup>1</sup>	520,444,383	958,262,237
3. Terminated Vested Members	1,965,733,141	718,581,597
4. Retirees and Beneficiaries	<u>46,845,749,071</u>	<u>44,626,280,561</u>
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 84,462,481,169	\$ 81,003,879,142
6. Actuarial Adjustments <sup>2</sup>	<u>1,382,643,945</u>	<u>1,459,071,378</u>
7. Total Accrued Liability (5. + 6.)	\$ 85,845,125,114	\$ 82,462,950,520
<b>Present Value of Benefits</b>		
1. Active Members	\$ 53,468,657,745	\$ 52,163,948,981
2. Active Off Payroll Members <sup>1</sup>	520,444,383	958,262,237
3. Terminated Vested Members	1,965,733,141	718,581,597
4. Retirees and Beneficiaries	<u>46,845,749,071</u>	<u>44,626,280,561</u>
5. Present Value of Benefits (1. to 4.)	\$ 102,800,584,340	\$ 98,467,073,376
6. Actuarial Adjustments <sup>2</sup>	<u>1,579,374,828</u>	<u>1,641,844,599</u>
7. Total Present Value of Benefits (5. + 6.)	\$ 104,379,959,168	\$ 100,108,917,975

<sup>1</sup> Represents members no longer on payroll, but not otherwise classified.

<sup>2</sup> 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. Beginning with the June 30, 2012 (Lag) actuarial valuation, the AAVM recognizes investment returns greater or less than expected over a period of six years. In accordance with this AAVM, the Unexpected Investment Returns (UIR) are phased into the AVA at rates of 15%, 15%, 15%, 15%, 20%, and 20% per year (i.e. UIR is recognized at cumulative rates of 15%, 30%, 45%, 60%, 80%, and 100% over a period of six years).

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 AVA, where EIR equals the sum of beginning-of-fiscal-year AVA plus one-half of net cash flow, multiplied by the expected rate of return.

Beginning with the June 30, 2014 (Lag) actuarial valuation, 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, 2018	June 30, 2017
<b>ASSETS</b>		
Cash	\$ 19,139	\$ 163,875
Receivables		
Investment Securities Sold	\$ 494,566	\$ 687,047
Member Loans	1,129,906	1,102,986
Transferable Earnings due from QPP to VSFs	(234,000)	(281,000)
Accrued Interest and Dividends	326,006	301,680
Other	0	0
Total Receivables	\$ 1,716,478	\$ 1,810,713
<b>INVESTMENTS AT FAIR VALUE</b>		
Short-Term Investments		
U.S. Treasury Bills	\$ 40,216	\$ 37,090
Commercial Paper	644,809	422,635
Short-term Investment Fund	612,219	442,599
Discount Notes	71,958	188,544
Short term - Hedge Fund	0	0
Debt Securities		
U.S. Government and agency	11,612,008	7,261,949
Corporate and other	6,082,292	6,254,038
Promissory Notes	0	0
Equity Securities	17,979,085	18,956,882
Alternative Investments	10,176,771	9,258,954
Collective Trust Funds		
International Equity	13,315,724	13,655,017
Domestic Equity	0	0
Mortgage Debt Security	704,148	640,950
Treasury Inflation Protected Securities	2,858,313	2,531,110
Fixed Income	1,139,185	1,091,294
Collateral From Securities Lending	9,918,700	7,034,093
Total Investments	\$ 75,155,428	\$ 67,775,155
<b>OTHER ASSETS</b>	109,895	93,948
TOTAL ASSETS	\$ 77,000,940	\$ 69,843,691
<b>LIABILITIES</b>		
Accounts Payable	\$ 468,665	\$ 209,206
Payable for Investment Securities Purchased	1,023,260	955,572
Accrued Benefits Payable	377,156	321,457
Amount due to Variable Supplements Funds	4,995	5,493
Due to other Retirement Systems	1,412	1,088
Security Lending	9,918,700	7,034,093
Accrued Transfers to VSFs	0	0
TOTAL LIABILITIES	\$ 11,794,188	\$ 8,526,909
<b>PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS</b>	\$ 65,206,752	\$ 61,316,782

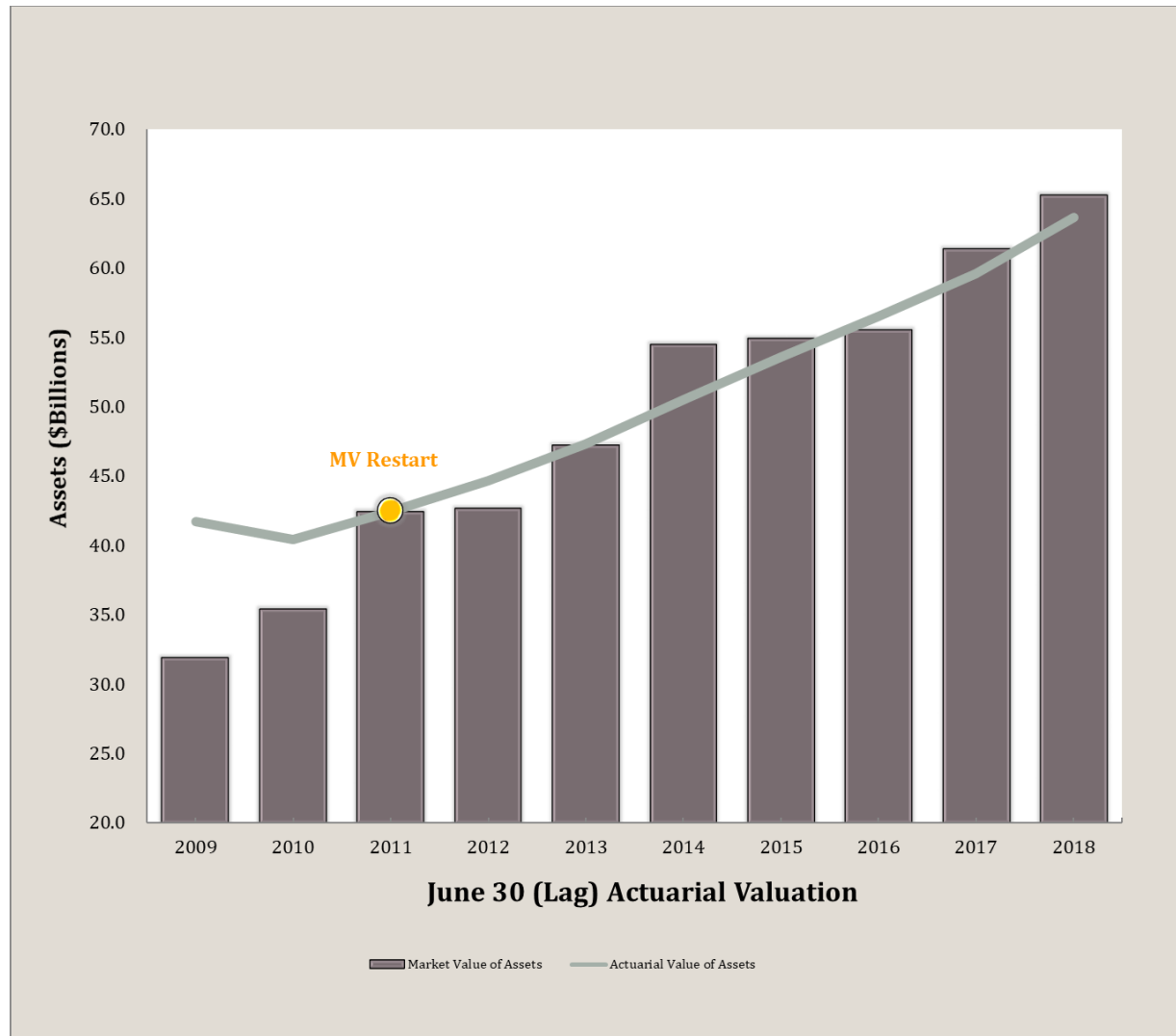
**Table II-2**  
**Statement of Changes in Plan Net Assets**

(\$ Thousands)		
	June 30, 2018	June 30, 2017
<b>ADDITIONS</b>		
Contributions		
Member Contributions	\$ 523,535	\$ 513,514
Employer Contributions	<u>3,377,024</u>	<u>3,328,193</u>
<b>Total Contributions</b>	\$ 3,900,559	\$ 3,841,707
Investment Income (Loss)		
Interest Income	\$ 878,598	\$ 753,789
Dividend Income	897,873	931,480
Net Appreciation (Depreciation) in Fair Value	<u>3,591,521</u>	<u>5,489,457</u>
Total Investment Income (Loss)	\$ 5,367,992	\$ 7,174,726
Less Investment Expenses	241,818	223,756
Net Income (Loss)	\$ 5,126,174	\$ 6,950,970
Securities Lending Transactions		
Securities Lending Income	\$ 30,089	\$ 33,703
Securities Lending Fees	<u>3,009</u>	<u>2,369</u>
Net Securities Lending Income (Loss)	\$ 27,080	\$ 31,334
Net Investment Income (Loss)	\$ 5,153,254	\$ 6,982,304
Other		
Other Income	<u>3,410</u>	<u>3,266</u>
<b>TOTAL ADDITIONS</b>	\$ 9,057,223	\$ 10,827,277
<b>DEDUCTIONS</b>		
Benefit Payments and Withdrawals	\$ 4,882,612	\$ 4,635,020
Payments to other Retirement Systems	\$ 9,055	\$ 8,087
Amount due to Variable Supplements Fund	\$ 10,897	\$ 11,297
Accrued Transfer to VSFs	\$ 205,000	\$ 285,924
Administrative Expenses	<u>59,689</u>	<u>59,671</u>
<b>TOTAL DEDUCTIONS</b>	\$ 5,167,253	\$ 4,999,999
<b>NET INCREASE (DECREASE) IN PLAN NET ASSETS</b>	\$ 3,889,970	\$ 5,827,278
<b>PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS</b>		
Beginning of Year	\$ 61,316,782	\$ 55,489,504
End of Year	\$ 65,206,752	\$ 61,316,782

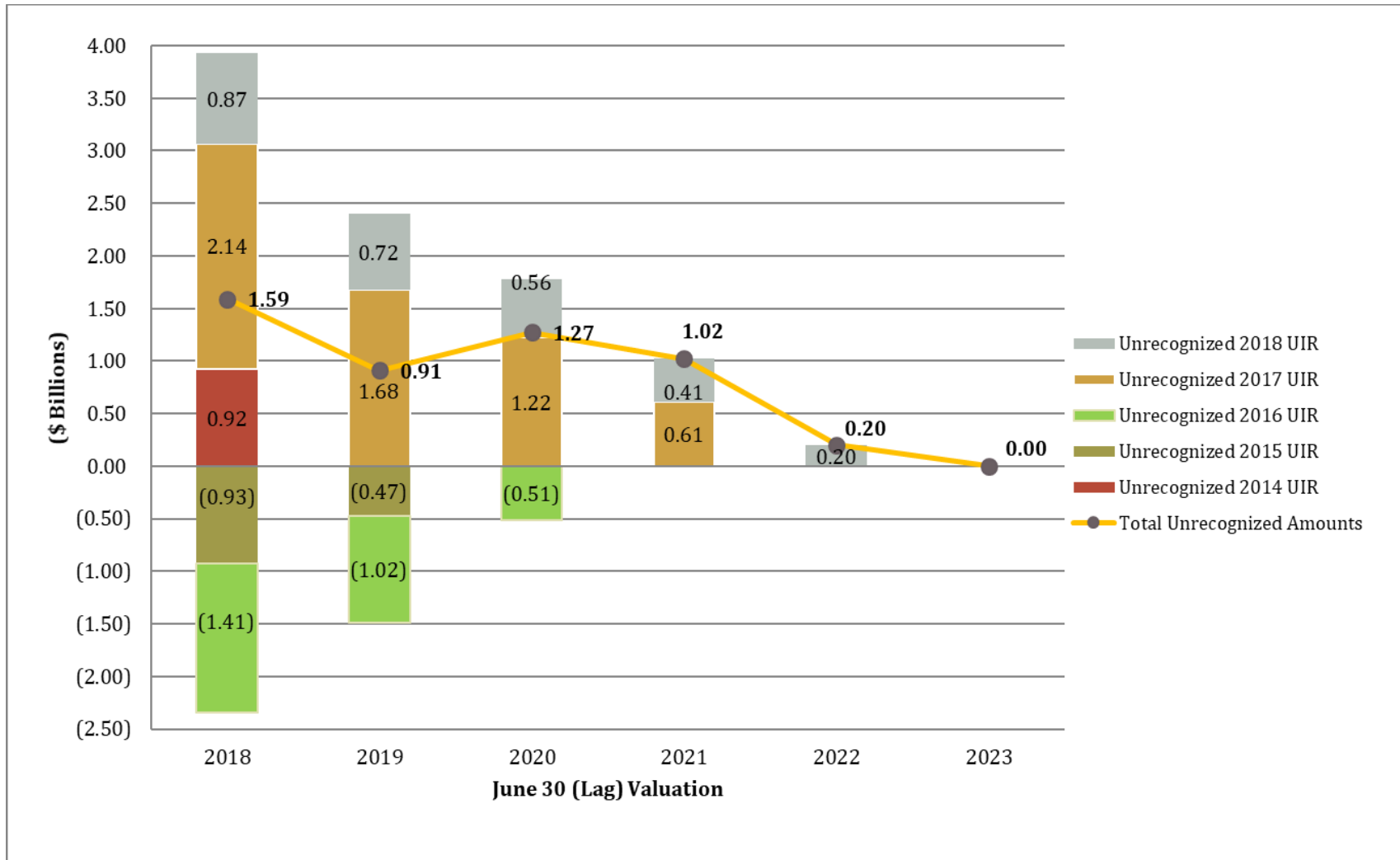
**Table II-3**  
**Development of Actuarial Value of Assets**

(\$ Thousands)		
Valuation Date	June 30, 2018	June 30, 2017
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY)	\$ 61,316,782	\$ 55,489,504
b. End of Year (EOY)	\$ 65,206,752	\$ 61,316,782
2. Contributions		
a. Employee	\$ 523,535	\$ 513,514
b. Employer	<u>3,377,024</u>	<u>3,328,193</u>
c. Total Contributions	\$ 3,900,559	\$ 3,841,707
3. Net Investment Income		
a. Investment Income	\$ 5,395,072	\$ 7,206,060
b. Investment Expenses	<u>(241,818)</u>	<u>(223,756)</u>
c. Total Net Investment Income	\$ 5,153,254	\$ 6,982,304
4. Benefit Payments and Other Cash Flow	\$ (4,958,843)	\$ (4,710,809)
5. Preliminary Transferable Earnings from NYCERS to COVSF - EOY	\$ (205,000)	\$ (285,924)
6. Net Cash Flow (2.c. + 4. + 5.)	\$ (1,263,284)	\$ (1,155,026)
7. Average Invested Assets		
a. AVA @ BOY	\$ 59,573,653	\$ 56,491,829
b. 1/2 Net Cash Flow before SKIM ((2.c. + 4.) / 2)	<u>(529,142)</u>	<u>(434,551)</u>
c. Total	\$ 59,044,511	\$ 56,057,278
8. Expected Rate of Return (AIR)	7.00%	7.00%
9. Expected Investment Return (EIR) (7.c. x 8.)	\$ 4,133,116	\$ 3,924,009
10. Unexpected Investment Return (UIR) (3.c. - 9.)	\$ 1,020,138	\$ 3,058,295
11. Preliminary AVA @ EOY		
a. AVA @ BOY (prior to corridor limit)	\$ 59,573,653	\$ 56,491,829
b. Net Cash Flow (6.)	(1,263,284)	(1,155,026)
c. Expected Investment Return (9.)	4,133,116	3,924,009
d. Phase in of UIR		
15% * UIR for prior year	153,021	458,744
15% * UIR for second prior year	458,744	(383,488)
15% * UIR for third prior year	(383,488)	(350,490)
15% * UIR for fourth prior year	(350,490)	692,771
20% * UIR for fifth prior year	923,696	370,924
20% * UIR for sixth prior year	<u>370,924</u>	<u>(475,620)</u>
Total	\$ 1,172,407	\$ 312,841
e. Preliminary AVA (11.a. + 11.b. + 11.c. + 11.d.)	\$ 63,615,892	\$ 59,573,653
12. Corridor		
a. 80% of MVA	\$ 52,165,402	\$ 49,053,426
b. 120% of MVA	\$ 78,248,102	\$ 73,580,138
<b>13. Final AVA @ EOY (11.e. bounded by 12.)</b>	<b>\$ 63,615,892</b>	<b>\$ 59,573,653</b>

Graph II-4  
Historical Market and Actuarial Value of Assets



**Graph II-5**  
**Future Recognition of UIR as of June 30, 2018**





## SECTION III – CONTRIBUTION DEVELOPMENT AND HISTORY

**Table III-1**  
**Statutory Contributions**

**Table III-1** shows the components of the Fiscal Year 2020 and the Fiscal Year 2019 Statutory Contributions.

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR STATUTORY CONTRIBUTIONS		
Valuation Date	June 30, 2018 (Lag)	June 30, 2017 (Lag)
Fiscal Year	2020	2019
Normal Cost <sup>1</sup>	\$ 1,576,308,450	\$ 1,549,996,638
Amortization of Unfunded Accrued Liability		
- Initial UAL	1,921,976,034	1,865,996,150
- 2011 (Gain)/Loss	(29,666,882)	(29,666,882)
- 2012 (Gain)/Loss	(7,384,090)	(7,384,090)
- 2013 (Gain)/Loss	9,838,580	9,838,580
- 2014 (Gain)/Loss	(154,087,106)	(154,087,106)
- 2014 Assumption Change <sup>2</sup>	233,084,501	233,084,501
- 2015 (Gain)/Loss	(50,393,431)	(50,393,431)
- 2016 (Gain)/Loss	(30,332,576)	(30,332,576)
- 2016 Assumption Change <sup>3</sup>	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	(3,085,886)	(3,085,886)
- 2017 COVSF Escalation Offset	154,027	154,027
- 2017 Assumption Change <sup>4</sup>	(98,976,687)	(98,976,687)
- 2017 Method Change <sup>4</sup>	81,714,634	81,714,634
- 2017 Census Data Update	223,201,197	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	(40,976,409)	NA
Total	2,083,284,670	2,068,281,195
Administrative Expenses	66,237,028	66,246,997
Interest on Late Employer Contributions	871,344	9,839,760
<b>Total Contribution to the New York City Employees' Retirement System</b>	<b>\$ 3,726,701,492</b>	<b>\$ 3,694,364,590</b>

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

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

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

<sup>4</sup> 2019 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, 2018.

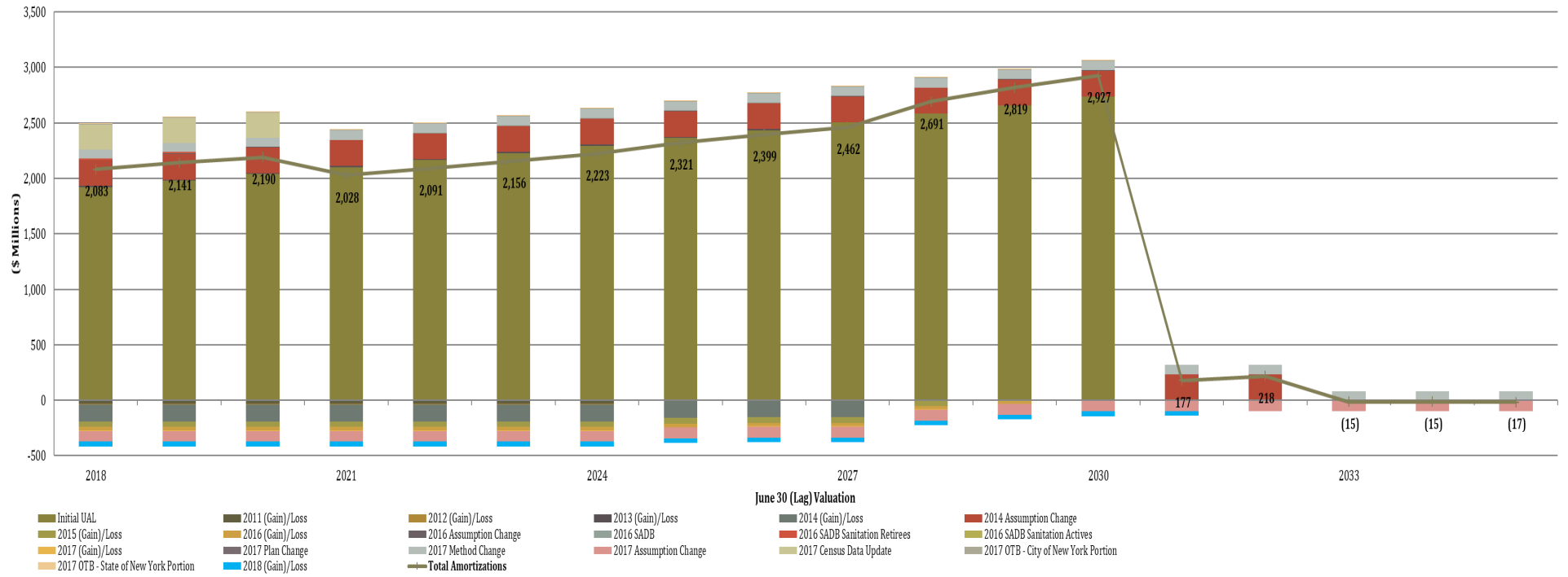
NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM SCHEDULE OF UNFUNDED ACCRUED LIABILITY BASES						
Amortization Base	Date Established	Original Amount	Amortization Years	Amortization Payment	Payments Remaining	OYLM UAL June 30, 2018
Initial UAL	6/30/10	\$ 20,194,114,494	22	\$ 1,921,976,034	13	\$ 18,144,301,102
(Gain)/Loss	6/30/11	\$ (250,820,523)	15	\$ (29,666,882)	7	\$ (154,565,130)
(Gain)/Loss	6/30/12	\$ (62,429,250)	15	\$ (7,384,090)	8	\$ (42,625,929)
(Gain)/Loss	6/30/13	\$ 83,180,893	15	\$ 9,838,580	9	\$ 61,968,420
(Gain)/Loss	6/30/14	\$ (1,302,739,151)	15	\$ (154,087,106)	10	\$ (1,046,244,143)
Assumption Change <sup>1</sup>	6/30/14	\$ 2,328,933,026	20	\$ 233,084,501	15	\$ 2,052,298,025
(Gain)/Loss	6/30/15	\$ (426,054,441)	15	\$ (50,393,431)	11	\$ (365,314,187)
(Gain)/Loss	6/30/16	\$ (256,448,676)	15	\$ (30,332,576)	12	\$ (232,908,220)
Assumption Change <sup>2</sup>	6/30/16	\$ 19,238,347	20	\$ 1,925,414	17	\$ 18,172,951
SADB	6/30/16	\$ 20,783,169	15	\$ 2,458,219	12	\$ 18,875,397
SADB Sanitation Retirees	6/30/16	\$ 34,163,423	5	\$ 10,433,043	2	\$ 18,235,677
SADB Sanitation Actives	6/30/16	\$ 4,530,309	11	\$ 667,208	8	\$ 3,851,572
(Gain)/Loss	6/30/17	\$ (26,089,812)	15	\$ (3,085,886)	13	\$ (24,932,864)
COVSF Escalation Offset	6/30/17	\$ 1,497,838	19	\$ 154,027	17	\$ 1,453,783
Assumption Change <sup>3</sup>	6/30/17	\$ (988,954,970)	20	\$ (98,976,687)	18	\$ (962,497,444)
Method Change <sup>3</sup>	6/30/17	\$ 816,476,035	20	\$ 81,714,634	18	\$ 794,632,840
Census Data Update	6/30/17	\$ 730,881,413	5	\$ 223,201,197	3	\$ 566,266,365
OTB - City of New York portion	6/30/17	\$ 53,833,920	15	\$ 6,367,440	13	\$ 51,446,659
OTB - State of New York portion	6/30/17	\$ 53,833,920	15	\$ 6,367,440	13	\$ 51,446,659
(Gain)/Loss	6/30/18	\$ (346,437,644)	15	\$ (40,976,409)	14	\$ (346,437,644)

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

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

<sup>3</sup> 2019 A&M.

