Pennsylvania Municipal Retirement System

Actuarial Valuation as of January 1, 2009

Produced by Cheiron

March 2010

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March 16, 2010

Pennsylvania Municipal Retirement Board of the
Pennsylvania Municipal Retirement System
c/o James B. Allen, Secretary
P.O. Box 1165
Harrisburg, PA 17108-1165

Dear Members of the Board:

At your request, we have conducted the annual actuarial valuation of the Pennsylvania Municipal Retirement System (the System) as of January 1, 2009. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

This report contains information on System assets, as well as analyses which combine asset and liability performance and projections. This is a multiple employer retirement system for participating municipalities and counties. Assets and liabilities are separately accounted for and reported to the Public Employee Retirement Commission of the Commonwealth of Pennsylvania. This report reflects aggregate valuation results for the System. The report provides statistics on employer contribution levels for the defined benefit portion of the municipal plans participating in the system as of the valuation date as well as required disclosures under the Governmental Accounting Standards Board Statement #25 for the entire System.

Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief. We rely on future System experience conforming to the underlying assumptions. To the extent that actual System experience deviates from the underlying assumptions, the results would vary accordingly.

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 the credentialed actuaries below meet the Qualification Standards of the American Academy of Actuaries to render the opinions contained in this report.

Sincerely,
Cheiron

Kenneth A. Kent, FSA, FCA
Consulting Actuary

Karen Zangara, FSA
Consulting Actuary

cc: Anthony J. Bucci, Jr.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

FOREWORD

Cheiron has performed the actuarial valuation of the Pennsylvania Municipal Retirement System (System) as of January 1, 2009. The purpose of this report is to:

1) **Measure and disclose**, as of the valuation date, the financial condition of the System;

2) **Indicate trends** in the financial progress of the System;

3) **Determine the average contribution rate** to be paid by the System's individual municipalities; and

4) **Provide specific information** and documentation required by the Governmental Accounting Standards Board (GASB).

An actuarial valuation establishes and analyzes System assets and liabilities on a consistent basis and traces the progress of both from one year to the next. It includes measurement of the System's investment performance as well as an analysis of actuarial liability gains and losses.

Section I presents a summary containing our findings and disclosing important trends experienced by the System in recent years.

Section II contains details on various asset measures, together with pertinent performance measurements.

Section III shows similar information on System liabilities, measured for actuarial, accounting, and government reporting purposes.

Section IV shows the distribution of the municipalities' contribution rates by component.

Section V includes the required disclosures under GASB Statement Number 25.

The appendices to this report contain a summary of the System's membership at the valuation date, and the actuarial methods and assumptions used in the valuations.

As this System is a multiple employer plan in which each of the participating municipalities are entitled to define and submit to the Board for amendment the benefit provisions for their respective employees, the actual plan provisions are not included in this report. We based our results on the plan provisions defined and submitted to the State under the 2009 Act 205 filings and 2008 Act 293 filings in preparing this valuation. The System is bound by Act 205 to complete a biennial valuation for each employer, but we have developed liabilities for 2009 for all plans in the System, which includes the four county plans, to provide an overall measure of the funded status of the System.

In preparing our report, we relied without audit, on information (some oral and some written) supplied by the Office of the System's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. This report incorporates all data and updates sent to Cheiron by February 9, 2010.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

FOREWORD

The actuarial assumptions reflect our understanding of the likely future experience of the System, and the assumptions as a whole represent our best estimate for the future experience of the System. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the System could vary from our results.

Finally, in preparing this report, we have conformed to generally 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. To the extent the laws of the Commonwealth of Pennsylvania and/or the administrative practices of the System differ from Actuarial Standards of Practice, we have identified such deviations within the assumption section of this report.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

SECTION I
BOARD SUMMARY

General Comments

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

- The overall financial condition of the Pennsylvania Municipal Retirement System,
- Biennial valuation of the non-county plans participating in the System,
- Past trends and expected future trends in the System's financial condition, 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 January 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.

The municipal plans are valued every other year. Throughout our report our discussion will address changes from 2007, the last time the municipal plans were valued, to 2009 when discussing the funded status of the aggregation of these plans. In other parts of our discussion we address the overall status of the System. In this case we compare results from the 2008 plan year to 2009 to identify the changes in the overall System funded status.

A. Valuation Basis

The January 1, 2009 valuation results are based on the same actuarial assumptions used in the January 1, 2007 valuation, except that the amortization period for recognizing unfunded gains and losses was extended from 15 years to 20 years as amended under Act 44. All results presented prior to January 1, 2007 are based on the valuation reports prepared by the prior actuary.

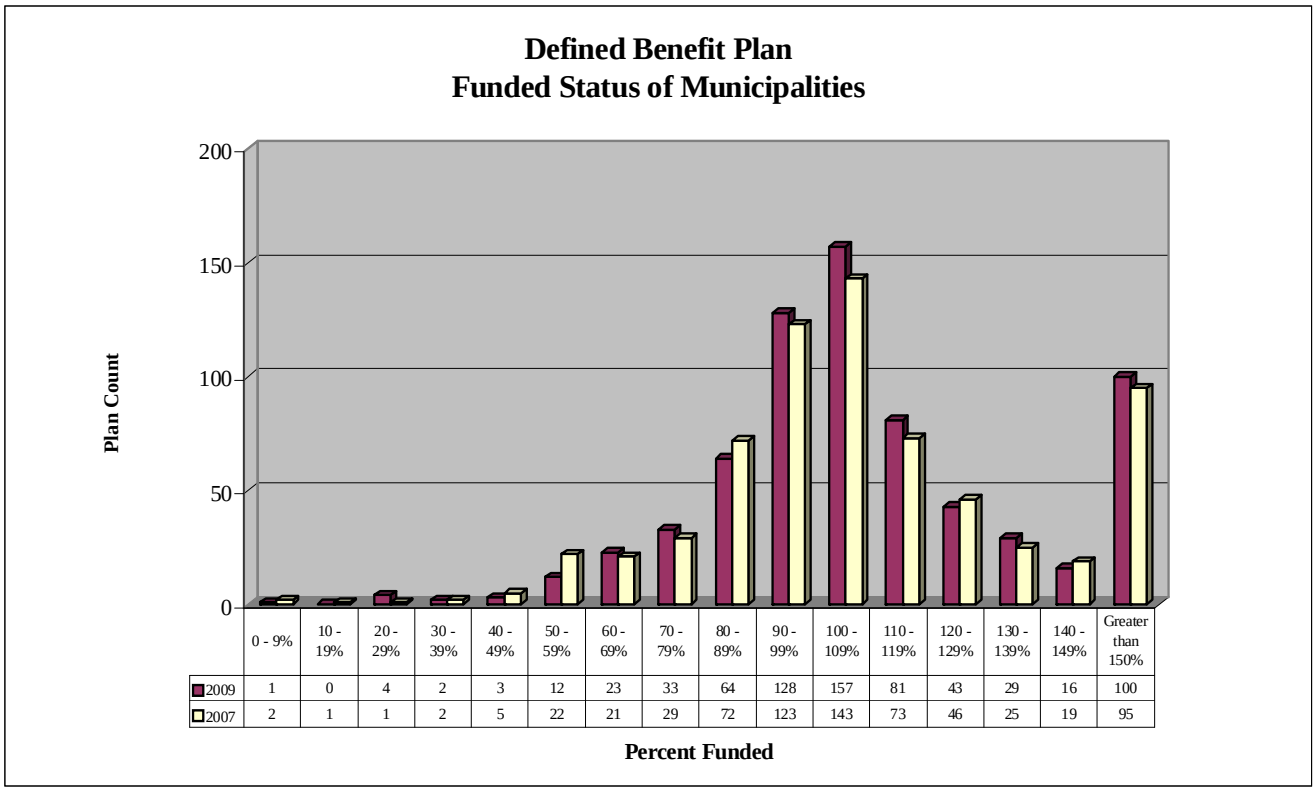
Below we identify two key results of this valuation.

- *Unfunded Actuarial Liability (UAL):* The UAL is the excess of the System's actuarial liability (AL) over the actuarial value of assets (AVA). Because the System is made up of many plans, some with UAL and others with surplus (when the AVA is greater than the AL), the aggregate change of each of these values combined provides the net funded level of the System. In aggregate the System has been in a net surplus, and that surplus has increased from $80.9 million as of January 1, 2008 to $88.5 million as of January 1, 2009.

- *Funding Ratio:* This is the ratio of the System's AVA to AL. The funding ratio increased from 105.9% as of January 1, 2008 to 106.1% as of January 1, 2009.

SECTION I
BOARD SUMMARY

The following chart shows a distribution of the funded status of the plans covered by the System in 2007 and 2009. From this comparison it would appear that the distribution of funded status shows a slight change in the distribution from 2007 with no discernable trend that is better or worse over the two year period.



	0 - 9%	10 - 19%	20 - 29%	30 - 39%	40 - 49%	50 - 59%	60 - 69%	70 - 79%	80 - 89%	90 - 99%	100 - 109%	110 - 119%	120 - 129%	130 - 139%	140 - 149%	Greater than 150%
2009	1	0	4	2	3	12	23	33	64	128	157	81	43	29	16	100
2007	2	1	1	2	5	22	21	29	72	123	143	73	46	25	19	95

B. Current Financial Condition

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

1. System Membership:

As shown in Table I-1 below, total membership in the Retirement System increased by 2.2% from 2008 to 2009. The growth in active participation is attributable to a 2.9% increase in the cash balance plans (previously referred to as defined contribution plans in prior reports) and a 0.3% increase in the defined benefit plans. The aggregate covered payroll of the System increased by 2.3% this year, while the average salary per active member increased by 1.7%.

