



**City of Philadelphia
Municipal Retirement System**

**Actuarial Valuation
as of July 1, 2009**

Produced by [Cheiron](#)

March 2010

Table of Contents

Letter of Transmittal	i
Section I – Board Summary	1
Section II – Assets	15
Section III – Liabilities	24
Section IV – Contributions and Minimum Municipal Obligation	29
Section V – Accounting Statement Information	46
Appendix A – Membership Information.....	52
Appendix B – Supporting Tables for City’s Funding Policy.....	72
Appendix C – Summary of Actuarial Assumptions and Methods.....	80
Appendix D – Summary of Plan Provisions	89
Appendix E – Glossary of Terms	110

LETTER OF TRANSMITTAL

March 24, 2010

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, 2009 actuarial valuation of the City of Philadelphia Municipal Retirement System.

In preparing our report, we relied without audit, 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. The results of this report are only applicable to the System's contribution for Fiscal Year Ending 2011, and rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results will vary accordingly.

This report reflects the funding requirements and determination of the City's Minimum Municipal Obligation (MMO) before recognition of the amendments made under Act 44 to the Act 205 funding requirements through the addition of Chapter 10. A separate report will be prepared as required under Act 205 Section 1002(b)(1) to reflect the MMO as amended.

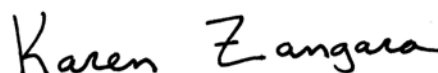
We hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board, and that we meet the Qualification Standards, as defined by the American Academy of Actuaries, to render the opinion contained in this report.

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



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



Karen Zangara, FSA, EA
Consulting Actuary



CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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,
- Past trends and expected future trends in the Retirement System's financial condition,
- The City's required contribution for Fiscal Year (FY) 2011 before application of the alternative funding under Chapter 10 of Act 205 pertaining to Cities of the First Class,
- The Retirement Board's Funding Policy recommended City contribution, and
- Information required by the Governmental Accounting Standards Board (GASB).

In this Section, we present a summary of the principal valuation results. This includes the basis upon which the July 1, 2009 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.

A. Valuation Basis

The June 30, 2009 valuation results are based on the same actuarial assumptions and methods used in the June 30, 2008 valuation except as follows:

- **Interest Rate:** The interest rate decreased **from 8.75% to 8.25%**.
- **Asset Valuation Method:** Investment gains and losses are smoothed **over a ten year period** prospectively beginning with investment returns from July 1, 2008 through June 30, 2009.
- **Actuarial Funding Method:** Amortization period of actuarial **gains and losses** was extended from 15 years to **20 years**.
- **Administrative Expenses:** Expense assumption was increased from \$7.5 million to **\$8.0 million**.

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

- ***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 \$3.779 billion as of July 1, 2008 to **\$4.933 billion as of July 1, 2009** primarily due to asset losses from July 1, 2008 through June 30, 2009 as well as the increase in the AL due to the 50 basis point decrease in the interest rate.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

SECTION I
BOARD SUMMARY

- **Funding Ratio:** This is the ratio of the System's AVA to AL. The funding ratio decreased from 55.0% as of July 1, 2008 to **45.0% as of July 1, 2009** due to the asset losses and the interest rate assumption change.
- **Minimum Municipal Obligation (MMO):** The MMO is the required minimum amount the City must contribute under Pennsylvania State law **before application of amendments** specific to the System. The MMO provided in this report does not reflect possible deferrals of a portion of the MMO, as permitted per Act 44. The MMO increased from \$447.4 million for FY 2010 to **\$569.3 million for FY 2011**.
- **Contribution under the City's Funding Policy:** The recommended beginning-of-year contribution under the City's Funding Policy increased from \$545.6 million for FY 2010* based upon actual FY 2010 payroll to an estimated **\$682.3 million for FY 2011**.

Table I-1 Key Results (\$ thousands)		
Valuation Date	7/1/2009	7/1/2008
Unfunded Actuarial Liability	\$ 4,932,932	\$ 3,778,657
Funding Ratio	45.0%	55.0%
Fiscal Year	2011	2010
Minimum Municipal Obligation	\$ 569,290	\$ 447,446
City's Funding Policy Contribution	\$ 682,335	\$ 545,641

*The City's funding contribution for FY 2010 was updated based upon the actual payroll of \$1,463.3 million (provided as pay rates in the data) as of July 1, 2009, which is used to estimate the beginning of year FY 2010 payroll. In the July 1, 2008 actuarial valuation report, the estimated FY 2010 payroll was \$1,514.8 million based upon July 1, 2008 pay rates, which was used to estimate the FY 2010 funding contribution of \$548.8 million.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

B. Current Financial Condition

On the following pages, we summarize the key results of the July 1, 2009 valuation and how they compare to the results from the July 1, 2008 valuation.

1. City Membership:

As shown in Table I-2 below, total membership in the Retirement System decreased by 0.3% from 2008 to 2009

Table I-2 Membership Total				
	July 1, 2009		July 1, 2008	% Change
Actives	28,632		29,215	-2.0%
Terminated Vesteds	1,336		1,263	5.8%
Disabled	4,288		4,349	-1.4%
Retirees	21,214		20,898	1.5%
Beneficiaries	8,554		8,510	0.5%
DROP	1,638		1,648	-0.6%
Total City Members	65,662		65,883	-0.3%
Annual Salaries	\$ 1,463,259,769	\$	1,456,520,491	0.5%
Average Salary per Active Member	\$ 51,106	\$	49,855	2.5%
Annual Retirement Allowances	\$ 605,992,742	\$	585,670,639	3.5%
Average Retirement Allowance	\$ 17,794	\$	17,350	2.6%

A significant result is that the active participant population decreased 2.0% during the 2008 – 2009 plan years while the inactive population (excluding the DROP participants) increased 1%. Furthermore, the average salary per active member increased by only 2.5% during the plan year, which is significantly below the assumed 5.0% salary scale. Due to the decrease in the active participant population, the total payroll growth was lower than expected at 0.5% versus the 4% payroll growth assumption. Annual retirement allowances continued to increase by 3.5% this year.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

2. City Assets and Liabilities

Table I-3 presents a comparison between the July 1, 2009 and July 1, 2008 System assets, liabilities, UAL, and funding ratios. The Funding Ratio decreased materially from 55.0% as of July 1, 2008 to **45.0%** as of July 1, 2009 due to the decline in assets and increase in liabilities as a function of the change in the interest assumption from 8.75% to 8.25% effective July 1, 2009.

Table I-3 Assets and Liabilities (\$ thousands)				
	July 1, 2009	July 1, 2008	% Change	
Actuarial Liabilities by Membership:				
Actives	\$ 3,164,583	\$ 2,946,646		7.4%
Terminated Vesteds	111,107	100,163		10.9%
Disabled	642,177	610,402		5.2%
Retirees	3,868,581	3,627,513		6.6%
Beneficiaries	493,044	460,275		7.1%
DROP	689,988	652,392		5.8%
Non-Vested Refunds	5,565	4,829		15.3%
Total Actuarial Liability	\$ 8,975,045	\$ 8,402,219		6.8%
Market Value of Assets (net of PAF)*	\$ 3,368,427	\$ 4,383,545		-23.2%
Actuarial Value of Assets (net of PAF)*	\$ 4,042,113	\$ 4,623,562		-12.6%
Unfunded Actuarial Liability	\$ 4,932,932	\$ 3,778,657		30.5%
Funding Ratio	45.0%	55.0%		-10.0%

** 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 value of assets (net of the Pension Adjustment Fund (PAF)) decreased by 23.2%. For the actuarial value of assets, the experience gains and losses are smoothed over future years, which yielded an initial increase in the preliminary actuarial value of assets of 1.5%. However, the final actuarial of assets is limited by the 20% corridor around the market value of assets, prohibiting the use of an actuarial asset value that is 20% more or less than the market value, which caused the final actuarial value of assets to decrease by 12.6% over the prior year.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

3. Components of UAL Change between July 1, 2008 and July 1, 2009:

The Retirement System's unfunded actuarial liability increased by \$1,154.2 million, from \$3,778.7 million as of July 1, 2008 to \$4,932.9 million as of July 1, 2009. Table I-4 below presents the specific components of this change in the UAL based upon expected MMO contributions.

The System experienced an \$822.4 million investment loss based upon the actuarial value of assets and a \$10.2 million liability loss. There was also a \$384.4 million liability increase due to the assumption change of decreasing the interest rate from 8.75% to 8.25%. Actual FY 2009 contributions created a \$2.4 million gain when compared to the MMO expected contributions which was offset by a \$4.0 million loss due to the one year deferral of gains and losses under the MMO contribution method.

Table I-4 Change in Unfunded Actuarial Liability (\$ millions)		
Experience		
1. UAL change due to investment (gain)/loss	\$	822.4
2. UAL change due to overall liability (gain)/loss		10.2
Contributions		
3. UAL change to difference in benefit accruals, MMO contributions, and timing	\$	(2.4)
4. UAL change due to one-year delay in MMO contributions		4.0
Assumption Change		
5. UAL change due to assumption change	\$	384.4
Total		
6. Total net overall change: sum 1 through 5	\$	1,218.6
7. Expected change in UAL		(64.4)
8. Total unexpected increase/(decrease) in UAL: 6 + 7	\$	1,154.2

The \$10.2 million liability loss is attributable to the following:

- \$4.3 million demographic gain due to the decreased active population and average pay increasing less than expected.
- \$14.5 million loss due to retirees

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

4. Contributions:

The contribution under the City's Funding Policy for Fiscal Year (FY) 2010 was originally estimated to be \$548.8 million based upon estimated FY 2010 payroll. Using updated payroll the FY 2010 contribution is \$545.6. For Fiscal Year 2011, contributions increased by 7.55% of payroll, from 37.29% to 44.84%. In dollar terms, the contributions under the City's Funding Policy increased from \$545.6 million to \$682.3 million, a \$136.7 million increase. The FY 2011 contributions under the City's Funding Policy will be updated next year when the FY 2011 payroll is available. All contributions for the City's Funding Policy are provided as of the beginning of the year.

The Minimum Municipal Obligation for Fiscal Year 2011 measured as of the beginning of the year increased by 7.87% of payroll, from 29.54% to 37.41%. In dollar terms, the required beginning of year contribution increased from \$447.4 million to \$569.3 million, a \$121.9 million increase.

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

Table I-5 Contributions (\$ thousands)				
Fiscal Year	2011	% of Pay	2010	% of Pay
City's Funding Policy*				
Estimated FY Payroll	\$ 1,521,790		\$ 1,463,260	**
Normal Cost (with Expenses)	\$ 149,473	9.82%	\$ 130,827	8.94%
Employee Contributions	(52,840)	3.47%	(49,804)	3.40%
City Normal Cost	\$ 96,633	6.35%	\$ 81,023	5.54%
Amortization Payment	585,702	38.49%	464,619	31.75%
City's Funding Policy	\$ 682,335	44.84%	\$ 545,642	37.29%
Minimum Municipal Obligation				
Estimated FY Payroll	\$ 1,521,790		\$ 1,514,781	
Normal Cost (with Expenses)	\$ 149,473	9.82%	\$ 135,724	8.96%
Employee Contributions	(52,840)	3.47%	(51,558)	3.40%
City Normal Cost	\$ 96,633	6.35%	\$ 84,166	5.56%
Amortization Payment	472,657	31.06%	363,280	23.98%
Minimum Municipal Obligation	\$ 569,290	37.41%	\$ 447,446	29.54%

* Assuming beginning-of-year payment.

** FY 2010 payroll for the City's Funding Policy reflects based the July 1, 2009 pay rates and will be finalized when the FY 2010 payroll is available. 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, 2009 ACTUARIAL VALUATION**

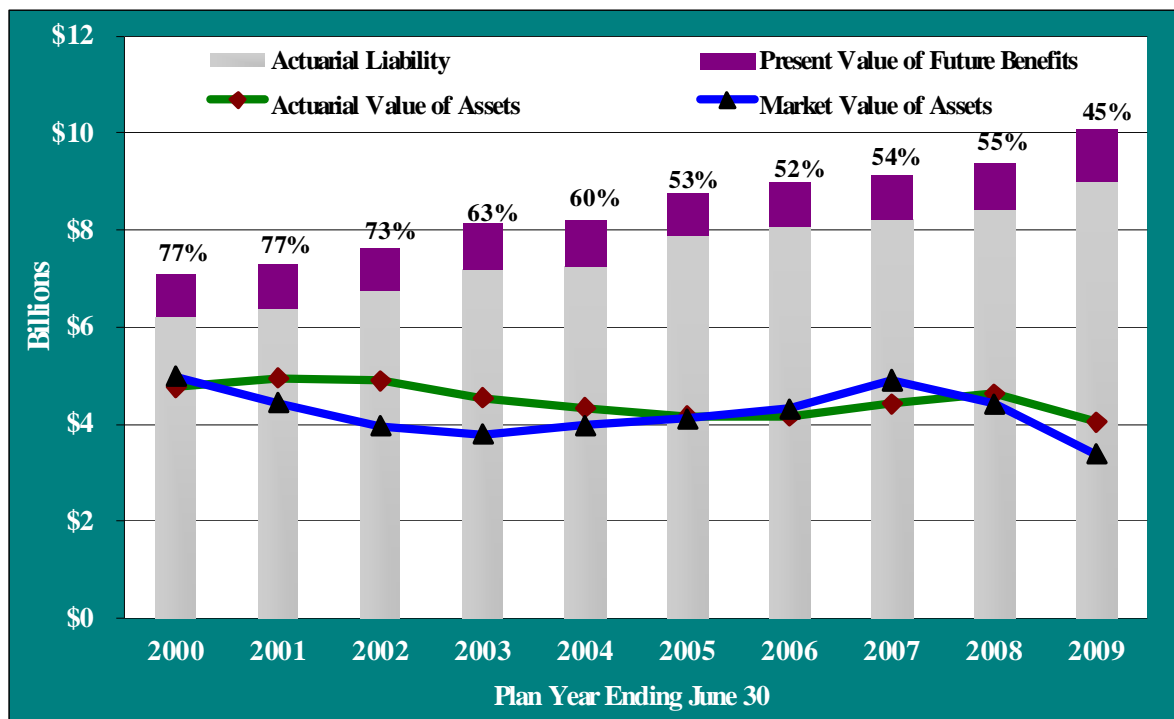
**SECTION I
BOARD SUMMARY**

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 2000.

City of Philadelphia Assets* and Liabilities – 2000 to 2009



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

The System's funding ratio has declined significantly since 2000. In 2007 and 2008, the funding ratio increased for the first time since 2000, primarily due to strong asset performance and the delayed asset loss recognition methodology used for the actuarial value of assets. In 2009, the funding ratio declined by 10% due to the investment losses during the year and the change in the actuarial liability interest rate assumption.

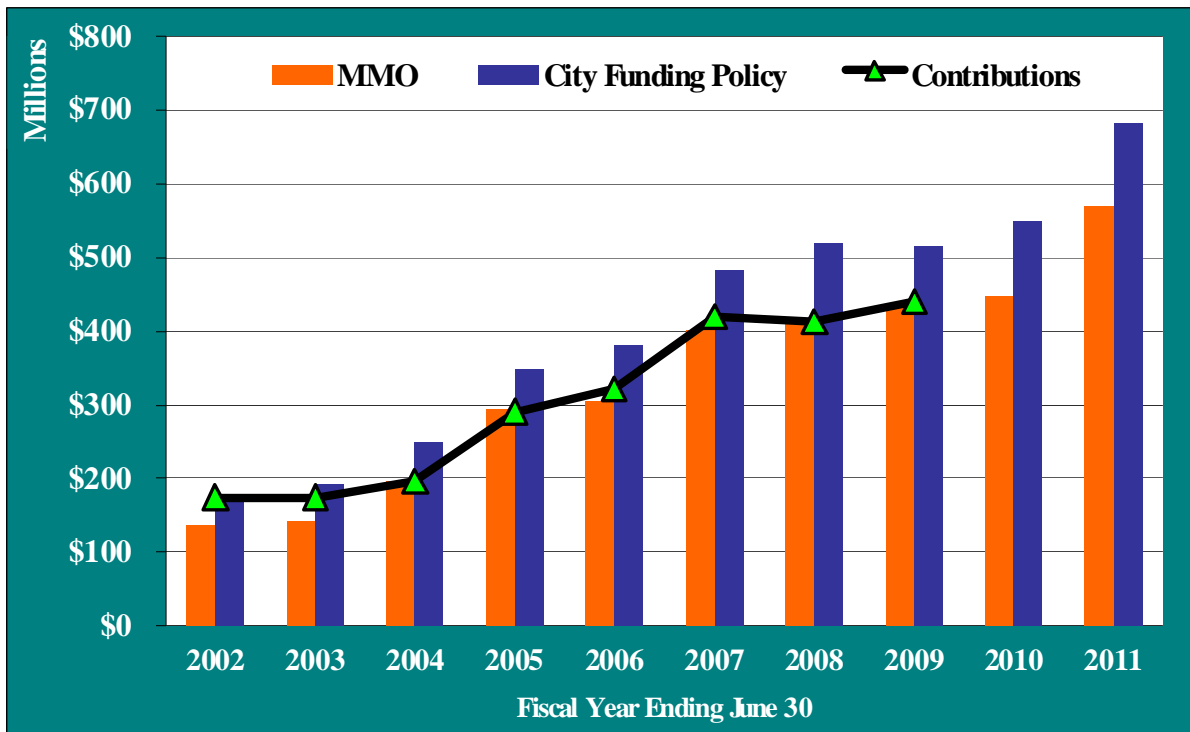
**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

This historic trend emphasizing the funded status has continued to decline increasing the risk of insolvency if contributions coupled with more stable and favorable returns relative to the long term assumption are not realized in the near future.

In this next chart 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 2002. 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 2010 and 2011.

