



CITY OF PHILADELPHIA
BOARD OF PENSIONS AND RETIREMENT
ANNUAL REPORT

Fiscal Year Ending
June 30, 2015

Michael Nutter
Mayor

Rob Dubow
Chairperson

Francis X. Bielli, Esq.
Executive Director

City of Philadelphia

BOARD OF PENSIONS AND RETIREMENT

Annual Report

Fiscal Year July 1, 2014 – June 30, 2015



**16th Floor, Two Penn Center
Plaza Philadelphia, PA 19102**

215-496-7418

To the People of the City of Philadelphia:

The Board of Pensions and Retirement hereby submits the Annual Report of the Retirement System for City of Philadelphia employees for the fiscal year ending June 30, 2015.

The report consists of three sections:

- An introductory section, which contains a summary of the Fund and identifies the administrators, trustees, investment managers and professional consultants of the Retirement System
- A financial section as prepared by the City of Philadelphia Finance Department, which contains the System's financial statements, membership pension data, and investment statistics.
- The Board's Annual Actuarial Valuation Report as prepared by Cheiron Inc., which details the methods of costing and funding current and future benefits to members and beneficiaries of the Retirement System.

If you require more detailed information on the Board's Investment Portfolio, please write to Francis X. Bielli, Esq., Executive Director, Two Penn Center Plaza, 16th Floor, Philadelphia, PA 19102, or call 215-496-7418 or 1-800-544-1173. Additional copies of this report can be downloaded from <http://www.phila.gov/pensions>.

Cover photo provided courtesy of the City of Philadelphia, Office of the City Representative.

TABLE OF CONTENTS

Section 1 - Introduction

City of Philadelphia Public Employees Retirement System	5
Members of the Board	5
Consultants	6
Investment Managers	7
Mission Statement	12
Membership	12
Funding	12
Income	13
Investments	13
Expenses	13
Amendments to the City of Philadelphia Public Employees Retirement Code	14
Professional; Services	14
Audit	14

Section 2 - Financial Information for Fiscal Year Ended June 30, 2015 prepared by the City of Philadelphia Finance Department

Statement of Fiduciary Net Position	15
Summary of Investment Type	16
Statement of Changes in Plan Net Position	17
Analysis of Member Contributions	18
Statement of Receipts and Disbursements by Division	19
Cash and Accrued Contributions	20

Section 3 - Actuarial Valuation Report (AVR) - Fiscal Year Ended June 30, 2015 (prepared by Cheiron Inc., McLean, VA)

21

SECTION 1 - INTRODUCTION

CITY OF PHILADELPHIA PUBLIC EMPLOYEES RETIREMENT SYSTEM

Francis X. Bielli, Esquire

Executive Director

MEMBERS OF THE BOARD

Rob Dubow, Chairperson

Director of Finance
Appointed January 7,
2008.

Alan L. Butkovitz, Esquire

City Controller
Elected by voters of
Philadelphia. Serving as Board
Member since January 2006.

Albert L. D'Attilio, Esquire

Director of Human
Resources Appointed June
2, 2008.

Richard Negrin, Esquire

Deputy Mayor/Managing
Director Appointed July 1,
2010.

Veronica M. Pankey

AFSCME District Council 33.
Serving as Employee Elected
Representative since February 2011.

Shelley Smith, Esquire

City Solicitor
Appointed January 7, 2008.

Ronald Stagliano, Vice-Chairperson

Fraternal Order of Police.
Serving as Employee Elected
Representative since November
2004.

Carol Stukes

AFSCME District Council 47.
Serving as Employee Elected
Representative since September
1994.

Andrew P. Thomas

Philadelphia Firefighters Union
Local No. 22. Serving as Employee
Elected Representative since
November 2012.

CONSULTANTS

ACTUARY

Cheiron, Inc.

McLean, VA

PRE-AUDIT FUNCTIONS

City of Philadelphia – Office of the City Controller

Philadelphia, PA

AUDITOR

CliftonLarsonAllen, LLP

Timonium, MD

LEGAL COUNSEL

City of Philadelphia Law Department

Philadelphia, PA

GENERAL INVESTMENT CONSULTANT

Cliffwater, LLC

Marina del Ray, CA

ALTERNATIVE INVESTMENT CONSULTANT

Franklin Park Associates, LLC (Private Markets)

Bala Cynwyd, PA

PROXY CONSULTANT

Marco Consulting Group

Chicago, IL

CUSTODIAN BANK

J.P. Morgan Chase

New York, NY

INVESTMENT MANAGERS

Domestic Equity

Apex Capital Management	Dayton, OH
Aronson-Johnson-Ortiz	Philadelphia, PA
Ariel Investments	Chicago, IL
Brandywine Global Management	Philadelphia, PA
Ceredex Value Advisors	Orlando, FL
Emerald Advisors	Lancaster, PA
Fisher Investment Management	Woodside, CA
GW Capital Management	Bellevue, WA
Hahn Capital Management	San Francisco, CA
Herndon Capital Management	Atlanta, GA
Lyrical Asset Management	New York, NY
O'Shaughnessy Asset Management	Stamford, CT
Rhumblin Advisors	Boston, MA
Snyder Capital Management	San Francisco, CA

International Equity

Causeway Capital Management	Los Angeles, CA
Cheswold Lane	Conshohocken, PA
Hanoverian Capital	Kennett Square, PA
Lombardia	Pasadena, CA
Northern Trust	Chicago, IL

Emerging Markets Equity

Rhumblin Advisors	Boston, MA
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Core Bond, Global Fixed Income and Fixed Income

Brandywine Global Management	Philadelphia, PA
Garcia Hamilton	Boston, MA

GW Capital Management	Bellevue, WA
Logan Circle	Philadelphia, PA
Longfellow Investment Management	Boston, MA
Rhumblin Advisers	Boston, MA
<u>High Yield</u>	
MacKay Shields	New York, NY
Strategic Income Management	Seattle, WA
<u>Convertible Bonds</u>	
Allianz Global Investors Capital	New York, NY
<u>Emerging Market Debt</u>	
Rhumblin Advisers	Boston, MA
<u>Real Estate Investment Trusts</u>	
Rhumblin FTSE NAREIT	Boston, MA
<u>Master Limited Partnership</u>	
Advisory Research (FAMCO)	St. Louis, MO
Harvest Fund Advisers	Wayne, PA
Tortoise Capital Advisers	Leawood, KS
<u>Hedge Fund</u>	
400 Capital	New York, NY
Archview	New York, NY
Apollo	New York, NY
Avenue Coppers Opportunity Fund L.P.	New York, NY
Axonic	New York, NY
Beachpoint Capital Management	Santa Monica, CA
Blue Harbour	Greenwich, CT
Caspian Select Credit International	Harrison, NY
Emerging Sovereign Group	New York, NY

Kildonan	New York, NY
KKR-PBPR Capital Partners LP	New York, NY
Taconic	New York, NY
<u>Private Markets</u>	
Advent International GPE, VI, L.P.	New York, NY
Altaris Healthcare Partners II, L.P.	New York, NY
Asian Financial Corporation	Philadelphia, PA
Audax Mezzanine Fund III, L.P.	New York, NY
Avenue Special Situations Fund V, L.P.	New York, NY
Bay Partners XI, L.P.	Cupertino, CA
Blackstone Capital Partners, IV, V, & VI, L.P.	New York, NY
Capital Dynamics Mid-Market Direct IV	New York, NY
Carlyle Europe III, L.P.	New York, NY
Castile Ventures III, L.P.	Waltham, MA
Columbia Capital Equity Partners II & III, L.P.	New York, NY
Court Square Capital Partners	New York, NY
EIV Capital	Houston, TX
European Strategic Partners I & II, L.P. Standard Life of Scotland	Edinburgh, Scotland
Fairview Capital II & III, L.P.	Farmington, CT
Fenway Partners Capital Fund II, L.P.	New York, NY
Franklin Park Raspberry Street	Bala Cynwyd, PA
Franklin Park Venture Fund Series 2008	Bala Cynwyd, PA
Green Equity Investors IV, L.P.	Los Angeles, CA
ICV Partners II, L.P.	New York, NY
KKR 2006 Fund, L.P.	New York, NY
Kohlberg Investors V, L.P.	Mt. Kisco, NY
KPS Special Situations Fund III, L.P.	New York, NY

Levine Leichtman Capital Partners IV, L.P.	Los Angeles, CA
Lindsay, Goldberg & Bessemer I & II, L.P.	New York, NY
Littlejohn Fund III, L.P.	Greenwich, CT
LLR Equity Partners I & II, L.P.	Philadelphia, PA
Mason Wells Buyout Fund III, L.P.	Milwaukee, WI
Meridian Venture Partners, L.P. & MVP Distribution Partners, L.P.	Radnor, PA
Morgan Stanley Venture Partners IV & 2002	New York, NY
Natural Gas Partners IX, L.P.	Irving, TX
Nogales Investors Fund I & II, L.P.	Los Angeles, CA
Novitas Capital III, L.P. (formerly PA Early Stage)	Wayne, PA
OCM Opportunities Fund II, IV & Viib, L.P.	Los Angeles, CA
Pharos Capital Partners II, L.P.	Houston, TX
Platinum Equity Capital Partners I & II, L.P.	Beverly Hills, CA
Quaker BioVentures, L.P.	Philadelphia, PA
Relativity Fund, L.P.	New York, NY
Riverside Capital Appreciation Fund V, L.P.	New York, NY
SCP Private Equity Partners I & II, L.P.	Wayne, PA
Sterling Capital Partners II & III, L.P.	Northbrook, IL
Summitt Subordinated Debt IV, L.P.	Palo Alto, CA
TA Associates XI, L.P.	Boston, MA
Technology Leaders IV, L.P.	Wayne, PA
TGP Partners II, & III, L.P.	Fort Worth, TX
The Retail Initiative 1994, L.P.	New York, NY
Thomas H, Lee Equity Fund IV & V, L.P.	Boston, MA
United Bank of Philadelphia	Philadelphia, PA
Veritas Capital Partners III, L.P.	New York, NY

Vista Equity Partners III & Vista Foundation II, L.P.	Chicago, IL
Wellspring Capital Partners IV, L.P.	New York, NY
Wicks Capital Partners IV, L.P.	New York, NY
Wicks Communications & Media Partners III, L.P.	New York, NY
<u>Private Real Estate Investments</u>	
Almanac Realty Investors	New York, NY
Arsenal Real Estate Fund IA, L.P.	Morristown, NJ
Beacon Capital Strategic Partners IV & V, L.P.	Boston, MA
CIM Urban REIT, LLC	Los Angeles, CA
Colony Investors VIII, L.P.	Los Angeles, CA
Exeter Industrial Value Fund, L.P.	Plymouth Meeting, PA
Gaw Capital	Los Angeles, CA
LEM Capital, LLC	Philadelphia, PA
Lone Star Real Estate Fund II, L.P.	Dallas, TX
Lyrical Antheus Realty Partners	Englewood, NJ
Mesa West Real Estate Income Fund II, L.P.	Los Angeles, CA
Tishman Speyer European Real Estate	New York, NY

MISSION STATEMENT

The Board of Pensions and Retirement was charged under the Philadelphia Home Rule Charter with the creation and maintenance of an actuarially sound Retirement System providing benefits for all City employees. The Ordinance (Bill No. 907) implementing the present Retirement System was formally approved by City Council on December 3, 1956, and the System became operational effective January 1, 1957. The enactment of Bill No. 907 superseded the Act of Assembly approved May 20, 1915, P.L. 566, under which the Pension Fund had previously been governed.

The Board, as defined in the Home Rule Charter, is composed of the Director of Finance, who serves as chairperson, the Managing Director, the City Solicitor, the Personnel Director, the City Controller and four members who are elected by the Civil Service employees of the City of Philadelphia. The elected members serve a four-year term of office.

The 9-member Board formally approves all benefit applications, but its major role is that of “trustee”, to ensure that the Retirement System remains actuarially and financially sound for the benefit of current and future benefit recipients. The Board, with the assistance of its professional consultants, develops the policies and strategies which will enable the Board to successfully execute its fiduciary obligations.

The Executive Director, aided by staff, administers the day-to-day activities of the Retirement System, providing services to all system members.

MEMBERSHIP

The Public Employees Retirement System provides benefits to police, fire and civilian workers of the City of Philadelphia through the administration of multiple plans adopted from 1915 to the present. In addition, the Board of Pensions administers (but does not fund) a pension plan for the employees of some quasi-public agencies (the Philadelphia Parking Authority, the Philadelphia Municipal Authority, and the Philadelphia Housing Development Corporation). Membership details, as well as membership activity information for fiscal year 2015, may be found in the Actuarial Section of this report.

FUNDING

The Municipal Pension Plan Funding Standard and Recovery Act of December 1984 (Act 205) mandated funding methods for all municipal pension plans in the Commonwealth of Pennsylvania. Under the provisions of Act 205, the Municipal Retirement System is required to fund the actuarial liability accrued after July 1, 1985 on a level dollar payment method. In effect, the cost of current pension obligations must be satisfied annually.

The unfunded actuarial liability which had accrued prior to July 1, 1985 is being amortized over a 40-year period with payments increasing at the rate of 6% per year. This debt portion will be satisfied on June 30, 2019.

Act 205 requires that an actuarial valuation be performed annually and that an experience study, covering a 5-year period, be conducted every 4 years to ensure that the pension costs derived by the actuary are accurate and based on valid historical experience.

In January 1999, the City issued \$1.29 billion of 30-year pension obligation bonds having an overall rate of 6.61% with a goal of reducing the City's unfunded pension obligation liability.

The Actuarial Section of this report contains fiscal year 2015 information regarding normal cost; total unfunded accrued liability; recommended contribution under the City's funding policy; actual contributions; and the Minimum Municipal Obligation (MMO) as required by the Commonwealth of Pennsylvania's Acts 205 and 189.

In Fiscal Year 2015, the Board lowered the assumed rate of interest from 7.85% to 7.80%.

INCOME

The City of Philadelphia is the largest single contributor to the Public Employees Retirement System. Employees contribute a percentage of their pay, which varies with plan membership. Contributions are also paid by the quasi-public agencies whose employees' pension benefits are administered by the Board of Pensions. A major source of income is the earnings of the System's investment portfolio. Both the Actuarial and Financial Sections of this report provide further information on the Board's fiscal year 2015 income.

INVESTMENTS

The 9-member Board of Pensions and Retirement plays an active role in the determination of investment policy and strategy. All major decisions regarding the portfolio are approved by the Board based upon the recommendations of its investment consultants and managers and the Board's in-house investment staff. Cliffwater LLC, the Board's Investment Consultant, oversees the management of the portfolio by investment management firms (a listing of these firms is presented on pages 6-11).

The investment policy developed by the Board provides the framework for the investment of funds. However, the way the Board invests its funds is constrained by legal statutes. Investments of the Public Employees Retirement System must be made in compliance with Section 22-1001 of the Public Employees Retirement Code and the regulations for the investment of similar State funds as set forth in the Act of March 1, 1974 (P.L. 125, No. 31), as amended (71 Pa. C.S. Section 5931).

As part of its overall investment policy, the Board approved an asset allocation strategy which has as its goal the identification of the mix of broad asset classes that most efficiently balances the need for achieving a 7.80% rate of return with the desire to minimize the possibility of capital loss. This strategy is periodically reviewed by the Board for possible fine-tuning to ensure that it remains dynamic and reflective of market conditions.

The Financial Section of this report provides further information on the Board's fiscal year 2015 assets.

EXPENSES

Pension benefit payments are the Board's greatest current normal expense. Other expenses include the refund of pension contributions to employees who left City employment and the administrative expenses of operating the Board.

AMENDMENTS TO CITY OF PHILADELPHIA PUBLIC EMPLOYEES RETIREMENT CODE

Bill #140741 (Enacted by City Council on 11/13/14)

Amending Title 22 of The Philadelphia Code, entitled "Public Employees Retirement Code," to expand the scope of "Plan '10" and "DC Plan" to cover additional employees, including employees represented by AFSCME, District Council 33, and certain employees not covered by a collective bargaining agreement, to change contribution rates, and to make technical amendments, all under certain terms and conditions.

Bill #140743 (Enacted by City Council on 11/13/14)

Amending Title 22 of The Philadelphia Code, entitled "Public Employees Retirement Code," to expand the scope of "Plan '10" and "DC Plan" to cover additional employees, including elected officials, to change contribution rates, and to make technical amendments, all under certain terms and conditions.

Bill #150235 (Enacted by City Council on 5/7/15)

Amending Title 22 of The Philadelphia Code, entitled "Public Employees Retirement Code," by amending various provisions to provide for provisions for participants performing qualified military service, to allow certain transfer payments for purchase of service and for purchase of service by certain classes of employees, to allow for non-spouse beneficiary rollover rights, to provide certain retroactive effective dates, and otherwise provide language required by the Internal Revenue Code, under certain terms and conditions.

The full text of these amendments, as well as the entirety of the City of Philadelphia Public Employees Retirement Code (Section 22 of the Philadelphia Code) is available on the City of Philadelphia City Council website at <http://citynet/citycouncil/index.html>.

PROFESSIONAL SERVICES

Professional consultants are retained by the Board of Pensions and Retirement to provide expertise and support necessary for the administration of the Public Employees Retirement System. A list of those firms rendering professional services to the Board is presented on Page 6.

AUDIT

The City Controller's Office, which is independent of the City of Philadelphia Administration, audits all operational transactions of the Board of Pensions and Retirement. For the Fiscal year ending June 30, 2015, the Board elected to have the annual financial audit of the Municipal Pension Fund performed by the accounting firm of CliftonLarsonAllen, LLP.

SECTION 2 – FINANCIAL INFORMATION

Exhibit A-1

**CITY OF PHILADELPHIA
STATEMENT OF FIDUCIARY NET POSITION
FOR THE PERIOD ENDED JUNE 30, 2015**

ASSETS		
Cash and cash equivalents		\$ 124,032,010
Contributions receivable from plan members		5,975,493
Accrued interest and other receivables		130,502,803
Investments, at fair value		
Equity	\$ 2,402,232,729	
Fixed income	1,234,728,337	
Private market	459,820,720	
Real estate	286,871,439	
Hedge funds	<u>156,197,821</u>	
Total investments		4,539,851,046
Collateral on loaned securities	405,963,994	
Less: Allowance on loaned securities	<u>(285,498)</u>	
Total collateral on loaned securities at fair value		<u>405,678,496</u>
Total assets		<u>5,206,039,848</u>
 LIABILITIES		
Accrued expenses and other liabilities		125,823,440
Due on return of securities loaned		<u>405,963,994</u>
Total liabilities		<u>531,787,434</u>
 NET POSITION RESTRICTED FOR PENSIONS		 <u>\$ 4,674,252,414</u>

**CITY OF PHILADELPHIA
MUNICIPAL PENSION FUND
SUMMARY OF INVESTMENT TYPE
FYE 6/30/15**

	Cost	Market
Cash & Cash Equivalents	124,005,071.76	124,032,010.00
U.S. Government Securities	241,506,234.16	233,576,468.19
U.S. Government Agency Securities	3,929,631.02	3,936,443.88
Government Bonds (foreign)	196,354,953.13	180,669,529.17
Corporate Bonds	288,621,844.52	291,651,212.74
Corporate Equity	2,221,018,270.24	2,428,902,967.34
Limited Partnerships	1,186,582,865.06	1,178,035,249.91
Mutual Fund	102,651,900.79	122,443,879.45
Commercial Mortgage Backed Securities	81,119,284.26	80,174,398.46
Municipal Bonds	4,706,137.90	4,851,243.30
Asset Backed Securities	7,616,884.91	7,586,557.12
ETF	8,233,626.33	7,980,116.40
MISCELLANEOUS	<u>316.99</u>	<u>42,980.33</u>
Total	4,466,347,021.07	4,663,883,056.29

CITY OF PHILADELPHIA
STATEMENT OF CHANGES IN PLAN NET POSITION
Year ended June 30, 2015

ADDITIONS

Contributions:		
Employer	\$ 577,195,412	
Plan Members	<u>58,657,817</u>	
Total Contributions		\$ 635,853,229
Investment Income:		
Interest and dividends income	98,397,653	
Net appreciation in FV of investments	<u>(76,805,561)</u>	
	21,592,092	
Less: Investment expenses	<u>(9,801,531)</u>	
Net investment income		11,790,561
Securities lending income	2,266,122	
Less: securities lending expense	<u>(338,712)</u>	
Net income from securities lending activities		1,927,410
Miscellaneous operating revenue		<u>122</u>
Total additions		649,691,597

DEDUCTIONS

Benefit payments	876,386,837	
Refund of contributions	5,279,199	
Administrative expenses	<u>10,478,541</u>	
Total deductions		<u>892,144,578</u>

INCREASE IN NET POSITION (242,452,980)

**NET POSITION HELD IN TRUST FOR PENSION BENEFITS
BEGINNING OF YEAR** 4,916,705,396

**NET POSITION HELD IN TRUST FOR PENSION BENEFITS
END OF YEAR** 4,674,252,416

City of Philadelphia - Municipal Pension Fund

Analysis of Members' Contributions

For the Period Ended June 30, 2015

Fund & Index code	Fire Division New 530330	Fire Division Old & 1987 530337	Police Division New 530340	Police Division Old & 1987 530347	Elected Officials Plan 530350	Municipal Revised Plan 530360	Municipal Division Plan 93 530361	Municipal Division New 530362	Municipal Division Hybrid 530363	Municipal Plan 1987 530367	Undistributed Pension Plan 530390	Total
Additions												
Regular Payroll Deductions (7701)	739,347	7,272,409	2,096,378	20,411,290	299,395	5,384,650	19,260,322	-		31	8,791	55,472,614
Installment Repurchase Deductions (7706)	8,628	121,425	28,717	208,303	26,392	17,194	317,474	-				728,134
Quasi payroll deductions (7702)	1,839	211,359	49,513	226,349		903,269	1,008,998	-	9,773			2,411,099
Retirees' Pension Payment (7703)	76	-	9,058	-		35,569	1,267	-				45,970
	749,890	7,605,193	2,183,666	20,845,942	325,787	6,340,682	20,588,061	-	9,773	31	8,791	58,657,817

**CITY OF PHILADELPHIA
MUNICIPAL PENSION FUND
FOR THE PERIOD ENDED
JUNE 30, 2015**

Receipts and Disbursements by Division

Plan and Index Code	Member Contributions	Pension Benefits	Withdrawals	Misc. Revenue	Operating Expenses
Fire Division new - 530330	749,890	101,579,730	107,373	-	-
Fire Division old & 1987 - 530337	7,605,193	7,716,452	218,353	-	-
Police Division new - 530340	2,183,666	223,707,607	319,529	-	-
Police Division old & 1987 - 530347	20,845,942	22,054,365	1,551,750	-	-
Elected Officials - 530350	325,787	1,409,604	58,963	-	-
Municipal revised plan 60 - 530360	6,340,682	480,269,407	832,634	-	-
Municipal Division Plan 93 - 530361	20,588,061	39,185,891	2,190,567	-	-
Municipal Division New - 530362		176,106		-	-
Municipal Division Hybrid - 530363	9,773	-		-	-
Municipal Plan 1987 - 530367	31	287,674	29	-	-
Undistributed Pension Plan - 530390	8,791	-	-	120,398	10,478,541
TOTAL	58,657,817	876,386,837	5,279,199	120,398	10,478,541

**MUNICIPAL PENSION FUND
FISCAL 2015 INFORMATION**

Cash and Accrued Contributions from the City - Fiscal 2015 *

Category	Amount	
Cash received	\$ 492,730,205.00	
Accrued 6/30/15	-	
		492,730,205.00
 Cash and Accrued Contributions from Quasi-Agencies - Fiscal 2015		
Cash received	18,698,223.00	
Accrued 6/30/2015	2,397,189.00	
		21,095,412.00
Total City & Quasi Agencies		513,825,617.00
Contribution from the Commonwealth		62,069,795.00
Total Contribution requirement		<u>\$ 575,895,412.00</u>

* Analysis of Contributions from the City - Fiscal 2015

Date	Amount
12/4/2014	\$ 43,800,000.00
3/27/2015	448,930,205.00
	\$ 492,730,205.00

SECTION 3 – ACTUARIAL VALUATION

City of Philadelphia

**Municipal Retirement
System**

**Actuarial Valuation Report
as of July 1, 2015**

**Produced by Cheiron
March 2016**



City of Philadelphia Municipal Retirement System

**Actuarial Valuation Report
as of July 1, 2015**

Produced by Cheiron

March 2016

TABLE OF CONTENTS

Section

Letter of Transmittal	i
Section I – Board Summary	1
Section II – Assets	21
Section III – Liabilities	30
Section IV – Contributions.....	35

Appendices

Appendix A – Membership Information	53
Appendix B – Actuarial Assumptions and Methods	75
Appendix C – Summary of Plan Provisions.....	84
Appendix D – Historical Information	94
Appendix E – Glossary of Terms.....	126

LETTER OF TRANSMITTAL

March 25, 2016

City of Philadelphia Municipal Retirement System
Two Penn Center Plaza – 16th Floor
Philadelphia, PA 19102-1721

Dear Board Members:

At your request, we have performed the July 1, 2015 Actuarial Valuation of the City of Philadelphia Municipal Retirement System (the System).

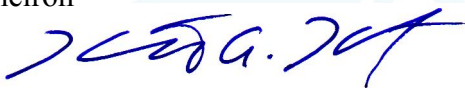
In preparing our report, we relied on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice #23. The results of this report are only applicable to the System's contribution for Fiscal Year Ending 2017. Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions and changes in plan provisions or applicable law.

To the best of our knowledge, this report has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries we meet the Qualification Standards, as defined by the American Academy of Actuaries, to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This actuarial valuation report was prepared exclusively for the City of Philadelphia Municipal Retirement System for the purposes described herein and for the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Finally, in preparation of this report we have accepted the assumptions and methodologies as adopted by the Board of Pensions and Retirement for the City of Philadelphia Municipal Retirement System.

Sincerely,
Cheiron

A handwritten signature in blue ink, appearing to read "K.A. Kent".

Kenneth A. Kent, FSA, FCA, EA, MAAA
Principal Consulting Actuary

A handwritten signature in blue ink, appearing to read "Anu Patel".

Anu Patel, FSA, EA, MAAA
Principal Consulting Actuary

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

The primary purpose of the actuarial valuation and this report is to disclose the following as of the valuation date:

- The financial condition of the City of Philadelphia Municipal Retirement System (the System),
- Past and expected future trends and risks to the Retirement System's financial condition,
- The City's Minimum Municipal Obligation (MMO) representing the required contribution in accordance with Act 205 of Pennsylvania Law for Fiscal Year End (FYE) 2017, and
- The Retirement Board's Funding Policy recommended City contribution.

This year Cheiron issued a separate report containing the information required by the Governmental Accounting Standards Board (GASB) and therefore that accounting information is not included in this valuation report.

In this Section, we present a summary of the principal valuation results. This includes the basis upon which the July 1, 2015 valuation was completed and an examination of the current financial condition of the System. In addition, we present a review of the key historical trends followed by the System's projected financial outlook.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

A. Valuation Basis

The June 30, 2015 valuation results are based on the same actuarial methods and assumptions as used in the June 30, 2014 valuation except for the following changes:

- **Interest Rate:** The interest rate was decreased from 7.80% to 7.75% as of July 1, 2015.
- **Stress/Premium Pay:** The stress/premium pay assumption was updated from 4% of pay to 6% of pay for Police and Fire participants.

For a detailed description of all methods and assumptions used, refer to Appendix C of this report.

This report was prepared using census data and financial information as of July 1, 2015 and does not reflect any subsequent changes in the membership or the assets.

Below we highlight significant results of this valuation. Table I-1 summarizes these results:

- **Financial Performance:** The return on market value of assets at 0.29% for the year ending June 30, 2015 was lower than expected when benchmarked against the assumed 7.80% return rate. With the 10-year smoothing of assets applied in the calculation of the actuarial asset value, the 2008 and 2009 investment losses still impact the results for funding purposes. On an actuarial asset value basis the return as of June 30, 2015 was 5.80% resulting in an experience loss when compared to the 7.80% assumption. The ratio of actuarial assets to market assets increased from 99.2% in the prior year to 104.9% for the current year.
- **Pension Adjustment Fund (PAF):** As defined in the Philadelphia Code the PAF provides for additional benefit distributions through the use of excess earnings. The asset return for the adjusted market value which is based on five-year smoothing of asset gains and losses was 9.13%. The favorable asset returns over the past five years resulted in a transfer of \$7.8 million into the PAF as of June 30, 2015. These funds are removed from the assets in determining the City's funding obligation.
- **Unfunded Actuarial Liability (UAL):** The UAL is the excess of the System's actuarial liability (AL) over the actuarial value of assets (AVA). The UAL increased from \$5.707 billion as of July 1, 2014 to **\$5.937 billion as of July 1, 2015** reflecting the net of asset losses and liability losses from July 1, 2014 through June 30, 2015 as well as changes in actuarial assumptions as of July 1, 2015.
 - The experience loss represents \$194.9 million increase in the UAL. This is comprised of a \$107.9 million liability loss attributable to losses from new entrants with past service, salary growth higher than expected and movement in data for service connected disabilities, retirements and terminations plus \$87.0 million asset loss. There was an increase in UAL of \$81.0 million due to assumption changes in interest rate and the load for stress/premium pay for uniform participants.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

- ***Funding Ratio:*** This is the ratio of the System's AVA to AL. The funding ratio decreased from 45.8% as of July 1, 2014 to **45.0% as of July 1, 2015** mainly due to the experience losses and changes in actuarial assumptions. While this ratio may appear to reflect lack of progress in funding, the decrease in the assumed rate of return represents improvement of System's risk profile improving the likelihood of achieving this assumption in the future. The funding ratio on market assets to liability basis decreased from 46.1% to 42.9% reflecting the loss on the asset returns.
- ***Minimum Municipal Obligation (MMO):*** The MMO is the required minimum amount the City must contribute under Pennsylvania State Law. The MMO increased from \$595.0 million for FYE 2016 to **\$629.6.0 million for FYE 2017**.
- ***Expected City Contributions including Sales Tax Revenue:*** Additional funds are also to be contributed into the System based on the expected portion of future sales tax revenue according to the State Legislation. These sales tax contributions are anticipated to be contributed over and above the City's contribution of the MMO and will be in addition to what the MMO would be without the additional assets attributable to the sales tax. This in effect creates a new funding policy as the funding requirements under Act 205 do not exclude the sales tax revenue from meeting the City's funding obligation. However because there were no sales tax revenues received for FYE 2015 it does not affect this year's valuation. The impact of these anticipated future contributions to the System are demonstrated in the projections section of the Board Summary
- ***Contribution under the City's Funding Policy:*** The beginning-of-year contribution under the City's Funding Policy increased from \$919.0 million for FYE 2016 based upon actual FYE 2015 payroll to an estimated **\$979.0 million for FYE 2017**.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

Table I-1 summarizes the comparative UAL and fiscal year funding amounts discussed above.