**Graph III-3**  
**Remaining UAL Amortizations as of June 30, 2018**



**Table III-4**  
**Reconciliation of Outstanding UAL Bases**

	Amounts (\$ Thousands) Remaining to be Amortized, as of								
June 30 (Lag) Valuation Date	2010	2011	2012	2013	2014	2015	2016	2017 <sup>1</sup>	2018
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
2010 ERI		7,140	7,640	5,919	4,078	2,108	0	0	0
2011 (Gain)/Loss		(250,821)	(268,378)	(256,477)	(243,742)	(230,117)	(215,537)	(171,257)	(154,565)
2012 (Gain)/Loss			(62,429)	(66,799)	(63,837)	(60,668)	(57,276)	(46,509)	(42,626)
2013 (Gain)/Loss				83,181	89,004	85,057	80,834	66,803	61,968
2013 Transit Refunds				320	342	265	183	0	0
2014 (Gain)/Loss					(1,302,740)	(1,393,931)	(1,332,117)	(1,117,015)	(1,046,244)
2014 Assumption Change					2,328,933	2,491,958	2,425,291	2,128,626	2,052,298
2015 (Gain)/Loss						(426,054)	(455,878)	(386,945)	(365,314)
2016 (Gain)/Loss							(256,449)	(245,076)	(232,908)
2016 Assumption Change							19,238	18,724	18,173
2016 SADB							20,783	19,862	18,875
2016 SADB Sanitation Retirees							34,163	26,469	18,236
2016 SADB Sanitation Actives							4,530	4,202	3,852
2017 (Gain)/Loss								(26,090)	(24,933)
2017 Removal of COVSF Escalation Offset								1,498	1,454
2017 Assumption Change								(988,955)	(962,498)
2017 Method Change								816,476	794,633
2017 Census Data Update								730,881	566,266
2017 OTB - City of New York portion								53,834	51,447
2017 OTB - State of New York portion								53,834	51,447
2018 (Gain)/Loss									(346,438)
<b>Sum of Outstanding Amortization Amounts</b>	<b>\$ 20,194,114</b>	<b>\$ 21,364,022</b>	<b>\$ 21,227,644</b>	<b>\$ 21,208,999</b>	<b>\$ 22,090,883</b>	<b>\$ 21,522,025</b>	<b>\$ 21,028,502</b>	<b>\$ 19,582,565</b>	<b>\$ 18,607,424</b>

June 30 (Lag) Valuation Date	2010	2011	2012	2013	2014	2015	2016	2017	2018
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
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
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
4. PV 1-year Adjusted Employer Contribution <sup>2</sup>	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
5. PV Future Administrative Expense Reimbursement	0	98,569	100,863	103,197	101,743	107,940	114,780	59,854	59,845
<b>6. Adjusted UAL (3. - 4. - 5.)</b>	<b>\$ 20,194,114</b>	<b>\$ 21,364,022</b>	<b>\$ 21,227,644</b>	<b>\$ 21,208,999</b>	<b>\$ 22,090,884</b>	<b>\$ 21,522,025</b>	<b>\$ 21,028,502</b>	<b>\$ 19,582,565</b>	<b>\$ 18,607,424</b>

<sup>1</sup> 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.

<sup>2</sup> 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 2011 through 2020.

(\$ Thousands)			
<b>Fiscal Year Ended June 30</b>	<b>Actuarial Contribution Certified</b>	<b>Statutory Contribution Contributed</b>	<b>Percentage of Actuarial Contribution Contributed</b>
2011	\$ 2,387,216	\$ 2,387,216	100.0%
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%

**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 2011 through 2020.

CITY RATES (\$ Thousands)			
Fiscal Year Ended June 30	Actuarial Contribution	Salary <sup>1</sup> at Beginning of Fiscal Year	City Rate
2011	\$ 2,387,216	\$ 11,466,215	20.8%
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%

<sup>1</sup>Includes 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, 2018 (Lag)						
Fiscal Year	2020						
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
<b>Contribution</b>							
1. Normal Cost	\$ 8,570,906	\$ 0	\$ 383,343,002	<b>\$ 391,913,908</b>	\$ 0	\$ 52,598,774	<b>\$ 52,598,774</b>
2. Amortization of Unfunded Accrued Liability	22,990,299	25,245,537	436,618,447	<b>484,854,283</b>	10,769,019	94,392,903	<b>105,161,922</b>
3. Administrative Expenses	339,428	338,742	13,201,508	<b>13,879,678</b>	144,073	3,626,170	<b>3,770,243</b>
4. Interest on Late Employer Contributions	0	0	0	0	0	0	0
5. Actuarial Contribution (1. + 2. + 3. + 4.)	<b>\$ 31,900,633</b>	<b>\$ 25,584,279</b>	<b>\$ 833,162,957</b>	<b>\$ 890,647,869</b>	<b>\$ 10,913,092</b>	<b>\$ 150,617,847</b>	<b>\$ 161,530,939</b>



**Table IV-2**  
**Employer Contributions by Obligor: All**

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM								
SUMMARY OF EMPLOYER CONTRIBUTION BY OBLIGOR								
Valuation Date	June 30, 2018 (Lag)							
Fiscal Year	2020							
Obligor	NYC Transit Authority Subtotal	NYC Housing Authority Subtotal	NYC Health and Hospitals Corporation	Triborough Bridge and Tunnel Authority	NYC Off-Track Betting Corporation - City of New York portion	NYC Off-Track Betting Corporation - State of New York portion	NYC Housing Development Corporation	NYC School Construction Authority
<b>Contribution</b>								
1. Normal Cost	\$ 391,913,908	\$ 52,598,774	\$ 214,528,944	\$ 13,832,734	\$ 0	\$ 0	\$ 1,092,147	\$ 819,749
2. Amortization of Unfunded Accrued Liability	484,854,283	105,161,922	280,094,504	30,849,876	12,005,188	12,005,188	991,000	2,454,771
3. Administrative Expenses	13,879,678	3,770,243	11,000,628	506,998	0	0	25,041	21,439
4. Interest on Late Employer Contributions	0	0	0	0	0	871,344	0	0
5. Actuarial Contribution (1. + 2. + 3. + 4.)	\$ 890,647,869	\$ 161,530,939	\$ 505,624,076	\$ 45,189,608	\$ 12,005,188	\$ 12,876,532	\$ 2,108,188	\$ 3,295,959
<b>Obligor</b>	<b>State Judiciary Employees</b>	<b>NYC Municipal Water Authority</b>	<b>CUNY Senior Colleges</b>	<b>Correction</b>	<b>Sanitation</b>	<b>All Others (i.e. New York City)</b>	<b>Total</b>	
<b>Contribution</b>								
1. Normal Cost	\$ 0	\$ 94,615	\$ 23,713,002	\$ 233,594,501	\$ 116,789,175	\$ 527,330,901	\$ 1,576,308,450	
2. Amortization of Unfunded Accrued Liability	1,451,998	(22,333)	21,125,616	238,038,144	143,972,070	750,302,443	\$ 2,083,284,670	
3. Administrative Expenses	14,064	2,401	1,399,048	4,120,819	3,259,642	28,237,027	\$ 66,237,028	
4. Interest on Late Employer Contributions	0	0	0	0	0	0	871,344	
5. Actuarial Contribution (1. + 2. + 3. + 4.)	\$ 1,466,062	\$ 74,683	\$ 46,237,666	\$ 475,753,464	\$ 264,020,887	\$ 1,305,870,371	\$ 3,726,701,492	

**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, 2018 (Lag)						
Fiscal Year	2020						
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
<b>Accrued Liability</b>							
1. Active Members	\$ 326,290,512	\$ 0	\$ 8,406,146,323	\$ 8,732,436,835	\$ 0	\$ 1,716,954,840	\$ 1,716,954,840
2. Active Off Payroll Members <sup>1</sup>	260,999	0	88,057,391	88,318,390	0	23,766,088	23,766,088
3. Terminated Vested Members	16,733,885	0	242,388,111	259,121,996	0	151,155,850	151,155,850
4. Retirees and Beneficiaries	409,065,704	508,031,167	10,299,715,282	11,216,812,153	225,264,077	2,338,737,492	2,564,001,569
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 752,351,100	\$ 508,031,167	\$ 19,036,307,107	\$ 20,296,689,374	\$ 225,264,077	\$ 4,230,614,270	\$ 4,455,878,347
6. Actuarial Adjustments <sup>2</sup>	879,886	51,467,614	28,855,382	81,202,882	34,866,412	9,231,280	44,097,692
7. Total Accrued Liability (5. + 6.)	\$ 753,230,986	\$ 559,498,781	\$ 19,065,162,489	\$ 20,377,892,256	\$ 260,130,489	\$ 4,239,845,550	\$ 4,499,976,039
<b>Present Value of Future Benefits</b>							
1. Active Members	\$ 394,275,348	\$ 0	\$ 12,921,780,526	\$ 13,316,055,874	\$ 0	\$ 2,323,177,036	\$ 2,323,177,036
2. Active Off Payroll Members <sup>1</sup>	260,999	0	88,057,391	88,318,390	0	23,766,088	23,766,088
3. Terminated Vested Members	16,733,885	0	242,388,111	259,121,996	0	151,155,850	151,155,850
4. Retirees and Beneficiaries	409,065,704	508,031,167	10,299,715,282	11,216,812,153	225,264,077	2,338,737,492	2,564,001,569
5. Present Value of Benefits (1. to 4.)	\$ 820,335,936	\$ 508,031,167	\$ 23,551,941,310	\$ 24,880,308,413	\$ 225,264,077	\$ 4,836,836,466	\$ 5,062,100,543
6. Actuarial Adjustments <sup>2</sup>	879,886	51,467,614	28,855,382	81,202,882	34,866,412	9,231,280	44,097,692
7. Total Present Value of Future Benefits (5. + 6.)	\$ 821,215,822	\$ 559,498,781	\$ 23,580,796,692	\$ 24,961,511,295	\$ 260,130,489	\$ 4,846,067,746	\$ 5,106,198,235

<sup>1</sup> Represents members no longer on payroll, but not otherwise classified.

<sup>2</sup> 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, 2018 (Lag)							
Fiscal Year	2020							
Obligor	NYC Transit Authority Subtotal	NYC Housing Authority Subtotal	NYC Health and Hospitals Corporation	Triborough Bridge and Tunnel Authority	NYC Off-Track Betting Corporation - City of New York portion	NYC Off-Track Betting Corporation - State of New York portion	NYC Housing Development Corporation	NYC School Construction Authority
<b>Accrued Liability</b>								
1. Active Members	\$ 8,732,436,835	\$ 1,716,954,840	\$ 4,855,142,062	\$ 395,653,450	\$ 0	\$ 0	\$ 20,232,788	\$ 29,080,880
2. Active Off Payroll Members <sup>1</sup>	88,318,390	23,766,088	63,641,304	5,283,844	144,673	144,673	161,282	25,849
3. Terminated Vested Members	259,121,996	151,155,850	385,479,826	14,329,867	14,528,088	14,528,088	1,182,192	1,447,561
4. Retirees and Beneficiaries	11,216,812,153	2,564,001,569	6,287,033,901	592,948,294	143,454,225	143,454,225	15,922,973	22,563,532
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 20,296,689,374	\$ 4,455,878,347	\$ 11,591,297,093	\$ 1,008,215,455	\$ 158,126,985	\$ 158,126,985	\$ 37,499,235	\$ 53,117,822
6. Actuarial Adjustments <sup>2</sup>	81,202,882	44,097,692	19,552,445	18,774,173	51,480,800	51,480,800	14,065	137,158
7. Total Accrued Liability (5. + 6.)	\$ 20,377,892,256	\$ 4,499,976,039	\$ 11,610,849,538	\$ 1,026,989,628	\$ 209,607,785	\$ 209,607,785	\$ 37,513,300	\$ 53,254,980
<b>Present Value of Future Benefits</b>								
1. Active Members	\$ 13,316,055,874	\$ 2,323,177,036	\$ 7,171,687,019	\$ 546,313,891	\$ 0	\$ 0	\$ 31,246,075	\$ 36,241,037
2. Active Off Payroll Members <sup>1</sup>	88,318,390	23,766,088	63,641,304	5,283,844	144,673	144,673	161,282	25,849
3. Terminated Vested Members	259,121,996	151,155,850	385,479,826	14,329,867	14,528,088	14,528,088	1,182,192	1,447,561
4. Retirees and Beneficiaries	11,216,812,153	2,564,001,569	6,287,033,901	592,948,294	143,454,225	143,454,225	15,922,973	22,563,532
5. Present Value of Benefits (1. to 4.)	\$ 24,880,308,413	\$ 5,062,100,543	\$ 13,907,842,050	\$ 1,158,875,896	\$ 158,126,985	\$ 158,126,985	\$ 48,512,522	\$ 60,277,979
6. Actuarial Adjustments <sup>2</sup>	81,202,882	44,097,692	19,552,445	18,774,173	51,480,800	51,480,800	14,065	137,158
7. Total Present Value of Future Benefits (5. + 6.)	\$ 24,961,511,295	\$ 5,106,198,235	\$ 13,927,394,495	\$ 1,177,650,069	\$ 209,607,785	\$ 209,607,785	\$ 48,526,587	\$ 60,415,137
<b>Obligor</b>	<b>State Judiciary Employees</b>	<b>NYC Municipal Water Authority</b>	<b>CUNY Senior Colleges</b>	<b>Correction</b>	<b>Sanitation</b>	<b>All Others (i.e. New York City)</b>	<b>Total</b>	
<b>Accrued Liability</b>								
1. Active Members	\$ 0	\$ 1,811,074	\$ 550,721,716	\$ 2,465,086,857	\$ 2,108,964,425	\$ 14,254,469,647	\$ 35,130,554,574	
2. Active Off Payroll Members <sup>1</sup>	0	10,147	6,629,885	78,986,506	20,202,235	233,129,508	520,444,383	
3. Terminated Vested Members	0	363,923	35,038,760	94,497,534	43,414,129	950,645,328	1,965,733,141	
4. Retirees and Beneficiaries	14,463,653	665,974	425,391,858	6,207,414,812	4,164,098,936	15,047,522,967	46,845,749,071	
5. Accrued Liability Pre-Adjustments (1. to 4.)	\$ 14,463,653	\$ 2,851,118	\$ 1,017,782,219	\$ 8,845,985,709	\$ 6,336,679,725	\$ 30,485,767,450	\$ 84,462,481,169	
6. Actuarial Adjustments <sup>2</sup>	66,442	0	5,620,502	916,095,538	91,148,079	102,973,369	1,382,643,945	
7. Total Accrued Liability (5. + 6.)	\$ 14,530,095	\$ 2,851,118	\$ 1,023,402,721	\$ 9,762,081,247	\$ 6,427,827,804	\$ 30,588,740,819	\$ 85,845,125,114	
<b>Present Value of Future Benefits</b>								
1. Active Members	\$ 0	\$ 2,995,225	\$ 832,773,315	\$ 4,859,003,611	\$ 3,414,090,832	\$ 20,935,073,830	\$ 53,468,657,745	
2. Active Off Payroll Members <sup>1</sup>	0	10,147	6,629,885	78,986,506	20,202,235	233,129,508	520,444,383	
3. Terminated Vested Members	0	363,923	35,038,760	94,497,534	43,414,129	950,645,328	1,965,733,141	
4. Retirees and Beneficiaries	14,463,653	665,974	425,391,858	6,207,414,812	4,164,098,936	15,047,522,967	46,845,749,071	
5. Present Value of Benefits (1. to 4.)	\$ 14,463,653	\$ 4,035,269	\$ 1,299,833,818	\$ 11,239,902,463	\$ 7,641,806,132	\$ 37,166,371,633	\$ 102,800,584,340	
6. Actuarial Adjustments <sup>2</sup>	66,442	0	5,620,502	1,112,826,421	91,148,079	102,973,369	1,579,374,828	
7. Total Present Value of Future Benefits (5. + 6.)	\$ 14,530,095	\$ 4,035,269	\$ 1,305,454,320	\$ 12,352,728,884	\$ 7,732,954,211	\$ 37,269,345,002	\$ 104,379,959,168	

<sup>1</sup> Represents members no longer on payroll, but not otherwise classified.

<sup>2</sup> 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, 2018 (Lag)						
Fiscal Year	2020						
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
<b>Participant Data</b>							
1. Active Members							
a. Number	846	0	39,945	40,791	0	9,170	9,170
b. Annual Salary <sup>1</sup>	\$ 89,979,811	\$ 0	\$ 3,297,800,709	\$ 3,387,780,520	\$ 0	\$ 616,180,917	\$ 616,180,917
c. Average Salary	\$ 106,359	\$ 0	\$ 82,559	\$ 83,052	\$ 0	\$ 67,195	\$ 67,195
2. Active Off Payroll Members <sup>2</sup>	40	0	3,934	3,974	0	1,473	1,473
3. Terminated Vested Members	85	0	2,466	2,551	0	1,646	1,646
4. Retirees and Beneficiaries							
a. Number	1,018	1,975	31,972	34,965	840	9,483	10,323
b. Total Annual Benefits	\$ 41,726,413	\$ 59,832,570	\$ 1,049,441,619	\$ 1,151,000,602	\$ 26,879,877	\$ 227,300,787	\$ 254,180,664
c. Average Annual Benefit	\$ 40,989	\$ 30,295	\$ 32,824	\$ 32,919	\$ 32,000	\$ 23,969	\$ 24,623

<sup>1</sup> 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.

<sup>2</sup> 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, 2018 (Lag)						
Fiscal Year	2020						
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
<b>Participant Data</b>							
1. Active Members							
a. Number	40,791	9,170	29,782	1,276	0	94	70
b. Annual Salary <sup>1</sup>	\$ 3,387,780,520	\$ 616,180,917	\$ 2,220,509,901	\$ 126,883,504	\$ 0	\$ 9,767,837	\$ 8,648,084
c. Average Salary	\$ 83,052	\$ 67,195	\$ 74,559	\$ 99,438	\$ 0	\$ 103,913	\$ 123,544
2. Active Off Payroll Members <sup>2</sup>	3,974	1,473	5,895	176	81	10	3
3. Terminated Vested Members	2,551	1,646	4,630	107	370	8	10
4. Retirees and Beneficiaries							
a. Number	34,965	10,323	24,928	1,454	1,187	35	44
b. Total Annual Benefits	\$ 1,151,000,602	\$ 254,180,664	\$ 615,291,775	\$ 56,652,463	\$ 29,677,227	\$ 1,435,218	\$ 2,006,250
c. Average Annual Benefit	\$ 32,919	\$ 24,623	\$ 24,683	\$ 38,963	\$ 25,002	\$ 41,006	\$ 45,597
Obligor	State Judiciary Employees	NYC Municipal Water Authority	CUNY Senior Colleges	Correction	Sanitation	All Others (i.e. New York City)	Total
<b>Participant Data</b>							
1. Active Members							
a. Number	0	10	4,552	10,384	7,497	86,946	190,572
b. Annual Salary <sup>1</sup>	\$ 0	\$ 942,469	\$ 263,690,473	\$ 918,652,808	\$ 717,761,821	\$ 6,188,299,723	\$ 14,459,118,057
c. Average Salary	\$ 0	\$ 94,247	\$ 57,928	\$ 88,468	\$ 95,740	\$ 71,174	\$ 75,872
2. Active Off Payroll Members <sup>2</sup>	2	2	1,427	1,452	323	13,665	28,483
3. Terminated Vested Members	0	1	570	480	189	10,827	21,389
4. Retirees and Beneficiaries							
a. Number	82	1	2,170	12,209	11,129	55,589	154,116
b. Total Annual Benefits	\$ 2,614,396	\$ 64,271	\$ 43,354,841	\$ 517,542,746	\$ 415,610,481	\$ 1,506,502,784	\$ 4,595,933,718
c. Average Annual Benefit	\$ 31,883	\$ 64,271	\$ 19,979	\$ 42,390	\$ 37,345	\$ 27,101	\$ 29,821

<sup>1</sup> 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.

<sup>2</sup> 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, 2017 (Lag) actuarial valuation and the June 30, 2018 (Lag) actuarial valuation.<sup>1</sup>

DEVELOPMENT OF EXPERIENCE (GAIN) / LOSS June 30, 2018 (\$ Thousands)	
1. Expected Accrued Liability (AL)	
a. AL at June 30, 2017	\$ 82,816,392
b. Total Normal Cost and Administrative Expenses at June 30, 2017	1,962,461
c. Interest on 1.a. and 1.b. to June 30, 2018	5,934,520
d. Fiscal Year 2018 Benefit Payments	(4,986,709)
e. Interest on 1.d. to June 30, 2018	<u>(171,583)</u>
f. Expected AL at June 30, 2018	\$ 85,555,081
2. Actual AL at June 30, 2018	\$ 86,326,623
3. Expected Total Actuarial Value of Assets (AVA)	
a. Total AVA at June 30, 2017	\$ 59,927,095
b. Interest on 3.a. to June 30, 2018	4,194,897
c. Total Contributions Paid in Fiscal Year 2018	3,882,133
d. Interest on 3.c. to June 30, 2018	133,577
e. Fiscal Year 2018 Benefit Payments	(4,986,709)
f. Interest on 3.e. to June 30, 2018	<u>(171,583)</u>
g. Expected Total AVA at June 30, 2018	\$ 62,979,410
4. Actual Total AVA at June 30, 2018	\$ 64,097,390
5. Liability (Gain) / Loss (2. - 1.f.)	\$ 771,542
6. Actuarial Asset (Gain) / Loss (3.g. - 4.)	\$ (1,117,980)
7. Total Actuarial (Gain) / Loss (5. + 6.)	\$ (346,438)

<sup>1</sup> 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)						
<b>June 30 (Lag) Valuation Date</b>	<b>(1) Actuarial Value of Assets (AVA)</b>	<b>(2) Accrued Liability (AL)</b>	<b>(3) Unfunded AL (UAL) (2) - (1)</b>	<b>(4) Funded Ratio (1) / (2)</b>	<b>(5) Covered Payroll</b>	<b>(6) UAL as a % of Covered Payroll (3) / (5)</b>
2009	\$41,710,159	\$53,052,658	\$11,342,499	78.6%	\$11,880,994	95.5%
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%

Effective June 30, 2010, AL is based on the Entry Age Normal cost method. Previously, the Frozen Initial Liability cost method was used. 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 (ACCNY), 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, 2018	June 30, 2017
<b>COVSF</b>		
Active	\$ 291,742	\$ 310,484
Retiree	1,087,050	1,077,413
Total	\$ 1,378,792	\$ 1,387,897
<b>HPOVSF</b>		
Active	\$ 0	\$ 0
Retiree	14,254	15,061
Total	\$ 14,254	\$ 15,061
<b>HPSOVSF</b>		
Active	\$ 0	\$ 0
Retiree	20,612	21,503
Total	\$ 20,612	\$ 21,503
<b>TPOVSF</b>		
Active	\$ 0	\$ 0
Retiree	28,558	31,292
Total	\$ 28,558	31,292
<b>TPSOVSF</b>		
Active	\$ 0	\$ 0
Retiree	22,910	24,080
Total	\$ 22,910	\$ 24,080
<b>Total VSF AL</b>	\$ 1,465,126	\$ 1,479,833

**Table VII-2**  
**VSF Member Data**

VARIABLE SUPPLEMENTS FUNDS		
MEMBERS INCLUDED IN THE JUNE 30, 2018 (Lag) AND THE JUNE 30, 2017 (Lag) ACTUARIAL VALUATIONS		
	June 30, 2018	June 30, 2017
<b>COVSF</b>		
Actives		
Number	10,384	9,568
Average Age	38.9	39.9
Retirees		
Number	7,971	7,858
Average Age	58.4	57.9
<b>HPOVSF</b>		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	149	153
Average Age	75.1	74.2
<b>HPSOVSF</b>		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	212	215
Average Age	74.6	73.6
<b>TPOVSF</b>		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	294	315
Average Age	74.7	73.9
<b>TPSOVSF</b>		
Actives		
Number	0	0
Average Age	0	0
Retirees		
Number	238	243
Average Age	75.0	74.0

**Table VII-3**  
**VSF Statement of Assets**

(\$ Thousands)				
Valuation Date	June 30, 2018 <sup>1</sup>		June 30, 2017 <sup>2</sup>	
	MVA <sup>3</sup>	AVA	MVA <sup>4</sup>	AVA
<b>COVSF</b>	\$ 449,771	\$ 481,498	\$ 332,683	\$ 353,441
<b>HPOVSF</b>	0	0	0	0
<b>HPSOVSF</b>	0	0	0	0
<b>TPOVSF</b>	0	0	0	0
<b>TPSOVSF</b>	0	0	0	0
<b>TOTAL</b>	\$ 449,771	\$ 481,498	\$ 332,683	\$ 353,441

<sup>1</sup> The COVSF assets include preliminary SKIM amounts determined by the Actuary in a letter dated September 7, 2018 to the Comptroller's Office.

