Fiscal Year 2017
Actuarial Valuation Report
of the
New York City
Police Pension Fund

JUNE 30, 2015 (LAG) ACTUARIAL VALUATION

prepared by the

New York City
Office of the Actuary

2017

OFFICE OF THE ACTUARY

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

SHERRY S. CHAN
CHIEF ACTUARY

May 21, 2018

Board of Trustees
New York City Police Pension Fund and Group Life Insurance Plan
233 Broadway, Room 2501
New York, NY 10279

Re: Fiscal Year 2017 Pension Valuation Report (Report)

Dear Trustees:

This Report presents the results of the June 30, 2015 (Lag) actuarial valuation of the benefits under both the New York City Police Pension Fund (POLICE) and Group Life Insurance Plan (collectively, the Plan). These results form the basis for determining the statutorily-required contribution (Statutory Contribution) of $2,293,839,525 for Fiscal Year 2017 (i.e. for the period beginning July 1, 2016 and ending June 30, 2017). Calculations made for other purposes may be significantly different than the results shown herein.

All results are based on final SKIM amounts as determined by the Actuary in the memo dated May 4, 2017 to the Boards. Results of the June 30, 2014 (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, 2015 (Lag) and June 30, 2014 (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 as of June 30, 2015 and June 30, 2014 by POLICE and the Office of the Comptroller.

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 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.

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

The City of New York prepared its Fiscal Year 2016 financial statements in accordance with Governmental Accounting Standards Board Statement No. 68 (GASB 68). POLICE prepared its Fiscal Year 2016 Comprehensive Annual Financial Report (CAFR) in accordance with GASB Statement No. 67 (GASB 67). The Office of the Actuary published GASB 67 and 68 results for Fiscal Year 2016 in a separate report dated October 11, 2016, which is available on the Office of the Actuary website (www.nyc.gov/actuary). The enclosed report does not address GASB results.

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 (ERISA), 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 Chan

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

SSC/eh

cc:

Mr. Kevin Holloran - New York City Police Pension Fund
Ms. Marlene Markoe-Boyd - New York City Office of the Actuary
Mr. Sam Rumley - New York City Office of the Actuary
Mr. Michael Samet - New York City Office of the Actuary
Keith Snow, Esq. - New York City Office of the Actuary

Table of Contents

SECTION I – EXECUTIVE SUMMARY

This pension valuation report presents the results of the June 30, 2015 (Lag) actuarial valuation of the New York City Police Pension Fund (POLICE) and Group Life Insurance Plan (collectively, the Plan).

The purposes of the valuation are:

- To determine the actuarially-required contribution (Actuarial Contribution) and the statutorily-required contribution (Statutory Contribution) for Fiscal Year 2017 (i.e. July 1, 2016 to June 30, 2017),
- 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.

This Report does not provide financial and accounting information needed to meet the current requirements of GASB. That information is provided in a separate report.

All results are based on final SKIM amounts as determined by the Actuary in the memo dated May 4, 2017 to the Boards. 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 changes in applicable statute and plan provisions.

Table I-1
Executive Summary

Presented in **Table I-1** are the principal results of the June 30, 2015 (Lag) actuarial valuation and, for comparative purposes, the June 30, 2014 (Lag) actuarial valuation.

NEW YORK CITY POLICE PENSION FUND

SUMMARY OF VALUATION RESULTS

Valuation Date	June 30, 2015 (Lag)	June 30, 2014 (Lag)
Fiscal Year	**2017**	**2016**
Funded Status		
1. Actuarial Accrued Liability	$ 45,297,561,300	$ 44,384,022,415
2. Actuarial Value of Assets (AVA)[1]	31,092,977,000	29,212,981,000
3. Unfunded Actuarial Accrued Liability (AVA Basis) (1. - 2.)	$ 14,204,584,300	$ 15,171,041,415
4. Funded Ratio (AVA Basis) (2. / 1.)	68.6%	65.8%
5. Market Value of Assets (MVA)[1]	32,355,973,000	31,750,892,000
6. Unfunded Actuarial Accrued Liability (MVA Basis) (1. - 5.)	$ 12,941,588,300	$ 12,633,130,415
7. Funded Ratio (MVA Basis) (5. / 1.)	71.4%	71.5%
Contribution[2]		
1. Normal Cost	$ 1,236,125,837	$ 1,265,970,787
2. Amortization of Unfunded Actuarial Accrued Liability	1,037,216,543	1,107,990,579
3. Administrative Expenses	20,497,145	19,978,505
4. Actuarial Contribution (1. + 2. + 3.)	$ 2,293,839,525	$ 2,393,939,871
5. Statutory Contribution (4.)	$ 2,293,839,525	$ 2,393,939,871
Participant Data		
1. Active Members		
a. Number	34,435	34,402
b. Annual Salary[3]	$ 3,564,029,659	$ 3,618,095,284
c. Average Salary	$ 103,500	$ 105,171
2. Active/Inactive Members[4]	1,484	1,369
3. Terminated Vested Members	546	572
4. Retirees and Beneficiaries		
a. Number	48,703	48,212
b. Total Annual Benefits	$ 2,264,267,709	$ 2,183,965,721
c. Average Annual Benefit	$ 46,491	$ 45,299

[1] Actuarial Value of Assets and Market Value of Assets are rounded to the nearest thousand.

[2] Including results for Variable Supplements Funds.

[3] Salaries shown are the 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.

[4] Represents members no longer on payroll, but not otherwise classified.

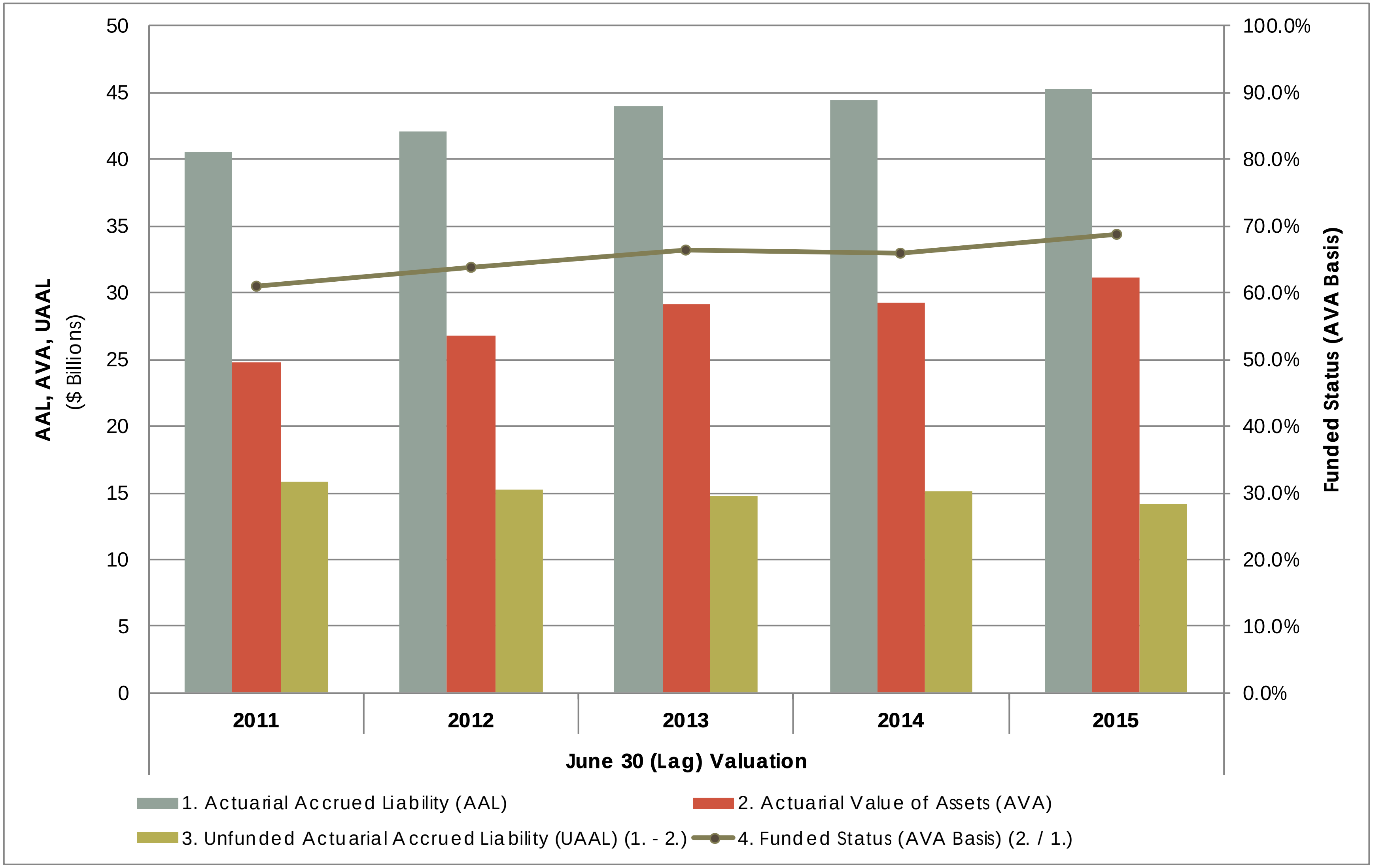
Table I-2
Actuarial Liabilities

NEW YORK CITY POLICE PENSION FUND LIABILITY BY STATUS				
Valuation Date	**June 30, 2015 (Lag)**		**June 30, 2014 (Lag)**	
Fiscal Year	**2017**		**2016**	
Actuarial Accrued Liability				
1. Active Members	$	14,983,927,621	$	14,833,114,888
2. Active/Inactive Members[1]		92,584,527		85,567,319
3. Terminated Vested Members		74,968,544		73,976,884
4. Retirees and Beneficiaries		26,968,329,088		25,911,360,310
5. Actuarial Accrued Liability Pre-Adjustments (1. to 4.)	$	42,119,809,780	$	40,904,019,401
6. Actuarial Adjustments[2]		3,177,751,520		3,480,003,014
7. Total Actuarial Accrued Liability (AAL) (5. + 6.)	$	45,297,561,300	$	44,384,022,415
Present Value of Benefits				
1. Active Members	$	25,192,303,521	$	25,240,907,264
2. Active/Inactive Members[1]		92,584,527		85,567,319
3. Terminated Vested Members		74,968,544		73,976,884
4. Retirees and Beneficiaries		26,968,329,088		25,911,360,310
5. Present Value of Benefits (1. to 4.)	$	52,328,185,680	$	51,311,811,777
6. Actuarial Adjustments[2]		3,970,345,289		4,272,131,433
7. Total Present Value of Benefits (5. + 6.)	$	56,298,530,969	$	55,583,943,210

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

[2] Includes unfunded VSF liability and other actuarial loading adjustments.

Graph I-3
Historical Funded Status



SECTION II – SUMMARY OF DEMOGRAPHIC DATA

The June 30, 2015 (Lag) and June 30, 2014 (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.

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

Table II-1
Summary of Active Membership

NEW YORK CITY POLICE PENSION FUND

ACTIVE MEMBERS INCLUDED IN THE
JUNE 30, 2015 (LAG) AND THE JUNE 30, 2014 (LAG) ACTUARIAL VALUATIONS

	June 30, 2015 (Lag)	June 30, 2014 (Lag)
Number		
Males	28,637	28,632
Females	5,798	5,770
Total	34,435	34,402
Annual Salary[1]		
Males	$ 2,979,452,953	$ 3,028,133,268
Females	584,576,706	589,962,016
Total	$ 3,564,029,659	$ 3,618,095,284
Average Salary[1]		
Males	$ 104,042	$ 105,760
Females	100,824	102,246
Total Average	$ 103,500	$ 105,171
Average Age (Years)		
Males	37.8	37.6
Females	37.7	37.5
Total Average	37.8	37.6
Average Past Service (Years)		
Males	11.8	11.7
Females	11.1	11.0
Total Average	11.7	11.6

[1]Salaries shown are the 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 II-2
Active Membership by Tier

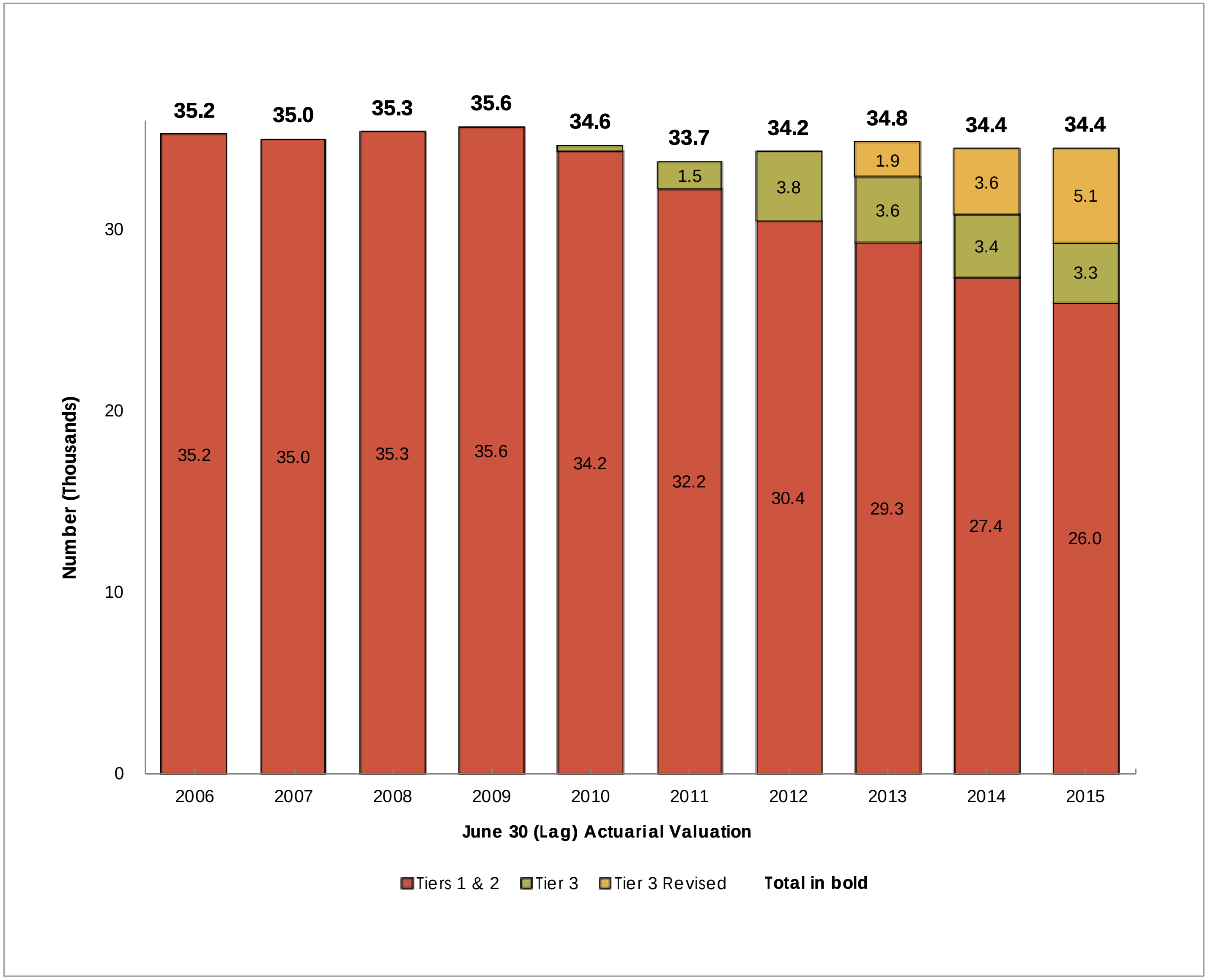


Table II-3
Summary of Pensioner Membership

Group	June 30, 2015 (Lag)				June 30, 2014 (Lag)			
		Annual Amounts Payable				Annual Amounts Payable		
	Number	Plan Benefit	Supplement	Total	Number	Plan Benefit	Supplement	Total
Service Pensioners	**32,148**	$ 1,352,411,652	$ 82,217,153	**$ 1,434,628,805**	**31,610**	$ 1,287,669,973	$ 84,593,879	**$ 1,372,263,852**
Ordinary Disability Pensioners	**3,068**	80,535,644	18,305,111	**98,840,755**	**3,172**	82,134,070	19,136,388	**101,270,458**
Accidental Disability Pensioners	**12,298**	635,005,950	63,369,742	**698,375,692**	**12,244**	615,525,673	63,999,157	**679,524,830**
Beneficiaries of Members Killed in the Line-of-Duty	**367**	10,833,253	2,113,918	**12,947,171**	**352**	9,612,659	2,188,654	**11,801,313**
Other Beneficiaries	**822**	17,187,292	2,287,994	**19,475,286**	**834**	16,659,424	2,445,844	**19,105,268**
Total	**48,703**	**$ 2,095,973,791**	**$ 168,293,918**	**$ 2,264,267,709**	**48,212**	**$2,011,601,799**	**$ 172,363,922**	**$2,183,965,721**

