Pennsylvania Municipal Retirement System

Actuarial Valuation as of January 1, 2012

Produced by Cheiron

May 2013

Classic Values, Innovative Advice

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June 7, 2013

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 (System) as of January 1, 2012. This report includes the valuation of the four county plans and reflects a roll forward of all other plans administered by the System. The results of the valuation are contained in this report. The purpose of the valuation is discussed in the Foreword.

The purpose of this report is to present the annual actuarial valuation of the Pennsylvania Municipal Retirement System. This report is for the use of the Pennsylvania Municipal Retirement Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party. This report contains 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 traditional defined benefit portion of the municipal plans participating in the system as of the valuation date, the updated methods and assumptions effective January 1, 2012, as well as required disclosures under the Governmental Accounting Standards Board Statement #25 for the entire System.

Your attention is called to the Foreword and Board Summary in which we refer to the general approach employed in the preparation of this report, a big picture view of the System, historical trends developed by Cheiron, and future stress testing of the System. Note the trend data developed prior to January 1, 2007 was developed by the prior actuary. 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 to the best of our knowledge and belief. All municipalities that were required to file an Act 205 form as of January 1, 2011, had their liabilities actuarially adjusted and included in this report to maintain a valuation of the System from year to year. All county plans reported to the State for the 2012 Act 293 Filing are the actual values. 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.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of

Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron

Karen Zangara

Kenneth A. Kent, FSA, FCA
Principal Consulting Actuary

Karen M. Zangara, FSA
Principal Consulting Actuary

cc: Anthony J. Bucci, Jr.
Kristine Cline

FOREWORD

Cheiron has performed the actuarial valuation of the Pennsylvania Municipal Retirement System (System) as of January 1, 2012. 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 an agent multiple employer plan in which each of the participating municipalities are entitled to define and submit to the Board 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 2011 Act 205 filings and 2012 Act 293 filings in preparing this valuation. Because the System is bound by Act 205 to complete a biennial valuation for each employer, we have developed liabilities for 2012 for all county plans required to submit a valuation as of January 1, 2012. For the municipalities valued as of January 1, 2011 we used the 2011 results to estimate the liabilities for these plans to provide an overall measure of the funded status of the System. This method is referred to as a "roll forward" and is used throughout this report in all 2012 calculations for the municipalities to provide a reasonable estimate of the aggregate System results.

FOREWORD

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. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice #23.

The actuarial assumptions reflects the Board's understanding of the likely future experience of the System, and the assumptions as a whole represent the best estimate for the future experience of the System based on the trends and results of periodic experience analysis performed as required under Act 205. 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.

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 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, 2012 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 January 1, 2012 valuation results are based on the same actuarial assumptions used in the January 1, 2011 valuation. Since the valuation date, the Board has adopted a reduction in the assumed interest/discount rate from 6.0% to 5.5%. Because this change was adopted beginning with the January 1, 2013 valuation, the results in this January 1, 2012 do not reflect this assumption change.

Below we identify a number of 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), in aggregate the System continues to be in a surplus which has increased from $39.8 million as of January 1, 2011 to $65.6 million as of January 1, 2012.

- On a snap shot basis comparing the market value of assets (MVA) to AL provides information of the progress of the System funding after the 2008 dramatic market decline that resulted in the System's assets dropping below the total reserves. As of January 1, 2012 the AL exceeded the MVA resulting in an unfunded liability of $237.0 million. This represents a deterioration compared to the unfunded liability of $131.6 million as of January 1, 2011 or a net $105.4 million dollar increase to the unfunded liability.

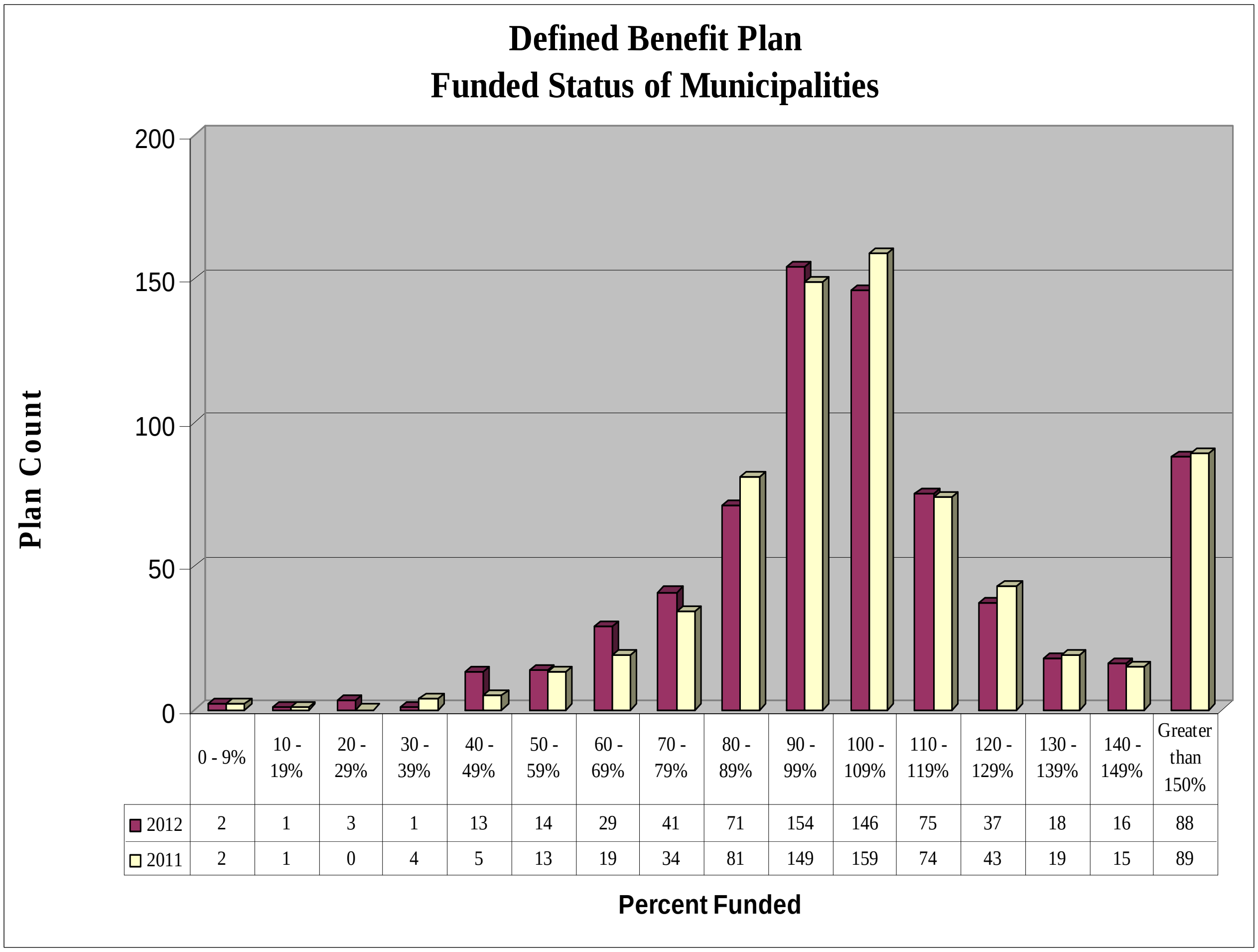
- *Funding Ratio:* This is the ratio of the System's AVA to AL. The funding ratio increased from 102.4% as of January 1, 2011 to 103.8% as of January 1, 2012. However, this reflects a larger spread between the AVA and MVA with the AVA representing 120.3% of MVA this year. The 2011 ratio of AVA to MVA was 111.2%.

- This report includes only county plan results for four plans. Adams County – Green Acres, has ceased operations and any assets and liabilities attributable to Green Acres has been assumed under the Adams County Plan.

The following chart shows a distribution of the funded status using actuarial value of assets of

SECTION I
BOARD SUMMARY

the plans covered by the System in 2011 and 2012. From this comparison it would appear that the individual funding ratios of the member municipalities over 100% funded last year have decreased slightly. This reflects the use of surplus to offset the annual cost of benefits. Therefore, when rolling forward the liabilities the funded status is anticipated to decline for these municipalities, and the funded status is anticipated to increase for the other municipalities.



	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%
2012	2	1	3	1	13	14	29	41	71	154	146	75	37	18	16	88
2011	2	1	0	4	5	13	19	34	81	149	159	74	43	19	15	89

For the county plans valued, the funded status on average increased from 98.7% for the five plans in the system as of January 1, 2010 to 100.5% for the four plans as of January 1, 2012. This is partially due to the cessation of operations at Adams County – Green Acres, as well as improved funded status for the other county plans.