City of Philadelphia Contributions for Fiscal Years 2002-2011



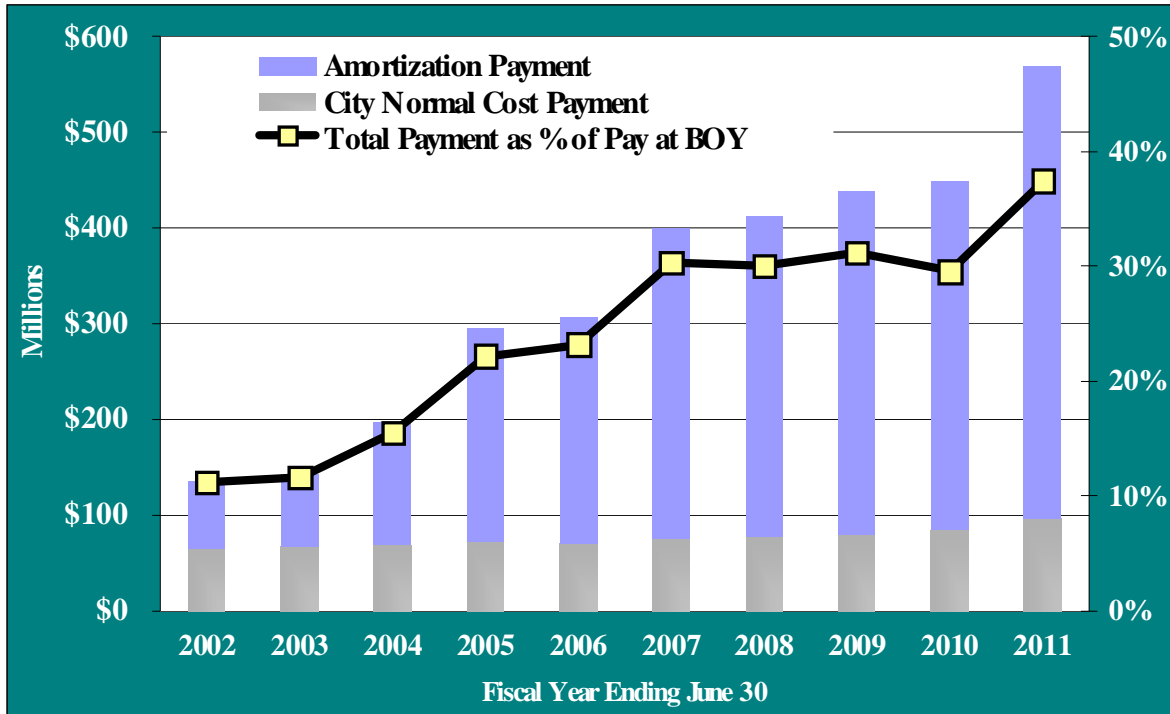
The key trend illustrated in this chart is the rapid escalation in all three measures starting in FY 2004 due in part to investment losses and in part to the City's funding decision. Since 2004 the City began to make contributions based on the MMO rather than the Funding Policy which has resulted in the Funding Policy amounts diverging more from the MMO. This is especially evident for FY 2011 contributions, where the City's Funding Policy contributions increased about \$137 million. In addition, the MMO and City's Funding Policy amounts for FY 2011 increased significantly due to the investment losses and the change in the actuarial liability investment rate assumption. Possible contribution deferrals provided for under Act 44 for FY 2010 are not reflected above.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

The chart below shows historical amortization and City normal cost payments under the MMO. Also shown is the total beginning-of-year payment as a percentage of payroll based on the values in the legend on the right versus the line graph, for example in 2011 the City cost is expected to be just under 40% of payroll.

MMO Contributions by Source for Fiscal Years 2002-2010



The chart illustrates that the City normal cost payment has remained relatively level over the period shown except for FY 2011 where there is a small increase due to the change in the investment rate assumptions. The amortization payment to pay off the unfunded actuarial liability has increased from just under \$100 million for FY 2002 to just under \$500 million for FY 2011. The total payment as a percentage of payroll is now nearly 37%, up from about 11% in FY 2002. Both the amortization payment and the total payment as a percentage of payroll increased from the amount due in FY 2010 to the amount due in FY 2011.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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, 2009 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 and the implications to the System with and without the application of the permitted rolling amortization when the funded status reaches 70%. Our illustrations assume the provisions of Act 205 as amended by Act 44 remain in force during the projection period without consideration of the sunset provisions. Possible deferred contributions are not reflected in these projections based on the understanding that the City will be obligated to contribute interest on the outstanding deferrals, making the transaction relatively cost neutral as measured against the actuarial assumption.

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

- 1) Assuming 8.25% returns each and every year, and
- 2) Assuming returns shown in the table below. These are rates of return which vary each year but over the projection period equal on average the assumed 8.25% 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.

Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Return	2.5%	7.5%	11.5%	15.5%	13.5%	10.5%	7.5%	5.5%	0.5%	-4.5%
Fiscal Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Return	-0.5%	3.5%	6.5%	7.5%	11.5%	15.5%	19.5%	15.5%	11.0%	8.30%

In reviewing each of these projections, it is the future trends versus the actual values that are important to consider in your deliberation of the risks of the System and the potential volatility of future funding ratios and City contribution levels.

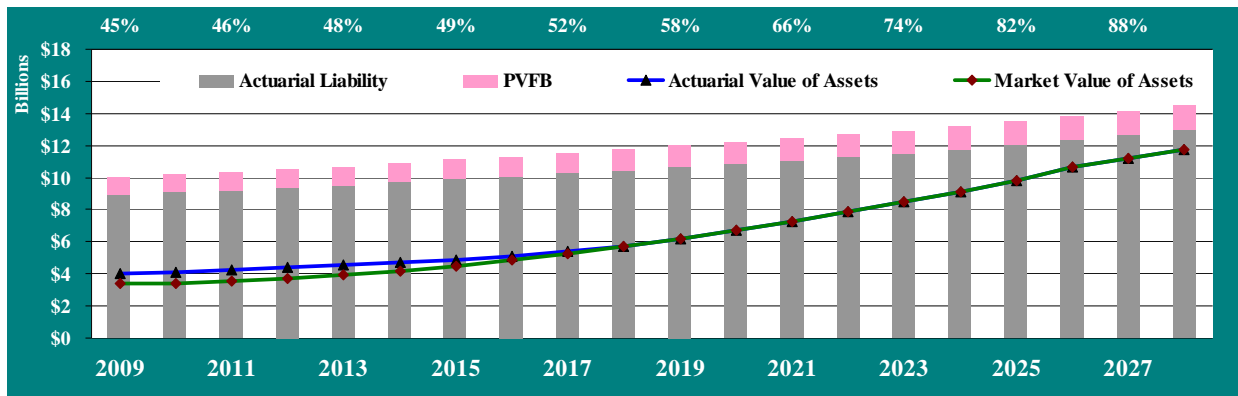
**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

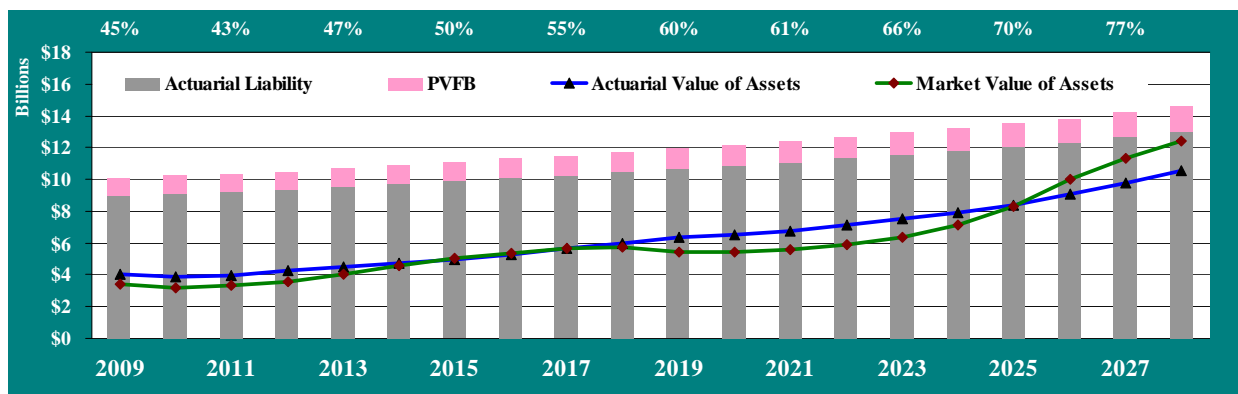
Projection Set 1: Assets* and Liabilities

The two charts below show asset measures (green and blue lines) compared to liabilities (grey and pink bars). At the top of each chart is the progression of the System's funding ratio which compares the actuarial value of assets (green lines) to the actuarial liability (grey bars). The most revealing insight from these two charts is how varying investment returns impact the System's funding ratio. In both projections you can see that we applied the 10 year asset smoothing method adopted by the Board. This has significant influence on the smoothing of assets against market value volatility.

**Chart 1: Projection of Assets and Liabilities, 8.25% return each year and
City makes contributions based on MMO**



**Chart 2: Projection of Assets and Liabilities, varying returns averaging 8.25% and
City makes contributions based on MMO**



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

Chart 2 demonstrates that if the fund can achieve a long-term return rate of 8.25%, 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 fund pays out more than it receives in a year when returns are

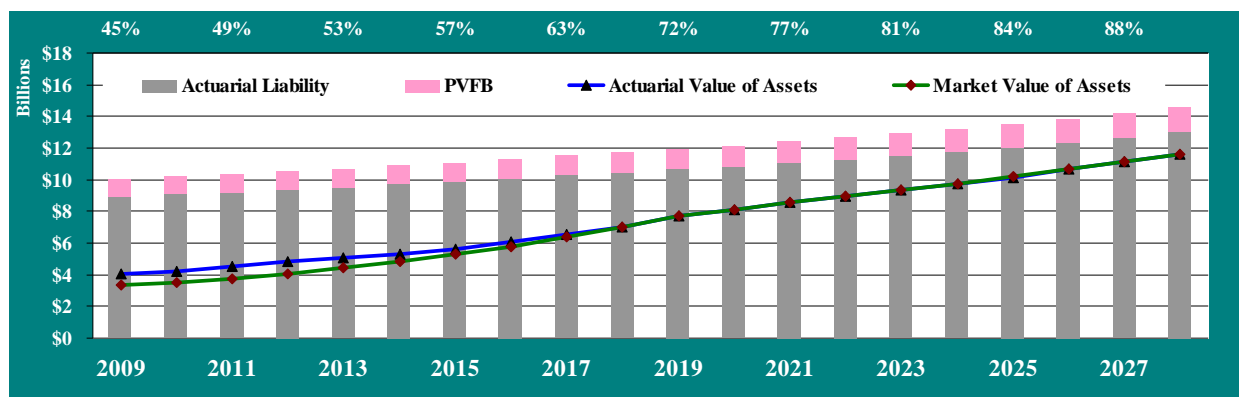
**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION I
BOARD SUMMARY**

below the assumption, the assets that get paid out are no longer in the fund during subsequent years of market recovery.

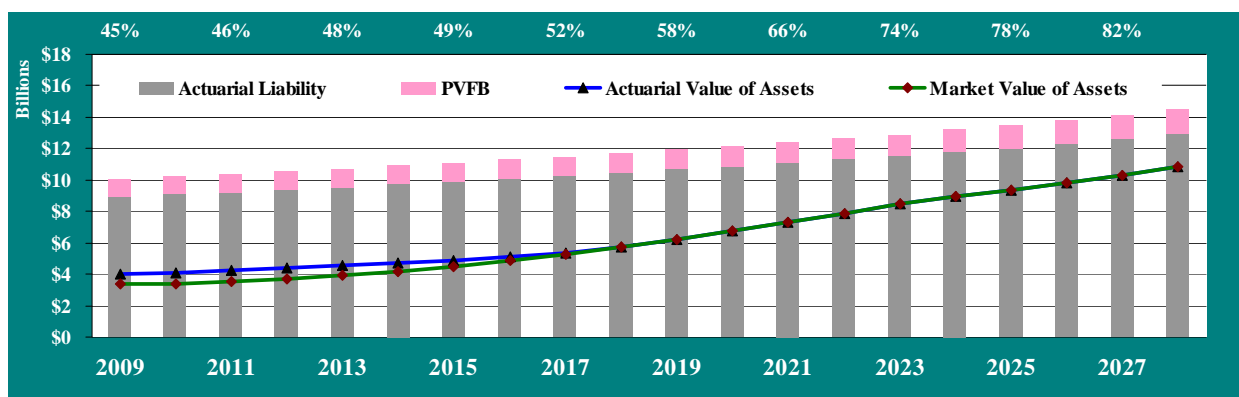
It is also important to consider the fact that as long as the System is significantly underfunded, the financial burden on the City will remain relatively high and the only reason both of these projections show gradual improvement is because the contributions will be adjusted to cover any cost volatility.

Chart 3: Projection of Assets and Liabilities, 8.25% return each year, and the City makes contributions based on the City's Funding Policy



In the above scenario where the City's Funding Policy is contributed every year, the System reaches a funded ratio of 88% at the end of the projection period (similar to the projections on the prior page in Chart 1). Also, prior to 2027 the funding ratio is higher than the ratio achieved each year if the MMO contributions are made, because of the higher assumed contributions.

Chart 4: Projection of Assets and Liabilities, under the MMO, 8.25% return each year, and application of rolling 10 year amortization once the Fund is 70% funded



Under Act 205, which states that if the plan is 70% funded or higher, the City can adopt the policy of annually re-amortizing the unfunded liability over 10 years. Chart 4 is similar to Chart 1, except that once the fund is 70% funded, contributions are made on the basis of 10-year

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

SECTION I
BOARD SUMMARY

rolling amortization. The resulting funding ratio at the end of the projection period is lower than if the MMO was contributed for the entire period (82% versus 88%).

Projection Set 2: Projected City Contribution Rate

The chart below shows that the City's composite contribution rate under the MMO which increases slowly until 2017 after which the MMO decreases slightly until 2026 when the initial unfunded is paid off and the contribution rate drops to less than 20% of pay roll. The unfunded actuarial liability is not paid off during this projection period; thus the projected contributions never revert to the normal cost rate. The decrease in 2019 for the City's Funding Policy rate is due to the payment in full of the initial unfunded liability. This projection assumes all actuarial assumptions are met, including the 8.25% anticipated investment return assumption, and the MMO contributions are made each year.

Chart 5: Projection of City Contributions, 8.25% return each year

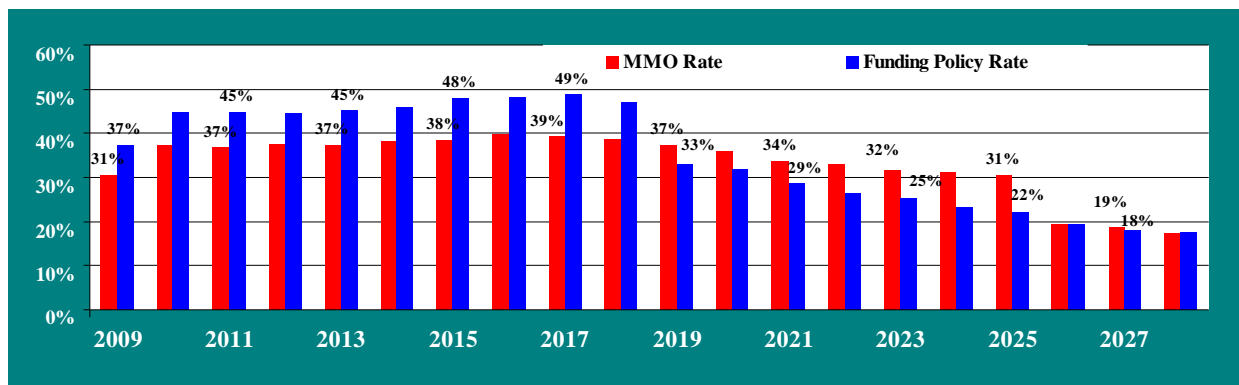
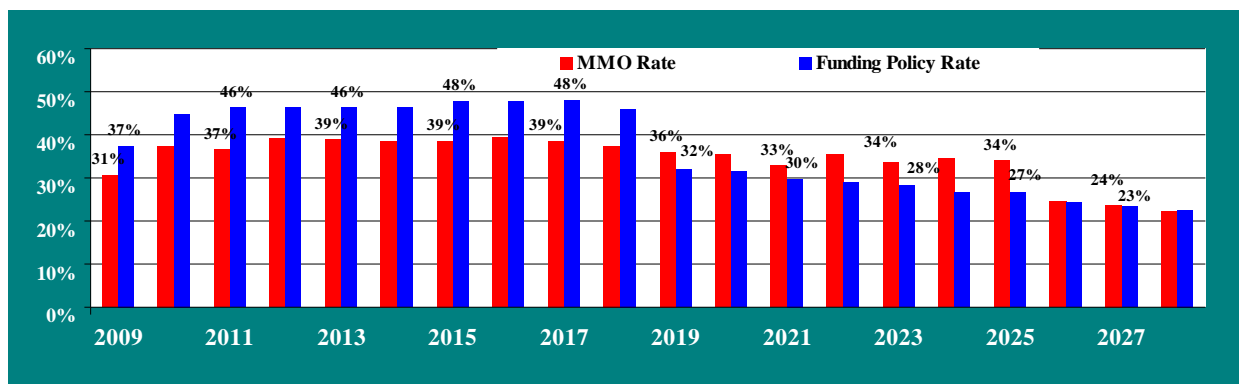


Chart 6: Projection of City Contributions, varying returns averaging 8.25%



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

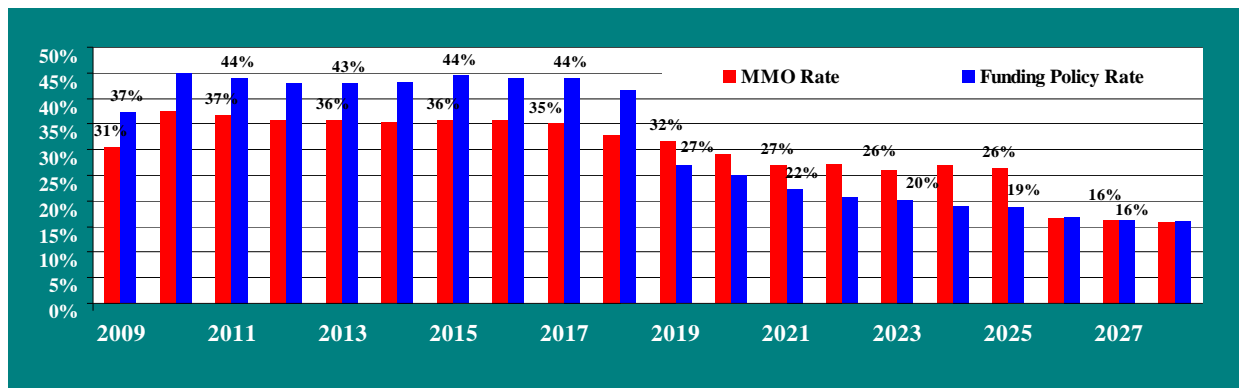
CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

SECTION I
BOARD SUMMARY

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.

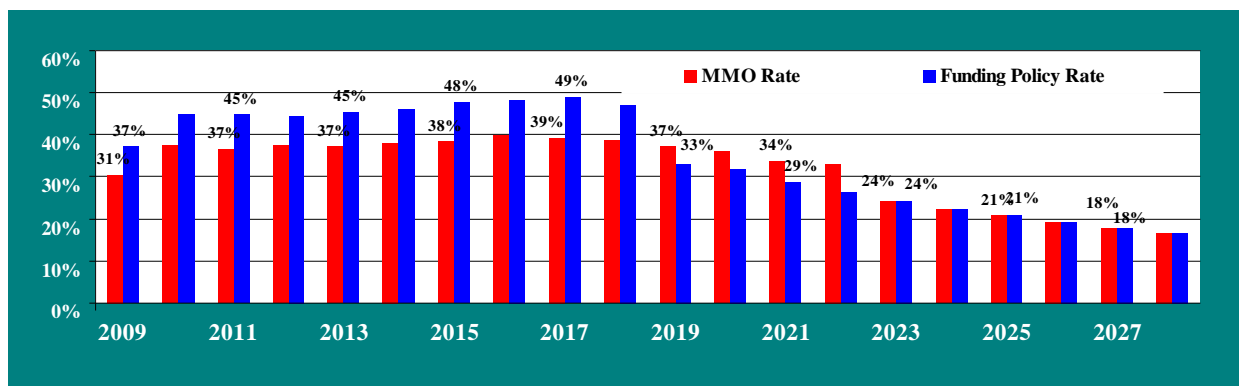
**Chart 7: Projection of City Contributions, 8.25% return each year,
and the City makes contributions based on the City's Funding Policy**

This chart shows the expected future contribution if the City's Funding Policy contributions are made each year. Since larger contributions are assumed to be made each year up front, projected contributions are expected to steadily decline when compared to Chart 5.