Table II-4

Distribution of Pensioners and Benefits at June 30, 2015

AGE	MALE NUMBER	MALE BENEFITS	MALE AVERAGE	FEMALE NUMBER	FEMALE BENEFITS	FEMALE AVERAGE	TOTAL NUMBER	TOTAL BENEFITS	TOTAL AVERAGE
SERVICE RETIREMENT:									
UNDER 30	0	0	0	0	0	0	0	0	0
30 TO 34	0	0	0	0	0	0	0	0	0
35 TO 39	1	37,560	37,560	0	0	0	1	37,560	37,560
40 TO 44	848	45,930,332	54,163	213	10,020,274	47,044	1,061	55,950,606	52,734
45 TO 49	3,655	205,647,803	56,265	760	36,722,376	48,319	4,415	242,370,179	54,897
50 TO 54	5,981	307,693,537	51,445	1,363	62,060,146	45,532	7,344	369,753,683	50,348
55 TO 59	4,455	213,832,108	47,998	883	38,568,108	43,678	5,338	252,400,216	47,284
60 TO 64	2,306	104,993,576	45,531	334	13,683,468	40,968	2,640	118,677,044	44,953
65 TO 69	2,771	115,223,491	41,582	94	3,471,512	36,931	2,865	118,695,003	41,429
70 TO 74	3,607	132,932,319	36,854	87	3,155,011	36,264	3,694	136,087,330	36,840
75 TO 79	2,220	69,771,265	31,428	37	1,293,328	34,955	2,257	71,064,593	31,486
80 TO 84	1,218	34,791,790	28,565	23	714,814	31,079	1,241	35,506,604	28,611
85 TO 89	853	23,347,192	27,371	19	426,103	22,426	872	23,773,295	27,263
90 & UP	413	10,136,695	24,544	7	175,997	25,142	420	10,312,692	24,554
TOTAL	**28,328**	**1,264,337,668**	**44,632**	**3,820**	**170,291,137**	**44,579**	**32,148**	**1,434,628,805**	**44,626**
ORDINARY DISABILITY:									
UNDER 30	1	19,484	19,484	1	15,043	15,043	2	34,527	17,264
30 TO 34	12	356,040	29,670	4	120,620	30,155	16	476,660	29,791
35 TO 39	40	1,246,716	31,168	20	606,406	30,320	60	1,853,122	30,885
40 TO 44	131	4,778,812	36,479	55	1,853,663	33,703	186	6,632,475	35,658
45 TO 49	227	7,480,715	32,955	129	3,984,725	30,889	356	11,465,440	32,206
50 TO 54	198	5,834,362	29,466	125	3,342,163	26,737	323	9,176,525	28,410
55 TO 59	130	3,338,306	25,679	76	1,971,143	25,936	206	5,309,449	25,774
60 TO 64	92	2,913,814	31,672	28	682,109	24,361	120	3,595,923	29,966
65 TO 69	318	8,195,278	25,771	17	374,534	22,031	335	8,569,812	25,582
70 TO 74	481	12,455,343	25,895	18	390,709	21,706	499	12,846,052	25,744
75 TO 79	289	10,009,890	34,636	9	191,587	21,287	298	10,201,477	34,233
80 TO 84	264	11,380,806	43,109	8	235,543	29,443	272	11,616,349	42,707
85 TO 89	283	12,383,547	43,758	5	189,053	37,811	288	12,572,600	43,655
90 & UP	104	4,372,286	42,041	3	118,058	39,353	107	4,490,344	41,966
TOTAL	**2,570**	**84,765,399**	**32,983**	**498**	**14,075,356**	**28,264**	**3,068**	**98,840,755**	**32,217**
ACCIDENTAL DISABILITY:									
UNDER 30	6	348,840	58,140	1	56,969	56,969	7	405,809	57,973
30 TO 34	114	7,176,010	62,947	25	1,467,663	58,707	139	8,643,673	62,185
35 TO 39	221	14,864,944	67,262	40	2,398,782	59,970	261	17,263,726	66,145
40 TO 44	754	55,237,496	73,259	113	7,127,832	63,078	867	62,365,328	71,932
45 TO 49	1,657	121,085,851	73,075	249	15,453,122	62,061	1,906	136,538,973	71,636
50 TO 54	1,871	121,198,830	64,778	357	21,591,440	60,480	2,228	142,790,270	64,089
55 TO 59	1,225	73,195,960	59,752	184	10,135,740	55,086	1,409	83,331,700	59,142
60 TO 64	711	37,460,447	52,687	69	3,599,219	52,163	780	41,059,666	52,641
65 TO 69	1,485	67,589,432	45,515	41	1,481,970	36,146	1,526	69,071,402	45,263
70 TO 74	1,662	70,989,908	42,714	37	1,507,786	40,751	1,699	72,497,694	42,671
75 TO 79	773	32,896,417	42,557	10	418,384	41,838	783	33,314,801	42,548
80 TO 84	358	16,744,510	46,772	3	99,489	33,163	361	16,843,999	46,659
85 TO 89	240	10,621,341	44,256	7	331,211	47,316	247	10,952,552	44,342
90 & UP	84	3,269,727	38,925	1	26,372	26,372	85	3,296,099	38,778
TOTAL	**11,161**	**632,679,713**	**56,687**	**1,137**	**65,695,979**	**57,780**	**12,298**	**698,375,692**	**56,788**

AGE	MALE NUMBER	MALE BENEFITS	MALE AVERAGE	FEMALE NUMBER	FEMALE BENEFITS	FEMALE AVERAGE	TOTAL NUMBER	TOTAL BENEFITS	TOTAL AVERAGE
ACCIDENTAL DEATH:									
UNDER 30	0	0	0	3	165,721	55,240	3	165,721	55,240
30 TO 34	0	0	0	1	46,792	46,792	1	46,792	46,792
35 TO 39	0	0	0	11	486,121	44,193	11	486,121	44,193
40 TO 44	1	86,829	86,829	9	414,087	46,010	10	500,916	50,092
45 TO 49	1	35,991	35,991	44	2,014,145	45,776	45	2,050,136	45,559
50 TO 54	6	263,929	43,988	46	2,012,839	43,757	52	2,276,768	43,784
55 TO 59	3	151,591	50,530	31	1,227,721	39,604	34	1,379,312	40,568
60 TO 64	0	0	0	27	929,714	34,434	27	929,714	34,434
65 TO 69	3	168,196	56,065	50	1,488,552	29,771	53	1,656,748	31,259
70 TO 74	1	65,015	65,015	58	1,598,979	27,569	59	1,663,994	28,203
75 TO 79	5	193,714	38,743	22	495,511	22,523	27	689,225	25,527
80 TO 84	2	44,394	22,197	25	620,665	24,827	27	665,059	24,632
85 TO 89	1	29,708	29,708	12	286,547	23,879	13	316,255	24,327
90 & UP	1	33,609	33,609	4	86,801	21,700	5	120,410	24,082
TOTAL	**24**	**1,072,976**	**44,707**	**343**	**11,874,195**	**34,619**	**367**	**12,947,171**	**35,278**
OTHER BENEFICIARIES:									
UNDER 30	7	196,081	28,012	7	97,223	13,889	14	293,304	20,950
30 TO 34	0	0	0	1	29,560	29,560	1	29,560	29,560
35 TO 39	1	13,585	13,585	3	80,046	26,682	4	93,631	23,408
40 TO 44	2	65,676	32,838	9	467,254	51,917	11	532,930	48,448
45 TO 49	6	248,361	41,394	25	790,875	31,635	31	1,039,236	33,524
50 TO 54	5	162,788	32,558	45	1,718,679	38,193	50	1,881,467	37,629
55 TO 59	2	59,286	29,643	39	1,206,332	30,932	41	1,265,618	30,869
60 TO 64	2	52,437	26,219	53	1,467,001	27,679	55	1,519,438	27,626
65 TO 69	1	32,543	32,543	79	2,145,419	27,157	80	2,177,962	27,225
70 TO 74	1	19,546	19,546	102	2,752,997	26,990	103	2,772,543	26,918
75 TO 79	1	29,448	29,448	107	2,734,538	25,556	108	2,763,986	25,592
80 TO 84	0	0	0	98	2,072,405	21,147	98	2,072,405	21,147
85 TO 89	0	0	0	100	1,833,130	18,331	100	1,833,130	18,331
90 & UP	0	0	0	126	1,200,076	9,524	126	1,200,076	9,524
TOTAL	**28**	**879,751**	**31,420**	**794**	**18,595,535**	**23,420**	**822**	**19,475,286**	**23,693**
ALL PENSIONERS AND BENEFICIARIES:									
UNDER 30	14	564,405	40,315	12	334,956	27,913	26	899,361	34,591
30 TO 34	126	7,532,050	59,778	31	1,664,635	53,698	157	9,196,685	58,578
35 TO 39	263	16,162,805	61,456	74	3,571,355	48,262	337	19,734,160	58,558
40 TO 44	1,736	106,099,145	61,117	399	19,883,110	49,832	2,135	125,982,255	59,008
45 TO 49	5,546	334,498,721	60,314	1,207	58,965,243	48,853	6,753	393,463,964	58,265
50 TO 54	8,061	435,153,446	53,983	1,936	90,725,267	46,862	9,997	525,878,713	52,604
55 TO 59	5,815	290,577,251	49,970	1,213	53,109,044	43,783	7,028	343,686,295	48,902
60 TO 64	3,111	145,420,274	46,744	511	20,361,511	39,846	3,622	165,781,785	45,771
65 TO 69	4,578	191,208,940	41,767	281	8,961,987	31,893	4,859	200,170,927	41,196
70 TO 74	5,752	216,462,131	37,632	302	9,405,482	31,144	6,054	225,867,613	37,309
75 TO 79	3,288	112,900,734	34,337	185	5,133,348	27,748	3,473	118,034,082	33,986
80 TO 84	1,842	62,961,500	34,181	157	3,742,916	23,840	1,999	66,704,416	33,369
85 TO 89	1,377	46,381,788	33,683	143	3,066,044	21,441	1,520	49,447,832	32,531
90 & UP	602	17,812,317	29,589	141	1,607,304	11,399	743	19,419,621	26,137
TOTAL	**42,111**	**1,983,735,507**	**47,107**	**6,592**	**280,532,202**	**42,556**	**48,703**	**2,264,267,709**	**46,491**