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BOARD SUMMARY

B. Current Financial Condition

On the following pages, we summarize the key results of the January 1, 2012 valuation and how they compare to the results from the January 1, 2011 valuation.

1. System Membership:

As shown in Table I-1 below, total membership in the Retirement System decreased by 0.1% from 2011 to 2012. The active participant counts reported for the Traditional Defined Benefit Plans decreased by 3.2%. The aggregate covered payroll of the System decreased by 3.2% and the average salary decreased by 0.9%.

Table I-1
Membership Total

	January 1, 2012	January 1, 2011	% Change
Traditional Defined Benefit Actives	7,836	8,091	-3.2%
Cash Balance Benefit Actives	1,158	1,119	3.5%
Terminated Vesteds	973	987	-1.4%
Participants Receiving Benefit Payments	3,899	3,707	5.2%
Beneficiaries	495	477	3.8%
Total System Members	14,361	14,381	-0.1%
Annual Salaries*	$411,893,822	$425,485,909	-3.2%
Average Salary per Active Member**	45,797	46,198	-0.9%

* Annualized salary for traditional defined benefit plan participants and actual salary for cash balance participants
** Average salary as of January 1, 2012 after excluding 110 active participants with no reported salary is $46,364

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Table I-2 is a summary of the demographic make-up of the traditional defined benefit and cash balance plans in the System.

Table I-2
Demographic Make-up of the System

Category	Valuation as of January 1, 2012	Valuation as of January 1, 2011	Percent Change
Number of plans:			
Traditional Defined Benefit Plans	709	707	0.3%
Cash Balance Plans	240	229	4.8%
Active Employees in Traditional Defined Benefit Plans:			
Count	7,836	8,091	-3.2%
Average Age	48.1	47.8	0.8%
Average Service	12.9	12.7	2.3%
Total Payroll*	$ 366,882,467	$ 383,802,844	-4.4%
Average Pay*	$ 46,820	$ 47,436	-1.3%
Active Employees in Cash Balance Plans:			
Count	1,158	1,119	3.5%
Average Age	48.4	49.8	-2.8%
Average Service	12.8	11.8	8.5%
Total Payroll*	$ 41,143,383	$ 41,683,065	-1.3%
Average Pay*	$ 35,530	$ 37,250	-4.6%
Inactive Participants in Traditional Defined Benefit Plans:			
Deferred Pension	723	711	1.7%
Return of Contributions	21	42	-50.0%
Deferred Vested Participants in Cash Balance Plans	229	234	-2.1%
Pensioners:			
Count	3,899	3,707	5.2%
Average Age	69.5	69.7	-0.4%
Average Monthly Benefit	$ 1,167	$ 1,141	2.2%
Number of New Awards	438	396	10.6%
Average New Monthly Benefit	$ 1,367	$ 1,552	-11.9%
Number Receiving Legislated COLA	247	164	50.6%
Survivor Beneficiaries:			
Count	495	477	3.8%
Average Age	73.3	74.0	-1.0%
Average Monthly Benefit	$ 812	$ 785	3.4%

*Annualized salaries paid during the prior Plan year.

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BOARD SUMMARY

2. System Assets and Liabilities:

Table I-3 presents a comparison between the January 1, 2011 and January 1, 2012 System assets, liabilities, unfunded actuarial liability, and funding ratios for traditional defined benefit non-county, traditional defined benefit county, and cash balance plans. While this valuation was prepared to support the county plans, we were provided non-county participant data and *rolled forward* the liabilities from the 2011 valuation for estimation purposes for these plans. The total funding ratio increased from 102.4% as of January 1, 2011 to 103.8% as of January 1, 2012.

However, using the market asset value as a measure of funded status the year over year funding ratio declined from 92.1% to 86.3%.

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

	January 1, 2012	January 1, 2011	% Change
Traditional Defined Benefit (Non-county) Plans:			
Actives	$ 981,147	$ 905,782	8.3%
Terminated Vesteds	49,284	53,485	-7.9%
In Pay Status	533,317	559,188	-4.6%
Total Actuarial Liability	$ 1,563,748	$ 1,518,455	3.0%
Actuarial Value of Assets[1]	1,556,444	1,552,880	0.2%
Unfunded/(Surplus) of Actuarial Liability	$ 7,304	$ (34,425)	-121.2%
Traditional Defined Benefit (County) Plans:			
Actives	$ 50,964	$ 60,726	-16.1%
Terminated Vesteds	8,501	6,571	29.4%
In Pay Status	30,927	19,618	57.6%
Total Actuarial Liability[2]	$ 90,392	$ 86,915	4.0%
Actuarial Value of Assets[1]	90,812	82,720	9.8%
Unfunded/(Surplus) of Actuarial Liability	$ (420)	$ 4,195	-110.0%
Cash Balance Plans:			
Actives	$ 55,845	$ 51,751	7.9%
Terminated Vesteds	8,935	8,189	9.1%
In Pay Status	8,297	8,594	-3.5%
Total Actuarial Liability	$ 73,077	$ 68,534	6.6%
Actuarial Value of Assets[1]	73,077	68,534	6.6%
Unfunded/(Surplus) of Actuarial Liability	$ 0	$ 0	0.0%
Total of All Plans			
Actives	$ 1,087,956	$ 1,018,259	6.8%
Terminated Vesteds	66,720	68,245	-2.2%
In Pay Status	572,541	587,400	-2.5%
Total Actuarial Liability	$ 1,727,217	$ 1,673,904	3.2%
Market Value of Assets	$ 1,490,169	$ 1,542,288	-3.4%
Actuarial Value of Assets (summation of above)[1]	$ 1,720,333	$ 1,704,134	
Expenses in Excess of Assessment	2,842	3,375	
Actuarial Value of Asset Adjustment[3]	69,634	6,243	
Final Actuarial Value of Assets[4]	$ 1,792,809	$ 1,713,752	4.6%
Unfunded/(Surplus) using Actuarial Value	**$ (65,592)**	**$ (39,848)**	**64.6%**
Funding Ratio on Actuarial Asset Value	**103.8%**	**102.4%**	**1.4%**
Unfunded/(Surplus) using Market Asset Value	**$ 237,048**	**$ 131,616**	**80.1%**
Funding Ratio on Market Asset Value	**86.3%**	**92.1%**	**-5.8%**

1 The assets shown above are attributable to the traditional defined benefit, cash balance, non-county and county plans based upon updated data and information provided.
2 Municipal plan liabilities are estimated in even years based upon a roll forward of the prior year's liabilities.
3 The actuarial value of asset adjustment reflects the total estimated assets of the plan.
4 The final actuarial value of assets reflect the asset value based upon member, municipal, retiree and disability reserve accounts, as approved by the Board and provided by PMRS.

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Table I-4 presents a summary of the January 1, 2012 County traditional defined benefit plans that are in a surplus or underfunded position.