**Chart 8: Projection of City Contributions, 8.25% return each year,
and application of rolling 10-year amortization once the Fund is 70% funded**

Chart 8 is similar to Chart 5, except that once the fund is 70% funded contributions are made using a 10-year rolling amortization (as permitted under Act 205). This creates a smoother funding requirement than continued funding using the various amortization bases. The following chart illustrates how this provision could affect the future funding requirements.



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

The Retirement System uses and discloses two different asset measurements 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 PAF which is not available for funding purposes. The actuarial value of assets is a value that smoothes annual investment returns over multiple years to reduce annual investment volatility, and is used in determining contribution levels. By definition, the actuarial value of assets does not include the PAF.

On the following pages we present detailed information on System assets:

- Disclosure of assets at July 1, 2008 and July 1, 2009,
- 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, 2009, and
- Disclosure of investment performance for the year.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

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 marketplace. Because these fluctuations would cause volatility in employer contributions, an actuarial value of assets is developed. Table II-1 below discloses the market value by asset class as of July 1, 2008 and July 1, 2009. Table II-2 discloses the System’s net cash flows for the plan year beginning July 1, 2008 and ending June 30, 2009. Table II-3 discloses Fiscal 2009 City contributions.

Table II-1			
Statement of Assets at Market Value*			
	7/1/2009		7/1/2008
<u>Assets</u>			
Cash	\$	33,500,864	\$ 24,069,063
Investments		3,375,757,790	4,458,339,485
Securities Lending		420,344,216	776,255,428
Accounts Receivable		5,126,834	4,456,969
Due from Brokers		732,359,181	93,212,478
Interest and Dividends Receivable		8,133,823	8,573,166
Due from Other Governmental Units		4,756,950	4,797,893
Total Assets	\$	4,579,979,658	\$ 5,369,704,482
<u>Liabilities</u>			
Vouchers Payable	\$	20,182	\$ 288,683
Accounts Payable		3,084,833	3,492,879
Salaries and Wages Payable		152,111	118,394
Due on Securities Lending		420,344,216	776,255,428
Due to Brokers		754,826,242	161,302,676
Accrued Expenses		1,621,250	974,220
Deferred Revenue		2,644,542	2,475,207
Monies Held in Escrow		372,708	377,392
Allowance for Unrealized Loss		20,581,763	-
Other Liabilities		564,735	344,256
Total Liabilities	\$	1,204,212,582	\$ 945,629,135
Net Assets	\$	3,375,767,076	\$ 4,424,075,347

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

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

SECTION II
ASSETS

B. System Cash Flows for the Year July 1, 2008 through July 1, 2009

Table II-2 Changes in Market Values*		
Value of Assets – July 1, 2008		\$ 4,424,075,347
<u>Additions</u>		
Contributions:		
Employer Contributions	\$ 455,389,006	
Employee Contributions	54,022,578	
Total Contributions		\$ 509,411,584
Investment Income:		
Gain/(Loss) from Sale of Investments	\$ (912,254,505)	
Interest and Dividends	75,635,329	
Total Investment Income	\$ (836,619,176)	
Investment Activity Expenses:		
Investment Expenses	\$ (12,758,521)	
Total Investment Activity Expenses	\$ (12,758,521)	
Securities Lending Activities:		
Securities Lending Income	\$ 12,342,274	
Securities Lending Expenses	(27,244,638)	
Net Income from Securities Lending Activities	\$ (14,902,364)	
Miscellaneous Operating Revenues	\$ 1,014,880	
Net Investment Income		\$ (863,265,181)
Total Additions		\$ (353,853,597)
<u>Deductions</u>		
Administrative Expenses	\$ (8,581,800)	
Withdrawal Refunds	(4,786,213)	
Benefit Payments	(655,973,491)	
PAF Distributions	(25,113,170)	
Total Deductions		\$ (694,454,674)
<u>Total</u>		
Net Increase (Decrease)		\$ (1,048,308,271)
Value of Assets – July 1, 2009		\$ 3,375,767,076

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

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

Table II-3 City Contributions for the Plan Year Ending June 30, 2009		
Cash Received, November 28, 2008	\$	440,003,000
Quasi-Agencies		
Cash Received		15,386,006
Accrued as of June 30, 2009		-
Total	\$	455,389,006

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

C. Actuarial Value of Assets

To determine on-going funding requirements, most pension funds 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 amortized over a ten-year period.

Table II-4 Development of Actuarial Value of Assets as of July 1, 2009					
1. Market Value of Assets as of July 1, 2009				\$	3,375,767,076
2. Pension Adjustment Fund (PAF) as of July 1, 2009 Before Additional Transfers				\$	7,339,818
3. Market Value of Assets Net of Original PAF*				\$	3,368,427,258
4. Deferred Asset Gains/(Losses)					
<u>Plan</u>	<u>Investment</u>	<u>Percent</u>	<u>Percent</u>	<u>Amount</u>	
<u>Year</u>	<u>Gains / (Losses)</u>	<u>Recognized</u>	<u>Deferred</u>	<u>Deferred</u>	
2004	\$ 30,013,180	100%	0%	\$	-
2005	99,429,256	80%	20%		19,885,851
2006	380,531,307	60%	40%		152,212,523
2007	(642,637,544)	40%	60%		(385,582,527)
2008	(1,235,073,412)	10%	90%		(1,111,566,071)
Total				\$	(1,325,050,224)
5. Preliminary Actuarial Value as of July 1, 2009 (5 = 3 - 4)				\$	4,693,477,482
6. Corridor for Actuarial Value					
a. 80% of Market Value Net of PAF				\$	2,694,741,806
b. 120% of Market Value Net of PAF				\$	4,042,112,710
7. Additional PAF Transfer as of July 1, 2009				\$	-
8. Actuarial Value of Assets Net of Final PAF as of July 1, 2009				\$	4,042,112,710
8 = min of 1) 6b or 2) the max of 6a and 5, minus 7					
As a percent of Market Value Net of Final PAF					120.0%
9. Market Value of Assets Net of Final PAF				\$	3,368,427,258

* 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, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

D. Apportionment of Actuarial Value of Assets

The asset apportionment 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, 2009 (\$ thousands)								
	1967 Plan			1987 Plan				
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Total
1. Actuarial Value of Assets as of July 1, 2008	\$ 2,077,364	\$ 892,188	\$ 398,891	\$ 577,444	\$ 13,412	\$ 529,883	\$ 134,380	\$ 4,623,562
2. Transactions During Plan Year July 1, 2008 to June 30, 2009								
a. Contributions								
City and Commonwealth	\$ 201,529	\$ 124,100	\$ 44,553	\$ 35,640	\$ 379	\$ 25,992	\$ 7,810	\$ 440,003
Employees	11,076	4,745	2,153	14,130	152	16,666	5,100	54,022
Quasi-Public Agencies	15,386	-	-	-	-	-	-	15,386
b. Benefit Payments	(365,768)	(193,795)	(83,615)	(4,613)	(1,204)	(5,547)	(1,432)	(655,973)
c. Withdrawals	(938)	(373)	(472)	(1,654)	-	(1,113)	(236)	(4,786)
d. Administrative Expenses	(3,505)	(1,423)	(506)	(2,162)	(5)	(751)	(229)	(8,582)
e. Net Transactions	\$ (142,220)	\$ (66,746)	\$ (37,887)	\$ 41,341	\$ (678)	\$ 35,247	\$ 11,013	\$ (159,930)
3. Total Fund Balance Prior to Allocation of Investment Income [1. + 2e.]	\$ 1,935,144	\$ 825,442	\$ 361,004	\$ 618,785	\$ 12,734	\$ 565,130	\$ 145,393	\$ 4,463,632
4. Investment Income During Plan Year July 1, 2008 to June 30, 2009	\$ 99,646	\$ 42,504	\$ 18,589	\$ 31,863	\$ 656	\$ 29,100	\$ 7,487	\$ 229,845
5. Preliminary Actuarial Value of Assets as of July 1, 2009 [3. + 4.]	\$ 2,034,790	\$ 867,946	\$ 379,593	\$ 650,648	\$ 13,390	\$ 594,230	\$ 152,880	\$ 4,693,477
6. Final Actuarial Value of Assets With Corridor as of July 1, 2009	\$ 1,752,401	\$ 747,491	\$ 326,912	\$ 560,351	\$ 11,532	\$ 511,764	\$ 131,662	\$ 4,042,113

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

E. Development of the Pension Adjustment Fund as of July 1, 2009

The table below provides the funds available for distribution consideration under title §22-311 of the Philadelphia Code. In general, the Pension Adjustment Fund (PAF) provides for enhanced 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 some other increase determined by the Board.

Table II-6 Development of the Pension Adjustment Fund as of July 1, 2009		
1. PAF on July 1, 2008	\$	40,530,613
2. PAF Distribution	\$	(25,113,170)
3. Market Value Asset Return Through June 30, 2009 *		-19.93%
4. PAF on July 1, 2009 Before Additional Transfers** =(1) x [1 + (3)] + (2)	\$	7,339,818
5. Preliminary Actuarial Asset Value Through June 30, 2009	\$	4,693,477,482
6. Actuarial Asset Value Return Through June 30, 2009 ***		5.06%
7. Return in Excess of Investment Assumption Plus 1.0%, Limited to 5.0% =(6) - [8.75% + 1.00%]		0.00%
8. Additional Transfer as of July 1, 2009 =50% of (7) x (5)	\$	-
9. Total PAF as of July 1, 2009 = (4) + (8)	\$	7,339,818

* Market Value Asset Return including the PAF

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

*** Asset return based upon the Preliminary actuarial asset value which reflects the 10 year smoothing of gains/losses prospectively as of July 1, 2009. Fund Counsel reviewing the Philadelphia code for this change.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

F. Investment Performance

The market value of assets internal rate of return (net of PAF) was -19.9% for the year ending June 30, 2009. This is compared to an assumed return of 8.75%. The return for the year ending June 30, 2008 was -4.5%.

On an actuarial value of assets basis (net of PAF), the return for FY 2009 was -9.3%. This return produced an overall investment loss of \$822.4 million for the year ending June 30, 2009. Last year the actuarial value basis returned 10.1%.

Table II-7 Annual Rates of Return				
Year Ending June 30,	Market Value *	Actuarial Value *	Total Return Standard & Poor's 500 Index	Barclays Aggregate Bond Index**
1994	1.6%	7.8%	1.3%	-1.5%
1995	11.7%	7.8%	26.1%	12.8%
1996	15.1%	10.1%	26.0%	4.7%
1997	18.3%	12.2%	34.6%	8.2%
1998	14.3%	13.1%	30.2%	10.5%
1999	10.0%	13.1%	22.7%	3.1%
2000	9.6%	11.1%	7.3%	4.6%
2001	-6.0%	8.3%	-14.8%	11.2%
2002	-5.8%	3.4%	-18.0%	8.6%
2003	1.8%	-2.2%	0.3%	10.4%
2004	16.6%	4.6%	19.1%	0.3%
2005	9.9%	1.8%	6.3%	6.8%
2006	11.3%	6.1%	8.6%	-0.8%
2007	17.0%	10.7%	20.6%	6.1%
2008	-4.5%	10.1%	-13.1%	7.1%
2009	-19.9%	-9.3%	-26.2%	6.0%

* Net of PAF

** Formerly Lehman Brothers Aggregate Bond Index

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION II
ASSETS**

G. Asset Gain/(Loss)

There was a \$1,235.1 million investment loss on market value of assets when compared to the expected as of July 1, 2009. Table II-8 reconciles the 2009 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. There was no PAF transfer amount as of July 1, 2009.

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, 2008	\$ 4,383,544,734	\$ 40,530,613	\$ 4,424,075,347
2. Transactions During Plan Year July 1, 2008 to June 30, 2009			
a. Contributions			
City and Commonwealth	\$ 440,003,000	\$ -	\$ 440,003,000
Employees	54,022,578	-	54,022,578
Quasi-Public Agencies	15,386,006	-	15,386,006
b. Benefit Payments	(655,973,491)	(25,113,170) ¹	(681,086,661)
c. Withdrawals	(4,786,213)	-	(4,786,213)
d. Administrative Expenses	<u>(8,581,800)</u>	<u>-</u>	<u>(8,581,800)</u>
e. Net Transactions	\$ (159,929,920)	\$ (25,113,170)	\$ (185,043,090)
3. Expected Investment Income From July 1, 2008 to June 30, 2009	\$ 379,885,856	\$ (8,077,625) ²	\$ 371,808,231
4. PAF transfer at July 1, 2009	\$ -	\$ -	\$ -
5. Expected Market Value of Assets as of July 1, 2009 [1. + 2.e. + 3. + 4]	\$ 4,603,500,670	\$ 7,339,818	\$ 4,610,840,488
6. Market Value of Assets as of July 1, 2009	\$ 3,368,427,258	\$ 7,339,818	\$ 3,375,767,076
7. Investment Gain/(Loss) [6. - 5.]	\$ (1,235,073,412)	\$ -	\$ (1,235,073,412)

¹ This is the amount of distributions made out of the Pensions Adjustment Fund during the Plan Year

² 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, 2009 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, 2008 and July 1, 2009
- 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, 2010.

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 pay off 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.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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, 2009, and July 1, 2008, for the Retirement System.

Table III-1 Disclosure of Liabilities (\$ thousands)		
	July 1, 2009	July 1, 2008
Present Value of Future Benefits		
Actives	\$ 4,254,849	\$ 3,910,611
Terminated Vesteds	111,107	100,163
Disabled	642,177	610,402
Retirees	3,868,581	3,627,513
Beneficiaries	493,044	460,275
DROP	689,988	652,392
Non-Vested Refunds	5,565	4,829
Total City PVFB	\$ 10,065,311	\$ 9,366,185
Market Value of Assets	(3,375,767)	(4,424,075)
Present Value Future Member Contrib.	(362,000)	(352,278)
City's Unfunded Future Obligation	\$ 6,327,544	\$ 4,589,831
Actuarial Liability		
Actives	\$ 3,164,583	\$ 2,946,645
Terminated Vesteds	111,107	100,163
Disabled	642,177	610,402
Retirees	3,868,581	3,627,513
Beneficiaries	493,044	460,275
DROP	689,988	652,392
Non-Vested Refunds	5,565	4,829
Total City AL	\$ 8,975,045	\$ 8,402,219
Actuarial Value of Assets	(4,042,113)	(4,623,562)
Unfunded Actuarial Liability	\$ 4,932,932	\$ 3,778,657

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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, 2009 (\$ thousands)								
	1967 Plan			1987 Plan				Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	
Present Value of Future Benefits								
Actives	\$ 1,299,125	\$ 458,173	\$ 179,259	\$ 971,777	\$ 9,204	\$ 1,038,880	\$ 298,432	\$ 4,254,849
Terminated Vesteds	74,008	144	-	26,428	-	8,067	2,460	111,107
Disabled	234,638	244,349	62,401	23,084	-	64,363	13,341	642,177
Retirees	2,088,496	1,201,761	496,301	61,310	4,204	11,695	4,813	3,868,581
Beneficiaries	281,579	138,779	53,595	8,285	465	7,430	2,912	493,044
DROP	442,290	112,111	96,044	21,391	8,177	5,914	4,060	689,988
Non-Vested Refunds	1,786	161	54	2,938	9	515	103	5,565
Total PVFB	\$ 4,421,922	\$ 2,155,478	\$ 887,654	\$ 1,115,213	\$ 22,059	\$ 1,136,864	\$ 326,121	\$ 10,065,311
Actuarial Liability								
Actives	\$ 1,148,690	\$ 399,695	\$ 157,983	\$ 658,206	\$ 8,034	\$ 623,310	\$ 168,666	\$ 3,164,583
Terminated Vesteds	74,008	144	-	26,428	-	8,067	2,460	111,107
Disabled	234,638	244,349	62,401	23,084	-	64,363	13,341	642,177
Retirees	2,088,496	1,201,761	496,301	61,310	4,204	11,695	4,813	3,868,581
Beneficiaries	281,579	138,779	53,595	8,285	465	7,430	2,912	493,044
DROP	442,290	112,111	96,044	21,391	8,177	5,914	4,060	689,988
Non-Vested Refunds	1,786	161	54	2,938	9	515	103	5,565
Total AL	\$ 4,271,487	\$ 2,097,000	\$ 866,378	\$ 801,642	\$ 20,889	\$ 721,294	\$ 196,355	\$ 8,975,045
Actuarial Value of Assets	(1,752,401)	(747,491)	(326,912)	(560,351)	(11,532)	(511,764)	(131,662)	(4,042,113)
Unfunded Actuarial Liability	\$ 2,519,086	\$ 1,349,509	\$ 539,466	\$ 241,291	\$ 9,357	\$ 209,530	\$ 64,693	\$ 4,932,932
Funding %	41%	36%	38%	70%	55%	71%	67%	45%

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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, 2009 (\$ thousands)								
	1967 Plan			1987 Plan				Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	
Retirement	\$ 15,515	\$ 9,214	\$ 3,630	\$ 23,653	\$ 111	\$ 32,720	\$ 10,583	\$ 95,426
Death	934	377	163	2,092	13	1,361	465	5,405
Disability	2,159	775	281	4,757	17	3,430	959	12,377
Termination	5,396	753	275	12,517	92	2,753	730	22,517
Administrative Expenses	3,212	1,311	463	2,063	5	730	216	8,000
Total Normal Cost	27,217	12,429	4,812	45,082	237	40,993	12,953	143,724
Expected Employee Contributions	\$ 9,729	\$ 4,302	\$ 1,677	\$ 13,552	\$ 145	\$ 16,535	\$ 4,868	\$ 50,808
City Normal Cost	\$ 17,488	\$ 8,127	\$ 3,135	\$ 31,530	\$ 92	\$ 24,458	\$ 8,085	\$ 92,915
Current Annual Payroll	\$ 259,441	\$ 71,698	\$ 27,953	\$ 674,228	\$ 1,892	\$ 330,694	\$ 97,353	\$ 1,463,260
City Normal Cost as % of Pay, Beginning of Year Payment	6.741%	11.336%	11.215%	4.676%	4.862%	7.396%	8.305%	6.350%
City Normal Cost as % of Pay, End of Year Payment	7.297%	12.271%	12.141%	5.062%	5.263%	8.006%	8.990%	6.874%

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION III
LIABILITIES**

Table III-4 shows changes in the unfunded actuarial liability from July 1, 2008 to July 1, 2009 due to actuarial experience and the interest rate assumption change; there were no plan changes. It also shows the development of the expected unfunded actuarial liability from July 1, 2009 to July 1, 2010 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 D. 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, 2010 (\$ thousands)								
	1967 Plan			1987 Plan				Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 1,969,874	\$1,079,629	\$ 423,616	\$ 87,946	\$ 4,371	\$ 50,026	\$ 20,189	\$3,635,652
2. Changes in UAL due to								
a. Actuarial Experience	\$ 385,427	\$ 194,806	\$ 85,935	\$ 98,213	\$ 4,269	\$ 112,331	\$ 31,859	\$ 912,840
b. Assumption Changes	163,785	75,074	29,915	55,132	717	47,173	12,645	384,442
c. Active Plan Changes	-	-	-	-	-	-	-	-
d. Inactive Plan Changes	-	-	-	-	-	-	-	-
e. Subtotal	\$ 549,212	\$ 269,880	\$ 115,850	\$ 153,345	\$ 4,986	\$ 159,504	\$ 44,504	\$1,297,281
3. Actual UAL as of July 1, 2009 [1. + 2e.]	\$ 2,519,086	\$1,349,509	\$ 539,466	\$ 241,291	\$ 9,357	\$ 209,530	\$ 64,693	\$4,932,932
4. Expected Changes in UAL from July 1, 2009 to July 1, 2010 due to								
a. Interest on Changes in UAL	\$ 45,310	\$ 22,265	\$ 9,558	\$ 12,651	\$ 411	\$ 13,159	\$ 3,672	\$ 107,026
b. FY 2010 Amortization Contribution	(104,177)	(66,491)	(21,154)	(1,309)	(121)	119	8	(193,125)
c. Subtotal	\$ (58,867)	\$ (44,225)	\$ (11,597)	\$ 11,342	\$ 291	\$ 13,278	\$ 3,680	\$ (86,099)
5. Expected UAL as of July 1, 2010 [3. + 4c.]	\$ 2,460,219	\$1,305,284	\$ 527,869	\$ 252,633	\$ 9,648	\$ 222,808	\$ 68,373	\$4,846,833

Note: Numbers may not add due to rounding.