Table I-1
Membership Total

	January 1, 2009	January 1, 2008	% Change
Defined Benefit Actives	8,411	8,383	0.3%
Cash Balance Plan Actives	978	950	2.9%
Terminated Vesteds	847	751	12.8%
Participants Receiving Benefit Payments	3,289	3,173	3.7%
Beneficiaries	461	425	8.5%
Total System Members	13,986	13,682	2.2%
Annual Salaries*	$405,181,956	$395,972,321	2.3%
Average Salary per Active Member	43,155	42,427	1.7%

** Projected salary for Defined Benefit plan participants and actual salary for Cash Balance plan participants.*

SECTION I
BOARD SUMMARY

Table I-2 summarizes demographic make-up of the System's defined benefit and cash balance plans.

Table I-2
Demographic Make-up of the System

Category	Valuation as of January 1 2009	2008	Percent Change
Number of plans:			
Defined Benefit Plans	696	692	0.58%
Cash Balance Plans	203	183	10.93%
Active Employees in Defined Benefit Plans:			
Count	8,411	8,383	0.33%
Average Age	47.2	46.8	0.85%
Average Service	12.1	12.0	0.83%
Total Payroll*	$ 372,370,037	$ 364,865,185	2.06%
Average Pay	$ 44,272	$ 43,524	1.72%
Active Employees in Cash Balance Plans:			
Count	978	950	2.95%
Average Age	49.2	48.4	1.65%
Average Service	10.8	10.6	1.89%
Average Pay**	$ 33,550	$ 32,744	2.46%
Inactive Participants in Defined Benefit Plans with Rights			
Deferred Pension	650	570	14.04%
Return of Contributions	-	7	-100.00%
Inactive Participants in Cash Balance Plans	197	174	13.22%
Pensioners:			
Count	3,289	3,173	3.66%
Average Age	70.0	69.9	0.14%
Average Monthly Benefit	$ 1,044	$ 1,025	1.85%
Number of New Awards	271	236	14.83%
Average New Monthly Benefit	$ 1,157	$ 1,065	8.63%
Number Receiving Legislated COLA	176	195	-9.74%
Survivor Beneficiaries:			
Count	461	425	8.47%
Average Age	74.1	76.7	-3.44%
Average Monthly Benefit	$ 758	$ 756	0.26%

* *Projected salaries for the current Plan year.*
** *Actual salaries paid during the prior Plan year.*

SECTION I
BOARD SUMMARY

2. System Assets and Liabilities:

Table I-3 presents a comparison between the January 1, 2008 and January 1, 2009 System assets, liabilities, UAL, and funding ratios for defined benefit non-county, defined benefit county, and cash balance plans. While this valuation was prepared to support the non-county plans, we were provided county participant data and determined their liabilities for estimation purposes. The total funding ratio increased from 105.9% as of January 1, 2008 to 106.1% as of January 1, 2009.

Table I-3
Total Plan Assets and Liabilities
($ thousands)

	January 1, 2009	January 1, 2008	% Change
Defined Benefit (Non-county) Plans:			
Actives	$ 836,136	$ 791,065	5.7%
Terminated Vesteds	48,115	41,243	16.7%
In Pay Status	452,904	430,160	5.3%
Total Actuarial Liability	$ 1,337,155	$ 1,262,468	5.9%
Actuarial Value of Assets*	1,414,237	1,342,510	5.3%
Unfunded/(Surplus) of Actuarial Liability	$ (77,082)	$ (80,042)	-3.7%
Defined Benefit (County) Plans:			
Actives	$ 38,779	$ 46,879	-17.3%
Terminated Vesteds	5,672	5,108	11.0%
In Pay Status	19,107	16,896	13.1%
Total Actuarial Liability**	$ 63,558	$ 68,883	-7.7%
Actuarial Value of Assets*	74,992	69,788	7.5%
Unfunded/(Surplus) of Actuarial Liability	$ (11,434)	$ (905)	1163.4%
Filed as Cash Balance Plans:			
Actives	$ 37,988	$ 35,924	5.7%
Terminated Vesteds	6,598	5,877	12.3%
In Pay Status	6,338	4,049	56.5%
Total Actuarial Liability	$ 50,924	$ 45,850	11.1%
Actuarial Value of Assets*	50,924	45,850	11.1%
Unfunded/(Surplus) of Actuarial Liability	$ -	$ -	0.0%
Total of All Plans			
Actives	$ 912,903	$ 873,868	4.5%
Terminated Vesteds	60,385	52,228	15.6%
In Pay Status	478,349	451,105	6.0%
Total Actuarial Liability	$ 1,451,637	$ 1,377,201	5.4%
Market Value of Assets	$ 1,170,632	$ 1,564,774	-25.2%
Actuarial Value of Assets*	$ 1,540,153	1,458,148	5.6%
Unfunded/(Surplus) of Actuarial Liability	$ (88,516)	$ (80,947)	9.3%
Funding Ratio	106.1%	105.9%	0.2%

* *The assets shown here are attributable to the defined benefit, cash balance, non-county, and county plans. They exclude one year of administration expense reserve and excess interest allocation, if any, to be credited at year end.*

** *County Plan liabilities are estimated in odd years based on unaudited data received from the System.*

SECTION I
BOARD SUMMARY

Table I-4 presents a summary of the January 1, 2009 defined benefit plans that are in a surplus or underfunded position.

Table I-4
Funded Status of Municipalities as of January 1, 2009

A. Municipal Plans in a surplus position	
1. Number of plans with a surplus	425
2. Assets in plans with a surplus	$992,151,618
3. Actuarial Liability in plans with a surplus	831,035,497
4. Amount of surplus (2. – 3.)	$161,116,121
B. Municipal Plans in an underfunded position	
1. Number of underfunded plans	271
2. Assets in underfunded plans	$497,077,124
3. Actuarial Liability in underfunded plans	569,677,767
4. Amount of (unfunded) liability (2. – 3.)	($72,600,643)

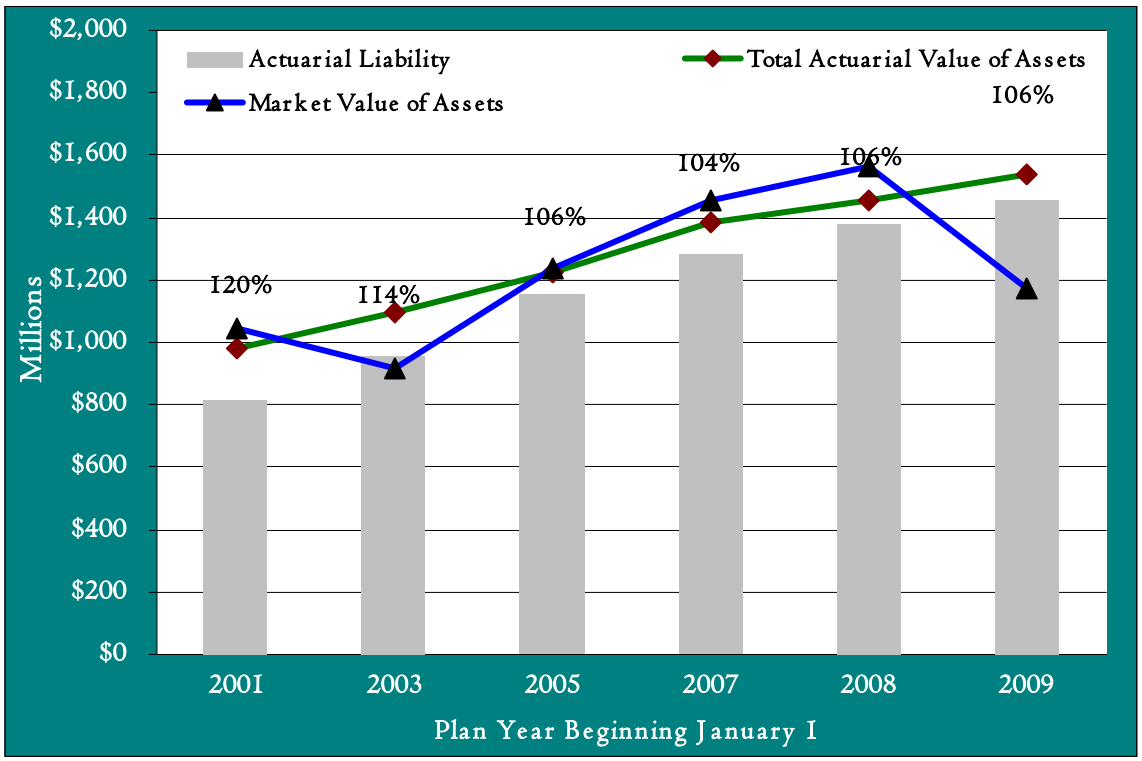
For comparison with January 1, 2007 results there were 401 plans in surplus totaling $108 million and 278 plans with unfunded liabilities of $66 million.

C. Historical Trends

Even though most of the attention given to the valuation reflects the most recently computed actuarial liability and funding ratio, it is important to remember that each valuation is merely a snapshot of the long-term progress of the System. 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 total System (defined benefit, cash balance, county and non-county) market and actuarial value of assets compared to the total System (defined benefit, cash balance, county and non-county) actuarial liabilities. Additionally, we have included the funding ratio on an actuarial asset valuation basis to show the progress of the Retirement System since 2001.