Table I-1 Key Results (\$ thousands)			
Valuation Date	7/1/2015	7/1/2014	
Unfunded Actuarial Liability	\$ 5,936,979	\$ 5,706,923	
Funding Ratio	45.0%	45.8%	
	Fiscal Year 2017	Fiscal Year 2016	
Minimum Municipal Obligation	\$ 629,620	\$ 594,975	
City's Funding Policy Contribution*	\$ 978,994	\$ 918,986	

*The City's funding policy contribution for FYE 2016 was updated based upon the actual payroll of \$1,597.8 million (provided as pay rates in the data) as of July 1, 2015, used to estimate the beginning of year FYE 2016 payroll. In the July 1, 2014 actuarial valuation report, the estimated FYE 2016 payroll was \$1,544.8 million based upon July 1, 2014 pay rates and increased with the payroll assumption.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

B. Current Financial Condition

On the following pages, we summarize the key results of the July 1, 2015 valuation and how they compare to the results from the July 1, 2014 valuation.

1. City Membership:

As shown in Table I-2 below, total membership in the Retirement System increased by 1.7% from 2014 to 2015.

Table I-2 Membership Total				
	July 1, 2015	July 1, 2014	% Change	
Actives	27,951	27,065	3.3%	
Terminated Vesteds	1,334	1,224	9.0%	
Disabled	4,016	3,954	1.6%	
Retirees	22,245	21,768	2.2%	
Beneficiaries	8,566	8,547	0.2%	
DROP	1,784	2,264	-21.2%	
Total City Members	65,896	64,822	1.7%	
Annual Salaries	\$ 1,597,848,869	\$ 1,495,421,387	6.8%	
Average Salary per Active Member	\$ 57,166	\$ 55,253	3.5%	
Annual Retirement Allowances	\$ 719,580,951	\$ 686,601,608	4.8%	
Average Retirement Allowance	\$ 20,662	\$ 20,036	3.1%	

The active participant population increased by 3.3% during the 2014-2015 plan year. Deferred Retirement Option Plan (DROP) participants decreased about 21.2% from 2014 to 2015 as members reached the end of their four-year DROP participation period. The average salary per active member increased by 3.5% during the plan year. The result of higher active membership paired with higher salary growth produced a total payroll growth higher than expected of 6.8% versus the expected 3.3% payroll growth assumption from last year.

Annual retirement allowances continued to increase, growing by 4.8% this year and reflects a 3.1% increase in the average benefits provided with an increase in participants in pay status of 1.6%.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

2. City Assets and Liabilities:

Table I-3 presents a comparison between the July 1, 2015 and July 1, 2014 system assets, liabilities, UAL, and funding ratios. The Funding Ratio decreased from 45.8% as of July 1, 2014 to **45.0%** as of July 1, 2015 due to the asset losses, liability losses, and changes in actuarial assumptions. Prior to the assumption changes the funded ratio would have been 45.4%.

Table I-3 Assets and Liabilities (\$ thousands)				
	July 1, 2015	July 1, 2014	% Change	
Actuarial Liabilities by Membership:				
Actives	\$ 3,599,336	\$ 3,389,554	6.2%	
Terminated Vesteds	126,357	111,873	12.9%	
Disabled	726,996	686,641	5.9%	
Retirees	4,896,290	4,656,035	5.2%	
Beneficiaries	616,393	604,661	1.9%	
DROP	828,281	1,067,134	-22.4%	
Non-Vested Refunds	6,739	5,937	13.5%	
Total Actuarial Liability	<u>\$ 10,800,392</u>	<u>\$ 10,521,835</u>	2.6%	
Market Value of Assets (net of PAF)*	\$ 4,636,053	\$ 4,854,266	-4.5%	
Actuarial Value of Assets (net of PAF)*	\$ 4,863,413	\$ 4,814,912	1.0%	
Actuarial Assets minus Market Assets	\$ 227,360	\$ (39,354)	-677.7%	
Unfunded Actuarial Liability	\$ 5,936,979	\$ 5,706,923	4.0%	
Funding Ratio	45.0%	45.8%	-0.8%	

*The PAF is available for distribution under title §22-311 of the Philadelphia Code. In general, the PAF provides for enhanced benefit distribution to retirees and beneficiaries through the use of excess earnings. For more details on the PAF, see Section II – E

The market asset value average return was 0.29% compared to the 7.80% assumption for the previous year. For the actuarial value of assets, the experience gains and losses are smoothed over future years, which yielded a rate of return of 5.80%.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

3. Components of UAL Change between July 1, 2014 and July 1, 2015:

The Retirement System's unfunded actuarial liability increased by \$230.1 million, from \$5,706.9 million as of July 1, 2014 to \$5,937.0 million as of July 1, 2015. Table I-4 presents the specific components of this change in the UAL.

The System experienced a \$87.0 million asset loss based upon the actuarial value of assets and a \$107.9 million liability loss which is attributable to demographic experience. There was also an additional liability of \$81.0 million recognized due to the changes in assumptions (decrease in interest rate from 7.80% to 7.75% and changes in the stress/premium pay assumption for Police and Fire participants). Actual FYE 2015 contributions when compared to the expected MMO created an \$18.6 million loss due to the timing of contributions. There was a \$38.9 million loss due to the one year deferral of gains and losses under the MMO funding requirements. When these changes are compared to the expected pay down of the UAL as part of the MMO there is a net increase in the UAL of \$230.1 million over what is expected as of July 1, 2015.

Table I-4 Change in Unfunded Actuarial Liability (UAL) (\$ thousands)	
Experience	
1. UAL change due to asset (gain)/loss*	\$ 87,013.8
2. UAL change due to overall liability (gain)/loss	\$ 107,861.5
Contributions	
3. UAL change due to difference in benefit accruals, actual contributions and timing	\$ 18,591.1
4. UAL change due to one-year delay in MMO contributions	\$ 38,887.8
Total (Gain)/Loss Amortization Base	
5. Total UAL change due to gains and losses: sum 1 through 4	\$ 252,354.2
Plan Changes	
6. UAL change due to plan changes	\$ 0
Assumption Changes	
7. UAL change due to assumption changes	\$ 81,008.3
Total	
8. Total net overall change: 5 + 6 + 7	\$ 333,362.5
9. UAL change due to benefit accruals and payments, contributions, and interest	<u>(103,306.9)</u>
10. Net increase/(decrease) in UAL: 8 + 9	\$ 230,055.6

* Includes loss due to PAF transfer

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

4. Contributions:

Table I-5 below summarizes the City contribution amounts. The contribution under the **City's Funding Policy** for FYE 2016 was originally estimated to be \$917.6 million based upon estimated FYE 2016 payroll. Using updated payroll, the FYE 2016 contribution is \$919.0 million. For Fiscal Year 2017, the funding policy contributions increased by 1.80% of payroll, from 57.51% to 59.31%. In dollar terms, the contributions under the City's Funding Policy increased from \$919.0 million to \$979.0 million, a \$60.0 million increase. Along with changes in assumptions and experience, the increase in the funding policy is attributable to experience losses for each year the actual City contributions are less than the policy amount. The FYE 2017 contributions under the City's Funding Policy will be updated next year based on actual payroll. All contributions for the City's Funding Policy are provided as of the beginning of the year.

The **Minimum Municipal Obligation** for FYE 2017 measured as of the beginning of the year decreased by 0.37% of payroll, from 38.52% to 38.15%. In dollar terms, the required beginning of year contribution increased from \$595.0 million to \$629.6 million, a \$34.6 million increase. Though the MMO increased in dollar amounts, it decreased as a percent of pay because total payroll increased more than the increase in MMO over the last year. This is because the amortization of experience losses and assumption changes had less of a relative impact than the increase in active members and salary increases coupled with an increase in employee contribution rates. So while growth in active membership will result in the dollar cost increasing, the new employee contribution rates and higher payroll over which the unfunded liability is paid down as a level payment amount will result in lower costs as a percent of pay.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

In Section IV of this report, we provide more detail on the development of these contributions.

Table I-5 Contributions (\$ thousands)				
Fiscal Year Ending in Year:	2017	% of Pay	2016	% of Pay
City's Funding Policy¹				
Estimated FY Payroll	\$ 1,650,578		\$ 1,597,849 ²	
Normal Cost (with Expenses)	\$ 156,220	9.46%	\$ 148,428	9.29%
Employee Contributions ⁴	<u>(65,652)</u>	3.98%	<u>(60,816)</u>	3.81%
City Normal Cost	\$ 90,568	5.49%	\$ 87,612	5.48%
Amortization Payment	<u>888,426</u>	53.83%	<u>831,374</u>	52.03%
City's Funding Policy	\$ 978,994	59.31%	\$ 918,986	57.51%
Minimum Municipal Obligation ³				
Estimated FY Payroll	\$ 1,650,578		\$ 1,544,770	
Normal Cost (with Expenses)	\$ 156,220	9.46%	\$ 145,007	9.39%
Employee Contributions ⁴	<u>(65,652)</u>	3.98%	<u>(58,796)</u>	3.81%
City Normal Cost	\$ 90,568	5.49%	\$ 86,212	5.58%
Amortization Payment	<u>539,052</u>	32.66%	<u>508,763</u>	32.93%
Minimum Municipal Obligation	\$ 629,620	38.15%	\$ 594,975	38.52%

¹ Assuming beginning-of-year payment.

² FY 2016 Payroll for the City's Funding Policy is based upon the 7/1/2015 pay rates and will be finalized when the FYE 2016 payroll is available. All other payroll is estimated based upon the prior year's data used for the actuarial valuation.

³ The MMO does not include Quasi-Agency contributions.

⁴ Reflects an estimated increase in employee contributions for Municipal employees of 0.5% effective January 1, 2015 and 1% after January 1, 2016.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

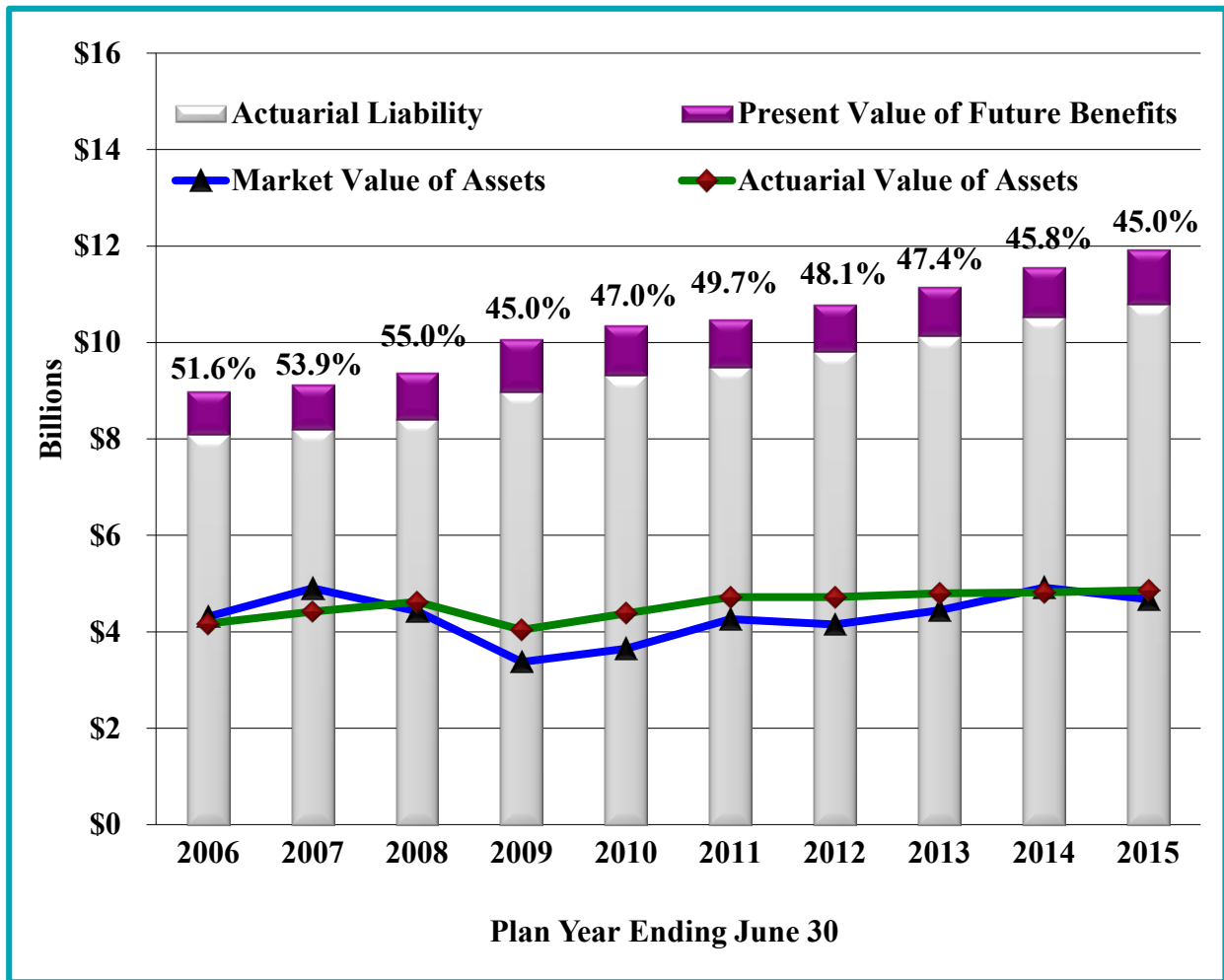
**SECTION I
BOARD SUMMARY**

C. Historical Trends

Although most of the attention given to the valuation reflects the most recently computed unfunded actuarial liability, funding ratio, and contribution amounts, it is important to remember that each valuation is merely a snapshot of the long-term progress of a pension fund. It is equally important to judge a current year's valuation result relative to historical trends, as well as trends expected into the future.

In the chart below, we present the historical trends for the market and actuarial value of assets compared to the actuarial liabilities and present value of future benefits; we also show the progress of the Retirement System's funding ratios (provided above each bar) since 2006.

City of Philadelphia Assets* and Liabilities – 2006 to 2015



* Market value of assets includes the PAF, which is not available for funding purposes.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

The System's funding ratio has declined significantly since 2006. In 2009, the funding ratio declined by 10% due to the investment losses during the year 2009 and the change in the actuarial liability interest rate assumption. In 2011, the funding ratio increased by 2.7% due to strong investment returns, which was partially offset by the increased actuarial liability due to the assumption changes. In particular, the assumed interest rate assumption has been decreased during this period from 8.75% to 7.75%. In 2012 the funding ratio decreased by 1.6% due to lower than expected investment returns and additional changes in assumptions and in 2014 the funding ratio decreased by 1.6% due to asset losses and further changes in assumptions to reduce future risks and reflect lower interest rates resulting in an increased actuarial liability. In 2015, the funding ratio decreased by 0.8% due to experience losses, change in the discount rate assumption, and the change in the stress/premium pay assumption for Police and Fire participants.

This historic trend emphasizing the relatively low funded status highlights the potential risk of running out of assets to pay benefits. However, as long as the City adheres to the continued policy of contributing at least the Minimum Municipal Obligation this risk will be avoided.

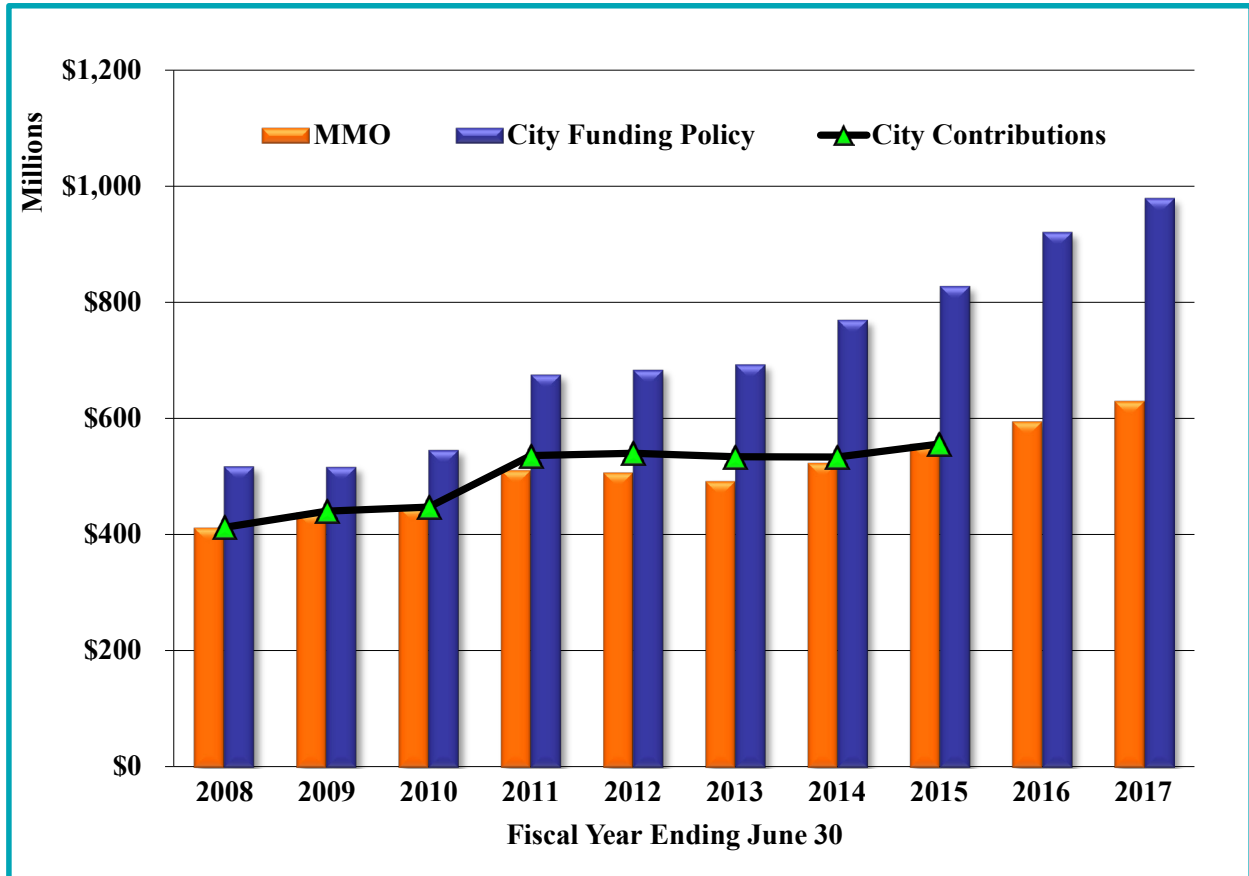
Another observation relevant to this System is the fact assets have remained relatively flat over the projection period. This is a function of the significant negative cash flow as contributions and investment income have just barely kept pace with benefit payouts and expenses. This is demonstrated later in the summary section.

In the chart on the next page, we present historical trends for the Minimum Municipal Obligation (MMO), the contribution under the City's Funding Policy, and the actual contribution made for fiscal years since 2008. Because there is a two-year lag in the determination of the City Funding Policy and MMO requirements, we show the contributions to date and the estimated amounts for fiscal years 2016 and 2017. The FYE 2010 and 2011 City contributions include the \$150 million and \$80 million deferred contributions which have been fully paid during FYE 2013. The deferred contributions are subsequently included in the asset value as if they were made when due in accordance with special funding provisions under Act 205, and treated as if they are short-term investments and therefore not reflected in the actual City contributions received during FYE 2013.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

City of Philadelphia Contributions for Fiscal Years 2008-2017



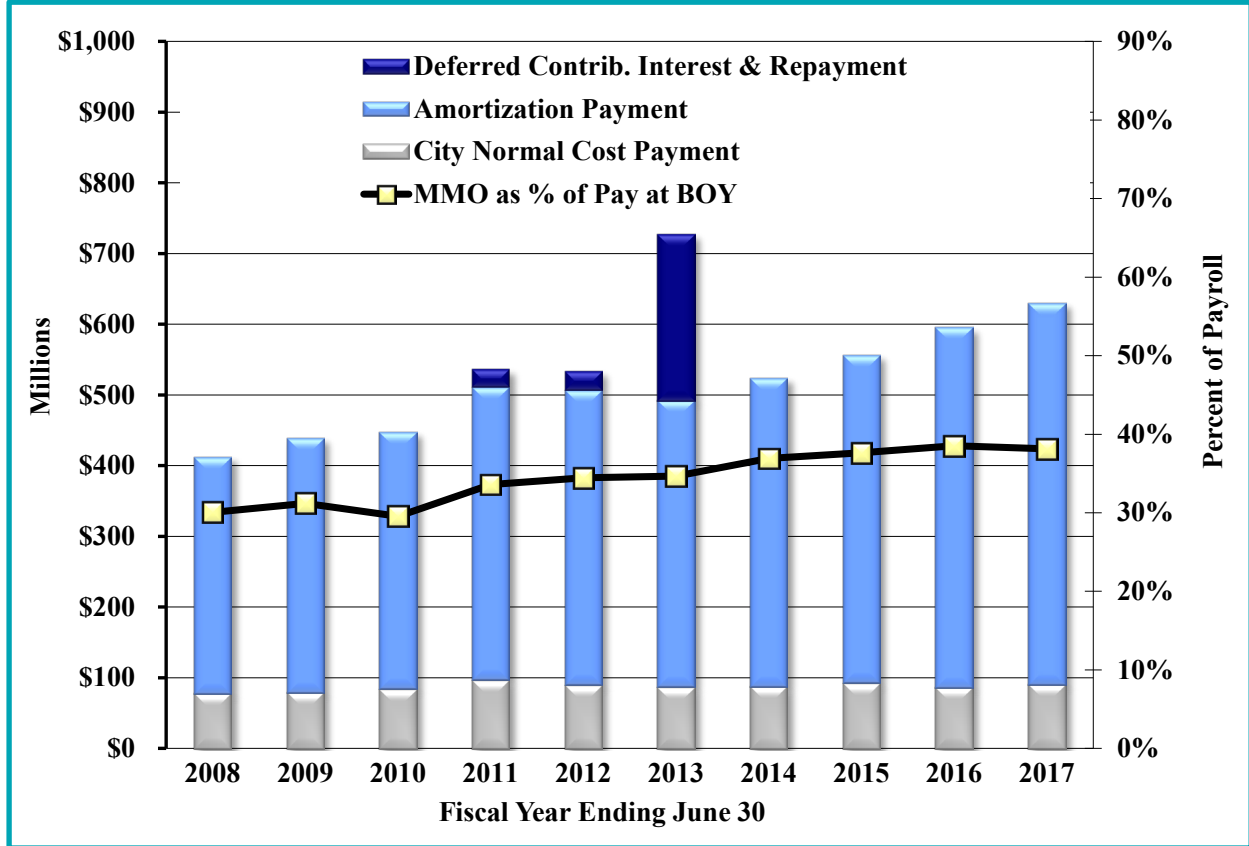
The key trend illustrated in this chart is the continuous growth in all three measures since FYE 2008 due in part to ten year smoothing of investment losses, assumption changes and the City’s decision to fund based on the MMO instead of the funding policy. This has slowed the funding progress in maintaining the funding policy and has resulted in losses under the funding policy due to contribution amounts being lower than what the policy calls for. These losses result in the increasing gap between the funding policy amount and the MMO. In addition, the MMO and City’s Funding Policy amounts for FYE 2011 increased significantly mainly due to the investment losses and changes in assumptions.

The chart on the next page shows historical amortization payments, City normal cost payments, and the deferred contribution interest and principal repayment. Also shown is the beginning-of-year MMO (normal cost plus amortization payments only, not including the deferred contributions) as a percentage of payroll based on the values in the legend on the right versus the line graph. For example in 2016 and 2017, the City cost is expected to be about 38%.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

MMO Contributions by Source for Fiscal Years 2008-2017



The chart illustrates that the City normal cost payment has increased gradually over the period shown. The amortization payment to pay off the unfunded actuarial liability has increased from over \$334 million for FYE 2008 to just over \$539 million for FYE 2017. Since FYE 2013 the amortization amounts have increased steadily due to the changes in assumptions that have had a net result of increasing liabilities and continued recognition of the 2008 investment losses.

The total City cost (normal cost plus amortization payments) as a percentage of payroll (as shown by the line and on the right hand axis) was about 30% in 2008, decreased in 2010 and then increased as the investment losses of FYE 2008 and 2009 get recognized over time to the current level of 38% in FYE 2017.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

D. Projected Financial Trends

Our analysis of the City of Philadelphia Municipal Retirement System’s projected financial trends is an important part of this valuation. In this section, we present our assessment of the implications of the July 1, 2015 valuation results on the future outlook in terms of benefit security (assets over liabilities) and the City’s expected cost progression.

In the charts that follow, we project the Retirement System’s assets and liabilities, and the City’s contributions as a percent of payroll. Unless otherwise noted we assume the MMO contributions are made each year. Our illustrations assume the provisions of Act 205 as amended by Act 44 remain in force during the projection period.

These projections reflect increased member contributions for Municipal employees of 0.5% of compensation between January 1, 2015 and December 31, 2015 and 1.0% of contributions after January 1, 2016. We also assume that new employees who have the option to elect out of Plan 10 and into Plan 87 will choose to participate in Plan 87 and pay higher member contributions.

Additional funds are also to be contributed into the System based on the expected portion of future sales tax revenue according to the State Legislation. The amounts provided to us by the City (as shown in the table below) reflect a reduction in the sales tax revenue by \$15 million in each of the first three years to provide the resources for debt financing. These sales tax contributions are anticipated to be contributed over and above the City’s contribution of the MMO and are included in the projections that follow.

Typically, as additional contributions are received, the following years MMOs are reduced as a function of the additional assets. However, it is our understanding the City has agreed to maximize the benefit from the sales tax revenue such that this revenue is in addition to what the MMO would be without the additional assets attributable to the sales tax. This new funding approach will not preclude the maintenance of determining an MMO which includes all assets in accordance with Act 205. To allow for this new Funding Policy for projection purposes and future actuarial valuations, we have created a notional account to track and accumulate the additional amount of revenue from the sales tax. These amounts are accumulated at the Actuarial Asset Value return rates to preserve the Funding Policy objective. The accumulated assets in this notional account are deducted from actuarial asset value in determining the contributions under this new Funding Policy. For the projections we show the new Funding Policy compared to the MMO calculated in accordance with Act 205 and the old Funding Policy.

Fiscal Year Ending	2016	2017	2018	2019	2020
Expected Sales Tax	\$ 10,421,716	\$ 15,417,017	\$ 20,898,683	\$ 41,421,093	\$ 47,039,040
Fiscal Year Ending	2021	2022	2023	2024	2025
Expected Sales Tax	\$ 52,647,962	\$ 56,964,161	\$ 61,388,265	\$ 65,922,972	\$ 70,571,046
Fiscal Year Ending	2026	2027	2028	2029	2030
Expected Sales Tax	\$ 75,335,322	\$ 80,218,705	\$ 85,224,173	\$ 90,354,777	\$ 95,613,647
Fiscal Year Ending	2031	2032	2033	2034	2035
Expected Sales Tax	\$ 101,003,988	\$ 106,529,087	\$ 112,192,315	\$ 117,997,122	\$ 123,947,051

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

The projections are provided on two different asset return assumption bases:

- 1) Assuming the new 7.75% return assumption each and every year, and
- 2) Assuming returns in the table below. These are rates of return which vary each year, but over the projection period equal on average the assumed 7.75% return. We do this because the City’s return will never be level from year to year and the System must anticipate the implications of asset return volatility to the funded status and contribution requirements. These rates are shown for illustration purposes only and are not a prediction of actual returns.

Fiscal Year Beginning	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Return	2.0%	4.5%	15.0%	8.0%	11.7%	12.3%	13.0%	8.2%	7.0%	-4.5%
Fiscal Year Beginning	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Return	-0.5%	15.5%	-2.0%	3.75%	12.0%	7.9%	8.5%	14.5%	11.0%	7.0%

In reviewing each of these projections, it is the future trends, not necessarily the actual values that are important to observe in consideration of the risks of the System and the potential volatility of future funding ratios and City contribution levels.

Projection Set 1: Assets and Liabilities

The two charts on the following page show asset measures (green and blue lines) compared to liabilities (grey bar). At the top of each chart is the progression of the System’s funding ratio which compares the actuarial value of assets (blue lines) to the actuarial liability (grey bars). The projections demonstrate a number of issues. Funding at the MMO level with the current ten-year asset smoothing method and the 2009, 30-year fresh start amortization method on a level dollar basis, will result in a very slow improvement of funding while the full impact of the 2008/2009 investment losses are fully realized. This is also a reflection of the negative cash flow of the System discussed below. The impact of these issues is mitigated by the additional contributions from sales tax revenue which are anticipated to be contributed above the City’s MMO resulting in a faster improvement in funded status. The new Funding Policy using the sales tax revenue accelerates the year the System is expected to reach 100% funding from the year 2040 to 2034.

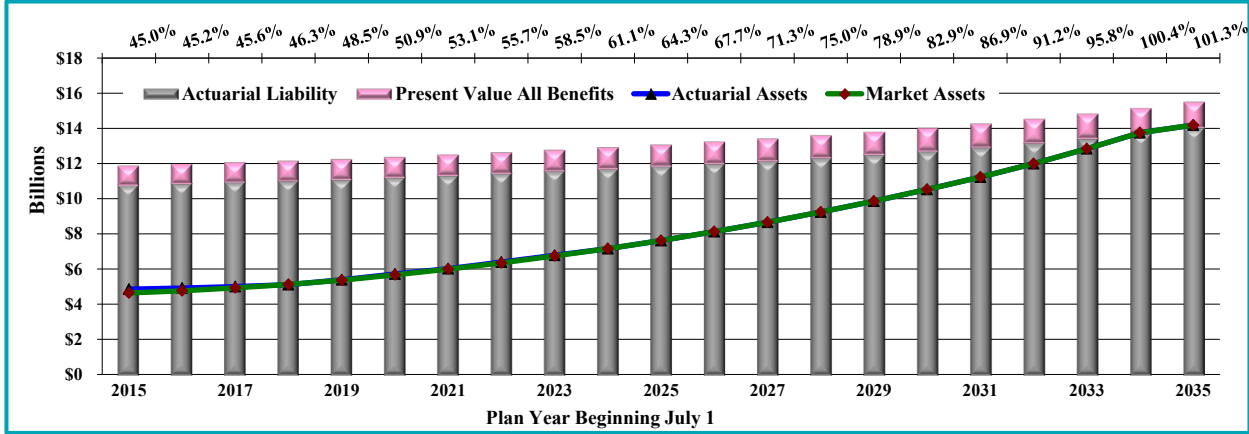
The alternative return expectations reveal insight from these two charts as to how varying investment returns impact the System’s funding ratio.