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contribution is needed based upon the funding method of the plan. For an actuarial funding method to be effective it should result in a pattern of contributions that is both stable and predictable.

The actuarial funding method is the Entry Age Normal (EAN) cost method used to determine the normal cost and the unfunded actuarial liability. The normal cost is based upon the normal cost rate determined by 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 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. Finally, the 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 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. Under both 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 amortization periods. The amortization periods are different under the MMO and the City's Funding Policy, which is outlined in more detail in Appendix B Section B.

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, 2009 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, 2010. Table IV-2 shows the quasi-agency funding rates as a percent of payroll.

Table IV-1 Employee Contribution Rates for the Plan Year Beginning July 1, 2010				
	Municipal*	Elected	Police	Fire
1967 Plan	3.75%	N/A	6.00%	6.00%
Plan 87	2.01%	7.68%	5.00%	5.00%

** For Municipal 1967 plan, employee contributions are 6% for pay in excess of the social security wage base*

This table isolates the City Funding Policy requirements for the Quasi Agencies that participate in the System based upon rates used to determine the 1967 Municipal cost.

Table IV-2 Quasi Agency Funding Rate as a Percent of Payroll		
Valuation Date	July 1, 2009	July 1, 2008
Fiscal Year	2011	2010
1. Normal Cost Rate	7.297%	6.135%
2. Amortization Rate under the City's Funding Policy	<u>125.124%</u>	<u>93.492%</u>
3. Total Year-End Rate [1. + 2.]	132.421%	99.627%
4. Adjusted for Quarterly Payments [3. x 0.96877]	128.285%	96.516%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-3 below shows the development of the FY 2011 Minimum Municipal Obligation (MMO) for each division. Table IV-4 on the following page shows a schedule of amortization payments toward the MMO based upon the MMO amortization periods and the new interest rate.

Table IV-3 Development of the Minimum Municipal Obligation for Fiscal Year 2011 (\$ thousands)				
	Non-Uniformed	Police	Fire	Total
Estimated FY 2010-2011 Payroll	\$ 972,984	\$ 418,488	\$ 130,318	\$ 1,521,790
Normal Cost %	7.189%	12.769%	13.635%	9.275%
Normal Cost	\$ 69,947	\$ 53,438	\$ 17,768	\$ 141,153
Amortization Payment	263,206	154,975	54,476	472,657
Administrative Expenses	5,491	2,122	707	8,320
Subtotal	\$ 338,644	\$ 210,535	\$ 72,951	\$ 622,130
Expected Employee Contributions	(24,363)	(21,670)	(6,807)	(52,840)
Minimum Municipal Obligation	\$ 314,281	\$ 188,865	\$ 66,144	\$ 569,290

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

**Table IV-4
Unfunded Liability Payments toward the MMO for Fiscal Year 2011
(\$ thousands)**

Type of Base	7/1/2009 Balance	Municipal Remaining Years	FY 2011 Payment	7/1/2009 Balance	Police Remaining Years	FY 2011 Payment	7/1/2009 Balance	Fire Remaining Years	FY 2011 Payment	7/1/2009 Balance	Total Remaining Years
Original July 1, 1985 Unfunded Liability	\$ 939,772	16	\$ 77,980	\$ 603,286	16	\$ 50,059	\$ 240,580	16	\$ 19,963	\$ 1,783,638	16
July 1, 1993											
Active Plan Change	\$ (143)	1	\$ (143)	\$ (95)	1	\$ (95)	\$ -	-	\$ -	\$ (237)	1
Assumption Change	(1,404)	1	(1,404)	11	1	11	(261)	1	(261)	(1,654)	1
Subtotal	\$ (1,546)		\$ (1,546)	\$ (84)		\$ (84)	\$ (261)		\$ (261)	\$ (1,891)	
July 1, 1995											
Experience (Gain)/Loss	\$ 930	1	\$ 930	\$ 62	1	\$ 62	\$ (403)	1	\$ (403)	\$ 589	1
Active Plan Change	232	6	47	-	-	-	-	-	-	232	6
Subtotal	\$ 1,162		\$ 976	\$ 62		\$ 62	\$ (403)		\$ (403)	\$ 821	
July 1, 1996											
Experience (Gain)/Loss	\$ 1,236	2	\$ 642	\$ 606	2	\$ 315	\$ (527)	2	\$ (274)	\$ 1,315	2
July 1, 1997											
Experience (Gain)/Loss	\$ (18,495)	3	\$ (6,660)	\$ (7,099)	3	\$ (2,556)	\$ (4,745)	3	\$ (1,709)	\$ (30,339)	3
Assumption Change	29,680	8	4,816	3,632	8	589	1,530	8	248	34,841	8
Subtotal	\$ 11,184		\$ (1,843)	\$ (3,466)		\$ (1,967)	\$ (3,216)		\$ (1,460)	\$ 4,502	
July 1, 1998											
Experience (Gain)/Loss	\$ (6,705)	4	\$ (1,880)	\$ (5,473)	4	\$ (1,535)	\$ (4,919)	4	\$ (1,380)	\$ (17,097)	4
July 1, 1999											
Experience (Gain)/Loss	\$ (65,845)	5	\$ (15,335)	\$ 484	5	\$ 113	\$ (23,902)	5	\$ (5,567)	\$ (89,262)	5
Active Plan Change	10,538	10	1,467	-	-	-	-	-	-	10,538	10
Subtotal	\$ (55,307)		\$ (13,868)	\$ 484		\$ 113	\$ (23,902)		\$ (5,567)	\$ (78,725)	
July 1, 2000											
Experience (Gain)/Loss	\$ (14,868)	6	\$ (2,994)	\$ 20,679	6	\$ 4,164	\$ 423	6	\$ 85	\$ 6,234	6

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

**Table IV-4
Unfunded Liability Payments toward the MMO for Fiscal Year 2011 (continued)
(\$ thousands)**

Type of Base	7/1/2009 Balance	Municipal Remaining Years	FY 2011 Payment	7/1/2009 Balance	Police Remaining Years	FY 2011 Payment	7/1/2009 Balance	Fire Remaining Years	FY 2011 Payment	7/1/2009 Balance	Total Remaining Years
July 1, 2001											
Experience (Gain)/Loss	\$ (12,176)	7	\$ (2,179)	\$ (14,581)	7	\$ (2,609)	\$ 7,285	7	\$ 1,304	\$ (19,472)	7
Assumption Change	<u>(3,225)</u>	12	<u>(400)</u>	<u>(1,839)</u>	12	<u>(228)</u>	<u>(4,183)</u>	12	<u>(519)</u>	<u>\$ (9,247)</u>	12
Subtotal	\$ (15,401)		\$ (2,579)	\$ (16,420)		\$ (2,838)	\$ 3,103		\$ 784	\$ (28,718)	
July 1, 2002											
Asset (Gain)/Loss	\$ 18,845	24	\$ 1,688	\$ 10,047	24	\$ 900	\$ 4,282	24	\$ 384	\$ 33,174	24
Liability (Gain)/Loss	<u>104,264</u>	8	<u>16,920</u>	<u>69,308</u>	8	<u>11,247</u>	<u>19,386</u>	8	<u>3,146</u>	<u>\$ 192,959</u>	8
Assumption Change	\$ 12,925	13	\$ 1,531	\$ 8,570	13	\$ 1,015	\$ 6,746	13	\$ 799	\$ 28,241	13
Subtotal	\$ 136,034		\$ 20,140	\$ 87,925		\$ 13,163	\$ 30,414		\$ 4,329	\$ 254,373	
July 1, 2003											
Asset (Gain)/Loss	\$ 322,038	24	\$ 28,847	\$ 169,937	24	\$ 15,222	\$ 73,053	24	\$ 6,544	\$ 565,029	24
Liability (Gain)/Loss	<u>59,828</u>	9	<u>8,940</u>	<u>8,556</u>	9	<u>1,278</u>	<u>6,365</u>	9	<u>951</u>	<u>\$ 74,750</u>	9
Active Plan Change	-	-	-	20,082	14	2,283	8,031	14	913	\$ 28,113	14
Inactive Plan Change	<u>-</u>	-	<u>-</u>	<u>17,627</u>	4	<u>4,944</u>	<u>5,270</u>	4	<u>1,478</u>	<u>\$ 22,897</u>	4
Subtotal	\$ 381,866		\$ 37,786	\$ 216,203		\$ 23,728	\$ 92,720		\$ 9,886	\$ 690,789	
July 1, 2004											
Experience (Gain)/Loss	\$ 116,494	10	\$ 16,219	\$ 70,372	10	\$ 9,798	\$ 20,695	10	\$ 2,881	\$ 207,561	10
July 1, 2005											
Experience (Gain)/Loss	\$ 190,098	11	\$ 24,898	\$ 81,067	11	\$ 10,618	\$ 34,691	11	\$ 4,544	\$ 305,856	11
Assumption Change	<u>219,811</u>	16	<u>23,309</u>	<u>106,362</u>	16	<u>11,279</u>	<u>42,701</u>	16	<u>4,528</u>	<u>\$ 368,874</u>	16
Plan Change	<u>1,927</u>	16	<u>204</u>	<u>243</u>	16	<u>26</u>	<u>-</u>	-	<u>-</u>	<u>\$ 2,170</u>	16
Subtotal	\$ 411,836		\$ 48,411	\$ 187,671		\$ 21,922	\$ 77,392		\$ 9,072	\$ 676,899	
July 1, 2007											
Experience (Gain)/Loss	\$ 130,351	13	\$ 15,445	\$ 174	13	\$ 21	\$ 14,562	13	\$ 1,725	\$ 145,087	13

Note: Numbers may not add due to rounding.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

<p style="text-align: center;">Table IV-4 Unfunded Liability Payments toward the MMO for Fiscal Year 2011 (continued) (\$ thousands)</p>											
Type of Base	7/1/2009 Balance	Municipal Remaining Years	FY 2011 Payment	7/1/2009 Balance	Police Remaining Years	FY 2011 Payment	7/1/2009 Balance	Fire Remaining Years	FY 2011 Payment	7/1/2009 Balance	Total Remaining Years
July 1, 2009											
Experience (Gain)/Loss	\$ 513,991	20	\$ 49,264	\$ 274,773	20	\$ 26,336	\$ 114,937	20	\$ 11,016	\$ 903,701	20
Assumption Change	219,634	20	21,051	122,247	20	11,717	42,560	20	4,079	384,442	20
Subtotal	\$ 733,625		\$ 70,316	\$ 397,020		\$ 38,053	\$ 157,498		\$ 15,096	\$ 1,288,143	
Total	\$ 2,769,734		\$ 263,206	\$ 1,559,040		\$ 154,975	\$ 604,158		\$ 54,476	\$ 4,932,932	

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-5 provides more detail by plan on the expected and actual unfunded actuarial liability and the new amortization bases established as of July 1, 2009 for the MMO.

Table IV-5a Development of the Fiscal Year 2011 Amortization Payment under MMO Municipal and Elect (\$ thousands) 7/1/2009 Outstanding Balance Remaining Years FY 2011 Payment			
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 2,036,109		\$ 192,890
2. Changes in UAL due to			
a. Actuarial Experience	\$ 513,991	20	\$ 49,264
b. Assumption Changes	219,634	20	21,051
c. Active Plan Changes	-	0	-
d. Inactive Plan Changes	-	0	-
e. Subtotal	\$ 733,625		\$ 70,316
3. Total [1. + 2e.]	\$ 2,769,734		\$ 263,206

Table IV-5b Development of the Fiscal Year 2011 Amortization Payment under MMO Police (\$ thousands) 7/1/2009 Outstanding Balance Remaining Years FY 2011 Payment			
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 1,162,021		\$ 116,922
2. Changes in UAL due to			
a. Actuarial Experience	\$ 274,773	20	\$ 26,336
b. Assumption Changes	122,247	20	11,717
c. Active Plan Changes	-	0	-
d. Inactive Plan Changes	-	0	-
e. Subtotal	\$ 397,020		\$ 38,053
3. Total [1. + 2e.]	\$ 1,559,040		\$ 154,975

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-5c Development of the Fiscal Year 2011 Amortization Payment under MMO Fire (\$ thousands) 7/1/2009 Outstanding Balance Remaining Years FY 2011 Payment			
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 446,660		\$ 39,380
2. Changes in UAL due to			
a. Actuarial Experience	\$ 114,937	20	\$ 11,016
b. Assumption Changes	42,560	20	\$ 4,079
c. Active Plan Changes	-	0	-
d. Inactive Plan Changes	-	0	-
e. Subtotal	\$ 157,498		\$ 15,096
3. Total [1. + 2e.]	\$ 604,158		\$ 54,476

Table IV-5d Development of the Fiscal Year 2011 Amortization Payment under MMO Total (\$ thousands) 7/1/2009 Outstanding Balance Remaining Years FY 2011 Payment			
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 3,644,789		\$ 349,192
2. Changes in UAL due to			
a. Actuarial Experience	\$ 903,701	20	\$ 86,617
b. Assumption Changes	384,442	20	36,848
c. Active Plan Changes	-	0	-
d. Inactive Plan Changes	-	0	-
e. Subtotal	\$ 1,288,142		\$ 123,465
3. Total [1. + 2e.]	\$ 4,932,932		\$ 472,657

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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	\$ 5,094,017	\$ 2,818,295	\$ 1,062,732	\$ 8,975,045
Market Value of Assets (less POB)	\$ 1,621,968	\$ 936,225	\$ 274,377	\$ 2,832,570
Actuarial Value of Assets (less POB)	\$ 1,846,079	\$ 1,059,048	\$ 317,438	\$ 3,222,565
Unfunded Actuarial Liability (AL - AVA)	\$ 3,247,938	\$ 1,759,247	\$ 745,294	\$ 5,752,479
Amortization Contributions				
1/1/1985 Initial Liability				
Remaining Years	16	16	16	16
Level-Dollar Contribution	\$ 77,110	\$ 51,748	\$ 19,740	\$ 148,598
Payroll-Based Contribution	\$ 147,513	\$ 94,695	\$ 37,763	\$ 279,971
Post-1/1/1985 Liability				
Remaining Years	19	20	26	20
Amortization Contribution	\$ 143,914	\$ 59,422	\$ 25,469	\$ 228,805
Total Amortization Contribution	\$ 291,427	\$ 154,117	\$ 63,232	\$ 508,776

Note: Numbers may not add due to rounding.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table IV-7
Modified Unfunded Liability Payments toward the MMO for Fiscal Year 2011
(\$ thousands)

Type of Base	7/1/2009 Balance	Municipal Remaining Years	FY 2011 Payment	7/1/2009 Balance	Police Remaining Years	FY 2011 Payment	7/1/2009 Balance	Fire Remaining Years	FY 2011 Payment	7/1/2009 Balance	Total Remaining Years
Original July 1, 1985 Unfunded Liability	\$ 1,777,738	16	\$ 147,513	\$ 1,141,214	16	\$ 94,695	\$ 455,095	16	\$ 37,763	\$ 3,374,047	16
All Changes Prior to July 1, 2009	\$ 841,726		\$ 83,677	\$ 247,648		\$ 23,922	\$ 159,216		\$ 12,915	\$ 1,248,591	
July 1, 2009 Charges											
Experience (Gain)/Loss	\$ 408,840	20	\$ 39,186	\$ 248,138	20	\$ 23,783	\$ 88,423	20	\$ 8,475	\$ 745,401	20
Assumption Change	<u>219,634</u>	20	<u>21,051</u>	<u>122,247</u>	20	<u>11,717</u>	<u>42,560</u>	20	<u>4,079</u>	<u>384,442</u>	20
Subtotal	\$ 628,474		\$ 60,237	\$ 370,385		\$ 35,500	\$ 130,983		\$ 12,554	\$ 1,129,842	
Total	\$ 3,247,939		\$ 291,427	\$ 1,759,247		\$ 154,117	\$ 745,295		\$ 63,232	\$ 5,752,481	

Note: Numbers may not add due to rounding.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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	\$ -	\$ 7,041,525.30	\$ -	\$ 727,185,593.15
2000	9,917,857.50	29,825,175.27	-	717,267,735.65
2001	4,567,730.63	29,324,323.46	-	712,700,005.02
2002	-	29,087,715.02	-	712,700,005.02
2003	6,422,403.75	29,087,715.02	-	706,277,601.27
2004	8,884,981.88	28,728,336.25	-	697,392,619.39
2005	15,161,038.13	28,250,550.75	-	682,231,581.26
2006	18,743,737.50	27,403,048.72	-	663,487,843.76
2007	22,526,257.50	26,345,901.92	-	640,961,586.26
2008	26,486,083.13	25,064,157.87	-	614,475,503.13
2009	30,870,879.38	23,543,856.70	-	583,604,623.75
2010	40,000,711.88	21,756,432.78	-	543,603,911.87
2011	45,151,018.13	19,420,391.21	-	498,452,893.74
2012	22,154,721.72	45,234,066.39	-	476,298,172.02
2013	21,786,233.75	48,416,929.37	-	454,511,938.27
2014	20,545,516.84	50,378,126.28	-	433,966,421.43
2015	20,088,811.07	53,652,021.42	-	413,877,610.36
2016	19,364,886.72	56,464,212.02	-	394,512,723.64
2017	18,085,471.62	57,743,627.12	-	376,427,252.02
2018	16,915,332.51	58,913,766.23	-	359,511,919.51
2019	15,787,131.76	60,041,966.99	-	343,724,787.75
2020	14,758,165.41	61,070,933.33	-	328,966,622.34
2021	13,823,708.03	62,005,390.71	-	315,142,914.31
2022	12,919,375.38	62,909,723.36	-	302,223,538.93
2023	12,071,748.11	63,757,350.63	-	290,151,790.82
2024	11,250,110.80	64,578,987.94	-	278,901,680.02
2025	10,560,195.36	65,268,903.38	-	268,341,484.66
2026	17,271,090.90	58,558,007.84	-	251,070,393.76
2027	60,297,984.38	16,196,263.75	-	190,772,409.38
2028	64,125,534.38	12,367,341.75	-	126,646,875.00
2029	126,646,875.00	4,147,685.16	-	-