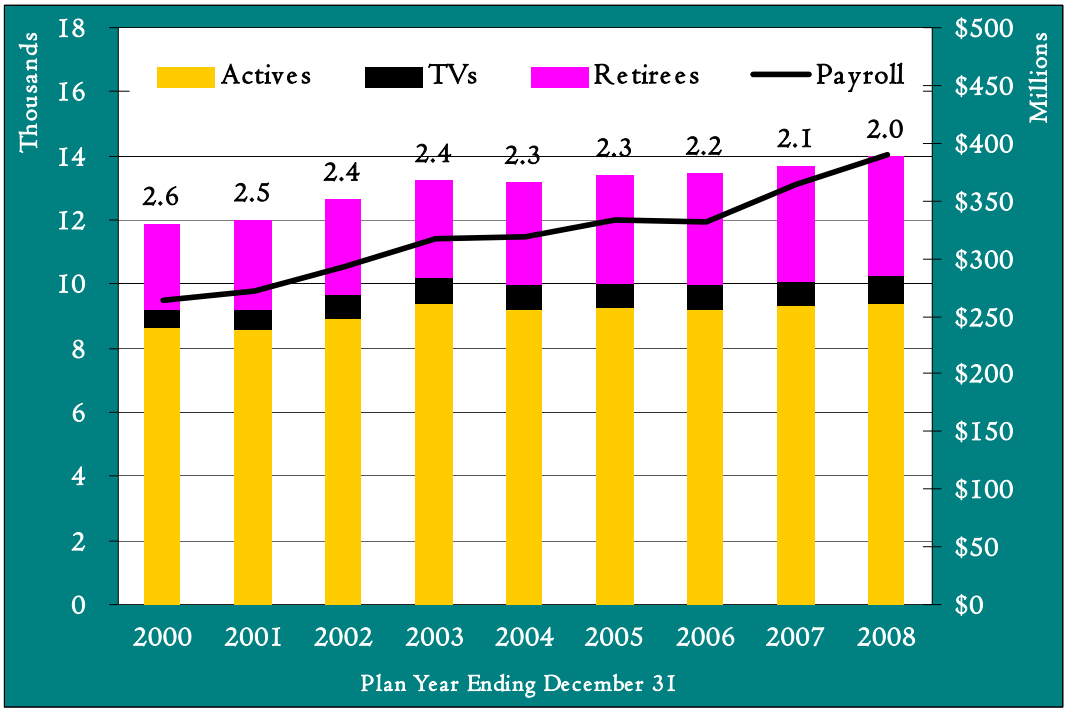
Pennsylvania Municipal Retirement System Assets and Liabilities – 2001 to 2009



This graph demonstrates that the System's funding ratio (Actuarial Value of Assets divided by the Actuarial Liability) declined steadily over the given period but still remained over 100% because of the way assets are measured for funding purposes. However, the 2009 Market Value of Assets is less than the Actuarial Liability, such that on a market value basis, the funded ratio would be 80.6%.

SECTION I
BOARD SUMMARY

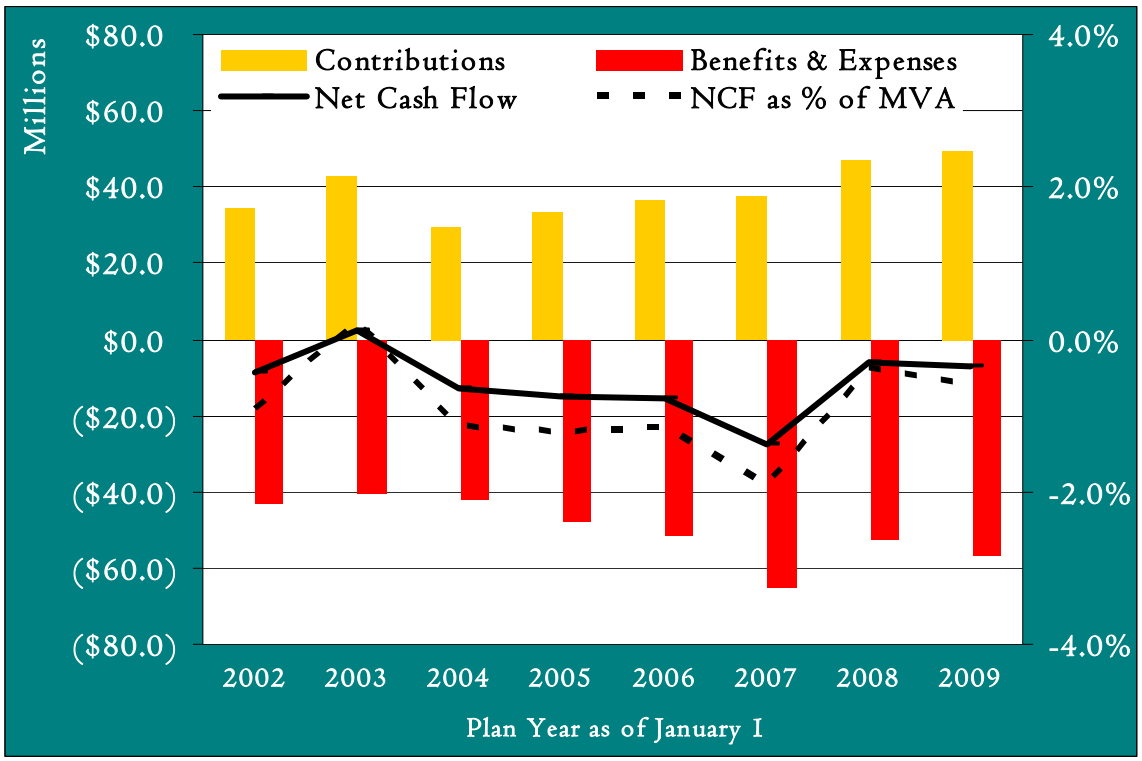
Pennsylvania Municipal Retirement System Participant Counts – 2000 to 2008



The chart above shows a comparison of the demographic makeup of the System over the last eight years. The number above the bars represents the ratio of active to inactive employees which is decreasing at a steady pace. A retirement system has a life cycle of its own, reaching maturity when as many or more of the covered participants are non-active (retirees and terminated vested participants (TVs)). When this occurs, the ratio moves closer to and sometimes below 1.0. For the System, the fact that this ratio is still relatively high indicates that contribution income significantly offsets benefit payments resulting in relatively small negative cash flows at about 0.6% of assets.

SECTION I
BOARD SUMMARY

This next graph tracks the cash flow since 2002. An important risk element of a retirement system is the implication of cash flow and resources for paying benefits. If the level of benefit payments exceeds expected contributions, then additional cash from existing assets are needed to make the benefit payments. This is referred to as negative cash flow which is typical among mature public retirement systems. On the right-hand side we show the net cash flow as a percent of assets. As the graph below illustrates, there is a net negative cash flow that ranges between 0.5% to 2.0% of total assets. This implies that along with proceeds from contributions, an additional amount of cash generated from asset investments must be identified to pay benefits. Another way to consider this is that for the total value of assets to grow, you need a minimum return between 0.5% to 2.0%.



D. Projected Financial Trends

Our analysis of the Pennsylvania 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 January 1, 2009 valuation results on the future outlook in terms of benefit security (assets over liabilities) and the System's expected funding progression.

In the charts that follow, we project the Retirement System's resources and obligations. We assume the Act 205 contributions are made each year. The projections are provided on two different bases:

1) Assuming 6.00% 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 6.00% return. We do this because the System's return will never be level from year to year.

Table I-5
Projected Returns Equal to the Valuation Rate

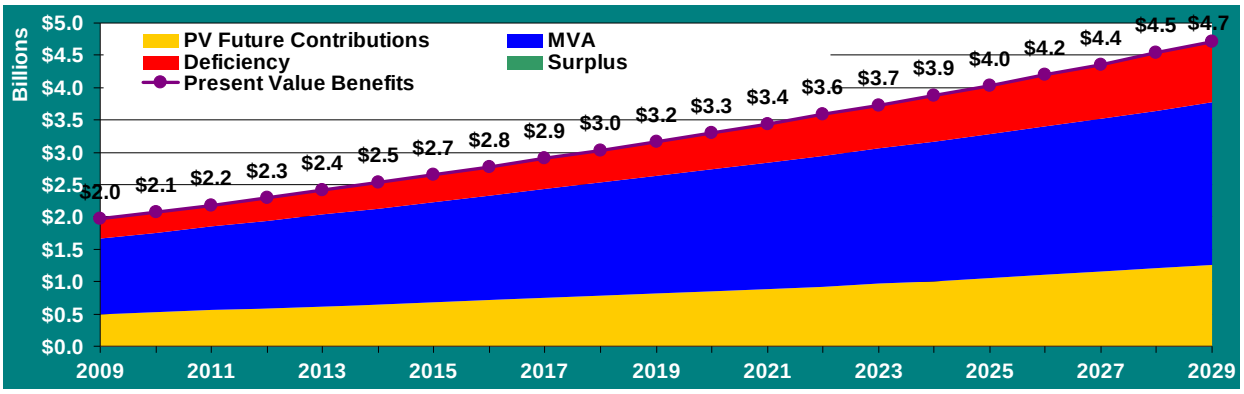
Fiscal Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Return	17.00%	3.00%	16.00%	15.00%	11.00%	5.00%	5.00%	1.00%	6.00%	8.00%
Fiscal Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Return	-11.00%	0.00%	4.00%	-2.50%	9.00%	10.00%	12.10%	-1.00%	10.75%	

This first chart shows how the total projected obligations of the system assuming the current active population remains constant (shown by the purple line). That means when an active participant is expected to change status, they are assumed to be replaced. The area under the curve represents the *Present Value of Benefits.* This amount takes into account the value of all benefits earned up to this point of time – actuarial liability – plus benefits assumed to be earned into the future. This then represents the total PMRS obligation over time.