Graph II-5
Pensioner Average Benefits

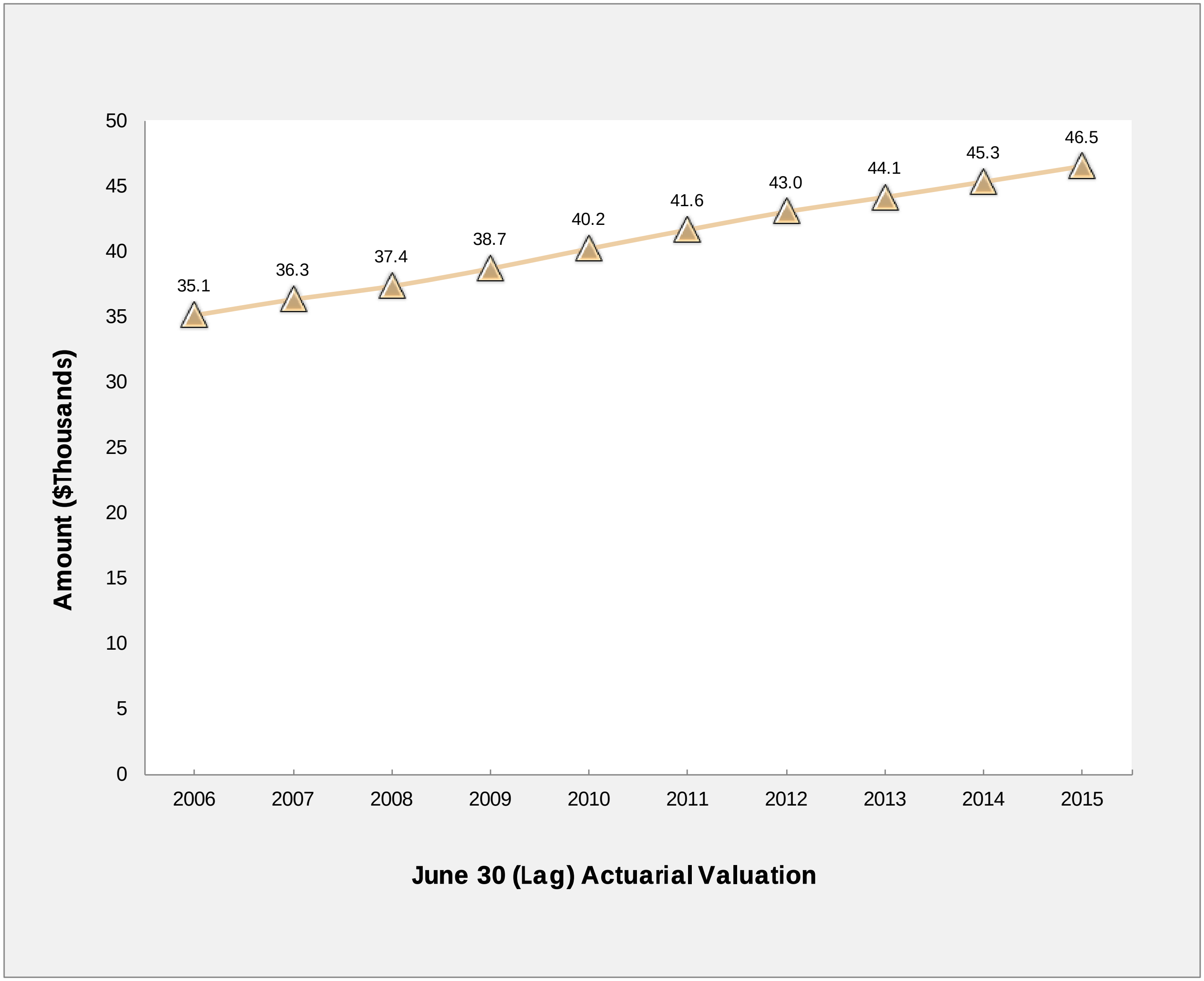


Table II-6
Status Reconciliation

CHANGES IN THE NUMBER OF ACTIVES AND PENSIONERS DURING THE FISCAL YEAR CLASSIFIED BY STATUS

Status	(1) Active Members	(2) Service Pension	(3) Ordinary Disability	(4) Accidental Disability	(5) Accidental Death	(6) Other Beneficiary	(7) Pensioners Subtotal (2) to (6)	(8) Grand Total (1) + (7)
1. Number at June 30, 2014	**34,402**	31,610	3,172	12,244	352	834	**48,212**	**82,614**
2. Additions during the Year								
a. New Entrants	**1,822**	1,177	38	225	6	1	**1,447**	**3,269**
b. Transfer of category[1]	**5**	0	0	49	6	47	**102**	**107**
c. Change in Payroll Status	**79**	4	1	0	14	6	**25**	**104**
d. Total Additions during the Year	**1,906**	1,181	39	274	26	54	**1,574**	**3,480**
3. Separations during the Year								
a. Resignation or Dismissal	**142**	0	0	0	0	0	**0**	**142**
b. Retirement for Service	**1,112**	0	0	0	0	0	**0**	**1,112**
c. Retirement for Accidental Dis.	**222**	0	0	0	0	0	**0**	**222**
d. Retirement for Ordinary Dis.	**39**	0	0	0	0	0	**0**	**39**
e. Accidental Death	**6**	0	0	0	0	0	**0**	**6**
f. Ordinary Death	**23**	564	135	204	10	58	**971**	**994**
g. Transfer to Other System	**0**	0	0	0	0	0	**0**	**0**
h. Transfer of Category[1]	**0**	79	8	16	0	4	**107**	**107**
i. Change in Payroll Status	**288**	0	0	0	1	4	**5**	**293**
j. By Vested Termination	**41**	0	0	0	0	0	**0**	**41**
k. Other	**0**	0	0	0	0	0	**0**	**0**
l. Total Separations during the Year	**1,873**	643	143	220	11	66	**1,083**	**2,956**
4. Number at June 30, 2015	**34,435**	32,148	3,068	12,298	367	822	**48,703**	**83,138**

[1] Includes pensioners changing retirement causes

Graph II-7
Headcount Summary by Status

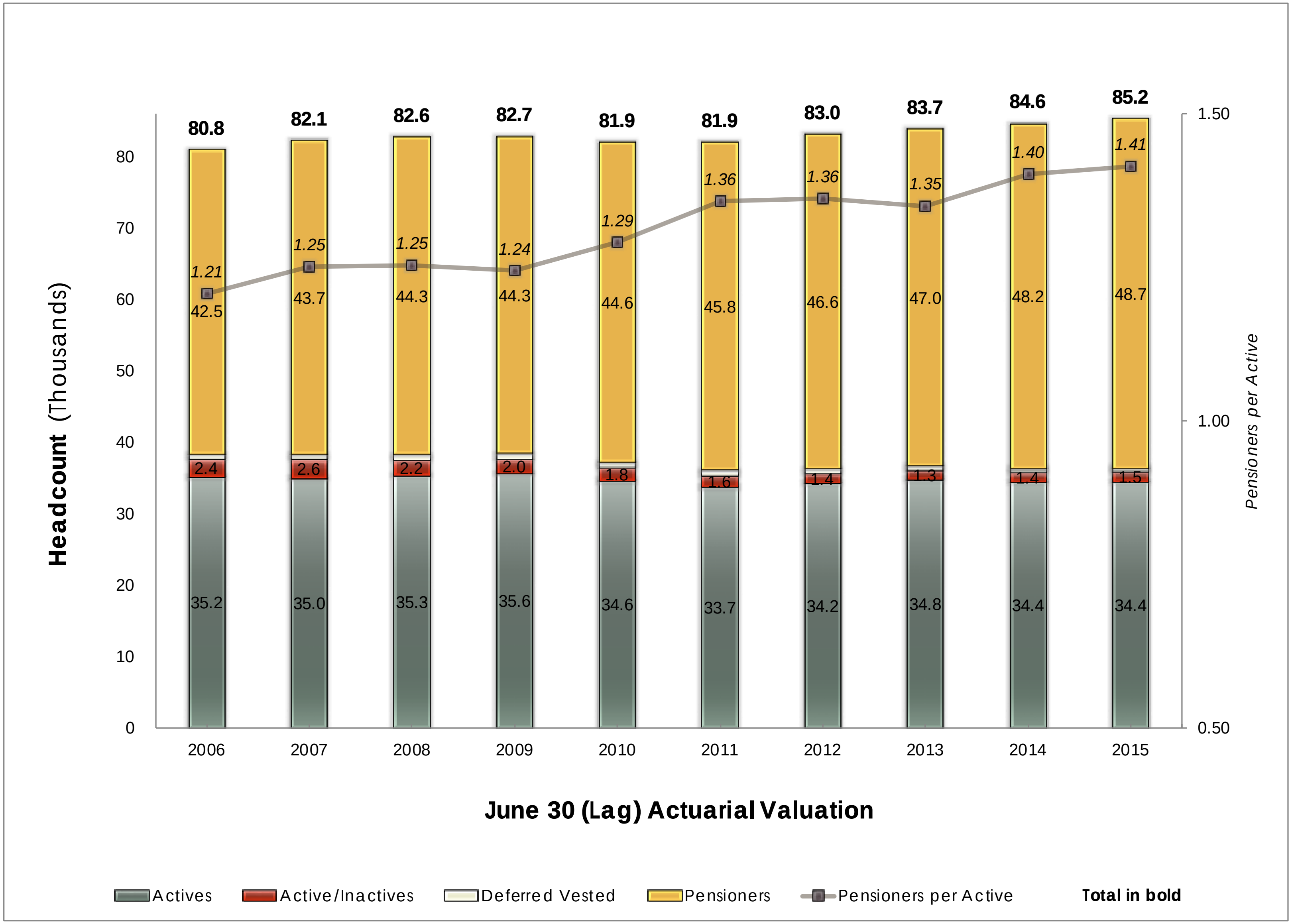


Table II-8
Historical Active Member Salary Data

June 30 (Lag) Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2006	35,194	$2,816,928,536	$80,040	0.5%
2007	34,956	2,961,649,327	84,725	5.9%
2008	35,337	3,095,903,827	87,611	3.4%
2009	35,608	3,261,118,111	91,584	4.5%
2010	34,597	3,464,096,750	100,127	9.3%
2011	33,705	3,480,066,072	103,251	3.1%
2012	34,240	3,478,153,934	101,582	(1.6%)
2013	34,775	3,607,606,894	103,741	2.1%
2014	34,402	3,618,095,284	105,171	1.4%
2015	34,435	3,564,029,659	103,500	(1.6%)

Annualized covered payrolls used for the Fiscal Year 2012 and subsequent years' employer contributions are based on revised actuarial assumptions enacted by Chapter 3/13 (i.e. the 2012 A&M) and unchanged in the 2016 A&M.

Salaries shown are the 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 II-9

Distribution of Active Members and Salary Data at June 30, 2015

	SERVICE									
AGE	UNDER 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & UP	ALL YEARS
COUNT:										
UNDER 20	0	0	0	0	0	0	0	0	0	**0**
20 TO 24	1,175	0	0	0	0	0	0	0	0	**1,175**
25 TO 29	4,383	1,169	5	0	0	0	0	0	0	**5,557**
30 TO 34	1,886	3,990	1,626	5	0	0	0	0	0	**7,507**
35 TO 39	803	1,762	3,311	936	0	0	0	0	0	**6,812**
40 TO 44	120	700	1,652	2,541	1,222	1	0	0	0	**6,236**
45 TO 49	2	93	730	1,260	2,151	468	1	0	0	**4,705**
50 TO 54	2	2	62	358	750	480	242	0	0	**1,896**
55 TO 59	1	4	3	47	73	109	202	24	0	**463**
60 TO 64	1	1	1	8	4	2	45	8	5	**75**
65 TO 69	0	1	1	2	0	0	0	0	0	**4**
70 & UP	0	0	1	0	1	1	0	0	2	**5**
TOTAL	**8,373**	**7,722**	**7,392**	**5,157**	**4,201**	**1,061**	**490**	**32**	**7**	**34,435**
TOTAL SALARY:										
UNDER 20	0	0	0	0	0	0	0	0	0	**0**
20 TO 24	63,217,067	0	0	0	0	0	0	0	0	**63,217,067**
25 TO 29	270,900,591	121,030,294	474,974	0	0	0	0	0	0	**392,405,859**
30 TO 34	118,574,046	425,919,354	183,307,364	539,371	0	0	0	0	0	**728,340,135**
35 TO 39	49,832,505	187,671,203	375,231,958	115,832,790	0	0	0	0	0	**728,568,456**
40 TO 44	8,051,042	74,255,195	185,327,910	312,613,513	162,580,716	128,872	0	0	0	**742,957,248**
45 TO 49	197,612	9,868,792	81,459,838	151,134,505	280,873,313	65,650,319	125,031	0	0	**589,309,410**
50 TO 54	240,835	211,795	6,858,600	42,908,647	93,278,126	64,923,800	35,017,889	0	0	**243,439,692**
55 TO 59	111,442	558,857	393,428	5,470,281	8,898,546	13,992,333	30,159,441	4,060,876	0	**63,645,204**
60 TO 64	126,880	140,261	153,268	1,045,910	704,093	251,174	6,364,826	1,306,639	761,813	**10,854,864**
65 TO 69	0	140,261	141,284	283,591	0	0	0	0	0	**565,136**
70 & UP	0	0	141,284	0	143,330	143,330	0	0	298,644	**726,588**
TOTAL	**511,252,020**	**819,796,012**	**833,489,908**	**629,828,608**	**546,478,124**	**145,089,828**	**71,667,187**	**5,367,515**	**1,060,457**	**3,564,029,659**
AVERAGE SALARY:										
UNDER 20	0	0	0	0	0	0	0	0	0	**0**
20 TO 24	53,802	0	0	0	0	0	0	0	0	**53,802**
25 TO 29	61,807	103,533	94,995	0	0	0	0	0	0	**70,615**
30 TO 34	62,871	106,747	112,735	107,874	0	0	0	0	0	**97,021**
35 TO 39	62,058	106,510	113,329	123,753	0	0	0	0	0	**106,954**
40 TO 44	67,092	106,079	112,184	123,028	133,045	128,872	0	0	0	**119,140**
45 TO 49	98,806	106,116	111,589	119,948	130,578	140,278	125,031	0	0	**125,252**
50 TO 54	120,418	105,898	110,623	119,857	124,371	135,258	144,702	0	0	**128,396**
55 TO 59	111,442	139,714	131,143	116,389	121,898	128,370	149,304	169,203	0	**137,463**
60 TO 64	126,880	140,261	153,268	130,739	176,023	125,587	141,441	163,330	152,363	**144,732**
65 TO 69	0	140,261	141,284	141,796	0	0	0	0	0	**141,284**
70 & UP	0	0	141,284	0	143,330	143,330	0	0	149,322	**145,318**
TOTAL	**61,060**	**106,164**	**112,756**	**122,131**	**130,083**	**136,748**	**146,260**	**167,735**	**151,494**	**103,500**

Table II-10
Reconciliation of Pensioner and Beneficiary Data

SCHEDULE OF PENSIONERS AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS								
June 30 (Lag) Actuarial Valuation	**Added to Rolls**		**Removed from Rolls**		**End of Year Rolls**		**% Increase in Annual Allowances**	**Average Annual Allowances**
	Number	**Annual Allowances[1]**	**Number**	**Annual Allowances**	**Number**	**Annual Allowances**		
2006	2,330	$131,918,392	988	$25,047,689	42,474	$1,492,294,412	7.7%	$35,134
2007	2,268	123,856,605	1,011	26,869,025	43,731	1,589,281,992	6.5%	36,342
2008	1,541	92,191,424	982	27,012,317	44,290	1,654,461,099	4.1%	37,355
2009	1,025	89,094,934	1,030	30,086,313	44,285	1,713,469,720	3.6%	38,692
2010	1,355	110,403,824	1,006	29,554,813	44,634	1,794,318,731	4.7%	40,201
2011	2,142	141,323,253	1,021	30,315,285	45,755	1,905,326,699	6.2%	41,642
2012	1,893	133,158,449	1,010	32,287,109	46,638	2,006,198,039	5.3%	43,016
2013	1,346	99,488,158	1,034	33,621,831	46,950	2,072,064,366	3.3%	44,133
2014	2,220	144,660,995	958	32,759,640	48,212	2,183,965,721	5.4%	45,299
2015	1,574	117,371,844	1,083	37,069,856	48,703	2,264,267,709	3.7%	46,491

[1]Includes post-retirement adjustments in benefits for those on the rolls as of the end of the previous year.

SECTION III – 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, actual 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 Actuarial Interest Rate (AIR) and the AVA, where EIR equals the sum of beginning-of-fiscal-year AVA plus one-half of net cash flow, multiplied by the AIR.