Table I-4
Funded Status of County Plans

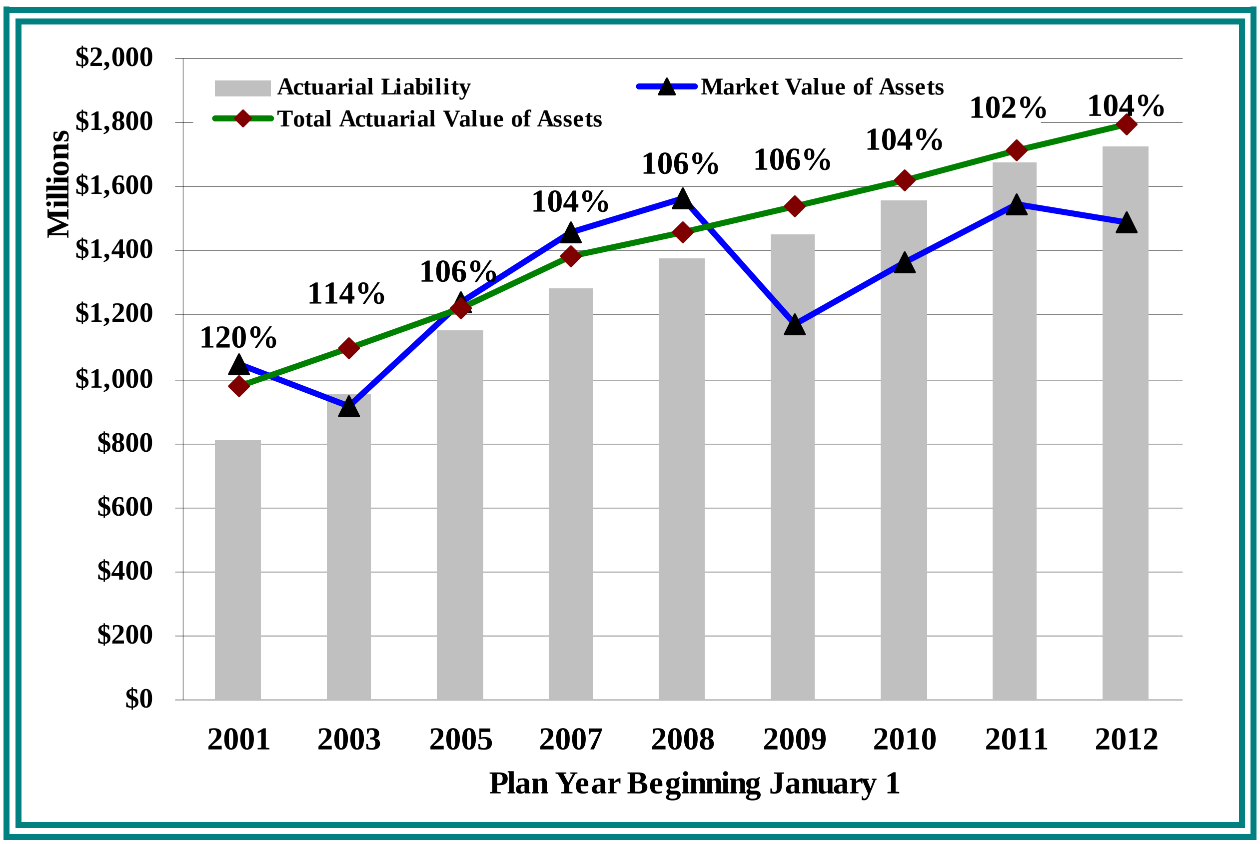
	January 1, 2012	January 1, 2010
A. County Plans in a surplus position		
1. Number of plans with a surplus	3	3
2. Assets in plans with a surplus	\$88,343,130	\$42,059,754
3. Actuarial Liability in plans with a surplus	86,067,619	41,082,681
4. Amount of (surplus) (3. – 2.)	(\$2,275,511)	(\$977,073)
B. County Plans in an underfunded position		
1. Number of underfunded plans	1	2
2. Assets in underfunded plans	\$2,468,541	\$38,914,752
3. Actuarial Liability in underfunded plans	4,323,897	40,924,549
4. Amount of unfunded liability (3. – 2.)	\$1,855,356	\$2,009,797

C. Historical Trends

Even though 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 (traditional defined benefit, cash balance, county and non-county) market and actuarial value of assets compared to the total System (traditional defined benefit, cash balance, county and non-county) actuarial liabilities. We have included the funding ratio to show the progress of the Retirement System since 2001.

Pennsylvania Municipal Retirement System Assets and Liabilities – 2001 to 2012



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 asset method used for funding purposes. However, the funded ratio on a market value of assets is more important to understand the underlying System's risks. The 2012 Market Value of Assets is less than the Actuarial Liability, such that on a market value basis, the funded ratio would be 86.3% reflecting a System return of -1.9% in 2011.

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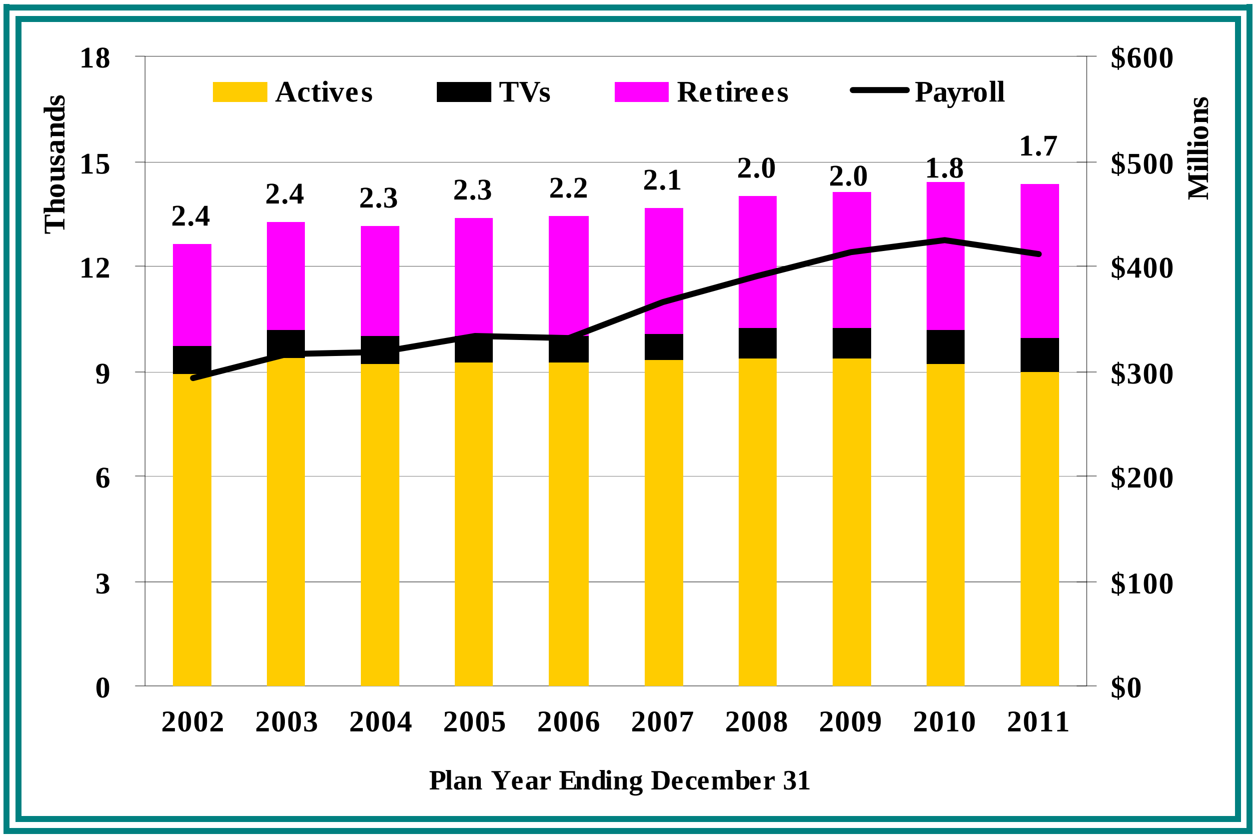
BOARD SUMMARY

<u>Pennsylvania Municipal Retirement System Participant Counts – end of year 2002 to 2011</u>



The chart above shows a comparison of the demographic makeup of the System over the last ten years. The number above the bars represents the ratio of active to inactive participants 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 is significant and net negative cash flows are very small, at approximately 1.5% of assets as illustrated in the next chart. However, there has been a steady decline of this ratio over the past ten years.