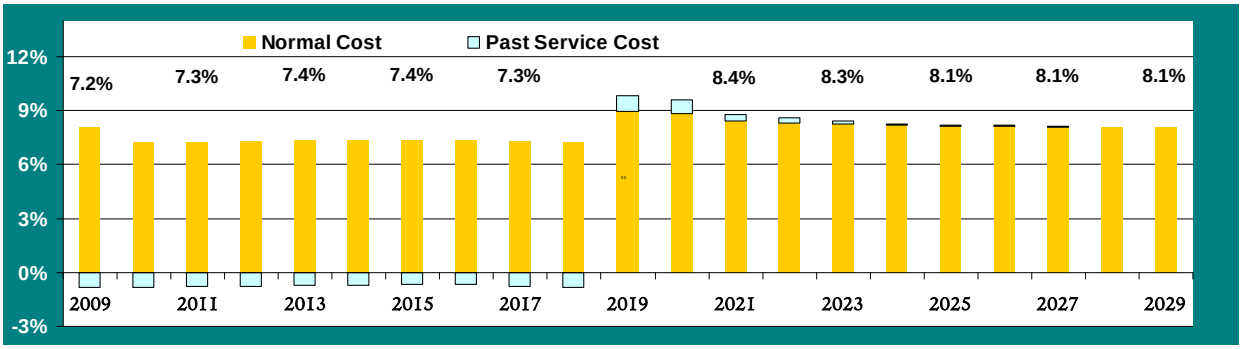
To meet this obligation we have resources which include the market value of assets (in blue) and the present value of future contributions (in gold). To the extent these two sources are insufficient to meet the obligations today or in the future, the result will be a deficit (in red). If the resources are more then enough, the result will be a surplus (green).

To the extent you have a deficit, under the PMRS system the only additional resource to meet the obligation is through additional investment earnings above the 6.0% crediting rate. Investing to bridge this current gap, which is equal to approximately $300 million, is a reflection of the risk of the system and defines the level of investment risk of the past as well the future risk.

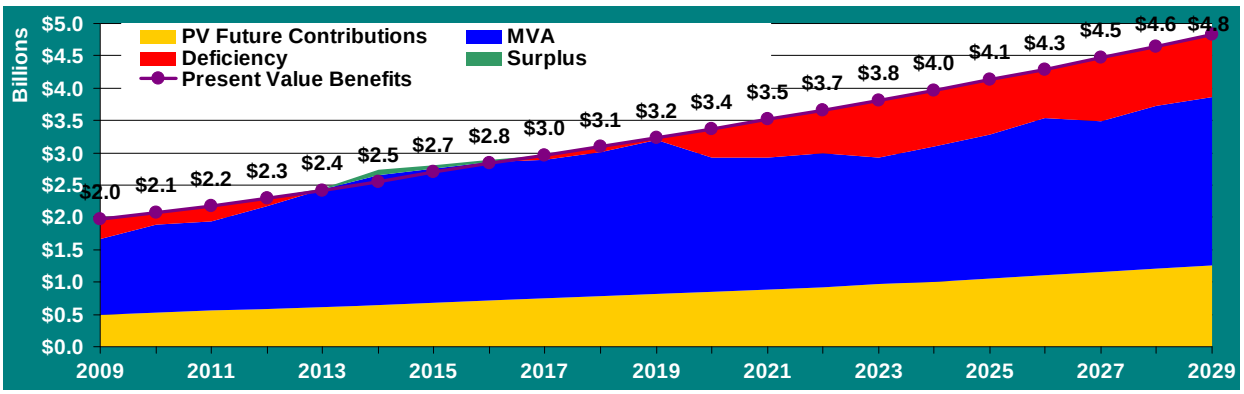
SECTION I
BOARD SUMMARY



This next graph shows the projected aggregate average employer cost as a percent of pay. The values above the bars represent the net employer contribution rates as a percent of covered pay. The increase in cost in 2019 reflects the fact that those municipalities with surplus are projected to be underfunded in 10 years, causing their cost to increase. The light blue bars that show up above or below the yellow bars reflect additional amortization of costs (or surplus) that increases (or offsets) the normal cost of benefits. Unfunded liabilities for applicable municipalities have been amortized based on actual reported amounts due.



Clearly the System's return on assets each year will not equal exactly 6.0% but will, over the long run, have a high likelihood of achieving this rate of return. Based on the hypothetical future return rates in Table I - 5 above, which yield an average 6.0% rate of return over the projection period, the projected funded status will show higher and lower levels of funding based upon the market value of assets.



SECTION II
ASSETS

The System's assets play a key role in the financial operation and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact upon benefit levels, Municipal and County contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on total (county & non-county) System assets including:

- **Disclosure** of System assets at December 31, 2008 and December 31, 2007;
- Statement of the **changes** in market values during the year;
- Development of the **actuarial value of assets**; and
- Allocation of **excess interest**.

Disclosure

The market value of assets represents a "snap-shot" or "cash-out" value, which 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. As a result, market values are usually not suitable for long-range planning.

The actuarial value of assets determines the funded ratio of the system.

Table II-1 summarizes assets at market value by asset class.

Table II-1
Statement of Assets at Market Value December 31 ($ Thousands)

	2008	2007
Assets		
Equity Investments	$697,235	$1,023,768
Accounts Receivable	12,389	16,338
Fixed Income Investments	294,750	390,777
Real Estate Investments	173,048	146,522
Fixed Assets	229	224
Accounts Payable	(1,604)	(1,892)
Investment Purchases Payable	(5,415)	(10,963)
Total Market Value of Assets	**$1,170,632**	**$1,564,774**

SECTION II
ASSETS

Table II-2 summarizes the transaction of the assets during the year leading up to our valuation.

Table II-2
Changes in Market Value in ($ Thousands)

Market Value of Assets – January 1, 2008		**$1,564,774**
Additions		
Contributions:		
Plan Members	$17,870	
Municipal Employers	31,533	
Assessments	290	
Total Contributions		$49,693
Investment Income:		
Net Appreciation In Fair Value Of Investments	(407,656)	
Short-Term And Other Investments	675	
Common And Preferred Stock	12,093	
Real Estate Equity	7,927	
International Equities	4,458	
Miscellaneous Income	107	
Securities Lending Income	2,895	
Less Securities Lending Expenses	(1,448)	
Less Investment Expenses	(6,129)	
Net Investment Income		($387,078)
Total Additions		($337,385)
Deductions		
Annuity Benefits	(46,173)	
Terminations	(7,597)	
Administrative Expenses	(2,987)	
Total Deductions		**($56,757)**
Market Value of Assets – January 1, 2009		**$1,170,632**

From the above table it is important to recognize that benefit payouts plus expenses of $56.8 million exceeds contribution income of $49.7 million for a net negative cash flow of $7.1 million which is best met through cash income from investments. The difference between contributions and benefit payments is slightly larger this year compared to the $6.0 million difference as of January 1, 2008.

SECTION II
ASSETS

Actuarial Value of Assets

The actuarial value of assets is developed by the actuary based upon the individual municipal account balances maintained by PMRS. This asset valuation method also takes into account the calculation of *excess interest* which is derived from income in excess of the long-term investment return assumption. The steps in the determination of the actuarial asset value as of December 31, 2008 are shown below. The difference between the market value of assets and the actuarial value of assets is considered the surplus. However the market value of assets is less than the reserves by $369.5 million as of December 31, 2008. This represents 31.6% of the market value and, based on the funding structure of the System, is currently anticipated to be made up by future investment returns in excess of the long-term 6.0% investment assumption.

Table II-3
Development of Actuarial Value of Assets ($ Thousands)

1. Prior Year Actuarial Value:	$1,458,148
2. Total Audited Reserve Accounts:	1,536,778
3. Expected Administrative Expenses:	3,375
4. Preliminary Actuarial Value (2+3):	1,540,153
5. Current Year Market Value of Assets:	1,170,632
6. Prior Year Market Value of Assets:	1,564,774
7. New Surplus/(Deficit) {Minimum of [(5-4) & (5-4) - (6-1)]}:	(476,147)
8. Percentage of New Surplus Credited as Excess Interest:[a]	0.000%
9. Excess Interest (Maximum of 0 and (7x8)) available:	0
10. Excess Interest awarded:	0
11. Current Year Actuarial Value of Assets (4+10):	**$1,540,153**

a See Table II-4b

Excess Interest Allocation

Each year, municipalities are eligible to receive a supplemental allocation of investment monies beyond the regular 6.0% interest rate if the System maintains a surplus margin. This "excess interest" award is derived as a portion of "new surplus" created during the year. "Surplus" refers to the excess of market value over the actuarial value of assets. Once the preliminary actuarial asset value has been determined, a formula is used to determine the new surplus. Depending on the relative size of surplus to market value "margin," between 10% and 90% of new surplus will be designated as "excess interest."

For the year ended December 31, 2008 there was no surplus because the market value of assets is less than the actuarial value of assets. Instead, there is a $476.1 million decline in new surplus which represents the difference in the market and actuarial asset values of $369.5 million plus the elimination of the net surplus at the end of 2007 of $106.6 million that eliminated the option to award excess interest. The calculation on the next page details the final excess interest calculation. The prior year's Trial Surplus is being used as the surplus amount for this calculation because no excess interest was awarded for 2008.