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 III-1

Statement of Plan Net Assets as of June 30, 2015 and June 30, 2014

($ Thousands)

	June 30, 2015	June 30, 2014
ASSETS		
Cash	$ 48,152	$ 45,733
Receivables		
Investment Securities Sold	$ 461,115	$ 581,149
Member Loans	256,288	255,808
FY14 Transferrable earnings due from QPP to VSFs	(231,000)	0
Accrued Interest and Dividends	60,370	59,897
Total Receivables	$ 546,773	$ 896,854
INVESTMENTS AT FAIR VALUE		
Short-Term Investments		
Commercial Paper	$ 481,829	$ 146,312
Short-term Investment Fund	681,410	491,145
U.S. Treasury Bills	682,955	642,188
Discount Notes	426,708	0
Debt Securities		
U.S. Government and Agency	7,074,891	2,824,945
Corporate and Other	0	4,108,798
Equity Securities	6,668,018	7,882,275
Alternative Investments	5,770,380	5,411,415
Collective Trust Funds		
Fixed Income	641,806	619,790
Domestic Equity	4,989,666	5,685,263
International Equity	5,411,168	5,794,509
Mortgage Debt Security	242,754	207,025
Treasury Inflation Protected Securities	953,550	969,643
Promissory Notes	0	0
Collateral From Securities Lending	2,678,845	3,704,504
Total Investments at Fair Value	$ 36,703,980	$ 38,487,812
OTHER ASSETS	14,879	13,678
TOTAL ASSETS	$ 37,313,784	$ 39,444,077
LIABILITIES		
Accounts Payable	$ 233,964	$ 141,773
Payable for Investment Securities Purchased	1,347,025	1,457,714
Accured Benefits Payable	107,977	78,373
Accrued Transfers to VSFs	590,000	2,310,000
Security Lending	2,678,845	3,705,325
TOTAL LIABILITIES	$ 4,957,811	$ 7,693,185
PLAN ASSETS HELD IN TRUST FOR PENSION BENEFITS	$ 32,355,973	$ 31,750,892

Table III-2
Statement of Changes in Plan Net Assets

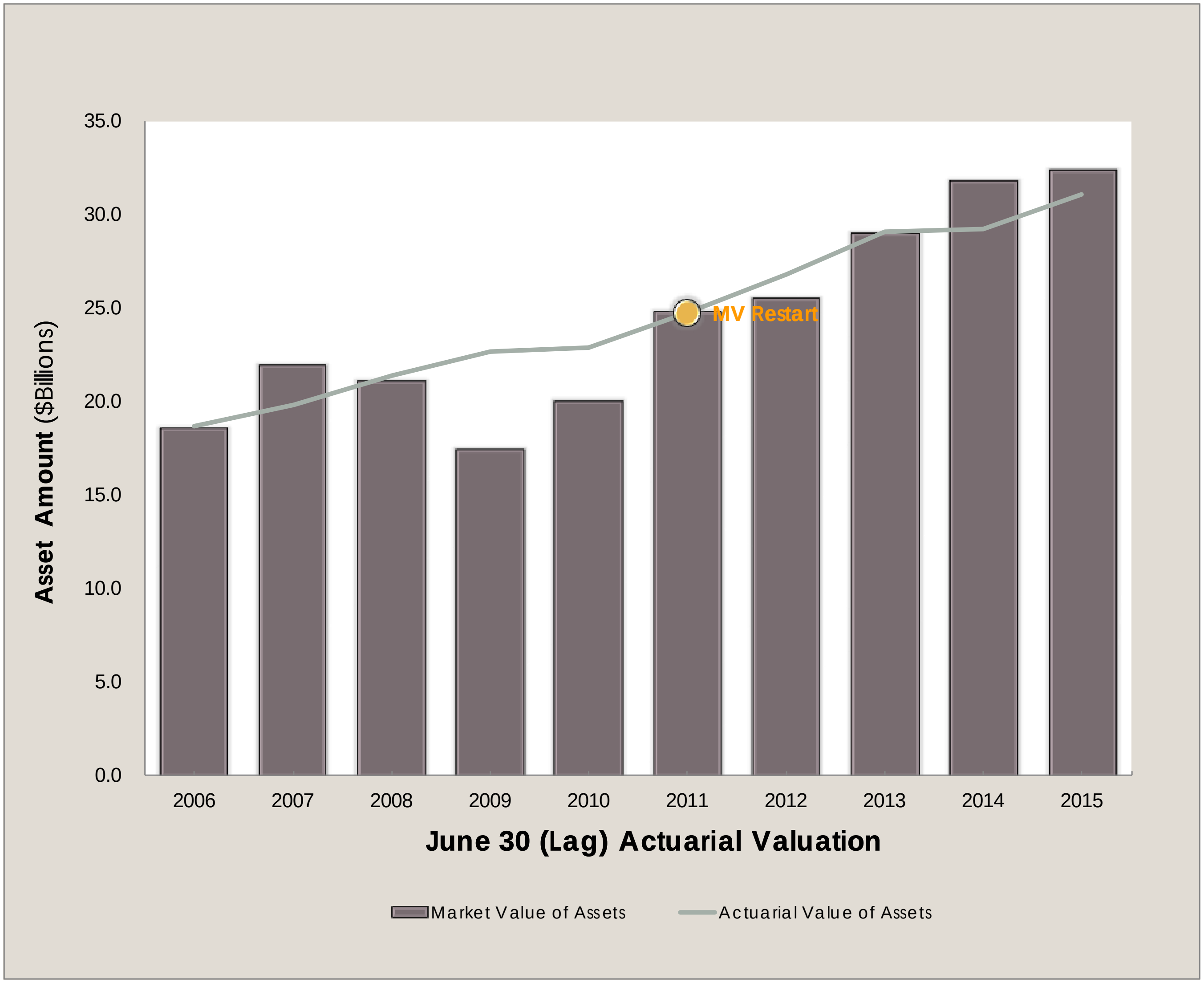
($ Thousands)	June 30, 2015	June 30, 2014
ADDITIONS		
Contributions		
Member Contributions	$ 241,102	$ 228,783
Employer Contributions	2,309,619	2,320,910
Total Contributions	$ 2,550,721	$ 2,549,693
Investment Income (Loss)		
Interest Income	$ 392,792	$ 374,192
Dividend Income	703,701	441,568
Net Appreciation (Depreciation) in Fair Value	96,151	4,369,202
Total Investment Income (Loss)	$ 1,192,644	$ 5,184,962
Less Investment Expenses	192,099	120,828
Net Income (Loss)	$ 1,000,545	$ 5,064,134
Securities Lending Transactions		
Securities Lending Income	$ 19,209	$ 8,412
Securities Lending Fees	(1,248)	(1,016)
Net Securities Lending Income (Loss)	$ 17,961	$ 7,396
Net Investment Income (Loss)	$ 1,018,506	$ 5,071,530
Other		
Net Receipts from Other Retirement Systems	3,574	5,548
Litigation Income	980	1,263
TOTAL ADDITIONS	$ 3,573,781	$ 7,628,034
DEDUCTIONS		
Benefit Payments and Withdrawls	$ 2,360,484	$ 2,305,609
Transfers to PSOVSF	313	231,024
Accrued Transfers to VSFs	590,000	2,310,000
Administrative Expenses	17,903	17,450
TOTAL DEDUCTIONS	$ 2,968,700	$ 4,864,083
NET INCREASE (DECREASE) IN PLAN NET ASSETS	$ 605,081	$ 2,763,951
PLAN NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
Beginning of Year	$ 31,750,892	$ 28,986,941
End of Year	$ 32,355,973	$ 31,750,892

Table III-3

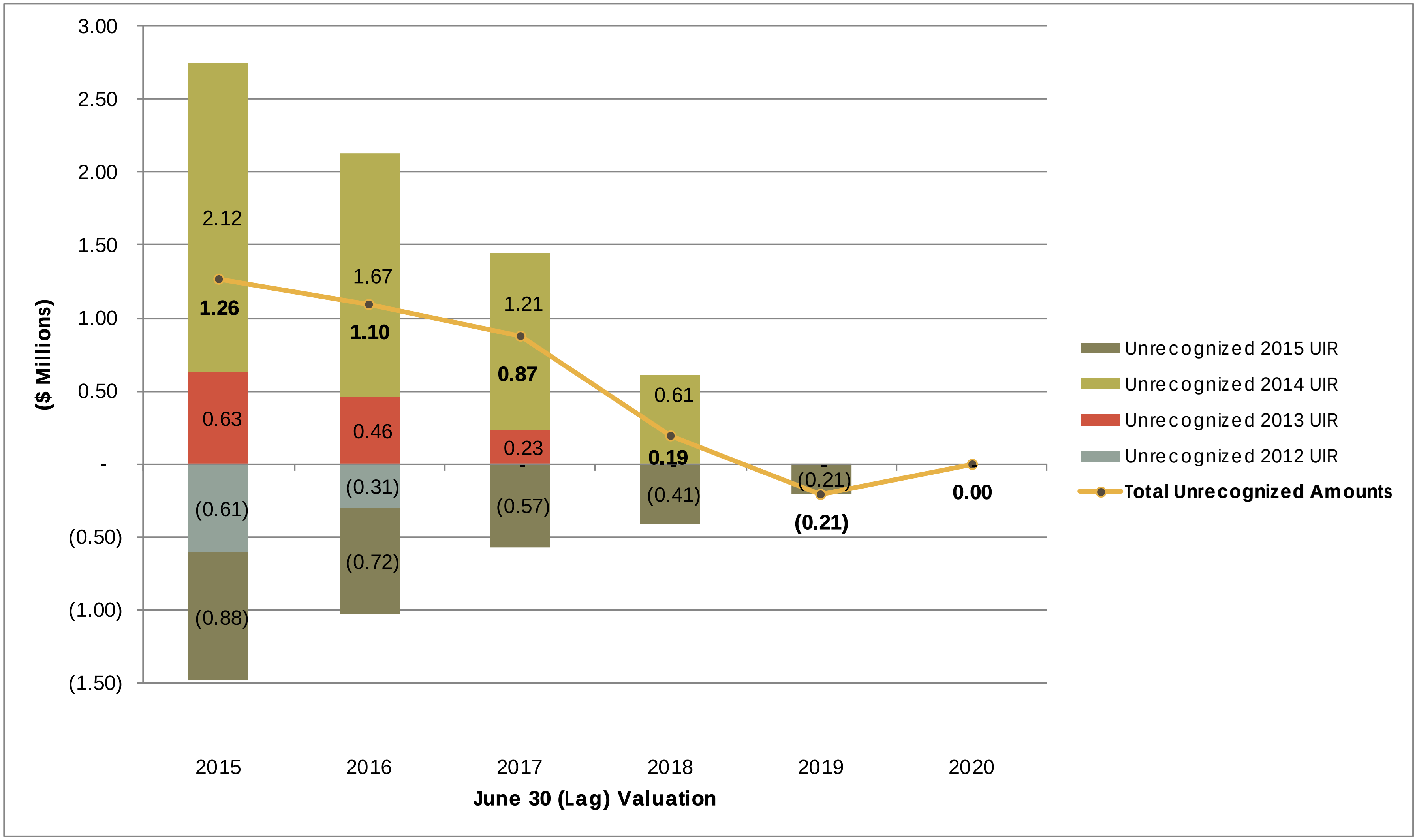
Development of Actuarial Value of Assets as of June 30, 2015

($ Thousands)		
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY)	$	31,750,892
b. End of Year (EOY)	$	32,355,973
2. Contributions		
a. Employee	$	241,102
b. Employer		2,309,619
c. Total Contributions	$	2,550,721
3. Benefit Payments and Other Cash Flow	$	(2,374,146)
4. Preliminary SKIM from POLICE to VSFs - EOY	$	(590,000)
5. Net Cash Flow (2.c. + 3. + 4.)	$	(413,425)
6. Net Investment Income		
a. Investment Income	$	1,210,605
b. Investment Expenses		(192,099)
c. Total Net Investment Income	$	1,018,506
7. Average invested assets		
a. AVA @ BOY	$	29,212,981
b. 1/2 Net Cash Flow before SKIM ((2.c. + 3.) / 2)		88,288
c. Total	$	29,301,269
8. Expected Rate of Return (AIR)		7.00%
9. Expected Investment Return (EIR) (7.c. x 8.)	$	2,051,089
10. Unexpected Investment Return (UIR) (6.c. - 9.)	$	(1,032,583)
11. Preliminary AVA @ EOY		
a. AVA @ BOY	$	29,212,981
b. Net Cash Flow (5.)		(413,425)
c. Expected Investment Return (9.)		2,051,089
d. Phase in of UIR		
15% * UIR for year ending June 30, 2015		(154,887)
15% * UIR for year ending June 30, 2014		455,301
15% * UIR for year ending June 30, 2013		170,836
15% * UIR for year ending June 30, 2012		(228,918)
20% * UIR for year ending June 30, 2011		N/A
20% * UIR for year ending June 30, 2010		N/A
Total	$	242,332
e. AVA (11.a. + 11.b. + 11.c. + 11.d.)	$	31,092,977
12. Corridor		
a. 80% of MVA	$	25,884,778
b. 120% of MVA	$	38,827,168
13. Final AVA at EOY (11e. bounded by 12.)	**$**	**31,092,977**

Graph III-4
Historical Market and Actuarial Asset Values



Graph III-5
Future Recognition of Unexpected Investment Returns



SECTION IV – CONTRIBUTION DEVELOPMENT AND HISTORY

Table IV-1
Statutory Contributions

Table IV-1 shows the components of the Fiscal Year 2017 and the Fiscal Year 2016 Statutory Contributions.

COMPONENTS OF CURRENT AND PRIOR FISCAL YEAR STATUTORY CONTRIBUTIONS		
Valuation Date	**June 30, 2015 (Lag)**	**June 30, 2014 (Lag)**
Fiscal Year	**2017**	**2016**
Normal Cost Contribution[1]	$ 1,236,125,837	$ 1,265,970,787
Amortization of Unfunded Actuarial Accrued Liability		
-Initial UAAL	1,150,693,040	1,117,177,709
-2011 (Gain)/Loss	32,652,194	32,652,194
-2012 (Gain)/Loss	(58,789,449)	(58,789,449)
-2013 (Gain)/Loss	(27,789,355)	(27,789,355)
-2014 (Gain)/Loss	(25,983,043)	(25,983,043)
-2014 Assumption Changes	70,722,523	70,722,523
-2015 (Gain)/Loss	(104,289,367)	NA
Total	1,037,216,543	1,107,990,579
Administrative Expenses	20,497,145	19,978,505
Total Contribution to the New York City Police Pension Fund	**$ 2,293,839,525**	**$ 2,393,939,871**

[1] Includes amounts necessary, if any, to provide for financing of the Excess Benefit Plan established by Chapter 623/04. Also includes $1,134,613 and $1,121,118, respectively, for the Group Life Insurance Plan and amounts attributable to Variable Supplements Funds.

Table IV-2
Development of Statutory Employer Normal Cost

Table IV-2 shows the development of the Fiscal Year 2017 and the Fiscal Year 2016 Statutory Employer Normal Cost.

DEVELOPMENT OF CURRENT AND PRIOR FISCAL YEAR STATUTORY EMPLOYER NORMAL COST				
Valuation Date	**June 30, 2015 (Lag)**		**June 30, 2014 (Lag)**	
Fiscal Year	**2017**		**2016**	
1. Present Value of Future Benefits				
a. Pensioners and Beneficiaries	$	25,144,556,276	$	23,962,766,817
b. Supplemental Benefits		2,398,772,812		2,410,593,493
c. Active Members		25,457,605,942		25,623,446,115
d. Future VSF Transfers		3,297,595,939		3,587,136,785
e. Total	$	56,298,530,969	$	55,583,943,210
2. PV Future Employee Contributions	$	626,067,852	$	607,183,681
3. PV Future Employer Normal Cost	$	10,374,901,817	$	10,592,737,114
4. Actuarial Accrued Liability (1.e.-2.-3.)		45,297,561,300		44,384,022,415
5. Present Value of Future Salaries (@ t = 0.5)		29,265,104,077		29,302,785,350
6. Employer Normal Cost Rate (3. / 5.)		35.451%		36.149%
7. Annual Salaries (@ t = 1.5)[1]	$	3,486,857,457	$	3,502,090,756
8. Statutory Employer Normal Cost (6. times 7.)	$	1,236,125,837	$	1,265,970,787

[1] The projected annualized covered payroll under the One-Year Lag methodology.