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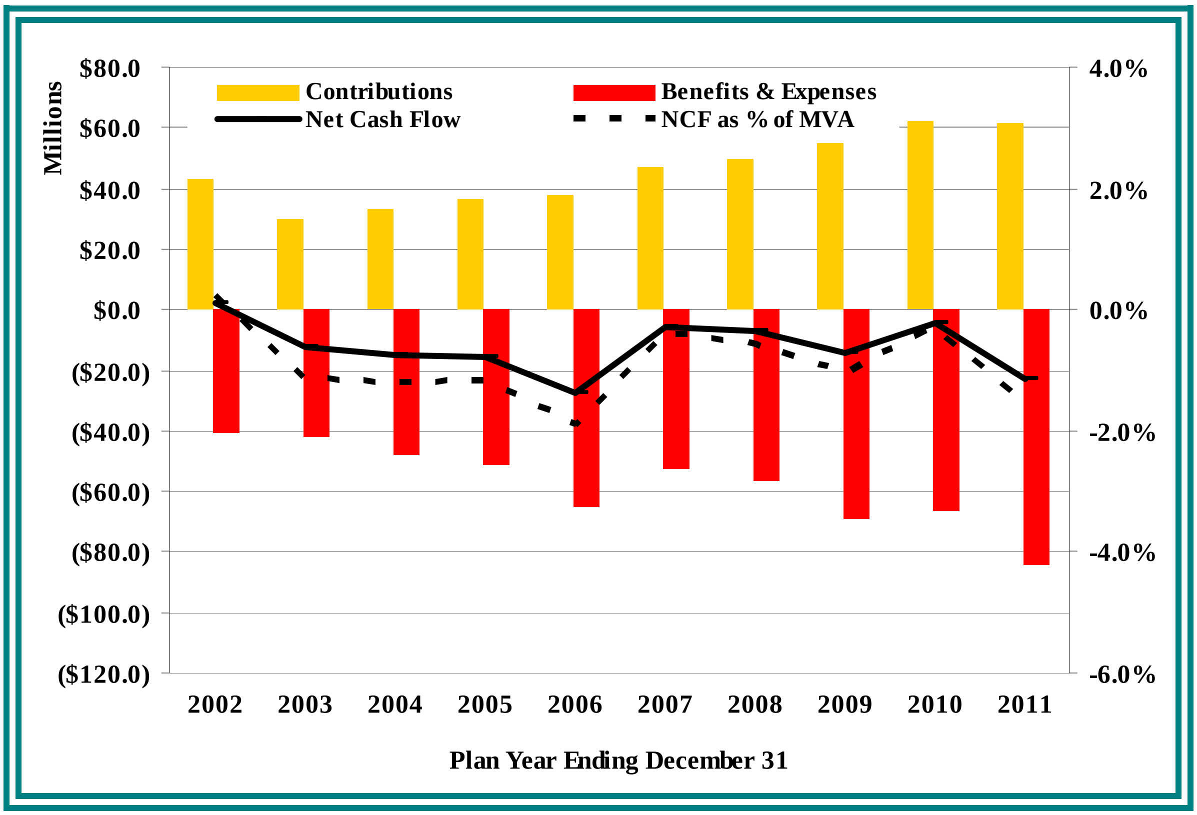
This next graph tracks the cash flow since 2002. An important risk element of a retirement system is the implication of cash flow and resources for paying benefits. If the level of benefit payments exceeds expected contributions plus expenses, then additional cash from existing assets are needed to make the benefit payments. This is referred to as negative cash flow which is typical among mature retirement systems. On the right-hand side, we show the net cash flow as a percent of assets. As the graph below illustrates, the net negative cash flow falls within the range between 0.3% to 2.0% of total assets (the cash flow was slightly positive in 2002). 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, the fund needs a minimum return between 0.3% to 2.0%.

The volatility of the net cash flow is not only a function of contributions and benefit payments, but also reflects funds in and out of the System as a result of new participating municipalities with asset transfers and municipalities who choose to leave the System.

<u>Pennsylvania Municipal Retirement System Cash Flows – 2002 through 2011</u>



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, 2012 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 four different bases:

1) Assuming 6.00% returns each and every year,

2) Assuming 7.50% returns each and every year,

3) Assuming returns equal to a 6.00% return based on Table I-5. 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.

4) Assuming 20 years of varied returns equal to an overall 7.50% return based on Table I-6.

The following projection shows how the total obligations of the System, assuming the current active population remain 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 called the 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 than enough, the result will be a surplus (green).

In periods of time when a deficit occurs, 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 about $208 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.

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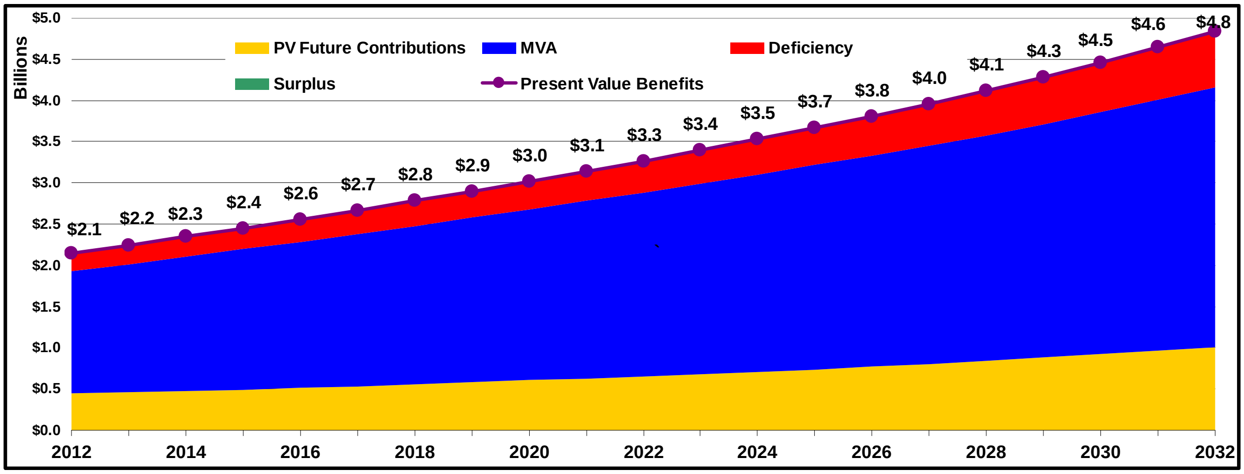
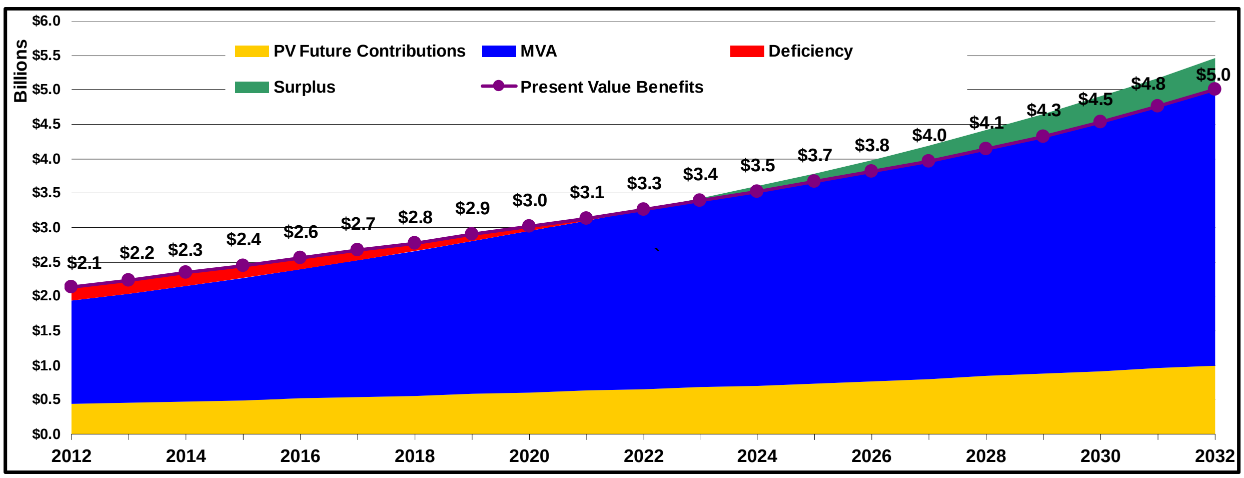
BOARD SUMMARY



This next graph shows the implications if the assets are projected to grow at the rate of 7.5%, based on this projection the System returns to a fully funded position by 2023.

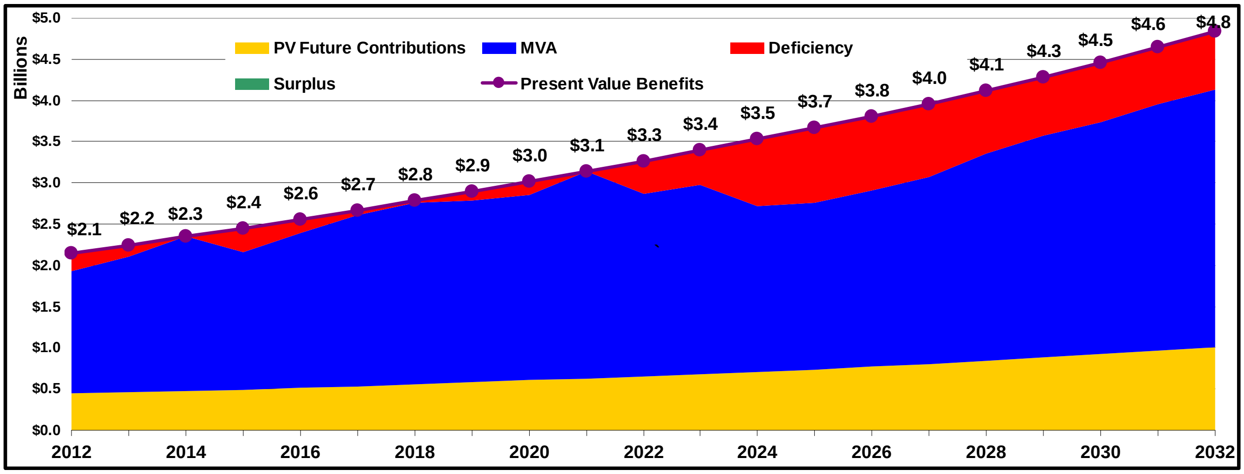


The System's return on assets each year will not equal exactly 6.0% but will, over the long run, have a high likelihood of achieving this rate of return. Based on the hypothetical future return rates in Table I-5 above, which yield an average 6.0% rate of return over the projection period, the projected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