<sup>2</sup> The COVSF assets include preliminary SKIM amounts determined by the Actuary in a letter dated September 15, 2017 to the Comptroller's Office.

<sup>3</sup> Includes Accrued Benefits Payable of \$47,529,000 for COVSF.

<sup>4</sup> Includes Accrued Benefits Payable of \$44,519,000 for COVSF.

**Table VII-4**  
**Development of COVSF Actuarial Value of Assets**

(\$ Thousands)		
Valuation Date	June 30, 2018	June 30, 2017
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY) <sup>1</sup>	\$ 332,683	\$ 46,943
b. End of Year (EOY) <sup>2</sup>	\$ 449,771	\$ 332,683
2. Contributions		
a. Employee	\$ 0	\$ 0
b. Employer	<u>0</u>	<u>0</u>
c. Total Contributions	\$ 0	\$ 0
3. Benefit Payments and Other Cash Flow	\$ (90,177)	\$ (31)
4. Preliminary Transferable Earnings from NYCERS to COVSF - EOY <sup>3</sup>	\$ 205,000	\$ 285,924
5. Net Cash Flow (2.c. + 3. + 4.)	\$ 114,823	\$ 285,893
6. Net Investment Income		
a. Investment Income	\$ 2,265	\$ (153)
b. Investment Expenses	<u>0</u>	<u>0</u>
c. Total Net Investment Income	\$ 2,265	\$ (153)
7. Average Invested Assets		
a. AVA @ BOY	\$ 353,442	\$ 68,561
b. 1/2 Net Cash Flow before SKIM ((2.c. + 3.) / 2)	<u>(45,089)</u>	<u>(15)</u>
c. Total	\$ 308,353	\$ 68,546
8. Expected Rate of Return (AIR)	7.00%	7.00%
9. Expected Investment Return (EIR) (7.c. x 8.)	\$ 21,585	\$ 4,798
10. Unexpected Investment Return (UIR) (6.c. - 9.)	\$ (19,320)	\$ (4,951)
11. Preliminary AVA @ EOY		
a. AVA @ BOY	\$ 353,442	\$ 68,561
b. Net Cash Flow (5.)	114,823	285,893
c. Expected Investment Return (9.)	21,585	4,798
d. Phase in of UIR		
15% * UIR for prior year	(2,898)	(743)
15% * UIR for second prior year	(743)	(1,603)
15% * UIR for third prior year	(1,603)	(2,027)
15% * UIR for fourth prior year	(2,027)	(416)
20% * UIR for fifth prior year	(555)	(525)
20% * UIR for sixth prior year	<u>(525)</u>	<u>(497)</u>
Total	\$ (8,351)	\$ (5,811)
e. AVA (11.a. + 11.b. + 11.c. + 11.d.)	\$ 481,498	\$ 353,441
<b>12. Final AVA at EOY (11.e.)</b>	<b>\$ 481,498</b>	<b>\$ 353,441</b>

<sup>1</sup> Includes Accrued Benefits Payable for 6/30/2017 of \$44,519,000 and Accrued Benefits Payable for 6/30/2016 of \$41,925,000.

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

<sup>3</sup> Reflects preliminary SKIM amounts as determined by the Actuary in a letter dated September 7, 2018 for 6/30/2018 and a letter dated September 15, 2017 for 6/30/2017 to the Comptroller's Office.

**Table VII-5**  
**SKIM Calculation as of June 30, 2018**

(\$ Thousands)	Preliminary
Total NYCERS Pension Fund	
1. FY2018 Equity Earnings	\$ 4,725,842
2. FY2018 Hypothetical Earnings	\$ 1,248,658
3. FY2018 Excess Earnings (1. - 2.)	\$ 3,477,184
4. Deficit at June 30, 2017	\$ 0
5. Hypothetical Interest Rate (HIR)	2.959%
6. Deficit with interest (4. x (1+HIR))	\$ 0
7. Potential SKIM (3. - 6.), not less than zero	\$ 3,477,184
	<b>COVSF</b>
Allocations to VSF	
8. Allocation Percentage	5.924%
9. Potential SKIM (7. x 8.)	\$ 205,988
10. Accumulated Benefit Obligation	\$ 1,409,384
11. MVA Prior to SKIM	\$ 244,771
12. ABO Gate = (10. - 11.), not less than zero	\$ 1,164,613
<b>13. SKIM Payable (Lesser of 9. and 12., not less than zero)</b>	\$ 205,988
14. Rounded Estimate, for FY18 Financial Statements <sup>1</sup>	\$ 205,000

<sup>1</sup> Included in MVA at June 30, 2018.

## 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

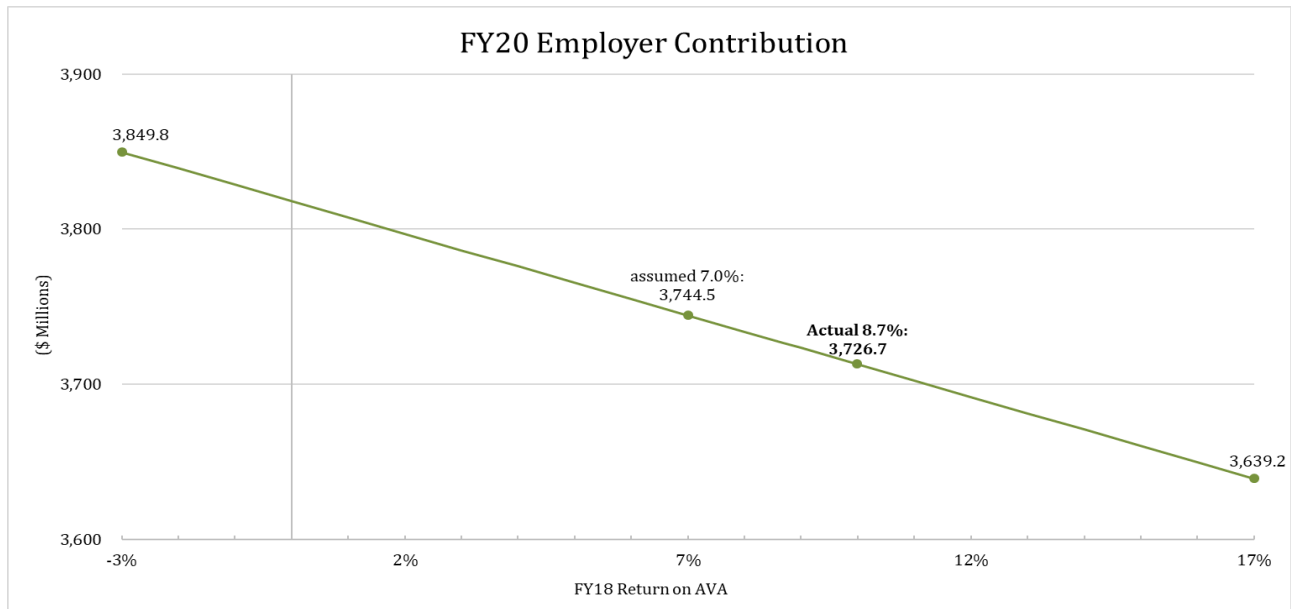
The funded status of NYCERS depends highly on the realization of the actuarial assumptions used, as well as certain demographic characteristics of the Plan and other exogenous factors. Risks faced by the Plan are described in this Section. These risks have been separated, based on the Actuary’s professional 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 FY20 employer contributions if FY18 investment returns had differed from the actual rate, by up to 10%.<sup>1</sup>

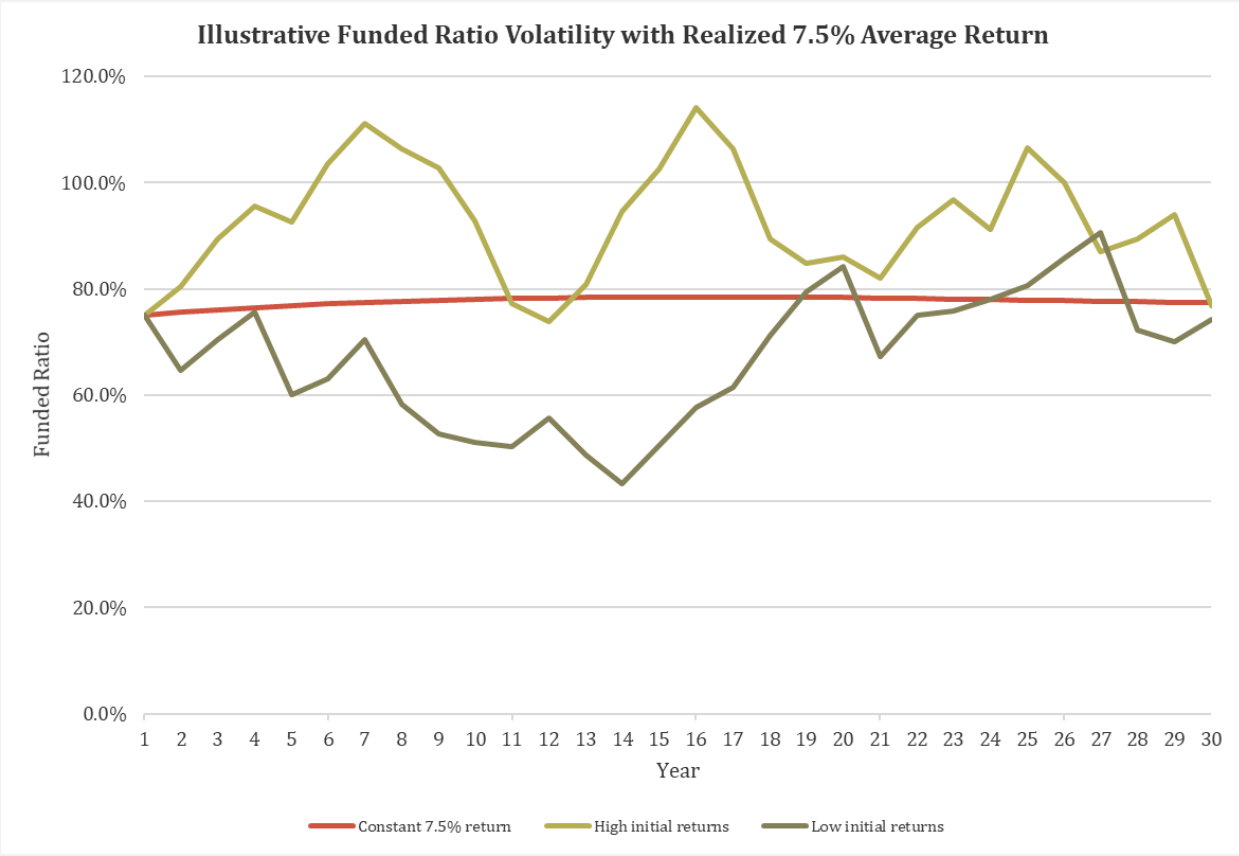
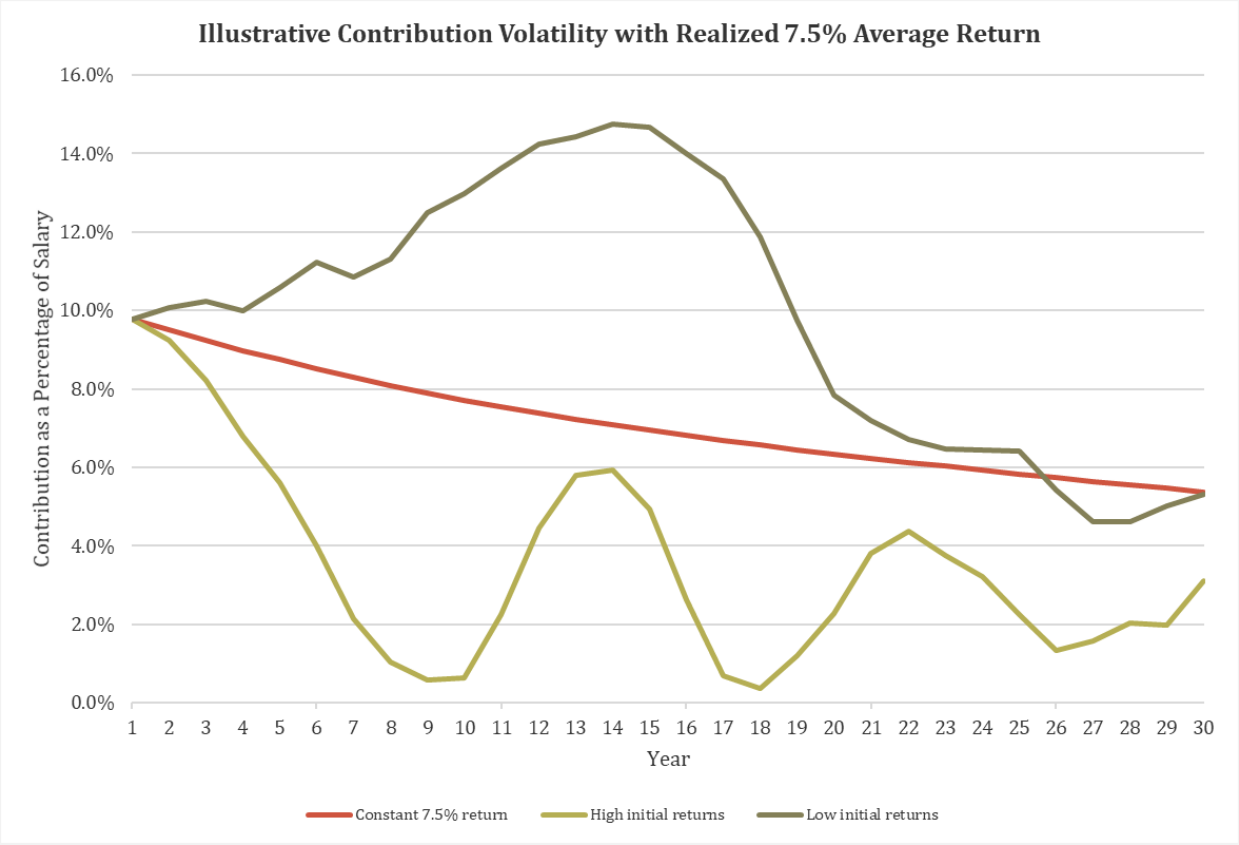


### Investment Risk: The Risk of Volatile of Realized Returns

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.<sup>2</sup>

<sup>1</sup> 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.

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

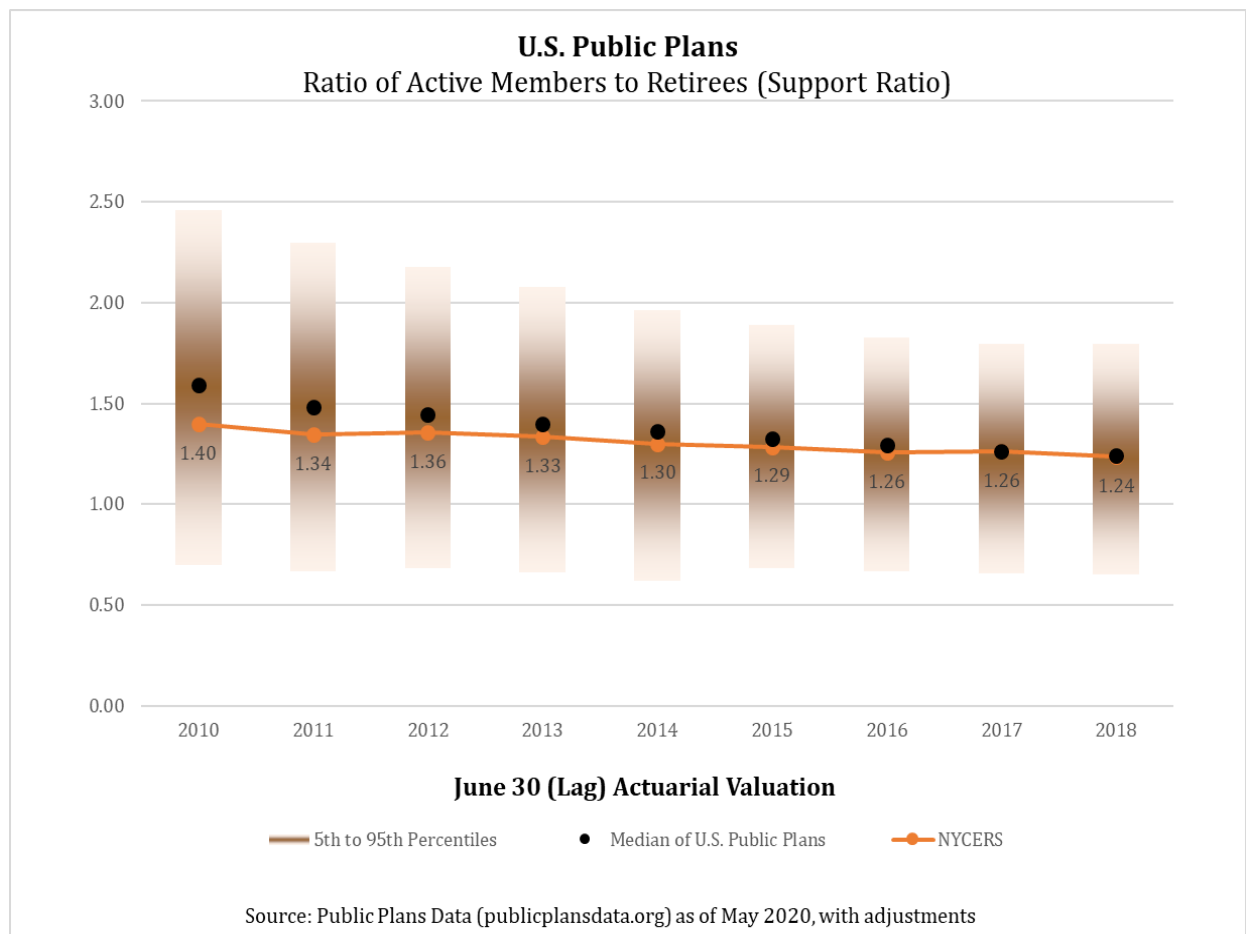


## Maturity Risk: The Risk of Demographic Imbalance

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.

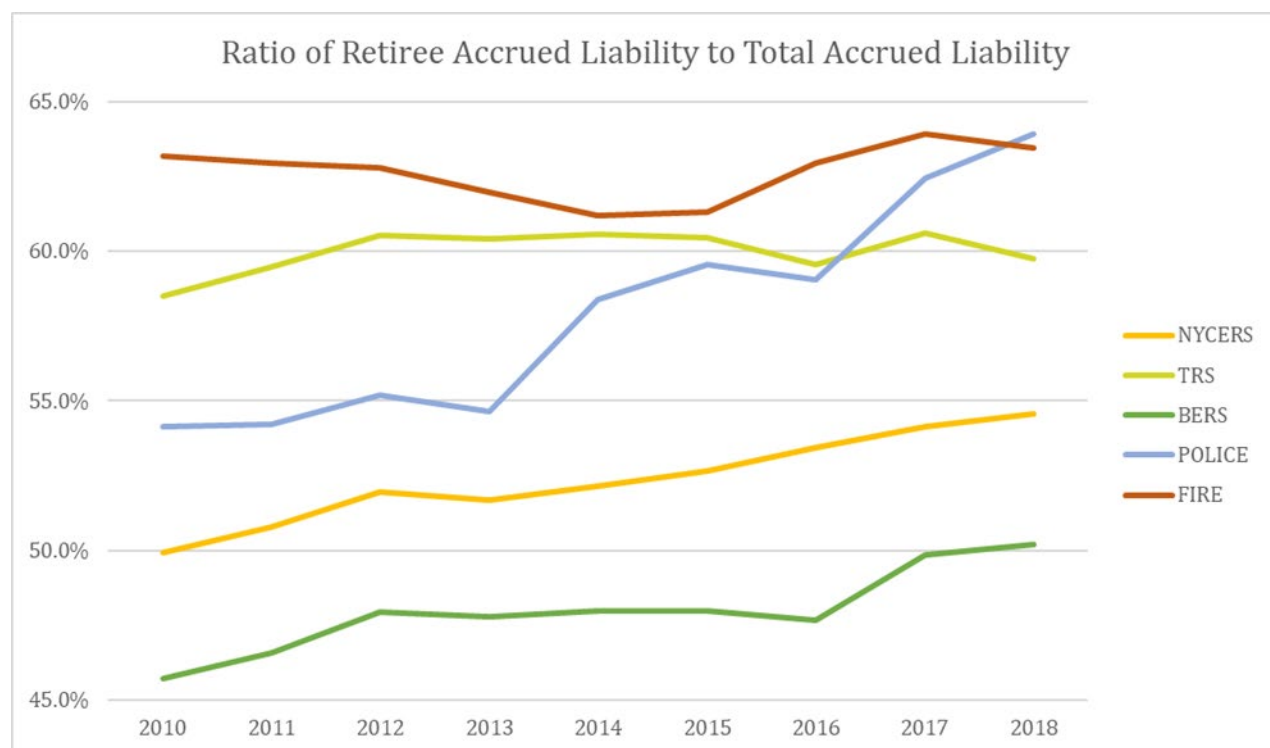


The chart above shows U.S. public pension plan Support Ratios in comparison to the Plan's. The median Support Ratio amongst U.S. public pensions has declined from 1.59 in the 2010 valuation year to 1.24 in the 2018 valuation year. Over that same period, the Plan's Support Ratio declined from 1.40 to 1.24, meaning that fewer active workers exist to support guaranteed pensioner payments.

Because the Plan's Support Ratio is below the median, NYCERS' contributions for active members form a smaller 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 Systems<sup>1</sup> 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.