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 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	\$ -	\$ 3,848,228.76	\$ -	\$ 397,410,560.15
2000	5,420,158.68	16,299,607.13	-	391,990,401.47
2001	2,496,287.61	16,025,889.30	-	389,494,113.86
2002	-	15,896,581.60	-	389,494,113.86
2003	3,509,875.74	15,896,581.60	-	385,984,238.12
2004	4,855,686.99	15,705,644.36	-	381,128,551.13
2005	8,285,583.09	15,439,067.14	-	372,842,968.04
2006	10,243,546.20	14,975,903.05	-	362,599,421.84
2007	12,310,712.28	14,398,167.04	-	350,288,709.56
2008	14,474,776.77	13,697,687.51	-	335,813,932.79
2009	16,871,089.83	12,866,835.33	-	318,942,842.96
2010	21,860,588.91	11,889,999.22	-	297,082,254.05
2011	24,675,257.01	10,613,340.83	-	272,406,997.04
2012	12,107,666.12	24,720,643.30	-	260,299,330.92
2013	11,906,285.60	26,460,093.82	-	248,393,045.32
2014	11,228,227.61	27,531,897.73	-	237,164,817.71
2015	10,978,635.63	29,321,097.79	-	226,186,182.08
2016	10,583,007.35	30,857,974.00	-	215,603,174.73
2017	9,883,800.61	31,557,180.75	-	205,719,374.12
2018	9,244,313.74	32,196,667.62	-	196,475,060.38
2019	8,627,746.39	32,813,234.97	-	187,847,313.99
2020	8,065,411.14	33,375,570.22	-	179,781,902.85
2021	7,554,725.51	33,886,255.84	-	172,227,177.34
2022	7,060,503.20	34,380,478.16	-	165,166,674.14
2023	6,597,270.66	34,843,710.70	-	158,569,403.48
2024	6,148,241.77	35,292,739.59	-	152,421,161.71
2025	5,771,199.53	35,669,781.82	-	146,649,962.18
2026	9,438,737.48	32,002,243.88	-	137,211,224.70
2027	32,953,149.75	8,851,339.07	-	104,258,074.95
2028	35,044,924.95	6,758,814.06	-	69,213,150.00
2029	69,213,150.00	2,266,730.66	-	-

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

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV- 9a provides the market value 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, 2008	\$ 2,134,544,636	\$ 1,231,483,993	\$ 368,478,027	\$ 3,734,506,656
Receipts				
Employer Contributions	\$ 252,748,034	\$ 118,794,942	\$ 55,211,943	\$ 426,754,919
Employee Contributions	25,358,172	21,411,006	7,253,400	54,022,578
State Aid	32,154,743	20,316,547	7,087,796	59,559,086
Supplemental State Assistance	-	-	-	-
Investment Income				
(includes investment expenses)	(442,989,018)	(252,778,357)	(77,163,613)	(772,930,988)
Other Receipts	-	-	-	-
Total Receipts	\$ (132,728,069)	\$ (92,255,863)	\$ (7,610,473)	\$ (232,594,405)
Disbursements				
Benefit Payments	\$ 371,584,295	\$ 199,341,420	\$ 85,047,777	\$ 655,973,492
Refund of Contributions	2,591,965	1,486,420	707,827	4,786,212
Administrative Expenses	5,671,962	2,174,921	734,917	8,581,800
PAF Transfer at Year End	-	-	-	-
Other Disbursements	-	-	-	-
Total Disbursements	\$ 379,848,222	\$ 203,002,761	\$ 86,490,521	\$ 669,341,504
Assets as of July 1, 2009	\$ 1,621,968,345	\$ 936,225,370	\$ 274,377,033	\$ 2,832,570,748

Note: Numbers may not add due to rounding

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

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

Table IV-9b Receipts and Disbursements Including Bond Issue Assets				
	Municipal	Police	Fire	Total
Assets as of July 1, 2008	\$ 2,538,219,338	\$ 1,341,828,086	\$ 503,497,310	\$ 4,383,544,734
Receipts				
Employer Contributions	\$ 220,779,962	\$ 129,775,437	\$ 45,274,520	\$ 395,829,920
Employee Contributions	25,358,172	21,411,006	7,253,400	54,022,578
State Aid	32,154,743	20,316,547	7,087,796	59,559,086
Supplemental State Assistance	-	-	-	-
Investment Income				
(includes investment expenses)	(492,606,067)	(265,828,679)	(96,752,810)	(855,187,556)
Other Receipts	-	-	-	-
Total Receipts	\$ (214,313,189)	\$ (94,325,689)	\$ (37,137,094)	\$ (345,775,972)
Disbursements				
Benefit Payments	\$ 371,584,295	\$ 199,341,420	\$ 85,047,777	\$ 655,973,492
Refund of Contributions	2,591,965	1,486,420	707,827	4,786,212
Administrative Expenses	5,671,962	2,174,921	734,917	8,581,800
PAF Transfer at Year End	-	-	-	-
Other Disbursements	-	-	-	-
Total Disbursements	\$ 379,848,222	\$ 203,002,761	\$ 86,490,521	\$ 669,341,504
Assets as of July 1, 2009	\$ 1,944,057,927	\$ 1,044,499,636	\$ 379,869,695	\$ 3,368,427,258

Note: Numbers may not add due to rounding

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

The Table IV -10 and Table IV - 11 provide information on the City's Funding Policy for FY 2010 and FY 2011. The differences between the MMO and the City's Funding Policy are:

- The City's Funding Policy amortizes the initial July 1, 1985 unfunded actuarial liability over 34 years, whereas the MMO is determined based on a 40-year amortization schedule.
- A July 2004 amendment to Act 205 allowed for 2001 and 2002 calendar year investment losses to be amortized over 30 years for the MMO, rather than the usual 15 years which is used for the City's Funding Policy.
- 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.
- Both the City's Funding Policy and the MMO utilize valuation results developed in the previous year (e.g., the July 1, 2009 valuation report will determine FY 2010 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 FY 2007-2008, the MMO recognized actuarial gains and losses every other year, in order to coincide with the filing of the Act 205 forms. 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 Funding Policy. For additional details on the amortized amounts by plan, refer to Appendix B. Table IV – 11 provides the estimated FY 2011 and updated FY 2010 contribution amount under the City's Funding Policy. The estimated FY 2011 contribution will be updated in next year's actuarial valuation report based upon the July 1, 2010 payroll.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION IV
CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION**

Table IV-10 Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy Total (\$ thousands)					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation Remaining	\$ 3,635,652	\$ 3,442,527		\$ 451,103	\$ 488,320
2. Changes in UAL due to					
a. Actuarial Experience	\$ 912,838	\$ 988,148	20	\$ 94,711	\$ 102,525
b. Assumption Changes	384,442	416,158	20	39,888	43,178
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 1,297,280	\$ 1,404,306		\$ 134,599	\$ 145,703
3. Total [1c. + 2e.]	\$ 4,932,932	\$ 4,846,832		\$ 585,702	\$ 634,022

Table IV-11 City's Funding Policy Contributions*				
Fiscal Year	2011	% of Pay	2010	% of Pay
Estimated FY Payroll	\$ 1,521,790		\$ 1,463,260	**
Normal Cost (with Expenses)	\$ 149,473	9.82%	\$ 130,827	8.94%
Employee Contributions	(52,840)	3.47%	(49,804)	3.40%
City Normal Cost	\$ 96,633	6.35%	\$ 81,023	5.54%
Amortization Payment	585,702	38.49%	464,619	31.75%
City's Funding Policy	\$ 682,335	44.84%	\$ 545,642	37.29%

* Assuming beginning-of-year payment.

** FY 2010 payroll for the City's Funding Policy is updated based the July 1, 2009 pay rates. All other payroll is estimated based upon the prior year's data used for the actuarial valuation

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

The Governmental Accounting Standards Board's Statement No. 25 (GASB 25) is effective for plan years beginning after June 15, 1996, and supersedes Statement No. 5. GASB No. 25 establishes standards for disclosure of pension information by public employee retirement systems and governmental employers in notes to financial statements and supplementary information. The disclosure presents the actuarial liability computed for funding purposes to the actuarial value of assets to determine a funding ratio (i.e., the EAN liability). The actuarial liability is determined assuming that participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 8.75% per annum for Fiscal Year 2009. For Fiscal Year 2010, the assumed interest rate will change to 8.25% based upon July 1, 2009 liabilities valued at this interest rate. GASB Statement No. 25 requires the actuarial liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of July 1, 2008 and July 1, 2009 are presented in Table V-1 and Table V-2.

GASB 25 also requires for the disclosure of two financial statements and two schedules of historical information:

- Statement of Plan Net Assets – includes information about System assets and liabilities at the valuation date. This statement can be found at the beginning of the Assets section of this report, in Table II-1.
- Statement of Changes in Plan Net Assets – shows receipts and disbursements from the Fund for the most recent plan year. This statement can also be found in the Assets section of this report, in Table II-2.
- Schedule of Funding Progress – discloses historical information about the funded status of the plan. This schedule can be found in Table V-3.
- Schedule of Employer Contributions – discloses historical information about the Annual Required Contribution (ARC) and the actual contributions made by the employer. This schedule can be found in Table V-4.

GASB Statement No. 27 requires that financial statements must include additional disclosures for pension expenditures/expenses. It is effective for the period beginning after June 15, 1997. Table V-5 summarizes the results of this valuation according to our interpretation of GASB 27. The interpretation of the statements is subject to your auditor's review. The required disclosures are:

- Annual Required Contribution (ARC) – this is the expected contribution required based on statement-specific valuation methods and assumptions, with the unfunded liability amortized over an initial period not to exceed 40 years and thereafter 30 years, either as a level-dollar amount or as a level percentage of pay, and with amortization of contributions less than or in excess of the required amount. Historically, the ARC has been shown as the contribution required under the City's Funding Policy.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

- Equivalent Single Amortization Period – this is the number of years incorporated in a weighted average amortization factor for all amortization components combined. The weighted average amortization factor is equal to the total unfunded actuarial liability divided by the sum of the amortization provisions for each of the separately amortized components. This weighted average produces 12.6 years.
- Net Pension Obligation (NPO) – the accumulated value of contribution deficiencies (or excesses) over required contributions from July 1, 1987 to July 1, 2009 between the annual pension cost and the employer’s contribution.
- Annual Pension Cost – is equal to the ARC plus one year’s interest on NPO and ARC adjustment.

Table V-1 Funding Status Under GASB Statement No. 25 (\$ thousands)			
	July 1, 2009	July 1, 2008	% Change
1. Actuarial Liabilities			
a. Members Currently Receiving Payments	\$ 5,693,789	\$ 5,350,582	6.4%
b. Vested Terminated and Inactive Members	116,672	104,992	11.1%
c. Active Members	3,164,583	2,946,645	7.4%
d. Total Actuarial Liability	\$ 8,975,045	\$ 8,402,219	6.8%
2. Actuarial Value of Assets	\$ 4,042,113	\$ 4,623,562	-12.6%
3. Unfunded Actuarial Liability	\$ 4,932,932	\$ 3,778,657	30.5%
4. Ratio of Actuarial Value of Assets to Actuarial Liability (2)/(1)(d)	45.0%	55.0%	-10.0%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-2 Statement of Changes in Liabilities - GASB No. 25 Basis (\$ thousands)	
Actuarial Liability as of July 1, 2008	\$ 8,402,219
Increase (Decrease) During Year Attributable to:	
Passage of Time	\$ 706,286
Benefits Paid	(660,760)
Assumption Change	384,442
Plan Amendment	-
Benefits Accrued, Other Gains/Losses	142,858
Net Increase (Decrease)	<u>\$ 572,826</u>
Actuarial Liability as of July 1, 2009	\$ 8,975,045

Table V-3 Schedule of Funding Progress (\$ millions)						
Actuarial Valuation Date *	Actuarial Value of Assets	Actuarial Liability	Unfunded Actuarial Liability (UAL)	Funded Ratio	Covered Payroll	UAL as a % of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	[(b-a)/c]
7/1/1992	\$ 1,981.8	\$ 4,425.5	\$ 2,443.7	44.8%	\$ 993.3	246.0%
7/1/1993	2,113.9	4,502.1	2,388.2	47.0%	975.0	244.9%
7/1/1994	2,225.2	4,662.6	2,437.4	47.7%	974.3	250.2%
7/1/1995	2,312.1	4,850.8	2,538.7	47.7%	1,006.4	252.3%
7/1/1996	2,457.2	5,098.1	2,640.9	48.2%	1,068.3	247.2%
7/1/1997	2,660.9	5,318.1	2,657.2	50.0%	1,067.7	248.9%
7/1/1998	2,921.3	5,586.1	2,664.8	52.3%	1,128.2	236.2%
7/1/1999	4,496.8	5,862.1	1,365.3	76.7%	1,178.6	115.8%
7/1/2000	4,765.0	6,193.4	1,428.4	76.9%	1,142.8	125.0%
7/1/2001	4,943.4	6,379.8	1,436.4	77.5%	1,180.4	121.7%
7/1/2002	4,891.3	6,727.2	1,835.9	72.7%	1,207.3	152.1%
7/1/2003	4,548.1	7,188.3	2,640.2	63.3%	1,269.3	208.0%
7/1/2004	4,333.1	7,247.7	2,914.6	59.8%	1,266.0	230.2%
7/1/2005	4,159.5	7,851.5	3,692.0	53.0%	1,270.7	290.5%
7/1/2006	4,168.5	8,083.7	3,915.2	51.6%	1,319.4	296.7%
7/1/2007	4,421.7	8,197.2	3,775.5	53.9%	1,351.8	279.3%
7/1/2008	4,623.6	8,402.2	3,778.7	55.0%	1,456.5	259.4%
7/1/2009	4,042.1	8,975.0	4,932.9	45.0%	1,463.3	337.1%

* The actuarial valuation reports need to be referenced in comparison of these values to ascertain when and if the values reflect assumption, benefit or method changes.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

**Table V-4
Schedule of Employer Contributions
(\$ millions)**

Fiscal Year Ended June 30	Annual Required Contribution (ARC)	Percentage of ARC Contributed
1993	\$ 209.4	100.0%
1994	223.8	104.5%
1995	212.8	100.0%
1996	222.5	100.0%
1997	237.0	100.0%
1998	252.1	100.0%
1999	256.7	586.9%*
2000	168.9	108.9%
2001	167.6	100.0%
2002	178.2	100.0%
2003	195.5	91.9%
2004	253.8	79.9%
2005	358.1	83.6%
2006	395.0	84.0%
2007	527.9	81.9%
2008	536.9	79.5%
2009	539.5	84.4%

* Due to the Pension Obligation Bond worth \$1,250,000,000 deposited on February 2, 1999.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

**Table V-5
Calculation of Annual Pension Cost
(\$ thousands)**

	1994	1995	1996	1997	1998	1999	2000	2001
ARC	\$ 223,750	\$ 212,838	\$ 222,482	\$ 237,016	\$ 252,080	\$ 256,704	\$ 168,928	\$ 167,616
Interest on NPO	-	(900)	(869)	(840)	(811)	(783)	(113,257)	(110,748)
Adjustment to ARC	<u>-</u>	<u>1,241</u>	<u>1,198</u>	<u>1,158</u>	<u>1,118</u>	<u>1,080</u>	<u>156,130</u>	<u>152,672</u>
Annual Pension Cost	\$ 223,750	\$ 213,179	\$ 222,811	\$ 237,334	\$ 252,387	\$ 257,001	\$ 211,801	\$ 209,540
Contributions	<u>233,750</u>	<u>212,838</u>	<u>222,482</u>	<u>237,016</u>	<u>252,080</u>	<u>1,506,704</u>	<u>183,928</u>	<u>167,616</u>
Increase in NPO	\$ (10,000)	\$ 341	\$ 329	\$ 318	\$ 307	\$ (1,249,703)	\$ 27,873	\$ 41,924
NPO at BOY	<u>-</u>	<u>(10,000)</u>	<u>(9,659)</u>	<u>(9,330)</u>	<u>(9,012)</u>	<u>(8,705)</u>	<u>(1,258,408)</u>	<u>(1,230,535)</u>
NPO at EOY	\$ (10,000)	\$ (9,659)	\$ (9,330)	\$ (9,012)	\$ (8,705)	\$ (1,258,408)	\$ (1,230,535)	\$ (1,188,611)
Interest Rate	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
15-Year Amortization Factor (EOY)	8.06	8.06	8.06	8.06	8.06	8.06	8.06	8.06

Note: (\$9,012,000) was the NPO at transition date

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

**Table V-5
Calculation of Annual Pension Cost (continued)
(\$ thousands)**

	2002	2003	2004	2005	2006	2007	2008	2009
ARC	\$ 178,239	\$ 195,514	\$ 253,844	\$ 358,141	\$ 394,950	\$527,925	\$ 536,874	\$ 539,464
Interest on NPO	(106,975)	(103,330)	(98,392)	(90,448)	(82,068)	(71,541)	(60,685)	(48,957)
Adjustment to ARC	<u>147,470</u>	<u>142,446</u>	<u>135,638</u>	<u>124,687</u>	<u>113,135</u>	<u>99,953</u>	<u>84,785</u>	<u>68,399</u>
Annual Pension Cost	\$ 218,734	\$ 234,630	\$ 291,090	\$ 392,380	\$ 426,017	\$ 556,337	\$ 560,974	\$ 558,906
Contributions	<u>178,239</u>	<u>179,757</u>	<u>202,827</u>	<u>299,266</u>	<u>331,765</u>	<u>432,267</u>	<u>426,934</u>	<u>455,389</u>
Increase in NPO	\$ 40,495	\$ 54,873	\$ 88,263	\$ 93,114	\$ 94,252	\$ 124,069	\$ 134,040	\$ 103,517
NPO at BOY	<u>(1,188,611)</u>	<u>(1,148,116)</u>	<u>(1,093,243)</u>	<u>(1,004,980)</u>	<u>(911,866)</u>	<u>(817,614)</u>	<u>(693,545)</u>	<u>(559,505)</u>
NPO at EOY	\$ (1,148,116)	\$ (1,093,243)	\$ (1,004,980)	\$ (911,866)	\$ (817,614)	\$ (693,545)	\$ (559,505)	\$ (455,987)
Interest Rate	9.00%	9.00%	9.00%	9.00%	9.00%	8.75%	8.75%	8.75%
15-Year Amortization Factor (EOY)	8.06	8.06	8.06	8.06	8.06	8.18	8.18	8.18

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

The data for this valuation was provided by the Board of Pensions as of July 1, 2009. 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-20: Age/Service Distribution for Active Participants, Counts and Average Salary for all Plans
- A-21: Reconciliation of Plan Membership
- A-22 through A-26: Age and Benefit Distributions for Non-Active Member Data

