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Police Retirement System of Kansas City, Missouri

Actuarial Valuation Report
as of April 30, 2012

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Cavanaugh Macdonald
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September 18, 2012

The Board of Trustees
Police Retirement System of Kansas City, Missouri
1328 Agnes Street
Kansas City, MO 64127

Dear Members of the Board:

At your request, we have performed the annual actuarial valuation of the Police Retirement System of Kansas City, Missouri as of April 30, 2012 for the purpose of determining the actuarial contribution rate for fiscal year 2014. The major findings of the valuation are contained in this report, which reflects the benefit provisions in effect as of April 30, 2012.

In preparing this 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, member data and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the System.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provision or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Actuarial computations presented in this report under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the plan provisions described in Appendix B of this report and of GASB Statements No. 25 and 27. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We would like to express our appreciation to the System's staff, who gave substantial assistance in supplying the data on which this report is based.

We herewith submit the following report and look forward to discussing it with you.

Respectfully submitted,

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Pension Actuary

OVERVIEW

This report presents the results of the April 30, 2012 actuarial valuation of the Police Retirement System of Kansas City, Missouri. The primary purposes of performing a valuation are to:

- Determine the employer contribution rates required to fund the System on an actuarial basis,
- Disclose asset and liability measures as of the valuation date,
- Determine the experience of the System since the last valuation date, and
- Analyze and report on trends in System contributions, assets, and liabilities over the past several years

There were no changes in the actuarial assumptions and methods or benefit provisions used in the valuation.

The valuation results provide a "snapshot" view of the System's financial condition on April 30, 2012. The unfunded actuarial accrued liability increased from the last valuation by $13 million, primarily as a result of actual contributions for the fiscal year that were less than the actuarially determined contribution rate. The investment return on the market value of assets was about -1%. Even after applying the asset smoothing method, the return on the actuarial value of assets was less than the assumed rate of return of 7.75%, creating an experience loss on assets. However, favorable demographic experience offset the unfavorable asset experience, resulting in a very small total experience gain of $1 million. A detailed analysis of the change in the unfunded actuarial accrued liability from April 30, 2011 to April 30, 2012 is shown on page 3.

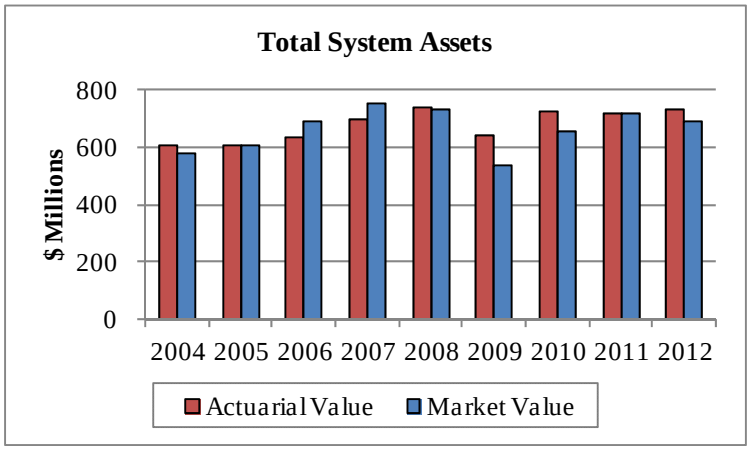
ASSETS

As of April 30, 2012, the System had total assets, when measured on a market value basis, of $688 million. This was a decrease of $28 million from the April 30, 2011 figure of $716 million. The market value of assets is not used directly in the calculation of the actuarial contribution rate. An asset valuation method which smoothes the effect of market fluctuations is used to determine the value of assets used in the valuation, called the "actuarial value of assets." The current smoothing method, first adopted by the Board for the April 30, 2011 valuation, recognizes the difference between the actual and expected return on the market value of assets evenly over a five year period. The method was implemented by setting the actuarial value of assets equal to the market value of assets at April 30, 2011. As a result, FY 2012 is the first year this smoothing mechanism has been applied to develop the actuarial value of assets.

A summary of the asset experience follows:

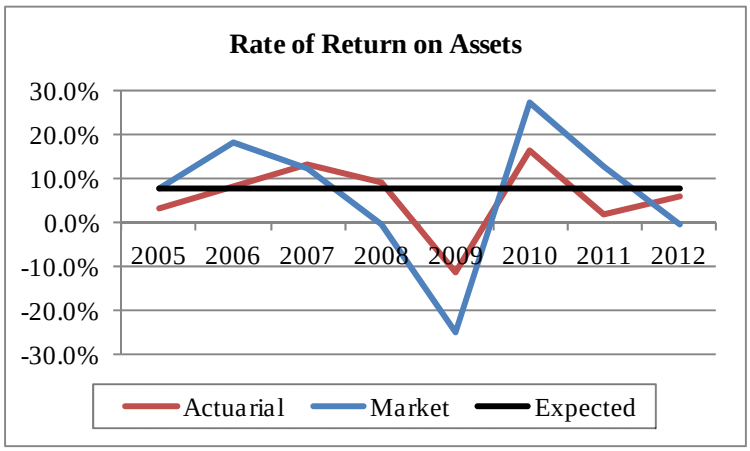
	Market Value ($M)	Actuarial Value ($M)
Assets, April 30, 2011	$715.8	$715.8
· City and Member Contributions	25.4	25.4
· Benefit Payments and Refunds	(49.1)	(49.1)
· Administrative Expenses	(0.6)	(0.6)
· Investment Income (net of expenses)	(3.6)	42.9
Final Assets, April 30, 2012	$687.9	$734.4