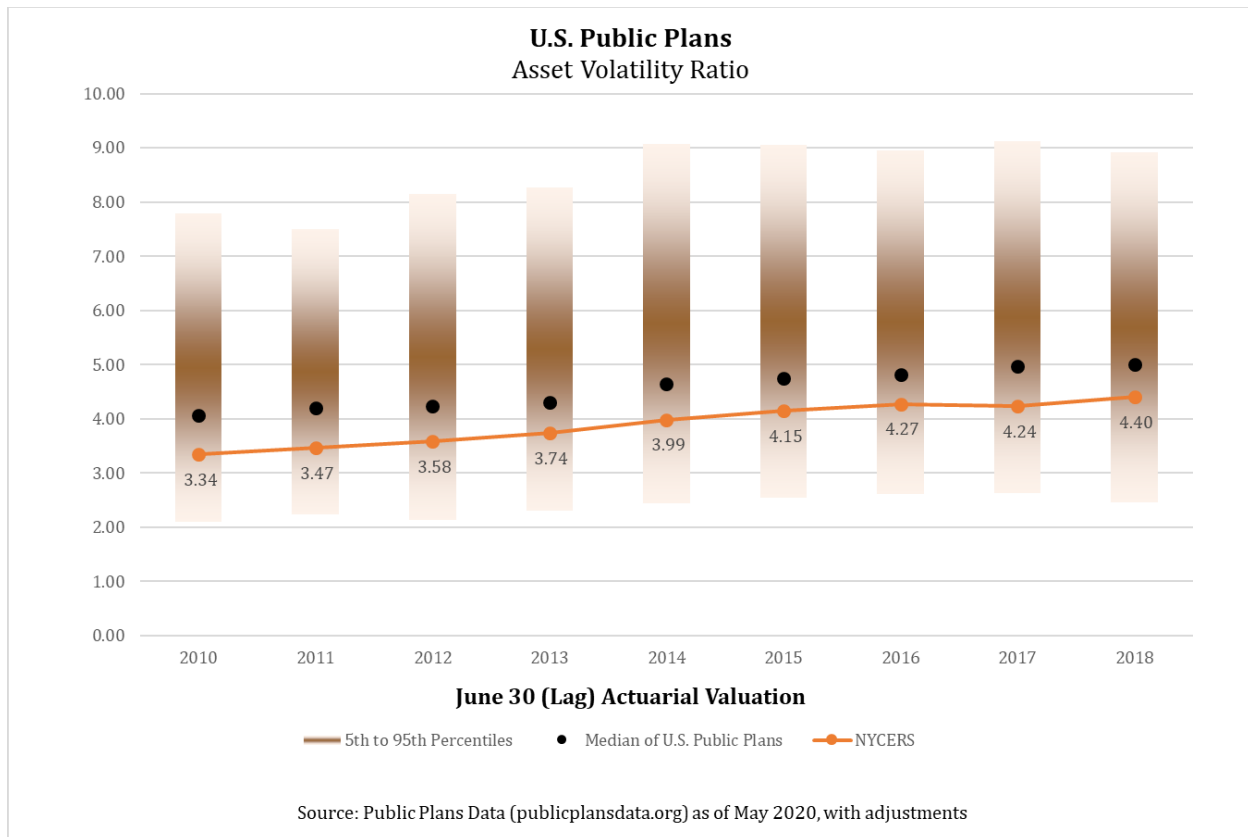


## Asset Volatility Ratio

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.

---

<sup>1</sup> 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% depends itself 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, 2018	
Valuation Date	June 30, 2018
<b>Results at 7.0%</b>	
1. Accrued Liability (AL)	\$ 85,845,125,114
2. Actuarial Value of Assets (AVA)	<u>63,615,892,000</u>
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 22,229,233,114
4. Funded Ratio (AVA Basis) (2. / 1.)	74.1%
5. Normal Cost	\$ 1,576,308,450
<b>Results at 6.0%</b>	
1. Accrued Liability (AL)	\$ 95,657,545,326
2. Actuarial Value of Assets (AVA)	<u>63,615,892,000</u>
3. Unfunded Accrued Liability (AVA Basis) (1. - 2.)	\$ 32,041,653,326
4. Funded Ratio (AVA Basis) (2. / 1.)	66.5%
5. Normal Cost	\$ 2,105,831,666
<b>Sensitivity Analysis for 1.0% Reduction in Interest Rate</b>	
1. Increase in Accrued Liability	11.4%
2. Increase in Unfunded Accrued Liability	44.1%
3. Decrease in Funded Ratio	7.6%
4. Increase in Normal Cost	33.6%



### 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-2018 was subsequently applied to these base rates.<sup>1</sup>

This scale MP-2018 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.”<sup>2</sup> 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.<sup>3</sup> In its most recent claims report, the Comptroller reports that in FY2018, NYC settled 14,094 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.

---

<sup>1</sup> Retirement Plans Experience Committee. “Mortality Improvement Scale MP-2018 Report” and “Mortality Improvement Scale MP-2014 report.” *Society of Actuaries*.

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

<sup>3</sup> <https://comptroller.nyc.gov/wp-content/uploads/documents/Claims-Report-FY-2018.pdf>

## 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 study<sup>1</sup> 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.<sup>2</sup>

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.

---

<sup>1</sup> The Pew Charitable Trusts. *"The State Pension Funding Gap: 2018."*

<sup>2</sup> 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:

<b>Employer</b>	<b>Abbreviation</b>
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:

<b>Group</b>	<b>Eligible Employees</b>	<b>Abbreviation</b>
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.

<b>Tier by Group and Hire Date</b>	<b>IDA</b>	<b>COR</b>	<b>SAN</b>	<b>All Other Groups</b>
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 <sup>1</sup>			Tier 6

Unless otherwise noted, Tier 1 and Tier 2 provisions are hereafter omitted for brevity<sup>2</sup>, 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:

<b>Group/Plan(s)</b>	<b>Contribution Rate</b>	<b>Period</b>
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:

<b>Lookback Wages</b>	<b>BMC Contribution Rate</b>
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%

<sup>1</sup> Sometimes denoted Tier 3R for clarity.

<sup>2</sup> Approximately 0.3% of active members as of June 30, 2018 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 3 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% <sup>1</sup>	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%	20
SAN Tier 3 22-year enhanced disability plan	1.30%	25
COR Tier 3 20-year plan <sup>2</sup>	3.61% or 4.61%	20
COR Tier 3 22-year enhanced disability plan	0.80%	25
TBTA 50/20 plans <sup>2</sup>	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

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

<sup>2</sup> 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 <sup>1</sup>	55	25
4	Chapter 96 57/5 plan <sup>1</sup>	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 <sup>2</sup> times additional Credited Service up to 10 more years

---

<sup>1</sup> 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.

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



<b>Tier</b>	<b>Plan Description</b>	<b>Benefit Formula</b>
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	<p><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</p> <p><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</p>
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	<p><u>If less than 20 years of Credited Service:</u> 1/60 times FAS times Credited Service</p> <p><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</p>

## 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:

<b>Tier</b>	<b>Plan Description</b>	<b>Minimum Age</b>	<b>Minimum Service</b>
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:

<b>Age</b>	<b>Early Retirement Factor</b>
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:  $50\% \times \text{FAS}$
  - iii. EMT, DSH, SAN Tier 3 22-year enhanced disability plan members, and COR Tier 3 22-year enhanced disability plan members:  $75\% \times \text{FAS}$

### **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 eligible<sup>1</sup>, 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 <sup>st</sup> year after retirement	50%
2 <sup>nd</sup> year after retirement	25%
3 <sup>rd</sup> 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.

---

<sup>1</sup> 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 1<sup>st</sup>, 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 Tier 3 reduction factors for early commencement are less than the factors applicable to 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, 2018 (Lag) actuarial valuation results reflect the following Chapter amendments from the prior five years.

- **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 326 of the Laws of 2016** (Chapter 326/16) extends the deadline to file a Notice of Participation in the World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2018.
- **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 Board of Trustees, based on recommendations of the Actuary, adopted new factors that provide the adjustment necessary for a retiree to choose an alternative form of benefit payment that is actuarially equivalent to the benefit payable for only the retiree's lifetime (i.e. Maximum Retirement Allowance). The new Option Factors are effective for retirements on and after April 1, 2019 and produce, in almost all cases, a benefit that is greater than the benefit provided under the prior set of Option Factors.

For virtually all retirees who would have elected an Optional Retirement Allowance prior to these new Option Factors and were to elect an Optional Retirement Allowance under the new Option Factors, there will be a reduction in the actuarial gains. For those retirees who would have declined an Optional Retirement Allowance, but would now elect an Optional Retirement Allowance in light of more favorable new factors, no additional cost is expected.

## SECTION XII - ACTUARIAL ASSUMPTIONS AND METHODS

The Actuary issued a Report entitled, "Proposed Changes in Actuarial Assumptions and Methods Used in Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2018 for the New York City Employees' Retirement System," dated December 31, 2018. The actuarial assumptions and methods described in that report were adopted by the Board of Trustees at the February 14, 2019 Board meeting and are referred to as the "2019 A&M."

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% <sup>1</sup>	30.00%/8.00% <sup>2</sup> 20.00%/30.00% <sup>3</sup>	10.00%	60.00%	25.00%
63	0.00%		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%

<sup>1</sup> 8.00% only applies to Tier 6 members; 0.00% otherwise.

<sup>2</sup> 30.00% for Tiers 1-4 members and 8.00% for Tier 6 members.

<sup>3</sup> 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 <sup>1</sup>	
	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%

<sup>1</sup> 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	0.00%
	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% <sup>1</sup>	20.00%/15.00% <sup>2</sup>	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%

<sup>1</sup> 45.00% for Tier 1-4 members and 30.00% for Tier 3R members.

<sup>2</sup> 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% <sup>1</sup>	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%

<sup>1</sup> 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						
	Correction			Sanitation		
Age	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 <sup>1</sup>	Merit Increase	Salary Increase <sup>1</sup>	Merit Increase	Salary Increase <sup>1</sup>	Merit Increase	Salary Increase <sup>1</sup>	Merit Increase	Salary Increase <sup>1</sup>
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%

<sup>1</sup> 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		
<b>Plan Group</b>	<b>Overtime Type</b>	<b>Assumption</b>
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		
	<b>Correction</b>	
<b>Years of Service</b>	<b>Baseline and Dual Service</b>	<b>Dual Disability</b>
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. **Post-commencement Mortality Assumption:** The service retiree mortality, disabled retiree mortality, and beneficiary mortality base tables are projected from 2012 using mortality improvement scale MP-2018. The base tables are also multiplied by adjustment factors to convert them from lives-weighted to amounts-weighted tables to account for socioeconomic effects on mortality. The adjustment factors used are as follows:

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 and females are assumed to be three 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 the maximum allowable loan at retirement.
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.
7. **Actuarial Asset Valuation Method (AAVM):**

The AAVM recognizes investment returns greater or less than expected over a period of six years.

In accordance with this AAVM, the Unexpected Investment Returns (UIR) are phased into the Actuarial Value of Assets (AVA) at rates of 15%, 15%, 15%, 15%, 20%, and 20%

per year (i.e. cumulative rates of 15%, 30%, 45%, 60%, 80%, and 100% over a period of six years).

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.

Under EAN, the explicit UALs that are developed each year are generally financed over fixed periods. Ideally, these periods are reasonably consistent with the expected future working lifetimes of all active participants. 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 the use of explicit assumptions in the 2019 A&M, and 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

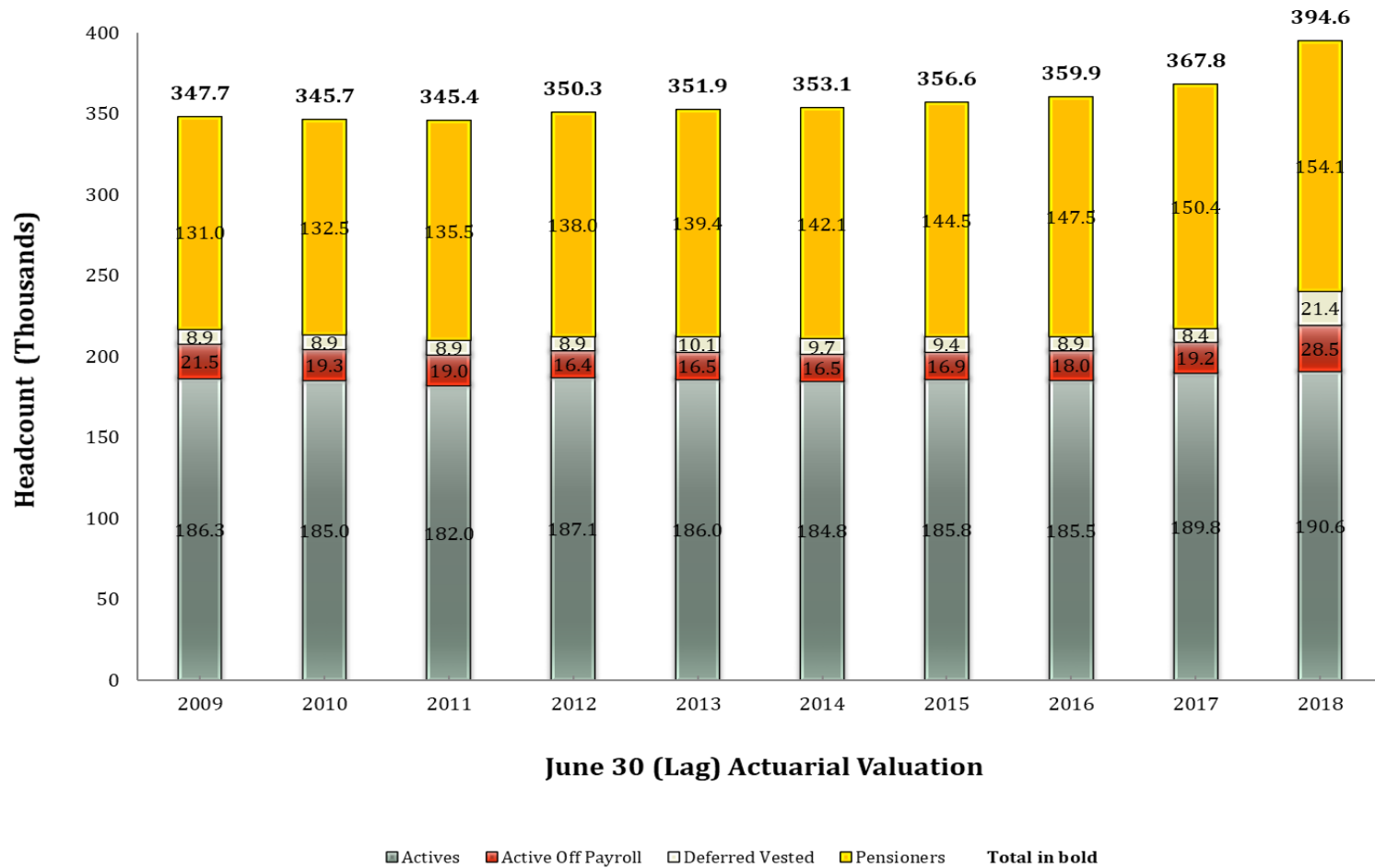
The June 30, 2018 (Lag) and June 30, 2017 (Lag) actuarial valuations are based upon census data as of those dates submitted by the Plan's administrative staff and the employers' payroll facilities. Financial information was provided by the Office of the Comptroller as of June 30, 2018 and June 30, 2017.

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)
<b>Number at June 30, 2017</b>	<b>189,792</b>	<b>19,180</b>	<b>8,417</b>	121,047	10,404	4,059	166	14,743	<b>150,419</b>	<b>367,808</b>
New Entrants	11,729	87	4,940	280	29	5	14	145	473	17,229
Rehire	4,967	12,289	(102)	0	0	0	0	0	0	17,154
Leaving Active Payroll	(5,410)	5,410	0	0	0	0	0	0	0	0
Vested Termination	(2,602)	(6,142)	8,744	0	0	0	0	0	0	0
Non-Vested Termination / Cashout	(1,455)	(1,039)	(88)	0	0	0	0	0	0	(2,582)
Accidental Death (from Active)	(1)	0	0	0	0	0	1	0	1	0
Ordinary Death (from Active)	(21)	(6)	0	0	0	0	0	0	0	(27)
Service Retirement	(6,176)	(1,010)	(521)	7,707	0	0	0	0	7,707	0
Ordinary Disability Retirement	(164)	(229)	0	0	393	0	0	0	393	0
Accidental Disability Retirement	(87)	(57)	(1)	0	0	145	0	0	145	0
Reclassifications	0	0	0	(19)	(579)	598	20	(20)	0	0
Death with Beneficiary	0	0	0	(821)	(93)	(9)	0	923	0	0
Death without Beneficiary	0	0	0	(3,552)	(338)	(101)	(1)	(977)	(4,969)	(4,969)
Off Pension Payroll	0	0	0	(15)	(1)	0	0	(37)	(53)	(53)
Net Change	780	9,303	12,972	3,580	(589)	638	34	34	3,697	26,752
<b>Number at June 30, 2018</b>	<b>190,572</b>	<b>28,483</b>	<b>21,389</b>	124,627	9,815	4,697	200	14,777	<b>154,116</b>	<b>394,560</b>

Graph XIII-2  
Headcount Summary by Status



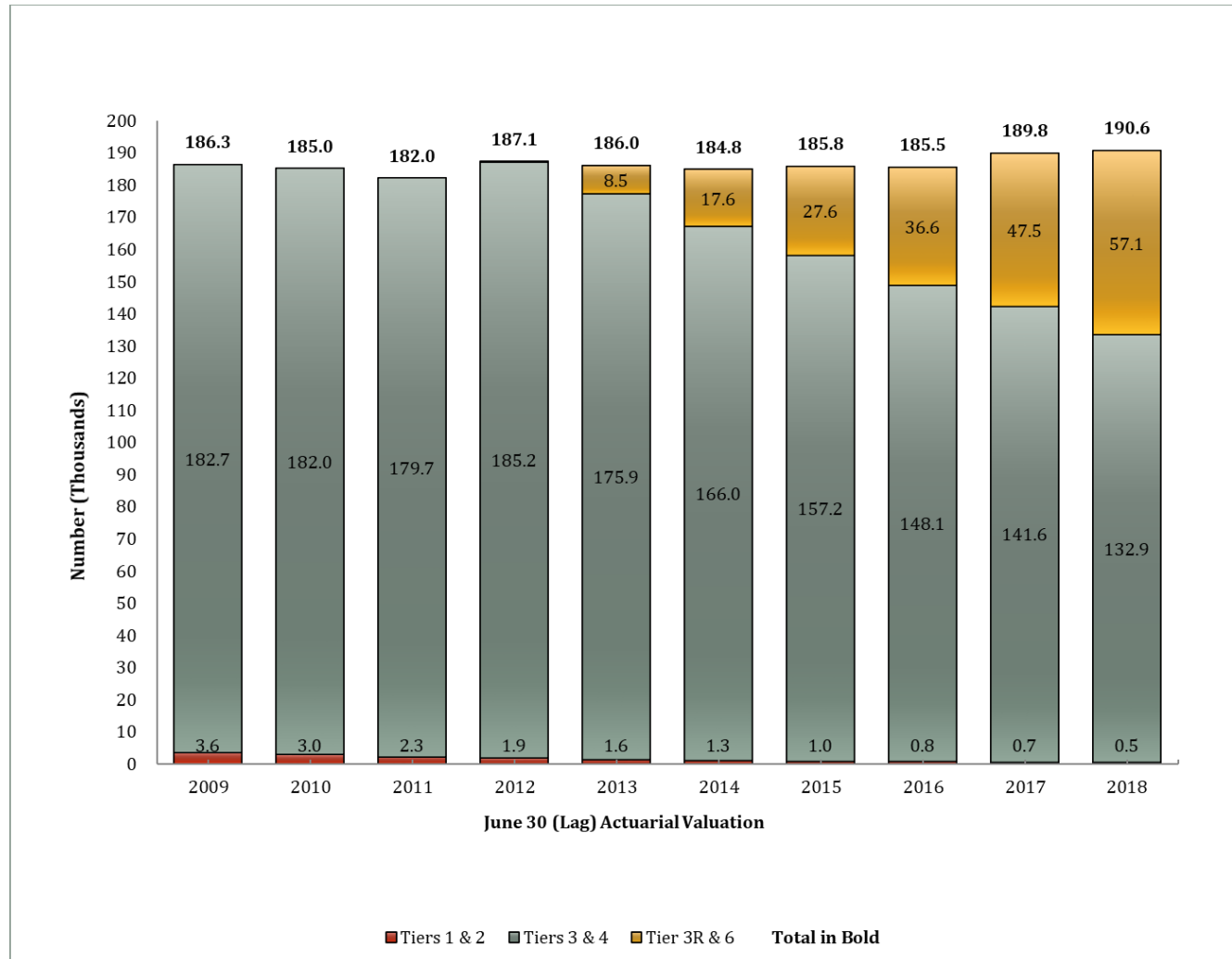
**Table XIII-3**  
**Summary of Active Membership**

NEW YORK CITY EMPLOYEES' RETIREMENT SYSTEM		
ACTIVE MEMBERS INCLUDED IN THE JUNE 30, 2018 (LAG) AND THE JUNE 30, 2017 (LAG) ACTUARIAL VALUATIONS		
	June 30, 2018 (Lag)	June 30, 2017 (Lag)
Number		
Males	105,339	104,630
Females	85,233	85,162
Total	190,572	189,792
Annual Salary <sup>1</sup>		
Males	\$ 8,529,342,102	\$ 8,291,231,842
Females	5,929,775,955	5,774,009,812
Total	\$ 14,459,118,057	\$ 14,065,241,654
Average Salary <sup>1</sup>		
Males	\$ 80,970	\$ 79,243
Females	69,571	67,800
Total Average	\$ 75,872	\$ 74,109
Average Age		
Males	47.7	48.0
Females	47.9	48.0
Total Average	47.8	48.0
Average Past Service		
Males	12.4	12.7
Females	12.3	12.4
Total Average	12.4	12.6

<sup>1</sup>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.