Table IV-3
Schedule of Unfunded Actuarial Accrued Liability Bases

The Initial UAAL 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. UAALs established after June 30, 2010 are generally amortized using Level Dollar Payments (LDP) as follows:

- Benefit Changes – Generally 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 IV-3** shows the Summary of Unfunded Actuarial Accrued Liability (UAAL) bases as of June 30, 2015.

NEW YORK CITY POLICE PENSION FUND
SUMMARY OF UNFUNDED ACTUARIAL ACCRUED LIABILITY BASES
($ Millions)

Amortization Base	Date Established	Original Amount[1]	Amortization Period/Method	Amortization Payment	Years/ Payments Remaining	OYLM UAAL June 30, 2015[2]
Initial UAAL	6/30/10	$ 15,226	22 Years Closed/IDP - 3%	$ 1,151	17/17	$ 13,774
(Gain)/Loss	6/30/11	$ 276	15 Years Closed/LDP	$ 33	11/11	$ 253
(Gain)/Loss	6/30/12	$ (497)	15 Years Closed/LDP	$ (59)	12/12	$ (483)
(Gain)/Loss	6/30/13	$ (235)	15 Years Closed/LDP	$ (28)	13/13	$ (240)
(Gain)/Loss	6/30/14	$ (220)	15 Years Closed/LDP	$ (26)	14/14	$ (235)
Assumption Change	6/30/14	$ 707	20 Years Closed/LDP	$ 71	19/19	$ 756
(Gain)/Loss	6/30/15	$ (882)	15 Years Closed/LDP	$ (104)	15/14	$ (882)

[1] Initial UAAL amount is before reflecting any adjustments under OYLM.

[2] Initial UAAL amount reflects adjustment under OYLM in year established.

Graph IV-4
Remaining UAAL Base Amortizations

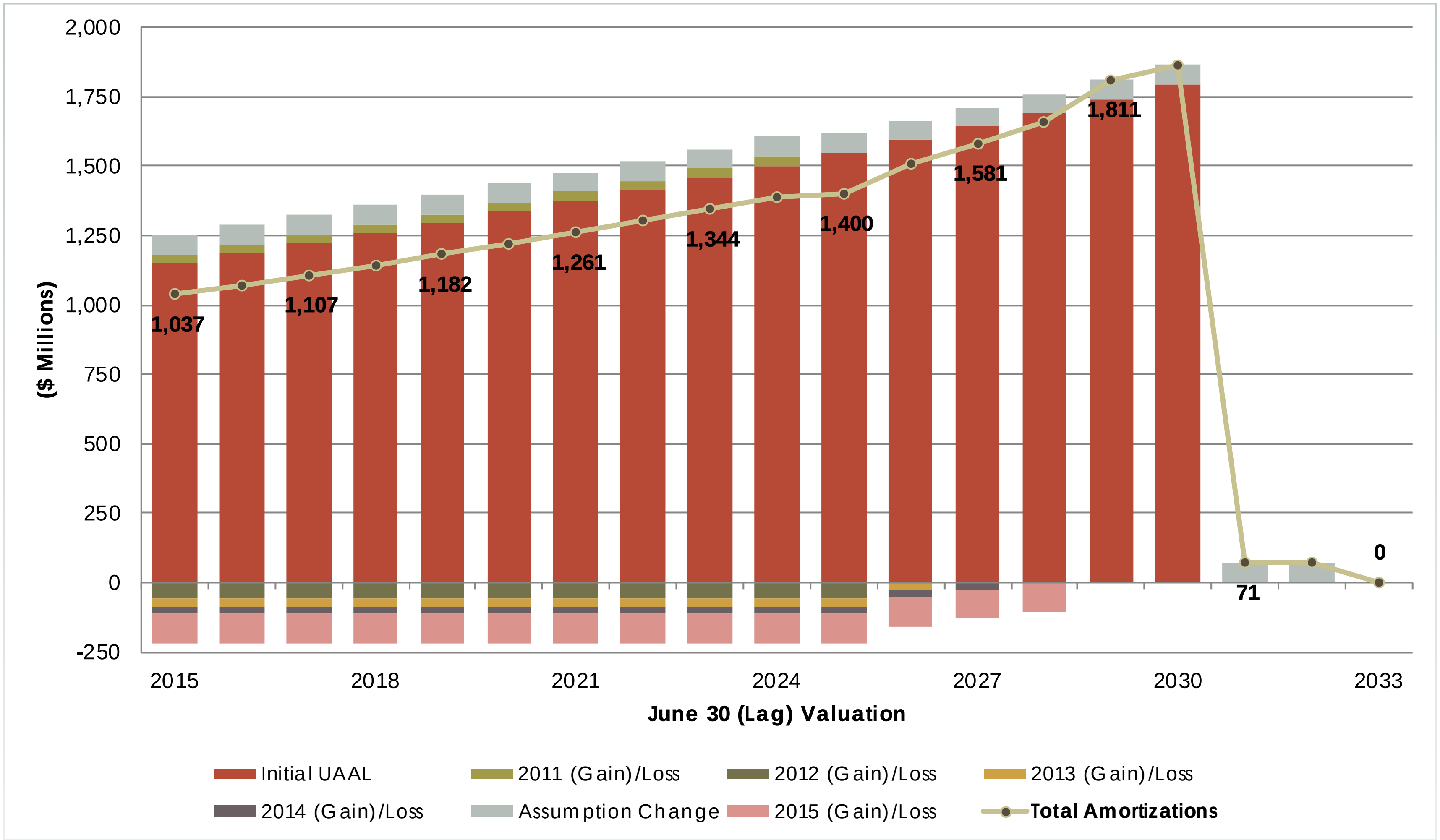


Table IV-5
Reconciliation of Outstanding UAAL Bases

	Amounts (in $ Thousands) Remaining to be Amortized, as of					
June 30 (Lag) Valuation Date	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Initial UAL amortization base	$ 13,211,375	$ 14,136,171	$ 14,098,951	$ 14,028,324	$ 13,921,027	$ 13,773,540
2010-2011 (Gain)/Loss		276,060	295,384	282,285	268,270	253,273
2011-2012 (Gain)/Loss			(497,039)	(531,832)	(508,248)	(483,013)
2012-2013 (Gain)/Loss				(234,947)	(251,393)	(240,245)
2013-2014 (Gain)/Loss					(219,675)	(235,053)
Assumption Change at June 30, 2014					706,645	756,110
2014-2015 (Gain)/Loss						(881,721)
Sum of Outstanding Amortization Amounts	**$ 13,211,375**	**$ 14,412,231**	**$ 13,897,296**	**$ 13,543,830**	**$ 13,916,626**	**$ 12,942,891**

June 30 (Lag) Valuation Date	2010	2011	2012	2013	2014	2015
1. Actuarial Accrued Liability (AAL)	$ 38,134,430	$ 40,524,580	$ 42,015,625	$ 43,900,094	$ 44,384,022	$ 45,297,561
2. Actuarial Value of Assets (AVA)	22,908,732	24,748,860	26,777,077	29,087,154	29,212,981	31,092,977
3. Unfunded Actuarial Accrued Liability (UAAL) (1. - 2.)	15,225,698	15,775,720	15,238,548	14,812,940	15,171,041	14,204,584
4. PV 1-year Adjusted Employer Normal Cost	2,014,323	1,328,510	1,306,238	1,232,609	1,216,942	1,223,860
5. PV Future Administrative Expense Reimbursement	0	34,979	35,014	36,501	37,473	37,833
6. Adjusted UAAL (3. - 4. - 5.)	**$ 13,211,375**	**$ 14,412,231**	**$ 13,897,296**	**$ 13,543,830**	**$ 13,916,626**	**$ 12,942,891**

Table IV-6
Actuarial and Statutory Contribution History

Table IV-6 compares the Statutory Contributions to the Actuarial Contributions for Fiscal Years 2008 through 2017.

($ Thousands)			
Fiscal Year Ended June 30	**Actuarial Contribution Certified**	**Statutory Contribution Contributed**	**Percentage of Actuarial Contribution Contributed**
2008	$ 1,797,824	$ 1,797,824	100.0%
2009	1,932,150	1,932,150	100.0%
2010	1,980,996	1,980,996	100.0%
2011	2,083,633	2,083,633	100.0%
2012	2,385,731	2,385,731	100.0%
2013	2,424,690	2,424,690	100.0%
2014	2,320,910	2,320,910	100.0%
2015	2,309,619	2,309,619	100.0%
2016	2,393,940	2,393,940	100.0%
2017	2,293,840	2,293,840	100.0%

Table IV-7
City Rates: Contributions as Percentage of Salary

Table IV-7 shows the City Rates defined to be the contributions as a percentage of salary for the Fiscal Years 2008 through 2017, inclusive.

CITY RATES ($ Thousands)			
Fiscal Year Ended June 30	**Actuarial Contribution**	**Salary[1] at Time =1.0**	**City Rate**
2008	$ 1,797,824	$ 2,797,411	64.267%
2009	1,932,150	2,946,710	65.570%
2010	1,980,996	3,097,485	63.955%
2011	2,083,633	3,252,706	64.058%
2012	2,385,731	3,448,765	69.176%
2013	2,424,690	3,459,872	70.080%
2014	2,320,910	3,420,312	67.857%
2015	2,309,619	3,512,778	65.749%
2016	2,393,940	3,540,326	67.619%
2017	2,293,840	3,509,985	65.352%

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

SECTION V - (GAIN)/LOSS ANALYSIS

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

Table V-1 develops the asset and liability (Gain)/Loss between the June 30, 2014 (Lag) actuarial valuation and the June 30, 2015 (Lag) actuarial valuation.[1]

DEVELOPMENT OF EXPERIENCE (GAIN)/LOSS JUNE 30, 2015 ($ Thousands)		
1. Expected Actuarial Accrued Liability (AAL)		
a. AAL at June 30, 2014	$	47,057,803
b. Total Normal Cost and Admin Expenses at June 30, 2014		1,394,184
c. Interest on 1.a. and 1.b. to June 30, 2015		3,391,639
d. Fiscal Year 2015 Benefit Payments		(2,749,775)
e. Interest on 1.d. to June 30, 2015		(94,614)
f. Expected AAL at June 30, 2015	$	48,999,237
2. Actual AAL at June 30, 2015	$	48,338,520
3. Expected Total Actuarial Value of Assets (AVA)		
a. Total AVA at June 30, 2014	$	31,886,762
b. Interest on 3.a. to June 30, 2015		2,232,073
c. Total Contributions Paid in Fiscal Year 2015		2,550,721
d. Interest on 3.c. to June 30, 2015		87,765
e. Fiscal Year 2015 Benefit Payments		(2,749,775)
f. Interest on 3.e. to June 30, 2015		(94,614)
g. Expected Total AVA at June 30, 2015	$	33,912,932
4. Actual Total AVA at June 30, 2015	$	34,133,936
5. Liability (Gain)/Loss (2. - 1.f.)	**$**	**(660,717)**
6. Actuarial Asset (Gain)/Loss (3.g. - 4.)	**$**	**(221,004)**
7. Total Actuarial (Gain)/Loss (5. + 6.)	**$**	**(881,721)**

[1] Includes results for Variable Supplements Funds.

SECTION VI – SCHEDULE OF FUNDING PROGRESS

Table VI-1
Schedule of Funding Progress

NEW YORK CITY POLICE PENSION FUND ($ Thousands)						
June 30 (Lag) Valuation Date	(1) Actuarial Value of Assets (AVA)	(2) Actuarial Accrued Liability (AAL)	(3) Unfunded AAL (UAAL) (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Covered Payroll	(6) UAAL as % of Covered Payroll (3) / (5)
2006	$18,689,451	$18,689,451	0	100.0%	$2,816,929	0.0%
2007	19,800,553	19,800,553	0	100.0%	2,961,649	0.0%
2008	21,393,152	21,393,152	0	100.0%	3,095,904	0.0%
2009	22,676,172	22,676,172	0	100.0%	3,261,118	0.0%
2010	22,908,732	38,134,430	15,225,698	60.1%	3,464,097	439.5%
2011	24,748,860	40,524,580	15,775,720	61.1%	3,480,066	453.3%
2012	26,777,077	42,015,625	15,238,548	63.7%	3,478,154	438.1%
2013	29,087,154	43,900,094	14,812,940	66.3%	3,607,607	410.6%
2014	29,212,981	44,384,022	15,171,041	65.8%	3,618,095	419.3%
2015	31,092,977	45,297,561	14,204,584	68.6%	3,564,030	398.6%

Effective June 30, 2010, AAL is based on the Entry Age Normal cost method. Previously, the Frozen Initial Liability cost method was used. AAL includes accrued liabilities attributable to the Variable Supplements Funds, net of their Actuarial Value of Assets, if any. Salaries include assumed overtime 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)

The New York City Police Pension Fund administers both the Police Officer's Variable Supplements Fund (POVSF) and the Police Superior Officers' Variable Supplements Fund (PSOVSF). The POVSF and PSOVSF (the Funds) operate pursuant to the provisions of Title 13, Chapter 2 of the Administrative Code of the City of New York (ACNY) and provide supplemental benefits to retirees who were Police Officers and Police Superior Officers, respectively, of the New York City Police Department, Subchapter One Pension Fund or New York City Police Department, Subchapter Two Pension Fund and who retired for service (with 20 or more years of service) on or after October 1, 1968.

Table VII-1
VSF Actuarial Accrued Liability

($ Thousands)		
Valuation Date	**June 30, 2015**	**June 30, 2014**
POVSF		
Active	$ 412,343	$ 404,568
Retiree	1,549,011	1,534,749
Total	$ 1,961,354	$ 1,939,317
PSOVSF		
Active	$ 1,270,144	$ 1,260,542
Retiree	2,314,463	2,268,930
Total	$ 3,584,607	$ 3,529,472
Total VSF AAL	$ 5,545,961	$ 5,468,789

Table VII-2
VSF Member Data

VARIABLE SUPPLEMENTS FUNDS

MEMBERS INCLUDED IN THE
JUNE 30, 2015 (LAG) AND JUNE 30, 2014 (LAG) ACTUARIAL VALUATIONS

	June 30, 2015		June 30, 2014	
	POVSF	**PSOVSF**	**POVSF**	**PSOVSF**
Actives				
Number	22,162	12,273	22,204	12,198
Average Age	35.09	42.55	34.97	42.44
Retirees				
Number	12,367	18,029	12,251	17,608
Average Age	61.59	60.57	61.46	60.25

Table VII-3
VSF Statement of Assets

($ Thousands)				
Valuation Date	**June 30, 2015**		**June 30, 2014**	
	MVA[1]	**AVA**	**MVA**[2]	**AVA**
POVSF	$1,923,579	$1,928,443	$1,683,868	$1,640,981
PSOVSF	1,065,500	1,112,516	1,021,422	1,032,800
Total	$2,989,079	$3,040,959	$2,705,290	$2,673,781

[1] Includes Accrued Benefits Payable of $75,645,000 for POVSF and $110,878,000 for PSOVSF.