SECTION II
ASSETS

Table II-4a
Determination of Excess Interest ($ Thousands)

1. Assets		
a. Market value	$	1,170,632
b. Preliminary Actuarial Value		1,540,153
c. Available Surplus (1a. - 1b.)	**$**	**(369,521)**
2. Reserves		
a. Members	$	368,673
b. Municipal		688,576
c. Disability		502
d. Retired		479,026
e. Total (2a. + 2b. + 2c. + 2d.)	**$**	**1,536,777**
3. Last year's surplus	$	106,626
4. New surplus/(deficit) (1c. - 3.)	$	(476,147)
5. Excess percent of New Surplus (see Table II-4b)		0.000%
6. Excess Interest Awarded	$	-
7. Percent of reserve {6. / (2e. - 2c.)}		0.00%
8. Trial Surplus/(Deficit) (1c. - 6.)	$	(369,521)
9. Trial margin percent {8. / 1a. Not less than zero}		0.00%

SECTION II
ASSETS

Table II-4b
Determination of Excess Percent of New Surplus ($ Thousands)

1. Market Value of Assets	$	1,170,632
2. Available Surplus	$	0
3. Margin (2. / 1.)		0.00%
4. New Surplus	$	-
5. New Margin (4. / 1.)		0.00%
6. Excess Percent (10% + 8*3.) / (100% + 8*5.)		0.00%

Because there is a net deficit, there is no excess interest to award to participating municipalities.

SECTION III
LIABILITIES

Disclosure

The actuarial liabilities are used for funding calculations and GASB disclosures. Act 205 calls for the use of the **Entry Age Normal Cost** funding cost method to be applied in determining these liabilities for municipal plans. The objective of this method is to spread the cost of a participant's benefits evenly as a percent of pay over the participant's working lifetime. The present value of benefits reflects not only the benefits earned to date but the additional liabilities for the benefits anticipated to be earned in the future by active participants.

The following table presents the defined benefit plan present value of benefits and actuarial liabilities for the 2009 valuation. For valuation purposes, the System is maintaining a net aggregate surplus. However when looking at all of the obligations expected to be distributed by the System compared to future contributions and market value of assets, there is a $281 million dollar deficit which can only be made up through favorable investment returns based on the current contribution structure. This deficit relative to the prospect of future investment returns is a measure of risk of the System.

Table III-1
Liabilities/Net Unfunded/(Surplus) of Defined Benefit Municipal Plans
January 1, 2009

Present Value of Benefits	
Active Participant Benefits	$1,394,296,078
Retiree and Inactive Benefits	525,798,517
Present Value of Benefits (PVB)	**$1,920,094,595**
Present Value of Future Normal Costs (PVFNC)	519,381,331
Municipal Market Value of Assets (MVA)	1,119,707,824
Net (Surplus)/Resources or Deficit/Unfunded (PVB-PVFNC-MVA)	**$281,005,440**
Actuarial Liability	
Present Value of Benefits (PVB)	$1,920,094,595
Present Value of Future Normal Costs (PVFNC)	519,381,331
Actuarial Liability (AL = PVB – PVFNC)	**$1,400,713,264**
Municipal Actuarial Value of Assets (AVA)	1,489,228,742
Net Unfunded/(Surplus) (AL – AVA)	**($88,515,478)**

SECTION IV
CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what contributions are needed based upon the funding policy established for the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For each of the plans covered by the System, the funding cost method as stipulated by law to be applied in the determination of the liability is the **Entry Age Actuarial Cost Method**. Based upon this cost method, the statutory methods for funding any unfunded liability, there are three components that are used to determine the total contribution: the **normal cost**, the amortization of **initial unfunded actuarial liability**, and any amortizations of **increases/decreases in the unfunded actuarial liability / or adjustment for surplus** expressed as a percent of payroll.

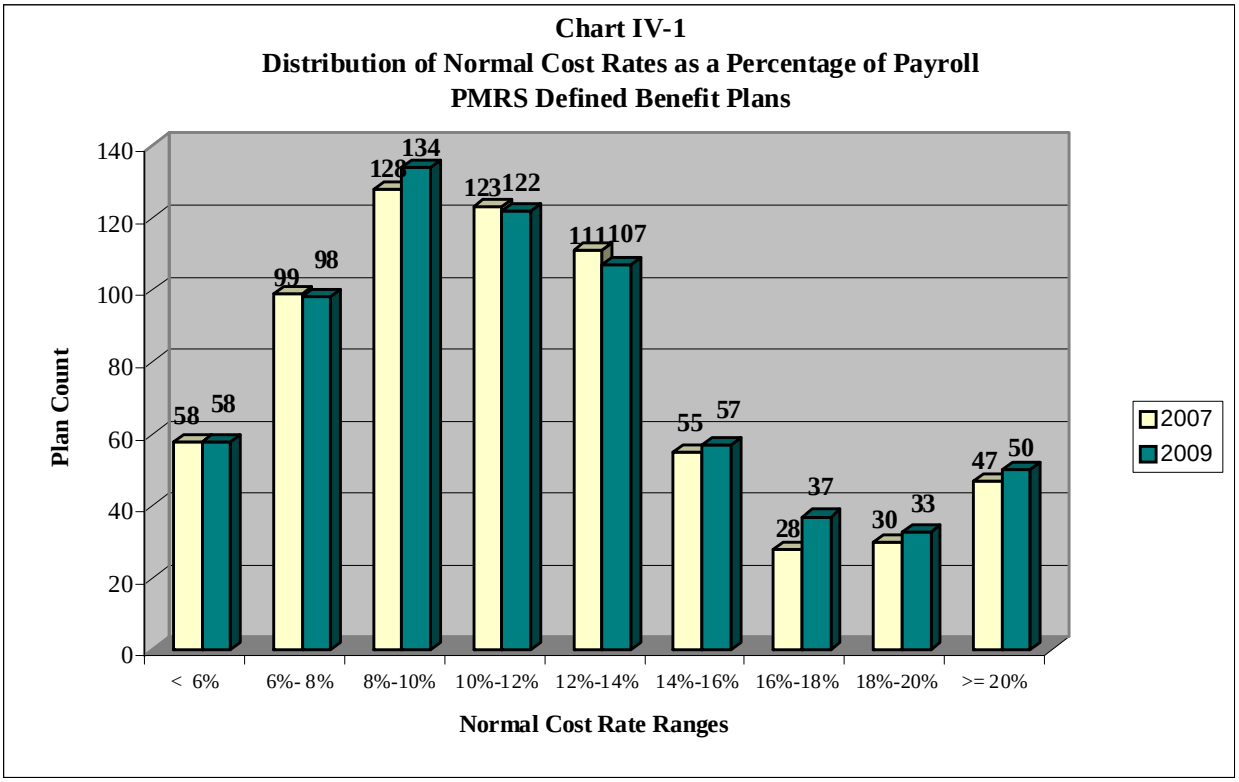
For plans with a surplus, the contribution rate is the normal cost offset by 10% of the surplus again expressed as a percent of payroll. This report provides an analysis of the aggregate assets and liabilities but not the aggregation of the Minimum Municipal Obligations required for each participating municipality covered by 2009 Act 205 forms as the combination of underfunded and surplus plans would not necessarily be informative in reviewing the overall funded status of the System.

Below we describe the cost components and provide graphically the distribution of costs among the participating municipalities.

The normal cost rate (i.e., normal cost as a percent of payroll) is determined in the following steps. First, for a typical new entrant an individual normal cost rate is determined by taking the value, as of entry age into the plan, of that member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary. Finally, the total normal cost rate is reduced by the member contribution rate to produce the employer normal cost rate. If a plan provides for a Separate Member Annuity through required member contributions, this amount is then added to the total normal cost rate to determine the final total normal cost rate.

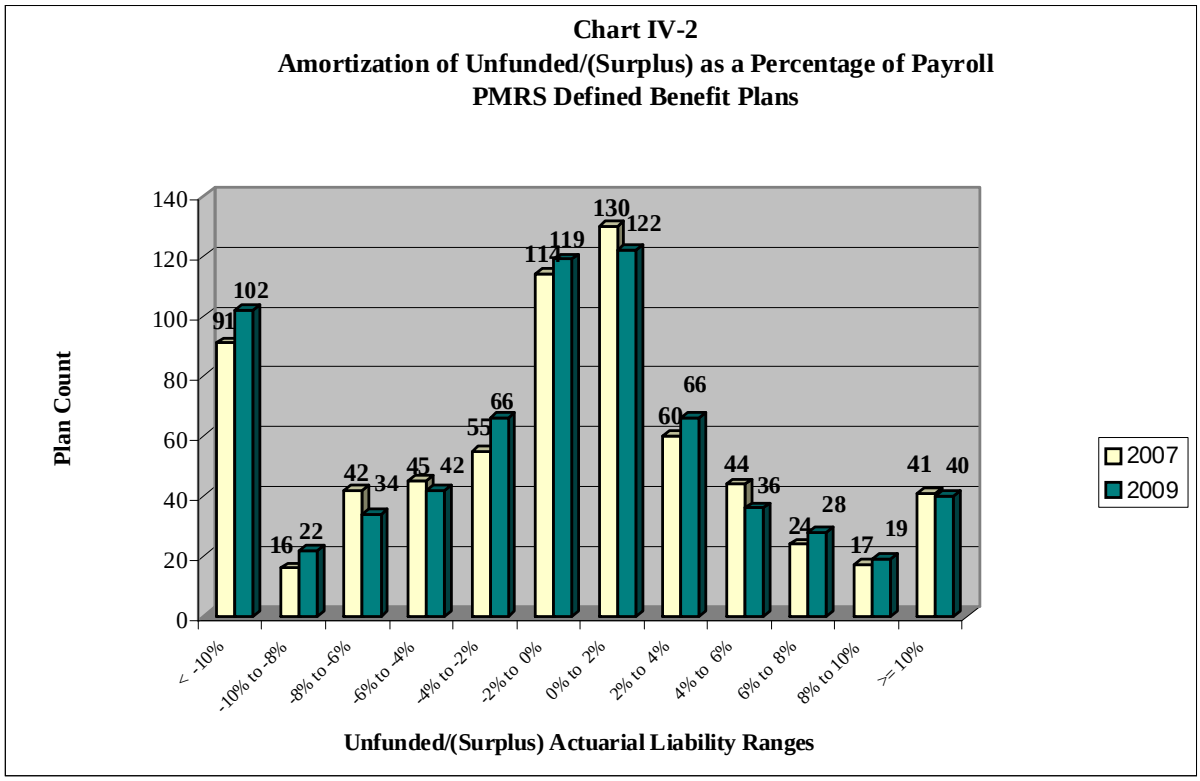
SECTION IV
CONTRIBUTIONS

The chart below is a summary of the normal cost rates determined for the defined benefit plans, including plans that have no normal cost because there are no active participants, as of January 1, 2007 and January 1, 2009 for trend comparison.