Table I-5
Projected Returns Equal to the Valuation Rate

Fiscal Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Return	12.00%	15.00%	-10.00%	15.00%	12.00%	8.00%	2.00%	4.00%	14.00%	-10.00%
Fiscal Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Return	6.00%	-10.50%	4.00%	9.00%	9.00%	14.00%	10.00%	7.00%	8.75%	6.90%

SECTION I
BOARD SUMMARY

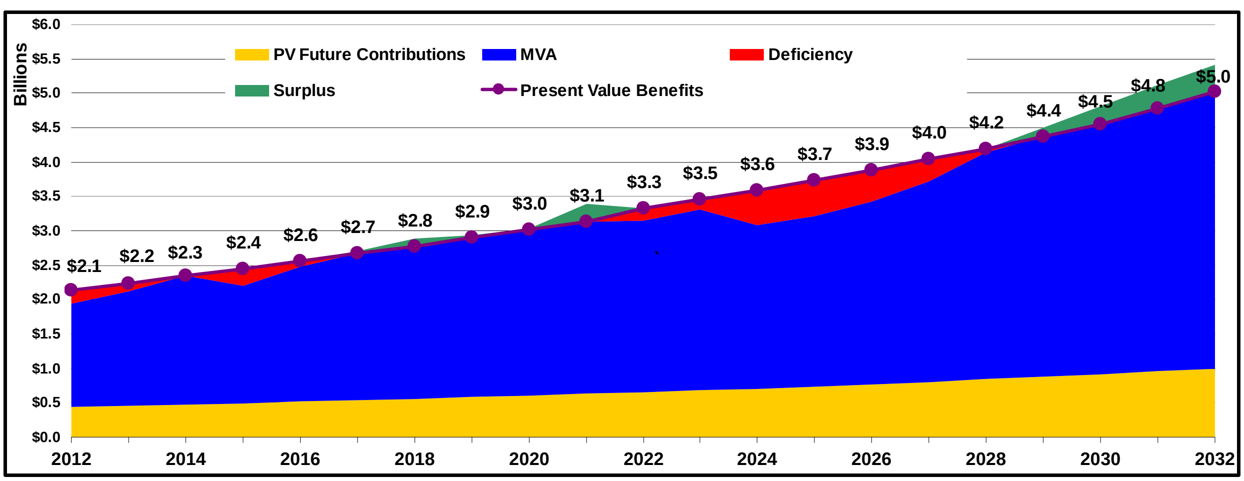


Based on this illustration, there is potential for the System to get close to funded which reflects some of the real expectations for future returns. However without returns averaging in excess of 6.0% the fund will continue to have a deficit over the projection period.

In a similar fashion to above, if we show returns that vary but now expected to produce an average return over time of 7.5% as summarized in Table 1-6 we can see how the fund could come out of deficit and return to a surplus position.

Table I-6
Projected Returns Equal to 7.5%

Fiscal Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Return	12.50%	15.00%	-8.00%	17.00%	12.00%	9.00%	3.00%	5.00%	16.00%	-8.00%
Fiscal Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Return	7.50%	-8.00%	7.00%	10.00%	12.00%	16.00%	12.00%	9.00%	9.00%	7.50%



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 deployments. 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, 2011 and December 31, 2010;
- 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 values are a reflection of the market values and the aggregate reserves being credited to each participating employer. They are used for evaluating the System's ongoing liability to meet its obligations to pay benefits when due.

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

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

	2011		2010	
Assets				
Equity Investments	$	925,583	$	1,010,924
Accounts Receivable		4,162		8,403
Fixed Income Investments		331,853		329,872
Real Estate Investments		232,406		195,872
Fixed Assets		160		176
Accounts Payable		(1,754)		(2,016)
Investment Purchases Payable		(2,241)		(943)
Total Market Value of Assets	**$**	**1,490,169**	**$**	**1,542,288**

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, 2011			**$**	**1,542,288**
Additions				
Contributions:				
Plan Members	$	20,732		
Municipal Employers		40,232		
Assessments		302		
Total Contributions			$	61,266
Investment Income:				
Net Appreciation In Fair Value Of Investments	$	(41,713)		
Short-Term And Other Investments		106		
Common And Preferred Stock		8,333		
Real Estate Equity		4,887		
International Equities		5,807		
Miscellaneous Income		0		
Less Investment Expenses		(6,507)		
Net Investment Income			$	(29,087)
Total Additions			**$**	**32,179**
Deductions				
Annuity Benefits	$	(63,105)		
Terminations		(18,051)		
Administrative Expenses		(3,142)		
Total Deductions			**$**	**(84,298)**
Market Value of Assets – January 1, 2012			**$**	**1,490,169**

From Table II-2 it is important to recognize that benefit payouts plus expenses of $84.3 million exceeds contribution income of $61.3 million for a net negative cash flow of $23.0 million. Over $13 million of this negative cash flow this year is due to the withdrawal of four plans from the System.

SECTION II
ASSETS

Actuarial Value of Assets

The actuarial value of assets is developed 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, 2011 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 $302.6 million as of December 31, 2011. This represents 20.3% of the market value which is an increase from 11.1% as of December 31, 2010. Based on the funding structure of the System, it is currently anticipated that this difference will be made up by future investment returns in excess of the long-term investment assumption.

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

1. Prior Year Actuarial Value:	$	1,713,752
2. Total Audited Reserve Accounts:	$	1,789,967
3. Expected Administrative Expenses:		2,842
4. Preliminary Actuarial Value (2+3):	$	1,792,809
5. Current Year Market Value of Assets:		1,490,169
6. Prior Year Market Value of Assets:		1,542,288
7. New Surplus/(Deficit) {Minimum of [(5-4)&(5-4)-(6-1)]}:		(302,640)
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):	**$**	**1,792,809**

a See Table II-4b

Excess Interest Allocation

Each year, municipalities may be eligible to receive a supplemental allocation of investment monies beyond the regular 6.0% interest rate. 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, 2011 there was no surplus because the market value of assets is less than the actuarial value of assets. The calculation in Table II-4a details the calculation that leads to no excess interest for this year.

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

1. Assets		
a. Market value	$	1,490,169
b. Preliminary Actuarial Value		1,792,809
c. Available Surplus/(Deficit) (1a. - 1b.)	**$**	**(302,640)**
2. Reserves		
a. Members	$	407,199
b. Municipal		745,385
c. Disability		212
d. Retired		637,171
e. Total (2a. + 2b. + 2c. + 2d.)	**$**	**1,789,967**
3. Last year's Surplus	$	0
4. New Surplus/(Deficit) (1c. - 3.)	$	(302,640)
5. Excess percent of New Surplus (see Table II-4b)		0.000%
6. Excess Interest Awarded	$	0
7. Percent of reserve {6. / (2e. - 2c.)}		0.00%
8. Trial Surplus/(Deficit) (1c. - 6.)	$	(302,640)
9. Trial margin percent {8. / 1a.}		0.00%

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SECTION II
ASSETS

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

1. Market Value of Assets	$ 1,490,169
2. Available Surplus	$ 0
3. Margin (2. / 1.)	0.00%
4. New Surplus	$ 0
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 present value of all benefits is the measure of the total expected obligations of the System reflecting the expected future benefit accruals of active participants and the payout stream of all benefits. When compared to the market asset value and present value of future contributions the balance (surplus)/deficit is a measure of the Systems risk in providing for these obligations.

The actuarial liabilities are used for funding calculations and GASB disclosures. This liability is calculated taking the present value of benefits less the present value of future normal costs under the **Entry Age Normal** funding method.

The following table presents the total traditional defined benefit liabilities reflecting actual County measured liabilities and roll-forward liabilities for the municipalities for the 2012 valuation.