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-1
Active Member Data**

	July 1, 2009	July 1, 2008	% Change		July 1, 2009	July 1, 2008	% Change
<u>Total City</u>				<u>1987 Municipal</u>			
Count	28,632	29,215	-2.0%	Count	15,244	15,200	0.3%
Average Age	43.6	43.4	0.6%	Average Age	43.0	42.5	1.1%
Average Service	12.3	12.0	2.4%	Average Service	8.0	7.4	8.4%
Average Salary	\$ 51,106	\$ 49,855	2.5%	Average Salary	\$ 44,229	\$ 43,260	2.2%
Total Annual Salary	\$ 1,463,259,769	\$ 1,456,520,491	0.5%	Total Annual Salary	\$ 674,227,879	\$ 657,550,939	2.5%
<u>1967 Municipal</u>				<u>1987 Elected</u>			
Count	4,761	5,318	-10.5%	Count	16	15	6.7%
Average Age	51.7	51.3	0.9%	Average Age	56.6	54.4	4.1%
Average Service	24.0	23.3	2.9%	Average Service	20.3	18.7	8.4%
Average Salary	\$ 54,493	\$ 54,974	-0.9%	Average Salary	\$ 118,275	\$ 117,035	1.1%
Total Annual Salary	\$ 259,440,967	\$ 292,349,216	-11.3%	Total Annual Salary	\$ 1,892,402	\$ 1,755,527	7.8%
<u>1967 Police</u>				<u>1987 Police</u>			
Count	1,033	1,154	-10.5%	Count	5,536	5,398	2.6%
Average Age	51.6	50.9	1.4%	Average Age	37.8	37.3	1.2%
Average Service	26.2	25.4	3.2%	Average Service	11.0	10.5	4.7%
Average Salary	\$ 69,407	\$ 65,877	5.4%	Average Salary	\$ 59,735	\$ 56,709	5.3%
Total Annual Salary	\$ 71,697,813	\$ 76,022,027	-5.7%	Total Annual Salary	\$ 330,694,468	\$ 306,114,447	8.0%
<u>1967 Fire</u>				<u>1987 Fire</u>			
Count	406	479	-15.2%	Count	1,636	1,651	-0.9%
Average Age	53.4	52.9	0.9%	Average Age	38.3	37.6	1.9%
Average Service	27.1	26.7	1.6%	Average Service	9.6	8.9	8.6%
Average Salary	\$ 68,850	\$ 65,500	5.1%	Average Salary	\$ 59,507	\$ 55,332	7.5%
Total Annual Salary	\$ 27,953,044	\$ 31,374,547	-10.9%	Total Annual Salary	\$ 97,353,196	\$ 91,353,788	6.6%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-2 Non-Active Member Data Count							
	July 1, 2009	July 1, 2008	% Change		July 1, 2009	July 1, 2008	% Change
<u>Total City</u>				<u>1987 Municipal Plan</u>			
Retired	21,214	20,898	1.5%	Retired	673	526	27.9%
Disabled	4,288	4,349	-1.4%	Disabled	150	131	14.5%
Beneficiary	<u>8,554</u>	<u>8,510</u>	0.5%	Beneficiary	<u>123</u>	<u>105</u>	17.1%
In Pay Status Total	34,056	33,757	0.9%	In Pay Status Total	946	762	24.1%
DROP	1,638	1,648	-0.6%	DROP	158	152	3.9%
Deferred Vested	1,336	1,263	5.8%	Deferred Vested	584	487	19.9%
<u>1967 Municipal Plan</u>				<u>1987 Elected Plan</u>			
Retired	12,757	12,609	1.2%	Retired	11	11	0.0%
Disabled	1,818	1,857	-2.1%	Disabled	-	-	
Beneficiary	<u>5,340</u>	<u>5,314</u>	0.5%	Beneficiary	<u>3</u>	<u>3</u>	0.0%
In Pay Status Total	19,915	19,780	0.7%	In Pay Status Total	14	14	0.0%
DROP	1,064	1,143	-6.9%	DROP	10	9	11.1%
Deferred Vested	627	664	-5.6%	Deferred Vested	-	-	
<u>1967 Police Plan</u>				<u>1987 Police Plan</u>			
Retired	5,653	5,674	-0.4%	Retired	71	57	24.6%
Disabled	1,703	1,770	-3.8%	Disabled	182	150	21.3%
Beneficiary	<u>2,160</u>	<u>2,148</u>	0.6%	Beneficiary	<u>78</u>	<u>72</u>	8.3%
In Pay Status Total	9,516	9,592	-0.8%	In Pay Status Total	331	279	18.6%
DROP	208	176	18.2%	DROP	24	9	166.7%
Deferred Vested	1	6	-83.3%	Deferred Vested	98	83	18.1%
<u>1967 Fire Plan</u>				<u>1987 Fire Plan</u>			
Retired	2,018	1,998	1.0%	Retired	31	23	34.8%
Disabled	399	414	-3.6%	Disabled	36	27	33.3%
Beneficiary	<u>821</u>	<u>842</u>	-2.5%	Beneficiary	<u>29</u>	<u>26</u>	11.5%
In Pay Status Total	3,238	3,254	-0.5%	In Pay Status Total	96	76	26.3%
DROP	157	153	2.6%	DROP	17	6	183.3%
Deferred Vested	-	-		Deferred Vested	26	23	13.0%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-3								
Non-Active Member Data								
Total Annual Benefit								
	July 1, 2009	July 1, 2008	% Change		July 1, 2009	July 1, 2008	% Change	
<u>Total City</u>				<u>1987 Municipal Plan</u>				
Retired	\$ 466,141,068	\$ 449,178,992	3.8%	Retired	\$ 7,211,907	\$ 5,447,715	32.4%	
Disabled	76,102,842	75,183,367	1.2%	Disabled	2,474,655	2,116,568	16.9%	
Beneficiary	<u>63,748,832</u>	<u>61,308,280</u>	4.0%	Beneficiary	<u>818,459</u>	<u>634,761</u>	28.9%	
In Pay Status Total	605,992,742	585,670,639	3.5%	In Pay Status Total	10,505,021	8,199,044	28.1%	
DROP (pension)	59,070,942	56,140,127	5.2%	DROP (pension)	2,082,793	1,969,832	5.7%	
DROP (account balance)	102,410,327	112,698,385	-9.1%	DROP (account balance)	3,140,471	2,948,391	6.5%	
Deferred Vested	19,090,252	17,919,468	6.5%	Deferred Vested	7,006,259	5,693,606	23.1%	
<u>1967 Municipal Plan</u>				<u>1987 Elected Plan</u>				
Retired	\$ 258,418,045	\$ 246,264,673	4.9%	Retired	\$ 472,429	\$ 472,433	0.0%	
Disabled	29,660,762	29,745,814	-0.3%	Disabled	-	-		
Beneficiary	36,889,539	35,415,948	4.2%	Beneficiary	68,613	68,615	0.0%	
In Pay Status Total	324,968,346	311,426,435	4.3%	In Pay Status Total	541,042	541,048	0.0%	
DROP (pension)	37,332,478	38,462,403	-2.9%	DROP (pension)	855,097	773,956	10.5%	
DROP (account balance)	67,721,377	76,748,128	-11.8%	DROP (account balance)	1,487,723	556,293	167.4%	
Deferred Vested	10,199,738	10,563,611	-3.4%	Deferred Vested	-	-		
<u>1967 Police Plan</u>				<u>1987 Police Plan</u>				
Retired	\$ 139,713,961	\$ 138,669,531	0.8%	Retired	\$ 1,095,917	\$ 844,056	29.8%	
Disabled	29,375,032	30,173,598	-2.6%	Disabled	5,714,074	4,464,551	28.0%	
Beneficiary	<u>17,829,239</u>	<u>17,364,629</u>	2.7%	Beneficiary	<u>673,644</u>	<u>517,528</u>	30.2%	
In Pay Status Total	186,918,232	186,207,758	0.4%	In Pay Status Total	7,483,635	5,826,135	28.4%	
DROP (pension)	9,613,268	7,350,668	30.8%	DROP (pension)	529,819	194,321	172.7%	
DROP (account balance)	14,559,324	15,134,902	-3.8%	DROP (account balance)	496,201	362,518	36.9%	
Deferred Vested	13,436	102,584	-86.9%	Deferred Vested	1,491,992	1,232,478	21.1%	
<u>1967 Fire Plan</u>				<u>1987 Fire Plan</u>				
Retired	\$ 58,785,333	\$ 57,208,255	2.8%	Retired	\$ 443,476	\$ 272,329	62.8%	
Disabled	7,689,636	7,890,682	-2.5%	Disabled	1,188,683	792,154	50.1%	
Beneficiary	<u>7,201,392</u>	<u>7,067,013</u>	1.9%	Beneficiary	<u>267,946</u>	<u>239,786</u>	11.7%	
In Pay Status Total	73,676,361	72,165,950	2.1%	In Pay Status Total	1,900,105	1,304,269	45.7%	
DROP (pension)	8,283,104	7,269,953	13.9%	DROP (pension)	374,383	118,994	214.6%	
DROP (account balance)	14,695,239	16,834,199	-12.7%	DROP (account balance)	309,992	113,957	172.0%	
Deferred Vested	-	-		Deferred Vested	378,827	327,189	15.8%	

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

Table A-4 Non-Active Member Data Average Annual Benefit															
		July 1, 2009		July 1, 2008		% Change				July 1, 2009		July 1, 2008		% Change	
<u>Total City</u>										<u>1987 Municipal Plan</u>					
Retired	\$	21,973	\$	21,494	2.2%	Retired	\$	10,716	\$	10,357	3.5%				
Disabled		17,748		17,288	2.7%	Disabled		16,498		16,157	2.1%				
Beneficiary		7,453		7,204	3.4%	Beneficiary		6,654		6,045	10.1%				
In Pay Status Total		17,794		17,350	2.6%	In Pay Status Total		11,105		10,760	3.2%				
DROP (pension)		36,063		34,066	5.9%	DROP (pension)		13,182		12,959	1.7%				
DROP (account balance)		62,522		68,385	-8.6%	DROP (account balance)		19,876		19,397	2.5%				
Deferred Vested		14,289		14,188	0.7%	Deferred Vested		11,997		11,691	2.6%				
<u>1967 Municipal Plan</u>										<u>1987 Elected Plan</u>					
Retired	\$	20,257	\$	19,531	3.7%	Retired	\$	42,948	\$	42,948	0.0%				
Disabled		16,315		16,018	1.9%	Disabled		-		-					
Beneficiary		6,908		6,665	3.7%	Beneficiary		22,871		22,872	0.0%				
In Pay Status Total		16,318		15,745	3.6%	In Pay Status Total		38,646		38,646	0.0%				
DROP (pension)		35,087		33,650	4.3%	DROP (pension)		85,510		85,995	-0.6%				
DROP (account balance)		63,648		67,146	-5.2%	DROP (account balance)		148,772		61,810	140.7%				
Deferred Vested		16,268		15,909	2.3%	Deferred Vested		-		-					
<u>1967 Police Plan</u>										<u>1987 Police Plan</u>					
Retired	\$	24,715	\$	24,439	1.1%	Retired	\$	15,435	\$	14,808	4.2%				
Disabled		17,249		17,047	1.2%	Disabled		31,396		29,764	5.5%				
Beneficiary		8,254		8,084	2.1%	Beneficiary		8,636		7,188	20.2%				
In Pay Status Total		19,643		19,413	1.2%	In Pay Status Total		22,609		20,882	8.3%				
DROP (pension)		46,218		41,765	10.7%	DROP (pension)		22,076		21,591	2.2%				
DROP (account balance)		69,997		85,994	-18.6%	DROP (account balance)		20,675		40,280	-48.7%				
Deferred Vested		13,436		17,097	-21.4%	Deferred Vested		15,224		14,849	2.5%				
<u>1967 Fire Plan</u>										<u>1987 Fire Plan</u>					
Retired	\$	29,130	\$	28,633	1.7%	Retired	\$	14,306	\$	11,840	20.8%				
Disabled		19,272		19,060	1.1%	Disabled		33,019		29,339	12.5%				
Beneficiary		8,771		8,393	4.5%	Beneficiary		9,240		9,223	0.2%				
In Pay Status Total		22,754		22,178	2.6%	In Pay Status Total		19,793		17,161	15.3%				
DROP (pension)		52,759		47,516	11.0%	DROP (pension)		22,023		19,832	11.0%				
DROP (account balance)		93,600		110,027		DROP (account balance)		18,235		18,993					
Deferred Vested		-		-		Deferred Vested		14,570		14,226	2.4%				

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-5
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	237	661	40	0	0	0	0	0	938
25 to 29	274	1,576	645	38	0	0	0	0	2,533
30 to 34	137	1,113	1,251	553	28	0	0	1	3,083
35 to 39	93	730	1,050	1,492	351	33	0	1	3,750
40 to 44	69	605	797	1,247	1,056	399	14	2	4,189
45 to 49	54	560	683	948	986	1,084	323	9	4,647
50 to 54	42	457	590	732	736	1,030	902	366	4,855
55 to 59	31	310	430	536	386	492	326	509	3,020
60 to 64	13	176	274	228	129	124	70	153	1,167
65 & up	4	88	138	87	40	37	17	39	450
Total	954	6,276	5,898	5,861	3,712	3,199	1,652	1,080	28,632

**Table A-6
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ 37,776	\$ 38,188	\$ 32,083	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 37,824
25 to 29	41,053	43,923	49,649	47,484	-	-	-	-	45,124
30 to 34	42,261	45,591	53,762	55,263	47,440	-	-	41,661	50,509
35 to 39	39,176	44,812	53,322	57,333	58,611	49,680	-	60,451	53,375
40 to 44	34,925	43,121	49,884	56,012	60,211	57,594	57,607	71,793	53,859
45 to 49	35,923	39,421	45,575	51,529	58,009	58,481	61,669	56,168	52,724
50 to 54	44,726	39,233	43,709	48,447	54,464	55,605	64,204	60,000	53,201
55 to 59	35,394	37,688	45,643	47,178	49,002	54,740	61,935	65,002	51,926
60 to 64	42,469	35,486	41,506	44,650	51,382	49,888	55,756	61,984	46,745
65 & up	36,314	26,338	33,970	43,331	42,729	43,659	48,934	57,576	38,495
Total	\$ 39,473	\$ 42,107	\$ 48,985	\$ 53,114	\$ 56,578	\$ 56,274	\$ 62,689	\$ 62,524	\$ 51,106

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-7
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	2	0	0	0	0	0	0	0	2
25 to 29	0	0	0	0	0	0	0	0	0
30 to 34	0	2	0	0	0	0	0	0	2
35 to 39	0	0	0	8	23	11	0	0	42
40 to 44	0	0	2	10	193	195	7	0	407
45 to 49	0	0	2	14	289	578	219	7	1,109
50 to 54	0	1	5	13	314	649	605	282	1,869
55 to 59	0	2	1	3	167	298	218	279	968
60 to 64	0	1	2	6	63	86	47	77	282
65 & up	0	0	0	0	19	25	15	21	80
Total	2	6	12	54	1,068	1,842	1,111	666	4,761

**Table A-8
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ 5,128	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,128
25 to 29	-	-	-	-	-	-	-	-	-	-
30 to 34	-	45,504	-	-	-	-	-	-	-	45,504
35 to 39	-	-	-	43,915	52,885	48,616	-	-	-	50,058
40 to 44	-	-	35,903	49,850	53,442	51,666	54,553	-	-	52,436
45 to 49	-	-	42,722	41,868	51,622	53,590	59,113	58,256	-	54,030
50 to 54	-	41,348	61,633	49,774	50,934	51,643	61,837	58,145	-	55,813
55 to 59	-	36,811	52,026	48,212	47,291	51,463	58,088	59,689	-	54,566
60 to 64	-	60,425	74,694	38,744	54,618	48,459	54,600	59,633	-	53,931
65 & up	-	-	-	-	44,039	40,267	45,514	52,726	-	45,418
Total	\$ 5,128	\$ 44,401	\$ 55,569	\$ 45,558	\$ 51,141	\$ 51,906	\$ 59,992	\$ 58,794	\$ -	\$ 54,493

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-9
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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
25 to 29	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	1	0	0	0	0	1
40 to 44	0	0	0	2	17	24	1	1	45
45 to 49	0	0	1	1	13	197	71	1	284
50 to 54	0	0	0	0	0	161	211	54	426
55 to 59	0	0	0	0	2	66	57	111	236
60 to 64	0	0	0	0	0	8	10	21	39
65 & up	0	0	0	0	0	0	0	2	2
Total	0	0	1	4	32	456	350	190	1,033

**Table A-10
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
25 to 29	-	-	-	-	-	-	-	-	-	
30 to 34	-	-	-	-	-	-	-	-	-	
35 to 39	-	-	-	60,451	-	-	-	-	60,451	
40 to 44	-	-	-	60,654	63,091	64,329	67,641	79,088	64,100	
45 to 49	-	-	60,047	60,451	62,258	68,749	72,135	79,915	69,278	
50 to 54	-	-	-	-	-	65,055	71,099	73,031	69,060	
55 to 59	-	-	-	-	63,899	64,813	72,397	74,984	71,421	
60 to 64	-	-	-	-	-	62,674	65,511	71,246	68,017	
65 & up	-	-	-	-	-	-	-	75,360	75,360	
Total	\$ -	\$ -	\$ 60,047	\$ 60,552	\$ 62,803	\$ 66,536	\$ 71,351	\$ 74,067	\$ 69,407	

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-11
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	
25 to 29	0	0	0	0	0	0	0	0	0	
30 to 34	0	0	0	0	0	0	0	0	0	
35 to 39	0	0	0	0	0	0	0	0	0	
40 to 44	0	0	0	0	5	7	1	0	13	
45 to 49	0	0	0	0	2	61	13	0	76	
50 to 54	0	0	0	0	1	72	55	6	134	
55 to 59	0	0	0	0	0	33	31	81	145	
60 to 64	0	0	0	0	0	3	2	31	36	
65 & up	0	0	0	0	0	0	0	2	2	
Total	0	0	0	0	8	176	102	120	406	

**Table A-12
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
25 to 29	-	-	-	-	-	-	-	-	-	
30 to 34	-	-	-	-	-	-	-	-	-	
35 to 39	-	-	-	-	-	-	-	-	-	
40 to 44	-	-	-	-	64,479	64,609	61,470	-	64,317	
45 to 49	-	-	-	-	60,834	67,124	67,504	-	67,023	
50 to 54	-	-	-	-	60,834	63,712	68,322	70,541	65,889	
55 to 59	-	-	-	-	-	66,063	69,849	75,756	72,287	
60 to 64	-	-	-	-	-	61,027	65,575	72,087	70,803	
65 & up	-	-	-	-	-	-	-	81,755	81,755	
Total	\$ -	\$ -	\$ -	\$ -	63,112	\$ 65,325	\$ 68,561	\$ 74,648	\$ 68,850	

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-13
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	150	423	36	0	0	0	0	0	609
25 to 29	180	1,045	364	31	0	0	0	0	1,620
30 to 34	94	800	713	217	27	0	0	1	1,852
35 to 39	71	555	677	636	125	17	0	0	2,081
40 to 44	65	530	620	656	221	50	3	1	2,146
45 to 49	54	555	624	647	230	116	17	1	2,244
50 to 54	42	453	553	619	197	85	25	23	1,997
55 to 59	31	306	420	484	176	67	17	36	1,537
60 to 64	13	175	270	216	65	26	10	23	798
65 & up	4	88	137	85	21	12	1	12	360
Total	704	4,930	4,414	3,591	1,062	373	73	97	15,244