SECTION IV
CONTRIBUTIONS

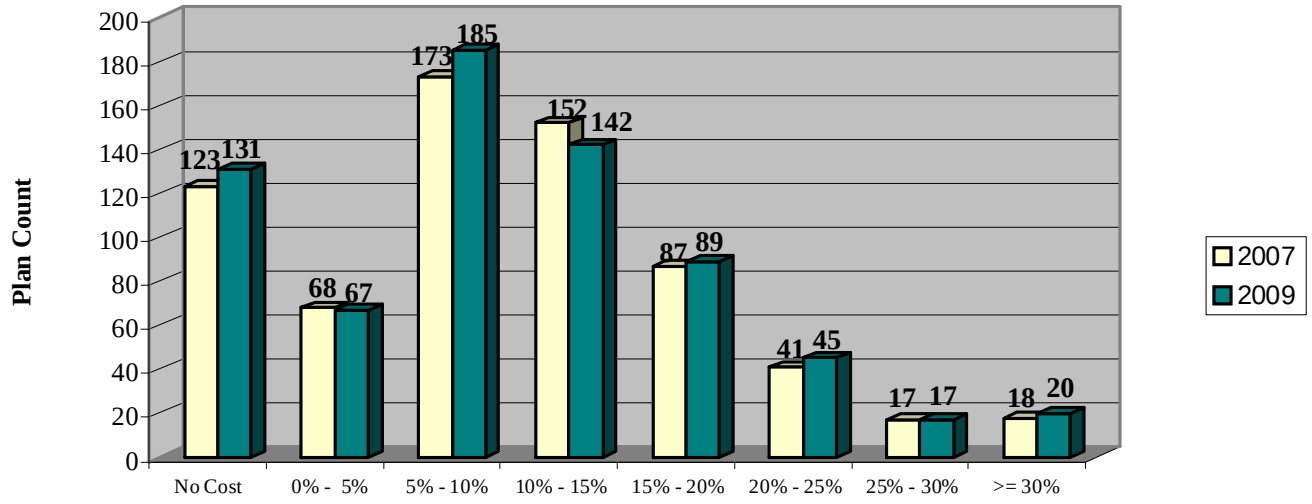
Chart IV-2 below is a summary of the unfunded/(surplus) actuarial liability amortization costs defined as a percent of covered payroll of each plan's active members, determined for the defined benefit plans as of January 1, 2007 and January 1, 2009 for trend comparison.



SECTION IV
CONTRIBUTIONS

Chart IV-3 below is a summary of the total costs as a percentage of covered payroll, representing the sum of the normal cost and amortization of unfunded/(surplus) offset determined for the defined benefit plans as of January 1, 2007 and January 1, 2009 for trend comparison. For 2009, there are 46 plans that have no payroll because there are no active participants. These plans are all listed in the "No Cost" category. Three of these plans are currently underfunded and are required to amortize the cost of the unfunded actuarial liability through continued contributions.

Chart IV-3
Cost of Plan as Percentage of Payroll
PMRS Defined Benefit Plans



SECTION V
ACCOUNTING STATEMENT INFORMATION

Statement No. 25 of the Governmental Accounting Standards Board (GASB) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The GASB-25 actuarial liability is the same as the actuarial liability amount calculated for funding purposes.

The actuarial liability (GASB-25) is determined assuming that the System is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 6.0% per annum.

GASB Statement No. 25 requires the actuarial liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of January 1, 2009 are exhibited in Table V-1.

Tables V-2 through V-7 are exhibits to be used with the System's CAFR report:

- Table V-2 is the Note to Required Supplementary Information;
- Table V-3 is the Solvency Test which shows the portion of Actuarial Liability covered by Assets;
- Table V-4 is the Funded Status of Actuarial Liabilities;
- Table V-5 is the Schedule of Retirees and Beneficiaries;
- Table V-6 is the Schedule of Total Membership; and
- Table V-7 is the Schedule of Total Membership Funded Status of Actuarial Liabilities.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-1
Accounting Statement Information

	January 1, 2009	January 1, 2008
A. GASB No. 25 Basis		
1. Actuarial Liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$538,733,517	$461,965,617
2. Actuarial Liabilities for current employees	912,903,747	915,235,383
3. Total Actuarial Liability (1. + 2.)	$1,451,637,264	$1,377,201,000
4. Net Actuarial Assets available for benefits	$1,540,152,742	$1,458,148,442
5. Unfunded/(Surplus) Actuarial Liability (3. - 4.)	($88,515,478)	($80,947,442)

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-2
NOTE TO REQUIRED SUPPLEMENTARY INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation date	January 1, 2009
Actuarial cost method	Entry age
Amortization method	Level dollar for Plan Bases and open for Aggregate Gain/Loss
Actuarial assumptions:	
Investment rate of return*	6.0%
Projected salary increases*	3.0%-7.8%
*Includes inflation at	3.0%
Cost-of-living adjustments	ad hoc

The actuarial assumptions used have been recommended by the actuary and adopted by the System's Board based on the most recent review of the System's experience completed in 2004.

The rate of employer contributions to the System is composed of the normal cost, amortization of the unfunded actuarial liability and an allowance for administrative expenses. The normal cost is a level percent of payroll cost which, along with member contributions, will pay for projected benefits at retirement for the average plan participant. The actuarial liability is that portion of the present value of projected benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial liability. The allowance for administrative expenses is based upon the System's actual administrative expenses.

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-3
SOLVENCY TEST
Aggregate Accrued Liabilities for

Valuation Date January 1,	Active Member Contributions (1)*	Retirees & Beneficiaries (2)	Active Member Employer Financed Contributions (3)	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
2009	$333,142,928	538,733,517	579,760,819	1,540,152,742	100%	100%	115%
2008	321,567,969	461,965,617	593,667,414	1,458,148,442	100%	100%	114%
2007	293,593,948	471,770,821	516,657,229	1,336,009,295	100%	100%	110%
2005	231,122,200	395,061,900	528,674,100	1,219,130,000	100%	100%	112%
2003	213,174,400	329,766,100	412,318,900	1,084,828,900	100%	100%	131%

* *This includes the sum of the active member employee contribution balances, the member separate annuity account balances, the municipal for separate annuity account balances, and the excess interest allocations.*

Table V-4
Funded Status of Actuarial Liabilities
GASB Statement No. 25 Disclosure

Valuation Date January 1,	Actuarial Value of Assets (A)	Actuarial Liability (AL) Entry Age (B)	Unfunded AL (Surplus) (B-A)	Funded Ratio (A/B)
2009	1,540,152,742	1,451,637,264	(88,515,478)	106.1%
2008	1,458,148,442	1,377,201,000	(80,947,442)	105.9%
2007	1,336,009,295	1,282,021,998	(53,987,297)	104.2%
2006	60,678,307	55,251,080	(5,427,227)	109.8%
2005	1,219,130,000	1,154,858,200	(64,271,800)	105.6%
2004	54,024,249	45,580,670	(8,443,579)	118.5%

The actuarial assumptions as of January 1, 2009 are shown in the assumptions and methods section. The above information was derived from the following membership data, as provided by the System, regarding:

- 696 defined benefit county and non-county plans and 203 cash balance plans as of January 1, 2009;
- Four defined benefit plans required to re-determine contribution levels as of January 1, 2008 (prior year non-county benefit plans estimated from the January 1, 2007 valuation);
- 679 defined benefit county and non-county plans and 177 cash balance plans as of January 1, 2007;
- Four defined benefit plans required to re-determine contribution levels as of January 1, 2006;
- 678 defined benefit county and non-county plans and 169 cash balance plans as of January 1, 2005; and
- Four defined benefit plans required to re-determine contribution levels as of January 1, 2004.

SECTION V
ACCOUNTING STATEMENT INFORMATION

The table below is a schedule of the changes to the retiree and beneficiary rolls over the last six years.

Table V-5
Schedule of Retirees and Beneficiaries
Added to and Removed from Rolls in Last Six Years

Valuation Date January 1,	Added to roll	Average Annual Annuities Added	Avg Annual Benefit Increase*	Deleted from roll	Average Annual Annuities Removed	Number on roll	Annual Annuities	Percentage Increase in annuities	Average Annual Annuities	Percent increase in Average Annual Annuities
2009	271	13,883	790	119	11,494	3,750	45,414,210	5.9%	12,110	1.6%
2008	236	12,780	362	97	8,921	3,598	42,895,559	7.6%	11,922	3.4%
2007	252	12,828	N/A	170	N/A	3,459	39,870,509	5.1%	11,527	2.6%
2006	268	N/A	N/A	83	N/A	3,377	37,943,181	9.4%	11,236	3.4%
2005	251	N/A	N/A	116	N/A	3,192	34,691,928	8.4%	10,868	3.8%
2004	214	N/A	N/A	84	N/A	3,057	32,010,035	7.4%	10,471	2.8%

* Increase measured as an average of impacted retirees

The table below is a summary of the total membership over the last six years.