[2] Includes Accrued Benefits Payable of $74,933,000 for POVSF and $108,599,000 for PSOVSF.

Table VII-4
Development of VSF Actuarial Value of Assets

($ Thousands)		
	POVSF	PSOVSF
1. Market Value of Assets (MVA)		
a. Beginning of Year (BOY)[1]	$ 1,608,935	$ 912,823
b. End of Year (EOY)[2]	$ 1,847,934	$ 954,622
2. Contributions		
a. Employee	$ 0	$ 0
b. Employer	0	0
c. Total Contributions	$ 0	$ 0
3. Benefit Payments and Other Cash Flow	$ (151,308)	$ (234,617)
4. Preliminary SKIM from POLICE to VSFs - EOY	$ 330,000	$ 260,000
5. Net Cash Flow (2.c. + 3. + 4.)	$ 178,692	$ 25,383
6. Net Investment Income		
a. Investment Income	$ 61,307	$ 18,817
b. Investment Expenses	(288)	(122)
c. Total Net Investment Income	$ 61,019	$ 18,695
7. Average invested assets		
a. AVA @ BOY	$ 1,640,981	$ 1,032,800
b. 1/2 Net Cash Flow before SKIM ((2.c. + 3.) / 2)	(75,654)	(117,309)
c. Total	$ 1,565,327	$ 915,491
8. Expected Rate of Return (AIR)	7.00%	7.00%
9. Expected Investment Return (EIR) (7.c. x 8.)	$ 109,573	$ 64,084
10. Unexpected Investment Return (UIR) (6.c. - 9.)	$ (48,554)	$ (45,389)
11. Preliminary AVA @ EOY		
a. AVA @ BOY	$ 1,640,981	$ 1,032,800
b. Net Cash Flow (5.)	178,692	25,383
c. Expected Investment Return (9.)	109,573	64,084
d. Phase in of UIR		
15% * UIR for year ending June 30, 2015	(7,283)	(6,808)
15% * UIR for year ending June 30, 2014	7,306	(162)
15% * UIR for year ending June 30, 2013	4,514	(264)
15% * UIR for year ending June 30, 2012	(5,340)	(2,517)
20% * UIR for year ending June 30, 2011	N/A	N/A
20% * UIR for year ending June 30, 2010	N/A	N/A
Total	$ (803)	$ (9,751)
e. AVA (11.a. + 11.b. + 11.c. + 11.d.)	$ 1,928,443	$ 1,112,516
12. Corridor		
a. 80% of MVA	$ 1,538,863	$ 852,400
b. 120% of MVA	$ 2,308,294	$ 1,278,600
13. Final AVA at EOY (11e. bounded by 12.)	**$ 1,928,443**	**$ 1,112,516**

[1] Net of Accrued Benefits Payable of $74,933,000 for POVSF and $108,599,000 for PSOVSF.

[2] Net of Accrued Benefits Payable of $75,645,000 for POVSF and $110,878,000 for PSOVSF.

Table VII-5
SKIM Calculation as of June 30, 2015

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

($ Thousands)	Preliminary[1]		Final	
Total POLICE Pension Fund				
1. FY2015 Equity Earnings	$ 1,160,408		$ 1,149,847	
2. FY2015 Hypothetical Earnings	555,425		585,409	
3. FY2015 Excess Earnings (2. - 1.)	604,983		564,438	
4. Deficit at June 30, 2014	0		0	
5. Hypothetical Interest Rate (HIR)	2.562%		2.562%	
6. Deficit with interest (4 x (1+HIR)^2))	0		0	
7. Potential SKIM (3. - 6.)	$ 604,983		$ 564,438	
	POVSF	PSOVSF	POVSF	PSOVSF
Allocations to VSF				
8. Allocation Percentage[2]	55.8%	44.2%	53.263%	46.737%
9. Potential SKIM (7. x 8.)	$ 337,581	$ 267,402	$ 300,637	$ 263,802
10. Accumulated Benefit Obligation	2,042,939	3,399,184	2,070,025	3,461,157
11. MVA Prior to SKIM	1,593,579	805,499	1,593,579	805,499
12. ABO Gate = (10. - 11.)	449,360	2,593,685	476,446	2,655,658
13. SKIM Payable (Lesser of 9 and 12, not less than zero)	**$ 337,581**	**$ 267,402**	**$ 300,637**	**$ 263,802**
14. Rounded Estimate, for FY15 Financial Statements[3]	$ 330,000	$ 260,000		

[1] Estimated at November 2, 2015.

[2] For estimated SKIM, based on Valuation Salaries at June 30, 2014.

[3] Included in MVA at June 30, 2015.

Table VII-6

VSF Projected Benefit Payments as of June 30, 2015

($ Thousands)	POVSF			PSOVSF		
Fiscal Year	Actives	Retirees	Total	Actives	Retirees	Total
2016	$ 12,097	$ 145,355	**$ 157,452**	$ 44,769	$ 211,847	**$ 256,616**
2017	16,803	142,836	**159,639**	53,133	209,063	**262,196**
2018	22,008	139,626	**161,634**	62,898	205,120	**268,018**
2019	27,213	136,353	**163,566**	71,067	201,212	**272,279**
2020	31,314	133,109	**164,423**	76,545	197,265	**273,810**
2021	37,501	129,906	**167,407**	82,893	193,423	**276,316**
2022	42,509	126,820	**169,329**	87,357	189,603	**276,960**
2023	49,293	123,848	**173,141**	92,651	185,879	**278,530**
2024	55,154	120,970	**176,124**	96,560	182,286	**278,846**
2025	63,101	118,022	**181,123**	101,044	178,484	**279,528**

The population shown represents a closed group based upon members' status classification at June 30, 2015.

Summary of VSF Plan Provisions

A. Eligibility

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

B. Benefits

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

C. Cost of Living Benefits

Any 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.

E. VSF DROP

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

Summary of VSF Actuarial Assumptions and Methods

Assumptions not detailed below are as described in SECTION X – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS (2016 A&M).

1. **POVSF vs. PSOVSF Membership**: All active members who are currently Police Superior Officers are assumed to retire for service with twenty or more years of service as Police Superior Officers. Additional active retirements for Service are assumed such that 50% of overall active Service retirements are assumed from the rank of Police Superior Officer.

2. **COLA**: 1.5% per year for Auto COLA, used to estimate future COLA on the first $18,000 of POLICE benefits which, in general, reduces benefits payable by the Fund until age 62.

3. **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 POVSF and the PSOVSF as is used to determine the AVA of the Plan. For more information, see SECTION III – MARKET AND ACTUARIAL VALUES OF ASSETS.

4. **Liability Method**: The obligations of POLICE to the POVSF and the PSOVSF are recognized through a methodology where the APV of future VSF transfers from POLICE to the POVSF and PSOVSF is included directly as an actuarial liability of POLICE. This amount is computed as the excess, if any, of the APV of benefits of the POVSF and PSOVSF over the AVA of the POVSF and PSOVSF, respectively. Under EAN, a portion of the APV of future VSF transfers is reflected in the APV of future normal costs and a portion is reflected in the UAAL.

5. **SKIM Calculation**: The ACCNY provides that POLICE transfer to the Funds a portion of the amount by which earnings on equity investments of POLICE exceed what the earnings would have been had such funds been invested at a yield rate equal to that of newly issued fixed-income securities, less any negative Cumulative Earnings Differentials and other limitations, determined as follows:

    a. *Hypothetical Interest Rate*: 115% of the average of monthly yields of 10-year U.S. Treasury Notes

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 Factor*: The current year's positive Earnings Differential, offset by any negative Earnings Differentials from prior years accumulated with interest at the Hypothetical Interest Rate

e. *Proportionate Transferable Earnings*: The portion of the Cumulative Earnings Factor allocable to the VSFs based on the ratio of total contributions between Police Officers and Police Superior Officers, limited so as not to allow assets to exceed the Accumulated Benefit Obligation (ABO) of the VSFs.

SECTION VIII – SUMMARY OF PLAN PROVISIONS

A. Effective Date:

March 29, 1940

B. Eligibility Requirements:

1. Tier 1: Pre-July 1, 1973.
2. Tier 2: July 1, 1973 to June 30, 2009.
3. Tier 3: July 1, 2009 to March 31, 2012.
4. Tier 3 Revised: On or after April 1, 2012.

Eligible service includes City service in positions in the competitive class of the civil service for probationary periods or permanent appointments in the Police force; or City service in a position of Police Surgeon classified in the non-competitive class of civil service.

C. Member Contributions:

1. Tier 1 and Tier 2

   Required Member Contributions – Based upon age at entry and elected retirement age, credited with regular and special interest. Contributions are required for the first 20 or 25 years, depending on the member's selection of minimum period of Membership service.

   Voluntary Member Contributions – Additional contributions to the Annuity Savings Fund credited with regular and special interest.

2. Tier 3 and Tier 3 Revised

   Members contribute 3.0% of salary for a maximum of 25 years.

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

1. Tier 1 and Tier 2

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

2. Tier 3 and Tier 3 Revised

   The City of New York does not pay any portion of member contributions.

E. Credited Service:

Credited service is classified as Allowable Police Service or certain other Credited Service.

1. Tier 1 and Tier 2

   Members are credited with one year of service for two hundred fifty or more days of service and not more than one year for all service in any calendar year. Allowable Police Service includes service in the Uniformed Transit Police Force, Uniformed Housing Police Force, Uniformed Correction Force, and Uniformed Sanitation Force, provided all such service immediately precedes the Uniformed Police Force service.

   Allowable Police Service also includes service in the New York Fire Department.

   Members may purchase, subject to limitations in the law, years of certain wartime military service, combined military service, and service as police officers in a foreign country for the United States Government, and authorized Child Care Leave.

2. Tier 3 and Tier 3 Revised

   Police service includes service in the uniformed force of the New York Fire Department and the New York State and Local Police and Fire Retirement System.

Members may purchase, subject to limitations in the law, years of certain war time military service.

F. Salary Base:

1. Tier 1

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

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

2. Tier 2

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

   If greater, FAS will equal the greatest average three consecutive years' pensionable compensation, where each year's salary cannot exceed 120% of the average of the two previous years.

3. Tier 3

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

4. Tier 3 Revised

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

G. Service Retirement

1. Eligibility

   a. Tier 1 and Tier 2

      Completion of 20 or 25 years of Credited Service, in accordance with the member’s selection of the minimum period of Membership service.

   b. Tier 3

      <u>Early Service Retirement</u>: Completion of 20 years of Credited Service or attainment of age 62.

      <u>Normal Service Retirement</u>: Completion of 22 years of Credited Service.

   c. Tier 3 Revised

      <u>Early Service Retirement</u>: Completion of 20 years of Credited Service.

      <u>Normal Service Retirement</u>: Completion of 22 years of Credited Service.

2. Benefits

a. Tier 1 and Tier 2

50% of [FS (Tier 1) or FAS (Tier 2)] plus 1/60th of the sum of all salary after 20 or 25 years, as applicable, of Credited Service.

The benefit is adjusted by the annuitized value of the net excess or deficit of accumulated member contributions and ITHP over or under the required amounts.

b. Tier 3 and Tier 3 Revised

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

H. Disability Retirement

1. Accidental Disability (ADR)

a. Eligibility

i. All Tiers

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

b. Benefits

i. Tier 1 and Tier 2

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

ii. Tier 3 and Tier 3 Revised

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

2. Ordinary Disability (ODR)

a. Eligibility

i. Tier 1 and Tier 2

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

ii. Tier 3 and Tier 3 Revised:

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

b. Benefits

i. Tier 1 and Tier 2

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

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

Minimum Benefit:

Less than 10 years of service: ⅓ of [FS (Tier 1) or FAS (Tier 2)]

10 or more years of service: ½ of [FS (Tier 1) or FAS (Tier 2)],

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

ii. Tier 3 and Tier 3 Revised

The greater of:

(a) 33 1/3% of FAS

(b) 2.0% of FAS times number of years of Credited Service (not in excess of 22 years),

less 50% of the Primary Social Security Disability Benefit.

I. Death Benefits

1. Accidental Death Benefits

a. Eligibility

i. All Tiers: Immediate.

b. Benefits

i. Tier 1 and Tier 2

50% of the average of the final five years of salary, payable to surviving spouse or other eligible dependents for life

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

ii. Tier 3 and Tier 3 Revised

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

In addition there may be a benefit payable in accordance with General Municipal Law Section 208(f).

2. Ordinary Death Benefit

a. Eligibility

i. <u>Tier 1</u>: Immediate

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

b. Benefits

i. Tier 1

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

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

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

ii. Tier 2

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

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

iii. Tier 3 and Tier 3 Revised

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

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

J. Vested Benefit upon Termination

1. Eligibility

Credited Service:	Vested Percentage:
Less than 5 years	0%
5 or more years	100%

2. Benefit at Service Retirement Date

A vestee may elect a refund of accumulated member contributions, but would then lose entitlement to a vested benefit.

a. Tier 1 and Tier 2

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

b. Tier 3

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

In addition, the benefit is reduced by 50% of the Primary Social Security Retirement benefit at age 62.

c. Tier 3 Revised

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

In addition, the benefit is reduced by 50% of the Primary Social Security Retirement benefit at age 62.

K. Normal Form of Retirement Income

Single Life Annuity.

L. Loans

Applicable to Tier 1 and Tier 2 only.

1. Eligibility: After three years of membership up to the day of retirement.

2. Amount: Up to 90% of accumulated member contributions with a limit of $50,000 for tax-free treatment under IRC Section 72(p).

M. Cost of Living Adjustments (Auto COLA)

Applicable to Tier 1 and Tier 2 only.

1. Eligibility

   a. <u>Service Retirees</u>: Age 62 and retired 5 years or age 55 and retired 10 years.

   b. <u>Disability Retirees</u>: Retired 5 years.

   c. <u>Beneficiaries receiving accidental death benefits</u>: Receiving benefits for 5 years.

2. Amount

   Starting with benefits for September 2001, the Auto COLA percentage is 50% of the increase in CPI-U based upon the 12 months ending March 31 prior to the Auto COLA effective on the ensuing September 1, rounded to the next higher 0.1%. Such percentage shall not be less than 1.0% nor greater than 3.0%. This percentage is applied to the first $18,000 of the total retirement benefit (including all prior Auto COLAs) that is payable if no optional form of benefit is elected.

If a retiree dies and has chosen an optional form of payment which provides for benefits to be continued to the spouse for life, one half of the Auto COLA amount is paid to such spouse.

N. Escalation

Applicable to Tier 3 and Tier 3 Revised only.