In both projections, the 10-year asset smoothing method has significant influence on the smoothing of assets against market value volatility as well as the relatively slow funding progress. What should be apparent is while achieving the same average return over the projection period, when returns actually vary the funded ratio is below the projection of consistent 7.75% returns each year and does not achieve full funding during this projection period— this demonstrates the risk of negative cash flow.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

**Chart 1: Projection of Assets and Liabilities, 7.75% return each year and
City makes contributions based on MMO**



**Chart 2: Projection of Assets and Liabilities, varying returns averaging 7.75% and
City makes contributions based on MMO**

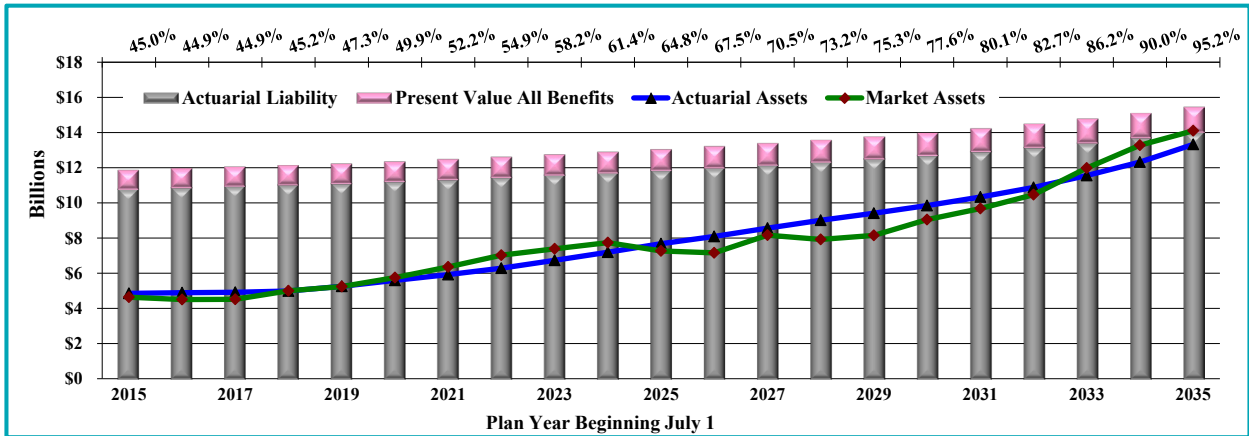


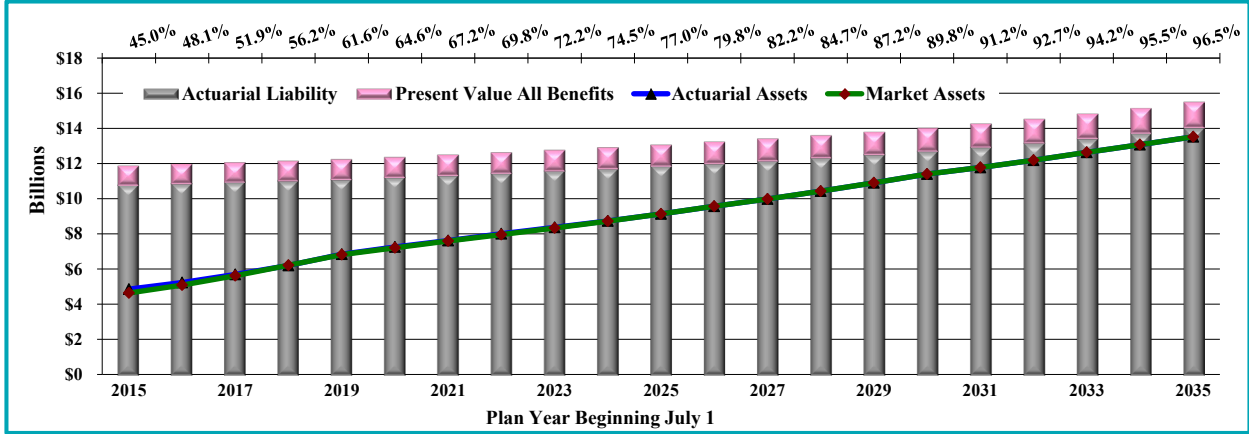
Chart 2 demonstrates that if the system can achieve a long-term return rate of 7.75%, the funding ratio can be adversely impacted by volatile returns year by year. This component of funding risk is driven by negative cash flows (where benefit payments and expenses are greater than contributions). When a mature system pays out more than it receives in a year and returns are below the assumption, the assets that get paid out are no longer in the system during subsequent years of market recovery. So a system with significant negative cash flow coupled with investment return volatility will grow at a slower rate than the investment return assumption.

It is also important to consider the fact that as long as the System is significantly underfunded, the financial burden on the City will remain relatively high, and the only reason both of these projections show gradual improvement is because the contributions will be adjusted to cover any cost volatility to comply with MMO requirements under Act 205.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

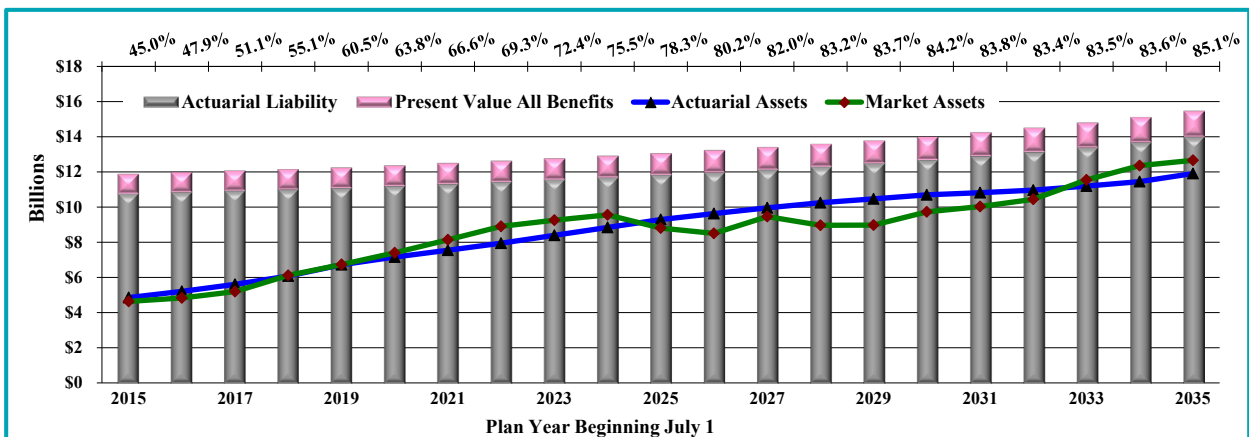
**SECTION I
BOARD SUMMARY**

Chart 3: Projection of Assets and Liabilities, 7.75% return each year, and the City makes contributions based on the City's Old Funding Policy



In the above scenario, where the City's old Funding Policy is contributed every year, the System reaches a funded ratio of 96.5% at the end of the projection period. For this scenario we have assumed that the City may use the sales tax revenue to meet the requirements of the old Funding Policy but such amounts would not be in addition to the policy. The funding ratio is higher than the ratio achieved in the initial years if the new Funding Policy is followed (MMO contributions plus sales tax revenue), because of the significantly higher assumed contributions in the first four years of the projection. Over time the contributions under the old Funding Policy are lower than the new Funding Policy therefore resulting in a lower funded ratio by the end of the projection period. We project the contribution amounts in support of these funding graphs in the next section.

Chart 4: Projection of Assets and Liabilities, if the City makes contributions based on the Old Funding Policy, varying returns averaging 7.75%



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

Chart 4 demonstrates that even if the return is achieved on average, because of negative cash flows the funded ratio could be less than long-term expectations might imply.

Projection Set 2: Projected City Contribution Rate

The chart below shows the MMO (red bars) including the impact on MMO reductions as a function of expected sales tax revenue (blue bars). The blue line shows the old Funding Policy and the green line shows the expected City contributions under the new Funding Policy where the sales tax revenue will be contributed on top of the MMO and will not be used to reduce future MMOs. The new Funding Policy rate is higher than the MMO until the System reaches 100% funded in FYE 2035 at which time it drops to the normal cost rate. The decrease in FYE 2020 for the City's old Funding Policy rate (blue line) is due to the payment in full of the initial unfunded liability. This projection assumes all actuarial assumptions are met, including the 7.75% anticipated investment return assumption, the MMO contributions are made each year and sales tax revenue is received as anticipated.

Chart 5: Projection of City Contributions, 7.75% return each year and the City makes contributions based on the MMO

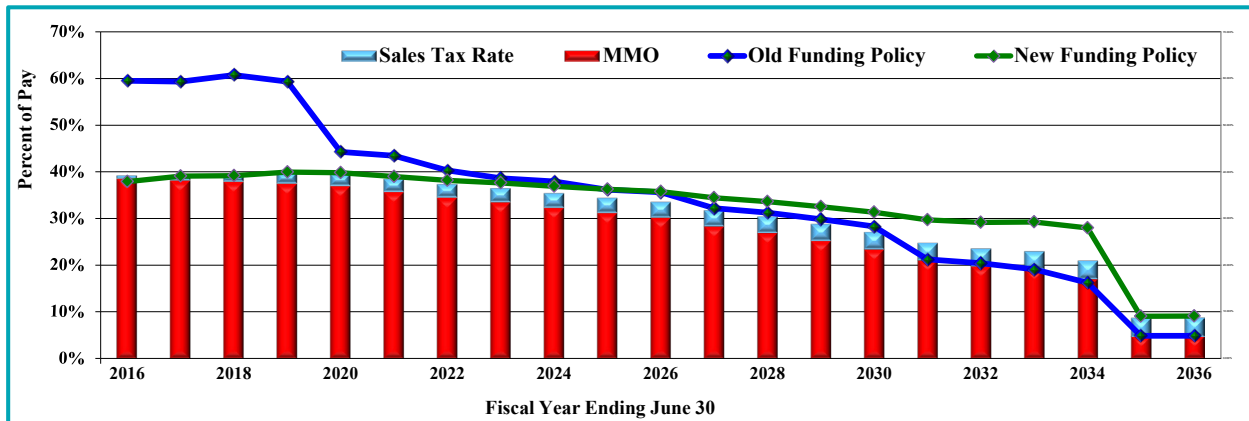
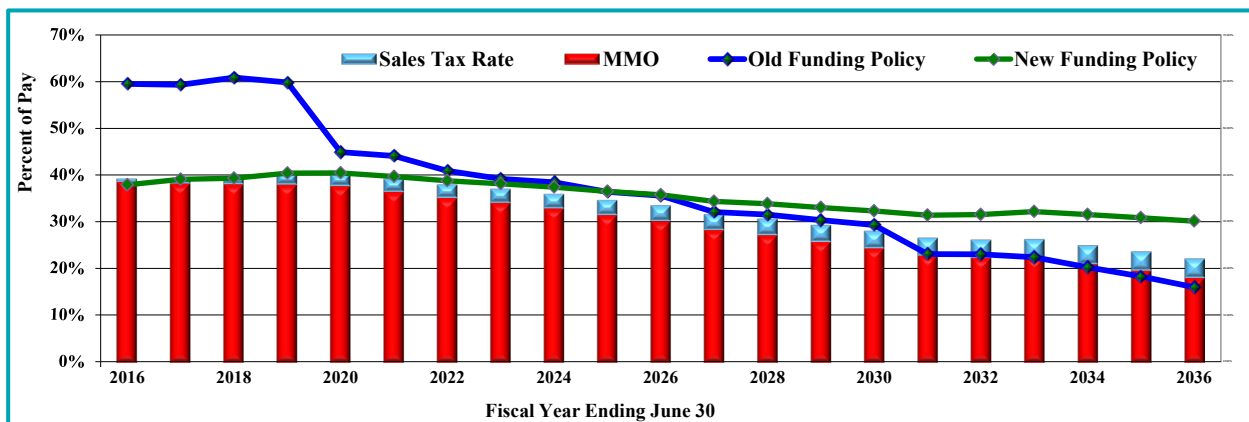


Chart 6: Projection of City Contributions, varying returns averaging 7.75% and the City makes contributions based on the MMO



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

As shown above, varying returns have an impact on the computed City contribution rate, especially in the later projection years. However, the volatility is mitigated for two reasons, the 10-year smoothing of assets and 20-year amortization of experience gains and losses. This illustrates that the future contributions should be anticipated to be higher to adjust for the market volatility. Thus, the market volatility can prolong the period of paying down the unfunded when coupled with the impact of negative cash flows in down markets.

Chart 7: Projection of City Contributions, 7.75% return each year, and the City makes contributions based on the City’s Funding Policy

This chart shows the expected future contribution if the City’s old Funding Policy contributions are made each year. Though under this scenario significantly larger contributions are assumed to be made each year up front, projected contributions are expected to decline more rapidly when the initial funded base is expected to be paid off in 2019 when compared to Chart 5.

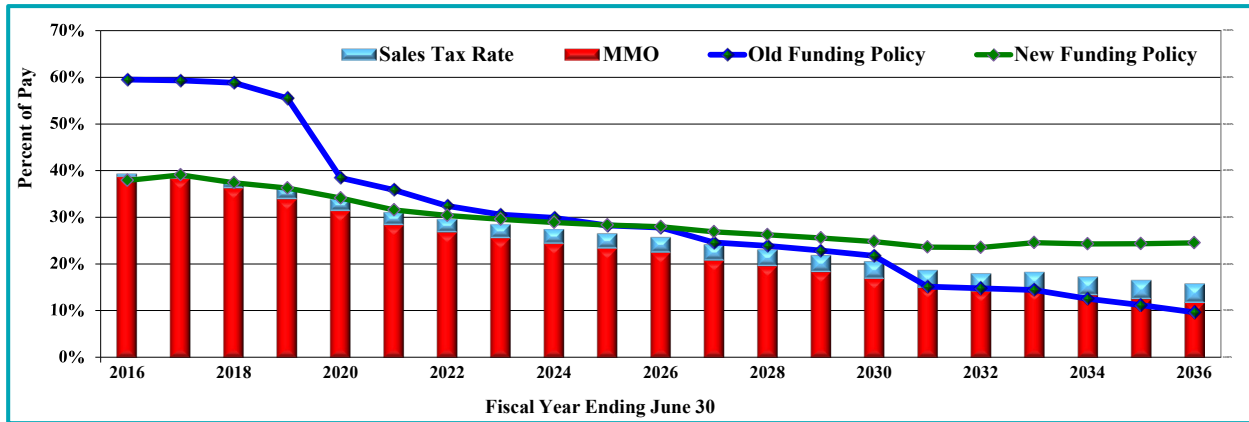
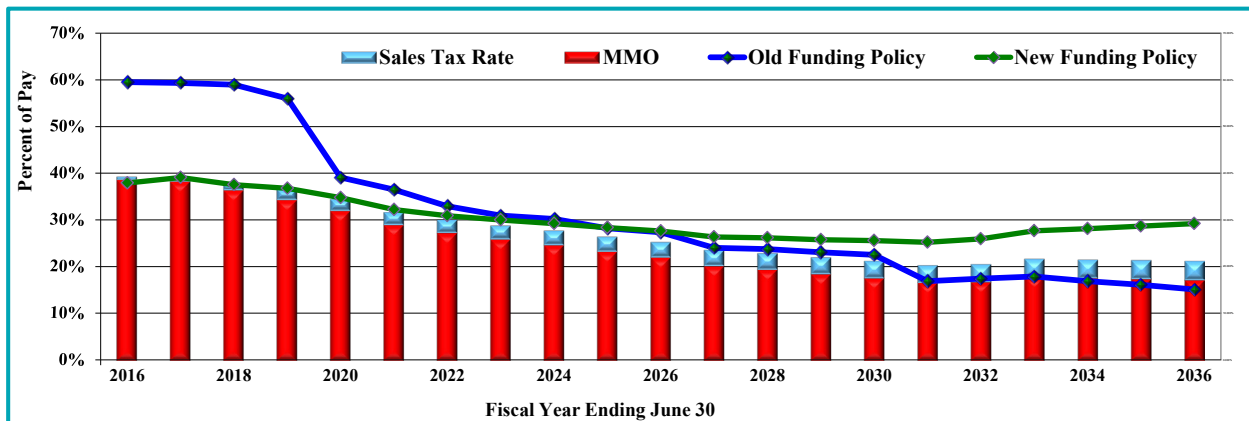


Chart 8: Projection of City Contributions, varying returns averaging 7.75% and the City makes contributions based on the City’s Funding Policy

Chart 8 is similar to Chart 7, illustrating again the smoothing expectation on a City Funding Policy level when the annual return rates vary from year to year.



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

We note that when the System becomes 70% funded or greater, the unfunded liability may be amortized on a rolling 10-year basis. We have not shown the implications of this alternative funding method provided for in Act 205 because it would effectively extend the period to achieve full funding many years beyond the current projection period illustrated.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

The Retirement System uses and discloses two different asset measurements for funding, which are presented in this section of the report: market value and actuarial value of assets. The market value represents the value of the assets if they were liquidated on the valuation date and, unless explicitly stated otherwise, this value includes the Pension Adjustment Fund (PAF) which is not available for funding purposes. The actuarial value of assets is a value that smooths annual investment returns over ten years beginning in 2008 (five years before 2008) to reduce annual investment volatility and is used in determining contribution levels. This smoothing method also requires that the actuarial value of assets may not be more than 120% nor less than 80% of the market value of assets. By definition, the actuarial value of assets does not include the PAF.

On the following pages, we present detailed information on the Retirement System's assets:

- Disclosure of assets at July 1, 2014 and July 1, 2015,
- Statement of cash flows during the year,
- Development of the actuarial value of assets,
- Apportionment of assets between plans for valuation purposes,
- Development of the Pension Adjustment Fund as of July 1, 2015, and
- Disclosure of investment performance for the year.

A. Disclosure

The market value of assets represents a “snap-shot” value as of the last day of the fiscal year that provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the value of the investments. Because these fluctuations would cause volatility in employer contributions, an actuarial value of assets is developed. Table II-1 on the following page presents the market value by asset class as of July 1, 2014 and July 1, 2015. Table II-2 presents the System's net cash flows for the plan year beginning July 1, 2014 and ending June 30, 2015. Table II-3 presents Fiscal 2015 City contributions.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

Table II-1		
Statement of Assets at Market Value¹		
	7/1/2015	7/1/2014
<u>Assets</u>		
Cash	\$ 124,032,000	\$ 187,988,000
Investments	4,539,851,000	4,800,194,000
Securities Lending	405,678,000	524,347,000
Accrued Interest and Other Receivables	132,196,000	130,113,000
Due from Other Governmental Units	<u>4,282,000</u>	<u>3,303,000</u>
Total Assets	\$ 5,206,039,000	\$ 5,645,945,000
<u>Liabilities</u>		
Due on Securities Lending	\$ 405,964,000	\$ 524,672,000
Accrued Expenses and Other Liabilities	<u>125,823,000</u>	<u>204,569,000</u>
Total Liabilities	\$ 531,787,000	\$ 729,240,000
Net Assets	\$ 4,674,252,000	\$ 4,916,705,000

¹ Includes the PAF which is not available for funding purposes.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

B. System Cash Flows for the Year July 1, 2014 through July 1, 2015

Table II-2 Changes in Market Values¹		
Value of Assets – July 1, 2014		\$ 4,916,705,000
<u>Additions</u>		
Contributions:		
Employer Contributions	\$ 577,195,000	
Employee Contributions	58,658,000	
Total Contributions		\$ 635,853,000
Investment Income:		
Appreciation in FV of Investments	\$ (76,805,000)	
Interest and Dividends	98,399,000	
Total Investment Income	\$ 21,594,000	
Investment Activity Expenses:		
Investment Expenses	(9,802,000)	
Total Investment Activity Expenses	\$ (9,802,000)	
Securities Lending Activities:		
Securities Lending Income	\$ 2,266,000	
Securities Lending Expenses	(339,000)	
Net Income from Securities Lending Activities	\$ 1,927,000	
Miscellaneous Operating Revenues	\$ 120,000	
Net Investment Income		13,839,000
Total Additions		\$ 649,692,000
<u>Deductions</u>		
Administrative Expenses	\$ (10,479,000)	
Withdrawal Refunds	(5,279,000)	
Benefit Payments	(844,213,000)	
PAF Distributions	(32,174,000)	
Total Deductions		(892,145,000)
<u>Total</u>		
Net Increase (Decrease)		(242,453,000)
Value of Assets – July 1, 2015		\$ 4,674,252,000

¹ Includes the PAF which is not available for funding purposes

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

Table II-3

City Contributions for the Plan Year Ending June 30, 2015

Cash Received from City during Fiscal Year 2015	\$	556,100,000
Cash Received from Quasi-Agencies		<u>21,095,000</u>
Total Cash Received during Fiscal Year 2015	\$	577,195,000

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

C. Actuarial Value of Assets

To determine on-going funding requirements, most pension systems utilize an actuarial value of assets that differs from the market value of assets. The actuarial value of assets represents an asset value based on averaging or smoothing year-to-year market value returns for purposes of reducing contribution volatility. Beginning with investment losses as of Fiscal Year End 2009, gains and losses are prospectively distributed in equal amounts over a ten-year period (over a five year period prior to 2009) coupled with the requirement that the resulting asset value may not be more or less than 20% of the MVA.

Table II-4 Development of Actuarial Value of Assets as of July 1, 2015						
1. Market Value of Assets as of July 1, 2015						\$ 4,674,252,000
2. Pension Adjustment Fund (PAF) as of July 1, 2015 Before Additional Transfers						\$ 30,422,457
3. Market Value of Assets Net of Original PAF*						\$ 4,643,829,543
4. Deferred Asset Gains/(Losses)						
<u>Fiscal Year</u>	<u>Investment</u>	<u>Percent</u>	<u>Percent</u>	<u>Amount</u>		
<u>Ending</u>	<u>Gains / (Losses)</u>	<u>Recognized</u>	<u>Deferred</u>	<u>Deferred</u>		
2009	\$ (1,235,073,412)	70%	30%	\$	(370,522,024)	
2010	200,524,637	60%	40%		80,209,855	
2011	414,187,915	50%	50%		207,093,958	
2012	(328,486,968)	40%	60%		(197,092,181)	
2013	127,718,278	30%	70%		89,402,795	
2014	347,082,935	20%	80%		277,666,348	
2015	(349,020,722)	10%	90%		(314,118,650)	
Total				\$	(227,359,899)	
5. Preliminary Actuarial Value as of July 1, 2015 (5 = 3 - 4)						\$ 4,871,189,442
6. Corridor for Actuarial Value						
a. 80% of Market Value Net of PAF						\$ 3,715,063,634
b. 120% of Market Value Net of PAF						\$ 5,572,595,451
7. Additional PAF Transfer as of July 1, 2015						\$ 7,776,305
8. Actuarial Value of Assets Net of Final PAF as of July 1, 2015 8 = max((min of 5 or 6b) and 6a), minus 7						\$ 4,863,413,137
9. As a percent of Market Value Net of Final PAF						104.9%
10. Market Value of Assets Net of Final PAF						\$ 4,636,053,238

* Market value of assets net of original PAF before the determination of the final PAF amount. See section II - E for more details on the development of the total PAF and the additional PAF transfer, if applicable.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

D. Apportionment of Actuarial Value of Assets

The asset allocation reflects the actual cash flows for each plan and proportional allocation of investment earnings.

Table II-5 Allocation of Assets for Valuation Purposes Between Plans as of July 1, 2015 (\$ thousands)									
	1967 Plan			1987 Plan				Plan '10	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	
1. Actuarial Value of Assets as of July 1, 2014	\$ 1,633,082	\$ 677,050	\$ 246,482	\$ 1,019,940	\$ 11,428	\$ 963,282	\$ 263,619	\$ 30	\$ 4,814,912
2. Transactions During Plan Year July 1, 2014 to June 30, 2015									
a. Contributions									
City and Commonwealth Employees	\$ 242,320	\$ 135,915	\$ 52,740	\$ 61,913	\$ 969	\$ 47,227	\$ 14,994	\$ 22	\$ 556,100
Quasi-Public Agencies	6,341	2,184	750	20,390	326	20,846	7,605	217	58,658
b. Benefit Payments	17,689	0	0	3,406	0	0	0	0	21,095
c. Withdrawals	(462,429)	(215,502)	(98,729)	(37,301)	(1,388)	(21,366)	(7,498)	0	(844,213)
d. Administrative Expenses	(833)	(320)	(107)	(2,191)	(59)	(1,552)	(218)	0	(5,279)
e. Net Transactions	(3,737)	(1,592)	(546)	(3,235)	(7)	(1,026)	(334)	(1)	(10,479)
3. Total Fund Balance Prior to Allocation of Investment Income [1. + 2e.]	\$ (200,649)	\$ (79,315)	\$ (45,892)	\$ 42,982	\$ (159)	\$ 44,129	\$ 14,549	\$ 238	\$ (224,118)
4. Investment Income During Plan Year July 1, 2014 to June 30, 2015	\$ 1,432,433	\$ 597,735	\$ 200,590	\$ 1,062,922	\$ 11,269	\$ 1,007,411	\$ 278,168	\$ 268	\$ 4,590,794
5. Preliminary Actuarial Value of Assets as of July 1, 2015 [3. + 4.]	\$ 87,490	\$ 36,508	\$ 12,252	\$ 64,921	\$ 688	\$ 61,530	\$ 16,990	\$ 16	\$ 280,395
6. Allocation of PAF Transfer	\$ 1,519,923	\$ 634,244	\$ 212,841	\$ 1,127,842	\$ 11,957	\$ 1,068,940	\$ 295,158	\$ 284	\$ 4,871,189
7. Final Actuarial Value of Assets With Corridor as of July 1, 2015	\$ (2,426)	\$ (1,012)	\$ (340)	\$ (1,800)	\$ (19)	\$ (1,706)	\$ (471)	\$ (0)	\$ (7,776)
	\$ 1,517,497	\$ 633,232	\$ 212,502	\$ 1,126,041	\$ 11,938	\$ 1,067,234	\$ 294,687	\$ 283	\$ 4,863,413

Note: Numbers may not add due to rounding

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

E. Development of the Pension Adjustment Fund as of July 1, 2015

This table provides the funds available for distribution consideration under title §22-311 of the Philadelphia Code. In general, the Pension Adjustment Fund (PAF) provides for additional benefit distributions to retirees and beneficiaries through the use of excess earnings. This may include a lump-sum bonus payment, monthly pension increases, ad-hoc cost of living adjustments, or other increases determined by the Board. The adjusted market value of assets reflects a five-year smoothing of asset gains and losses, as described in the Philadelphia Code.

Table II-6 Development of the Pension Adjustment Fund as of July 1, 2015	
1. PAF on July 1, 2014	\$ 62,439,228
2. PAF Distribution	(32,174,000)
3. Market Value Asset Return Through June 30, 2015 *	0.29%
4. PAF on July 1, 2015 Before Additional Transfers** =(1) x [1 + (3)] + (2)	\$ 30,422,457
5. Adjusted Market Value of Assets Through June 30, 2015	\$ 4,729,406,441
6. Adjusted Market Value of Assets Return Through June 30, 2015 ***	9.13%
7. Return in Excess of Investment Assumption Plus 1.0%, Limited to 5.0% =(6) - [7.8% + 1.00%]	0.33%
8. Additional Transfer as of July 1, 2015 =50% of (7) x (5)	\$ 7,776,305
9. Total PAF as of July 1, 2015 = (4) + (8)	\$ 38,198,762

* Market Value Asset Return including the PAF

** Calculations are based upon the unrounded percents for items (3) and (7)

*** Asset Return based upon the Adjusted Market Value of Assets using a 5 year smoothing of the gains/losses as outlined in Title 22-311

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

F. Investment Performance

The market value of assets internal rate of return was 0.29% for the year ending June 30, 2015. This is compared to an assumed return of 7.80% for the same period. This return produced an overall investment loss of \$349.0 million for the year ending June 30, 2015. On an actuarial value of assets basis (net of PAF), the return for FYE 2014 was 5.80%. In the table below, we also provide returns from two broad asset classes for comparison.

**Table II-7
Annual Rates of Return**

Year Ending	Investment Return	Market Value	Actuarial Value *	Total Return Standard & Poor's 500 Index	Barclays Aggregate Bond Index**
June 30,	Assumption	Value	Value *	500 Index	Bond Index**
1995	9.00%	11.70%	7.80%	26.10%	12.80%
1996	9.00%	15.10%	10.10%	26.00%	4.70%
1997	9.00%	18.30%	12.20%	34.60%	8.20%
1998	9.00%	14.30%	13.10%	30.20%	10.50%
1999	9.00%	10.00%	13.10%	22.70%	3.10%
2000	9.00%	9.60%	11.10%	7.30%	4.60%
2001	9.00%	-6.00%	8.30%	-14.80%	11.20%
2002	9.00%	-5.80%	3.40%	-18.00%	8.60%
2003	9.00%	1.80%	-2.20%	0.30%	10.40%
2004	9.00%	16.60%	4.60%	19.10%	0.30%
2005	8.75%	9.90%	1.80%	6.31%	6.81%
2006	8.75%	11.30%	6.10%	8.60%	-0.80%
2007	8.75%	16.98%	10.71%	20.60%	6.10%
2008	8.75%	-4.53%	10.13%	-13.10%	7.10%
2009	8.75%	-19.87%	-9.28%	-26.21%	5.98%
2010	8.25%	13.81%	12.89%	14.40%	9.19%
2011	8.15%	19.40%	9.90%	28.13%	3.56%
2012	8.10%	0.18%	2.42%	3.14%	7.30%
2013	7.95%	10.94%	5.08%	17.91%	-0.85%
2014	7.85%	15.70%	4.81%	22.04%	4.36%
2015	7.80%	0.29%	5.80%	5.25%	1.86%

* Net of PAF

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

G. Asset Gain/(Loss)

There was a \$349.0 million investment loss on market value of assets when compared to the expected as of July 1, 2015. Table II-8 reconciles the 2015 asset loss (expected versus actual) for the market value of assets both net of the PAF and in total. This investment loss is smoothed over a ten-year period to determine the actuarial value of assets (see Table II – 4). Also provided below is a reconciliation of the PAF including the current year transfer amount.