Table V-6
Schedule of Total Membership
Six Year Trend

Valuation Date January 1,	Active Members Defined Benefit Plans	Active Members Cash Balance Plans	Retirees	Beneficiaries	Deferred Pensions	Inactive Members	Total
2009	8,411	978	3,289	461	847	0	13,986
2008	8,383	950	3,173	425	744	7	13,682
2007	8,314	918	2,965	494	723	33	13,447
2006	8,374	896	2,941	436	675	66	13,388
2005	8,341	867	2,768	424	602	165	13,167
2004	8,491	902	2,657	416	546	230	13,242

SECTION V
ACCOUNTING STATEMENT INFORMATION

The table below is a schedule of the total membership over the last four years.

Table V-7
Schedule of Total Membership
Funded Status of Actuarial Liabilities

	As of January 1[a]			
	2009	**2008**	**2007**	**2006**
a. Retirees currently receiving benefits	3,289	3,173	2,965	218
b. Beneficiaries currently receiving benefits	461	425	494	8
c. Terminated vested employees entitled to future benefits from Defined Benefit Plans	650	570	561	53
d. Terminated non-vested employees entitled to contribution refunds from Defined Benefit Plans	-	7	33	7
e. Active employees in defined benefit plans	8,411	8,383	8,314	717
i. Aggregate Salary	$372,370,037	$364,865,185	$358,690,830	$23,905,899
ii. Vested[b]	4,952	4,913	4,430	358
iii. Non-vested	3,459	3,470	3,884	359
f. Participants in cash balance plans	1,175	1,124	1,080	-
i. Aggregate Salary[c]	$32,811,919	$31,107,136	28,213,485	$0
ii. Active	978	950	918	-
iii. Inactive	197	174	162	-

a 2007, 2008, and 2009 include defined benefit non-county plans, defined benefit county plans, and cash balance plans. 2006 results consist of defined benefit county plans only
b Count of vested participants estimated based on service as of the valuation date
c Actual salary for preceding valuation date

APPENDIX A
MEMBERSHIP INFORMATION

Pennsylvania Municipal Retirement System Distribution of Active Members by Age and Service as of January 1, 2009

COUNTS BY AGE/SERVICE

	Service										
Age	1 year or less	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up	Total
Under 20	11	2	0	0	0	0	0	0	0	0	13
20 to 24	87	63	31	20	6	0	0	0	0	0	207
25 to 29	91	98	78	109	129	2	0	0	0	0	507
30 to 34	100	68	67	107	280	47	2	0	0	0	671
35 to 39	100	80	61	112	321	189	99	10	0	0	972
40 to 44	111	74	75	130	329	254	193	94	7	0	1,267
45 to 49	89	75	76	143	322	233	273	185	137	16	1,549
50 to 54	85	57	78	131	307	262	246	203	196	174	1,739
55 to 59	69	31	59	89	210	177	200	194	126	224	1,379
60 to 64	25	19	22	57	138	115	138	89	66	103	772
65 & up	14	10	9	17	59	50	52	30	24	48	313
Total	782	577	556	915	2,101	1,329	1,203	805	556	565	9,389

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

APPENDIX A
MEMBERSHIP INFORMATION

Pennsylvania Municipal Retirement System Distribution of Active Members by Age and Service as of January 1, 2009

AVERAGE SALARY BY AGE/SERVICE*

	Service										
Age	1 year or less	1 to 2	2 to 3	3 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 & up	Total
Under 20	$22,598	$23,778	$0	$0	$0	$0	$0	$0	$0	$0	$22,779
20 to 24	$29,874	$30,970	$36,305	$36,074	$25,628	$0	$0	$0	$0	$0	$31,647
25 to 29	$32,072	$35,697	$39,457	$39,861	$43,328	$48,250	$0	$0	$0	$0	$38,511
30 to 34	$33,524	$38,094	$38,873	$43,011	$47,304	$48,220	$36,288	$0	$0	$0	$42,822
35 to 39	$34,014	$38,201	$38,855	$43,730	$46,647	$48,655	$50,596	$43,696	$0	$0	$44,589
40 to 44	$32,333	$38,670	$37,202	$37,695	$43,715	$46,640	$53,268	$52,210	$49,449	$0	$44,123
45 to 49	$36,232	$35,998	$34,342	$39,010	$41,728	$44,316	$49,554	$53,246	$50,887	$47,948	$44,540
50 to 54	$32,497	$36,724	$36,250	$35,731	$40,158	$42,248	$45,236	$49,198	$51,948	$50,570	$43,621
55 to 59	$33,258	$42,107	$40,045	$36,704	$38,796	$41,242	$44,525	$47,190	$49,987	$56,161	$44,681
60 to 64	$29,991	$38,244	$36,121	$34,150	$39,420	$38,831	$43,313	$48,422	$49,874	$51,274	$42,724
65 & up	$25,492	$17,348	$28,961	$32,902	$30,895	$35,858	$34,401	$41,086	$39,984	$50,757	$36,369
Total	$32,605	$36,401	$37,452	$38,796	$42,608	$43,911	$47,123	$49,540	$50,448	$52,857	$43,155

**Actual 2009 salary.*

APPENDIX A
MEMBERSHIP INFORMATION

Pennsylvania Municipal Retirement System Distribution of Inactive Benefit Payments as of January 1, 2009

COUNTS BY BENEFIT/AGE: RECEIVING PAYMENTS

Age	Monthly Benefit	Count
x < 30	$2,719	1
30 <= x < 35	$1,500	2
35 <= x < 40	$4,501	8
40 <= x < 45	$12,202	21
45 <= x < 50	$30,568	41
50 <= x < 55	$155,539	134
55 <= x < 60	$437,969	305
60 <= x < 65	$798,163	644
65 <= x < 70	$861,462	778
70 <= x < 75	$600,736	640
75 <= x < 80	$430,192	517
80 <= x < 85	$295,939	399
85 <= x	$153,028	260
<Total>	$3,784,518	3,750

COUNTS BY BENEFIT/AGE: DEFERRED PAYMENTS*

Age	Monthly Benefit	Count
x < 30	$480	3
30 <= x < 35	$7,554	17
35 <= x < 40	$28,381	52
40 <= x < 45	$51,182	79
45 <= x < 50	$106,248	138
50 <= x < 55	$185,104	212
55 <= x < 60	$80,253	120
60 <= x < 65	$14,856	27
65 <= x < 70	$795	1
70 <= x < 75	$301	1
75 <= x < 80	$0	0
80 <= x < 85	$0	0
85 <= x	$0	0
<Total>	$475,155	650

* Deferred payments listed above are attributable to defined benefit plans only. Deferred payments to the 197 cash balance participants will be determined upon retirement.

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

APPENDIX A
MEMBERSHIP INFORMATION

Pensions in Payment on January 1, 2009 by Type and Amount

Monthly Amount	Total	Pension Type				
		Normal	Involuntary early	Voluntary early	Service disability	Non-service disability
Total	3,750	3,093	180	373	34	70
Under $100	190	167	11	10	1	1
$ 100 - $199	242	192	29	19	2	0
200 - 299	261	205	31	25	0	0
300 - 399	270	219	24	26	0	1
400 - 499	225	180	13	27	2	3
500 - 599	259	215	11	25	1	7
600 - 699	210	172	9	22	0	7
700 - 799	204	159	10	27	0	8
800 - 899	202	156	8	23	2	13
900 - 999	196	152	10	25	2	7
1,000 - 1,199	338	272	6	43	6	11
1,200 - 1,399	226	187	5	26	4	4
1,400 - 1,599	206	173	5	19	7	2
1,600 - 1,799	147	126	4	14	3	0
1,800 - 1,999	130	111	2	13	0	4
2,000 - 2,199	98	88	0	9	1	0
2,200 - 2,399	66	62	0	4	0	0
2,400 - 2,599	68	61	0	5	1	1
2,600 - 2,799	56	51	2	2	1	0
2,800 - 2,999	32	30	0	1	0	1
3,000 - 3,499	57	51	0	5	1	0
3,500 - 3,999	41	38	0	3	0	0
4,000 and over	26	26	0	0	0	0

PENNSYLVANIA MUNICIPAL RETIREMENT SYSTEM

APPENDIX A
MEMBERSHIP INFORMATION

Pensions Awarded in Prior Ten Years, by Type and Monthly Amount

Year Ended December 31:	Total		Normal		Involuntary early		Voluntary early		Disability	
	Number	Average Monthly Amount	Number	Average Monthly Amount	Number	Average Monthly Amount	Number	Average Monthly Amount	Number*	Average Monthly Amount
1998	152	939	122	1,006	13	785	6	347	11 (2)	698
1999	179	869	152	912	22	647	3	345	2 (0)	850
2000	185	954	147	1,028	25	736	8	423	5 (1)	702
2001	246	1,277	206	1,346	30	957	6	945	4 (0)	655
2002	199	1,087	170	1,121	17	974	5	670	7 (2)	837
2003	214	1,199	171	1,226	26	1,206	8	609	9 (4)	1,199
2004	247	1,126	189	1,185	35	994	13	653	10 (1)	1,100
2005	264	1,270	217	1,290	23	1,257	11	639	13 (4)	1,493
2006	252	1,069	192	1,082	19	572	32	1,196	9 (2)	1,373
2007	236	1,065	227	1,056	6	1,259	-	-	3 (0)	1,350
2008	271	1,157	223	1,150	7	843	36	1,259	5 (3)	1,162

* *Numbers of service-related disability pensions are shown in parentheses.*

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions:

The current PMRS actuarial assumptions used in this study are as follows.