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 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, the lesser of 3.0% or the Cost-of-Living Index increase, as computed December 31 of each prior year for benefits being escalated the following April.

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

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

4. Partial Escalation

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

O. WTC Disability Benefits

Certain active, vested, and retired members of the Plan, who participated in the rescue, recovery, or clean-up operations at the WTC site and who become disabled due to certain diseases, are presumed to have become disabled in the performance of duty and therefore may be entitled to be reclassified with an Accidental Disability Retirement.

P. WTC Death Benefits

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

Q. Changes Since the Prior Valuation

There are no new plan provisions reflected since the prior valuation.

SECTION IX – CHAPTER AMENDMENTS

The June 30, 2015 (Lag) actuarial valuation results reflect the following Chapter amendments from the prior five years.

- Chapter 427 of the Laws of 2014 (Chapter 427/14), amended Military Law Section 243-d, effective November 4, 2014, to provide non-contributory retirement service credit for members of the New York City Retirement Systems called to active military duty on or after September 11, 2001 and prior to January 1, 2006 who did not receive his or her full salary from a participating employer and is otherwise eligible to receive retirement service credit for such service.

- Chapter 489 of the Laws of 2013 (Chapter 489/13), addressed limitations in existing disability provisions intended to protect public employees who suffered injuries or illnesses in WTC rescue, recovery and cleanup operations.

- Chapter 3 of the Laws of 2013 (Chapter 3/13), effective retroactive to July 1, 2011, enacted those 2012 A&M that require State legislation.

- Chapter 18 of the Laws of 2012 (Chapter 18/12), placed certain limitations on the Tier 3 and Tier 4 benefits available to participants hired on and after April 1, 2012 in most New York State Public Employee Retirement Systems, including POLICE, and is generally referred to as Tier 6 (referred to by POLICE as Tier 3 Revised).

SECTION X – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS (2016 A&M)

The February 10, 2012 report entitled, "Proposed Changes in Actuarial Assumptions and Methods for Determining Employer Contributions For Fiscal Years Beginning on and After July 1, 2011 For the New York City Police Pension Fund" contains the 2012 A&M. This report details the best judgment of the Actuary and takes into account the two most recent actuarial experience studies and recommendations prepared by The Segal Company in their report dated November 2006 and The Hay Group in their report dated December 2011.

A memorandum dated December 4, 2015 to the Board of Trustees of POLICE contains the revised probabilities of post-retirement mortality beginning with the June 30, 2014 (Lag) actuarial valuation.

In addition, beginning with the June 30, 2014 (Lag) actuarial valuation, the AVA is constrained to be within a corridor of 80% to 120% of market value.

The 2012 A&M, after reflection of the above changes to the probabilities of post-retirement mortality and the introduction of the AVA corridor, are referred to as the 2016 A&M.

Representative samples of the actuarial assumptions and a description of the actuarial methods follow. Full tables of the 2012 A&M are available on the New York City Office of the Actuary website, under "Reports."

Table X-1: Active Member Mortality

Table X-1 presents a sample of probabilities of mortality that are used for active members.

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF ACTIVE MEMBER MORTALITY			
	Ordinary Death		
Age	Males	Females	Accidental Death
20	0.04%	0.03%	0.01%
30	0.04%	0.03%	0.01%
40	0.05%	0.04%	0.02%
50	0.15%	0.10%	0.03%
60	0.30%	0.20%	0.04%
70+	NA	NA	NA

Table X-2: Service Retiree Mortality

Table X-2 presents a sample of the Valuation Table probabilities of mortality that are used for service retirees with separate probabilities for males and females. The Valuation Table probabilities reflect the application of Mortality Improvement Scale MP-2015.

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF POST-RETIREMENT MORTALITY IN THE JUNE 30, 2015 (LAG) VALUATION		
Age	Males	Females
20	0.0219%	0.0126%
30	0.0400%	0.0264%
40	0.0836%	0.0567%
50	0.1940%	0.1908%
60	0.7617%	0.5288%
70	1.8000%	1.1933%
80	5.0173%	3.6572%
90	14.0346%	10.1351%
100	31.0742%	21.4488%
110	96.7583%	96.7971%
115	100.0000%	100.0000%

Table X-3: Disabled Retiree Mortality

Table X-3 presents a sample of the Valuation Table probabilities of mortality that are used for disabled retirees with separate probabilities for males and females. The Valuation Table probabilities reflect the application of Mortality Improvement Scale MP-2015.

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF POST-DISABLEMENT MORTALITY IN THE JUNE 30, 2015 (LAG) VALUATION		
Age	Males	Females
20	0.0313%	0.0154%
30	0.0706%	0.0411%
40	0.1355%	0.0684%
50	0.3753%	0.2605%
60	0.9432%	0.6219%
70	2.2100%	1.5428%
80	5.9024%	4.6534%
90	17.1410%	12.7907%
100	33.8579%	21.6887%
110	96.7583%	96.7971%
115	100.0000%	100.0000%

Table X-4: Beneficiary Mortality

Table X-4 presents a sample of the Valuation Table probabilities of mortality that are used for beneficiaries with separate probabilities for males and females. The Valuation Table probabilities reflect the application of Mortality Improvement Scale MP-2015.

NEW YORK CITY POLICE PENSION FUND

PROBABILITIES OF BENEFICIARY MORTALITY
IN THE JUNE 30, 2015 (LAG) VALUATION

Age	Males	Females
20	0.0219%	0.0126%
30	0.0400%	0.0264%
40	0.0925%	0.0680%
50	0.4086%	0.2472%
60	1.0773%	0.7335%
70	1.9534%	1.3903%
80	5.2649%	3.7065%
90	14.0544%	10.5748%
100	31.0742%	21.4655%
110	96.7583%	96.7971%
115	100.0000%	100.0000%

Table X-5: Withdrawal

Table X-5 presents a sample of probabilities of withdrawal from active service, for causes other than death or retirement.

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF WITHDRAWAL FOR CAUSES OTHER THAN DEATH OR RETIREMENT	
Years Of Service	Probability Of Withdrawal
0	4.00%
5	2.00%
10	1.00%
15	0.30%
20	NA

Table X-6: Disability

Table X-6 presents a sample of probabilities of disability retirement during active service:

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF DISABILITY RETIREMENT				
		Accidental Disability		
		Tier 1 and Tier 2		Tier 3/ Tier 3 Revised
Age	Ordinary Disability	Not Eligible for WTC Benefits	Eligible for WTC Benefits	
20	0.050%	0.150%	0.300%	0.150%
30	0.100%	0.500%	1.000%	0.500%
40	0.150%	1.250%	2.500%	1.200%
50	0.200%	2.000%	4.000%	1.500%
60	6.000%	5.000%	10.000%	3.000%

Table X-7a: Service Retirement, Unreduced with Full COLA

Table X-7a presents a sample of select and ultimate age-based probabilities of retirement, for those eligible for unreduced retirement.

NEW YORK CITY POLICE PENSION FUND

PROBABILITIES OF SERVICE RETIREMENT
FOR THOSE ELIGIBLE FOR
UNREDUCED RETIREMENT WITH FULL COLA

	Years of Service Since First Eligible		
Age	0	1	2 or More
40	60.00%	15.00%	10.00%
50	60.00%	15.00%	15.00%
60	60.00%	20.00%	20.00%
61	60.00%	30.00%	30.00%
62	60.00%	50.00%	50.00%
63	100.00%	100.00%	100.00%

Table X-7b: Service Retirement, Tier 3 and Tier 3 Revised Early Service Retirement

Table X-7b presents a sample of probabilities of retirement, for those assumed to retire prior to eligibility for unreduced retirement.

NEW YORK CITY POLICE PENSION FUND PROBABILITIES OF SERVICE RETIREMENT FOR TIER 3 AND TIER 3 REVISED EARLY SERVICE RETIREMENT		
Years of Service	Reduced Retirement	Unreduced Before Full COLA
20	5.00%	NA
21	2.00%	NA
22	NA	5.00%
23	NA	2.00%
24	NA	2.00%

Table X-8: Salary Scale

Table X-8 presents a sample of service-based salary increase rates.

NEW YORK CITY POLICE PENSION FUND ANNUAL RATES OF SALARY INCREASE	
Years of Service	Salary Scale Rate of Next Increase
0	3.00%
1	7.00%
2	13.00%
3	15.00%
4	21.00%
5	36.00%
10	5.00%
15	4.50%
20	4.00%
25 +	3.50%

Salary Scale includes an assumed General Wage Increase of 3.0% per annum. Longevity increases for the first 10 years are first included in FAS after 20 years of service. All longevity increases are included in FAS after 25 years of service.

Table X-9: Overtime Assumptions

NEW YORK CITY POLICE PENSION FUND OVERTIME					
Years of Service	All Tiers Baseline	Tier 1/2 Dual Service	Tier 1/2 Dual Disability	Tier 3/ Tier 3 Revised Dual Service	Tier 3/ Tier 3 Revised Dual Disability
0	15.00%	18.00%	8.00%	17.00%	12.00%
5	15.00%	18.00%	8.00%	17.00%	12.00%
10	15.00%	18.00%	8.00%	17.00%	12.00%
15	15.00%	18.00%	8.00%	17.00%	12.00%
20	15.00%	18.00%	12.00%	17.00%	14.00%
25	12.00%	15.00%	9.00%	14.00%	11.00%
30	7.00%	10.00%	6.00%	9.00%	6.00%
35	6.00%	8.00%	6.00%	7.00%	6.00%
40	6.00%	8.00%	6.00%	7.00%	6.00%
45	6.00%	8.00%	6.00%	7.00%	6.00%

Dual Overtime assumptions are used for years immediately preceding retirement in which compensation would contribute toward FS or FAS calculations.

Additional Assumptions and Methods

1. **Marital Assumption**: All active members are assumed to be married and females are assumed to be three years younger than their male spouses.

2. **Credited Service**: Calculated in whole year increments for valuation purposes.

3. **Loans**: Except for Death Benefits, it is assumed that eligible members take the maximum allowable loan at retirement.

4. **Actuarial Interest Rate**: 7.0% per annum, net of investment expenses.

5. **COLA**: Based on an assumed long-term Consumer Price Index inflation rate of 2.5% per year. 1.5% per year for Auto COLA, 2.5% per year for Escalation.

6. **Actuarial Asset Valuation Method (AAVM)**:

   The Actuary reset the Actuarial Value of Assets to 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, actual 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).

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

7. **Actuarial Cost Method**: Beginning with the June 30, 2010 (Lag) actuarial valuation, the Entry Age Normal (EAN) cost method of funding is used by the Actuary to calculate the contribution required of the employer under the 2016 A&M.

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

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

Under this method, actuarial gains and losses, as they occur, reduce and increase the UAAL, 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 UAALs 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 25.

Under EAN, the employer normal cost remains constant and changes gradually over time for the entire plan as the characteristics of the members change (e.g. more Tier 3 Revised active members decrease the average employer normal cost).

8. **Lump Sum Death Benefits**: Liabilities for group life lump sum death benefits are calculated under the One-Year Term Cost method.

9. **Allowances for Administrative Expenses**: The Employer Contribution for a fiscal year is increased by the interest-adjusted amount of administrative expenses paid from POLICE during the second prior fiscal year.

10. **WTC Disability and Death Benefits**: For actuarial valuations beginning June 30, 2014 and later, obligations attributable to the WTC Disability Law and to the WTC Death Benefits Law are determined through the use of explicit assumptions in the 2016 A&M, and through estimation techniques for post-retirement reclassifications.

11. **One-year Lag Methodology**: One year Lag Methodology uses a June 30, XX-2 valuation date to determine Fiscal Year XX employer contributions.

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

Present Value of Future Salary (PVFS): The PVFS at June 30, XX-2 is reduced by the value of salary projected to be paid during Fiscal Year XX-1.

Salary for Determining Employer Normal Contributions: Salary used to determine the employer Normal Contribution is the salary projected to be paid during Fiscal Year XX to members on payroll at June 30, XX-2.

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

SECTION XI – SUBSEQUENT EVENTS

Chapter 41 of the Laws of 2016 (Chapter 41/16), signed into law on May 31, 2016 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. This law will be reflected in future valuations as participants request military service credit.

Chapter 59 of the Laws of 2017 (Chapter 59/17), Part SSS, signed into law on April 10, 2017, changes the Accidental Disability Retirement and Ordinary Disability Retirement benefits for current Tier 3 and Tier 3 Revised members who elect to participate in the Enhanced Disability Benefits. Tier 3 Revised members as of April 1, 2017 and later are mandated into the Enhanced Disability Benefits. Members electing or mandated into this benefit will pay an extra 1% of wages.

The Enhanced Accidental Disability Benefit is equal to 75% of FAS5.

The Enhanced Ordinary Disability Benefit is equal to the greater of:

33 1/3% of FAS5, or

2% of FAS5 multiplied by years of credited service (not in excess of 22 years).

Under the OYLM, the first year in which these changes to the disability benefits will impact the employer contribution is Fiscal Year 2019.

In February 2017, the City engaged Bolton Partners to perform an actuarial audit of the five New York City Retirement Systems and Pension Funds, serving as the Independent Actuary under Section 96 of the New York City Charter. The engagement includes, but is not limited to, contribution audits, experience studies, and administrative reviews of each system. Bolton Partners released their reports on March 12, 2018. Further experience studies are being conducted and are anticipated to change actuarial assumptions in future actuarial valuations; the first year in which changes to actuarial assumptions will impact the employer contribution is expected to be Fiscal Year 2019.

SECTION XII – RISK AND UNCERTAINTY

The Fiscal Year 2017 employer contribution is based on the census data reported as of June 30, 2015 and on actuarial assumptions and methods adopted by the Board of Trustees during Fiscal Year 2012 and enacted by the New York State Legislature as Chapter 3 of the Laws of 2013 (the 2012 A&M), with revisions made to the post-retirement mortality assumptions and to the AAVM during Fiscal Year 2016 (the 2016 A&M).