Table II-8 Calculation of Asset Gain/(Loss)			
	Market Value (Net of PAF)	PAF	Total Market Value
1. Market Value of Assets as of July 1, 2014	\$ 4,854,265,772	\$ 62,439,228	\$ 4,916,705,000
2. Transactions During Plan Year July 1, 2014 to June 30, 2015			
a. Contributions			
City and Commonwealth	\$ 556,100,000	\$ 0	\$ 556,100,000
Employees	58,658,000	0	58,658,000
Quasi-Public Agencies	21,095,000	0	21,095,000
b. Benefit Payments	(844,213,000)	(32,174,000)	(876,387,000)
c. Withdrawals	(5,279,000)	0	(5,279,000)
d. Administrative Expenses	(10,479,000)	0	(10,479,000)
e. Net Transactions	\$ (224,118,000)	\$ (32,174,000)	\$ (256,292,000)
3. Expected Investment Income from July 1, 2014 to June 30, 2015	\$ 362,702,492	\$ 157,230 *	\$ 362,859,722
4. PAF transfer at July 1, 2015	\$ (7,776,305)	\$ 7,776,305	\$ 0
5. Expected Market Value of Assets as of July 1, 2015 [1. + 2.e. + 3. + 4]	\$ 4,985,073,960	\$ 38,198,762	\$ 5,023,272,722
6. Market Value of Assets as of July 1, 2015	\$ 4,636,053,238	\$ 38,198,762	\$ 4,674,252,000
7. Investment Gain/(Loss) [6. - 5.]	\$ (349,020,722)	\$ 0	\$ (349,020,722)

* The PAF is credited with investment income at the market rate of return earned by plan assets.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION III
LIABILITIES**

In this section, we present detailed information on liabilities for the City of Philadelphia Municipal Retirement System, including:

- Disclosure of liabilities at July 1, 2014 and July 1, 2015,
- Statement of changes in these liabilities and the unfunded liabilities during the year,
- Development of the normal cost rates by plan, and
- The reconciliation of the changes in the unfunded liability by plan as well as the expected unfunded liability as of July 1, 2016.

Disclosure

Two types of liabilities are calculated and presented in this report. Each type is distinguished by the purpose for which the figures are ultimately used.

- **Present Value of all Future Benefits:** Used for measuring all future obligations, this represents the amount of money needed today to fully fund all benefits both earned as of the valuation date and those to be earned in the future by current plan participants, under the current plan provisions and assumptions.
- **Actuarial Liability:** Used for determining employer contributions and GASB accounting disclosures. This liability is calculated by subtracting the present value of future member contributions and future employer normal cost contributions as determined under the Entry Age Normal Cost (EAN) actuarial funding method from the present value of all future benefits.

These liabilities are for funding purposes and are not appropriate for measuring the cost of settling plan liabilities by purchasing annuities or paying lump sums.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION III
LIABILITIES**

Table III-1 shows the present value of future benefits, actuarial liability, and unfunded actuarial liability as of July 1, 2015, and July 1, 2014, for the Retirement System.

Table III-1 Disclosure of Liabilities (\$ thousands)		
	July 1, 2015	July 1, 2014
Present Value of Future Benefits		
Actives	\$ 4,724,148	\$ 4,427,210
Terminated Vesteds	126,357	111,873
Disabled	726,996	686,641
Retirees	4,896,290	4,656,035
Beneficiaries	616,393	604,661
DROP Account plus Deferred Annuities	828,281	1,067,134
Non-Vested Refunds	6,739	5,937
Total City PVFB	\$ 11,925,204	\$ 11,559,491
Market Value of Assets (Net of PAF)	(4,636,053)	(4,854,266)
Present Value Future Member Contrib.	(444,911)	(377,619)
City's Unfunded Future Obligation	\$ 6,844,240	\$ 6,327,606
Actuarial Liability		
Actives	\$ 3,599,336	\$ 3,389,554
Terminated Vesteds	126,357	111,873
Disabled	726,996	686,641
Retirees	4,896,290	4,656,035
Beneficiaries	616,393	604,661
DROP	828,281	1,067,134
Non-Vested Refunds	6,739	5,937
Total City AL	\$ 10,800,392	\$ 10,521,835
Actuarial Value of Assets	(4,863,413)	(4,814,912)
Unfunded Actuarial Liability	\$ 5,936,979	\$ 5,706,923

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION III
LIABILITIES**

Table III-2 shows the present value of future benefits, actuarial liability, and unfunded actuarial liability for each Plan in the Retirement System.

Table III-2 Liabilities Detail as of July 1, 2015 (\$ thousands)									
	1967 Plan			1987 Plan				Plan '10	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	
Present Value of Future Benefits									
Actives	\$ 842,184	\$ 258,450	\$ 83,775	\$ 1,554,015	\$ 16,432	\$ 1,497,806	\$ 467,124	\$ 4,363	\$ 4,724,148
Terminated Vesteds	53,522	146	0	53,920	0	15,696	3,072	0	126,357
Disabled	235,406	199,686	49,724	72,704	0	142,600	26,875	0	726,996
Retirees	2,683,765	1,294,031	608,709	206,908	10,349	64,621	27,906	0	4,896,290
Beneficiaries	328,240	164,384	71,872	27,464	704	16,397	7,333	0	616,393
DROP	388,759	242,704	53,402	71,975	0	59,572	11,870	0	828,281
Non-Vested Refunds	1,677	155	50	4,001	0	665	191	0	6,739
Total PVFB	\$ 4,533,553	\$ 2,159,556	\$ 867,532	\$ 1,990,987	\$ 27,485	\$ 1,797,357	\$ 544,371	\$ 4,363	\$ 11,925,204
Actuarial Liability									
Actives	\$ 792,406	\$ 238,750	\$ 77,954	\$ 1,186,366	\$ 13,998	\$ 1,000,913	\$ 288,631	\$ 319	\$ 3,599,336
Terminated Vesteds	53,522	146	0	53,920	0	15,696	3,072	0	126,357
Disabled	235,406	199,686	49,724	72,704	0	142,600	26,875	0	726,996
Retirees	2,683,765	1,294,031	608,709	206,908	10,349	64,621	27,906	0	4,896,290
Beneficiaries	328,240	164,384	71,872	27,464	704	16,397	7,333	0	616,393
DROP	388,759	242,704	53,402	71,975	0	59,572	11,870	0	828,281
Non-Vested Refunds	1,677	155	50	4,001	0	665	191	0	6,739
Total AL	\$ 4,483,775	\$ 2,139,856	\$ 861,711	\$ 1,623,338	\$ 25,051	\$ 1,300,464	\$ 365,878	\$ 319	\$ 10,800,392
Actuarial Value of Assets	(1,517,497)	(633,232)	(212,502)	(1,126,041)	(11,938)	(1,067,234)	(294,687)	(283)	(4,863,413)
Unfunded Actuarial Liability	\$ 2,966,278	\$ 1,506,624	\$ 649,209	\$ 497,297	\$ 13,113	\$ 233,230	\$ 71,191	\$ 36	\$ 5,936,979
Funding %	33.8%	29.6%	24.7%	69.4%	47.7%	82.1%	80.5%	88.8%	45.0%

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION III
LIABILITIES**

Table III-3 shows the derivation of the City normal cost as a percent of pay for each Plan in the System.

Table III-3 Derivation of the Normal Cost as of July 1, 2015 (\$ thousands)									
	1967 Plan			1987 Plan				Plan '10	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	
Retirement	\$ 7,715	\$ 4,431	\$ 1,443	\$ 28,583	\$ 249	\$ 36,157	\$ 13,126	\$ 232	\$ 91,936
Death	239	121	41	1,386	11	1,564	587	15	3,965
Disability	969	682	206	5,635	30	7,375	2,485	71	17,454
Termination	3,797	411	127	19,605	152	3,632	1,101	203	29,027
Administrative Expenses	3,028	1,291	441	2,846	6	884	306	46	8,848
Total Normal Cost (with Expenses)	\$ 15,748	\$ 6,935	\$ 2,258	\$ 58,055	\$ 450	\$ 49,612	\$ 17,605	\$ 567	\$ 151,229
Expected Employee Contributions	\$ 6,287	\$ 2,020	\$ 657	\$ 26,016	\$ 309	\$ 20,681	\$ 7,170	\$ 414	\$ 63,554
City Normal Cost	\$ 9,461	\$ 4,915	\$ 1,601	\$ 32,039	\$ 141	\$ 28,931	\$ 10,435	\$ 153	\$ 87,676
Current Annual Payroll	\$ 132,367	\$ 33,672	\$ 10,956	\$ 861,459	\$ 3,356	\$ 404,714	\$ 138,145	\$ 13,180	\$ 1,597,849
City Normal Cost as % of Pay, Beginning of Year Payment	7.147%	14.596%	14.612%	3.719%	4.193%	7.148%	7.554%	1.162%	5.487%
City Normal Cost as % of Pay, End of Year Payment	7.701%	15.727%	15.745%	4.007%	4.517%	7.702%	8.139%	1.252%	5.912%

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION III
LIABILITIES**

Table III-4 shows changes in the unfunded actuarial liability from July 1, 2014 to July 1, 2015 due to actuarial experience and assumption changes; it is our understanding there were no plan changes. It also shows the development of the expected unfunded actuarial liability from July 1, 2015 to July 1, 2016 based upon the City's Funding Policy, which is used to develop the end of year amortization amounts for the City's Funding Policy in Table IV – 10 and in Appendix B. The actuarial experience of each of the plans is calculated based on the plans' actual asset and liability values compared to the expected values.

Table III-4									
Expected Unfunded Actuarial Liability for the Plan Year Ending June 30, 2016									
(\$ thousands)									
	1967 Plan			1987 Plan				Plan '10	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation*	\$ 2,741,648	\$ 1,390,595	\$ 596,617	\$ 401,448	\$ 11,343	\$ 175,667	\$ 44,217	\$ (15)	\$ 5,361,520
2. Changes in UAL due to									
a. Actuarial Experience	\$ 207,785	\$ 102,545	\$ 47,586	\$ 84,929	\$ 1,667	\$ 30,771	\$ 19,120	\$ 48	\$ 494,450
b. Assumption Changes	16,845	13,485	5,006	10,920	103	26,793	7,854	2	81,008
c. Active Plan Changes	0	0	0	0	0	0	0	0	0
d. Inactive Plan Changes	0	0	0	0	0	0	0	0	0
e. Subtotal	\$ 224,630	\$ 116,029	\$ 52,592	\$ 95,849	\$ 1,770	\$ 57,564	\$ 26,974	\$ 50	\$ 575,458
3. Actual UAL as of July 1, 2015 [1. + 2e.]	\$ 2,966,278	\$ 1,506,625	\$ 649,209	\$ 497,297	\$ 13,113	\$ 233,230	\$ 71,191	\$ 36	\$ 5,936,979
4. Expected Changes in UAL from July 1, 2015 to July 1, 2016 due to									
a. Interest on Changes in UAL	\$ 17,409	\$ 8,992	\$ 4,076	\$ 7,428	\$ 137	\$ 4,461	\$ 2,090	\$ 4	\$ 44,598
b. FY 2016 Amortization Contribution	(250,504)	(133,088)	(57,596)	(21,951)	(789)	(11,794)	(3,111)	0	(478,833)
c. Subtotal	\$ (233,096)	\$ (124,096)	\$ (53,520)	\$ (14,523)	\$ (652)	\$ (7,333)	\$ (1,020)	\$ 4	\$ (434,235)
5. Expected UAL as of July 1, 2016 [3. + 4c.]	\$ 2,733,182	\$ 1,382,529	\$ 595,689	\$ 482,774	\$ 12,461	\$ 225,897	\$ 70,171	\$ 40	\$ 5,502,744

* Expected UAL is based upon the City's funding policy

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

In the process of evaluating the financial condition of any pension system, the actuary analyzes the assets and liabilities to determine what level (if any) of contribution needed based on the funding methods either required by law or adopted by the plan sponsor. For an actuarial funding method to be effective, it should result in a pattern of contributions that are both stable, predictable and systematically fund the plan obligations.

The actuarial funding method used to determine the normal cost and the unfunded actuarial liability is the Entry Age Normal (EAN) cost method. The normal cost is based on taking the value, as of entry age into the plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of each member's expected future salary producing a normal cost rate as a percent of salary that should remain relatively constant over a participant's career. The normal cost rate is multiplied by current salary to determine each member's normal cost which is then all summed to get the total normal cost for all members. Finally, the total normal cost is reduced by the member contribution to produce the employer normal cost. The unfunded actuarial liability is the difference between the EAN actuarial liability and the actuarial value of assets.

Within this section of the report, two contribution amounts are determined based upon two different sets of rules for determining the way the unfunded actuarial liability is funded. The first method is defined in accordance with Act 205 and defines the Minimum Municipal Obligation (MMO), which is the City's minimum required contribution under Pennsylvania state law. The second method is in accordance with the City's Funding Policy or what we are now referring to as the "old" Funding Policy, which predates the Act 205 rules and calls for contributions that are greater than the MMO until the initial unfunded liability determined in 1984 is fully funded. Going forward a "new" Funding Policy will reflect the City's contributions based on the MMO calculated without recognition of the accumulated value of any sales tax revenue received by the System. Under all funding methods there are two components: the normal cost and the amortized unfunded actuarial liability. The amortized unfunded actuarial liability is the amount of the unfunded actuarial liability that is paid each year based upon the given or defined amortization periods. The amortization periods are different under the MMO and the City's old Funding Policy, but will be the same for the new Funding Policy. These amortization periods are outlined in more detail in Appendix C, Section B.

As of July 1, 2010, gains and losses are recognized annually to determine the amortization base used to calculate the MMO, as opposed to biennially. This change is implemented in accordance with section 1002 of Act 205.

In addition, the MMO, excluding the Pension Obligation Bond (POB) is also provided in this section, as required for reporting purposes under Act 205.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

In Table IV-1 we provide the employee contribution rates as a percent of pay effective for the plan year starting July 1, 2016. These **rates do not include the increases in contributions** for certain municipal employees and elected officials currently in Plans 67, 87 and 87 Prime and elected officials as required by legislation. This legislation called for employees in these groups to pay an additional 0.5% of compensation from January 1, 2015 to December 31, 2015 and an additional 1.0% from January 1, 2016 onwards. New employees in these groups entering Plan 87 Municipal prime will pay an additional 1.0% of compensation which is included in the table below.

Table IV-1 Employee Contribution Rates for the Plan Year Beginning July 1, 2016				
	Municipal¹	Elected²	Police	Fire
Plan 67	6.00%	N/A	6.00%	6.00%
Plan 67- 50% of Aggregate NC ³	5.95%	N/A	N/A	N/A
Plan 87	2.02%	8.21%	5.00%	5.00%
Plan 87- 50% of Aggregate NC ⁴	3.37%	N/A	N/A	N/A
Plan 87 - Accelerated Vesting ⁵	3.63%	10.60%	N/A	N/A
Plan 87 Prime ⁶	3.02%	9.21%	6.00%	6.00%
Plan '10 ⁷	3.14%	N/A	5.50%	5.50%

¹For Municipal Plan 67 members who participate in the Social Security System, employee contributions are 3.75% of compensation up to the social security wage base and 6% above it.

²The employee contribution rate is based upon the normal cost of \$449,727 under Plan 87 Elected, normal cost of \$248,947 under Plan 87 Municipal and current annual payroll of \$3,355,528.

³Effective November 2014 guards represented by DC 33 contribute at 50% of the aggregate Normal Cost of all members in Plan J.

⁴This represents 50% of Aggregate Normal Cost for all members in Plan Y.

⁵Member rate for Municipal Plan 87 (Y5) members eligible to vest in 5 years and Elected Officials (L8) eligible to be vested in 8 years instead of 10 years.

⁶Plan 87 Prime refers to new hires who have the option to elect Plan '10 but have elected to stay in Plan '87.

⁷There were 339 participants in Plan '10 Municipal as of the valuation date. Because this group is relatively small the employee contribution rate is phased in over 10 years beginning in 2012 with the employee contribution rate calculated for new entrants in Plan '87 Prime.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-2a and Table IV-2b isolate the City Funding Policy requirements for the Quasi Agencies that participate in the System broken out for Municipal Plans 1967 and 1987 both under the Funding Policy and MMO.

Table IV-2a Quasi Agency Funding Rate as a Percent of Payroll (Based on Funding Policy)		
Valuation Date	July 1, 2015	July 1, 2014
Fiscal Year Ending in Year	2017	2016
67 Municipal		
1. Normal Cost Rate	7.701%	7.259%
2. Amortization Rate under the City's Funding Policy	<u>370.894%</u>	<u>319.233%</u>
3. Total Year-End Rate [1. + 2.]	378.595%	326.492%
4. Quarterly adjustment factor	0.97219	0.97201
5. Total, adjusted for Quarterly Payments [3. x 4.]	368.065%	317.354%
87 Municipal		
1. Normal Cost Rate	4.007%	4.162%
2. Amortization Rate under the City's Funding Policy	<u>7.402%</u>	<u>6.672%</u>
3. Total Year-End Rate [1. + 2.]	11.410%	10.834%
4. Quarterly adjustment factor	0.97219	0.97201
5. Total, adjusted for Quarterly Payments [3. x 4.]	11.092%	10.531%
Plan 10 Municipal		
1. Normal Cost Rate	1.252%	0.053%
2. Amortization Rate under the City's Funding Policy	<u>0.030%</u>	<u>-0.471%</u>
3. Total Year-End Rate [1. + 2.]	1.282%	-0.418%
4. Quarterly adjustment factor	0.97219	0.97201
5. Total, adjusted for Quarterly Payments [3. x 4.]	1.246%	-0.407%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

**Table IV-2b
Quasi Agency Funding Rate as a
Percent of Payroll (Based on MMO)**

Valuation Date	July 1, 2015	July 1, 2014
Fiscal Year Ending in Year	2017	2016
67 Municipal		
1. Normal Cost Rate	7.701%	7.259%
2. Amortization Rate under MMO	<u>220.640%</u>	<u>194.404%</u>
3. Total Year-End Rate [1. + 2.]	228.342%	201.662%
4. Quarterly adjustment factor	0.97219	0.97201
5. Total, adjusted for Quarterly Payments [3. x 4.]	221.990%	196.019%
87 Municipal		
1. Normal Cost Rate	4.007%	4.162%
2. Amortization Rate under MMO*	<u>5.684%</u>	<u>4.923%</u>
3. Total Year-End Rate [1. + 2.]	9.691%	9.085%
4. Quarterly adjustment factor	0.97219	0.97201
5. Total, adjusted for Quarterly Payments [3. x 4.]	9.422%	8.830%
Plan 10 Municipal		
1. Normal Cost Rate	1.252%	0.053%
2. Amortization Rate under MMO*	<u>0.027%</u>	<u>-0.423%</u>
3. Total Year-End Rate [1. + 2.]	1.278%	-0.370%
4. Quarterly adjustment factor	0.97219	0.97201
5. Total, adjusted for Quarterly Payments [3. x 4.]	1.243%	-0.360%

* The amortization amounts were derived based on the proportional share of the Unfunded Actuarial Liability.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-3 shows the development of the FYE 2016 Minimum Municipal Obligation (MMO) for each division. Table IV-4 on the following page shows a schedule of amortization payments toward the MMO.

Table IV-3				
Development of the Minimum Municipal Obligation for Fiscal Year End 2017				
(\$ thousands)				
	Non-Uniformed	Police	Fire	Total
Estimated FY 2016-2017 Payroll	\$ 1,043,704	\$ 452,853	\$ 154,021	\$ 1,650,578
Normal Cost %	6.819%	12.403%	12.821%	8.911%
Normal Cost	\$ 71,166	\$ 56,167	\$ 19,747	\$ 147,080
Amortization Payment	317,692	155,972	65,388	539,052
Administrative Expenses	6,122	2,246	772	9,140
Subtotal	\$ 394,980	\$ 214,385	\$ 85,907	\$ 695,272
Expected Employee Contributions	<u>(34,116)</u>	<u>(23,450)</u>	<u>(8,085)</u>	<u>(65,652)</u>
Minimum Municipal Obligation	\$ 360,864	\$ 190,935	\$ 77,821	\$ 629,620

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-4 Unfunded Liability Payments toward the MMO for Fiscal Year 2017 (\$ thousands)												
Type of Base	Municipal			Police			Fire			Total		
	7/1/2015 Balance	Years Left	FY 2017 Payment	7/1/2015 Balance	Years Left	FY 2017 Payment	7/1/2015 Balance	Years Left	FY 2017 Payment	7/1/2015 Balance	Years Left	FY 2017 Payment
Fresh Start Base												
est. July 1, 2009	\$ 2,590,455	24	\$ 223,599	\$ 1,458,127	24	\$ 125,860	\$ 565,052	24	\$ 48,773	\$ 4,613,634	24	\$ 398,232
Gain/Loss Base												
est. July 1, 2010	\$ (52,478)	15	\$ (5,603)	\$ (37,420)	15	\$ (3,996)	\$ (2,801)	15	\$ (299)	\$ (92,699)	15	\$ (9,898)
Assumption Change												
est. July 1, 2010	\$ 67,030	10	\$ 9,167	\$ 26,895	10	\$ 3,679	\$ 24,545	10	\$ 3,357	\$ 118,471	10	\$ 16,202
Gain/Loss												
est. July 1, 2011	\$ (103,476)	16	\$ (10,677)	\$ (20,968)	16	\$ (2,163)	\$ (20,620)	16	\$ (2,128)	\$ (145,064)	16	\$ (14,968)
Assumption Change												
est. July 1, 2011	\$ 19,523	11	\$ 2,507	\$ 11,739	11	\$ 1,508	\$ 3,959	11	\$ 508	\$ 35,221	11	\$ 4,523
Gain/Loss												
est. July 1, 2012	\$ 143,589	17	\$ 14,367	\$ 75,943	17	\$ 7,598	\$ 19,667	17	\$ 1,968	\$ 239,199	17	\$ 23,933
Assumption Change												
est. July 1, 2012	\$ 53,871	12	\$ 6,549	\$ 30,777	12	\$ 3,741	\$ 10,754	12	\$ 1,307	\$ 95,402	12	\$ 11,597
Gain/Loss												
est. July 1, 2013	\$ 127,747	18	\$ 12,432	\$ 37,212	18	\$ 3,621	\$ (5,252)	18	\$ (511)	\$ 159,707	18	\$ 15,542
Assumption Change												
est. July 1, 2013	\$ 73,321	13	\$ 8,491	\$ 43,968	13	\$ 5,092	\$ 14,665	13	\$ 1,698	\$ 131,954	13	\$ 15,282
Gain/Loss												
est. July 1, 2014	\$ 103,692	19	\$ 9,841	\$ 42,466	19	\$ 4,030	\$ 49,287	19	\$ 4,678	\$ 195,445	19	\$ 18,549
Assumption Change												
est. July 1, 2014	\$ 251,042	14	\$ 27,851	\$ (8,793)	14	\$ (975)	\$ 10,096	14	\$ 1,120	\$ 252,345	14	\$ 27,996
Gain/Loss												
est. July 1, 2015	\$ 174,537	20	\$ 16,193	\$ 39,630	20	\$ 3,677	\$ 38,187	20	\$ 3,543	\$ 252,354	20	\$ 23,412
Assumption Change												
est. July 1, 2015	\$ 27,870	15	\$ 2,976	\$ 40,278	15	\$ 4,301	\$ 12,860	15	\$ 1,373	\$ 81,008	15	\$ 8,650
Total	\$ 3,476,724		\$ 317,692	\$ 1,739,855		\$ 155,972	\$ 720,399		\$ 65,388	\$ 5,936,977		\$ 539,052

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-5 (a) – (d) provides more detail by plan on the expected and actual unfunded actuarial liability and the new amortization bases established as of July 1, 2015 for the MMO.

Table IV-5a			
Development of the Fiscal Year 2017 Amortization Payment under MMO			
Municipal and Elected			
(\$ thousands)			
	7/1/2015	Remaining	FY 2017
	Outstanding Balance	Years	Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation	\$ 3,274,316		\$ 298,523
2. Changes in UAL due to			
a. Actuarial Experience	\$ 174,537	20	\$ 16,193
b. Assumption Changes	27,870	15	2,976
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	0	1	0
e. Subtotal	\$ 202,408		\$ 19,169
3. Total [1c. + 2e.]	\$ 3,476,724		\$ 317,692

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-5b			
Development of the Fiscal Year 2017 Amortization Payment under MMO			
Police			
(\$ thousands)			
	7/1/2015 Outstanding Balance	Remaining Years	FY 2017 Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation	\$ 1,659,947		\$ 147,995
2. Changes in UAL due to			
a. Actuarial Experience	\$ 39,630	20	\$ 3,677
b. Assumption Changes	40,278	15	4,301
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	0	1	0
e. Subtotal	\$ 79,908		\$ 7,977
3. Total [1c. + 2e.]	\$ 1,739,855		\$ 155,972

Note: Numbers may not add due to rounding.

Table IV-5c			
Development of the Fiscal Year 2017 Amortization Payment under MMO			
Fire			
(\$ thousands)			
	7/1/2015 Outstanding Balance	Remaining Years	FY 2017 Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation	\$ 669,353		\$ 60,472
2. Changes in UAL due to			
a. Actuarial Experience	\$ 38,187	20	\$ 3,543
b. Assumption Changes	12,860	15	1,373
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	0	1	0
e. Subtotal	\$ 51,047		\$ 4,916
3. Total [1c. + 2e.]	\$ 720,400		\$ 65,388

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-5d			
Development of the Fiscal Year 2017 Amortization Payment under MMO			
Total			
(\$ thousands)			
	7/1/2015	Remaining	FY 2017
	Outstanding Balance	Years	Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation	\$ 5,603,616		\$ 506,990
2. Changes in UAL due to			
a. Actuarial Experience	\$ 252,354	20	\$ 23,412
b. Assumption Changes	81,008	15	8,650
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	0	1	0
e. Subtotal	<u>\$ 333,362</u>		<u>\$ 32,062</u>
3. Total [1c. + 2e.]	\$ 5,936,978		\$ 539,052

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

The tables on the following pages support Exhibit I of the Act 205 filings.

- Table IV-6 is a summary of assets, liabilities, and amortization contributions under the assumption that the Pension Obligation Bond (POB) was never contributed.
- Table IV-7 is a schedule of modified amortization payments under the assumption that the proceeds from the POB were never contributed.
- Table IV-8a, IV-8b, and IV-8c are debt service schedules for the POB, allocated for the Municipal, Police, and Fire divisions.
- Tables IV-9a and IV-9b are statements of receipts and disbursements for each division excluding and including bond issue assets, respectively, excluding the PAF.