A. Healthy Life Mortality: Sample rates are:

	Retirees Prior to January 1, 2005 (1983 GAM Males; females setback 6 years)		New Retirees on or after January 1, 2005 (1994 GAM)	
Age	Male	Female	Male	Female
50	0.39%	0.19%	**0.26%**	**0.14%**
55	0.61	0.35	**0.44**	**0.23**
60	0.92	0.57	**0.80**	**0.44**
65	1.56	0.84	**1.45**	**0.86**
70	2.75	1.39	**2.37**	**1.37**
75	4.46	2.48	**3.72**	**2.27**
80	7.41	4.04	**6.20**	**3.94**
85	11.48	6.71	**9.72**	**6.77**

(a) Type of Death:
(i) 15% of mortality is assumed to be service related for municipal plans, and
(ii) 50% of mortalities are assumed to be service related for uniform plans.

B. Disabled Life Mortality Rates: Mortality under healthy life table for a life ten years older.

C. Termination Rates Before Retirement: For all plans with 25 or more active members, the termination rates indicated below were used; for municipalities with between six and 24 members, a percentage of the indicated rates where such percentage equals 100% less 5% x (25 – number of members); for municipalities with five or fewer members, no terminations were assumed.

	Current Valuation Rate[1]		
	Uniformed	Municipal	
Years of Service	Male and Female	Male	Female
Less than 1	**13%**	**13%**	**16%**
1 but less than 2	**10**	**12**	**15**
2 but less than 3	**7**	**10**	**13**
3 but less than 4	**7**	**9**	**11**
4 but less than 5	**6**	**6**	**9**
5 but less than 6	**5**	**6**	**8**
6 but less than 7	**4**	**6**	**7**
7 but less than 8	**3**	**5**	**7**
8 but less than 9	**3**	**4**	**6**
9 but less than 10	**3**	**3**	**5**
10 or more	**3**	**2**	**4**

[1] *No termination rates are applied once the employee becomes eligible for voluntary early or normal retirement.*

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D. Disability Incidence Rates:

Municipal - 40% of 1964 OASDI (Social Security) Experience for Males. Sample rates are:

Age	Valuation Rate (%)
25	0.034%
35	0.059
45	0.144
55	0.404
65	0.928

Uniformed plans – 60% of 1964 OASDI (Social Security) Experience for Males. Sample rates are:

Age	Valuation Rate (%)
25	0.051%
35	0.088
45	0.216
55	0.605
65	1.393

Type of Disability:
(i) 15% of disablements are assumed to be service related for municipal plans, and
(ii) 50% of disablements are assumed to be service related for uniform plans.

E. Workers Compensation: Service-related disability benefits payable from municipal plans are offset by 25% of final average salary.

F. Salary Scale: Three year select rates include 3.0% inflation and age-related scale for merit/seniority based on sample rates below plus 2% during the select period only then reverting to inflation and merit/seniority thereafter. Final average salary plans approximates an additional 6% increase in final salary at retirement.

Sample rates are as follows:

Age	Total Rate (%)* (including inflation)
25	7.8%
30	5.9
35	5.1
40	4.5
45	4.2
50	4.1
55	3.9
60	3.7
65	3.0

**Add 2% for each of the first three years of service.*

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G. Retirement Age: The age at which unreduced benefits are available. No early retirement is assumed. Specific assumptions regarding retirement age are:

(a) Uniformed Members:

(i) Members first eligible to retire at age 57 or younger will defer their retirement four years,
(ii) Members first eligible to retire at ages 58, 59, 60 or 61 will retire at age 62, and
(iii) Members first eligible to retire at ages 62 or older will retire when first eligible.

(b) Municipal Members:

Members are assumed to retire over a range of ages as shown below:

Age	Current Rate of Normal Retirement[2]
Under 46	5%
46 – 54	15
55 – 59	10
60 – 61	10
62	30
63 – 64	20
65	35
66 – 74	15
75	100

Inactive vested members are assumed to retire when first eligible for unreduced benefits.

H. Marital Status and Spouse's Age[3]: 85 percent of members will be married at time of retirement and females are four years younger than their spouses.

I. Social Security Projections[3]:

(a) The Social Security Taxable Wage Base will increase by 3.5% compounded annually;

(b) The Consumer Price Index will increase 3.0% compounded annually; and

(c) The Average Total Wages of All Workers will increase by 3.5% compounded annually.

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[2] *Rates indicated are adjusted by adding 5% (and 10% for ages 60-62 under current rate assumptions) for the year in which the member is first eligible for normal retirement.*

[3] *If applicable.*

J. Post-Retirement Cost of Living Increases[3]: 3.0% per year, subject to plan limitations.

K. Net Investment Return: 6.0% compounded annually (net of investment and certain administration expenses) for funding purposes.

L. Administrative Expenses: The reserve for non-investment related expenses of the system, net the $20 per participant annual assessment is based on expected expenses for the current year. The amount allocated for 2009 is $3,375,000.

Actuarial Methods:

Contribution requirements are individually determined for each participating municipality, on an actuarial basis as described below, at least biennially. The frequency of the actuarial valuation is determined by applicable Commonwealth statute (Act 205 of 1984 and Act 293 of 1972). The following actuarial methods were adopted effective January 1, 1985, unless indicated otherwise.

Actuarial Value of Assets:

Sum of all audited reserve accounts as of the valuation date, including Member, Municipal, Retired, and Disability Reserves, and a one-year administration expense reserve, plus the portion of any additional investment income to be distributed as "excess interest." The actuarial value can never be less than 90 percent of fair market value.

Each year, municipalities receive an excess interest allocation derived as a portion of new surplus created during the prior year. "Surplus" refers to the excess of fair market value over the actuarial value of assets. Once the preliminary actuarial asset value has been determined, a formula is used to allocate the new surplus. Generally, depending on the relative size of surplus to fair market value, between 10 percent and 90 percent of the new surplus will become excess interest.

Based on the unique legislative structure of PMRS, because assets are set equal to reserves under the System, they do not necessarily relate directly or indirectly with the current market value of assets as required under Actuarial Standard of Practice Statement No. 44 which states under section 3.3:

> *"…the actuary should select an asset valuation method that is designed to produce actuarial values of assets that bear a reasonable relationship to the corresponding market values. The qualities of such an asset valuation method include the following:*
>
> *a. The asset valuation method is likely to produce actuarial values of assets that are sometimes greater than and sometimes less than the corresponding market values.*
>
> *b. The asset valuation method is likely to produce actuarial values of assets that, in the actuary's professional judgment, satisfy both of the following:*

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1. *The asset values fall within a reasonable range around the corresponding market values. For example, there might be a corridor centered at market value, outside of which the actuarial value of assets may not fall, in order to assure that the difference from market value is not greater than the actuary deems reasonable.*

2. *Any differences between the actuarial value of assets and the market value are recognized within a reasonable period of time. For example, the actuary might use a method where the actuarial value of assets converges toward market value at a pace that the actuary deems reasonable, if the investment return assumption is realized in future periods.*

In lieu of satisfying both (1) and (2) above, an asset valuation method could satisfy section 3.3(b) if, in the actuary's professional judgment, the asset valuation method either (i) produces values within a sufficiently narrow range around market value or (ii) recognizes differences from market value in a sufficiently short period."

On this basis, the administrative rules adopted by PMRS for defining the Actuarial Value of Assets do not necessarily meet the requirement of the standard. We, therefore, qualify our Actuarial Opinion on the actuarial asset methodology by the disclosure of this variance to ASOP 44 requirements.

Actuarial Cost Method:

Entry Age Normal Actuarial Cost Method.

Entry age is defined as attained age less credited service. The normal cost rate is derived as a level percent of future compensation of current employees, on an individual basis. This rate is applied to the projected payroll and projected employee contributions are deducted. Actuarial gains (or losses), including the effect of contributions greater or lesser than the previously determined actuarial level, are reflected by decreases (or increases) in the unfunded actuarial liability. Under Act 205 of 1984, the unfunded actuarial liability is amortized as a level dollar amount over the lesser of:

(a) (i) 30 years, with respect to the initial liability as of 1/1/85 (or first valuation);
(ii) 20 years, with respect to actuarial gains and losses;
(iii) 20 years, with respect to changes due to actuarial assumptions;
(iv) 20 years, with respect to changes due to plan provisions;
(v) 10 years, with respect to changes in benefits for currently retired members; or

(b) The average assumed working lifetime of active employees as of the date the liability was established.[4]

With the two exceptions which follow, the funding method is applied individually with respect to each municipality:

1) Retired and disabled members are paid monthly benefits from the System's Retired Reserve account, which at the time of retirement receives a transfer from the municipal and member accounts in an amount actuarially determined to be sufficient to pay all future benefits for the member (and, if applicable, a surviving beneficiary). Thus, post-retirement experience is pooled with the System. (However, this procedure does not apply to the legislated ad-hoc adjustments effective January 1, 1989.)

2) A disabled member's pension is met in part from the amount that can be provided by the value of that portion of the member's accrued benefit attributable to municipal contributions, with the balance of the pension being provided by the appropriate transfer from the Disability Reserve Account. The amount of annual transfer from the accumulated municipal contributions to the Disability Reserve Account is determined on the one year term cost basis, i.e., the expected cost of disabilities in the coming year.

Changes in Actuarial Assumptions and Methods:

There were no changes in the actuarial assumptions from last year to this year.

There was a change in the Actuarial Method for amortizing the unfunded gain/loss. The amortization period was extended from 15 years to 20 years in accordance with amendments to Act 205 by Act 44.

[4] *If there are no active employees, the unfunded liability is amortized one year after the liability was established.*