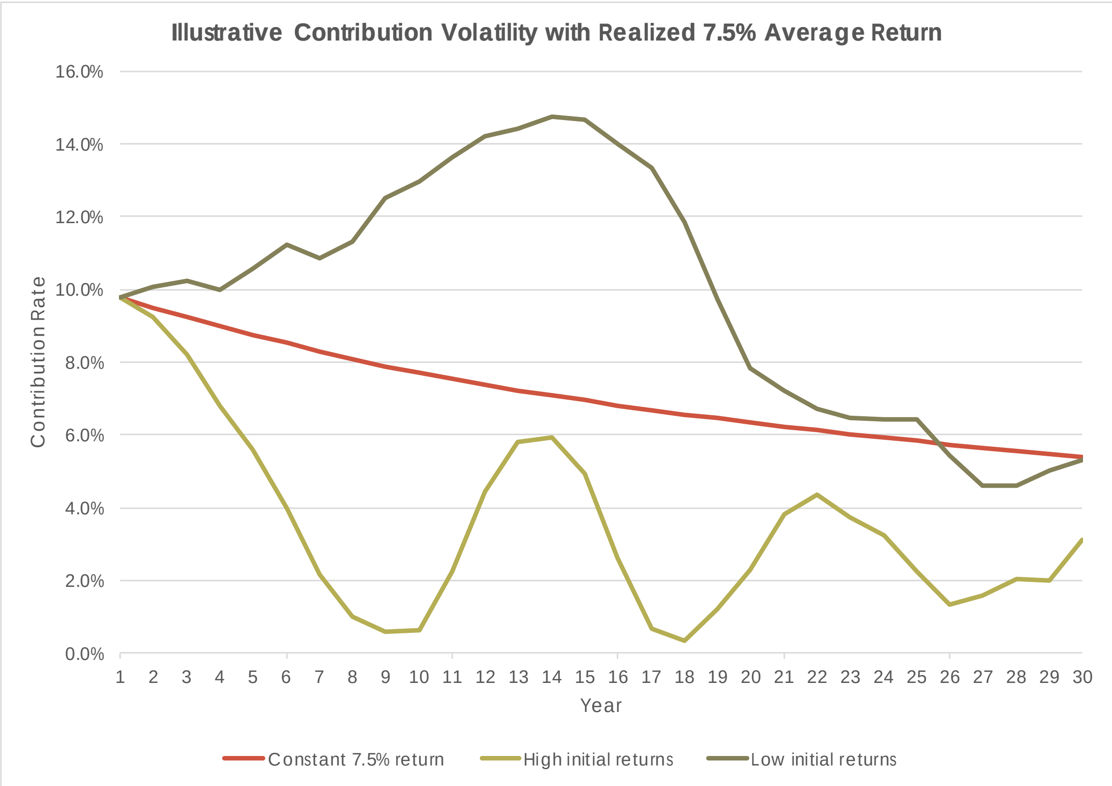
The funded status of POLICE depends highly on the realization of the actuarial assumptions used, as well as certain demographic characteristics of the Plan and other exogenous factors. Many of the risks faced by the Plan are described in fuller detail below; in future years, full stochastic simulation of the Plan funding would help quantify these risks as they pertain to the Plan.

High Risk Types

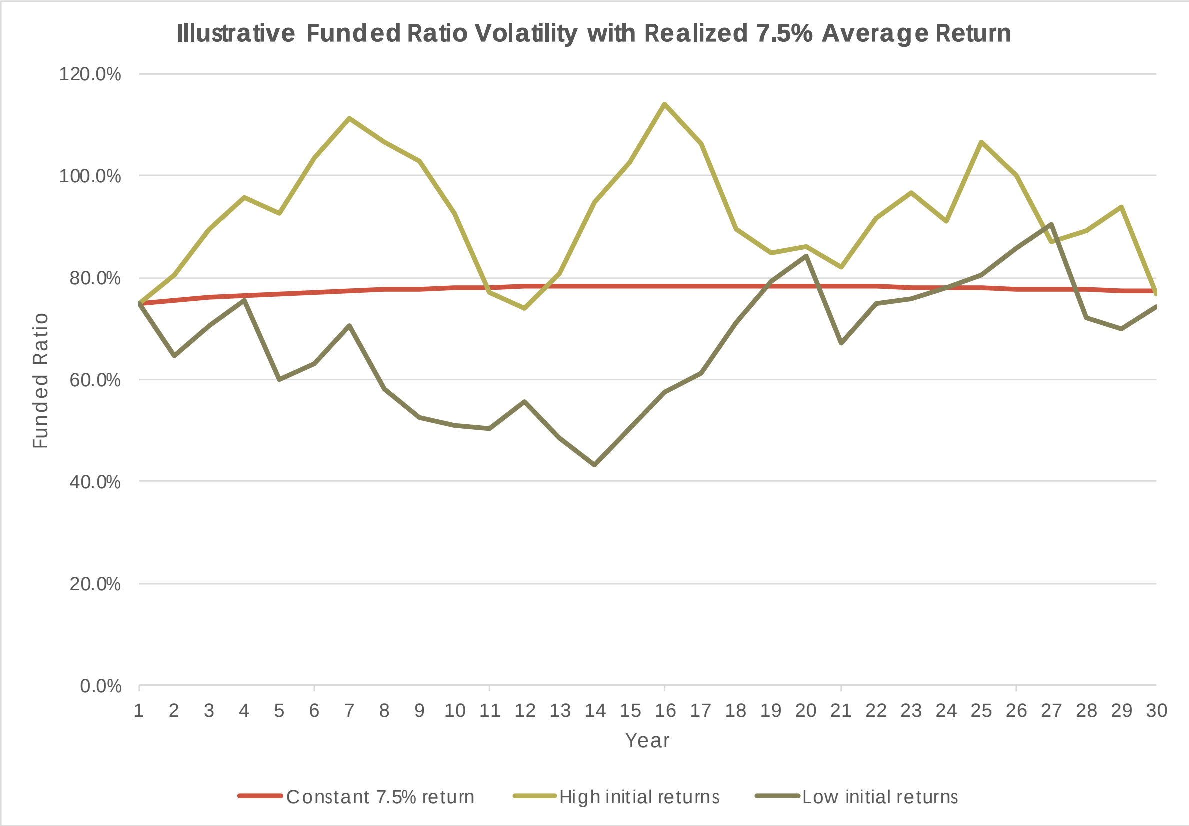
Investment Risk

The most substantial risk for POLICE is the investment risk that investment returns may be different than assumed. As risk-free investment return rates have fallen in recent decades, more aggressive asset allocations have become necessary to achieve long-term rates of return commensurate with the actuarial assumption of 7.0%.

This investment return volatility can contribute substantially to contribution and funded status volatility, even if the long-term investment return assumption of 7.0% is realized. While not yet available specifically for the Plan, 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.[1] Similar scenario analysis could be done for POLICE.



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



Note that these illustrations show volatility even if long-term expected rates of return are realized. Further risk exists that long-term expected rates of return may not be realized.

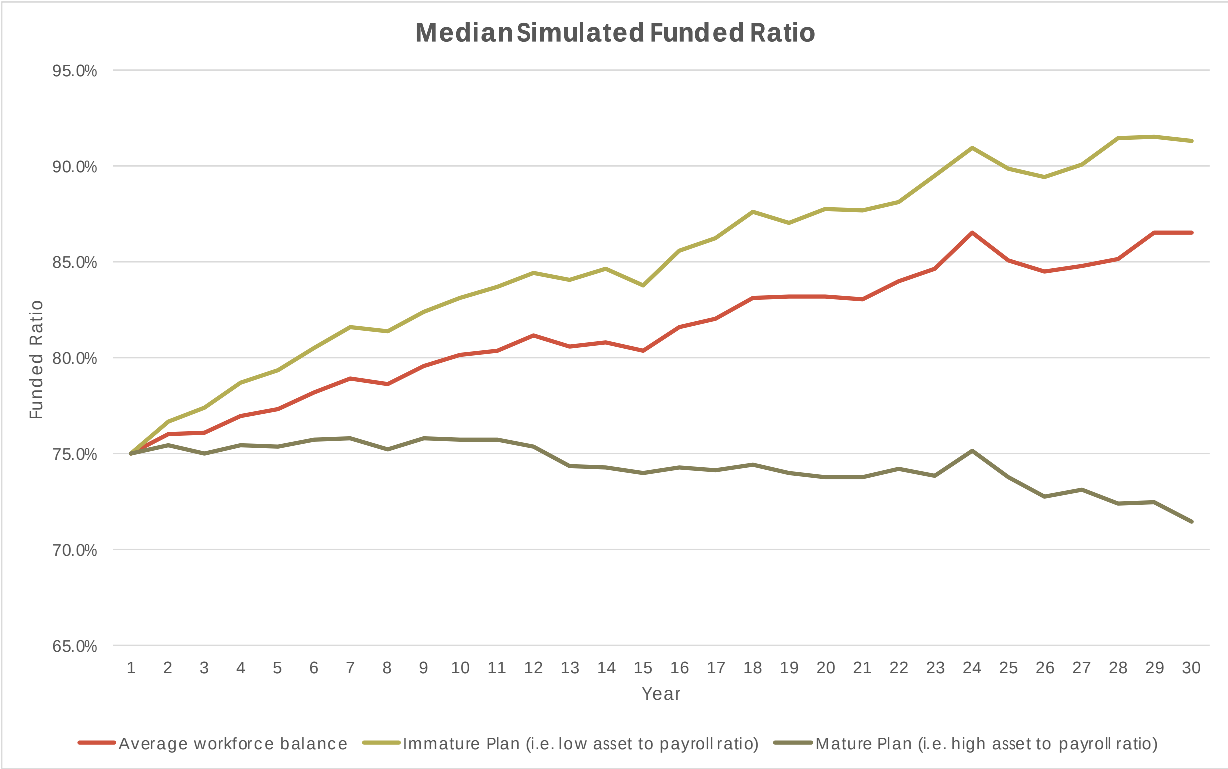
Maturity Risk

With respect to future fiscal years, it should be noted that POLICE is a mature pension fund. A mature pension fund has a significant ratio of retirees to active members and, usually, of assets to active member payroll and of Actuarial Accrued Liability (AAL) to active member payroll. These ratios, sometimes known as volatility ratios, for the Plan can be found in the chart below.

Valuation Date	June 30, 2015 (Lag)	June 30, 2014 (Lag)
Fiscal Year	**2017**	**2016**
Volatility Ratios		
1. Market Value of Assets (MVA)	$ 32,355,973,000	$ 31,750,892,000
2. Actuarial Value of Assets (AVA)	31,092,977,000	29,212,981,000
3. Actuarial Accrued Liability	45,297,561,300	44,384,022,415
4. Active Salary	3,564,029,659	3,618,095,284
5. Asset Volatility Ratio (MVA basis) (1. / 4.)	9.1	8.8
6. Asset Volatility Ratio (AVA basis) (2. / 4.)	8.7	8.1
7. Liability Volatility Ratio (3. / 4.)	12.7	12.3

These ratios indicate a mature pension plan; consequently, there is potential for significant volatility in employer contributions to POLICE in the future, particularly when considered as a fraction of active member payroll. In cases where the retiree population grows in size but the active population remains level or approximately level, retiree benefit payments can grow more quickly in future years than contributions for active workers. Thus for mature pension plans, net cashflow (prior to investment income) shrinks or even becomes negative.

While not available specifically for the Plan, illustrative forecasts of sample plans of various maturities can demonstrate this effect.[1]



[1] Boyd, Donald J. and Yin, Yimeng. "How Public Pension Plan Demographic Characteristics Affect Funding and Contribution Risk." Pension Simulation Project. *The Nelson A. Rockefeller Institute of Government*.

Medium Risk Types

Interest Rate Risk

The Actuarial 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 Investment Risk 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 justifies a long-term rate of return assumption of 7.0%, a reduction in the Actuarial Interest Rate would significantly increase the Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability of the Plan, as well as the Normal Cost and resulting contribution. While not yet available on this funding basis, the sensitivity could be expected to be generally similar to the sensitivity reported for GASB 67/68 purposes.[1]

NEW YORK CITY POLICE PENSION FUND

GASB 67/68 SENSITIVITY ANALYSIS AS OF JUNE 30, 2015

Valuation Date	June 30, 2015
Results at 7.0%	
1. Total Pension Liability	$ 47,857,706,787
2. Plan Fiduciary Net Position	35,345,052,000
3. Net Pension Liability (1. - 2.)	$ 12,512,654,787
4. Funded Ratio (GASB Basis) (2. / 1.)	73.9%
Results at 6.0%	
1. Total Pension Liability	$ 53,048,407,857
2. Plan Fiduciary Net Position	35,345,052,000
3. Net Pension Liability (1. - 2.)	$ 17,703,355,857
4. Funded Ratio (GASB Basis) (2. / 1.)	66.6%
Sensitivity Analysis for 1.0% Reduction in Interest Rate	
1. Increase in Total Pension Liability	10.8%
2. Increase in Net Pension Liability	41.5%
3. Decrease in Funded Ratio	7.3%

[1] As disclosed in the fiscal year 2015 report for GASB 67/68, dated January 8, 2016 (as revised).

Inflation Risk

POLICE faces risk in the event that 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). This risk is not currently quantified but should be considered in future years.

Longevity Risk

POLICE faces risk in its assumption of future mortality rates. Actuarial experience studies were used to develop the "base" mortality rates assumed in the valuation; Society of Actuaries mortality improvement scale MP-2015 was subsequently applied to these base rates.[1]

This scale MP-2015 is an assumption regarding the *improvement* of future mortality 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.

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

This longevity risk is not currently quantified but should be considered in future years.

---

[1] Retirement Plans Experience Committee. "Mortality Improvement Scale MP-2015 Report" and "Mortality Improvement Scale MP-2014 report." *Society of Actuaries.*

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

Low Risk Types

Credit/Solvency Risk

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 and POLICE face low solvency risk.

Contribution Risk

Many public pension systems suffer from high contribution risk, wherein sponsoring governmental entities fail to make contributions as determined by the actuary under their funding policies. A recent study found that in 2010, the Annual Required Contribution[1] was not made for over 35% of the 110 public plans in the study.[2]

The New York City Retirement Systems and Pension Funds generally face low contribution risk. City benefits are constitutionally protected, and participating employers have historically contributed the actuarial contribution as certified by the Actuary. The Actuary believes the City will continue to do so in future years.

Contribution risk may also increase in future years as 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.

Agency Risk

Because of the volatility inherent in pension assets and the gradual amortization of unfunded liabilities, the long-term funded status of the Plan is expected to improve. 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.

In future years of higher funded status, this may become a higher risk to the Plan, as current taxpapers and plan members may receive preferential treatment over future taxpayers and plan members.

---

[1] As defined at the time in GASB 25/27.
[2] Shnitser, Natalya. *"Funding Discipline for U.S. Public Pension Plans: An Empirical Analysis of Institutional Design." Iowa Law Review, Vol. 100 (2015)*.

APPENDIX: ACRONYMS AND ABBREVIATIONS

2012 A&M	Actuarial Assumptions and Methods enacted by Chapter 3/13
2016 A&M	2012 A&M with changes proposed by the Actuary and adopted by Board of Trustees during Fiscal Year 2016
AAL	Actuarial Accrued Liability
AAVM	Actuarial Asset Valuation Method
ABO	Accumulated Benefit Obligation
ACCNY	Administrative Code of the City of New York
AIR	Actuarial Interest Rate
APV	Actuarial Present Value
APVB	Actuarial Present Value of Benefits
AVA	Actuarial Value of Assets
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
GASB5	Governmental Accounting Standards Board Statement No. 5
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
OYLM	One-Year Lag Methodology
POLICE	New York City Police Pension Fund
POVSF	Police Officer's Variable Supplements Fund
PSOVSF	Police Superior Officers' Variable Supplements Fund
PVFNC	Present Value of Future Normal Costs
PVFS	Present Value of Future Salary
UAAL	Unfunded Actuarial Accrued Liability
UIR	Unexpected Investment Return
VSF	Variable Supplements Fund
WTC	World Trade Center