Table IV-6 Summary of Modified Actuarial Data (\$ thousands)				
	Municipal	Police	Fire	Total
Actuarial Liability	\$ 6,132,483	\$ 3,440,321	\$ 1,227,588	\$ 10,800,392
Market Value of Assets (less POB)	\$ 2,198,554	\$ 1,519,433	\$ 355,789	\$ 4,073,776
Actuarial Value of Assets (less POB)	\$ 2,173,938	\$ 1,473,188	\$ 359,814	\$ 4,006,940
Unfunded Actuarial Liability (AL - AVA)	\$ 3,958,545	\$ 1,967,133	\$ 867,774	\$ 6,793,452
Amortization Contributions				
Total Amortization Amount	\$ 359,871	\$ 176,133	\$ 78,385	\$ 614,389
Remaining Years	21	22	21	21

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-7 Modified Unfunded Liability Payments toward the MMO for Fiscal Year 2017 (\$ thousands)												
Type of Base	Municipal			Police			Fire			Total		
	7/1/2015 Balance	Remaining Years	FY 2017 Payment	7/1/2015 Balance	Remaining Years	FY 2017 Payment	7/1/2015 Balance	Remaining Years	FY 2017 Payment	7/1/2015 Balance	Remaining Years	FY 2017 Payment
Fresh Start UAL Base est. July 1, 2009	\$ 3,037,707	24	\$ 262,204	\$ 1,645,375	24	\$ 142,023	\$ 697,053	24	\$ 60,167	\$ 5,380,135	24	\$ 464,394
July 1, 2010 Charges												
Experience (Gain)/Loss	\$ (46,479)	15	\$ (4,963)	\$ (32,513)	15	\$ (3,472)	\$ 1,596	15	\$ 170	\$ (77,396)	15	\$ (8,264)
Assumption Change	67,030	10	9,167	26,895	10	3,678	24,545	10	3,357	118,471	10	16,201
July 1, 2011 Charges												
Experience (Gain)/Loss	\$ (80,957)	16	\$ (8,353)	\$ (8,161)	16	\$ (842)	\$ (10,929)	16	\$ (1,128)	\$ (100,047)	16	\$ (10,323)
Assumption Change	\$ 19,523	11	\$ 2,507	\$ 11,739	11	\$ 1,508	\$ 3,959	11	\$ 508	\$ 35,221	11	\$ 4,523
July 1, 2012 Charges												
Experience (Gain)/Loss	\$ 144,253	17	\$ 14,433	\$ 80,080	17	\$ 8,012	\$ 20,536	17	\$ 2,055	\$ 244,868	17	\$ 24,500
Assumption Change	\$ 53,871	12	\$ 6,549	\$ 30,777	12	\$ 3,741	\$ 10,754	12	\$ 1,307	\$ 95,402	12	\$ 11,597
July 1, 2013 Charges												
Experience (Gain)/Loss	\$ 136,983	18	\$ 13,331	\$ 46,406	18	\$ 4,516	\$ (3,169)	18	\$ (308)	\$ 180,220	18	\$ 17,538
Assumption Change	\$ 73,321	13	\$ 8,491	\$ 43,968	13	\$ 5,092	\$ 14,665	13	\$ 1,698	\$ 131,954	13	\$ 15,282
July 1, 2014 Charges												
Experience (Gain)/Loss	\$ 104,230	19	\$ 9,892	\$ 47,501	19	\$ 4,508	\$ 48,758	19	\$ 4,627	\$ 200,489	19	\$ 19,028
Assumption Change	\$ 251,042	14	\$ 27,851	\$ (8,793)	14	\$ (975)	\$ 10,096	14	\$ 1,120	\$ 252,346	14	\$ 27,996
July 1, 2015 Charges												
Experience (Gain)/Loss	\$ 170,150	20	\$ 15,786	\$ 43,581	20	\$ 4,043	\$ 37,050	20	\$ 3,437	\$ 250,780	20	\$ 23,266
Assumption Change	\$ 27,870	15	\$ 2,976	\$ 40,278	15	\$ 4,301	\$ 12,860	15	\$ 1,373	\$ 81,008	15	\$ 8,650
Total	\$ 3,958,545		\$ 359,871	\$ 1,967,132		\$ 176,133	\$ 867,774		\$ 78,385	\$ 6,793,451		\$ 614,388

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-8a				
TOTAL DEBT SERVICE REQUIREMENTS: MUNICIPAL				
Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1999	\$ 0	\$ 7,041,525.30	\$ 0	\$ 727,185,593.15
2000	9,917,857.50	29,825,175.27	0	717,267,735.65
2001	4,567,730.63	29,324,323.46	0	712,700,005.02
2002	0	29,087,715.02	0	712,700,005.02
2003	6,422,403.75	29,087,715.02	0	706,277,601.27
2004	8,884,981.88	28,728,336.25	0	697,392,619.39
2005	15,161,038.13	28,250,550.75	0	682,231,581.26
2006	18,743,737.50	27,403,048.72	0	663,487,843.76
2007	22,526,257.50	26,345,901.92	0	640,961,586.26
2008	26,486,083.13	25,064,157.87	0	614,475,503.13
2009	30,870,879.38	23,543,856.70	0	583,604,623.75
2010	40,000,711.88	21,756,432.78	0	543,603,911.87
2011	45,151,018.13	19,420,391.21	0	498,452,893.74
2012	22,154,721.72	45,234,066.39	0	476,298,172.02
2013	21,786,233.75	48,416,929.37	0	454,511,938.27
2014	20,545,516.84	50,378,126.28	0	433,966,421.43
2015	20,088,811.07	53,652,021.42	0	413,877,610.36
2016	19,364,886.72	56,464,212.02	0	394,512,723.64
2017	18,085,471.62	57,743,627.12	0	376,427,252.02
2018	16,915,332.51	58,913,766.23	0	359,511,919.51
2019	15,787,131.76	60,041,966.99	0	343,724,787.75
2020	14,758,165.41	61,070,933.33	0	328,966,622.34
2021	13,823,708.03	62,005,390.71	0	315,142,914.31
2022	12,919,375.38	62,909,723.36	0	302,223,538.93
2023	12,071,748.11	63,757,350.63	0	290,151,790.82
2024	11,250,110.80	64,578,987.94	0	278,901,680.02
2025	10,560,195.36	65,268,903.38	0	268,341,484.66
2026	17,271,090.90	58,558,007.84	0	251,070,393.76
2027	60,297,984.38	16,196,263.75	0	190,772,409.38
2028	64,125,534.38	12,367,341.75	0	126,646,875.00
2029	126,646,875.00	4,147,685.16	0	0

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-8b

TOTAL DEBT SERVICE REQUIREMENTS: POLICE

Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1999	\$ 0	\$ 3,848,228.76	\$ 0	\$ 397,410,560.15
2000	5,420,158.68	16,299,607.13	0	391,990,401.47
2001	2,496,287.61	16,025,889.30	0	389,494,113.86
2002	0	15,896,581.60	0	389,494,113.86
2003	3,509,875.74	15,896,581.60	0	385,984,238.12
2004	4,855,686.99	15,705,644.36	0	381,128,551.13
2005	8,285,583.09	15,439,067.14	0	372,842,968.04
2006	10,243,546.20	14,975,903.05	0	362,599,421.84
2007	12,310,712.28	14,398,167.04	0	350,288,709.56
2008	14,474,776.77	13,697,687.51	0	335,813,932.79
2009	16,871,089.83	12,866,835.33	0	318,942,842.96
2010	21,860,588.91	11,889,999.22	0	297,082,254.05
2011	24,675,257.01	10,613,340.83	0	272,406,997.04
2012	12,107,666.12	24,720,643.30	0	260,299,330.92
2013	11,906,285.60	26,460,093.82	0	248,393,045.32
2014	11,228,227.61	27,531,897.73	0	237,164,817.71
2015	10,978,635.63	29,321,097.79	0	226,186,182.08
2016	10,583,007.35	30,857,974.00	0	215,603,174.73
2017	9,883,800.61	31,557,180.75	0	205,719,374.12
2018	9,244,313.74	32,196,667.62	0	196,475,060.38
2019	8,627,746.39	32,813,234.97	0	187,847,313.99
2020	8,065,411.14	33,375,570.22	0	179,781,902.85
2021	7,554,725.51	33,886,255.84	0	172,227,177.34
2022	7,060,503.20	34,380,478.16	0	165,166,674.14
2023	6,597,270.66	34,843,710.70	0	158,569,403.48
2024	6,148,241.77	35,292,739.59	0	152,421,161.71
2025	5,771,199.53	35,669,781.82	0	146,649,962.18
2026	9,438,737.48	32,002,243.88	0	137,211,224.70
2027	32,953,149.75	8,851,339.07	0	104,258,074.95
2028	35,044,924.95	6,758,814.06	0	69,213,150.00
2029	69,213,150.00	2,266,730.66	0	0

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-8c

TOTAL DEBT SERVICE REQUIREMENTS: FIRE

Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1999	\$ 0	\$ 1,620,185.70	\$ 0	\$ 167,318,251.01
2000	2,282,001.44	6,862,479.41	0	165,036,249.57
2001	1,050,989.88	6,747,238.34	0	163,985,259.69
2002	0	6,692,797.06	0	163,985,259.69
2003	1,477,731.92	6,692,797.06	0	162,507,527.77
2004	2,044,346.92	6,612,408.45	0	160,463,180.85
2005	3,488,405.72	6,500,173.80	0	156,974,775.13
2006	4,312,749.60	6,305,171.92	0	152,662,025.53
2007	5,183,070.24	6,061,932.84	0	147,478,955.29
2008	6,094,187.16	5,767,016.15	0	141,384,768.13
2009	7,103,085.64	5,417,209.80	0	134,281,682.49
2010	9,203,770.28	5,005,941.15	0	125,077,912.21
2011	10,388,805.08	4,468,440.96	0	114,689,107.13
2012	5,097,583.51	10,407,913.67	0	109,591,523.62
2013	5,012,798.05	11,140,259.13	0	104,578,725.57
2014	4,727,321.30	11,591,511.24	0	99,851,404.27
2015	4,622,237.80	12,344,802.31	0	95,229,166.47
2016	4,455,669.93	12,991,859.70	0	90,773,496.54
2017	4,161,289.10	13,286,240.52	0	86,612,207.44
2018	3,892,051.60	13,555,478.02	0	82,720,155.84
2019	3,632,463.70	13,815,065.92	0	79,087,692.14
2020	3,395,708.67	14,051,820.95	0	75,691,983.47
2021	3,180,699.22	14,266,830.40	0	72,511,284.25
2022	2,972,621.18	14,474,908.45	0	69,538,663.07
2023	2,777,590.48	14,669,939.14	0	66,761,072.59
2024	2,588,539.82	14,858,989.80	0	64,172,532.77
2025	2,429,797.06	15,017,732.56	0	61,742,735.71
2026	3,973,908.11	13,473,621.52	0	57,768,827.60
2027	13,873,973.00	3,726,600.95	0	43,894,854.60
2028	14,754,654.60	2,845,603.67	0	29,140,200.00
2029	29,140,200.00	954,341.55	0	0

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV- 9a provides the receipts and disbursements of assets *excluding* the Bond issue assets and excluding the PAF.

Table IV-9a				
Receipts and Disbursements Excluding Bond Issue Assets				
	Municipal	Police	Fire	Total
Assets as of July 1, 2014	\$ 2,325,096,953	\$ 1,543,181,122	\$ 377,066,580	\$ 4,245,344,655
Receipts				
Employer Contributions	\$ 317,552,720	\$ 169,216,007	\$ 69,021,613	\$ 555,790,339
Employee Contributions	27,273,125	23,029,608	8,355,083	58,657,816
State Aid	38,083,582	22,851,058	8,451,278	69,385,918
Supplemental State Assistance	0	0	0	0
Investment Income				
(includes investment expenses)	6,614,288	4,661,963	1,068,607	12,344,858
Other Receipts	0	0	0	0
Total Receipts	\$ 389,523,715	\$ 219,758,636	\$ 86,896,580	\$ 696,178,931
Disbursements				
Benefit Payments	\$ 501,118,196	\$ 236,868,323	\$ 106,226,317	\$ 844,212,836
Refund of Contributions	3,082,193	1,871,279	325,726	5,279,198
Administrative Expenses	6,981,366	2,617,891	879,743	10,479,000
PAF Transfer at Year End	4,884,780	2,149,553	741,972	7,776,305
Other Disbursements	0	0	0	0
Total Disbursements	\$ 516,066,535	\$ 243,507,046	\$ 108,173,758	\$ 867,747,339
Assets as of July 1, 2015	\$ 2,198,554,133	\$ 1,519,432,712	\$ 355,789,402	\$ 4,073,776,247

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV- 9b provides the market value of assets *including* the Bond issue assets and excluding the PAF.

Table IV-9b Receipts and Disbursements Including Bond Issue Assets				
	Municipal	Police	Fire	Total
Assets as of July 1, 2014	\$ 2,677,893,673	\$ 1,670,603,329	\$ 505,769,168	\$ 4,854,266,171
Receipts				
Employer Contributions	\$ 288,235,889	\$ 160,290,906	\$ 59,282,288	\$ 507,809,083
Employee Contributions	27,273,125	23,029,608	8,355,083	58,657,816
State Aid	38,083,582	22,851,058	8,451,278	69,385,918
Supplemental State Assistance	0	0	0	0
Investment Income (includes investment expenses)	7,446,839	4,833,985	1,400,946	13,681,770
Other Receipts	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Receipts	\$ 361,039,435	\$ 211,005,557	\$ 77,489,595	\$ 649,534,587
Disbursements				
Benefit Payments	\$ 501,118,196	\$ 236,868,323	\$ 106,226,317	\$ 844,212,836
Refund of Contributions	3,082,193	1,871,279	325,726	5,279,198
Administrative Expenses	6,981,366	2,617,891	879,743	10,479,000
PAF Transfer at Year End	4,884,780	2,149,553	741,972	7,776,305
Other Disbursements	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Disbursements	\$ 516,066,535	\$ 243,507,046	\$ 108,173,758	\$ 867,747,339
Assets as of July 1, 2015	\$ 2,522,866,574	\$ 1,638,101,840	\$ 475,085,005	\$ 4,636,053,420

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

The Table IV – 10 and Table IV – 11 provide information on the City’s old Funding Policy for FYE 2015 and FYE 2016. The differences between the MMO and the City’s old Funding Policy are:

- The City’s Funding Policy amortizes the initial July 1, 1985 unfunded actuarial liability over 34 years. Chapter 10 under Act 44 allowed for the amortization of the entire unfunded actuarial liability as of July 1, 2009 to be “fresh started” over a 30-year period for MMO purposes.
- The normal cost portion of the City’s Funding Policy payment is based on actual fiscal year payroll, whereas the MMO is based on the prior year’s estimated payroll for that year.
- **Interest does not accumulate on the MMO, as long as the payment is made by the end of the fiscal year.** This has the impact of creating systematic losses each year which get offset by assumed interest on contributions received before year end.
- Both the City’s Funding Policy and the MMO utilize valuation results developed in the previous year (e.g., the July 1, 2015 valuation report will determine FYE 2017 contribution amounts). However, no interest is added to the MMO for this delay.
- The MMO reflects amortization of prior years’ City contributions above past MMOs as actuarial gains.

Starting with FYE 2007-2008, the MMO recognized actuarial gains and losses every other year, in order to coincide with the filing of the Act 205 forms. Beginning for FYE 2012, gains and losses are recognized annually. The City’s Funding Policy recognizes actuarial gains and losses on an annual basis.

Table IV – 10 develops the amortized amounts for the current year under the City’s old Funding Policy. For additional details on the amortized amounts by plan, refer to Appendix B.

Table IV – 11 provides the estimated FYE 2017 and updated FYE 2016 contribution amount under the City’s old Funding Policy. The estimated FYE 2017 contribution will be updated in next year’s actuarial valuation report based upon the July 1, 2016 payroll.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-10					
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy					
Total					
(\$ thousands)					
	7/1/2015	7/1/2016	Remaining	FY 2017 Payment	FY 2017 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation Remaining	\$ 5,361,520	\$ 4,882,687		\$ 829,678	\$ 893,978
2. Changes in UAL due to					
a. Actuarial Experience	\$ 494,450	\$ 532,770	20	\$ 49,428	\$ 53,258
b. Assumption Changes	81,008	87,286	15	9,320	10,043
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ 575,458	\$ 620,056		\$ 58,748	\$ 63,301
3. Total [1c. + 2e.]	\$ 5,936,978	\$ 5,502,744		\$ 888,426	\$ 957,279

Table IV-11				
City's Funding Policy Contributions*				
Fiscal Year	2017	% of Pay	2016	% of Pay
Estimated FY Payroll	\$ 1,650,578		\$ 1,597,849	**
Normal Cost (with Expenses)	\$ 156,220	9.46%	\$ 148,428	9.29%
Employee Contributions	<u>(65,652)</u>	3.98%	<u>(60,816)</u>	3.81%
City Normal Cost	\$ 90,568	5.49%	\$ 87,612	5.48%
Amortization Payment	<u>888,426</u>	53.83%	<u>831,374</u>	52.03%
City's Funding Policy	\$ 978,994	59.31%	\$ 918,986	57.51%

* Assuming beginning-of-year payment.

** FY 2015 Payroll for the City's Funding Policy is the final payroll for the prior year. All other payroll is estimated based upon the prior year's data used for the actuarial valuation.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

The data for this valuation was provided by the Board of Pensions as of July 1, 2015. Cheiron did not audit any of the data; however, it was reviewed to ensure that it complies with generally accepted actuarial standards. The following is a list of data charts contained in this section:

- A-1: Active Member Data by Plan
- A-2: Non-Active Member Data, Counts, by Plan
- A-3: Non-Active Member Data, Total Annual Benefits, by Plan
- A-4: Non-Active Member Data, Average Annual Benefits, by Plan
- A-5 through A-22: Age/Service Distribution for Active Participants, Counts and Average Salary for all Plans
- A-23: Reconciliation of Plan Membership
- A-24 through A-28: Age and Benefit Distributions for Non-Active Member Data

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-1
Active Member Data**

	July 1, 2015	July 1, 2014	% Change		July 1, 2015	July 1, 2014	% Change
<u>2010 Municipal</u>				<u>1987 Elected</u>			
Count	339	9	3666.7%	Count	25	24	4.2%
Average Age	34.9	36.4	-4.1%	Average Age	57.1	55.9	2.1%
Average Service	0.6	2.6	-77.3%	Average Service	20.3	19.6	3.3%
Average Salary	\$ 38,880	\$ 34,044	14.2%	Average Salary	\$ 134,221	\$ 132,442	1.3%
Total Annual Salary	\$ 13,180,429	\$ 306,392	4201.8%	Total Annual Salary	\$ 3,355,528	\$ 3,178,598	5.6%
<u>1967 Municipal</u>				<u>1987 Municipal</u>			
Count	2,101	2,406	-12.7%	Count	17,399	16,721	4.1%
Average Age	54.4	53.8	1.2%	Average Age	44.0	43.9	0.2%
Average Service	28.4	27.6	2.9%	Average Service	10.1	9.9	1.9%
Average Salary	\$ 63,002	\$ 60,402	4.3%	Average Salary	\$ 49,512	\$ 47,692	3.8%
Total Annual Salary	\$ 132,367,095	\$ 145,328,040	-8.9%	Total Annual Salary	\$ 861,458,725	\$ 797,456,350	8.0%
<u>1967 Police</u>				<u>1987 Police</u>			
Count	402	455	-11.6%	Count	5,569	5,467	1.9%
Average Age	55.2	54.4	1.5%	Average Age	41.1	40.9	0.6%
Average Service	30.2	29.3	2.9%	Average Service	14.7	14.4	2.0%
Average Salary	\$ 83,761	\$ 79,000	6.0%	Average Salary	\$ 72,673	\$ 69,542	4.5%
Total Annual Salary	\$ 33,672,104	\$ 35,944,998	-6.3%	Total Annual Salary	\$ 404,714,324	\$ 380,186,952	6.5%
<u>1967 Fire</u>				<u>1987 Fire</u>			
Count	127	155	-18.1%	Count	1,989	1,828	8.8%
Average Age	56.3	55.5	1.5%	Average Age	40.1	40.5	-1.0%
Average Service	30.6	29.7	3.2%	Average Service	11.6	11.9	-2.8%
Average Salary	\$ 86,267	\$ 78,167	10.4%	Average Salary	\$ 69,454	\$ 66,140	5.0%
Total Annual Salary	\$ 10,955,882	\$ 12,115,821	-9.6%	Total Annual Salary	\$ 138,144,782	\$ 120,904,236	14.3%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-1			
Active Member Data (continued)			
	July 1, 2015	July 1, 2014	% Change
<u>Total City</u>			
Count	27,951	27,065	3.3%
Average Age	44.0	44.2	-0.3%
Average Service	12.8	13.0	-1.5%
Average Salary	\$ 57,166	\$ 55,253	3.5%
Total Annual Salary	\$ 1,597,848,869	\$ 1,495,421,387	6.8%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-2 Non-Active Member Data Count							
	July 1, 2015	July 1, 2014	% Change		July 1, 2015	July 1, 2014	% Change
<u>Total City</u>				<u>1987 Municipal Plan</u>			
Retired	22,245	21,768	2.2%	Retired	1,797	1,511	18.9%
Disabled	4,016	3,954	1.6%	Disabled	407	310	31.3%
Beneficiary	<u>8,566</u>	<u>8,547</u>	0.2%	Beneficiary	<u>338</u>	<u>286</u>	18.2%
In Pay Status Total	34,827	34,269	1.6%	In Pay Status Total	2,542	2,107	20.6%
DROP	1,784	2,264	-21.2%	DROP	411	445	-7.6%
Deferred Vested	1,334	1,224	9.0%	Deferred Vested	846	740	14.3%
<u>1967 Municipal Plan</u>				<u>1987 Elected Plan</u>			
Retired	12,784	12,606	1.4%	Retired	19	18	5.6%
Disabled	1,503	1,526	-1.5%	Disabled	0	0	0.0%
Beneficiary	<u>5,025</u>	<u>5,066</u>	-0.8%	Beneficiary	<u>4</u>	<u>4</u>	0.0%
In Pay Status Total	19,312	19,198	0.6%	In Pay Status Total	23	22	4.5%
DROP	788	1,153	-31.7%	DROP	0	0	0.0%
Deferred Vested	352	361	-2.5%	Deferred Vested	0	0	0.0%
<u>1967 Police Plan</u>				<u>1987 Police Plan</u>			
Retired	5,281	5,351	-1.3%	Retired	259	201	28.9%
Disabled	1,361	1,425	-4.5%	Disabled	360	320	12.5%
Beneficiary	<u>2,240</u>	<u>2,232</u>	0.4%	Beneficiary	<u>126</u>	<u>117</u>	7.7%
In Pay Status Total	8,882	9,008	-1.4%	In Pay Status Total	745	638	16.8%
DROP	326	381	-14.4%	DROP	153	135	13.3%
Deferred Vested	1	1	0.0%	Deferred Vested	117	109	7.3%
<u>1967 Fire Plan</u>				<u>1987 Fire Plan</u>			
Retired	1,988	1,987	0.1%	Retired	117	94	24.5%
Disabled	317	325	-2.5%	Disabled	68	48	41.7%
Beneficiary	<u>781</u>	<u>794</u>	-1.6%	Beneficiary	<u>52</u>	<u>48</u>	8.3%
In Pay Status Total	3,086	3,106	-0.6%	In Pay Status Total	237	190	24.7%
DROP	74	115	-35.7%	DROP	32	35	-8.6%
Deferred Vested	0	0	0.0%	Deferred Vested	18	13	38.5%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-3
Non-Active Member Data
Total Annual Benefit**

	July 1, 2015	July 1, 2014	% Change		July 1, 2015	July 1, 2014	% Change
<u>Total City</u>				<u>1987 Municipal Plan</u>			
Retired	\$ 561,136,997	\$ 533,764,706	5.1%	Retired	\$ 23,235,749	\$ 18,702,333	24.2%
Disabled	82,396,437	78,485,389	5.0%	Disabled	7,318,622	5,620,990	30.2%
Beneficiary	76,047,517	74,351,513	2.3%	Beneficiary	2,544,624	2,147,205	18.5%
In Pay Status Total	\$ 719,580,951	\$ 686,601,608	4.8%	In Pay Status Total	\$ 33,098,995	\$ 26,470,528	25.0%
DROP (pension)	\$ 63,920,132	\$ 80,962,315	-21.0%	DROP (pension)	\$ 6,389,322	\$ 6,701,250	-4.7%
DROP (account balance)	154,170,256	216,859,933	-28.9%	DROP (account balance)	12,128,685	14,623,948	-17.1%
Deferred Vested	\$ 19,268,000	\$ 17,226,494	11.9%	Deferred Vested	\$ 11,113,527	\$ 9,449,912	17.6%
<u>1967 Municipal Plan</u>				<u>1987 Elected Plan</u>			
Retired	\$ 313,327,654	\$ 296,333,997	5.7%	Retired	\$ 1,335,382	\$ 1,244,450	7.3%
Disabled	27,828,852	27,308,445	1.9%	Disabled	0	0	0.0%
Beneficiary	41,458,231	40,914,290	1.3%	Beneficiary	118,681	118,681	0.0%
In Pay Status Total	\$ 382,614,737	\$ 364,556,732	5.0%	In Pay Status Total	\$ 1,454,063	\$ 1,363,131	6.7%
DROP (pension)	\$ 30,250,664	\$ 42,874,389	-29.4%	DROP (pension)	\$ 0	\$ 0	0.0%
DROP (account balance)	65,732,221	116,946,102	-43.8%	DROP (account balance)	0	0	0.0%
Deferred Vested	\$ 5,898,746	\$ 5,816,442	1.4%	Deferred Vested	\$ 0	\$ 0	0.0%
<u>1967 Police Plan</u>				<u>1987 Police Plan</u>			
Retired	\$ 146,061,471	\$ 144,557,949	1.0%	Retired	\$ 5,832,952	\$ 4,183,694	39.4%
Disabled	24,968,674	25,824,302	-3.3%	Disabled	13,401,072	11,624,569	15.3%
Beneficiary	21,036,614	20,520,500	2.5%	Beneficiary	1,422,636	1,296,807	9.7%
In Pay Status Total	\$ 192,066,759	\$ 190,902,751	0.6%	In Pay Status Total	\$ 20,656,660	\$ 17,105,070	20.8%
DROP (pension)	\$ 17,518,200	\$ 20,359,865	-14.0%	DROP (pension)	\$ 4,651,398	\$ 3,889,896	19.6%
DROP (account balance)	55,498,107	56,447,576	-1.7%	DROP (account balance)	9,740,798	8,355,982	16.6%
Deferred Vested	\$ 13,436	\$ 13,436	0.0%	Deferred Vested	\$ 1,918,388	\$ 1,761,211	8.9%
<u>1967 Fire Plan</u>				<u>1987 Fire Plan</u>			
Retired	\$ 68,774,343	\$ 66,890,488	2.8%	Retired	\$ 2,569,446	\$ 1,851,795	38.8%
Disabled	6,337,981	6,375,515	-0.6%	Disabled	2,541,236	1,731,568	46.8%
Beneficiary	8,818,862	8,769,021	0.6%	Beneficiary	647,869	585,009	10.7%
In Pay Status Total	\$ 83,931,186	\$ 82,035,024	2.3%	In Pay Status Total	\$ 5,758,551	\$ 4,168,372	38.1%
DROP (pension)	\$ 4,168,968	\$ 6,107,579	-31.7%	DROP (pension)	\$ 941,580	\$ 1,029,336	-8.5%
DROP (account balance)	9,492,798	17,837,722	-46.8%	DROP (account balance)	1,577,648	2,648,603	-40.4%
Deferred Vested	\$ 0	\$ 0	0.0%	Deferred Vested	\$ 323,903	\$ 185,493	74.6%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-4 Non-Active Member Data Average Annual Benefit						
	July 1, 2015	July 1, 2014	% Change		July 1, 2015	July 1, 2014
<u>Total City</u>				<u>1987 Municipal Plan</u>		
Retired	\$ 25,225	\$ 24,521	2.9%	Retired	\$ 12,930	\$ 12,377
Disabled	20,517	19,850	3.4%	Disabled	17,982	18,132
Beneficiary	<u>8,878</u>	<u>8,699</u>	2.1%	Beneficiary	<u>7,528</u>	<u>7,508</u>
In Pay Status Total	\$ 20,662	\$ 20,036	3.1%	In Pay Status Total	\$ 13,021	\$ 12,563
DROP (pension)	\$ 35,830	\$ 35,761	0.2%	DROP (pension)	\$ 15,546	\$ 15,059
DROP (account balance)	86,418	95,786	-9.8%	DROP (account balance)	29,510	32,863
Deferred Vested	\$ 14,444	\$ 14,074	2.6%	Deferred Vested	\$ 13,137	\$ 12,770
<u>1967 Municipal Plan</u>				<u>1987 Elected Plan</u>		
Retired	\$ 24,509	\$ 23,507	4.3%	Retired	\$ 70,283	\$ 69,136
Disabled	18,516	17,895	3.5%	Disabled	0	0
Beneficiary	<u>8,250</u>	<u>8,076</u>	2.2%	Beneficiary	<u>29,670</u>	<u>29,670</u>
In Pay Status Total	\$ 19,812	\$ 18,989	4.3%	In Pay Status Total	\$ 63,220	\$ 61,961
DROP (pension)	\$ 38,389	\$ 37,185	3.2%	DROP (pension)	\$ 0	\$ 0
DROP (account balance)	83,417	101,428	-17.8%	DROP (account balance)	0	0
Deferred Vested	\$ 16,758	\$ 16,112	4.0%	Deferred Vested	\$ 0	\$ 0
<u>1967 Police Plan</u>				<u>1987 Police Plan</u>		
Retired	\$ 27,658	\$ 27,015	2.4%	Retired	\$ 22,521	\$ 20,814
Disabled	18,346	18,122	1.2%	Disabled	37,225	36,327
Beneficiary	<u>9,391</u>	<u>9,194</u>	2.1%	Beneficiary	<u>11,291</u>	<u>11,084</u>
In Pay Status Total	\$ 21,624	\$ 21,193	2.0%	In Pay Status Total	\$ 27,727	\$ 26,810
DROP (pension)	\$ 53,737	\$ 53,438	0.6%	DROP (pension)	\$ 30,401	\$ 28,814
DROP (account balance)	170,240	148,156	14.9%	DROP (account balance)	63,665	61,896
Deferred Vested	\$ 13,436	\$ 13,436	0.0%	Deferred Vested	\$ 16,396	\$ 16,158
<u>1967 Fire Plan</u>				<u>1987 Fire Plan</u>		
Retired	\$ 34,595	\$ 33,664	2.8%	Retired	\$ 21,961	\$ 19,700
Disabled	19,994	19,617	1.9%	Disabled	37,371	36,074
Beneficiary	<u>11,292</u>	<u>11,044</u>	2.2%	Beneficiary	<u>12,459</u>	<u>12,188</u>
In Pay Status Total	\$ 27,197	\$ 26,412	3.0%	In Pay Status Total	\$ 24,298	\$ 21,939
DROP (pension)	\$ 56,337	\$ 53,109	6.1%	DROP (pension)	\$ 29,424	\$ 29,410
DROP (account balance)	128,281	155,111	-17.3%	DROP (account balance)	49,302	75,674
Deferred Vested	\$ 0	\$ 0	0.0%	Deferred Vested	\$ 17,995	\$ 14,269

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-5
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Total City**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	332	365	36	1	0	0	0	0	734
25 to 29	559	1,390	693	55	0	0	0	0	2,697
30 to 34	305	967	1,452	510	50	0	0	0	3,284
35 to 39	176	586	998	1,075	526	35	0	0	3,396
40 to 44	140	419	653	851	1,232	309	38	0	3,642
45 to 49	114	359	548	674	1,147	901	594	7	4,344
50 to 54	109	271	483	606	823	738	1,047	255	4,332
55 to 59	87	256	405	472	586	454	652	545	3,457
60 to 64	46	127	287	260	295	162	155	159	1,491
65 & up	13	57	167	113	87	35	32	70	574
Total	1,881	4,797	5,722	4,617	4,746	2,634	2,518	1,036	27,951

**Table A-6
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Total City**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 32,107	\$ 34,794	\$ 32,628	\$ 33,141	\$ 0	\$ 0	\$ 0	\$ 0	\$ 33,470
25 to 29	38,450	47,458	54,554	45,520	0	0	0	0	47,375
30 to 34	39,632	48,832	60,933	59,092	58,617	0	0	0	55,070
35 to 39	36,074	49,054	60,559	63,665	66,138	57,904	0	0	59,125
40 to 44	35,012	47,137	58,772	63,271	67,683	68,668	66,962	0	61,511
45 to 49	34,474	47,779	53,416	59,083	66,561	70,269	72,117	63,475	62,872
50 to 54	36,927	46,945	48,715	51,936	59,493	67,027	69,336	70,748	60,206
55 to 59	34,601	43,274	46,112	48,658	53,883	61,818	65,416	74,684	57,485
60 to 64	39,073	51,201	45,517	51,318	53,283	54,693	61,684	71,554	53,805
65 & up	47,916	48,456	41,261	40,920	44,855	51,311	53,164	66,775	46,992
Total	\$ 36,617	\$ 46,821	\$ 55,523	\$ 57,870	\$ 62,707	\$ 66,342	\$ 68,265	\$ 72,625	\$ 57,166

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-7

Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Municipal (Plan 67)

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	1	0	0	0	0	0	0	1
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	1	0	0	2	10	3	0	0	16
45 to 49	0	0	0	1	3	75	190	4	0	273
50 to 54	0	2	0	1	4	132	497	192	0	828
55 to 59	0	0	0	1	6	74	340	350	0	771
60 to 64	0	0	0	1	1	20	52	67	0	141
65 & up	0	0	0	0	0	7	24	40	0	71
Total	0	3	1	4	16	318	1,106	653	0	2,101

Table A-8

Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Municipal (Plan 67)