Table III-1
Obligation Deficit/(Surplus) Analysis of All PMRS Plans

		January 1, 2012
Present Value of All Benefits - Total Obligation		
Active Participant Benefits	$	1,503,369,479
Retiree and Inactive Benefits		639,260,852
Present Value of Benefits (PVB)	**$**	**2,142,630,331**
Present Value of Future Contributions		(446,995,212)
Municipal Market Value of Assets (MVA)		(1,490,169,104)
Net (Surplus)/Deficit of Resources to Obligation		
(PVB + PVFNC + MVA)	**$**	**205,466,015**
Actuarial Liability		
Present Value of Benefits (PVB)	$	2,142,630,331
Present Value of Future Normal Cost Contributions (PVFNC)		(415,413,062)
Actuarial Liability (AL = PVB + PVFNC)	**$**	**1,727,217,269**
Municipal Actuarial Value of Assets (AVA)		(1,792,809,433)
Net Unfunded/(Surplus) (AL + AVA)	**$**	**(65,592,164)**

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.

The statutory funding method requires that increases/decreases resulting from experience gains or losses get amortized over the lesser of 20 years or the future working life of the active participants. Increases/decreases from assumption changes are amortized over 15 years. Changes in liabilities as a result of changes in benefits are amortized over 20 years if state mandated, otherwise over 10 years for active employees and 1 year for inactive employees. There are exceptions to some of these rules for plans in differing levels of “distress” as defined by under Act 205.

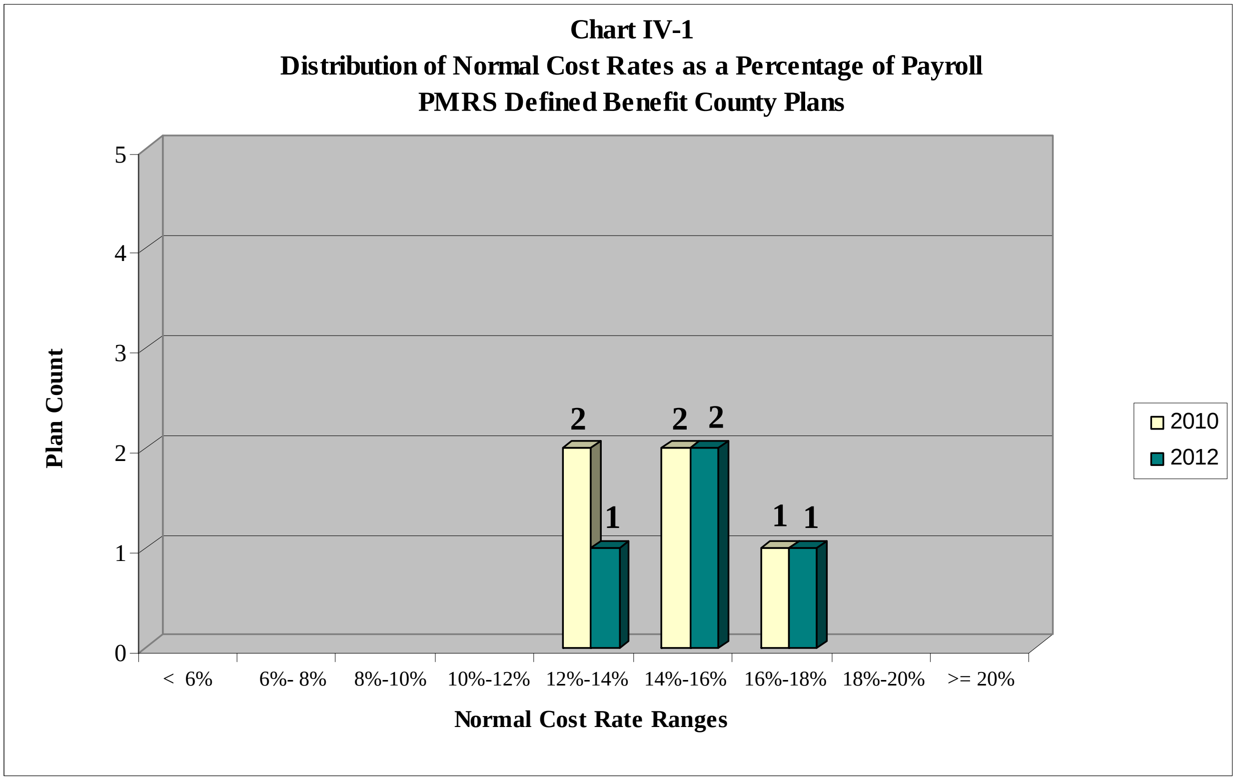
For plans with a surplus, the contribution rate is the normal cost offset by 10% of the surplus again expressed as a percent of payroll. This report provides an analysis of the aggregate assets and liabilities but not the aggregation of the Minimum Municipal Obligations required for each participating municipality covered by the 2011 Act 205 forms. 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.

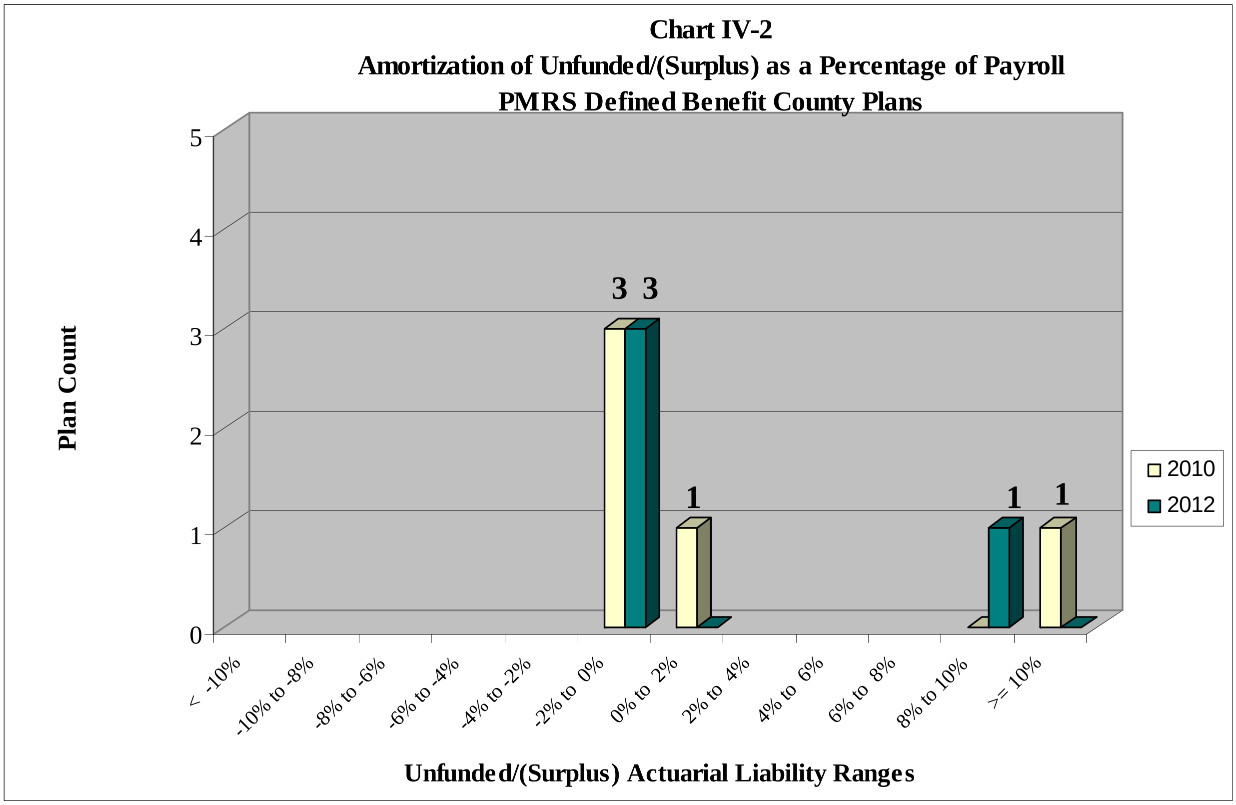
SECTION IV
CONTRIBUTIONS

The following chart is a summary of the normal cost rates determined for the traditional defined benefit County plans as of January 1, 2010 and January 1, 2012.