**Graph XIII-4**  
**Active Membership by Tier**



**Table XIII-5**  
**Schedule of Active Member Salary Data**

<b>June 30 (Lag) Actuarial Valuation</b>	<b>Number</b>	<b>Annual Salary</b>	<b>Average Annual Salary</b>	<b>Percentage Increase/ (Decrease) In Avg. Salary</b>
2009	186,284	\$11,880,993,974	\$63,779	3.6%
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%

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, 2018**

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	254	3	0	0	0	0	0	0	0	257
25 TO 29	1,205	142	32	0	0	0	0	0	0	1,379
30 TO 34	2,107	799	180	12	0	0	0	0	0	3,098
35 TO 39	2,066	1,096	681	180	0	0	0	0	0	4,023
40 TO 44	1,597	974	1,092	741	97	2	0	0	0	4,503
45 TO 49	1,276	873	1,167	1,330	713	307	11	0	0	5,677
50 TO 54	1,086	734	1,235	1,569	1,065	1,367	613	26	0	7,695
55 TO 59	693	657	941	1,436	1,078	1,241	985	200	0	7,231
60 TO 64	351	360	621	999	710	670	572	275	13	4,571
65 TO 69	79	131	274	444	273	227	160	99	33	1,720
70 & UP	10	30	84	165	124	66	53	40	31	603
<b>TOTAL</b>	<b>10,758</b>	<b>5,799</b>	<b>6,307</b>	<b>6,876</b>	<b>4,060</b>	<b>3,880</b>	<b>2,394</b>	<b>640</b>	<b>77</b>	<b>40,791</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	1,769	0	0	0	0	0	0	0	0	1,769
20 TO 24	14,490	236	0	0	0	0	0	0	0	14,725
25 TO 29	74,148	11,134	2,756	0	0	0	0	0	0	88,038
30 TO 34	139,751	63,351	14,912	1,175	0	0	0	0	0	219,189
35 TO 39	144,551	88,457	56,544	16,199	0	0	0	0	0	305,750
40 TO 44	112,793	80,474	92,371	65,473	8,608	192	0	0	0	359,910
45 TO 49	90,939	72,959	98,853	117,017	64,171	29,512	1,206	0	0	474,657
50 TO 54	77,479	61,535	105,139	138,162	97,576	127,608	59,541	2,566	0	669,605
55 TO 59	50,802	54,577	80,328	125,656	99,711	116,491	93,845	19,463	0	640,873
60 TO 64	25,533	29,751	52,708	88,387	65,568	62,348	53,840	27,167	1,288	406,591
65 TO 69	5,828	11,092	23,022	39,091	25,170	20,503	15,295	9,803	3,353	153,157
70 & UP	745	2,449	7,091	14,876	10,905	5,839	4,717	3,703	3,191	53,516
<b>TOTAL *</b>	<b>738,830</b>	<b>476,013</b>	<b>533,723</b>	<b>606,034</b>	<b>371,709</b>	<b>362,494</b>	<b>228,443</b>	<b>62,702</b>	<b>7,831</b>	<b>3,387,781</b>

*AVERAGE SALARIES: \*\**

UNDER 20	52,034	0	0	0	0	0	0	0	0	52,034
20 TO 24	57,047	78,502	0	0	0	0	0	0	0	57,297
25 TO 29	61,534	78,407	86,111	0	0	0	0	0	0	63,842
30 TO 34	66,327	79,288	82,844	97,940	0	0	0	0	0	70,752
35 TO 39	69,967	80,709	83,030	89,992	0	0	0	0	0	76,001
40 TO 44	70,628	82,622	84,589	88,357	88,739	96,206	0	0	0	79,927
45 TO 49	71,269	83,573	84,707	87,982	90,001	96,131	109,613	0	0	83,610
50 TO 54	71,343	83,834	85,132	88,058	91,621	93,349	97,130	98,706	0	87,018
55 TO 59	73,308	83,070	85,364	87,504	92,496	93,869	95,274	97,316	0	88,629
60 TO 64	72,745	82,641	84,876	88,475	92,350	93,057	94,126	98,789	99,074	88,950
65 TO 69	73,777	84,673	84,022	88,042	92,199	90,323	95,591	99,019	101,595	89,045
70 & UP	74,498	81,637	84,422	90,155	87,944	88,474	89,007	92,566	102,929	88,750
<b>TOTAL</b>	<b>68,677</b>	<b>82,085</b>	<b>84,624</b>	<b>88,138</b>	<b>91,554</b>	<b>93,426</b>	<b>95,423</b>	<b>97,972</b>	<b>101,706</b>	<b>83,052</b>

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, 2018 (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	2	0	0	0	0	0	0	0	0	2
20 TO 24	61	3	0	0	0	0	0	0	0	64
25 TO 29	233	142	6	0	0	0	0	0	0	381
30 TO 34	263	308	87	1	0	0	0	0	0	659
35 TO 39	255	278	127	121	4	0	0	0	0	785
40 TO 44	219	264	154	273	128	6	0	0	0	1,044
45 TO 49	169	238	178	328	322	185	4	0	0	1,424
50 TO 54	169	218	165	315	320	434	138	0	0	1,759
55 TO 59	112	180	132	338	272	392	182	49	2	1,659
60 TO 64	56	102	75	207	157	166	131	92	9	995
65 TO 69	10	40	38	81	52	35	13	13	8	290
70 & UP	2	17	10	31	18	12	7	4	7	108
<b>TOTAL</b>	<b>1,551</b>	<b>1,790</b>	<b>972</b>	<b>1,695</b>	<b>1,273</b>	<b>1,230</b>	<b>475</b>	<b>158</b>	<b>26</b>	<b>9,170</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	64	0	0	0	0	0	0	0	0	64
20 TO 24	2,396	159	0	0	0	0	0	0	0	2,555
25 TO 29	10,660	7,260	304	0	0	0	0	0	0	18,224
30 TO 34	13,040	17,102	4,848	68	0	0	0	0	0	35,058
35 TO 39	13,543	17,099	8,043	7,499	299	0	0	0	0	46,484
40 TO 44	12,517	17,067	10,391	17,769	9,245	433	0	0	0	67,421
45 TO 49	10,671	16,366	11,947	22,697	23,860	14,072	369	0	0	99,981
50 TO 54	10,168	14,486	11,181	21,206	22,932	33,476	11,108	0	0	124,557
55 TO 59	6,981	11,965	9,018	23,325	20,421	29,814	15,416	3,957	173	121,070
60 TO 64	3,655	6,878	4,732	14,763	11,657	12,789	10,659	7,184	680	72,997
65 TO 69	735	2,596	2,540	5,811	3,567	2,606	1,019	951	597	20,422
70 & UP	105	795	710	2,434	1,245	815	521	296	425	7,346
<b>TOTAL *</b>	<b>84,536</b>	<b>111,773</b>	<b>63,716</b>	<b>115,572</b>	<b>93,226</b>	<b>94,005</b>	<b>39,091</b>	<b>12,388</b>	<b>1,875</b>	<b>616,181</b>

*AVERAGE SALARIES: \*\**

UNDER 20	31,974	0	0	0	0	0	0	0	0	31,974
20 TO 24	39,287	52,969	0	0	0	0	0	0	0	39,928
25 TO 29	45,751	51,124	50,746	0	0	0	0	0	0	47,832
30 TO 34	49,581	55,526	55,728	68,247	0	0	0	0	0	53,199
35 TO 39	53,109	61,509	63,334	61,978	74,755	0	0	0	0	59,215
40 TO 44	57,155	64,646	67,476	65,087	72,223	72,157	0	0	0	64,580
45 TO 49	63,140	68,764	67,116	69,198	74,100	76,067	92,140	0	0	70,212
50 TO 54	60,168	66,450	67,766	67,320	71,663	77,134	80,490	0	0	70,812
55 TO 59	62,332	66,472	68,320	69,009	75,078	76,057	84,701	80,753	86,393	72,978
60 TO 64	65,272	67,434	63,090	71,321	74,251	77,040	81,363	78,085	75,520	73,364
65 TO 69	73,490	64,907	66,855	71,738	68,587	74,444	78,422	73,156	74,669	70,422
70 & UP	52,678	46,747	71,019	78,519	69,150	67,897	74,407	73,952	60,725	68,014
<b>TOTAL</b>	<b>54,504</b>	<b>62,443</b>	<b>65,552</b>	<b>68,184</b>	<b>73,233</b>	<b>76,427</b>	<b>82,296</b>	<b>78,402</b>	<b>72,111</b>	<b>67,195</b>

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, 2018 (cont'd)**

<b>Health and Hospitals Corporation</b>										
<b>AGE \ SVC</b>	<b>UNDER 5</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40 &amp; UP</b>	<b>ALL YEARS</b>
<i>NUMBER:</i>										
UNDER 20	0	0	0	0	0	0	0	0	0	<b>0</b>
20 TO 24	59	0	0	0	0	0	0	0	0	<b>59</b>
25 TO 29	669	96	1	0	0	0	0	0	0	<b>766</b>
30 TO 34	1,082	773	156	1	0	0	0	0	0	<b>2,012</b>
35 TO 39	943	1,138	636	83	0	0	0	0	0	<b>2,800</b>
40 TO 44	812	1,133	919	341	25	2	0	0	0	<b>3,232</b>
45 TO 49	726	1,049	1,143	619	195	45	0	0	0	<b>3,777</b>
50 TO 54	664	1,094	1,318	982	610	261	40	0	0	<b>4,969</b>
55 TO 59	562	983	1,245	1,086	848	574	170	34	0	<b>5,502</b>
60 TO 64	282	680	919	892	812	602	204	104	16	<b>4,511</b>
65 TO 69	73	271	402	317	203	193	80	36	31	<b>1,606</b>
70 & UP	14	77	121	99	94	74	20	22	27	<b>548</b>
<b>TOTAL</b>	<b>5,886</b>	<b>7,294</b>	<b>6,860</b>	<b>4,420</b>	<b>2,787</b>	<b>1,751</b>	<b>514</b>	<b>196</b>	<b>74</b>	<b>29,782</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	0	0	0	0	0	0	0	0	0	<b>0</b>
20 TO 24	3,490	0	0	0	0	0	0	0	0	<b>3,490</b>
25 TO 29	44,726	5,794	41	0	0	0	0	0	0	<b>50,561</b>
30 TO 34	73,860	51,690	9,597	44	0	0	0	0	0	<b>135,191</b>
35 TO 39	68,200	76,709	42,984	5,187	0	0	0	0	0	<b>193,081</b>
40 TO 44	58,944	78,714	66,787	24,893	1,857	149	0	0	0	<b>231,345</b>
45 TO 49	53,947	73,840	85,052	47,150	15,371	3,020	0	0	0	<b>278,380</b>
50 TO 54	49,090	78,170	95,795	76,322	53,013	19,277	2,990	0	0	<b>374,657</b>
55 TO 59	43,824	70,736	87,656	86,373	73,890	45,610	13,132	2,419	0	<b>423,640</b>
60 TO 64	24,178	50,770	66,593	70,380	71,365	51,083	16,736	8,533	1,018	<b>360,656</b>
65 TO 69	7,225	20,441	28,960	23,526	18,184	15,886	6,900	3,050	2,912	<b>127,083</b>
70 & UP	1,369	6,477	8,946	7,370	7,184	5,524	1,516	1,700	2,339	<b>42,424</b>
<b>TOTAL *</b>	<b>428,855</b>	<b>513,342</b>	<b>492,411</b>	<b>341,245</b>	<b>240,864</b>	<b>140,548</b>	<b>41,273</b>	<b>15,702</b>	<b>6,269</b>	<b>2,220,510</b>

*AVERAGE SALARIES: \*\**

UNDER 20	0	0	0	0	0	0	0	0	0	<b>0</b>
20 TO 24	59,152	0	0	0	0	0	0	0	0	<b>59,152</b>
25 TO 29	66,855	60,357	40,588	0	0	0	0	0	0	<b>66,006</b>
30 TO 34	68,263	66,869	61,517	44,360	0	0	0	0	0	<b>67,192</b>
35 TO 39	72,323	67,407	67,586	62,494	0	0	0	0	0	<b>68,958</b>
40 TO 44	72,591	69,474	72,674	73,000	74,275	74,482	0	0	0	<b>71,580</b>
45 TO 49	74,308	70,391	74,411	76,171	78,828	67,103	0	0	0	<b>73,704</b>
50 TO 54	73,931	71,453	72,682	77,721	86,906	73,859	74,745	0	0	<b>75,399</b>
55 TO 59	77,979	71,960	70,406	79,533	87,134	79,459	77,248	71,141	0	<b>76,998</b>
60 TO 64	85,739	74,662	72,463	78,901	87,888	84,856	82,038	82,049	63,642	<b>79,950</b>
65 TO 69	98,976	75,428	72,040	74,213	89,574	82,310	86,249	84,724	93,946	<b>79,130</b>
70 & UP	97,805	84,118	73,931	74,444	76,429	74,645	75,789	77,267	86,616	<b>77,417</b>
<b>TOTAL</b>	<b>72,860</b>	<b>70,379</b>	<b>71,780</b>	<b>77,205</b>	<b>86,424</b>	<b>80,268</b>	<b>80,298</b>	<b>80,111</b>	<b>84,720</b>	<b>74,559</b>

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, 2018 (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	33	2	0	0	0	0	0	0	0	35
30 TO 34	24	27	19	0	0	0	0	0	0	70
35 TO 39	33	26	53	15	0	0	0	0	0	127
40 TO 44	27	29	81	87	4	0	0	0	0	228
45 TO 49	16	25	86	109	26	12	0	0	0	274
50 TO 54	10	17	41	67	20	31	5	0	0	191
55 TO 59	10	19	37	64	17	32	13	5	0	197
60 TO 64	3	5	16	37	8	13	10	4	0	96
65 TO 69	2	1	8	8	6	6	1	3	2	37
70 & UP	0	1	1	4	3	2	2	1	0	14
<b>TOTAL</b>	<b>165</b>	<b>152</b>	<b>342</b>	<b>391</b>	<b>84</b>	<b>96</b>	<b>31</b>	<b>13</b>	<b>2</b>	<b>1,276</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	436	0	0	0	0	0	0	0	0	436
25 TO 29	2,293	177	0	0	0	0	0	0	0	2,470
30 TO 34	2,065	2,350	2,011	0	0	0	0	0	0	6,426
35 TO 39	2,700	2,541	5,272	1,683	0	0	0	0	0	12,196
40 TO 44	2,463	2,644	7,903	9,124	408	0	0	0	0	22,542
45 TO 49	1,329	2,482	8,490	10,409	2,679	1,451	0	0	0	26,840
50 TO 54	1,046	1,769	4,174	6,614	1,847	3,237	605	0	0	19,292
55 TO 59	1,023	2,173	3,616	7,161	1,944	3,452	1,633	460	0	21,461
60 TO 64	314	600	1,719	3,489	787	1,442	923	606	0	9,880
65 TO 69	199	144	820	952	485	673	76	198	247	3,794
70 & UP	0	174	86	449	386	142	222	88	0	1,547
<b>TOTAL *</b>	<b>13,866</b>	<b>15,054</b>	<b>34,091</b>	<b>39,881</b>	<b>8,537</b>	<b>10,396</b>	<b>3,459</b>	<b>1,352</b>	<b>247</b>	<b>126,884</b>

*AVERAGE SALARIES: \*\**

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	62,230	0	0	0	0	0	0	0	0	62,230
25 TO 29	69,484	88,739	0	0	0	0	0	0	0	70,584
30 TO 34	86,045	87,039	105,857	0	0	0	0	0	0	91,806
35 TO 39	81,807	97,712	99,471	112,227	0	0	0	0	0	96,028
40 TO 44	91,233	91,175	97,569	104,868	102,068	0	0	0	0	98,869
45 TO 49	83,038	99,295	98,721	95,492	103,056	120,889	0	0	0	97,955
50 TO 54	104,576	104,081	101,795	98,717	92,347	104,416	121,040	0	0	101,004
55 TO 59	102,264	114,359	97,721	111,894	114,332	107,883	125,608	91,960	0	108,939
60 TO 64	104,712	120,046	107,430	94,289	98,434	110,910	92,291	151,500	0	102,918
65 TO 69	99,291	143,593	102,513	119,038	80,917	112,156	75,565	66,060	123,626	102,541
70 & UP	0	173,597	86,330	112,332	128,503	70,823	111,155	87,896	0	110,472
<b>TOTAL</b>	<b>84,038</b>	<b>99,040</b>	<b>99,681</b>	<b>101,998</b>	<b>101,629</b>	<b>108,294</b>	<b>111,577</b>	<b>103,991</b>	<b>123,626</b>	<b>99,438</b>

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, 2018 (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	2	0	0	0	0	0	0	0	35
25 TO 29	208	35	0	0	0	0	0	0	0	243
30 TO 34	208	171	48	0	0	0	0	0	0	427
35 TO 39	145	163	137	7	0	0	0	0	0	452
40 TO 44	101	141	158	66	3	0	0	0	0	469
45 TO 49	109	134	154	108	57	9	0	0	0	571
50 TO 54	120	110	167	121	90	29	6	0	0	643
55 TO 59	92	109	171	127	89	70	42	10	0	710
60 TO 64	57	89	137	107	71	35	31	17	0	544
65 TO 69	13	59	80	62	45	22	9	11	3	304
70 & UP	8	20	38	35	17	12	8	6	10	154
<b>TOTAL</b>	<b>1,094</b>	<b>1,033</b>	<b>1,090</b>	<b>633</b>	<b>372</b>	<b>177</b>	<b>96</b>	<b>44</b>	<b>13</b>	<b>4,552</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	1,099	65	0	0	0	0	0	0	0	1,164
25 TO 29	8,471	1,726	0	0	0	0	0	0	0	10,196
30 TO 34	9,304	9,599	2,694	0	0	0	0	0	0	21,596
35 TO 39	7,305	9,472	8,784	451	0	0	0	0	0	26,011
40 TO 44	5,170	8,501	10,696	4,181	162	0	0	0	0	28,711
45 TO 49	6,002	7,796	10,176	7,562	3,666	619	0	0	0	35,821
50 TO 54	6,000	5,879	10,690	7,837	6,322	2,360	414	0	0	39,501
55 TO 59	4,728	6,149	9,879	8,153	6,245	5,188	3,229	731	0	44,302
60 TO 64	3,276	4,884	7,146	6,107	4,692	2,186	1,976	1,129	0	31,395
65 TO 69	726	2,776	4,231	3,667	2,613	1,147	616	962	133	16,872
70 & UP	376	1,217	1,882	1,624	920	675	440	274	712	8,121
<b>TOTAL *</b>	<b>52,458</b>	<b>58,063</b>	<b>66,178</b>	<b>39,582</b>	<b>24,620</b>	<b>12,175</b>	<b>6,675</b>	<b>3,096</b>	<b>844</b>	<b>263,690</b>

*AVERAGE SALARIES: \*\**

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	33,300	32,499	0	0	0	0	0	0	0	33,254
25 TO 29	40,724	49,301	0	0	0	0	0	0	0	41,960
30 TO 34	44,732	56,133	56,116	0	0	0	0	0	0	50,577
35 TO 39	50,382	58,108	64,116	64,389	0	0	0	0	0	57,548
40 TO 44	51,189	60,292	67,698	63,350	54,025	0	0	0	0	61,217
45 TO 49	55,068	58,181	66,077	70,015	64,321	68,759	0	0	0	62,734
50 TO 54	49,998	53,442	64,011	64,767	70,247	81,369	68,940	0	0	61,432
55 TO 59	51,394	56,410	57,770	64,195	70,170	74,111	76,885	73,140	0	62,397
60 TO 64	57,472	54,872	52,160	57,078	66,082	62,450	63,743	66,387	0	57,711
65 TO 69	55,865	47,051	52,893	59,153	58,064	52,143	68,456	87,460	44,273	55,501
70 & UP	47,058	60,867	49,528	46,404	54,102	56,278	55,054	45,633	71,150	52,733
<b>TOTAL</b>	<b>47,951</b>	<b>56,208</b>	<b>60,713</b>	<b>62,531</b>	<b>66,183</b>	<b>68,783</b>	<b>69,535</b>	<b>70,360</b>	<b>64,948</b>	<b>57,928</b>

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, 2018 (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
20 TO 24	0	0	0	0	0	0	0	0	0	0
25 TO 29	1	1	0	0	0	0	0	0	0	2
30 TO 34	1	4	0	0	0	0	0	0	0	5
35 TO 39	3	9	2	0	0	0	0	0	0	14
40 TO 44	1	6	5	2	0	0	0	0	0	14
45 TO 49	1	11	7	7	2	1	0	0	0	29
50 TO 54	0	12	7	8	5	5	0	0	0	37
55 TO 59	1	5	5	11	3	4	3	1	0	33
60 TO 64	0	6	1	8	2	3	3	2	0	25
65 TO 69	0	1	1	4	1	0	2	1	0	10
70 & UP	0	1	0	2	1	1	0	0	0	5
<b>TOTAL</b>	<b>8</b>	<b>56</b>	<b>28</b>	<b>42</b>	<b>14</b>	<b>14</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>174</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0
25 TO 29	51	84	0	0	0	0	0	0	0	135
30 TO 34	89	456	0	0	0	0	0	0	0	545
35 TO 39	302	893	220	0	0	0	0	0	0	1,415
40 TO 44	136	518	546	115	0	0	0	0	0	1,315
45 TO 49	156	1,329	751	827	360	115	0	0	0	3,538
50 TO 54	0	996	850	1,047	591	586	0	0	0	4,070
55 TO 59	129	550	519	1,323	356	580	437	68	0	3,961
60 TO 64	0	457	92	883	245	253	407	301	0	2,638
65 TO 69	0	142	131	410	61	0	277	143	0	1,165
70 & UP	0	118	0	209	129	119	0	0	0	575
<b>TOTAL *</b>	<b>863</b>	<b>5,545</b>	<b>3,109</b>	<b>4,814</b>	<b>1,741</b>	<b>1,653</b>	<b>1,121</b>	<b>512</b>	<b>0</b>	<b>19,358</b>

*AVERAGE SALARIES: \*\**

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0
25 TO 29	51,296	84,191	0	0	0	0	0	0	0	67,743
30 TO 34	89,250	113,918	0	0	0	0	0	0	0	108,985
35 TO 39	100,587	99,266	109,863	0	0	0	0	0	0	101,063
40 TO 44	136,076	86,313	109,186	57,656	0	0	0	0	0	93,942
45 TO 49	155,873	120,840	107,233	118,187	180,020	115,201	0	0	0	122,010
50 TO 54	0	83,035	121,425	130,906	118,120	117,229	0	0	0	110,010
55 TO 59	128,914	110,071	103,839	120,230	118,645	144,878	145,536	68,001	0	120,032
60 TO 64	0	76,173	92,400	110,353	122,271	84,293	135,810	150,489	0	105,524
65 TO 69	0	142,275	131,048	102,605	61,337	0	138,591	143,087	0	116,535
70 & UP	0	118,251	0	104,319	128,947	118,903	0	0	0	114,948
<b>TOTAL</b>	<b>107,896</b>	<b>99,013</b>	<b>111,032</b>	<b>114,626</b>	<b>124,386</b>	<b>118,046</b>	<b>140,152</b>	<b>128,017</b>	<b>0</b>	<b>111,255</b>

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, 2018 (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	31	0	0	0	0	0	0	0	0	31
25 TO 29	254	22	0	0	0	0	0	0	0	276
30 TO 34	429	365	217	0	0	0	0	0	0	1,011
35 TO 39	315	343	661	91	0	0	0	0	0	1,410
40 TO 44	209	239	658	425	21	3	0	0	0	1,555
45 TO 49	108	151	443	425	153	61	0	0	0	1,341
50 TO 54	52	68	242	321	128	133	24	0	0	968
55 TO 59	26	29	106	155	95	132	49	5	0	597
60 TO 64	1	4	45	55	36	47	28	14	1	231
65 TO 69	0	2	9	14	9	11	15	2	3	65
70 & UP	0	0	0	2	2	1	2	1	4	12
<b>TOTAL</b>	<b>1,425</b>	<b>1,223</b>	<b>2,381</b>	<b>1,488</b>	<b>444</b>	<b>388</b>	<b>118</b>	<b>22</b>	<b>8</b>	<b>7,497</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	1,624	0	0	0	0	0	0	0	0	1,624
25 TO 29	13,778	1,987	0	0	0	0	0	0	0	15,765
30 TO 34	24,994	33,214	22,378	0	0	0	0	0	0	80,586
35 TO 39	18,695	32,137	68,357	10,446	0	0	0	0	0	129,635
40 TO 44	12,594	22,263	68,144	47,392	2,393	374	0	0	0	153,161
45 TO 49	6,428	14,163	45,676	46,831	17,367	7,363	0	0	0	137,827
50 TO 54	3,064	6,109	24,973	34,662	14,042	16,343	3,161	0	0	102,353
55 TO 59	1,564	2,744	10,972	16,783	10,457	14,907	5,471	667	0	63,564
60 TO 64	95	377	4,558	5,972	3,979	5,101	3,231	1,722	110	25,145
65 TO 69	0	175	889	1,472	943	1,169	1,646	211	332	6,839
70 & UP	0	0	0	194	239	131	197	113	387	1,263
<b>TOTAL *</b>	<b>82,836</b>	<b>113,168</b>	<b>245,947</b>	<b>163,753</b>	<b>49,421</b>	<b>45,389</b>	<b>13,706</b>	<b>2,714</b>	<b>829</b>	<b>717,762</b>

*AVERAGE SALARIES: \*\**

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	52,385	0	0	0	0	0	0	0	0	52,385
25 TO 29	54,243	90,332	0	0	0	0	0	0	0	57,120
30 TO 34	58,262	90,998	103,123	0	0	0	0	0	0	79,709
35 TO 39	59,350	93,694	103,415	114,789	0	0	0	0	0	91,940
40 TO 44	60,259	93,151	103,563	111,511	113,955	124,741	0	0	0	98,496
45 TO 49	59,520	93,795	103,105	110,190	113,512	120,700	0	0	0	102,780
50 TO 54	58,919	89,831	103,193	107,982	109,702	122,882	131,691	0	0	105,737
55 TO 59	60,152	94,608	103,509	108,279	110,073	112,929	111,650	133,361	0	106,472
60 TO 64	95,157	94,132	101,283	108,584	110,528	108,538	115,409	123,007	109,591	108,853
65 TO 69	0	87,434	98,815	105,175	104,786	106,287	109,756	105,728	110,665	105,210
70 & UP	0	0	0	97,223	119,727	131,291	98,538	113,186	96,763	105,209
<b>TOTAL</b>	<b>58,131</b>	<b>92,533</b>	<b>103,296</b>	<b>110,049</b>	<b>111,308</b>	<b>116,981</b>	<b>116,155</b>	<b>123,343</b>	<b>103,580</b>	<b>95,740</b>