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	65,585	0	0	0	0	0	0	65,585
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	53,292	0	0	55,564	56,359	50,337	0	0	54,939
45 to 49	0	0	0	32,533	48,151	63,059	63,073	68,970	0	62,880
50 to 54	0	76,217	0	31,537	40,639	58,908	61,411	67,388	0	62,297
55 to 59	0	0	0	119,025	49,199	60,252	59,925	71,955	0	65,410
60 to 64	0	0	0	60,888	17,722	51,906	50,166	64,721	0	57,175
65 & up	0	0	0	0	0	49,417	55,179	62,773	0	58,889
Total	\$ 0	\$ 68,575	\$ 65,585	\$ 60,996	\$ 45,691	\$ 59,470	\$ 60,546	\$ 69,289	\$ 0	\$ 63,002

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-9
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Police (Plan 67)**

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	1	8	23	0	0	32
50 to 54	0	0	0	1	0	1	111	35	0	148
55 to 59	0	0	0	0	0	0	67	98	0	165
60 to 64	0	0	0	0	0	0	19	30	0	49
65 & up	0	0	0	0	0	1	2	5	0	8
Total	0	0	0	1	1	10	222	168	0	402

**Table A-10
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Police (Plan 67)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	71,922	76,186	78,488	0	0	77,708
50 to 54	0	0	0	71,444	0	82,381	84,191	91,777	0	85,886
55 to 59	0	0	0	0	0	0	79,643	86,480	0	83,704
60 to 64	0	0	0	0	0	0	76,623	86,757	0	82,828
65 & up	0	0	0	0	0	79,490	72,674	75,936	0	75,565
Total	\$ 0	\$ 0	\$ 0	\$ 71,444	\$ 71,922	\$ 77,136	\$ 81,476	\$ 87,320	\$ 0	\$ 83,761

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-11

Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Fire (Plan 67)

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	1	5	0	0	6
50 to 54	0	0	0	0	0	1	25	7	0	33
55 to 59	0	0	0	0	0	1	21	41	0	63
60 to 64	0	0	0	0	0	0	3	17	0	20
65 & up	0	0	0	0	0	0	0	5	0	5
Total	0	0	0	0	0	3	54	70	0	127

Table A-12

Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Fire (Plan 67)

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	72,221	87,194	0	0	84,699
50 to 54	0	0	0	0	0	72,221	84,733	81,693	0	83,709
55 to 59	0	0	0	0	0	72,221	80,982	88,246	0	85,570
60 to 64	0	0	0	0	0	0	75,052	90,928	0	88,546
65 & up	0	0	0	0	0	0	0	104,690	0	104,690
Total	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 72,221	\$ 82,964	\$ 89,416	\$ 0	\$ 86,267

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-13
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Municipal (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	173	298	30	1	0	0	0	0	502
25 to 29	297	1,052	439	51	0	0	0	0	1,839
30 to 34	192	754	822	316	32	0	0	0	2,116
35 to 39	124	497	669	626	228	32	0	0	2,176
40 to 44	105	392	459	532	533	138	16	0	2,175
45 to 49	80	341	465	495	618	308	87	2	2,396
50 to 54	91	260	479	539	591	290	126	18	2,394
55 to 59	70	255	404	451	517	279	107	50	2,133
60 to 64	36	124	286	251	274	125	52	41	1,189
65 & up	11	56	167	113	84	26	6	16	479
Total	1,179	4,029	4,220	3,375	2,877	1,198	394	127	17,399

**Table A-14
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Municipal (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 22,594	\$ 30,244	\$ 28,422	\$ 33,141	\$ 0	\$ 0	\$ 0	\$ 0	\$ 27,504
25 to 29	34,486	43,793	45,453	43,630	0	0	0	0	42,682
30 to 34	36,779	46,253	52,615	50,306	51,720	0	0	0	48,553
35 to 39	33,863	47,283	55,032	56,314	54,259	56,200	0	0	52,361
40 to 44	33,044	46,096	53,253	56,943	57,882	59,653	58,557	0	53,470
45 to 49	31,441	46,883	50,272	54,109	59,492	58,414	61,396	44,478	53,778
50 to 54	36,399	46,012	48,515	49,327	53,767	59,233	60,588	59,990	51,282
55 to 59	32,183	43,176	45,889	47,443	51,494	56,159	56,991	56,996	48,963
60 to 64	36,637	50,460	45,219	50,494	51,868	52,464	59,008	58,447	49,972
65 & up	50,345	48,415	41,261	40,920	43,889	48,860	38,599	46,589	43,243
Total	\$ 32,938	\$ 44,541	\$ 49,832	\$ 52,079	\$ 54,898	\$ 57,343	\$ 59,164	\$ 56,380	\$ 49,512

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-15
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Elected (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	2	0	0	0	0	0	0	0	2
45 to 49	0	2	0	0	0	1	1	0	0	4
50 to 54	1	2	0	0	1	0	0	0	0	4
55 to 59	0	0	1	0	0	2	1	1	1	5
60 to 64	0	1	1	0	0	0	0	0	3	5
65 & up	0	0	0	0	0	1	0	4	5	5
Total	1	7	2	0	1	4	2	8	25	

**Table A-16
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Elected (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	127,085	0	0	0	0	0	0	0	127,085
45 to 49	0	127,085	0	0	0	175,572	127,085	0	0	139,207
50 to 54	127,085	127,085	0	0	127,085	0	0	0	0	127,085
55 to 59	0	0	136,162	0	0	131,623	129,677	213,968	0	148,611
60 to 64	0	127,085	130,972	0	0	0	0	140,052	0	135,642
65 & up	0	0	0	0	0	100,104	0	128,706	0	122,985
Total	\$ 127,085	\$ 127,085	\$ 133,567	\$ 0	\$ 127,085	\$ 134,731	\$ 128,381	\$ 143,618	\$ 143,618	\$ 134,221

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-17
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Police (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	72	41	5	0	0	0	0	0	118
25 to 29	95	222	218	3	0	0	0	0	538
30 to 34	20	83	476	162	14	0	0	0	755
35 to 39	6	34	224	330	276	2	0	0	872
40 to 44	8	7	146	203	590	139	16	0	1,109
45 to 49	3	5	54	103	397	391	275	1	1,229
50 to 54	0	1	1	36	169	209	252	2	670
55 to 59	0	1	0	12	45	61	89	3	211
60 to 64	1	1	0	4	19	14	24	1	64
65 & up	0	0	0	0	3	0	0	0	3
Total	205	395	1,124	853	1,513	816	656	7	5,569

**Table A-18
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Police (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 49,861	\$ 59,454	\$ 55,873	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 53,449
25 to 29	50,095	61,058	70,969	69,174	0	0	0	0	63,183
30 to 34	49,538	61,377	71,554	73,599	70,398	0	0	0	70,269
35 to 39	50,335	62,679	71,437	73,735	75,056	78,656	0	0	72,982
40 to 44	49,624	60,487	71,524	72,513	74,765	77,037	77,734	0	73,982
45 to 49	49,197	67,208	70,964	72,498	73,944	77,540	80,390	79,490	76,195
50 to 54	0	67,799	70,964	73,272	73,616	75,870	79,138	72,264	76,361
55 to 59	0	68,327	0	72,039	73,096	76,545	76,781	72,287	75,553
60 to 64	49,197	61,494	0	71,444	74,042	74,818	74,411	75,826	73,631
65 & up	0	0	0	0	71,922	0	0	0	71,922
Total	\$ 49,930	\$ 61,202	\$ 71,315	\$ 73,199	\$ 74,370	\$ 76,908	\$ 79,136	\$ 73,815	\$ 72,673

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-19
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Fire (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	42	18	1	0	0	0	0	0	61
25 to 29	81	104	35	1	0	0	0	0	221
30 to 34	39	124	154	32	4	0	0	0	353
35 to 39	17	53	105	119	22	1	0	0	317
40 to 44	8	15	48	116	107	22	3	0	319
45 to 49	6	8	29	75	128	117	13	0	376
50 to 54	3	2	3	29	58	105	36	1	237
55 to 59	0	0	0	8	18	37	27	2	92
60 to 64	0	0	0	4	1	3	5	0	13
65 & up	0	0	0	0	0	0	0	0	0
Total	196	324	375	384	338	285	84	3	1,989

**Table A-20
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Fire (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 40,999	\$ 53,674	\$ 42,557	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 44,765
25 to 29	40,999	56,453	66,155	70,922	0	0	0	0	52,391
30 to 34	40,999	56,781	72,504	72,412	72,564	0	0	0	63,493
35 to 39	40,999	56,850	72,567	74,409	77,376	70,922	0	0	69,266
40 to 44	40,999	58,028	72,763	76,116	77,674	77,931	70,968	0	74,480
45 to 49	40,999	57,744	71,167	73,843	78,180	80,479	79,773	0	76,516
50 to 54	40,999	57,396	73,286	73,960	76,814	80,963	84,275	93,859	78,846
55 to 59	0	0	0	73,272	76,033	79,281	80,705	72,426	78,392
60 to 64	0	0	0	80,547	81,942	72,221	83,411	0	79,834
65 & up	0	0	0	0	0	0	0	0	0
Total	\$ 40,999	\$ 56,600	\$ 71,785	\$ 74,645	\$ 77,563	\$ 80,185	\$ 81,904	\$ 79,570	\$ 69,454

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-21

Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Municipal (Plan 10)

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	45	8	0	0	0	0	0	0	53
25 to 29	86	12	0	0	0	0	0	0	98
30 to 34	54	6	0	0	0	0	0	0	60
35 to 39	29	2	0	0	0	0	0	0	31
40 to 44	19	2	0	0	0	0	0	0	21
45 to 49	25	3	0	0	0	0	0	0	28
50 to 54	14	4	0	0	0	0	0	0	18
55 to 59	17	0	0	0	0	0	0	0	17
60 to 64	9	1	0	0	0	0	0	0	10
65 & up	2	1	0	0	0	0	0	0	3
Total	300	39	0	0	0	0	0	0	339

Table A-22

Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2015 -- Municipal (Plan 10)

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 31,970	\$ 35,445	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 32,495
25 to 29	36,880	39,194	0	0	0	0	0	0	37,163
30 to 34	45,119	35,033	0	0	0	0	0	0	44,111
35 to 39	39,690	51,003	0	0	0	0	0	0	40,419
40 to 44	37,218	39,590	0	0	0	0	0	0	37,444
45 to 49	40,845	37,696	0	0	0	0	0	0	40,508
50 to 54	33,049	42,478	0	0	0	0	0	0	35,144
55 to 59	44,556	0	0	0	0	0	0	0	44,556
60 to 64	47,693	56,925	0	0	0	0	0	0	48,617
65 & up	34,560	50,715	0	0	0	0	0	0	39,945
Total	\$ 38,815	\$ 39,382	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,880

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-23
Reconciliation of Plan Membership**

	1967 Plan			Plan 87				Plan '10	Total City
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	
Active									
Active July 1, 2014	2,406	455	155	16,721	24	5,467	1,828	9	27,065
New Entrants and Rehires	12	1	1	2,024	2	253	211	320	2,824
Refunded Contributions	0	0	0	-267	0	-8	-1	0	-276
Non-Vested Terminations	-1	0	0	-198	0	-10	-5	0	-214
Terminated Vested	-6	0	0	-58	0	-3	-1	0	-68
Became Disabled	-10	0	0	-30	0	-15	-6	0	-61
Retired	-62	-8	-4	-112	-1	-28	-7	0	-222
Entered DROP	-223	-43	-22	-139	0	-48	-15	0	-490
Net Other Terminations	-13	-3	-3	-535	0	-38	-15	0	-607
Active July 1, 2015	2,103	402	127	17,406	25	5,570	1,989	329	27,951
Retired									
Retired July 1, 2014	12,606	5,351	1,987	1,511	18	201	94	0	21,768
New Retirees	704	106	67	320	1	63	24	0	1,285
Died with Beneficiary Payable	-134	-63	-29	-2	0	-1	-1	0	-230
Died without Beneficiary Payable	-389	-113	-35	-26	0	-1	-1	0	-565
Net Other Terminations	-3	0	-2	-6	0	-3	1	0	-13
Retired July 1, 2015	12,784	5,281	1,988	1,797	19	259	117	0	22,245
Beneficiary									
Beneficiary July 1, 2014	5,066	2,232	794	286	4	117	48	0	8,547
New Beneficiaries	195	98	40	56	0	10	4	0	403
Deaths	-236	-90	-50	-4	0	-1	0	0	-381
Net Other Terminations	0	0	-3	0	0	0	0	0	-3
Beneficiary July 1, 2015	5,025	2,240	781	338	4	126	52	0	8,566

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-23
Reconciliation of Plan Membership (continued)**

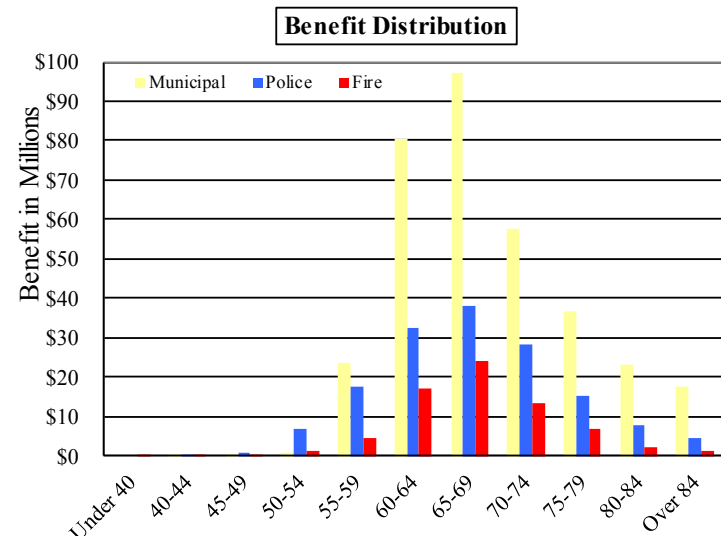
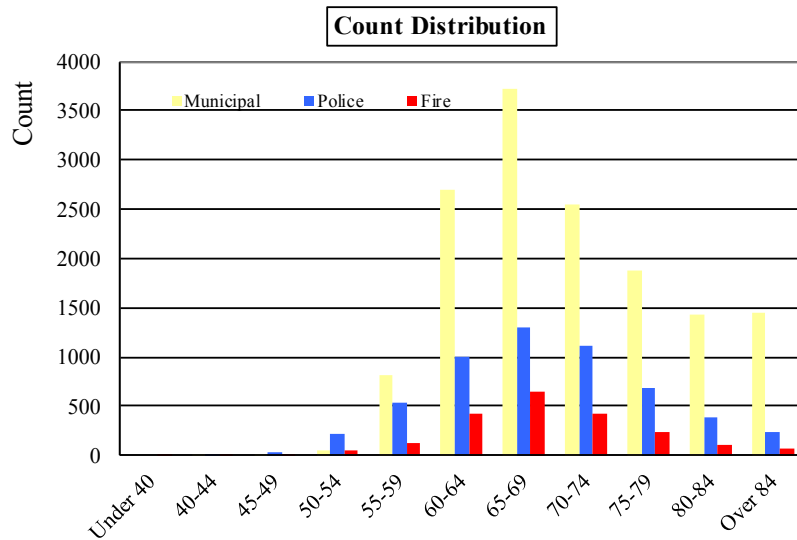
	1967 Plan			Plan 87				Plan '10	Total City
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	
Disabled									
Disabled July 1, 2014	1,526	1,425	325	310	0	320	48	0	3,954
New Disabilities	58	2	4	105	0	40	21	0	230
Died with Beneficiary Payable	-11	-19	-3	-3	0	0	0	0	-36
Died without Beneficiary Payable	-69	-47	-9	-6	0	0	-1	0	-132
Net Other Terminations	-1	0	0	1	0	0	0	0	0
Disabled July 1, 2015	1,503	1,361	317	407	0	360	68	0	4,016
Terminated Vested									
Terminated Vested July 1, 2014	361	1	0	740	0	109	13	0	1,224
New Vested Terminations	30	0	0	142	0	18	7	0	197
Retired	-29	0	0	-19	0	-4	-2	0	-54
Net Other Terminations	-10	0	0	-17	0	-6	0	0	-33
Terminated Vested July 1, 2015	352	1	0	846	0	117	18	0	1,334
DROP									
DROP July 1, 2014	1,153	381	115	445	0	135	35	0	2,264
New DROP Participants	223	43	23	140	0	49	14	0	492
Retired	-586	-96	-63	-169	0	-31	-17	0	-962
Net Other Terminations	-2	-2	-1	-5	0	0	0	0	-10
DROP July 1, 2015	788	326	74	411	0	153	32	0	1,784

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-24
Age Distribution of Retired Members as of July 1, 2015**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	0	\$ 0	0	\$ 0	1	\$ 13,058
40-44	1	9,206	5	75,351	1	10,728
45-49	1	1,836	36	927,934	7	196,179
50-54	51	1,033,137	223	6,699,609	51	1,276,517
55-59	809	23,637,375	539	17,711,560	134	4,593,854
60-64	2,701	80,576,225	1,001	32,610,165	417	17,168,374
65-69	3,721	97,048,646	1,305	38,048,545	651	24,204,997
70-74	2,553	57,616,848	1,113	28,406,669	424	13,219,060
75-79	1,878	36,836,449	688	15,204,173	245	7,009,831
80-84	1,433	23,448,378	389	7,705,835	100	2,320,479
Over 84	1,452	17,690,685	241	4,504,582	74	1,330,712
Total	14,600	337,898,785	5,540	151,894,423	2,105	71,343,789

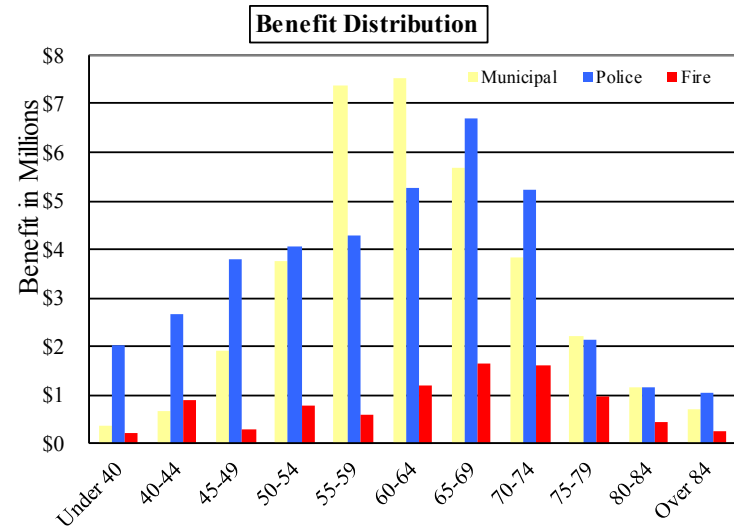
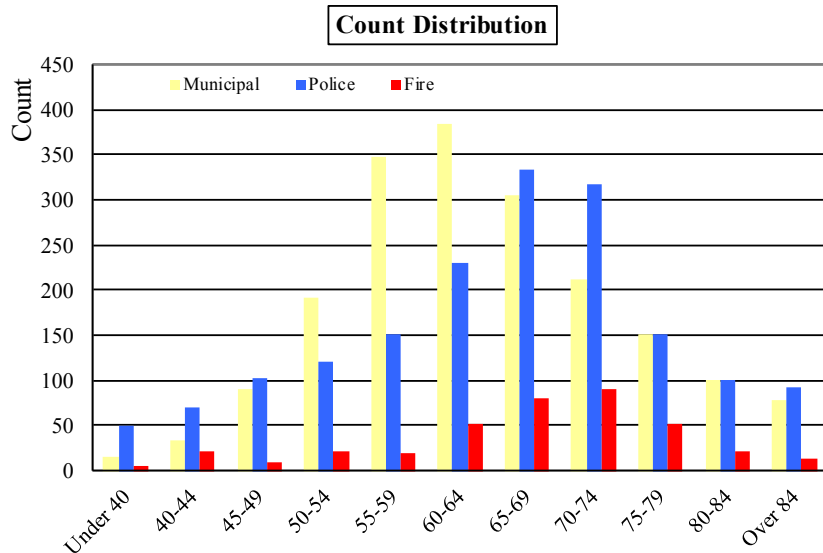


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-25
Age Distribution of Disabled Members as of July 1, 2015**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	15	\$ 375,798	49	\$ 2,014,079	6	\$ 226,029
40-44	33	673,172	70	2,680,565	21	907,968
45-49	90	1,897,034	103	3,807,830	9	270,557
50-54	191	3,742,431	121	4,070,168	22	792,906
55-59	348	7,380,024	151	4,296,484	19	588,367
60-64	385	7,509,740	231	5,275,183	51	1,193,541
65-69	306	5,688,444	334	6,679,177	81	1,661,818
70-74	213	3,850,089	318	5,223,607	90	1,605,973
75-79	151	2,208,481	152	2,132,089	51	951,540
80-84	100	1,138,806	100	1,154,387	21	438,241
Over 84	78	683,455	92	1,036,177	14	242,277
Total	1,910	35,147,474	1,721	38,369,746	385	8,879,217

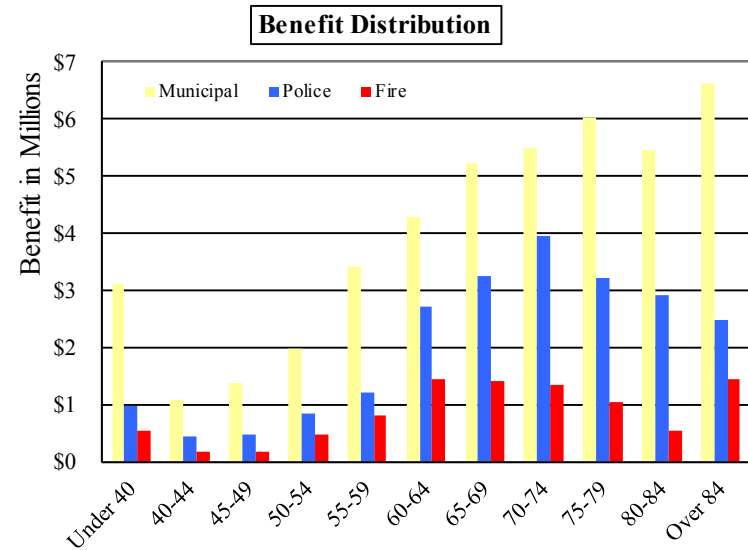
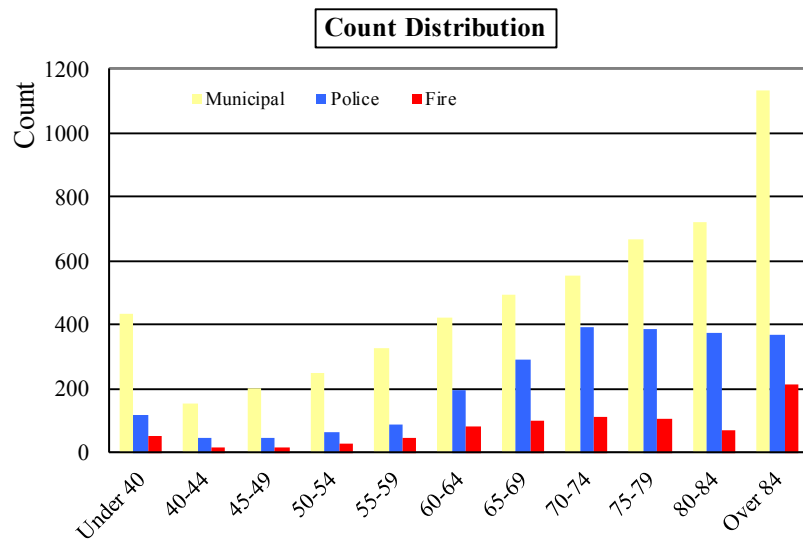


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-26
Age Distribution of Beneficiaries as of July 1, 2015**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	437	\$ 3,120,906	120	\$ 963,968	53	\$ 534,807
40-44	155	1,089,450	44	430,084	17	186,381
45-49	203	1,395,387	43	470,923	14	160,684
50-54	247	1,972,668	63	848,921	25	490,218
55-59	328	3,430,450	90	1,223,770	46	823,138
60-64	425	4,292,050	193	2,706,223	83	1,445,203
65-69	491	5,218,903	292	3,259,167	100	1,423,038
70-74	553	5,486,482	393	3,942,994	110	1,329,650
75-79	670	6,032,949	384	3,201,735	104	1,059,043
80-84	722	5,457,438	375	2,923,009	67	556,975
Over 84	1,136	6,624,853	369	2,488,456	214	1,457,594
Total	5,367	44,121,536	2,366	22,459,250	833	9,466,731



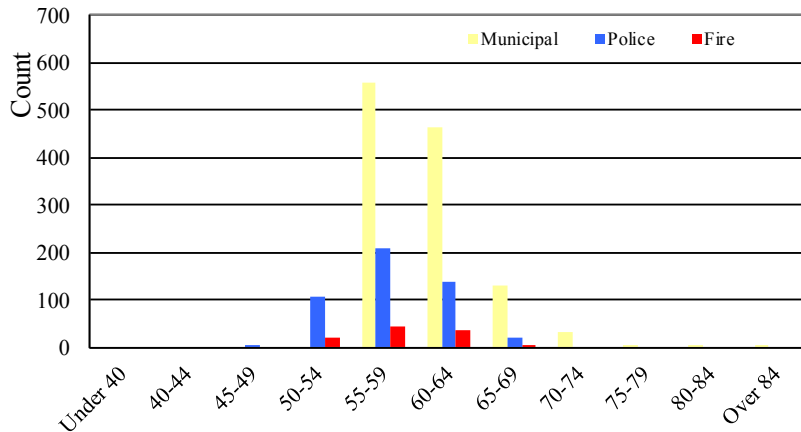
**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

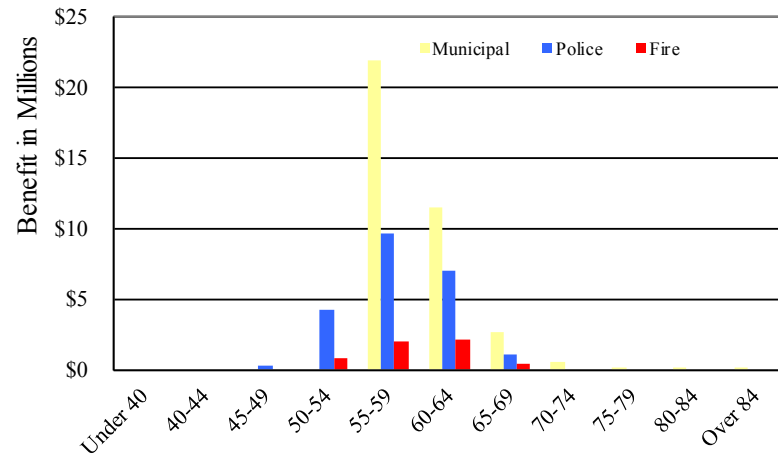
**Table A-27
Age Distribution of DROP Participants as of July 1, 2015**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	0	\$ 0	0	\$ 0	0	\$ 0
40-44	0	0	0	0	0	0
45-49	0	0	5	207,384	0	0
50-54	0	0	106	4,190,476	19	746,052
55-59	560	21,866,888	211	9,647,490	44	1,968,240
60-64	465	11,426,046	137	7,052,827	37	2,059,404
65-69	130	2,661,648	20	1,071,421	6	336,852
70-74	34	567,408	0	0	0	0
75-79	4	50,664	0	0	0	0
80-84	4	39,396	0	0	0	0
Over 84	2	27,936	0	0	0	0
Total	1,199	36,639,986	479	22,169,598	106	5,110,548

Count Distribution



Benefit Distribution



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

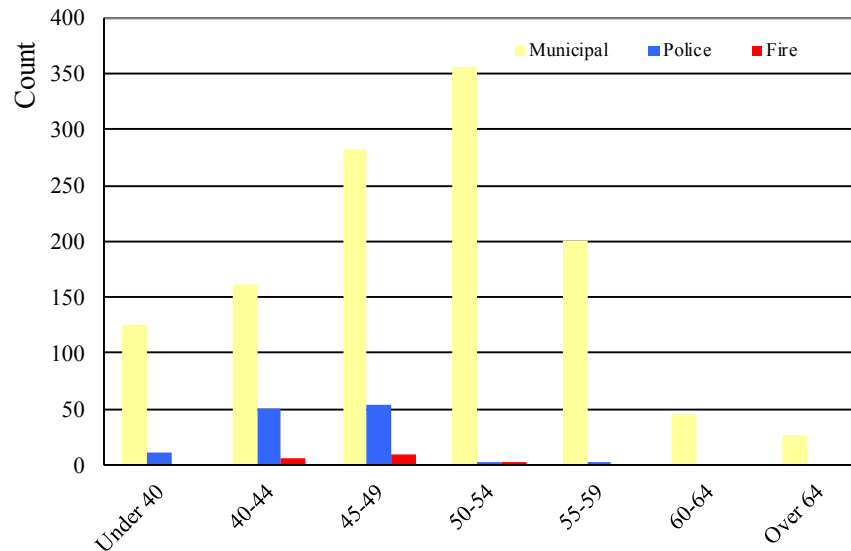
**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-28

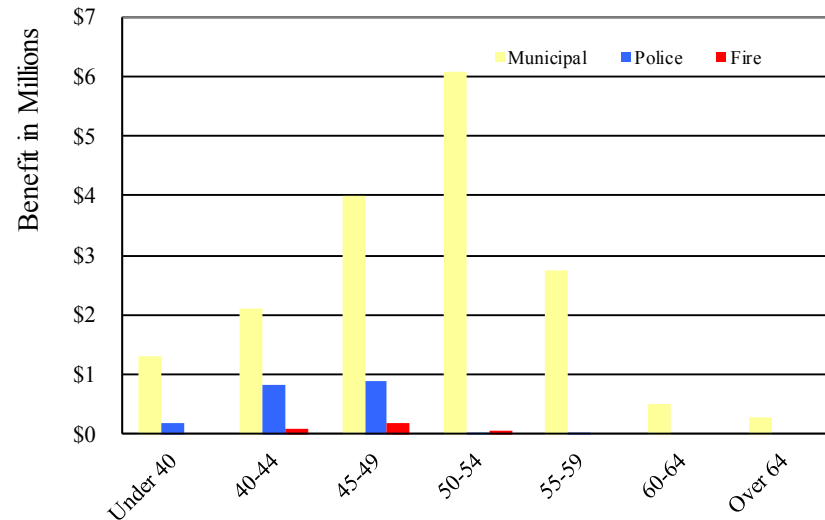
Age Distribution of Terminated Vested Members as of July 1, 2015

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	125	\$ 1,302,378	11	\$ 181,806	0	\$ 0
40-44	161	2,109,487	50	818,631	6	91,419
45-49	283	4,001,718	54	886,808	10	187,068
50-54	356	6,086,812	2	31,143	2	45,416
55-59	201	2,734,356	1	13,436	0	0
60-64	45	510,844	0	0	0	0
Over 64	27	266,678	0	0	0	0
Total	1,198	17,012,273	118	1,931,824	18	323,903

Count Distribution



Benefit Distribution



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

Appendix B provides supporting information on the amortization payments under the City's old Funding Policy by each plan.