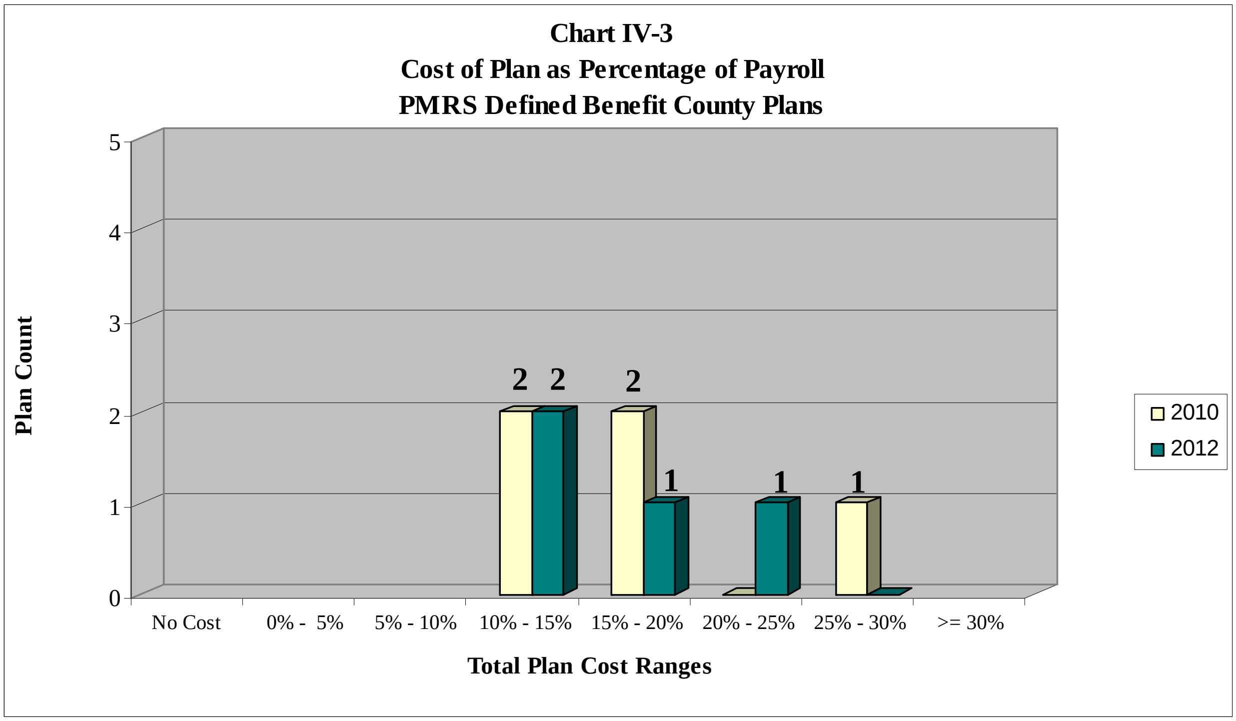
SECTION IV
CONTRIBUTIONS

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 traditional defined benefit County plans as of January 1, 2010 and January 1, 2012.



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 traditional defined benefit County plans as of January 1, 2010 and January 1, 2012.



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 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, 2012 are exhibited in Table V-1.

Tables V-2 through V-7 are exhibits to be used with the System's Comprehensive Annual Financial 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, 2012	January 1, 2011
A. GASB No. 25 Basis		
1. Actuarial Liabilities for retirees and beneficiaries currently receiving benefits and terminated not yet receiving benefits	$ 639,260,852	$ 655,645,661
2. Actuarial Liabilities for current employees	1,087,956,417	1,018,258,484
3. Total Actuarial Liability (1. + 2.)	$ 1,727,217,269	$ 1,673,904,145
4. Net Final Actuarial Assets available for benefits	1,792,809,433	1,713,751,974
5. Unfunded/(Surplus) Actuarial Liability (3. - 4.)	$ (65,592,164)	$ (39,847,829)

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, 2012
Actuarial cost method	Entry age
Amortization method	Level dollar for Plan Bases and an average for Aggregate Gain/Loss, 10% of surplus is credited against aggregate cost where applicable
Actuarial assumptions:	
Investment rate of return*	6.0%
Projected salary increases*	3.0%-8.3%
*Includes inflation at	3.0%
Cost-of-living adjustments	ad hoc

The actuarial assumptions used have been adopted by the System's Board based on the most recent review of the System's experience completed in 2010.

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)
2012	$407,199,633	$639,260,852	$680,756,784	$1,792,809,433	100%	100%	110%
2011	395,048,320	655,645,661	623,210,164	1,713,751,974	100%	100%	106%
2010	348,126,106	589,362,501	622,868,929	1,620,150,779	100%	100%	110%
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%

* *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)
2012	$1,792,809,433	$1,727,217,269	$(65,592,164)	103.8%
2011	1,713,751,974	1,673,904,145	(39,847,829)	102.4%
2010	1,620,150,779	1,560,357,536	(59,793,243)	103.8%
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%

The actuarial assumptions as of January 1, 2012 are shown in the assumptions and methods section. The above information was derived from the following membership data, as provided by the System, regarding:

- Four traditional defined benefit plans required to re-determine contribution levels as of January 1, 2012;
- 707 traditional defined benefit county and non-county plans and 229 cash balance plans as of January 1, 2011;
- Five traditional defined benefit plans required to re-determine contribution levels as of January 1, 2010;
- 696 traditional defined benefit county and non-county plans and 203 cash balance only plans as of January 1, 2009;
- Four traditional 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 traditional defined benefit county and non-county plans and 177 cash balance only plans as of January 1, 2007.

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	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 Annuities
2012	438	$16,404	$885	228	$14,252	4,394	$59,411,245	7.5%	$13,521	2.4%
2011	396	18,624	432	121	8,981	4,184	55,257,189	13.0%	13,207	5.6%
2010	296	16,030	623	137	9,458	3,909	48,897,954	7.7%	12,509	3.3%
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%

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	Cash Balance	Retirees	Beneficiaries	Deferred Pensions	Inactive Members	Total
2012	7,836	1,158	3,899	495	952	21	14,361
2011	8,091	1,119	3,707	477	945	42	14,381
2010	8,357	994	3,449	460	834	23	14,117
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

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]			
	2012	**2011**	**2010**	**2009**
a. Retirees currently receiving benefits	3,899	3,707	3,449	3,289
b. Beneficiaries currently receiving benefits	495	477	460	461
c. Terminated vested employees entitled to future benefits from Defined Benefit Plans	723	711	647	650
d. Terminated non-vested employees entitled to contribution refunds from Defined Benefit Plans	21	42	23	0
e. Active employees in defined benefit plans	7,836	8,091	8,357	8,411
i. Aggregate Salary[b]	$366,882,467	$383,802,844	$377,960,930	$372,370,037
ii. Vested[c]	4,964	4,992	5,025	4,952
iii. Non-vested	2,872	3,099	3,333	3,459
f. Participants in cash balance plans	1,387	1,353	1,181	1,175
i. Aggregate Salary	$41,143,383	$41,683,065	$35,104,086	$32,811,919
ii. Active	1,158	1,119	994	978
iii. Inactive	229	234	187	197

a Includes traditional defined benefit non-county plans, traditional defined benefit county plans, and cash balance plans

b Actual salary for preceding valuation date

c Count of vested participants estimated based on service as of the valuation date

APPENDIX A
MEMBERSHIP INFORMATION

Distribution of All Active Members by Age and Service as of January 1, 2012

COUNTS BY AGE/SERVICE

Age	Service										Total
	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	
Under 20	5	3	0	0	0	0	0	0	0	0	8
20 to 24	66	34	24	27	7	0	0	0	0	0	158
25 to 29	70	82	68	131	102	5	0	0	0	0	458
30 to 34	66	66	54	108	271	78	2	0	0	0	645
35 to 39	56	54	55	114	240	217	61	0	0	0	797
40 to 44	66	56	48	137	279	274	169	103	3	0	1,135
45 to 49	71	57	40	132	303	257	201	220	87	13	1,381
50 to 54	64	55	49	107	302	260	205	233	165	179	1,619
55 to 59	54	47	32	103	265	245	195	232	127	279	1,579
60 to 64	29	19	16	45	139	143	113	146	66	140	856
65 & up	11	5	9	20	63	63	59	51	23	54	358
Total	558	478	395	924	1,971	1,542	1,005	985	471	665	8,994

APPENDIX A
MEMBERSHIP INFORMATION

Distribution of Active Defined Benefit Members by Age and Service as of January 1, 2012

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	4	3	0	0	0	0	0	0	0	0	7
20 to 24	57	28	22	25	4	0	0	0	0	0	136
25 to 29	61	72	62	119	86	5	0	0	0	0	405
30 to 34	55	63	47	97	247	75	1	0	0	0	585
35 to 39	46	51	44	106	203	198	55	0	0	0	703
40 to 44	54	49	44	118	247	239	159	93	2	0	1,005
45 to 49	57	54	31	115	265	220	183	197	78	12	1,212
50 to 54	45	46	45	94	257	226	169	207	161	165	1,415
55 to 59	44	37	23	87	225	208	162	210	117	254	1,367
60 to 64	21	12	10	40	117	119	98	124	57	122	720
65 & up	6	3	6	18	51	57	42	38	19	41	281
Total	450	418	334	819	1,702	1,347	869	869	434	594	7,836