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, 2018 (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	378	0	0	0	0	0	0	0	0	378
25 TO 29	1,419	105	1	0	0	0	0	0	0	1,525
30 TO 34	1,097	681	289	1	0	0	0	0	0	2,068
35 TO 39	576	476	758	61	0	0	0	0	0	1,871
40 TO 44	280	271	584	385	29	0	0	0	0	1,549
45 TO 49	122	150	440	383	201	33	0	0	0	1,329
50 TO 54	63	76	264	235	150	135	38	0	0	961
55 TO 59	28	35	112	94	72	69	63	9	0	482
60 TO 64	3	13	38	37	27	21	23	17	2	181
65 TO 69	1	0	8	7	1	7	4	6	2	36
70 & UP	0	0	1	2	0	0	0	1	0	4
<b>TOTAL</b>	<b>3,967</b>	<b>1,807</b>	<b>2,495</b>	<b>1,205</b>	<b>480</b>	<b>265</b>	<b>128</b>	<b>33</b>	<b>4</b>	<b>10,384</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	20,314	0	0	0	0	0	0	0	0	20,314
25 TO 29	79,447	8,054	77	0	0	0	0	0	0	87,578
30 TO 34	63,111	60,875	30,302	63	0	0	0	0	0	154,352
35 TO 39	33,523	45,052	80,714	6,846	0	0	0	0	0	166,135
40 TO 44	16,410	25,555	63,054	44,960	3,971	0	0	0	0	153,949
45 TO 49	7,425	14,515	48,113	45,222	25,541	4,452	0	0	0	145,268
50 TO 54	3,701	7,351	29,210	27,489	18,823	17,317	5,138	0	0	109,030
55 TO 59	1,752	3,475	12,715	11,113	8,834	8,812	7,958	1,248	0	55,906
60 TO 64	173	1,220	4,259	4,337	3,328	2,596	2,879	2,225	236	21,254
65 TO 69	52	0	882	861	119	844	613	754	249	4,373
70 & UP	0	0	110	263	0	0	0	122	0	494
<b>TOTAL *</b>	<b>225,907</b>	<b>166,098</b>	<b>269,435</b>	<b>141,155</b>	<b>60,615</b>	<b>34,022</b>	<b>16,588</b>	<b>4,349</b>	<b>485</b>	<b>918,553</b>

*AVERAGE SALARIES: \*\**

UNDER 20	0	0	0	0	0	0	0	0	0	0
20 TO 24	53,741	0	0	0	0	0	0	0	0	53,741
25 TO 29	55,988	76,707	76,866	0	0	0	0	0	0	57,428
30 TO 34	57,530	89,390	104,852	63,427	0	0	0	0	0	74,638
35 TO 39	58,199	94,647	106,483	112,230	0	0	0	0	0	88,795
40 TO 44	58,606	94,298	107,969	116,778	136,924	0	0	0	0	99,386
45 TO 49	60,857	96,768	109,348	118,073	127,069	134,923	0	0	0	109,307
50 TO 54	58,741	96,729	110,644	116,975	125,483	128,278	135,223	0	0	113,454
55 TO 59	62,564	99,286	113,522	118,226	122,694	127,703	126,315	138,707	0	115,988
60 TO 64	57,773	93,839	112,078	117,220	123,264	123,618	125,170	130,885	118,123	117,424
65 TO 69	52,333	0	110,216	123,065	118,894	120,578	153,157	125,589	124,440	121,486
70 & UP	0	0	109,633	131,535	0	0	0	121,734	0	123,609
<b>TOTAL</b>	<b>56,946</b>	<b>91,919</b>	<b>107,990</b>	<b>117,141</b>	<b>126,282</b>	<b>128,383</b>	<b>129,593</b>	<b>131,778</b>	<b>121,281</b>	<b>88,468</b>

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, 2018 (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	991	2	0	0	0	0	0	0	0	993
25 TO 29	5,039	519	3	0	0	0	0	0	0	5,561
30 TO 34	5,232	3,080	490	2	0	0	0	0	0	8,804
35 TO 39	3,711	3,875	2,287	285	1	0	0	0	0	10,159
40 TO 44	2,611	2,801	2,929	1,308	138	6	0	0	0	9,793
45 TO 49	2,104	2,291	2,779	2,150	922	246	12	0	0	10,504
50 TO 54	1,759	1,955	2,499	2,210	1,899	1,759	454	10	0	12,545
55 TO 59	1,348	1,575	2,075	2,095	2,003	2,396	1,689	345	6	13,532
60 TO 64	695	1,066	1,487	1,455	1,339	1,530	1,342	712	51	9,677
65 TO 69	229	508	624	594	478	514	407	250	142	3,746
70 & UP	52	168	248	278	217	213	166	120	166	1,628
<b>TOTAL</b>	<b>23,775</b>	<b>17,840</b>	<b>15,421</b>	<b>10,377</b>	<b>6,997</b>	<b>6,664</b>	<b>4,070</b>	<b>1,437</b>	<b>365</b>	<b>86,946</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	49	0	0	0	0	0	0	0	0	49
20 TO 24	42,713	177	0	0	0	0	0	0	0	42,890
25 TO 29	264,053	31,080	123	0	0	0	0	0	0	295,257
30 TO 34	308,231	202,992	32,742	116	0	0	0	0	0	544,081
35 TO 39	233,144	280,472	164,139	20,884	50	0	0	0	0	698,689
40 TO 44	169,018	209,667	218,974	99,322	11,758	559	0	0	0	709,299
45 TO 49	137,163	170,239	207,639	161,670	76,083	20,659	1,004	0	0	774,456
50 TO 54	113,669	141,084	181,254	164,505	151,818	145,937	38,873	983	0	938,123
55 TO 59	89,736	110,625	151,926	159,609	161,177	196,698	142,540	27,561	632	1,040,503
60 TO 64	46,216	73,906	106,711	110,118	108,109	126,311	108,067	57,420	4,147	741,004
65 TO 69	16,244	34,747	44,060	44,900	38,718	41,982	32,507	19,888	11,558	284,604
70 & UP	2,931	11,460	16,973	19,354	16,126	16,660	11,684	9,876	14,282	119,345
<b>TOTAL *</b>	<b>1,423,168</b>	<b>1,266,447</b>	<b>1,124,542</b>	<b>780,478</b>	<b>563,840</b>	<b>548,805</b>	<b>334,673</b>	<b>115,728</b>	<b>30,618</b>	<b>6,188,300</b>

*AVERAGE SALARIES: \*\**

UNDER 20	12,252	0	0	0	0	0	0	0	0	12,252
20 TO 24	43,101	88,482	0	0	0	0	0	0	0	43,192
25 TO 29	52,402	59,885	41,088	0	0	0	0	0	0	53,094
30 TO 34	58,913	65,906	66,821	58,210	0	0	0	0	0	61,799
35 TO 39	62,825	72,380	71,770	73,276	50,495	0	0	0	0	68,775
40 TO 44	64,733	74,854	74,761	75,934	85,204	93,203	0	0	0	72,429
45 TO 49	65,192	74,308	74,717	75,195	82,519	83,978	83,658	0	0	73,730
50 TO 54	64,621	72,166	72,531	74,437	79,946	82,966	85,623	98,333	0	74,781
55 TO 59	66,570	70,238	73,217	76,186	80,468	82,094	84,393	79,887	105,285	76,892
60 TO 64	66,498	69,330	71,762	75,683	80,739	82,556	80,527	80,646	81,304	76,574
65 TO 69	70,934	68,399	70,610	75,589	81,001	81,677	79,869	79,551	81,393	75,975
70 & UP	56,369	68,212	68,439	69,619	74,315	78,214	70,383	82,298	86,036	73,308
<b>TOTAL</b>	<b>59,860</b>	<b>70,989</b>	<b>72,923</b>	<b>75,212</b>	<b>80,583</b>	<b>82,354</b>	<b>82,229</b>	<b>80,534</b>	<b>83,885</b>	<b>71,174</b>

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, 2018 (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	1,814	10	0	0	0	0	0	0	0	1,824
25 TO 29	9,061	1,064	43	0	0	0	0	0	0	10,168
30 TO 34	10,443	6,208	1,486	17	0	0	0	0	0	18,154
35 TO 39	8,047	7,404	5,342	843	5	0	0	0	0	21,641
40 TO 44	5,857	5,858	6,580	3,628	445	19	0	0	0	22,387
45 TO 49	4,631	4,922	6,397	5,459	2,591	899	27	0	0	24,926
50 TO 54	3,923	4,284	5,938	5,828	4,287	4,154	1,318	36	0	29,768
55 TO 59	2,872	3,592	4,824	5,406	4,477	4,910	3,196	658	8	29,943
60 TO 64	1,448	2,325	3,339	3,797	3,162	3,087	2,344	1,237	92	20,831
65 TO 69	407	1,013	1,444	1,531	1,068	1,015	691	421	224	7,814
70 & UP	86	314	503	618	476	381	258	195	245	3,076
<b>TOTAL</b>	<b>48,629</b>	<b>36,994</b>	<b>35,896</b>	<b>27,127</b>	<b>16,511</b>	<b>14,465</b>	<b>7,834</b>	<b>2,547</b>	<b>569</b>	<b>190,572</b>

*SALARIES (IN THOUSANDS):*

UNDER 20	1,882	0	0	0	0	0	0	0	0	1,882
20 TO 24	86,562	636	0	0	0	0	0	0	0	87,198
25 TO 29	497,627	67,297	3,301	0	0	0	0	0	0	568,225
30 TO 34	634,446	441,628	119,484	1,468	0	0	0	0	0	1,197,025
35 TO 39	521,964	552,832	435,057	69,195	350	0	0	0	0	1,579,396
40 TO 44	390,046	445,403	538,867	313,228	38,401	1,708	0	0	0	1,727,653
45 TO 49	314,060	373,690	516,696	459,384	229,099	81,263	2,578	0	0	1,976,769
50 TO 54	264,216	317,379	463,266	477,844	366,964	366,142	121,829	3,550	0	2,381,189
55 TO 59	200,539	262,993	366,628	439,496	383,034	421,550	283,660	56,574	804	2,415,280
60 TO 64	103,442	168,842	248,517	304,436	269,731	264,109	198,718	106,287	7,478	1,671,560
65 TO 69	31,010	72,113	105,536	120,691	89,860	84,810	58,949	35,960	19,381	618,310
70 & UP	5,527	22,690	35,798	46,773	37,134	29,905	19,297	16,171	21,335	234,630
<b>TOTAL *</b>	<b>3,051,320</b>	<b>2,725,502</b>	<b>2,833,150</b>	<b>2,232,515</b>	<b>1,414,574</b>	<b>1,249,486</b>	<b>685,031</b>	<b>218,541</b>	<b>48,999</b>	<b>14,459,118</b>

*AVERAGE SALARIES: \*\**

UNDER 20	47,053	0	0	0	0	0	0	0	0	47,053
20 TO 24	47,719	63,638	0	0	0	0	0	0	0	47,806
25 TO 29	54,920	63,249	76,762	0	0	0	0	0	0	55,884
30 TO 34	60,753	71,138	80,406	86,337	0	0	0	0	0	65,937
35 TO 39	64,864	74,667	81,441	82,081	69,903	0	0	0	0	72,982
40 TO 44	66,595	76,033	81,895	86,336	86,295	89,882	0	0	0	77,172
45 TO 49	67,817	75,922	80,772	84,152	88,421	90,392	95,489	0	0	79,306
50 TO 54	67,351	74,085	78,017	81,991	85,599	88,142	92,435	98,602	0	79,992
55 TO 59	69,826	73,216	76,001	81,298	85,556	85,855	88,755	85,979	100,562	80,663
60 TO 64	71,438	72,620	74,429	80,178	85,304	85,555	84,777	85,923	81,286	80,244
65 TO 69	76,191	71,187	73,086	78,832	84,139	83,557	85,309	85,416	86,523	79,129
70 & UP	64,270	72,260	71,170	75,685	78,013	78,490	74,796	82,927	87,082	76,278
<b>TOTAL</b>	<b>62,747</b>	<b>73,674</b>	<b>78,927</b>	<b>82,299</b>	<b>85,675</b>	<b>86,380</b>	<b>87,443</b>	<b>85,803</b>	<b>86,114</b>	<b>75,872</b>

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, 2018							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	22	2,311,425	105,065	75.6	45.5	34	3,484,487	102,485	74.1	43.8
1	F	5	435,560	87,112	71.8	47.4	6	485,258	80,876	73.2	46.7
		27	2,746,985	101,740	74.9	45.9	40	3,969,745	99,244	74.0	44.2
2	M	14	1,404,677	100,334	70.3	42.7	21	2,075,803	98,848	67.9	41.2
2	F	5	358,119	71,624	68.0	39.0	5	345,535	69,107	67.0	38.0
		19	1,762,796	92,779	69.7	41.7	26	2,421,338	93,128	67.7	40.6
4	M	22,968	2,072,087,848	90,216	53.3	18.6	24,564	2,144,763,476	87,313	52.9	18.1
4	F	4,687	381,050,361	81,299	51.1	18.0	4,937	389,754,738	78,946	50.7	17.6
		27,655	2,453,138,209	88,705	52.9	18.5	29,501	2,534,518,214	85,913	52.5	18.0
6	M	10,728	777,671,922	72,490	41.2	2.7	8,437	598,972,803	70,994	41.4	2.4
6	F	2,362	152,460,608	64,547	39.4	2.6	1,832	115,814,036	63,217	39.3	2.2
		13,090	930,132,530	71,057	40.9	2.7	10,269	714,786,839	69,606	41.0	2.4
ALL		40,791	3,387,780,520	83,052	49.1	13.4	39,836	3,255,696,136	81,727	49.6	14.0

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017							JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018				
1	M	22	2,311,425	105,065	75.6	45.5	22	2,206,280	100,285	74.6	44.5
1	F	5	435,560	87,112	71.8	47.4	5	425,991	85,198	70.8	46.4
		27	2,746,985	101,740	74.9	45.9	27	2,632,271	97,492	73.9	44.9
2	M	13	1,300,851	100,065	70.5	44.0	13	1,290,326	99,256	69.5	43.0
2	F	5	358,119	71,624	68.0	39.0	5	345,535	69,107	67.0	38.0
		18	1,658,970	92,165	69.8	42.6	18	1,635,861	90,881	68.8	41.6
4	M	22,591	2,043,867,666	90,473	53.4	18.7	22,591	1,972,644,595	87,320	52.4	17.7
4	F	4,460	365,813,538	82,021	51.3	18.4	4,460	353,734,591	79,313	50.3	17.4
		27,051	2,409,681,204	89,079	53.1	18.6	27,051	2,326,379,186	86,000	52.1	17.6
6	M	8,016	611,517,785	76,287	42.4	3.4	8,016	569,656,912	71,065	41.4	2.4
6	F	1,665	113,588,511	68,221	40.3	3.3	1,665	105,161,551	63,160	39.3	2.3
		9,681	725,106,296	74,900	42.1	3.4	9,681	674,818,463	69,705	41.1	2.4
ALL		36,777	3,139,193,455	85,358	50.2	14.6	36,777	3,005,465,781	81,721	49.2	13.6

		ADDITIONS DURING THE YEAR *					SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	0	0	0	0.0	0.0	12	1,278,207	106,517	73.3	42.3
1	F	0	0	0	0.0	0.0	1	59,267	0	85.0	48.0
		0	0	0	0.0	0.0	13	1,337,474	102,883	74.2	42.8
2	M	1	103,826	103,826	67.0	26.0	8	785,477	98,185	65.3	38.4
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	103,826	103,826	67.0	26.0	8	785,477	98,185	65.3	38.4
4	M	377	28,220,182	74,855	48.2	12.6	1,973	172,118,881	87,237	58.5	23.5
4	F	227	15,236,823	67,123	45.5	11.2	477	36,020,147	75,514	53.6	19.6
		604	43,457,005	71,949	47.2	12.1	2,450	208,139,028	84,955	57.5	22.7
6	M	2,712	166,154,137	61,266	37.6	0.7	421	29,315,891	69,634	40.4	2.0
6	F	697	38,872,097	55,771	37.4	0.9	167	10,652,485	63,787	39.5	1.7
		3,409	205,026,234	60,143	37.5	0.7	588	39,968,376	67,973	40.2	1.9
ALL		4,014	248,587,065	61,930	39.0	2.4	3,059	250,230,355	81,801	54.3	18.9

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

Housing Authority											
		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	3	227,786	75,929	73.0	37.7	5	339,715	67,943	72.4	32.2
1	F	3	174,980	58,327	70.3	47.3	4	215,747	53,937	69.3	47.0
		6	402,766	67,128	71.7	42.5	9	555,462	61,718	71.0	38.8
2	M	4	284,165	71,041	65.3	39.5	5	389,287	77,857	67.2	39.4
2	F	5	271,358	54,272	67.4	40.6	6	319,940	53,323	68.3	40.3
		9	555,523	61,725	66.4	40.1	11	709,227	64,475	67.8	39.9
4	M	4,255	321,402,362	75,535	51.5	19.1	4,683	348,037,686	74,319	51.0	18.5
4	F	2,787	176,041,684	63,165	51.4	17.9	3,015	184,991,492	61,357	50.8	17.2
		7,042	497,444,046	70,640	51.4	18.7	7,698	533,029,178	69,243	51.0	18.0
6	M	1,314	79,205,004	60,278	41.0	3.3	1,152	67,095,085	58,242	40.1	2.8
6	F	799	38,573,578	48,277	38.7	3.1	720	34,978,727	48,582	37.9	2.6
		2,113	117,778,582	55,740	40.1	3.2	1,872	102,073,812	54,527	39.2	2.7
ALL		9,170	616,180,917	67,195	48.8	15.1	9,590	636,367,679	66,357	48.7	15.1

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017							JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018				
1	M	3	227,786	75,929	73.0	37.7	3	227,133	75,711	72.0	36.7
1	F	3	174,980	58,327	70.3	47.3	3	172,437	57,479	69.3	46.3
		6	402,766	67,128	71.7	42.5	6	399,570	66,595	70.7	41.5
2	M	4	284,165	71,041	65.3	39.5	4	280,359	70,090	64.3	38.5
2	F	5	271,358	54,272	67.4	40.6	5	268,403	53,681	66.4	39.6
		9	555,523	61,725	66.4	40.1	9	548,762	60,974	65.4	39.1
4	M	4,213	318,673,732	75,641	51.5	19.2	4,213	313,081,229	74,313	50.5	18.2
4	F	2,738	173,034,217	63,197	51.5	18.1	2,738	168,599,123	61,577	50.5	17.1
		6,951	491,707,949	70,739	51.5	18.8	6,951	481,680,352	69,297	50.5	17.8
6	M	1,066	67,105,084	62,950	41.1	3.8	1,066	62,282,556	58,426	40.1	2.8
6	F	605	30,796,709	50,904	39.1	3.7	605	28,991,855	47,920	38.1	2.7
		1,671	97,901,793	58,589	40.4	3.8	1,671	91,274,411	54,623	39.4	2.8
ALL		8,637	590,568,031	68,377	49.4	15.9	8,637	573,903,095	66,447	48.4	14.9

		ADDITIONS DURING THE YEAR *					SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	0	0	0	0.0	0.0	2	112,582	56,291	73.0	25.5
1	F	0	0	0	0.0	0.0	1	43,310	43,310	69.0	49.0
		0	0	0	0.0	0.0	3	155,892	51,964	71.7	33.3
2	M	0	0	0	0.0	0.0	1	108,928	108,928	79.0	43.0
2	F	0	0	0	0.0	0.0	1	51,537	51,537	78.0	44.0
		0	0	0	0.0	0.0	2	160,465	80,233	78.5	43.5
4	M	42	2,728,630	64,967	50.7	13.4	470	34,956,457	74,375	56.1	21.3
4	F	49	3,007,467	61,377	43.5	9.6	277	16,392,369	59,178	54.3	18.6
		91	5,736,097	63,034	46.8	11.3	747	51,348,826	68,740	55.4	20.3
6	M	248	12,099,920	48,790	40.6	0.9	86	4,812,529	55,960	40.0	2.6
6	F	194	7,776,869	40,087	37.5	1.2	115	5,986,872	52,060	36.8	2.4
		442	19,876,789	44,970	39.3	1.0	201	10,799,401	53,728	38.1	2.5
ALL		533	25,612,886	48,054	40.5	2.8	953	62,464,584	65,545	51.9	16.6

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

Health and Hospitals											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	12	1,020,052	85,004	69.3	41.9	18	1,604,936	89,163	68.6	42.9
1	F	21	1,834,570	87,360	72.4	43.0	31	2,653,739	85,604	70.8	41.8
		33	2,854,622	86,504	71.2	42.6	49	4,258,675	86,912	70.0	42.2
2	M	12	1,245,656	103,805	67.8	36.8	15	1,376,588	91,773	66.6	36.8
2	F	13	1,122,208	86,324	68.2	40.7	19	1,678,983	88,368	67.7	40.5
		25	2,367,864	94,715	68.0	38.8	34	3,055,571	89,870	67.2	38.9
4	M	6,775	515,352,786	76,067	52.9	14.3	7,380	548,834,617	74,368	52.4	13.5
4	F	16,224	1,212,640,830	74,744	52.8	14.5	17,605	1,274,543,690	72,397	52.3	13.8
		22,999	1,727,993,616	75,133	52.8	14.5	24,985	1,823,378,307	72,979	52.3	13.8
6	M	1,964	153,247,672	78,028	42.6	2.7	1,797	134,236,248	74,700	41.5	2.3
6	F	4,761	334,046,127	70,163	42.1	2.7	4,359	294,458,779	67,552	41.3	2.3
		6,725	487,293,799	72,460	42.2	2.7	6,156	428,695,027	69,639	41.3	2.3
ALL		29,782	2,220,509,901	74,559	50.5	11.9	31,224	2,259,387,580	72,361	50.2	11.6

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017						JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					
1	M	11	969,518	88,138	69.2	45.6	11	950,813	86,438	68.2	44.6
1	F	21	1,834,570	87,360	72.4	43.0	21	1,774,255	84,488	71.4	42.0
		32	2,804,088	87,628	71.3	43.9	32	2,725,068	85,158	70.3	42.9
2	M	11	1,093,779	99,434	67.8	39.3	11	1,083,731	98,521	66.8	38.3
2	F	13	1,122,208	86,324	68.2	40.7	13	1,087,855	83,681	67.2	39.7
		24	2,215,987	92,333	68.0	40.0	24	2,171,586	90,483	67.0	39.0
4	M	6,683	508,389,604	76,072	52.9	14.3	6,683	494,413,436	73,981	51.9	13.3
4	F	15,906	1,189,426,188	74,778	52.9	14.7	15,906	1,147,847,555	72,164	51.9	13.7
		22,589	1,697,815,792	75,161	52.9	14.6	22,589	1,642,260,991	72,702	51.9	13.6
6	M	1,571	123,191,864	78,416	42.8	3.3	1,571	118,084,643	75,165	41.8	2.3
6	F	3,718	261,367,103	70,298	42.7	3.3	3,718	249,115,981	67,003	41.7	2.3
		5,289	384,558,967	72,709	42.7	3.3	5,289	367,200,624	69,427	41.7	2.3
ALL		27,934	2,087,394,834	74,726	51.0	12.5	27,934	2,014,358,269	72,111	50.0	11.5