Table B-1a					
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy					
1967 Plan - Municipal					
(\$ thousands)					
	7/1/2015	7/1/2016	Remaining	FY 2017 Payment	FY 2017 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 2,741,648	\$ 2,491,144		\$ 432,921	\$ 466,473
2. Changes in UAL due to					
a. Actuarial Experience	\$ 207,785	\$ 223,889	20	\$ 20,771	\$ 22,381
b. Assumption Changes	16,845	18,150	15	1,938	2,088
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ 224,630</u>	<u>\$ 242,039</u>		<u>\$ 22,709</u>	<u>\$ 24,469</u>
3. Total [1c. + 2e.]	\$ 2,966,278	\$ 2,733,183		\$ 455,631	\$ 490,942

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

Table B-1b					
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy					
1967 Plan - Police					
(\$ thousands)					
	7/1/2015	7/1/2016	Remaining	FY 2017 Payment	FY 2017 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 1,390,595	\$ 1,257,507		\$ 219,977	\$ 237,025
2. Changes in UAL due to					
a. Actuarial Experience	\$ 102,545	\$ 110,492	20	\$ 10,251	\$ 11,045
b. Assumption Changes	13,485	14,530	15	1,551	1,672
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ 116,029	\$ 125,022		\$ 11,802	\$ 12,717
3. Total [1c. + 2e.]	\$ 1,506,625	\$ 1,382,529		\$ 231,779	\$ 249,742

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

**Table B-1c
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy
1967 Plan - Fire
(\$ thousands)**

	7/1/2015 Outstanding Balance	7/1/2016 Expected Balance	Remaining Years	FY 2017 Payment Beginning-of-Year	FY 2017 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 596,617	\$ 539,021		\$ 95,782	\$ 103,205
2. Changes in UAL due to					
a. Actuarial Experience	\$ 47,586	\$ 51,274	20	\$ 4,757	\$ 5,126
b. Assumption Changes	5,006	5,394	15	576	621
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	<u>0</u>	<u>0</u>	1	<u>0</u>	<u>0</u>
e. Subtotal	\$ 52,592	\$ 56,668		\$ 5,333	\$ 5,746
3. Total [1c. + 2e.]	\$ 649,209	\$ 595,689		\$ 101,115	\$ 108,951

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

Table B-1d					
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy					
Plan 87 - Municipal					
(\$ thousands)					
	7/1/2015	7/1/2016	Remaining	FY 2017 Payment	FY 2017 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 401,448	\$ 379,497		\$ 49,436	\$ 53,267
2. Changes in UAL due to					
a. Actuarial Experience	\$ 84,929	\$ 91,511	20	\$ 8,490	\$ 9,148
b. Assumption Changes	10,920	11,766	15	1,256	1,354
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ 95,849	\$ 103,278		\$ 9,746	\$ 10,502
3. Total [1c. + 2e.]	\$ 497,297	\$ 482,774		\$ 59,182	\$ 63,769

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

**Table B-1e
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy
Plan 87 - Elected
(\$ thousands)**

	7/1/2015 Outstanding Balance	7/1/2016 Expected Balance	Remaining Years	FY 2017 Payment Beginning-of-Year	FY 2017 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 11,343	\$ 10,554		\$ 1,544	\$ 1,664
2. Changes in UAL due to					
a. Actuarial Experience	\$ 1,667	\$ 1,796	20	\$ 167	\$ 180
b. Assumption Changes	103	111	15	12	13
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	<u>0</u>	<u>0</u>	1	<u>0</u>	<u>0</u>
e. Subtotal	\$ 1,770	\$ 1,907		\$ 178	\$ 192
3. Total [1c. + 2e.]	\$ 13,113	\$ 12,461		\$ 1,722	\$ 1,856

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

**Table B-1f
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy
Plan 87 - Police
(\$ thousands)**

	7/1/2015 Outstanding Balance	7/1/2016 Expected Balance	Remaining Years	FY 2017 Payment Beginning-of-Year	FY 2017 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 175,666	\$ 163,872		\$ 23,812	\$ 25,658
2. Changes in UAL due to					
a. Actuarial Experience	\$ 30,771	\$ 33,156	20	\$ 3,076	\$ 3,314
b. Assumption Changes	26,793	28,869	15	3,083	3,321
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	<u>0</u>	<u>0</u>	1	<u>0</u>	<u>0</u>
e. Subtotal	\$ 57,564	\$ 62,025		\$ 6,159	\$ 6,636
3. Total [1c. + 2e.]	\$ 233,230	\$ 225,897		\$ 29,971	\$ 32,294

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

**Table B-1g
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy
Plan 87 - Fire
(\$ thousands)**

	7/1/2015 Outstanding Balance	7/1/2016 Expected Balance	Remaining Years	FY 2017 Payment Beginning-of-Year	FY 2017 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 44,217	\$ 41,106		\$ 6,208	\$ 6,689
2. Changes in UAL due to					
a. Actuarial Experience	\$ 19,120	\$ 20,602	20	\$ 1,911	\$ 2,059
b. Assumption Changes	7,854	8,463	15	904	974
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	<u>0</u>	<u>0</u>	1	<u>0</u>	<u>0</u>
e. Subtotal	\$ 26,974	\$ 29,064		\$ 2,815	\$ 3,033
3. Total [1c. + 2e.]	\$ 71,191	\$ 70,171		\$ 9,023	\$ 9,722

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

Table B-1h					
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy					
Plan 10 - Municipal					
(\$ thousands)					
	7/1/2015	7/1/2016	Remaining	FY 2017 Payment	FY 2017 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ (15)	\$ (14)		\$ (1)	\$ (1)
2. Changes in UAL due to					
a. Actuarial Experience	\$ 48	\$ 51	20	\$ 5	\$ 5
b. Assumption Changes	2	3	15	0	0
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	<u>0</u>	<u>0</u>	1	<u>0</u>	<u>0</u>
e. Subtotal	\$ 50	\$ 54		\$ 5	\$ 5
3. Total [1c. + 2e.]	\$ 36	\$ 40		\$ 4	\$ 4

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX B
SUPPORTING TABLES FOR CITY'S OLD FUNDING POLICY**

Table B-1i					
Development of the Fiscal Year 2017 Amortization Payment under the City's Old Funding Policy					
Total - All Divisions					
(\$ thousands)					
	7/1/2015	7/1/2016	Remaining	FY 2017 Payment	FY 2017 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2015 Based on July 1, 2014 Valuation					
a. Remaining	\$ 5,361,520	\$ 4,882,687		\$ 829,678	\$ 893,978
2. Changes in UAL due to					
a. Actuarial Experience	\$ 494,450	\$ 532,770	20	\$ 49,428	\$ 53,258
b. Assumption Changes	81,008	87,286	15	9,320	10,043
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	<u>0</u>	<u>0</u>	1	<u>0</u>	<u>0</u>
e. Subtotal	\$ 575,459	\$ 620,057		\$ 58,748	\$ 63,301
3. Total [1c. + 2e.]	\$ 5,936,979	\$ 5,502,744		\$ 888,426	\$ 957,279

There are no exhibits on the City's new funding policy because as of June 30, 2015 there have been no receipts from the sales tax revenue.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

Data Assumptions and Practices

In preparing our data, we relied on information supplied by the City of Philadelphia Municipal Retirement System staff. The data was reviewed to ensure that it complies with generally accepted actuarial standards. This information includes, but is not limited to, plan provisions, employee data, and financial information. Our methodology for obtaining the data used for the valuation is based upon the following assumptions and practices:

- We exclude raw active records with dates of hire after the valuation date.
- We include terminated vested records in the valuation data, regardless of whether they have enough service for vesting.
- We exclude terminated vested and retired records with values of zero in the benefit field.
- If a participant is found in multiple data files (e.g., both the active and retired data files), based on a match of both employee number and Social Security Number, we first attempt to identify the record with the most recent status change, and keep only that record. If it is not apparent which record is the most recent, we keep the record that generates the highest liability in our valuation system.
- If a participant is found multiple times in the same data file, based on a match of both employee number and Social Security Number, we keep the record that generates the highest liability in our valuation system, except where one of the records is in the recorded death file in which case we check for a survivor record or delete the record.
- Valuation pay reflects a load of 6% of pay for Police (stress pay) and Firefighters (premium pay).
- The date of retirement for a terminated vested participant was set to the valuation date, if the given date was earlier.
- If the payment form field for pensioners is missing, we assume that 1967 Plan members receive a 50% J&S annuity with a return of contributions in excess of payments received upon death of the member, and we assume that Plan 87 members receive a life annuity, also with a return of contributions. However, if the pensioner is a beneficiary or survivor, we assume that they receive a life annuity only.
- For pensioners under the form of payment 50% J&S annuity with return of contributions, 60% are assumed to be married based upon data provided by the City. All other forms of payment are explicitly valued.
- Records with missing dates of birth have their data filled in based on the average for their plan.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

- We assumed that all changes in participant data from last year to this year were valid unless indicated otherwise by System staff.
- DROP participants are assumed to begin payments immediately.
- For Municipal Plan 1967 participants, pay was assumed to be below the Social Security Taxable Wage Base for purposes of determining the aggregate member contribution amount.
- We assumed that any participant who was active last year, missing this year, and fully vested became a terminated vested with total credited service equal to credited service from last year plus one and final pay equal to pay from last year increased by the salary scale assumption.
- We assumed that any participant who was active last year, missing this year, and not fully vested became a terminated non-vested participant.
- We assumed that any participant who was inactive last year and missing from this year without a clear reason is now deceased.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

A. Actuarial Assumptions

1. Investment Return Assumption

7.75% compounded annually, net of expenses.

2. Salary Increase Rate

Age	All Divisions
<20	20.00%
20-24	11.00%
25-29	7.00%
30-34	5.00%
35-39	4.25%
40-44	4.00%
45-49	3.50%
50-54	3.30%
55-60	3.00%
61+	2.75%

3. Total Annual Payroll Growth

3.30% per year.

4. Administrative Expenses

Annual expected expenses included in this report are \$8,848,110, and assumed to increase by 3.30% per year.

5. Funding of the Pension Adjustment Fund

To recognize the expense of the benefits payable under the Pension Adjustment Fund, the actuarial liabilities have been increased by 0.54%. This estimate is based on the statistical average expected value of the benefits.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

6. Rates of Termination

Age	1967 Plan			1987 Plan	
	Municipal	Female	Unisex	Municipal and Elected Officials	Unisex
20	0.100000	0.105319	0.022050	0.260000	0.030000
25	0.086000	0.096000	0.021148	0.150000	0.037800
30	0.072000	0.071562	0.019148	0.105000	0.029900
35	0.045000	0.056170	0.016148	0.090000	0.025200
40	0.035000	0.039379	0.012148	0.090000	0.015400
45	0.030000	0.035597	0.000000	0.075000	0.010000
50	0.020000	0.022400	0.000000	0.065000	0.001600
55	0.000000	0.000000	0.000000	0.050000	0.001600

We assume that a vested employee who terminates will elect a pension deferred to service retirement age as long as their age plus years of service at termination are greater than or equal to 55 (45 for police and fire employees in the 1967 Plan). Otherwise, we assume they elect a refund of member contributions.

7. Rates of Disability

Age	Municipal and Elected Officials		Unisex
	Male	Female	
20	0.000025	0.000043	0.000795
25	0.000070	0.000061	0.000870
30	0.000557	0.000263	0.002668
35	0.001014	0.000870	0.005418
40	0.001800	0.001564	0.004684
45	0.002340	0.003109	0.003834
50	0.006600	0.004535	0.003154
55	0.007680	0.007338	0.000000
60	0.000000	0.000000	0.000000

For municipal and elected members, we assume that 70% of all disabilities are ordinary and 30% are service-connected. For police and fire members, we assume that 50% are ordinary and 50% are service-connected.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

8. Rates of Pre-Retirement Mortality (RP 2000 with Blue Collar adjustment, projected 17 years using Scale AA with a five year set back for Municipal males and females and a 2 year set back for Police and Fire males and females)

Experience studies are performed every four years as required by State law which require regular and detailed experience and analysis of the mortality trends such that improvements are addressed incrementally with assumption changes as a result of these studies. This mandatory process allows for periodic recognition of mortality improvements which are sufficient in addressing the potential trend. The most recent experience study was conducted for the period between July 1, 2008 and June 30, 2013.

Age	Municipal and Elected Officials		Uniformed	
	Male	Female	Male	Female
20	0.000194	0.000129	0.000228	0.000143
25	0.000291	0.00015	0.000314	0.000155
30	0.000345	0.000174	0.000361	0.000198
35	0.000667	0.000243	0.000871	0.000342
40	0.000948	0.000401	0.001101	0.000553
45	0.001098	0.000667	0.001274	0.000894
50	0.001317	0.001036	0.001563	0.001279
55	0.001741	0.001712	0.002379	0.002101
60	0.003190	0.002567	0.004864	0.003488
65	0.006507	0.004545	0.009686	0.007327

* For municipal and elected members, we assume that 98.5% of all deaths are ordinary, with 1.5% service-connected. For police and fire members, 92% are assumed to be ordinary and 8% service-connected.

9. Rates of Post-Retirement Mortality

For all groups we assume that mortality for healthy inactive lives will follow RP 2000 with Blue Collar adjustment, projected 17 years using Scale AA with a one year set forward for males and females.

Age	Male	Female
50	0.002015	0.001568
55	0.003585	0.002669
60	0.007167	0.005321
65	0.013813	0.010871
70	0.022690	0.019040
75	0.037529	0.029472
80	0.065888	0.048128
85	0.112135	0.083357
90	0.183439	0.141251
95	0.274405	0.198507

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

10. Rates of Post-Disability Mortality

For Police and Fire, we assume that mortality for disabled retirees follows RP 2000 Healthy mortality with Blue Collar adjustment, projected 17 years using Scale AA, with a 5 year set back for males and females and a 1% upward adjustment. For Municipal and Elected officials, we assume the same mortality table with projections as Police and Fire, but with a 1 year set back for males and females and a 1% upward adjustment.

Age	Municipal and Elected Officials		Uniformed	
	Male	Female	Male	Female
35	0.02073	0.00617	0.02073	0.00617
40	0.01969	0.00576	0.01969	0.00576
45	0.01807	0.00566	0.01807	0.00566
50	0.02033	0.00795	0.01657	0.00557
55	0.02465	0.01352	0.02091	0.01006
60	0.03092	0.01907	0.02694	0.01519
65	0.03801	0.02443	0.03308	0.02006
70	0.04611	0.03245	0.03881	0.02574
75	0.06099	0.04265	0.04925	0.03283
80	0.08715	0.06016	0.06918	0.04635

11. Rates of Retirement

Age	Rates of Service Retirement - 1967 Plan	
	Municipal	Uniformed
45-51	0.00	0.09
52	0.05	0.09
53	0.05	0.15
54	0.05	0.15
55	0.45	0.20
56	0.32	0.25
57	0.30	0.25
58	0.32	0.30
59	0.32	0.35
60	0.32	0.40
61	0.35	0.40
62	0.40	0.42
63	0.25	0.42
64	0.25	0.42
65	0.30	0.42
66	0.25	0.42
67	0.30	0.42
68	0.25	0.42
69	0.15	0.42
70 and up	1.00	1.00

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

Rates of Service Retirement - 1987 Plan and Plan '10				
Age	Municipal and Elected Officials		Uniformed	
	First Year Eligible	Subsequent Years	First Year Eligible	Subsequent Years
40-49	0.000	0.000	0.030	0.015
50	0.000	0.000	0.100	0.080
51	0.000	0.000	0.100	0.055
52	0.050	0.020	0.100	0.070
53	0.100	0.020	0.100	0.080
54	0.100	0.020	0.100	0.100
55	0.250	0.020	0.100	0.120
56	0.250	0.020	0.100	0.140
57	0.250	0.020	0.100	0.120
58	0.250	0.020	0.100	0.165
59	0.300	0.080	0.100	0.140
60	0.500	0.300	0.100	0.170
61	0.400	0.200	0.100	0.170
62	0.400	0.250	0.100	0.215
63	0.500	0.200	0.100	0.205
64	0.300	0.200	0.100	0.200
65	0.600	0.200	0.100	1.000
66	0.600	0.200	0.100	1.000
67	0.600	0.200	0.100	1.000
68	0.600	0.200	0.100	1.000
69	0.600	0.200	0.100	1.000
70	0.100	1.000	0.100	1.000

Retirements under DROP are included in the rates above.

12. Family Composition Assumptions

70% of active members and 60% of non-active members are assumed to be married for retirees with the 50% J&S with return on contribution form of payment only. Male spouses are assumed to be four-years older than female spouses.

13. Service-connected disability benefit

Service-connected disability benefits are increased by 2.9% to account for the periodic adjustment.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

14. Changes Since Last Valuation

- The interest rate assumption was decreased from 7.80% to 7.75%.
- The load on valuation pay was changed from 4% to 6% for Police participants to account for stress pay and for Fire participants to account for premium pay.

APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Actuarial Funding Method

The Entry Age Normal actuarial funding method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement. The actuarial liability is the difference between the present value of future benefits and the present value of future normal cost. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets.

2. Funding Methods

City's Old Funding Policy:

The initial July 1, 1985 UAL is amortized over 34 years ending June 30, 2019, with payments increasing at 3.3% per year, the assumed payroll growth. Other changes in the actuarial liability are amortized in level-dollar payments as follows:

- Actuarial gains and losses – 20 years beginning July 1, 2009. Prior to July 1, 2009, gains and losses were amortized over 15 years
- Assumption changes – 15 years beginning July 1, 2010. Prior to July 1, 2010, assumption changes were amortized over 20 years
- Plan changes for active members – 10 years
- Plan changes for inactive members – 1 years
- Plan changes mandated by the State – 20 years

MMO:

For the purposes of the MMO under Act 205 reflecting the fresh start amortization schedule, the July 1, 2009 UAL was “fresh started” to be amortized over 30 years ending June 30, 2039. This is a level dollar amortization of the UAL. All future amortization periods will follow the City's Funding Policy as outlined above.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2014 ACTUARIAL VALUATION**

**APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

3. Asset Valuation Method

The actuarial value of assets (AVA) is determined using an adjusted market value. Under this method, a preliminary AVA is determined as the market value of assets on the valuation date, minus the existing balance of the Pension Adjustment Fund (PAF) rolled forward at the current year's market rate of return, minus a decreasing fraction (9/10, 8/10, 7/10, etc.) of the investment gains or losses in each of the preceding nine years. Gains and losses prior to FYE June 30, 2008 were smoothed over a five year period and have now all been fully recognized. The gain or loss for a given year is the difference between the actual investment return (on a market-to-market basis) and the assumed investment return based on the market value of assets at the beginning of the year and actual cash flow. The AVA is adjusted, if necessary, to remain between 80% and 120% of the market value net of the PAF. The final AVA is determined by subtracting the additional transfer amount (if any) to the PAF. The additional transfer amount to the PAF remains to be calculated based on the five-year smoothing method.

4. Changes Since Last Valuation

None.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN**

This summary of plan provisions provides an overview of the major provisions of the pension plans used in the actuarial valuation. It is not intended to replace the more precise language of the retirement code, and if there is any difference between the description of the plans herein and the actual text of the retirement code, the retirement code will govern.

1. Participation

Municipal (Plan J):

Full-time employees participate on their date of employment. Temporary employees participate after completing six months employment. Participation is limited to employees hired before January 8, 1987. District Council 47 (Local 2186 or 2187) and 33 members hired between January 8, 1987 and October 1, 1992 were switched from Plan 87 to 1967 Plan effective on their hire dates, provided such employees contributed the difference between what they paid to the Plan and the amount they would have paid under Plan J.

Uniformed (Plans D and X):

Same as municipal.

2. Credited Service

Municipal (Plan J):

Credited service means the period of employment with the City during which the employee makes contributions to the Retirement System. Certain leaves of absence may also be credited.

Uniformed (Plans D and X):

Same as municipal.

3. Total Compensation

Municipal (Plan J):

Total compensation means the base rate of pay, longevity payments, and overtime received during a 12-month period.

Uniformed (Plans D and X):

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 6% of base pay) received during a 12-month period.

4. Final Compensation

Municipal (Plan J):

Final compensation means whichever is greater: annual base rate of pay at the time of termination or the total compensation received during the 12 months immediately preceding termination, including supplementary compensation received under Civil Service Regulation No. 32.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN**

Uniformed (Plans D and X):
Same as municipal.

5. Average Final Compensation

Municipal (Plan J):

Average final compensation means the arithmetic average of the total compensation received during the three calendar or anniversary years that produce the highest average.

Uniformed (Plans D and X):

Average final compensation means the highest of:

- The total compensation received during the 12-month period; or
- The annual base rate of pay, excluding longevity payments, calculated from the final pay period; or
- The arithmetic average of the total compensation received during five calendar years of employment.

6. Employee Contributions

Municipal (Plan J):

Employees who participates in the Social Security System contributes 3¾% of total compensation up to the taxable wage base (\$113,700 in 2013, \$117,000 in 2014, \$118,500 in 2015, and \$118,500 in 2016) and 6% of total compensation above the taxable wage base to the Retirement System.

Each employee who does not participate in the Social Security System contributes 6% of his total compensation to the Retirement System.

Effective 11/14/2014 guards represented by DC 33 contribute the higher of 3¾% of pay (or 6% of pay if they do not participate in Social Security System) and 50% of aggregate normal cost of all members in Plan J.

All other employees will pay an additional 0.5% of compensation for the period between January 1, 2015 through December 31, 2015 and 1.0% of compensation January 1, 2016 onwards.

Uniformed (Plans D and X):

6% of total compensation to the Retirement System.

7. Service Retirement

Eligibility

Municipal (Plan J):

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN**

Each municipal employee is eligible to retire and receive a service pension at age 55 with one year of service.

Uniformed (Plans D and X):

Each uniformed employee is eligible to retire and receive a service pension at age 45.

Benefit Amount

Municipal (Plan J):

The service pension equals 2 1/2% of the employee's average final compensation multiplied by credited service to a maximum of 20 years plus 2% of the employee's average final compensation multiplied by credited service above 20, to a maximum of 80% of the employee's average final compensation.

Uniformed (Plans D and X):

The service pension equals 2 1/2% of the employee's average final compensation multiplied by credited service, subject to a maximum of 100% of average final compensation.

8. Early Retirement

Eligibility

Municipal (Plan J):

Each municipal employee is eligible to retire and receive a reduced service pension at age 52 if he has 10 or more years of credited service.

Uniformed (Plans D and X):

Each uniformed employee is eligible to retire and receive a reduced service pension at age 40 if he or she has 10 or more years of credited service.

Benefit Amount

Municipal (Plan J):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age.

Uniformed (Plans D and X):

Same as municipal.

9. Deferred Vested Retirement

Eligibility

Municipal (Plan J):

A terminating employee who has completed 10 or more years of credited service is eligible for a deferred vested retirement benefit.

Uniformed (Plans D and X):

Same as municipal.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

Benefit Amount

Municipal (Plan J):

The annual deferred vested benefit is determined the same as service pensions, using average final compensation and credited service at termination. This benefit begins at service retirement date. If the member dies before the deferred vested benefit begins, an ordinary death benefit is payable (see Ordinary Death below). As an alternative before benefits begin, a plan member who is terminating employment may ask to have employee contributions returned (without interest) instead of receiving the deferred vested benefit.

Uniformed (Plans D and X):

Same as municipal.

10. Withdrawal Benefit

Municipal (Plan J):

Each employee terminating who has completed less than 10 years of credited service will receive a withdrawal benefit equal to his or her employee contributions (without interest).

Uniformed (Plans D and X):

Same as municipal.

11. Service-Connected Death

Eligibility

Municipal (Plan J):

The beneficiary of each active employee who dies solely from the performance of duties of the employee's position with the City is eligible for an immediate death benefit.

Uniformed (Plans D and X):

Same as municipal.

Benefit Amount

Municipal (Plan J):

The death benefit equals total employee contributions paid to the Retirement System, plus a yearly payment of 60% of the employee's final compensation reduced by any death benefits payable under the Worker's Compensation Act.

This benefit is payable to the spouse until his or her death. Dependent children are entitled to an additional yearly payment of 10% of final compensation for each dependent child (up to two children) until the child reaches age 18. If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is entitled to receive a yearly payment of 25% of final compensation until the child reaches age 18.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN**

If there are no spouse or dependent children, each dependent parent is entitled to receive a yearly payment of 15% of final compensation for life.

Uniformed (Plans D and X):
Same as municipal.

12. Ordinary Death

Eligibility

Municipal (Plan J):

The beneficiary of an active employee (or a terminated vested employee who did not withdraw employee contributions) who dies after completing 10 years of credited service or reaches age 55 is eligible for an immediate death benefit equal to a yearly pension or a lump sum payment. The beneficiary of an active employee who dies before completing 10 years of credited service and reaches age 55 is eligible for a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Uniformed (Plans D and X):

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw employee contributions) is eligible for a death benefit equal to a yearly pension or a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Annual Pension

Municipal (Plan J):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received if eligible to retire on the day before he died and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Uniformed (Plans D and X):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based on a minimum of 10 years of service) had the person been eligible to retire on the day before dying and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Lump Sum Payment

Municipal (Plan J):

The lump sum payment is equal to 10% of the deceased employee's average final compensation multiplied by years of credited service to a maximum of 10, plus the deceased employee's contributions to the Retirement System, minus the total amount of the deceased employee's City paid life insurance.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

Uniformed (Plans D and X):
Same as municipal.

13. Service-Connected Disability

Eligibility

Municipal (Plan J):

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated (unable to perform duties) solely as the result of accident or injury during the performance of duties is eligible for an immediate service-connected disability pension.

Uniformed (Plans D and X):
Same as municipal.

Benefit Amount

Municipal (Plan J):

The service-connected disability benefit is equal to the employee's Retirement System contributions, plus a yearly benefit of 70% of the employee's final compensation, reduced by any disability benefits payable under the Worker's Compensation Act. If he or she withdraws contributions, the benefit is payable for his or her lifetime only.

If the employee leaves employee contributions with the Retirement System, he or she may choose a survivor benefit option (see Survivor Benefit below) and the beneficiary will continue receiving benefit payments after his or her death.

Uniformed (Plans D and X):
Same as municipal.

14. Service-Connected Disability Periodic Adjustment

Eligibility

Municipal (Plan J):

An employee who is receiving a service-connected disability benefit who is totally disabled and does not collect Social Security disability insurance benefits is eligible for a periodic adjustment.

Uniformed (Plans D and X):
Same as municipal, but only applies to police employees.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

Benefit Amount

Municipal (Plan J):

The disabled employee's pension will be increased in the eighth year after separation by the percentage raise given in the previous year to active employees in his or her job class. The adjustment will continue each year thereafter until the employee's 65th birthday.

Uniformed (Plans D and X):

Same as municipal.

15. Ordinary Disability

Eligibility

Municipal (Plan J):

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit after completing 10 years of credited service.

Uniformed (Plans D and X):

Same as municipal, except that fire employees only need five years of credited service and police employees have no service requirement if the disability is permanent and total. Police employees with permanent and partial disability need 10 years of credited service.

Benefit Amount

Municipal (Plan J):

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement. If the employee is eligible for, or receiving workers' compensation, no benefit is payable. Such employee may apply for benefits at retirement age.

Uniformed (Plans D and X):

Same as municipal, except police employees that have no service requirement are credited with a minimum of 10 years of credited service. Same as municipal.

16. Survivor Benefit

Municipal (Plan J):

Service pensions, deferred vested benefits, service-connected disability benefits (if employee contributions are left on deposit), and ordinary disability benefits are payable under four optional forms. Options 1, 2, and 3 provide benefits actuarially equivalent to a lifetime only pension while Option 4 has no reduction.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN**

Option 1 – A benefit is payable to the employee with the provision that upon death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee's contributions over the sum of the payments received.

Option 2 – A reduced benefit payable to the employee with the provision that 100% of the reduced benefit will be paid to the designated beneficiary for life after the death of the employee.

Option 3 – Same as Option 2 except only 50% of the reduced benefit is continued to the designated beneficiary.

Option 4 – Upon the employee's death, 50% of the benefit will continue to be paid to the surviving spouse for life, provided the employee and spouse were married for two years before retirement and at death. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments are given to dependent parents for the remainder of their lives. In addition, Option 4 provides for a guaranteed return of employee contributions as described in Option 1 above.

Option 5 – Provides for a partial lump sum of between 6 and 36 monthly payments payable under Options 1, 2, 3 or 4. The remaining monthly benefit is reduced so that the partial lump sum plus the reduced benefit is actuarially equivalent to the original benefit.

Uniformed (Plans D and X):
Same as municipal.

17. Minimum Pension

Municipal (Plan J):

The monthly minimum pension to a pensioner is equal to \$25 multiplied by the pensioner's completed years of credited service, to a 10 year maximum.

Uniformed (Plans D and X):

The monthly minimum pension to pensioners is \$500. The monthly minimum pension to all other pensioners is \$440 providing such pension will increase to \$500 at the time the pensioner reaches age 60.

18. Waiver of Benefit

Municipal (Plan J):

Any employee at service retirement age with less than three but more than one year of credited service, may waive the right to receive a monthly benefit and in lieu thereof, receive a lump sum payment of twice his or her employee contributions without interest.

Uniformed (Plans D and X):
Same as municipal.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

19. Service-Connected Health Care Benefit

Municipal (Plan J):

Not applicable.

Uniformed (Plans D and X):

If a uniformed employee dies during the performance of duties, a service-connected health care benefit may be payable to the surviving spouse and dependent children. Regular payments will be made of the appropriate cost of maintaining medical, dental, optical, and prescription drug benefits that were in force at the time of the employee's death. Payments to the spouse cease upon remarriage and to dependent children at age 18 (age 22 if full-time student) or, if dependent due to physical or mental infirmity, the duration of the infirmity. The health care benefits are not paid from the pension trust assets.