APPENDIX A
MEMBERSHIP INFORMATION

Distribution of Active Cash Balance Members by Age and Service as of January 1, 2012

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	1	0	0	0	0	0	0	0	0	0	1
20 to 24	9	6	2	2	3	0	0	0	0	0	22
25 to 29	9	10	6	12	16	0	0	0	0	0	53
30 to 34	11	3	7	11	24	3	1	0	0	0	60
35 to 39	10	3	11	8	37	19	6	0	0	0	94
40 to 44	12	7	4	19	32	35	10	10	1	0	130
45 to 49	14	3	9	17	38	37	18	23	9	1	169
50 to 54	19	9	4	13	45	34	36	26	4	14	204
55 to 59	10	10	9	16	40	37	33	22	10	25	212
60 to 64	8	7	6	5	22	24	15	22	9	18	136
65 & up	5	2	3	2	12	6	17	13	4	13	77
Total	108	60	61	105	269	195	136	116	37	71	1,158

APPENDIX A
MEMBERSHIP INFORMATION

Inactive Benefit Payment Distribution as of January 1, 2012

COUNTS BY BENEFIT/AGE: RECEIVING PAYMENTS

Age	Monthly Benefit	Count
x < 30	$1,121	2
30 <= x < 35	$5,606	8
35 <= x < 40	$6,157	12
40 <= x < 45	$13,794	26
45 <= x < 50	$24,237	39
50 <= x < 55	$189,541	143
55 <= x < 60	$627,128	385
60 <= x < 65	$1,153,708	800
65 <= x < 70	$1,163,555	965
70 <= x < 75	$709,568	703
75 <= x < 80	$509,560	563
80 <= x < 85	$324,294	401
85 <= x	$222,668	347
<Total>	$4,950,937	4,394

COUNTS BY BENEFIT/AGE: DEFERRED PAYMENTS

Age	Monthly Benefit	Count
x < 30	$2,049	8
30 <= x < 35	$7,274	19
35 <= x < 40	$13,371	30
40 <= x < 45	$66,592	93
45 <= x < 50	$101,809	138
50 <= x < 55	$156,120	198
55 <= x < 60	$148,274	190
60 <= x < 65	$22,446	45
65 <= x < 70	$277	1
70 <= x < 75	$301	1
75 <= x < 80	$0	0
80 <= x < 85	$0	0
85 <= x	$0	0
<Total>	$518,513	723

APPENDIX A
MEMBERSHIP INFORMATION

Pensions in Payment on January 1, 2012 by Type and Amount

		Pension Type				
Monthly Amount	Total	Normal	Involuntary early	Voluntary early	Service disability	Non-service disability
Total	4,394	3,624	227	433	34	76
Under $100	217	186	21	8	1	1
$ 100 - $199	267	212	37	16	2	0
200 - 299	280	214	38	28	0	0
300 - 399	296	237	25	30	0	4
400 - 499	249	204	16	27	2	0
500 - 599	274	222	16	28	1	7
600 - 699	228	186	12	25	0	5
700 - 799	229	175	14	33	0	7
800 - 899	217	170	8	26	1	12
900 - 999	196	153	9	22	3	9
1,000 - 1,199	384	304	12	47	7	14
1,200 - 1,399	284	226	6	42	4	6
1,400 - 1,599	236	199	4	23	7	3
1,600 - 1,799	171	149	3	17	2	0
1,800 - 1,999	162	138	3	18	0	3
2,000 - 2,199	132	116	1	13	1	1
2,200 - 2,399	100	93	0	7	0	0
2,400 - 2,599	83	75	0	6	1	1
2,600 - 2,799	79	69	2	5	1	2
2,800 - 2,999	56	54	0	1	0	1
3,000 - 3,499	113	106	0	6	1	0
3,500 - 3,999	77	73	0	4	0	0
4,000 and over	64	63	0	1	0	0

APPENDIX A
MEMBERSHIP INFORMATION

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

	Total		Normal		Involuntary early		Voluntary early		Disability	
Year Ended December 31:	Number	Average Monthly Amount	Number	Average Monthly Amount	Number	Average Monthly Amount	Number	Average Monthly Amount	Number*	Average Monthly Amount
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	0	0	3 (0)	1,350
2008	271	1,157	223	1,150	7	843	36	1,259	5 (3)	1,162
2009	296	1,336	249	1,412	17	339	26	1,300	4 (0)	1,067
2010	396	1,552	341	1,632	13	364	37	1,250	5 (0)	1,407
2011	438	1,367	352	1,496	37	459	40	1,180	9 (3)	888

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

Active Members

Traditional defined benefit plans:		Defined Contribution plans:	
Municipal	6,943	Municipal	1,146
Police	768	Police	12
Firefighters	125	Firefighters	0
Total	7,836	Total	1,158

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions:

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

A. Healthy Life Mortality:

Rates of Pre-Retirement Mortality
Males: RP 2000 with 1 year set back
Females: RP 2000 with 5 year set back

Rates of Post-Retirement Mortality
Males and females: RP 2000 Sex-Distinct Mortality Table

The current mortality assumptions, while not reflecting projections for improvements as recommended under Actuarial Standard of Practice No. 35 are subject for experience review every four years at which time the Board receives recommendations of changes to reflect changes in experience over those expected from the tables applied over the five year period preceding the experience analysis. Such experience review is required by State statute.

B. Disabled Life Mortality Rates:

Males and females: RP 2000 with 10 year set forward

C. Termination Rates Before Retirement

Termination Rates for Municipal Participants

Service	Number of Active Members in Plan <25	25+
< 1	20.0%	20.0%
1	20.0%	20.0%
2	12.0%	15.0%
3	10.0%	12.0%
4	8.0%	7.0%
5	6.0%	7.0%
6	4.0%	6.0%
7	3.0%	5.0%
8	3.0%	5.0%
9	2.5%	5.0%
10+	2.5%	3.0%

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Termination Rates for Uniformed Participants

Service	**Number of Active Members in Plan**	
	<25	**25+**
< 1	14%	13%
1	14%	10%
2	12%	7%
3	10%	7%
4	6%	6%
5	4%	5%
6	3%	4%
7	2%	3%
8	2%	3%
9	1%	3%
10+	1%	3%

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

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Type of Disability:
(a) 15% of disablements are assumed to be service related for municipal plans, and
(b) 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:

Age	Salary Scale Total Rate (%)* (including inflation)
25	8.30%
30	6.40%
35	5.60%
40	5.00%
45	4.20%
50	4.10%
55	3.90%
60	3.70%
65	3.00%

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

G. Rates of Retirement:

(a) Municipal Members:

Age	Municipal Rate of Retirement[1]
Under 46	5%
46 – 54	15
55 – 59	10
60 – 61	10
62	30
63 – 64	20
65	35
66 – 74	15
75	100

1 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.

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(b) Uniformed Members:

Retirement Rates for Uniform Participants

Age	Rates for all Plans
<49	0%
50	20%
51	10%
52	10%
53	10%
54	10%
55	20%
56	25%
57	25%
58	30%
59	30%
60	40%
61	50%
62	50%
63	60%
64	70%
65	80%
66+	100%

H. Marital Status and Spouse's Age (if applicable):

85% of active members are assumed to be married. Male spouses are assumed to be three years older than female spouses.

I. Social Security Projections (if applicable):

(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.

J. Post-Retirement Cost of Living Increases (if applicable): 3.0% per year, subject to plan limitations.

K. Investment Return Assumption:

6.00% compounded annually, net of expenses.

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L. Administrative Expenses:

The expense assumption is based upon the expected expenses for the current year.

Changes in Actuarial Assumptions:

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

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:*
> *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*

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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 the PMRS Board, which are not subject to comply with Actuarial Standards of Practice (ASOP), when defining the Actuarial Value of Assets, does not necessarily meet the requirement of ASOP 44 Selection and Use of Asset Valuation Methods for Pension Valuation.

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, and updated by Act 44, 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) 15 years, with respect to changes due to actuarial assumptions;
(iv) 20 years, with respect to changes due to plan provisions (if state mandated);
(v) 10 years, with respect to changes in benefits for currently active members and 1 year of retired members (if local benefit changes); or

(b) The average assumed working lifetime of active employees as of the date the liability was established. If there are no active employees, the unfunded liability is amortized one year after the liability was established.

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

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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.