**Table A-14
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ 34,471	\$ 31,460	\$ 29,762	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 32,101
25 to 29	39,336	39,949	41,961	44,900	-	-	-	-	40,428
30 to 34	41,256	43,141	48,742	46,084	47,205	-	-	41,661	45,605
35 to 39	37,559	42,442	49,259	51,149	51,091	46,088	-	-	47,704
40 to 44	34,378	41,644	46,862	50,731	53,984	52,187	45,620	64,497	47,242
45 to 49	35,923	39,275	44,181	47,261	54,413	52,660	46,547	17,809	45,150
50 to 54	44,726	38,987	42,531	46,153	49,991	53,228	53,921	49,380	44,308
55 to 59	35,394	37,375	45,305	45,698	47,365	50,297	55,543	50,001	44,327
60 to 64	42,469	35,343	41,122	44,375	48,100	48,961	43,821	45,350	41,737
65 & up	36,314	26,338	33,736	42,319	41,544	50,726	36,933	52,902	35,652
Total	\$ 37,846	\$ 39,471	\$ 45,161	\$ 47,800	\$ 51,120	\$ 51,682	\$ 50,624	\$ 48,842	\$ 44,229

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-15
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	
25 to 29	0	0	0	0	0	0	0	0	0	
30 to 34	0	0	0	0	0	0	0	0	0	
35 to 39	0	0	0	0	0	0	0	0	0	
40 to 44	0	1	1	0	0	1	0	0	3	
45 to 49	0	0	0	0	0	0	0	0	0	
50 to 54	0	1	0	1	1	1	0	0	4	
55 to 59	0	1	0	0	0	0	2	1	4	
60 to 64	0	0	0	0	0	0	1	1	2	
65 & up	0	0	0	1	0	0	1	1	3	
Total	0	3	1	2	1	2	4	3	16	

**Table A-16
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
25 to 29	-	-	-	-	-	-	-	-	-	
30 to 34	-	-	-	-	-	-	-	-	-	
35 to 39	-	-	-	-	-	-	-	-	-	
40 to 44	-	112,233	112,233	-	-	112,233	-	-	112,233	
45 to 49	-	-	-	-	-	-	-	-	-	
50 to 54	-	112,233	-	112,233	112,233	186,044	-	-	130,686	
55 to 59	-	115,627	-	-	-	-	115,096	112,233	114,513	
60 to 64	-	-	-	-	-	-	112,233	117,959	115,096	
65 & up	-	-	-	112,233	-	-	112,233	120,250	114,905	
Total	\$ -	\$ 113,364	\$ 112,233	\$ 112,233	\$ 112,233	\$ 149,139	\$ 113,665	\$ 116,814	\$ 118,275	

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-17
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	82	187	3	0	0	0	0	0	272
25 to 29	88	355	241	6	0	0	0	0	690
30 to 34	42	183	424	315	1	0	0	0	965
35 to 39	21	113	248	696	184	5	0	1	1,268
40 to 44	3	37	106	441	518	116	1	0	1,222
45 to 49	0	0	40	214	346	99	3	0	702
50 to 54	0	0	19	76	168	41	4	1	309
55 to 59	0	0	7	37	35	17	1	0	97
60 to 64	0	0	2	5	1	1	0	0	9
65 & up	0	0	0	1	0	0	0	1	2
Total	236	875	1,090	1,791	1,253	279	9	3	5,536

**Table A-18
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ 44,478	\$ 50,626	\$ 54,438	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 48,815
25 to 29	44,526	52,431	59,862	59,787	-	-	-	-	54,082
30 to 34	44,526	52,137	60,284	61,287	53,782	-	-	-	58,374
35 to 39	44,526	52,260	60,109	61,848	63,970	64,231	-	60,451	60,683
40 to 44	44,526	52,737	59,893	61,656	64,223	67,258	66,942	-	62,815
45 to 49	-	-	60,584	61,229	63,362	65,212	60,952	-	62,804
50 to 54	-	-	60,869	61,687	62,629	64,138	67,650	60,451	62,547
55 to 59	-	-	60,047	60,958	61,760	63,317	61,145	-	61,597
60 to 64	-	-	60,047	60,451	60,856	61,123	-	-	60,481
65 & up	-	-	-	60,451	-	-	-	68,915	64,683
Total	\$ 44,509	\$ 51,975	\$ 60,116	\$ 61,591	\$ 63,654	\$ 65,757	\$ 64,616	\$ 63,272	\$ 59,735

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-19
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	3	51	1	0	0	0	0	0	55
25 to 29	6	176	40	1	0	0	0	0	223
30 to 34	1	128	114	21	0	0	0	0	264
35 to 39	1	62	125	151	19	0	0	0	358
40 to 44	1	37	68	138	102	6	1	0	353
45 to 49	0	5	16	72	106	33	0	0	232
50 to 54	0	2	13	23	55	21	2	0	116
55 to 59	0	1	2	12	6	11	0	1	33
60 to 64	0	0	0	1	0	0	0	0	1
65 & up	0	0	1	0	0	0	0	0	1
Total	12	462	380	419	288	71	3	1	1,636

**Table A-20
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2009 -- 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	\$ 41,637	\$ 48,381	\$ 48,576	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 48,016	
25 to 29	41,637	50,362	58,070	53,762	-	-	-	-	51,525	
30 to 34	41,637	51,545	60,900	59,758	-	-	-	-	56,200	
35 to 39	41,637	52,453	61,862	63,261	63,120	-	-	-	60,833	
40 to 44	41,637	52,787	61,325	63,458	65,445	64,265	91,709	-	62,535	
45 to 49	-	55,674	61,882	62,807	65,184	67,132	-	-	64,291	
50 to 54	-	57,348	61,845	62,898	64,537	64,582	60,979	-	63,733	
55 to 59	-	57,348	63,026	64,163	65,220	62,925	-	60,834	63,566	
60 to 64	-	-	-	60,429	-	-	-	-	60,429	
65 & up	-	-	66,026	-	-	-	-	-	66,026	
Total	\$ 41,637	\$ 51,049	\$ 61,060	\$ 63,049	\$ 65,017	\$ 65,484	\$ 71,222	\$ 60,834	\$ 59,507	

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-21
Reconciliation of Plan Membership**

	1967 Plan			Plan 87				Total City
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	
Active								
Active July 1, 2008	5,318	1,154	479	15,200	15	5,398	1,651	29,215
New Entrants and Rehires	19	8	0	1,367	1	302	31	1,728
Refunded Contributions	-6	0	0	-396	0	-19	-3	-424
Terminated Vested	-23	0	0	-84	0	-17	-5	-129
Became Disabled	-25	-1	-1	-16	0	-25	-6	-74
Retired	-115	-29	-6	-80	0	-13	-6	-249
Entered DROP	-348	-94	-61	-66	0	-18	-12	-599
Net Other Terminations	-59	-5	-5	-681	0	-72	-14	-836
Active July 1, 2009	4,761	1,033	406	15,244	16	5,536	1,636	28,632
Retired								
Retired July 1, 2008	12,609	5,674	1,998	526	11	57	23	20,898
New Retirees	626	86	63	154	0	17	9	955
Net Other Terminations	-478	-107	-43	-7	0	-3	-1	-639
Retired July 1, 2009	12,757	5,653	2,018	673	11	71	31	21,214
Beneficiary								
Beneficiary July 1, 2008	5,314	2,148	842	105	3	72	26	8,510
New Beneficiaries	247	100	33	18	0	7	3	408
Net Other Terminations	-221	-88	-54	0	0	-1	0	-364
Beneficiary July 1, 2009	5,340	2,160	821	123	3	78	29	8,554

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-21
Reconciliation of Plan Membership (continued)**

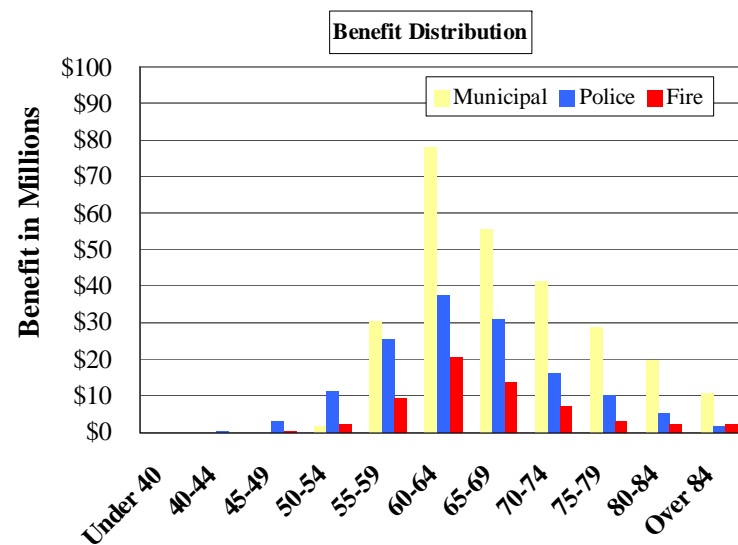
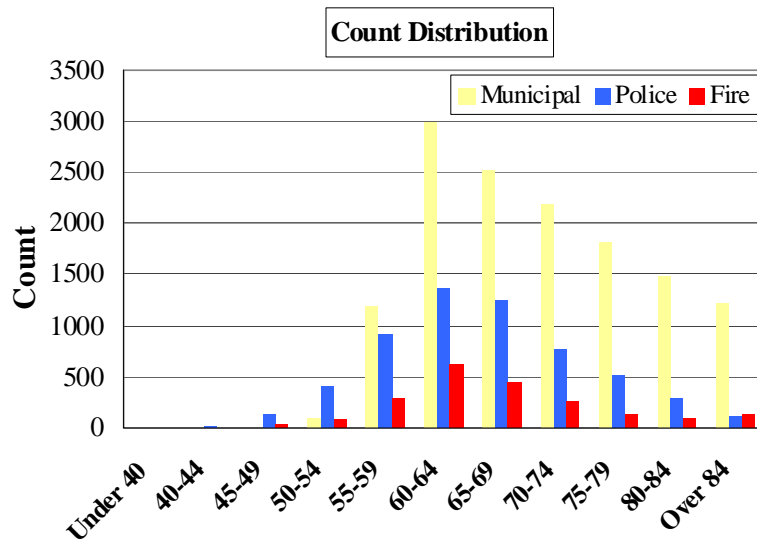
	1967 Plan			Plan 87				
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Total City
Disabled								
Disabled July 1, 2008	1,857	1,770	414	131	0	150	27	4,349
New Disabilities	44	6	1	22	0	33	10	116
Net Other Terminations	-83	-73	-16	-3	0	-1	-1	-177
Disabled July 1, 2009	1,818	1,703	399	150	0	182	36	4,288
Terminated Vested								
Terminated Vested July 1, 2008	664	6	0	487	0	83	23	1,263
New Vested Terminations	45	0	0	122	0	22	5	194
Net Other Terminations	-82	-5	0	-25	0	-7	-2	-121
Terminated Vested July 1, 2009	627	1	0	584	0	98	26	1,336
DROP								
DROP July 1, 2008	1,143	176	153	152	9	9	6	1,648
New DROP Participants	350	95	61	66	1	17	12	602
Net Other Terminations	-429	-63	-57	-60	0	-2	-1	-612
DROP July 1, 2009	1,064	208	157	158	10	24	17	1,638

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-22
Age Distribution of Retired Members as of July 1, 2009**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	0	\$ -	0	\$ -	0	\$ -
40-44	0	0	10	132,114	2	16,497
45-49	0	0	116	2,928,043	21	385,438
50-54	89	1,775,943	398	10,910,395	78	2,044,003
55-59	1,182	30,518,096	913	25,276,628	289	9,463,969
60-64	2,981	77,952,583	1,355	37,330,551	615	20,316,853
65-69	2,513	55,654,603	1,250	30,912,612	447	13,741,209
70-74	2,182	41,288,576	773	16,122,858	254	6,768,600
75-79	1,815	28,556,511	516	10,048,532	128	2,807,052
80-84	1,469	19,644,501	288	5,402,231	95	1,864,072
Over 84	1,210	10,711,568	105	1,745,914	120	1,821,116
Total	13,441	266,102,381	5,724	140,809,878	2,049	59,228,809

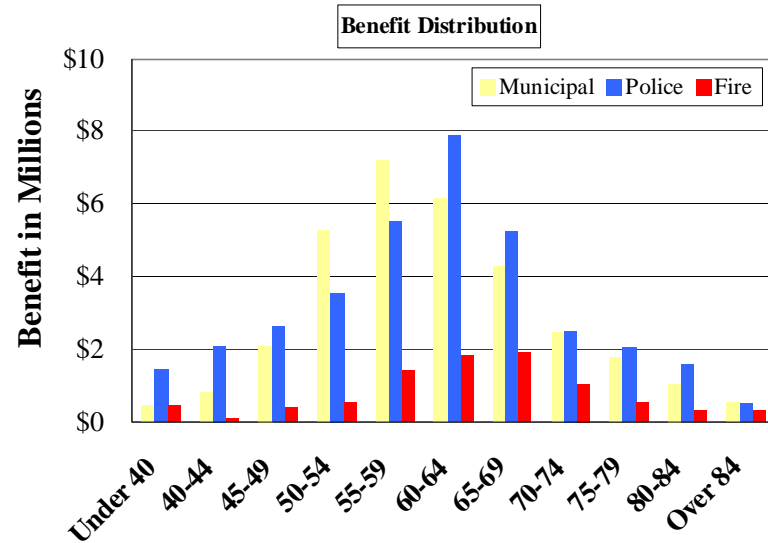
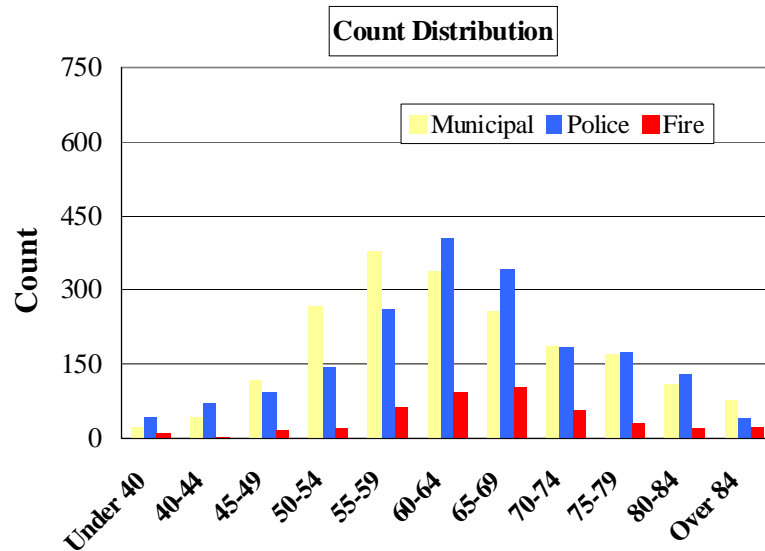


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-23
Age Distribution of Disabled Members as of July 1, 2009**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	21	\$ 436,587	43	\$ 1,443,467	11	\$ 453,868
40-44	43	841,211	68	2,112,882	4	116,795
45-49	116	2,094,638	94	2,665,242	16	434,409
50-54	268	5,288,514	145	3,574,052	18	538,600
55-59	377	7,198,595	261	5,499,016	63	1,398,032
60-64	339	6,143,684	405	7,884,371	94	1,839,543
65-69	259	4,273,158	341	5,265,939	104	1,901,772
70-74	188	2,484,826	183	2,511,081	56	1,056,073
75-79	172	1,755,910	173	2,054,834	28	536,719
80-84	109	1,050,793	131	1,591,607	20	297,275
Over 84	76	567,501	41	486,615	21	305,233
Total	1,968	32,135,417	1,885	35,089,106	435	8,878,319

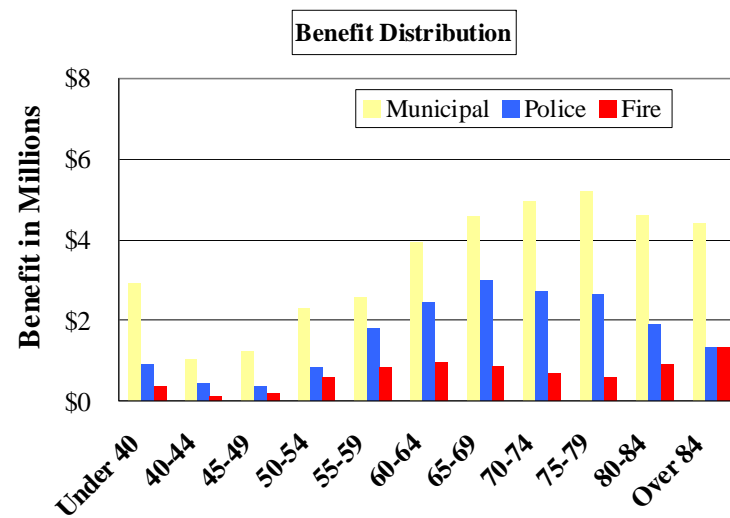
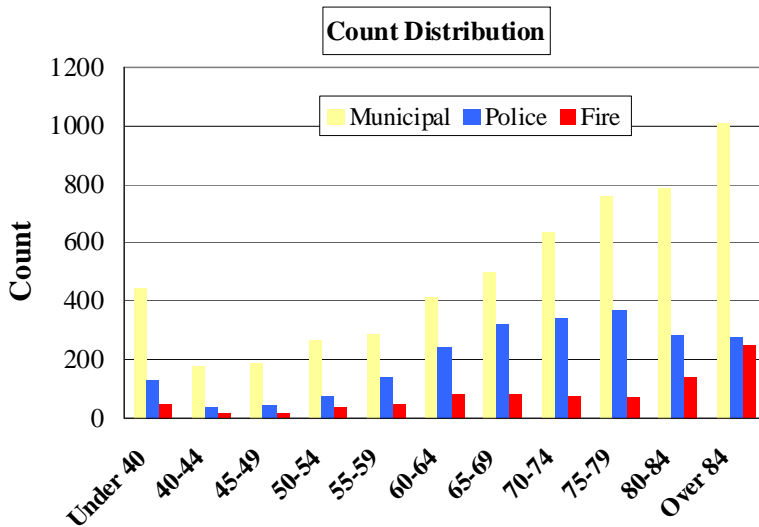


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-24
Age Distribution of Beneficiaries as of July 1, 2009**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	444	\$ 2,933,155	131	\$ 916,647	47	\$ 364,462
40-44	176	1,023,590	36	443,528	13	110,386
45-49	188	1,210,389	41	367,501	16	215,315
50-54	262	2,284,487	72	848,923	34	580,727
55-59	289	2,584,925	139	1,820,781	46	825,832
60-64	414	3,933,228	243	2,463,644	81	974,944
65-69	500	4,594,317	317	3,021,503	80	869,712
70-74	634	4,953,845	341	2,732,347	73	670,702
75-79	760	5,221,615	366	2,647,146	70	585,284
80-84	788	4,625,082	279	1,884,399	140	928,352
Over 84	1,011	4,411,978	273	1,356,464	250	1,343,622
Total	5,466	37,776,611	2,238	18,502,883	850	7,469,338



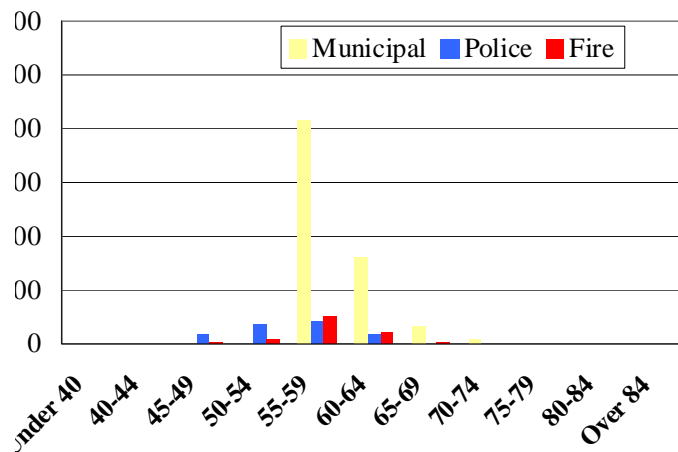
**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