20. Deferred Retirement Option Plan (DROP)

Municipal (Plan J):

Employees that have ten years of service and have reached two years past the minimum retirement age may elect to participate in the DROP. During this time, their accrued benefit will go into a DROP account and will earn interest at a specified rate. The rate is calculated each year on January 1 and is equal to the lesser of the yield on 1-year treasury bonds and half of the valuation interest rate as of that date. The benefit is calculated as of the date they entered the DROP. At the end of the DROP, the employees' accrued monthly benefit will commence, plus they will receive the accumulated amount of the accrued benefit paid to the DROP, as well as the interest earned on such benefit.

Uniformed (Plans D and X):

Same as municipal except that employees are eligible as soon as they have ten years' service and have reached minimum retirement age.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN**

1. Participation

Municipal (Plan Y):

Full-time employees participate on their date of employment. Temporary employees participate after completing six months of employment. Participation is limited to employees hired on or after January 8, 1987. Any member of the 1967 Plan may irrevocably elect to participate in Plan 87. All employees hired after their Plan '10 effective date become members of Plan '10 with some groups having the option to elect into Plan 87.

Uniformed (Plans A and B):

Same as municipal except for Police employees hired after January 1, 2010 and Fire employees hired on or after October 15, 2010 must make an election to participate in Plan 87.

Elected (Plan L):

Any City employee on or after January 8, 1987, in any general, municipal, or special election, participates in this Plan. Effective November 11, 2014, elected officials become members of Plan '10 upon employment or taking office unless they elect to participate in Plan 87.

2. Credited Service

Municipal (Plan Y):

Credited service means the period of employment with the City during which the employee makes contributions to the Retirement System. Certain leaves of absence may also be credited.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

3. Total Compensation

Municipal (Plan Y):

Total compensation means the base rate of pay, overtime, and longevity payments received during a 12-month period.

Uniformed (Plans A and B):

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 6% of base pay) received during a 12-month period.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Elected (Plan L):

Total compensation means the base rate of pay and longevity payments received during a 12-month period.

4. Final Compensation

Municipal (Plan Y):

Final compensation means whichever is greater: annual base rate of pay at the time of termination or the total compensation received during the 12 months immediately preceding termination, including supplementary compensation received under Civil Service Regulation No. 32.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

5. Average Final Compensation

Municipal (Plan Y):

Average final compensation means the arithmetic average of the total compensation received during the three calendar or anniversary years producing the highest average.

Uniformed (Plans A and B):

Average final compensation means the arithmetic average of the total compensation received during the two calendar or anniversary years producing the highest average.

Elected (Plan L):

Same as municipal.

6. Employee Contributions

Municipal (Plan Y):

Total employee contributions equal 30% of the gross normal cost for all members in the municipal division. For employees of the Sheriff's Office represented by Lodge 5 of the F.O.P hired after January 1, 2012 who elect to participate in Plan Y employee contributions equal 50% of gross normal cost. Exempt and non-represented employees hired after January 13, 1999 (and current employees as of January 13, 1999 that elect to do so) will contribute an additional amount to become vested in five years. Employees hired after their Plan '10 date who elect the option to participate in Plan 87 prime will pay an additional 1.0% of compensation.

Effective 11/14/2014 all guards represented by DC 33 contribute at 50% of aggregate normal cost. Other employees will pay an additional 0.5% of compensation for the period between

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN**

January 1, 2015 through December 31, 2015 and 1.0% of compensation January 1, 2016 onwards.

Uniformed (Plans A and B):

Total employee contributions equal 5% of total compensation, but not less than 30% or greater than 50% of gross normal cost for members in the uniformed division. Police employees hired after January 1, 2010 and Fire Fighters hired after October 15, 2010 who elect to participate in the 1987 Plan will contribute 6% of total compensation. Exempt and non-represented employees hired after January 13, 1999 (and current employees as of January 13, 1999 that elect to do so) will contribute an additional amount to become vested in five years.

Elected (Plan L):

Total employee contributions equal 30% of the gross normal cost for all members in the elected division calculated under the municipal plan plus 100% of the gross normal cost that exceeds the cost for the municipal plan. Employees hired after January 13, 1999 (and current employees as of January 13, 1999 that elect to do so) will contribute an additional amount to become vested in the lesser of two-full terms or eight years. Elected officials that are elected into Office after November 14, 2014 pay an additional 1% of compensation to participate in Plan L instead of Plan '10. All employees will also pay an additional 0.5% of compensation for the period between January 1, 2015 through December 31, 2015 and 1.0% of compensation January 1, 2016 onwards.

7. Service Retirement

Eligibility

Municipal (Plan Y):

Each municipal employee is eligible to retire and receive a service pension at age 60 if he or she has 10 or more years of credited service or, if the employee made additional contributions to become vested in five years, five years of credited service.

Uniformed (Plans A and B):

Each uniformed employee is eligible to retire and receive a service pension upon reaching age 50 and 10 or more years of credited service, or, if the employee made additional contributions to become vested in five years, five years of credited service.

Elected (Plan L):

Each elected official is eligible to retire and receive a service pension at age 55 if he or she has 10 or more years of credited service, or, if the employee made additional contributions to become vested in the lesser or two full terms or eight years, the lesser of two full terms or eight years of credited service.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Benefit Amount

Municipal (Plan Y):

The service pension equals 2.2% of the employee's average final compensation multiplied by years of credited service to a maximum of 10 years, plus 2% of the employee's average final compensation multiplied by years of service over 10, subject to a maximum of 100% of average final compensation.

Uniformed (Plans A and B):

The service pension equals 2.2% of the employee's average final compensation multiplied by years of credited service to a maximum of 20 years, plus 2% of the employee's average final compensation multiplied by years of credited service over 20, subject to a maximum of 100% of average final compensation.

Elected (Plan L):

The service pension equals 3.5% of the employee's average final compensation multiplied by years of credited service, subject to a maximum of 100% of average final compensation.

8. Early Retirement

Eligibility

Municipal (Plan Y):

Each municipal employee is eligible to retire and receive a reduced service pension at age 52 if he has 10 or more years of credited service. As an alternative, a member is eligible if he or she has at least 33 years of credited service, regardless of age.

Uniformed (Plans A and B):

Each uniformed employee is eligible to retire and receive a reduced service pension at age 40 if he or she has 10 or more years of credited service. Alternatively, a member is eligible if he has at least 25 years of credited service, regardless of age.

Benefit Amount

Municipal (Plan Y):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age. Benefits are not reduced if the employee has 33 or more years of credited service.

Uniformed (Plans A and B):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age. Benefits are not reduced if the employee has 25 or more years of credited service.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Elected (Plan L):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age.

9. Deferred Vested Retirement

Eligibility

Municipal (Plan Y):

An employee who terminates employment after completing 10 or more years of credited service or, if the employee made additional contributions to become vested in five years, five years of credited service, is eligible for a deferred vested retirement if his or her contributions have not been withdrawn.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

A person terminating employment and who has completed 10 or more years of credited service, or, if the employee made additional contributions to become vested in the lesser of two full terms or eight years, two full terms or eight years of credited service is eligible for a deferred vested retirement benefit provided he or she has not withdrawn contributions.

Benefit

Municipal (Plan Y):

The annual deferred vested benefit is determined the same as service pensions, based on average final compensation and credited service at termination. This benefit begins at the service retirement date. If a member dies before the deferred vested benefit begins, an ordinary death benefit is payable (see Ordinary Death below). As an alternative, the person terminating employment may request at any time before benefits begin a return of employee contributions (without interest) instead of the deferred vested benefit.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

10. Withdrawal Benefit

Eligibility

Municipal (Plan Y):

Each terminating employee who has completed fewer than 10 years of credited service (or, if the employee made additional contributions to become vested in five years, fewer than five years of credited service) will receive a withdrawal benefit equal to employee contributions (without interest).

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Each terminating employee who completed fewer than 10 years of credited service will receive a withdrawal benefit equal to employee contributions (without interest).

11. Service Connected Death

Eligibility

Municipal (Plan Y):

The beneficiary of each active employee who dies solely from the performance of duties of the employee's position with the City is eligible for an immediate death benefit.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

Benefit Amount

Municipal (Plan Y):

The death benefit equals the sum of the total employee contributions paid to the Retirement System (without interest), plus a yearly payment of 60% of the employee's final compensation reduced by any death benefits payable under the Workers' Compensation Act. This benefit is payable to the spouse until his or her death or remarriage, whichever occurs first. Dependent children are entitled to an additional 10% of final compensation yearly payment for each dependent child (up to two children) until the child reaches 18. This total benefit shall not exceed 80% of final compensation.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN**

If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is eligible for a yearly payment of 25% of final compensation until the child reaches age 18. If there is no spouse or dependent children, each dependent parent is entitled to a 15% of final compensation yearly payment for life.

Uniformed (Plans A and B):
Same as municipal.

Elected (Plan L):
Same as municipal.

12. Ordinary Death

Eligibility

Municipal (Plan Y):

The beneficiary of an active employee (or a terminated vested employee who did not withdraw his employee contributions) who dies after completing 10 years of credited service (or five years of credited service if additional contributions were made) or who has reached age 60 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completing 10 years of credited service (or five years of credited service if additional contributions were made) or reaching age 60 is eligible for a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Uniformed (Plans A and B):

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw employee contributions) is eligible for a death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary may be any relative by blood or marriage.

Elected (Plan L):

The beneficiary of an active employee (or a terminated vested employee who did not withdraw contributions) who dies after completing 10 years of credited service or reaching age 55 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completing 10 years of credited service or reaching age 55 is eligible for a lump sum payment.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

The beneficiary may be any relative by blood or marriage.

Annual Pension

Municipal (Plan Y):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received had he or she been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Uniformed (Plans A and B):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based on a minimum of 10 years of service) had he been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Elected (Plan L):

Same as municipal.

Lump Sum Payment

Municipal (Plan Y):

The lump sum payment is equal to the deceased employee's average final compensation multiplied by years of credited service (not to exceed the service in the denominator) and divided by the number of years of credited service needed to become vested, plus the deceased employee's contribution to the Retirement System (without interest) minus the total amount of the deceased employee's life insurance which was paid by the City.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

13. Service-Connected Disability

Eligibility

Municipal (Plan Y):

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated from any further performance of duties due solely to the result of the performance of duties is eligible for an immediate service-connected disability pension. The application for benefit must be made within one year after termination of employment.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN**

Uniformed (Plans A and B):
Same as municipal.

Elected (Plan L):
An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated from any further performance of duties due solely to the result of the performance of duties is eligible for an immediate service-connected disability pension.

Benefit Amount

Municipal (Plan Y):
The service-connected disability benefit is equal to the employee's contributions to the Retirement System, plus a yearly benefit of 70% of the employee's final compensation, reduced by any disability benefits payable under the Worker's Compensation Act.

If he or she withdraws contributions, the benefit is payable for his or her lifetime only. If the employee leaves employee contributions with the Retirement System, he or she may choose a survivor benefit option (see Survivor benefit below) and the beneficiary will continue receiving benefit payments after his or her death.

Uniformed (Plans A and B)
Same as municipal.

Elected (Plan L):
Same as municipal.

14. Service-Connected Disability Periodic Adjustment

Eligibility

Municipal (Plan Y):
An employee who is receiving a service-connected disability benefit who is totally disabled and does not collect Social Security disability insurance benefits is eligible for a periodic adjustment.

Uniformed (Plans A and B):
Same as municipal, but only applies to police employees.

Elected (Plan L):
Same as municipal.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Benefit Amount

Municipal (Plan Y):

The disabled employee's pension will be increased in the eighth year after separation by the percentage raise given in the previous year to active employees in his or her job class. The adjustment will continue each year until the employee's 65th birthday.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

15. Ordinary Disability

Eligibility

Municipal (Plan Y):

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit provided he or she has at least 10 years of credited service (or five years of credited service, if additional contributions were made). The application for benefits must be made within one year after termination.

Uniformed (Plans A and B):

Same as municipal, except that fire employees only need five years of credited service and police employees have no service requirement if the disability is permanent and total. Police employees with permanent and partial disability need 10 years of credited service (or five years of credited service, if additional contributions were made).

Elected (Plan L):

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit provided he or she has completed at least 10 years of credited service, or eight years if additional contributions were made.

Benefit Amount

Municipal (Plan Y):

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN**

If the employee is eligible for or receiving workers compensation, no benefit is payable. Such employee may apply for benefits at retirement age.

Uniformed (Plans A and B):

Same as municipal, except each eligible employee is automatically credited with a minimum of 10 years of service to calculate the annual benefit.

Elected (Plan L):

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

16. Survivor Benefits

Eligibility

Municipal (Plan Y):

Service pensions, deferred vested benefits, service-connected disability benefits, and ordinary disability benefits are payable under four optional forms. Options 2 and 3 provide benefits actuarially equivalent to a lifetime only pension while Option 1 has no reduction.

Option 1 - A benefit is payable to the employee providing on his death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee's contributions over the sum of the payments received.

Option 2 - A reduced benefit payable to the employee with the provision that 100% of the reduced benefit will continue to be paid to the designated beneficiary for life after the death of the employee.

Option 3 - The same as Option 2 except only 50% of the reduced benefit is continued to the designated beneficiary.

Option 5 – Provides for a partial lump sum of between 6 and 36 monthly payments payable under Options 1, 2, 3 or 4. The remaining monthly benefit is reduced so that the partial lump sum plus the reduced benefit is actuarially equivalent to the original benefit.

Uniformed (Plans A and B):

Same as municipal, except that police and fire employees may also elect Option 4:

Option 4 - Upon the employee's death, 50% of the benefit will continue to be paid to the surviving spouse for life, provided the employee and spouse were married for two years before retirement and at death. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

are given to dependent parents for the remainder of their lives. In addition, Option 4 provides for a guaranteed return of employee contributions as described in Option 1 above.

Elected (Plan L):

Same as municipal.

17. Service-Connected Health Care Benefit

Eligibility

Municipal (Plan Y):

Not applicable.

Uniformed (Plans A and B):

In the event of the death of a uniformed employee during the performance of his or her duties, a service-connected health care benefit may be payable to the surviving spouse and dependent children. Regular payments will be made of the appropriate cost of maintaining medical, dental, optical and pharmaceutical prescription benefits in force at the time of the employee's death. Payments to the spouse cease upon remarriage and to dependent children at age 18 (age 22 if a full-time student) or, if dependent due to physical or mental infirmity, the duration of the infirmity. The health care benefits are not paid from the pension trust assets.

Elected (Plan L):

Not applicable.

18. Deferred Retirement Option Plan (DROP)

Eligibility

Municipal (Plan Y):

Employees that have 10 years of service and have reached two years after the minimum retirement age may elect to participate in the DROP. During this time, their accrued benefit will go into a DROP account and will earn interest at a specified rate. The rate is calculated each year on January 1 and is equal to the lesser of the yield on 1-year treasury bonds and half of the valuation interest rate as of that date. The benefit is calculated as of the date they entered the DROP. At the end of the DROP, the employees' accrued monthly benefit will commence, plus they will receive the accumulated amount of the accrued benefit paid to the DROP, as well as the interest earned on such benefit.

Uniformed (Plans A and B):

Same as municipal except that employees are eligible as soon as they have ten-years service and have reached minimum retirement age.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN**

Elected (Plan L):

Officials elected to Office after September 18, 2009 are not eligible to participate in the DROP.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10**

1. Participation

Municipal:

Municipal employees hired or rehired after the Plan ‘10 effective date (as shown below) become members in Plan ‘10 immediately upon employment.

Employees of the Sheriffs’ Office or Register of Wills: January 1, 2012

Employees represented by AFSCME, District Council 47: March 5, 2014

Municipal employees in the civil service not represented by a union: May 14, 2014

Employees represented by AFSCME, District Council 33, other than guards: September, 2014

Guards represented by DC 33: November 11, 2014

Municipal employees not in the civil service and not represented by a union: November 11, 2014

Elected Officials: November 11, 2014

All employees except Register of wills and guards represented by DC33 have the option with 30 days to elect to participate in Plan 87 Municipal.

Uniformed:

Police employees hired or rehired on or after January 1, 2010 and Fire employees hired or rehired on or after October 15, 2010 are members in Plan ‘10 immediately upon employment. Employees have the option within 30 days to elect to participate in Plans A or B.

Existing Plan A, Plan B and Plan Y participants had the option, for a period of ninety (90) days, to make an irrevocable election to enter the Plan ‘10. Employees who elected do so would have their benefits in the existing pension plan frozen, and their future earnings and service will count only toward benefits under Plan ‘10.

2. Credited Service

Municipal:

Credited service means the period of employment with the City during which the employee makes contributions to the Retirement System. Certain leaves of absence may also be credited.

Uniformed:

Same as municipal.

3. Total Compensation

Municipal:

Total compensation means the base rate of pay, overtime, and longevity payments received during a 12-month period.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10

Uniformed:

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 6% of base pay) received during a 12-month period.

4. Final Compensation

Municipal:

Final compensation means whichever is greater: annual base rate of pay at the time of termination or the total compensation received during the 12 months immediately preceding termination, including supplementary compensation received under Civil Service Regulation No. 32.

Uniformed:

Same as municipal.

5. Average Final Compensation

Municipal:

Average final compensation means the arithmetic average of the total compensation received during the five calendar or anniversary years producing the highest average.

Uniformed:

Same as municipal.

6. Employee Contributions

Municipal:

Total employee contributions equal 50% of the gross normal cost for members in the municipal division.

Uniformed:

Total employee contributions equal 5.5% of total compensation up to twenty years of credited service.

7. Service Retirement

Eligibility

Municipal:

Each municipal employee is eligible to retire and receive a service pension at age 60 if he or she has 10 or more years of credited service.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10

Uniformed:

Each uniformed employee is eligible to retire and receive a service pension upon reaching age 50 and 10 or more years of credited service.

Benefit Amount

Municipal:

The service pension equals 1.25% of the employee’s average final compensation multiplied by years of credited service up to maximum of 20 years.

Uniformed:

The service pension equals 1.75% of the employee’s average final compensation multiplied by years of credited service up a maximum of 20 years.

8. Early Retirement

Eligibility

Municipal:

Each municipal employee is eligible to retire and receive a reduced service pension at age 52 if he has 10 or more years of credited service.

Uniformed:

Each uniformed employee is eligible to retire and receive a reduced service pension at age 40 if he or she has 10 or more years of credited service.

Benefit Amount

Municipal:

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age.

Uniformed:

Same as municipal.

9. Deferred Vested Retirement

Eligibility

Municipal:

An employee who terminates employment after completing 10 or more years of credited service is eligible for a deferred vested retirement if his or her contributions have not been withdrawn.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN '10

Uniformed:
Same as municipal.

Benefit

Municipal:
The annual deferred vested benefit is determined the same as service pensions, based on average final compensation and credited service at termination. This benefit begins at the service retirement date. If a member dies before the deferred vested benefit begins, an ordinary death benefit is payable (see Ordinary Death below). As an alternative, the person terminating employment may request at any time before benefits begin a return of employee contributions (without interest) instead of the deferred vested benefit.

Uniformed:
Same as municipal.

10. Withdrawal Benefit

Eligibility

Municipal:
Each terminating employee who has completed fewer than 10 years of credited service will receive a withdrawal benefit equal to employee contributions (without interest).

Uniformed:
Same as municipal.

11. Service Connected Death

Eligibility

Municipal:
The beneficiary of each active employee who dies solely from the performance of duties of the employee's position with the City is eligible for an immediate death benefit.

Uniformed:
Same as municipal.

Benefit Amount

Municipal:
The death benefit equals the sum of the total employee contributions paid to the Retirement System (without interest), plus a yearly payment of 60% of the employee's final compensation reduced by any death benefits payable under the Workers' Compensation Act.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10

This benefit is payable to the spouse until his or her death or remarriage, whichever occurs first. Dependent children are entitled to an additional 10% of final compensation yearly payment for each dependent child (up to two children) until the child reaches 18. This total benefit shall not exceed 80% of final compensation.

If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is eligible for a yearly payment of 25% of final compensation until the child reaches age 18. If there is no spouse or dependent children, each dependent parent is entitled to a 15% of final compensation yearly payment for life.

Uniformed:

Same as municipal.

12. Ordinary Death

Eligibility

Municipal:

The beneficiary of an active employee (or a terminated vested employee who did not withdraw his employee contributions) who dies after completing 10 years of credited service or who has reached age 60 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completing 10 years of credited service or reaching age 60 is eligible for a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Uniformed:

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw employee contributions) is eligible for a death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary may be any relative by blood or marriage.

Annual Pension

Municipal:

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received had he or she been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10

Uniformed:

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based on a minimum of 10 years of service) had he been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Lump Sum Payment

Municipal:

The lump sum payment is equal to the deceased employee’s average final compensation multiplied by years of credited service (not to exceed the service in the denominator) and divided by the number of years of credited service needed to become vested, plus the deceased employee’s contribution to the Retirement System (without interest) minus the total amount of the deceased employee’s life insurance which was paid by the City.

Uniformed:

Same as municipal.

13. Service-Connected Disability

Eligibility

Municipal:

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated from any further performance of duties due solely to the result of the performance of duties is eligible for an immediate service-connected disability pension. The application for benefit must be made within one year after termination of employment.

Uniformed:

Same as municipal.

Benefit Amount

Municipal:

The service-connected disability benefit is equal to the employee’s contributions to the Retirement System, plus a yearly benefit of 70% of the employee’s final compensation, reduced by any disability benefits payable under the Worker’s Compensation Act.

If he or she withdraws contributions, the benefit is payable for his or her lifetime only.

If the employee leaves employee contributions with the Retirement System, he or she may choose a survivor benefit option (see Survivor benefit below) and the beneficiary will continue receiving benefit payments after his or her death.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN '10

Uniformed:

Same as municipal.

14. Service-Connected Disability Periodic Adjustment

Eligibility

Municipal:

An employee who is receiving a service-connected disability benefit who is totally disabled and does not collect Social Security disability insurance benefits is eligible for a periodic adjustment.

Uniformed:

Same as municipal, but only applies to police employees.

Benefit Amount

Municipal:

The disabled employee's pension will be increased in the eighth year after separation by the percentage raise given in the previous year to active employees in his or her job class. The adjustment will continue each year until the employee's 65th birthday.

Uniformed:

Same as municipal.

15. Ordinary Disability

Eligibility

Municipal:

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit provided he or she has at least 10 years of credited service. The application for benefits must be made within one year after termination.

Uniformed:

Same as municipal, except that fire employees only need five years of credited service and police employees have no service requirement if the disability is permanent and total. Police employees with permanent and partial disability need 10 years of credited service.

Benefit Amount

Municipal:

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2015 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10**

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

If the employee is eligible for or receiving workers compensation, no benefit is payable. Such employee may apply for benefits at retirement age.

Uniformed (Plans A and B):

Same as municipal, except each eligible employee is automatically credited with a minimum of 10 years of service to calculate the annual benefit.

16. Survivor Benefits

Eligibility

Municipal:

Service pensions, deferred vested benefits, service-connected disability benefits, and ordinary disability benefits are payable under four optional forms. Options 2 and 3 provide benefits actuarially equivalent to a lifetime only pension while Option 1 has no reduction.

Option 1 - A benefit is payable to the employee providing on his death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee's contributions over the sum of the payments received.

Option 2 - A reduced benefit payable to the employee with the provision that 100% of the reduced benefit will continue to be paid to the designated beneficiary for life after the death of the employee.

Option 3 - The same as Option 2 except only 50% of the reduced benefit is continued to the designated beneficiary.

Option 5 – Provides for a partial lump sum of between 6 and 36 monthly payments payable under Options 1, 2, 3 or 4. The remaining monthly benefit is reduced so that the partial lump sum plus the reduced benefit is actuarially equivalent to the original benefit.

Uniformed:

Same as municipal, except that police and fire employees may also elect Option 4:

Option 4 - Upon the employee's death, 50% of the benefit will continue to be paid to the surviving spouse for life, provided the employee and spouse were married for two years before retirement and at death. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments

APPENDIX D
SUMMARY OF PLAN PROVISIONS – PLAN ‘10

are given to dependent parents for the remainder of their lives. In addition, Option 4 provides for a guaranteed return of employee contributions as described in Option 1 above.

17. Service-Connected Health Care Benefit

Eligibility

Municipal:
Not applicable.

Uniformed:
In the event of the death of a uniformed employee during the performance of his or her duties, a service-connected health care benefit may be payable to the surviving spouse and dependent children. Regular payments will be made of the appropriate cost of maintaining medical, dental, optical and pharmaceutical prescription benefits in force at the time of the employee’s death. Payments to the spouse cease upon remarriage and to dependent children at age 18 (age 22 if a full-time student) or, if dependent due to physical or mental infirmity, the duration of the infirmity. The health care benefits are not paid from the pension trust assets.

18. Deferred Retirement Option Plan (DROP)

Eligibility

Municipal:
Employees that have 10 years of service and have reached two years after the minimum retirement age may elect to participate in the DROP. During this time, their accrued benefit will go into a DROP account and will earn interest at a specified rate. The rate is calculated each year on January 1 and is equal to the lesser of the yield on 1-year treasury bonds and half of the valuation interest rate as of that date. The benefit is calculated as of the date they entered the DROP. At the end of the DROP, the employees’ accrued monthly benefit will commence, plus they will receive the accumulated amount of the accrued benefit paid to the DROP, as well as the interest earned on such benefit.

Uniformed:
Same as municipal except that employees are eligible as soon as they have ten-years service and have reached minimum retirement age.

SUMMARY OF LEGISLATIVE CHANGES

The following table summarizes the legislative changes to member contribution rates by Plan and by bargaining group where applicable. This information has been provided by the Staff and has been applied where effective as of the valuation date.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2014 ACTUARIAL VALUATION**

**APPENDIX D
SUMMARY OF PLAN PROVISIONS – LEGISLATIVE CHANGES**

Member Contribution Rates by Membership Class		Effective Date	
Plan 67	No SSA Coverage	Plan D (Police)	7/1/2016 6.00%
		Plan X (Fire)	6.00%
		Plan J-(OHCD)	6.00%
		Plan J1 (Non Repts; Exempts)	7.00%
	Plan J2 (DC 47; DC33: excl Guards and OHCD)	7.00%	
	SSA	Plan J5 (DC33-Guards) Eff 11/14/2014	Greater of 6% or 50% of Agregate Normal Cost of all members in Plan J (5.95%) 6.00%
		Plan J3 (Non Repts-Exempts: excluding Auditing (<i>Controller</i>) Department who are not in Civil Service)	4.75%
Plan J4 (DC 47-DC33:excl Guards)		4.75%	
Plan 87	Plan J6 (Non Civil Service-Auditing Dept EE)	4.75%	
	Plan J7 (DC33-Guard)	Greater of 3.75% or 50% of Agregate Normal Cost of all members in Plan J (5.95%) 5.95%	
	Plan A (Fire)	5.00%	
	Plan B (Police)	5.00%	
	Plan L (Elected)	9.21%	
	Plan Y	3.02%	
	Plan Y5	4.63%	
	Plan L8	11.60%	
	Plan Y2 (Non Repts-Exempts:excl Auditing EEs)	3.02%	
	Plan Y3 (DC 47-DC33:excl Guards and OHCD)	3.02%	
Plan Y4 (Exempts-Auditing/ <i>Controller</i> Dept Ees)	3.02%		
Plan 87 Prime	Plan Y12 (DC33: Guards) Eff 11/14/2014	50% of Agregate Normal Cost of all members in Plan Y 3.37%	
	Plan Y1 (Deputy Sheriff) DOH>=1/1/12	50% of Agregate Normal Cost of all members in Plan Y 3.37%	
	Plan Y4 (Non Repts) DOH>=5/14/14	+1% 4.02%	
	Plan Y6 (DC 47) DOH>=3/5/2014	+1% 4.02%	
	Plan Y9 (DC33-excluding Guards and OHCD) DOH>=9/9/2014	+1% 4.02%	
	Plan Y11 (Exempts) DOH>=11/14/2014	+1% 4.02%	
	Plan Y5.1(5 yr vesting-Exempts) DOH>=11/14/2014	+1% 5.63%	
	Plan L1 (elected) DOH>=11/14/2014	+1% 10.21%	
	Plan L8.1 (Elected) DOH>=11/14/2014	+1% 12.60%	
	Plan B6 (Police) DOH>=1/1/2010	FIXED 6.00%	
	Plan A6 (Fire) DOH>=10/15/2010	FIXED 6.00%	
	Plan 10	B10-Fire	FIXED 5.50%
		A10-Police	FIXED 5.50%
Y10		50% of Normal Cost for members of Plan 10	
Deputy Sheriff			3.14%
Register of Wills-MANDATORY DOH>=1/1/12			3.14%
Non-Reps			3.14%
DC33-Guards-MANDATORY DOH>=Eff 11/14/2014			3.14%
DC33			3.14%
DC 47			3.14%
Elected			3.14%
Exempts	3.14%		

APPENDIX E
GLOSSARY OF TERMS

1. Actuarial Liability

The Actuarial Liability is the difference between the present value of all future system benefits and the present value of total future normal costs. This is also referred to by some actuaries as the “accrued liability” or “actuarial accrued liability.”

2. Actuarial Assumptions

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement rate or rates of investment income and salary increases. Actuarial assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

3. Accrued Service

Service credited under the System which was rendered before the date of the actuarial valuation.

4. Actuarial Equivalent

A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

5. Actuarial Funding Method

A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of a retirement system benefit between future normal cost and actuarial accrued liability. Sometimes this is referred to as the “actuarial cost method.”

6. Actuarial Gain (Loss)

The difference between actual experience and actuarial assumption anticipated experience during the period between two actuarial valuation dates.

7. Actuarial Present Value

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

APPENDIX E
GLOSSARY OF TERMS

8. Adjusted Market Value of Assets

An asset value reflecting a five-year smoothing of asset gains and losses, as described in the Philadelphia Municipal Code Title 22-311.

9. Amortization

This term represents the paying off an interest-discounted amount with periodic payments of interest and principal—as opposed to paying off with a lump sum payment.

10. Normal Cost

The actuarial present value of retirement system benefits allocated to the current year by the actuarial funding method.

11. Unfunded Actuarial Liability (UAL)

The difference between actuarial liability and valuation assets. This is sometimes referred to as “unfunded actuarial accrued liability.”

Most retirement systems have unfunded actuarial liabilities. They typically arise each time new benefits are added and each time experience gains/losses are realized.

The existence of unfunded actuarial accrued liability is not in itself an indicator of poor funding. Also, unfunded actuarial liabilities do not represent a debt that is payable today. What is important is the ability of the plan sponsor to contribute the annual amortized cost to fund down the unfunded actuarial liability and the trend in unfunded actuarial liability amount.