ADDITIONS DURING THE YEAR *						SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *					
1	M	1	50,534	50,534	70.0	1.0	7	654,123	93,446	69.3	40.1
1	F	0	0	0	0.0	0.0	10	879,484	87,948	69.6	41.4
		1	50,534	50,534	70.0	1.0	17	1,533,607	90,212	69.5	40.9
2	M	1	151,877	151,877	68.0	10.0	4	292,857	73,214	66.0	32.8
2	F	0	0	0	0.0	0.0	6	591,128	98,521	68.8	42.3
		1	151,877	151,877	68.0	10.0	10	883,985	88,399	67.7	38.5
4	M	92	6,963,182	75,687	48.2	9.1	697	54,421,181	78,079	56.4	15.5
4	F	318	23,214,642	73,002	46.8	8.2	1,699	126,696,135	74,571	55.5	15.4
		410	30,177,824	73,604	47.1	8.4	2,396	181,117,316	75,592	55.7	15.5
6	M	393	30,055,808	76,478	42.0	0.6	226	16,151,605	71,467	39.5	2.2
6	F	1,043	72,679,024	69,683	39.9	0.7	641	45,342,798	70,738	39.1	2.2
		1,436	102,734,832	71,542	40.5	0.7	867	61,494,403	70,928	39.2	2.2
ALL		1,848	133,115,067	72,032	42.0	2.4	3,290	245,029,311	74,477	51.5	12.2

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

Triborough Bridge and Tunnel Authority											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	2	247,252	123,626	64.0	42.0	2	271,285	135,643	64.0	42.0
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		2	247,252	123,626	64.0	42.0	2	271,285	135,643	64.0	42.0
2	M	0	0	0	0.0	0.0	0	0	0	0.0	42.0
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	864	88,279,576	102,175	49.1	16.0	916	93,915,874	102,528	48.8	15.5
4	F	226	22,190,079	98,186	50.2	16.7	236	22,901,788	97,041	50.1	16.6
		1,090	110,469,655	101,348	49.3	16.1	1,152	116,817,662	101,404	49.1	15.7
6	M	137	12,066,429	88,076	38.6	2.6	97	9,328,310	96,168	39.7	2.5
6	F	47	4,100,168	87,238	40.0	3.0	42	3,629,582	86,419	39.5	2.4
		184	16,166,597	87,862	39.0	2.7	139	12,957,892	93,222	39.7	2.5
ALL		1,276	126,883,504	99,438	47.9	14.3	1,293	130,046,839	100,578	48.1	14.4

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017							JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018				
1	M	2	247,252	123,626	65.0	43.0	2	271,285	135,643	64.0	42.0
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		2	247,252	123,626	65.0	43.0	2	271,285	135,643	64.0	42.0
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	843	86,134,613	102,176	49.2	16.2	843	86,040,573	102,065	48.2	15.2
4	F	214	20,879,620	97,568	50.8	17.2	214	20,832,768	97,349	49.8	16.2
		1,057	107,014,233	101,243	49.5	16.4	1,057	106,873,341	101,110	48.5	15.4
6	M	84	8,398,765	99,985	41.3	3.6	84	7,972,658	94,913	40.3	2.6
6	F	36	3,327,745	92,437	41.1	3.4	36	3,093,576	85,933	40.1	2.4
		120	11,726,510	97,721	41.2	3.6	120	11,066,234	92,219	40.2	2.6
ALL		1,179	118,987,995	100,923	48.7	15.1	1,179	118,210,860	100,264	47.7	14.1

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	21	2,144,963	102,141	45.3	9.2	73	7,875,301	107,881	56.3	19.6
4	F	12	1,310,459	109,205	40.2	8.0	22	2,069,020	94,046	53.5	20.4
		33	3,455,422	104,710	43.5	8.8	95	9,944,321	104,677	55.6	19.8
6	M	53	3,667,664	69,201	34.5	1.0	13	1,355,652	104,281	36.2	2.0
6	F	11	772,423	70,220	36.7	1.6	6	536,006	89,334	36.3	2.5
		64	4,440,087	69,376	34.8	1.1	19	1,891,658	99,561	36.2	2.2
ALL		97	7,895,509	81,397	37.8	3.7	114	11,835,979	103,824	52.4	16.9

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.



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

CUNY Senior College											
TIER GENDER		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
		NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	5	340,323	68,065	72.0	40.0	8	574,231	71,779	70.6	41.4
1	F	6	337,485	56,248	73.0	37.0	7	372,762	53,252	73.1	38.6
		11	677,808	61,619	72.5	38.4	15	946,993	63,133	71.8	40.1
2	M	1	114,951	114,951	71.0	42.0	1	111,697	111,697	70.0	41.0
2	F	3	202,148	67,383	67.3	33.7	5	340,319	68,064	69.0	40.2
		4	317,099	79,275	68.2	35.7	6	452,016	75,336	69.2	40.3
4	M	1,631	113,916,872	69,845	51.2	14.3	1,743	116,933,332	67,087	50.6	13.5
4	F	1,614	85,857,185	53,195	53.7	14.3	1,748	87,619,091	50,125	52.8	13.4
		3,245	199,774,057	61,564	52.4	14.3	3,491	204,552,423	58,594	51.7	13.5
6	M	683	37,454,183	54,838	41.0	2.6	582	31,499,747	54,123	40.5	2.2
6	F	609	25,467,326	41,818	40.3	2.4	511	21,282,620	41,649	39.9	2.1
		1,292	62,921,509	48,701	40.7	2.5	1,093	52,782,367	48,291	40.2	2.2
<b>ALL</b>		<b>4,552</b>	<b>263,690,473</b>	<b>57,928</b>	<b>49.2</b>	<b>11.1</b>	<b>4,605</b>	<b>258,733,799</b>	<b>56,185</b>	<b>49.1</b>	<b>10.9</b>

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017							JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018				
1	M	5	340,323	68,065	72.0	40.0	5	327,851	65,570	71.0	39.0
1	F	6	337,485	56,248	73.0	37.0	6	322,861	53,810	72.0	36.0
		11	677,808	61,619	72.5	38.4	11	650,712	59,156	71.5	37.4
2	M	1	114,951	114,951	71.0	42.0	1	111,697	111,697	70.0	41.0
2	F	2	114,267	57,134	67.5	39.5	2	109,556	54,778	66.5	38.5
		3	229,218	76,406	68.7	40.3	3	221,253	73,751	67.7	39.3
4	M	1,596	110,967,574	69,529	51.3	14.4	1,596	107,810,674	67,551	50.3	13.4
4	F	1,585	84,231,939	53,143	53.8	14.5	1,585	80,289,175	50,656	52.8	13.5
		3,181	195,199,513	61,364	52.5	14.4	3,181	188,099,849	59,132	51.5	13.4
6	M	504	28,637,688	56,821	41.9	3.2	504	27,466,633	54,497	41.0	2.2
6	F	426	18,723,633	43,952	41.4	3.1	426	17,611,878	41,342	40.4	2.1
		930	47,361,321	50,926	41.7	3.1	930	45,078,511	48,472	40.7	2.1
<b>ALL</b>		<b>4,125</b>	<b>243,467,860</b>	<b>59,023</b>	<b>50.1</b>	<b>12.0</b>	<b>4,125</b>	<b>234,050,325</b>	<b>56,739</b>	<b>49.1</b>	<b>11.0</b>

ADDITIONS DURING THE YEAR *							SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	0	0	0	0.0	0.0	3	246,380	82,127	70.0	45.3
1	F	0	0	0	0.0	0.0	1	49,901	49,901	80.0	54.0
		0	0	0	0.0	0.0	4	296,281	74,070	72.5	47.5
2	M	0	0	0	0.0	0.0	0	0	0	0.0	0.0
2	F	1	87,881	87,881	67.0	22.0	3	230,763	76,921	70.7	41.3
		1	87,881	87,881	67.0	22.0	3	230,763	76,921	70.7	41.3
4	M	35	2,949,298	84,266	48.6	9.5	147	9,122,658	62,059	54.7	14.6
4	F	29	1,625,246	56,043	48.6	8.2	163	7,329,916	44,969	52.8	13.1
		64	4,574,544	71,477	48.6	8.9	310	16,452,574	53,073	53.7	13.8
6	M	179	8,816,495	49,254	38.4	0.9	78	4,033,114	51,707	37.6	2.3
6	F	183	6,743,693	36,851	37.9	0.9	85	3,670,742	43,185	37.4	2.3
		362	15,560,188	42,984	38.1	0.9	163	7,703,856	47,263	37.5	2.3
<b>ALL</b>		<b>427</b>	<b>20,222,613</b>	<b>47,360</b>	<b>39.8</b>	<b>2.2</b>	<b>480</b>	<b>24,683,474</b>	<b>51,424</b>	<b>48.5</b>	<b>10.4</b>

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

All Other Non-NYC Contributing Entities											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
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	128,947	128,947	72.0	20.0	1	122,739	122,739	71.0	19.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	128,947	128,947	72.0	20.0	1	122,739	122,739	71.0	19.0
4	M	71	9,099,427	128,161	53.7	17.1	71	8,819,184	124,214	53.9	16.8
4	F	94	9,292,047	98,852	52.1	13.3	95	9,120,519	96,005	51.7	12.2
		165	18,391,474	111,463	52.8	15.0	166	17,939,703	108,071	52.6	14.2
6	M	5	539,387	107,877	35.8	3.2	3	348,927	116,309	46.0	1.7
6	F	3	298,582	99,527	42.0	1.0	1	78,841	78,841	34.0	0.0
		8	837,969	104,746	38.1	2.4	4	427,768	106,942	43.0	1.2
ALL		174	19,358,390	111,255	52.2	14.4	171	18,490,210	108,130	52.5	13.9

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017							JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018				
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	128,947	128,947	72.0	20.0	1	122,739	122,739	71.0	19.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	128,947	128,947	72.0	20.0	1	122,739	122,739	71.0	19.0
4	M	66	8,417,658	127,540	54.4	17.7	66	8,176,778	123,891	53.4	16.7
4	F	90	8,889,462	98,772	52.4	13.4	90	8,608,115	95,646	51.4	12.4
		156	17,307,120	110,943	53.2	15.3	156	16,784,893	107,595	52.2	14.3
6	M	2	228,531	114,266	40.5	3.5	2	212,007	106,004	39.5	2.5
6	F	1	80,418	80,418	35.0	1.0	1	78,841	78,841	34.0	0.0
		3	308,949	102,983	38.7	2.7	3	290,848	96,949	37.7	1.7
ALL		160	17,745,016	110,906	53.1	15.1	160	17,198,480	107,491	52.1	14.1

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	681,769	136,354	45.0	8.6	5	642,406	128,481	61.4	17.6
4	F	4	402,585	100,646	45.5	11.0	5	512,404	102,481	57.4	8.6
		9	1,084,354	120,484	45.2	9.7	10	1,154,810	115,481	59.4	13.1
6	M	3	310,856	103,619	32.7	3.0	1	136,920	136,920	59.0	0.0
6	F	2	218,164	109,082	45.5	1.0	0	0	0	0.0	0.0
		5	529,020	105,804	37.8	2.2	1	136,920	136,920	59.0	0.0
ALL		14	1,613,374	115,241	42.6	7.0	11	1,291,730	117,430	59.4	11.9

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

New York City: Sanitation											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018						TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017					
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	4	384,185	96,046	72.5	47.8	4	366,103	91,526	71.5	46.8
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	384,185	96,046	72.5	47.8	4	366,103	91,526	71.5	46.8
2	M	5	549,335	109,867	65.8	31.0	4	417,758	104,440	65.5	33.3
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		5	549,335	109,867	65.8	31.0	4	417,758	104,440	65.5	33.3
4	M	5,084	544,540,613	107,109	46.0	15.9	5,363	558,881,144	104,211	45.4	15.3
4	F	130	14,036,155	107,970	47.9	16.7	138	14,479,057	104,921	47.6	16.0
		5,214	558,576,768	107,130	46.0	15.9	5,501	573,360,201	104,228	45.5	15.3
3R	M	2,178	152,175,017	69,869	37.0	4.1	1,905	118,442,780	62,175	36.7	3.5
3R	F	96	6,076,516	63,297	37.7	4.6	83	4,778,969	57,578	37.5	4.1
		2,274	158,251,533	69,592	37.0	4.1	1,988	123,221,749	61,983	36.7	3.5
<b>ALL</b>		<b>7,497</b>	<b>717,761,821</b>	<b>95,740</b>	<b>43.3</b>	<b>12.4</b>	<b>7,497</b>	<b>697,365,811</b>	<b>93,019</b>	<b>43.2</b>	<b>12.2</b>

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017						JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					
1	M	4	384,185	96,046	72.5	47.8	4	366,103	91,526	71.5	46.8
1	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	384,185	96,046	72.5	47.8	4	366,103	91,526	71.5	46.8
2	M	4	430,017	107,504	66.5	34.3	4	417,758	104,440	65.5	33.3
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		4	430,017	107,504	66.5	34.3	4	417,758	104,440	65.5	33.3
4	M	5,068	543,057,965	107,154	46.0	15.9	5,068	527,735,231	104,131	45.0	14.9
4	F	129	13,943,906	108,092	48.0	16.7	129	13,622,539	105,601	47.0	15.7
		5,197	557,001,871	107,178	46.0	16.0	5,197	541,357,770	104,167	45.0	15.0
3R	M	1,880	136,558,704	72,638	37.7	4.5	1,880	116,938,143	62,201	36.7	3.5
3R	F	81	5,337,513	65,895	38.7	5.2	81	4,681,087	57,791	37.7	4.2
		1,961	141,896,217	72,359	37.8	4.5	1,961	121,619,230	62,019	36.8	3.5
<b>ALL</b>		<b>7,166</b>	<b>699,712,290</b>	<b>97,643</b>	<b>43.8</b>	<b>12.9</b>	<b>7,166</b>	<b>663,760,861</b>	<b>92,626</b>	<b>42.8</b>	<b>11.9</b>

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	1	119,318	119,318	63.0	18.0	0	0	0	0.0	0.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		1	119,318	119,318	63.0	18.0	0	0	0	0.0	0.0
4	M	16	1,482,648	92,666	42.6	12.8	295	31,145,913	105,579	53.1	21.9
4	F	1	92,249	92,249	36.0	11.0	9	856,518	95,169	56.4	20.2
		17	1,574,897	92,641	42.2	12.7	304	32,002,431	105,271	53.2	21.8
3R	M	298	15,616,313	52,404	32.0	1.4	25	1,504,637	60,185	35.8	3.5
3R	F	15	739,003	49,267	32.5	1.7	2	97,882	48,941	30.0	2.0
		313	16,355,316	52,253	32.1	1.5	27	1,602,519	59,353	35.4	3.4
<b>ALL</b>		<b>331</b>	<b>18,049,531</b>	<b>54,530</b>	<b>32.7</b>	<b>2.1</b>	<b>331</b>	<b>33,604,950</b>	<b>101,526</b>	<b>51.7</b>	<b>20.3</b>

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

New York City: Correction											
		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	1	124,177	124,177	67.0	46.0	1	122,810	122,810	66.0	45.0
1	F	1	124,703	124,703	68.0	45.0	1	122,972	122,972	67.0	44.0
		2	248,880	124,440	67.5	45.5	2	245,782	122,891	66.5	44.5
2	M	0	0	0	0.0	0.0	1	50,620	50,620	41.0	9.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	1	50,620	50,620	41.0	9.0
3	M	3,084	331,383,617	107,453	43.6	13.1	3,088	341,982,354	110,746	44.7	14.3
3	F	2,771	305,280,500	110,170	43.5	13.8	2,861	316,801,339	110,731	43.7	14.2
		5,855	636,664,117	108,739	43.6	13.5	5,949	658,783,693	110,739	44.2	14.2
3R	M	2,875	177,546,715	61,755	32.8	2.4	2,303	133,603,336	58,013	32.8	2.1
3R	F	1,652	104,193,096	63,071	33.1	3.0	1,313	76,512,956	58,273	32.8	2.3
		4,527	281,739,811	62,235	32.9	2.6	3,616	210,116,292	58,107	32.8	2.2
ALL		10,384	918,652,808	88,468	38.9	8.7	9,568	869,196,387	90,844	39.9	9.7

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017						JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					
1	M	1	124,177	124,177	67.0	46.0	1	122,810	122,810	66.0	45.0
1	F	1	124,703	124,703	68.0	45.0	1	122,972	122,972	67.0	44.0
		2	248,880	124,440	67.5	45.5	2	245,782	122,891	66.5	44.5
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	2,633	300,029,842	113,950	45.3	14.7	2,633	294,323,258	111,782	44.3	13.7
3	F	2,469	283,687,272	114,900	44.6	15.0	2,469	278,210,659	112,682	43.6	14.0
		5,102	583,717,114	114,409	45.0	14.8	5,102	572,533,917	112,218	44.0	13.8
3R	M	1,626	109,293,937	67,216	34.3	3.1	1,626	94,416,082	58,066	33.3	2.1
3R	F	938	62,748,549	66,896	34.1	3.2	938	54,399,508	57,995	33.1	2.2
		2,564	172,042,486	67,099	34.2	3.1	2,564	148,815,590	58,040	33.2	2.1
<b>ALL</b>		<b>7,668</b>	<b>756,008,480</b>	<b>98,593</b>	<b>41.4</b>	<b>10.9</b>	<b>7,668</b>	<b>721,595,289</b>	<b>94,105</b>	<b>40.4</b>	<b>9.9</b>

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	50,620	50,620	41.0	9.0
2	F	0	0	0	0.0	0.0	0	0	0	0.0	0.0
		0	0	0	0.0	0.0	1	50,620	50,620	41.0	9.0
3	M	451	31,353,775	69,521	33.9	3.9	455	47,659,096	104,745	47.2	17.6
3	F	302	21,593,228	71,501	34.4	4.4	392	38,590,680	98,446	44.2	15.2
		753	52,947,003	70,315	34.1	4.1	847	86,249,776	101,830	45.8	16.5
3R	M	1,249	68,252,778	54,646	31.0	1.6	677	39,187,254	57,884	31.7	2.2
3R	F	714	41,444,547	58,046	31.8	2.7	375	22,113,448	58,969	32.3	2.6
		1,963	109,697,325	55,882	31.3	2.0	1,052	61,300,702	58,271	31.9	2.3
<b>ALL</b>		<b>2,716</b>	<b>162,644,328</b>	<b>59,884</b>	<b>32.1</b>	<b>2.6</b>	<b>1,900</b>	<b>147,601,098</b>	<b>77,685</b>	<b>38.1</b>	<b>8.6</b>

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

All Other New York City											
TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018							TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	98	9,056,144	92,410	72.7	46.2	123	11,440,416	93,012	72.0	44.8
1	F	103	7,532,800	73,134	71.4	46.1	135	10,110,314	74,891	70.2	44.9
		201	16,588,944	82,532	72.0	46.2	258	21,550,730	83,530	71.0	44.9
2	M	89	8,607,275	96,711	58.9	29.5	109	9,595,951	88,036	58.2	28.9
2	F	91	6,900,212	75,827	62.1	33.9	122	8,807,055	72,189	60.5	31.9
		180	15,507,487	86,153	60.6	31.7	231	18,403,006	79,667	59.4	30.5
4	M	27,129	2,271,479,644	83,729	51.9	16.4	28,804	2,318,545,847	80,494	51.4	15.8
4	F	32,545	2,264,912,373	69,593	51.2	16.5	34,359	2,295,976,487	66,823	50.6	15.8
		59,674	4,536,392,017	76,020	51.5	16.4	63,163	4,614,522,334	73,057	50.9	15.8
3R/6	M	13,321	845,846,674	63,497	38.4	2.5	11,390	684,646,666	60,109	37.6	2.1
3R/6	F	13,570	773,964,601	57,035	38.2	2.4	10,966	600,834,477	54,791	37.9	2.0
		26,891	1,619,811,275	60,236	38.3	2.4	22,356	1,285,481,143	57,500	37.7	2.1
ALL		86,946	6,188,299,723	71,174	47.5	12.2	86,008	5,939,957,213	69,063	47.6	12.4

JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017						JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018					
1	M	98	9,056,144	92,410	72.7	46.2	98	8,873,232	90,543	71.7	45.2
1	F	101	7,401,758	73,285	71.3	46.4	101	7,247,593	71,758	70.3	45.4
		199	16,457,902	82,703	72.0	46.3	199	16,120,825	81,009	71.0	45.3
2	M	87	8,428,126	96,875	59.0	30.0	87	8,181,581	94,041	58.0	29.0
2	F	89	6,751,766	75,863	62.2	34.1	89	6,519,608	73,254	61.2	33.1
		176	15,179,892	86,249	60.7	32.0	176	14,701,189	83,529	59.7	31.0
4	M	26,703	2,242,366,819	83,974	52.0	16.5	26,703	2,152,534,333	80,610	51.0	15.5
4	F	31,797	2,218,220,371	69,762	51.3	16.7	31,797	2,129,808,699	66,981	50.3	15.7
		58,500	4,460,587,190	76,249	51.6	16.6	58,500	4,282,343,032	73,202	50.6	15.6
3R/6	M	9,758	652,737,238	66,893	39.4	3.1	9,758	598,427,506	61,327	38.4	2.1
3R/6	F	9,639	569,180,907	59,050	39.3	3.1	9,639	527,527,549	54,728	38.3	2.1
		19,397	1,221,918,145	62,995	39.3	3.1	19,397	1,125,955,055	58,048	38.3	2.1
ALL		78,272	5,714,143,129	73,004	48.6	13.4	78,272	5,439,120,101	69,490	47.6	12.4

ADDITIONS DURING THE YEAR *						SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *					
1	M	0	0	0	0.0	0.0	25	2,567,184	102,687	73.3	43.4
1	F	2	131,042	65,521	76.0	32.5	34	2,862,721	84,198	69.8	43.3
		2	131,042	65,521	76.0	32.5	59	5,429,905	92,032	71.3	43.3
2	M	2	179,149	89,575	55.5	7.5	22	1,414,370	64,290	59.0	28.5
2	F	2	148,446	74,223	57.0	26.5	33	2,287,447	69,317	58.6	28.7
		4	327,595	81,899	56.3	17.0	55	3,701,817	67,306	58.8	28.6
4	M	426	29,112,825	68,340	47.1	8.5	2,101	166,011,514	79,015	56.7	19.4
4	F	748	46,692,002	62,422	45.1	8.6	2,562	166,167,788	64,859	53.7	17.1
		1,174	75,804,827	64,570	45.8	8.6	4,663	332,179,302	71,237	55.0	18.2
3R/6	M	3,563	193,109,436	54,199	35.5	0.8	1,632	86,219,160	52,830	32.5	2.2
3R/6	F	3,931	204,783,694	52,095	35.7	0.7	1,327	73,306,928	55,243	35.6	1.8
		7,494	397,893,130	53,095	35.6	0.7	2,959	159,526,088	53,912	33.9	2.0
ALL		8,674	474,156,594	54,664	37.0	1.8	7,736	500,837,112	64,741	47.1	12.2