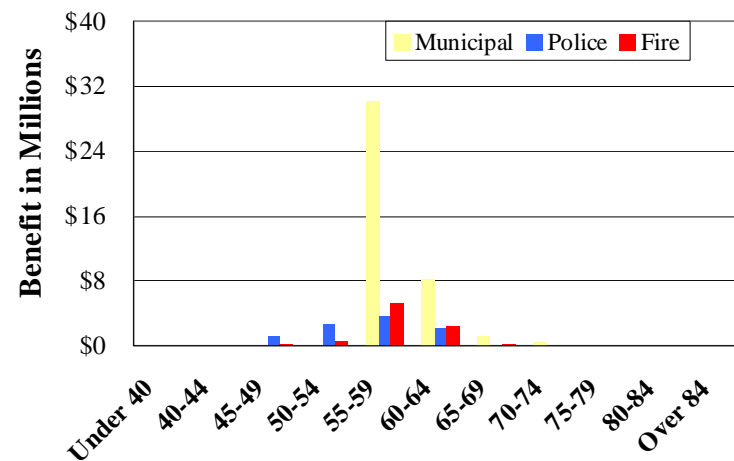
**Table A-25
Age Distribution of DROP Participants as of July 1, 2009**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	0	\$ -	0	\$ -	0	\$ -
40-44	0	0	0	0	0	0
45-49	0	0	36	1,255,098	6	233,940
50-54	1	41,996	71	2,712,217	17	691,427
55-59	827	30,100,676	83	3,755,576	104	5,203,333
60-64	318	8,214,422	38	2,207,462	43	2,374,741
65-69	64	1,329,928	2	64,246	4	154,046
70-74	17	416,901	2	148,488	0	0
75-79	3	142,174	0	0	0	0
80-84	2	24,271	0	0	0	0
Over 84	0	0	0	0	0	0
Total	1,232	40,270,368	232	10,143,087	174	8,657,487

Count Distribution



Benefit Distribution

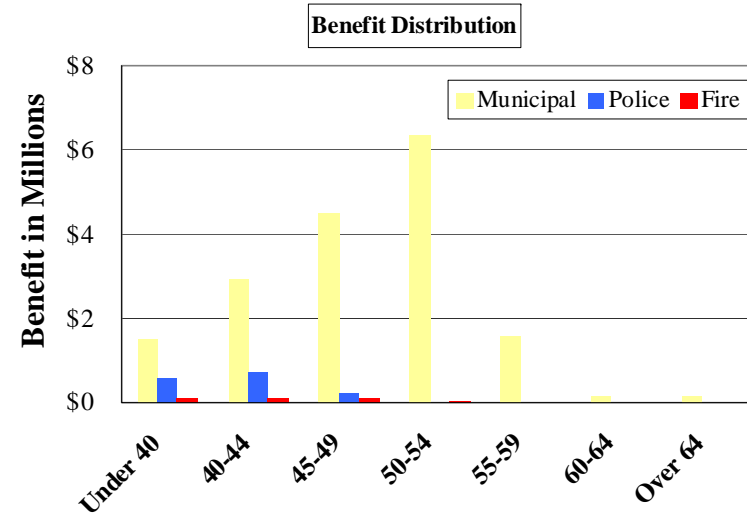
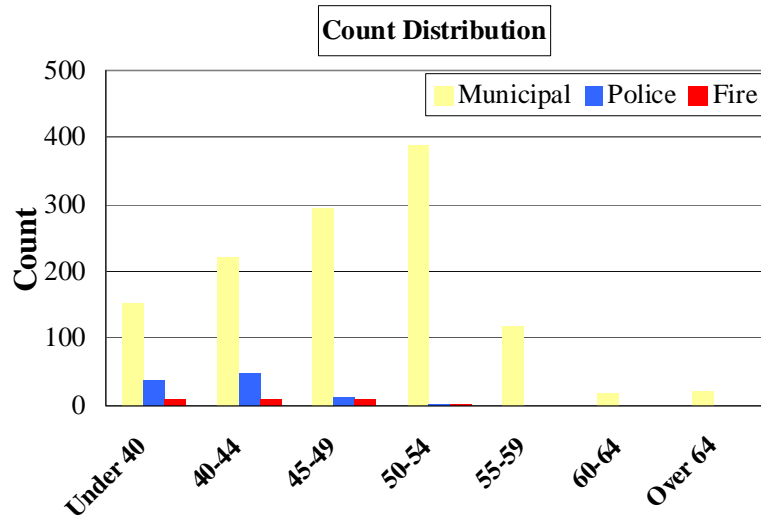


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

**APPENDIX A
MEMBERSHIP INFORMATION**

**Table A-26
Age Distribution of Terminated Vested Members as of July 1, 2009**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	151	\$ 1,512,928	39	\$ 561,901	8	\$ 118,954
40-44	221	2,909,859	47	714,519	9	127,900
45-49	294	4,509,904	12	215,572	8	108,590
50-54	389	6,370,544	1	13,436	1	23,383
55-59	117	1,587,100	0	0	0	0
60-64	19	160,507	0	0	0	0
Over 64	20	155,155	0	0	0	0
Total	1,211	17,205,997	99	1,505,428	26	378,827



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

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

<p style="text-align: center;">Table B-1a Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy 1967 Plan - Municipal (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 1,969,874	\$ 1,865,698		\$ 242,899	\$ 262,938
2. Changes in UAL due to					
a. Actuarial Experience	\$ 385,426	\$ 417,224	20	\$ 39,990	\$ 43,289
b. Assumption Changes	163,785	177,297	20	16,993	18,395
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 549,211	\$ 594,521		\$ 56,983	\$ 61,684
3. Total [1. + 2e.]	\$ 2,519,085	\$ 2,460,218		\$ 299,882	\$ 324,622

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

APPENDIX B
SUPPORTING TABLES FOR CITY'S FUNDING POLICY

<p style="text-align: center;">Table B-1b Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy 1967 Plan - Police (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 1,079,629	\$ 1,013,139		\$ 142,544	\$ 154,304
2. Changes in UAL due to					
a. Actuarial Experience	\$ 194,807	\$ 210,878	20	\$ 20,212	\$ 21,880
b. Assumption Changes	75,074	81,268	20	7,789	8,432
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 269,881	\$ 292,146		\$ 28,001	\$ 30,311
3. Total [1. + 2e.]	\$ 1,349,510	\$ 1,305,285		\$ 170,545	\$ 184,615

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

APPENDIX B
SUPPORTING TABLES FOR CITY'S FUNDING POLICY

<p style="text-align: center;">Table B-1c Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy 1967 Plan - Fire (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 423,616	\$ 402,462		\$ 52,029	\$ 56,321
2. Changes in UAL due to					
a. Actuarial Experience	\$ 85,934	\$ 93,024	20	\$ 8,916	\$ 9,652
b. Assumption Changes	29,915	32,383	20	3,104	3,360
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 115,849	\$ 125,407		\$ 12,020	\$ 13,012
3. Total [1. + 2e.]	\$ 539,466	\$ 527,869		\$ 64,049	\$ 69,333

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

<p style="text-align: center;">Table B-1d Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy Plan 87 - Municipal (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 87,946	\$ 86,636		\$ 8,121	\$ 8,791
2. Changes in UAL due to					
a. Actuarial Experience	\$ 98,214	\$ 106,316	20	\$ 10,190	\$ 11,031
b. Assumption Changes	55,132	59,681	20	5,720	6,192
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 153,346	\$ 165,997		\$ 15,910	\$ 17,223
3. Total [1. + 2e.]	\$ 241,292	\$ 252,633		\$ 24,031	\$ 26,014

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

<p style="text-align: center;">Table B-1e Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy Plan 87 - Elected (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 4,371	\$ 4,251		\$ 366	\$ 396
2. Changes in UAL due to					
a. Actuarial Experience	\$ 4,268	\$ 4,621	20	\$ 443	\$ 479
b. Assumption Changes	717	776	20	74	81
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 4,986	\$ 5,397		\$ 517	\$ 560
3. Total [1. + 2e.]	\$ 9,357	\$ 9,648		\$ 883	\$ 956

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

APPENDIX B
SUPPORTING TABLES FOR CITY'S FUNDING POLICY

<p style="text-align: center;">Table B-1f Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy Plan 87 - Police (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 50,026	\$ 50,144		\$ 3,571	\$ 3,866
2. Changes in UAL due to					
a. Actuarial Experience	\$ 112,332	\$ 121,599	20	\$ 11,655	\$ 12,616
b. Assumption Changes	47,173	51,065	20	4,894	5,298
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 159,505	\$ 172,664		\$ 16,549	\$ 17,915
3. Total [1. + 2e.]	\$ 209,530	\$ 222,808		\$ 20,120	\$ 21,780

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

APPENDIX B
SUPPORTING TABLES FOR CITY'S FUNDING POLICY

Table B-1g
Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy
Plan 87 - Fire
(\$ thousands)

	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 20,189	\$ 20,197		\$ 1,573	\$ 1,703
2. Changes in UAL due to					
a. Actuarial Experience	\$ 31,858	\$ 34,486	20	\$ 3,305	\$ 3,578
b. Assumption Changes	12,645	13,688	20	1,312	1,420
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 44,503	\$ 48,175		\$ 4,617	\$ 4,998
3. Total [1. + 2e.]	\$ 64,692	\$ 68,371		\$ 6,191	\$ 6,702

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

<p style="text-align: center;">Table B-1h Development of the Fiscal Year 2011 Amortization Payment under the City's Funding Policy Total - All Divisions (\$ thousands)</p>					
	7/1/2009 Outstanding Balance	7/1/2010 Expected Balance	Remaining Years	FY 2011 Payment Beginning-of-Year	FY 2011 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2009 Based on July 1, 2008 Valuation	\$ 3,635,652	\$ 3,442,527		\$ 451,103	\$ 488,320
2. Changes in UAL due to					
a. Actuarial Experience	\$ 912,838	\$ 988,148	20	\$ 94,711	\$ 102,525
b. Assumption Changes	384,442	416,158	20	39,888	43,178
c. Active Plan Changes	-	-	20	-	-
d. Inactive Plan Changes	-	-	10	-	-
e. Subtotal	\$ 1,297,280	\$ 1,404,306		\$ 134,599	\$ 145,703
3. Total [1. + 2e.]	\$ 4,932,932	\$ 4,846,832		\$ 585,702	\$ 634,022

APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Data Assumptions and Practices

In preparing our data, we relied, without audit, on information supplied by the City of Philadelphia Municipal Retirement System staff. 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 delete 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.
- Valuation pay reflects a load of 4% 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 payments 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, 2009 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.
- Service-connected disability benefits are increased by 2.9%.
- 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.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

A. Actuarial Assumptions

1. Investment Return Assumption

8.25% compounded annually, net of expenses.

2. Salary Increase Rate

5.0% per year (2.75% due to inflation, 1.5% due to seniority/merit, and 0.75% due to general productivity).

3. Total Annual Payroll Growth

4.0% per year.

4. Administrative Expenses

Annual expected expenses included in this report are \$8,000,000, increasing by 4.0% per year.

5. Rates of Termination

Age	1967 Plan			Plan 87	
	Municipal		Uniformed	Municipal and Elected Officials	Uniformed
	Male	Female	Unisex	Unisex	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	0.000000
55	0.000000	0.000000	0.000000	0.050000	0.000000

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.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

6. Rates of Disability

Age	Municipal and Elected Officials		Uniformed
	Male	Female	Unisex
20	0.000025	0.000043	0.000795
25	0.000070	0.000061	0.000870
30	0.000557	0.000263	0.001418
35	0.001514	0.000620	0.001918
40	0.001800	0.001314	0.001934
45	0.003840	0.002359	0.002334
50	0.007600	0.004285	0.002654
55	0.008680	0.007088	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.

7. Rates of Pre-Retirement Mortality (GAM 94)

Age	All Divisions	
	Male	Female
20	0.000507	0.000284
25	0.000661	0.000291
30	0.000801	0.000351
35	0.000851	0.000478
40	0.001072	0.000709
45	0.001578	0.000973
50	0.002579	0.001428
55	0.004425	0.002294
60	0.007976	0.004439
65	0.014535	0.008636

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.

APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

8. Rates of Post-Retirement Mortality

We assume that mortality for healthy inactive lives will follow 150% of the GAM 94 Mortality Table for males and females as appropriate, except that mortality for male municipal members is assumed to follow 140% of the GAM 94 Mortality Table.

9. Rates of Post-Disability Mortality

The rates of mortality for retired disabled lives are assumed to be the same as those for healthy inactive lives, adjusted by application of the following adjustment factors shown below.

Post-Disablement Mortality Adjustment Factors				
<u>Municipal and Elected Officials</u>			<u>Uniformed</u>	
Age	Male	Female	Age	Unisex
47 and younger	7.3	11.7	42 and younger	2.8
50	6.8	10.5	45	2.0
55	5.6	7.4	50	1.3
60	3.6	4.9	55	1.2
65	2.4	3.4	60 and up	1.0
70	2.1	1.9		
75	1.7	1.3		
80	1.2	1.2		
83 and up	1.0	1.0		

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

Rates of Retirement

Rates of Service Retirement - 1967 Plan		
	<u>Municipal</u>	<u>Uniformed</u>
Age		
45-49	-	0.08
50-53	-	0.12
54	-	0.17
55	0.35	0.20
56	0.20	0.20
57-61	0.12	0.20
62	0.40	0.20
63-69	0.20	0.20
70 and up	1.00	1.00

Rates of Service Retirement - Plan 87				
	<u>Municipal and Elected Officials</u>		<u>Uniformed</u>	
Age	First Year Eligible	Subsequent Years	First Year Eligible	Subsequent Years
40-51	-	-	0.300	0.125
52	0.450	0.060	0.300	0.140
53	0.420	0.060	0.300	0.150
54	0.390	0.060	0.300	0.170
55	0.360	0.060	0.300	0.190
56	0.330	0.060	0.300	0.215
57	0.300	0.060	0.300	0.225
58	0.300	0.060	0.300	0.225
59	0.300	0.080	0.300	0.230
60	0.300	0.100	0.300	0.230
61	0.350	0.150	0.300	0.245
62	0.430	0.300	0.300	0.295
63	0.500	0.187	0.300	0.265
64	0.500	0.199	0.300	0.260
65	0.600	0.309	0.300	1.000
66	0.600	0.232	-	-
67	0.600	0.214	-	-
68	0.600	0.214	-	-
69	0.600	0.238	-	-
70	0.600	1.000	-	-

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

10. 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.

11. Changes Since Last Valuation

- The interest rate assumption decreased from 8.75% to 8.25%.
- Administrative expenses increased from \$7.5 million to \$8.0 million.

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 Funding Policy:

The initial July 1, 1985 UAL is amortized over 34 years ending June 30, 2019, with payments increasing at 4% 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 – 20 years
- Plan changes for active members – 20 years
- Plan changes for inactive members – 10 years

MMO:

For the purposes of the MMO under Act 205, the initial July 1, 1985 UAL is amortized over 40 years ending June 30, 2026, with payments increasing at 4% per year, the assumed payroll growth. A July 2004 amendment to Act 205 allowed for the portion of the July 1, 2003 UAL attributable to 2001 and 2002 calendar year investment returns to be amortized over 30 rather than 15 years. All other amortization periods are consistent with the City's Funding Policy as outlined above. Possible contribution deferrals for FY 2010 permitted under Act 44 were not reflected within this report.

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 (4/5, 3/5, 2/5, 1/5) of the investment gain or loss in each of the preceding four years for gains and losses prior to July 1, 2009. Beginning July 1, 2009, investment gains and losses are recognized over a ten year period prospectively, creating the decreasing fraction to be (9/10, 8/10, 7/10, etc). 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.

CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION

APPENDIX C
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

4. Changes Since Last Valuation

- **Asset Valuation Method:** Investment gains and losses are smoothed over a ten year period prospectively beginning with investment returns from July 1, 2008 through June 30, 2009.
- **Funding Method:** The amortization period of actuarial gains and losses was extended from 15 years to 20 years.

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 4% 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

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

termination, including supplementary compensation received under Civil Service Regulation No. 32.

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):
Each employee who participates in the Social Security System contributes 3 3/4% of total compensation up to the taxable wage base (\$102,000 in 2008 and \$106,800 in 2009) 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.

Uniformed (Plans D and X):
6% of total compensation to the Retirement System.

7. Service Retirement

Eligibility

Municipal (Plan J):
Each municipal employee is eligible to retire and receive a service pension at age 55 with one year of service.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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

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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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.

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).

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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.

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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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.

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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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.

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.

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 number of 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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1967 PLAN

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.

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 reached 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 (4.5% as of July 1, 2007). 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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

1. Participation

Municipal:

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.

Uniformed (Plans A and B):

Same as municipal.

Elected:

Any City employee on or after January 8, 1987, in any general, municipal, or special election, participates in this Plan.

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 (Plans A and B):

Same as municipal.

Elected:

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.

Uniformed (Plans A and B):

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 4% of base pay) received during a 12-month period.

Elected:

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

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

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 (Plans A and B):

Same as municipal.

Elected:

Same as municipal.

5. Average Final Compensation

Municipal:

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:

Same as municipal.

6. Employee Contributions

Municipal:

Total employee contributions equal 30% of the gross normal cost for all members in the municipal division. 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.

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. 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:

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

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

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.

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 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:

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.

Benefit Amount

Municipal:

The service pension equals 2.2% of the employee's average final compensation for the first 10 years of credited service, 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:

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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

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. 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:

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.

Elected:

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:

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:

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

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

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:

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:

Same as municipal.

10. Withdrawal Benefit

Eligibility

Municipal:

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:

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:

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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Elected:

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. 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 (Plans A and B):

Same as municipal.

Elected:

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 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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

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:

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.

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).

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:

Same as municipal.

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 (Plans A and B):

Same as municipal.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Elected:

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 (Plans A and B):

Same as municipal.

Elected:

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:

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:

Same as municipal.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

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 (Plans A and B):

Same as municipal, but only applies to police employees.

Elected:

Same as municipal.

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 (Plans A and B):

Same as municipal.

Elected:

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 (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).

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Elected:

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:

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.

Elected:

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:

Service pensions, deferred vested benefits, service-connected disability benefits, and ordinary disability benefits are payable under three 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.

APPENDIX D
SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Uniformed (Plans A and B):

Same as municipal, except that 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 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:

Same as municipal.

17. Service-Connected Health Care Benefit

Eligibility

Municipal:

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:

Not applicable.

18. Deferred Retirement Option Plan (DROP)

Eligibility

Municipal:

Employees that have 10 years of service and reached 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 (4.5% as of July 1, 2009). 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.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2009 ACTUARIAL VALUATION**

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

Elected:

Same as municipal.

**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 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 funding 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. 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.

9. Annual Required Contribution (ARC) under GASB 25

The Governmental Accounting Standards Board (GASB) Statement No. 25 defines the Plan Sponsor’s “Annual Required Contribution” (ARC) that must be disclosed annually and is defined in accordance with the City’s Funding Policy.

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.