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

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

		Total									
		TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2018					TOTAL ACTIVE MEMBERS AS OF JUNE 30, 2017				
TIER	GENDER	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC	NUMBER	SALARY	AVG SAL	AVG AGE	AVG SVC
1	M	147	13,711,344	93,274	72.7	45.4	195	18,203,983	93,354	71.9	44.0
1	F	139	10,440,098	75,109	71.6	45.3	184	13,960,792	75,874	70.5	44.2
		286	24,151,442	84,446	72.1	45.3	379	32,164,775	84,867	71.2	44.1
2	M	126	12,335,006	97,897	61.7	32.0	157	14,140,443	90,067	60.8	31.6
2	F	117	8,854,045	75,676	63.4	35.2	157	11,491,832	73,196	62.2	33.7
		243	21,189,051	87,198	62.5	33.5	314	25,632,275	81,631	61.5	32.7
3/4	M	71,861	6,267,542,745	87,218	51.6	16.8	76,612	6,480,713,514	84,591	51.2	16.4
3/4	F	61,078	4,471,301,214	73,206	51.3	16.0	64,994	4,596,188,201	70,717	50.8	15.3
		132,939	10,738,843,959	80,780	51.5	16.4	141,606	11,076,901,715	78,223	51.0	15.9
3R/6	M	33,205	2,235,753,003	67,332	39.1	2.7	27,666	1,778,173,902	64,273	38.7	2.4
3R/6	F	23,899	1,439,180,602	60,219	38.8	2.5	19,827	1,152,368,987	58,121	38.5	2.2
		57,104	3,674,933,605	64,355	39.0	2.6	47,493	2,930,542,889	61,705	38.6	2.3
<b>ALL</b>		<b>190,572</b>	<b>14,459,118,057</b>	<b>75,872</b>	<b>47.8</b>	<b>12.4</b>	<b>189,792</b>	<b>14,065,241,654</b>	<b>74,109</b>	<b>48.0</b>	<b>12.6</b>

		JUNE 30, 2018 MEMBERS ALSO PRESENT AS OF JUNE 30, 2017					JUNE 30, 2017 MEMBERS ALSO PRESENT AS OF JUNE 30, 2018				
1	M	146	13,660,810	93,567	72.7	45.7	146	13,345,507	91,408	71.7	44.7
1	F	137	10,309,056	75,249	71.5	45.5	137	10,066,109	73,475	70.5	44.5
		283	23,969,866	84,699	72.1	45.6	283	23,411,616	82,727	71.1	44.6
2	M	121	11,780,836	97,362	61.7	32.8	121	11,488,191	94,944	60.7	31.8
2	F	114	8,617,718	75,594	63.5	35.4	114	8,330,957	73,079	62.5	34.4
		235	20,398,554	86,802	62.6	34.1	235	19,819,148	84,337	61.6	33.1
3/4	M	70,396	6,161,905,473	87,532	51.8	17.0	70,396	5,956,760,107	84,618	50.8	16.0
3/4	F	59,388	4,358,126,513	73,384	51.5	16.2	59,388	4,201,553,224	70,748	50.5	15.2
		129,784	10,520,031,986	81,058	51.7	16.6	129,784	10,158,313,331	78,271	50.7	15.6
3R/6	M	24,507	1,737,669,596	70,905	40.3	3.4	24,507	1,595,457,140	65,102	39.3	2.4
3R/6	F	17,109	1,065,151,088	62,257	39.9	3.2	17,109	990,661,826	57,903	38.9	2.2
		41,616	2,802,820,684	67,350	40.1	3.3	41,616	2,586,118,966	62,142	39.1	2.3
<b>ALL</b>		<b>171,918</b>	<b>13,367,221,090</b>	<b>77,753</b>	<b>48.9</b>	<b>13.5</b>	<b>171,918</b>	<b>12,787,663,061</b>	<b>74,382</b>	<b>47.9</b>	<b>12.5</b>

		ADDITIONS DURING THE YEAR *					SEPARATIONS FROM MEMBERSHIP DURING THE YEAR *				
1	M	1	50,534	50,534	70.0	1.0	49	4,858,476	99,153	72.5	42.0
1	F	2	131,042	65,521	76.0	32.5	47	3,894,683	82,866	70.3	43.4
		3	181,576	60,525	74.0	22.0	96	8,753,159	91,179	71.4	42.7
2	M	5	554,170	110,834	61.8	13.8	36	2,652,252	73,674	61.2	31.0
2	F	3	236,327	78,776	60.3	25.0	43	3,160,875	73,509	61.3	31.9
		8	790,497	98,812	61.3	18.0	79	5,813,127	73,584	61.3	31.5
3/4	M	1,465	105,637,272	72,107	43.5	8.4	6,216	523,953,407	84,291	56.2	20.3
3/4	F	1,690	113,174,701	66,967	43.5	8.2	5,606	394,634,977	70,395	53.6	16.6
		3,155	218,811,973	69,354	43.5	8.3	11,822	918,588,384	77,702	55.0	18.6
3R/6	M	8,698	498,083,407	57,264	35.9	0.9	3,159	182,716,762	57,840	34.2	2.2
3R/6	F	6,790	374,029,514	55,085	36.2	1.0	2,718	161,707,161	59,495	36.3	2.0
		15,488	872,112,921	56,309	36.0	0.9	5,877	344,423,923	58,605	35.2	2.1
<b>ALL</b>		<b>18,654</b>	<b>1,091,896,967</b>	<b>58,534</b>	<b>37.3</b>	<b>2.2</b>	<b>17,874</b>	<b>1,277,578,593</b>	<b>71,477</b>	<b>48.6</b>	<b>13.3</b>

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

\* Separations and additions do not include members who joined after June 30, 2017 and are no longer members on June 30, 2018.

**Table XIII-8**  
**Summary of Non-Pensioner Membership as of June 30, 2018**

STATUS	TIER 1		TIER 2		TIER 3/4		TIER 3R/6		ALL TIERS	
	NUMBER	SALARY <sup>1</sup>	NUMBER	SALARY <sup>1</sup>	NUMBER	SALARY <sup>1</sup>	NUMBER	SALARY <sup>1</sup>	NUMBER	SALARY <sup>1</sup>
<i>MALES:</i>										
ACTIVES	147	13,711,344	126	12,335,008	71,861	6,267,542,747	33,205	2,235,753,003	105,339	8,529,342,101
ACTIVE OFF PAYROLL <sup>2</sup>	4	298,089	11	543,429	5,479	278,085,309	3,965	201,563,273	9,459	480,490,100
VESTED	16	699,212	39	2,011,171	9,599	544,573,794	14	1,147,628	9,668	548,431,805
<b>ALL STATUS</b>	<b>167</b>	<b>14,708,645</b>	<b>176</b>	<b>14,889,608</b>	<b>86,939</b>	<b>7,090,201,850</b>	<b>37,184</b>	<b>2,438,463,904</b>	<b>124,466</b>	<b>9,558,264,006</b>
<i>FEMALES:</i>										
ACTIVES	139	10,440,098	117	8,854,045	61,078	4,471,301,209	23,899	1,439,180,604	85,233	5,929,775,955
ACTIVE OFF PAYROLL <sup>2</sup>	5	377,653	4	210,243	6,643	328,775,605	4,000	216,921,128	10,652	546,284,629
VESTED	16	690,141	27	1,118,938	11,667	626,718,602	11	868,364	11,721	629,396,045
<b>ALL STATUS</b>	<b>160</b>	<b>11,507,892</b>	<b>148</b>	<b>10,183,226</b>	<b>79,388</b>	<b>5,426,795,416</b>	<b>27,910</b>	<b>1,656,970,096</b>	<b>107,606</b>	<b>7,105,456,629</b>
<i>TOTAL:</i>										
ACTIVES	286	24,151,442	243	21,189,052	132,939	10,738,843,956	57,104	3,674,933,607	190,572	14,459,118,057
ACTIVE OFF PAYROLL <sup>2</sup>	9	675,742	15	753,672	12,122	606,860,914	7,965	418,484,401	20,111	1,026,774,729
VESTED	32	1,389,353	66	3,130,109	21,266	1,171,292,396	25	2,015,992	21,389	1,177,827,850
<b>ALL STATUS</b>	<b>327</b>	<b>26,216,537</b>	<b>324</b>	<b>25,072,833</b>	<b>166,327</b>	<b>12,516,997,266</b>	<b>65,094</b>	<b>4,095,434,000</b>	<b>232,072</b>	<b>16,663,720,636</b>

<sup>1</sup> 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.

<sup>2</sup> This table does not include members who are not vested and have either withdrawn or been off payroll for 5 years, and therefore are solely eligible to receive a refund of their member contributions. There are 8,372 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, 2018 (Lag)					June 30, 2017 (Lag)				
	Number	Annual Amounts Payable				Number	Annual Amounts Payable			
		Pensioners	Designated Annuitants	Supplementation	Total		Pensioners	Designated Annuitants	Supplementation	Total
Service Pensioners	124,627	\$ 3,768,876,916	\$ 0	\$ 224,366,137	\$ 3,993,243,053	121,047	\$ 3,564,801,235	\$ 0	\$ 224,519,451	\$ 3,789,320,686
Ordinary Disability Pensioners	9,815	164,094,096	0	21,794,842	\$ 185,888,938	10,404	171,199,170	0	22,562,296	193,761,466
Accidental Disability Pensioners	4,697	152,349,791	0	22,263,712	\$ 174,613,503	4,059	138,018,352	0	21,262,665	159,281,017
Accidental Death Pensioners	200	8,358,399	0	476,243	\$ 8,834,642	166	6,576,736	0	441,126	7,017,862
Other Beneficiaries	14,777	202,832,268	2,858,510	27,662,804	\$ 233,353,582	14,743	200,471,136	3,026,669	29,107,102	232,604,907
Total	154,116	\$ 4,296,511,470	\$ 2,858,510	\$ 296,563,738	\$ 4,595,933,718	150,419	\$ 4,081,066,629	\$ 3,026,669	\$ 297,892,640	\$ 4,381,985,938



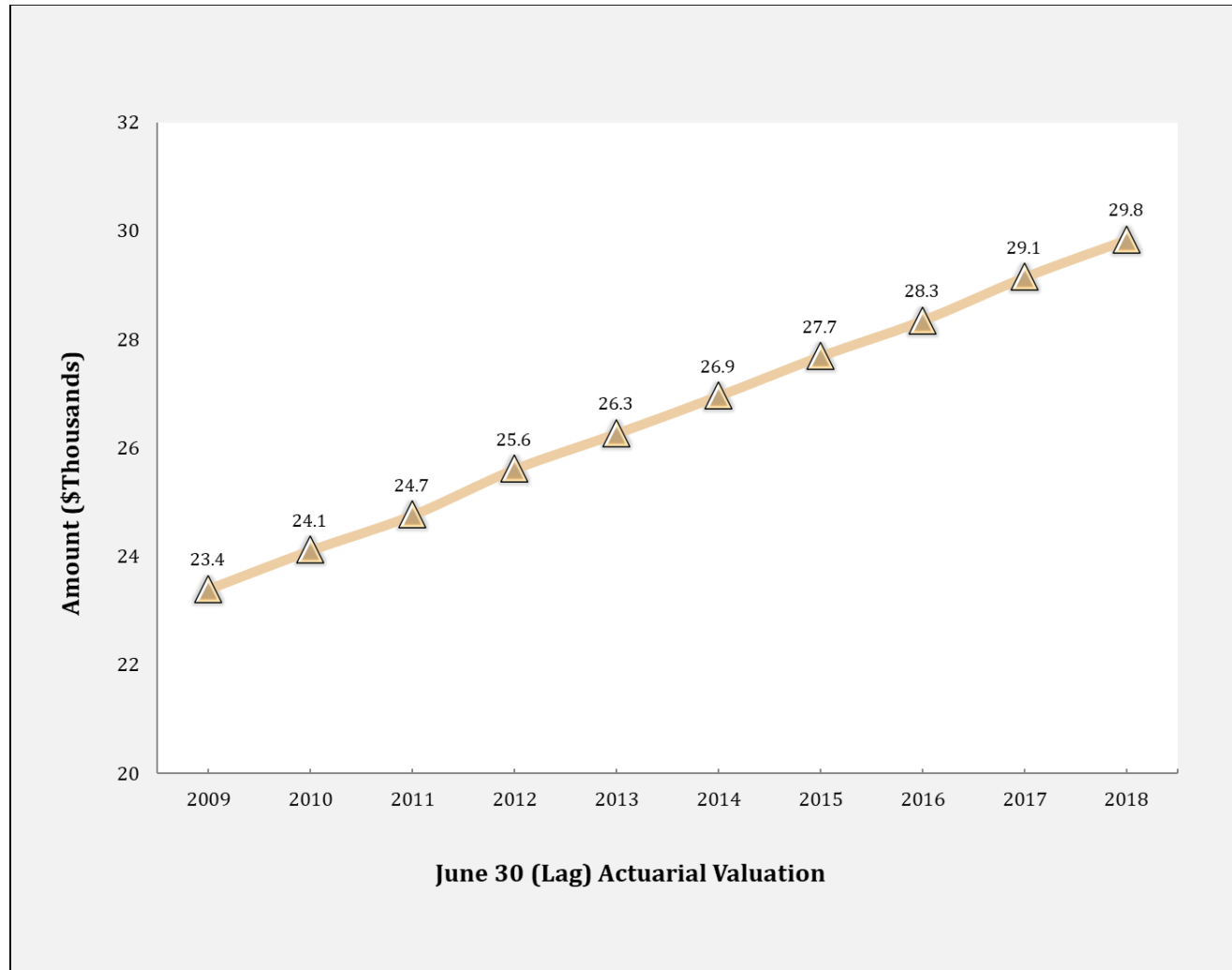
**Table XIII-10**  
**Distribution of Pension Benefits by Cause and Age as of June 30, 2018**

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	19	1,064,086	56,005	10	527,258	52,726	29	1,591,344	54,874
45 TO 49	319	16,384,818	51,363	175	9,067,341	51,813	494	25,452,159	51,523
50 TO 54	1,900	95,959,603	50,505	824	40,083,676	48,645	2,724	136,043,279	49,942
55 TO 59	5,332	243,885,324	45,740	2,328	87,055,013	37,395	7,660	330,940,337	43,204
60 TO 64	10,226	410,730,987	40,165	5,958	176,832,623	29,680	16,184	587,563,610	36,305
65 TO 69	15,427	581,529,921	37,696	10,162	293,202,556	28,853	25,589	874,732,477	34,184
70 TO 74	15,028	535,917,260	35,661	10,210	276,485,165	27,080	25,238	812,402,425	32,190
75 TO 79	12,248	395,894,280	32,323	7,656	188,077,766	24,566	19,904	583,972,046	29,339
80 TO 84	8,008	231,335,557	28,888	4,984	103,785,408	20,824	12,992	335,120,965	25,794
85 TO 89	4,590	123,418,289	26,889	3,204	59,819,571	18,670	7,794	183,237,860	23,510
90 & UP	2,956	74,413,849	25,174	3,063	47,772,702	15,597	6,019	122,186,551	20,300
<b>TOTAL</b>	<b>76,053</b>	<b>2,710,533,974</b>	<b>35,640</b>	<b>48,574</b>	<b>1,282,709,079</b>	<b>26,407</b>	<b>124,627</b>	<b>3,993,243,053</b>	<b>32,042</b>
<i>ORDINARY DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	2	34,786	17,393	0	0	0	2	34,786	17,393
35 TO 39	14	279,150	19,939	9	161,871	17,986	23	441,021	19,175
40 TO 44	38	835,002	21,974	43	707,391	16,451	81	1,542,393	19,042
45 TO 49	159	3,491,119	21,957	108	1,911,277	17,697	267	5,402,396	20,234
50 TO 54	480	10,369,366	21,603	352	6,281,632	17,846	832	16,650,998	20,013
55 TO 59	970	21,123,975	21,777	714	12,741,264	17,845	1,684	33,865,239	20,110
60 TO 64	1,131	23,398,744	20,689	823	14,609,160	17,751	1,954	38,007,904	19,451
65 TO 69	1,095	21,748,389	19,862	674	11,632,401	17,259	1,769	33,380,790	18,870
70 TO 74	1,025	19,744,463	19,263	452	7,184,014	15,894	1,477	26,928,477	18,232
75 TO 79	714	13,860,289	19,412	302	4,170,706	13,810	1,016	18,030,995	17,747
80 TO 84	302	5,672,611	18,783	133	1,659,779	12,480	435	7,332,390	16,856
85 TO 89	120	2,035,552	16,963	65	637,281	9,804	185	2,672,833	14,448
90 & UP	65	1,308,088	20,124	25	290,628	11,625	90	1,598,716	17,764
<b>TOTAL</b>	<b>6,115</b>	<b>123,901,534</b>	<b>20,262</b>	<b>3,700</b>	<b>61,987,404</b>	<b>16,753</b>	<b>9,815</b>	<b>185,888,938</b>	<b>18,939</b>
<i>ACCIDENTAL DISABILITY:</i>									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	13	505,228	38,864	5	132,147	26,429	18	637,375	35,410
35 TO 39	54	2,856,312	52,895	9	510,075	56,675	63	3,366,387	53,435
40 TO 44	111	5,837,838	52,593	32	1,541,852	48,183	143	7,379,690	51,606
45 TO 49	216	10,728,041	49,667	76	3,353,985	44,131	292	14,082,026	48,226
50 TO 54	469	22,163,812	47,258	127	4,867,001	38,323	596	27,030,813	45,354
55 TO 59	544	23,371,889	42,963	139	4,836,001	34,791	683	28,207,890	41,300
60 TO 64	487	19,103,153	39,226	111	3,836,723	34,565	598	22,939,876	38,361
65 TO 69	527	18,859,575	35,787	59	1,566,216	26,546	586	20,425,791	34,856
70 TO 74	642	20,763,398	32,342	48	1,048,799	21,850	690	21,812,197	31,612
75 TO 79	487	14,455,616	29,683	45	784,090	17,424	532	15,239,706	28,646
80 TO 84	230	6,823,086	29,666	31	455,505	14,694	261	7,278,591	27,887
85 TO 89	134	3,840,436	28,660	15	215,758	14,384	149	4,056,194	27,223
90 & UP	74	1,947,055	26,312	12	209,912	17,493	86	2,156,967	25,081
<b>TOTAL</b>	<b>3,988</b>	<b>151,255,439</b>	<b>37,928</b>	<b>709</b>	<b>23,358,064</b>	<b>32,945</b>	<b>4,697</b>	<b>174,613,503</b>	<b>37,176</b>

**Table XIII-10**  
**Distribution of Pension Benefits by Cause and Age as of June 30, 2018 (cont'd)**

AGE	MALE			FEMALE			TOTAL		
	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE	NUMBER	BENEFITS	AVERAGE
<i>ACCIDENTAL DEATH:</i>									
UNDER 30	1	33,428	33,428	1	37,602	37,602	2	71,030	35,515
30 TO 34	2	92,526	46,263	2	46,132	23,066	4	138,658	34,665
35 TO 39	4	151,211	37,803	1	25,357	25,357	5	176,568	35,314
40 TO 44	2	47,151	23,576	6	231,585	38,598	8	278,736	34,842
45 TO 49	5	164,209	32,842	11	500,352	45,487	16	664,561	41,535
50 TO 54	0	0	0	19	1,206,625	63,507	19	1,206,625	63,507
55 TO 59	2	64,539	32,270	27	1,288,463	47,721	29	1,353,002	46,655
60 TO 64	0	0	0	27	1,179,744	43,694	27	1,179,744	43,694
65 TO 69	1	34,613	34,613	27	1,159,711	42,952	28	1,194,324	42,654
70 TO 74	2	95,691	47,846	23	1,259,142	54,745	25	1,354,833	54,193
75 TO 79	2	59,688	29,844	20	757,135	37,857	22	816,823	37,128
80 TO 84	0	0	0	8	248,661	31,083	8	248,661	31,083
85 TO 89	0	0	0	3	52,356	17,452	3	52,356	17,452
90 & UP	0	0	0	4	98,721	24,680	4	98,721	24,680
<b>TOTAL</b>	<b>21</b>	<b>743,056</b>	<b>35,384</b>	<b>179</b>	<b>8,091,586</b>	<b>45,204</b>	<b>200</b>	<b>8,834,642</b>	<b>44,173</b>
<i>OTHER BENEFICIARIES:</i>									
UNDER 30	82	1,098,156	13,392	109	1,363,019	12,505	191	2,461,175	12,886
30 TO 34	75	955,447	12,739	89	1,019,305	11,453	164	1,974,752	12,041
35 TO 39	89	1,125,842	12,650	130	1,514,520	11,650	219	2,640,362	12,056
40 TO 44	115	1,595,468	13,874	174	2,294,667	13,188	289	3,890,135	13,461
45 TO 49	121	1,223,298	10,110	241	2,923,195	12,129	362	4,146,493	11,454
50 TO 54	144	1,321,697	9,178	345	4,694,516	13,607	489	6,016,213	12,303
55 TO 59	164	1,425,482	8,692	537	7,953,215	14,810	701	9,378,697	13,379
60 TO 64	173	1,969,884	11,387	806	14,132,759	17,534	979	16,102,643	16,448
65 TO 69	168	1,861,912	11,083	1,267	24,816,287	19,587	1,435	26,678,199	18,591
70 TO 74	167	2,036,115	12,192	1,572	29,674,670	18,877	1,739	31,710,785	18,235
75 TO 79	136	1,714,693	12,608	1,908	34,072,686	17,858	2,044	35,787,379	17,509
80 TO 84	98	1,232,925	12,581	1,782	30,170,305	16,931	1,880	31,403,230	16,704
85 TO 89	79	714,973	9,050	1,837	29,319,705	15,961	1,916	30,034,678	15,676
90 & UP	81	863,534	10,661	2,288	30,265,307	13,228	2,369	31,128,841	13,140
<b>TOTAL</b>	<b>1,692</b>	<b>19,139,426</b>	<b>11,312</b>	<b>13,085</b>	<b>214,214,156</b>	<b>16,371</b>	<b>14,777</b>	<b>233,353,582</b>	<b>15,792</b>
<i>ALL PENSIONERS AND BENEFICIARIES:</i>									
UNDER 30	83	1,131,584	13,634	110	1,400,621	12,733	193	2,532,205	13,120
30 TO 34	92	1,587,987	17,261	96	1,197,584	12,475	188	2,785,571	14,817
35 TO 39	161	4,412,515	27,407	149	2,211,823	14,844	310	6,624,338	21,369
40 TO 44	285	9,379,545	32,911	265	5,302,753	20,010	550	14,682,298	26,695
45 TO 49	820	31,991,485	39,014	611	17,756,150	29,061	1,431	49,747,635	34,764
50 TO 54	2,993	129,814,478	43,373	1,667	57,133,450	34,273	4,660	186,947,928	40,118
55 TO 59	7,012	289,871,209	41,339	3,745	113,873,956	30,407	10,757	403,745,165	37,533
60 TO 64	12,017	455,202,768	37,880	7,725	210,591,009	27,261	19,742	665,793,777	33,725
65 TO 69	17,218	624,034,410	36,243	12,189	332,377,171	27,269	29,407	956,411,581	32,523
70 TO 74	16,864	578,556,927	34,307	12,305	315,651,790	25,652	29,169	894,208,717	30,656
75 TO 79	13,587	425,984,566	31,352	9,931	227,862,383	22,945	23,518	653,846,949	27,802
80 TO 84	8,638	245,064,179	28,370	6,938	136,319,658	19,648	15,576	381,383,837	24,485
85 TO 89	4,923	130,009,250	26,409	5,124	90,044,671	17,573	10,047	220,053,921	21,902
90 & UP	3,176	78,532,526	24,727	5,392	78,637,270	14,584	8,568	157,169,796	18,344
<b>TOTAL</b>	<b>87,869</b>	<b>3,005,573,429</b>	<b>34,205</b>	<b>66,247</b>	<b>1,590,360,289</b>	<b>24,007</b>	<b>154,116</b>	<b>4,595,933,718</b>	<b>29,821</b>

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 <sup>1</sup>	Number	Annual Allowances	Number	Annual Allowances <sup>2</sup>		
2009	5,821	147,278,673	5,454	70,493,395	131,031	3,063,854,687	2.6%	23,383
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

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

<sup>2</sup> 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
AAVM	Actuarial Asset Valuation Method
ABO	Accumulated Benefit Obligation
ACCNY	Administrative Code of the City of New York
AIR	Actuarial Interest Rate
AL	Accrued Liability
AMC	Additional Member Contributions
AMC-PT	Additional Member Contributions for Physically-Taxing Employment
AVA	Actuarial Value of Assets
BMC	Basic Member Contributions
CAFR	Comprehensive Annual Financial Report
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