The annualized dollar-weighted rate of return, measured on the actuarial value of assets, was 6% and, measured on the market value of assets, was approximately -1%. The return on the actuarial value of assets of less than 7.75%, the assumed rate of return, resulted in an actuarial loss to the system of about $12 million, which increased the unfunded actuarial accrued liability. Historical asset information is shown in the following two graphs:



The actuarial value of assets has been both above and below the market value during this period. This is to be expected when using an asset smoothing method.

Note: Results for years before 2011 were prepared by the prior actuary.



Rates of return on the market value of assets have been very volatile. The return on actuarial value of assets has lagged the 7.75% assumption in the last decade.

Note: Results for years before 2011 were prepared by the prior actuary.

LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the asset value at the same date is referred to as the unfunded actuarial accrued liability (UAAL) or (surplus) if the asset value exceeds the actuarial accrued liability. The unfunded actuarial accrued liability will be reduced if the employer's contributions exceed the employer's normal cost for the year, after allowing for interest on the previous balance of the unfunded actuarial accrued liability. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and methods will also impact the total actuarial accrued liability and the unfunded portion thereof.

The Actuarial Accrued Liability and Unfunded Actuarial Accrued Liability for the System as of April 30, 2012 are:

Actuarial Accrued Liability	$972,127,874
Actuarial Value of Assets	734,375,923
Unfunded Actuarial Accrued Liability	$237,751,951

Between April 30, 2011 and April 30, 2012, the change in the unfunded actuarial accrued liability for the System was as follows (in millions):

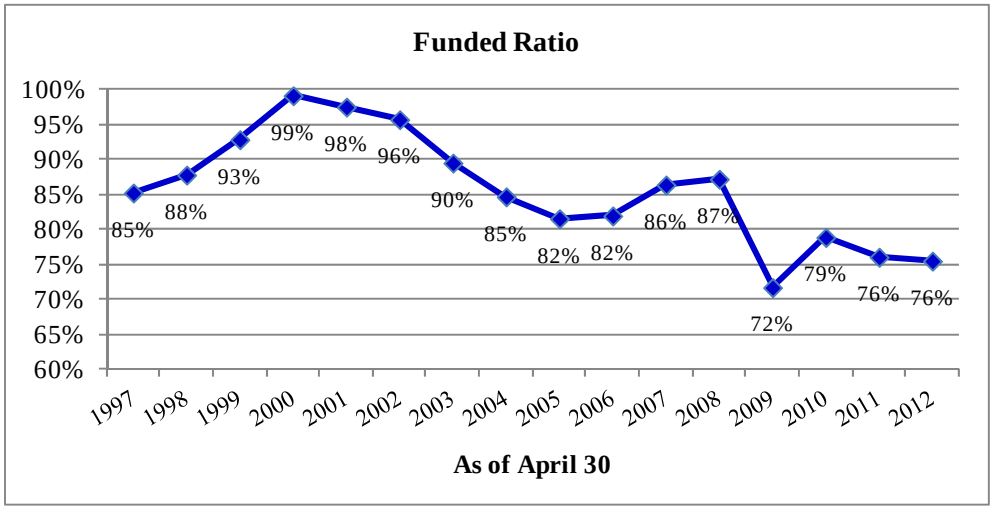
	$ millions
UAAL, April 30, 2011	224.8
• effect of contributions less than actuarial rate	13.7
• expected change due to amortization	(0.3)
• loss from investment return on actuarial assets	11.6
• demographic experience[1]	(12.3)
• all other experience	0.3
• change in actuarial assumptions/methods	0.0
• change in benefit provisions	0.0
UAAL, April 30, 2012	237.8

[1] Liability gain is about 2.5% of total actuarial liability

The experience gain for the last plan year of $0.7 million was the result of an actuarial loss of $11.6 million on System assets (actuarial value) and a liability gain of $12.3 million. The liability gain was primarily the result of salaries in the 2012 valuation that were much lower than expected, based on the actuarial assumption.

Analysis of the unfunded actuarial accrued liability strictly as a dollar amount can be misleading. Another way to evaluate the unfunded actuarial accrued liability and the progress made in its funding is to track the funded status, the ratio of the actuarial value of assets to the actuarial accrued liability. This information for recent years is shown below (in millions). Historical information is shown in the graph following the chart.

	4/30/2008	4/30/2009	4/30/2010	4/30/2011	4/30/2012
Actuarial Value of Assets ($M)	$742.1	$641.2	$722.5	$715.8	$734.4
Actuarial Accrued Liability ($M)	$850.8	$893.6	$915.5	$940.6	$972.1
Funded Ratio (Assets/Liability)	87%	72%	79%	76%	76%



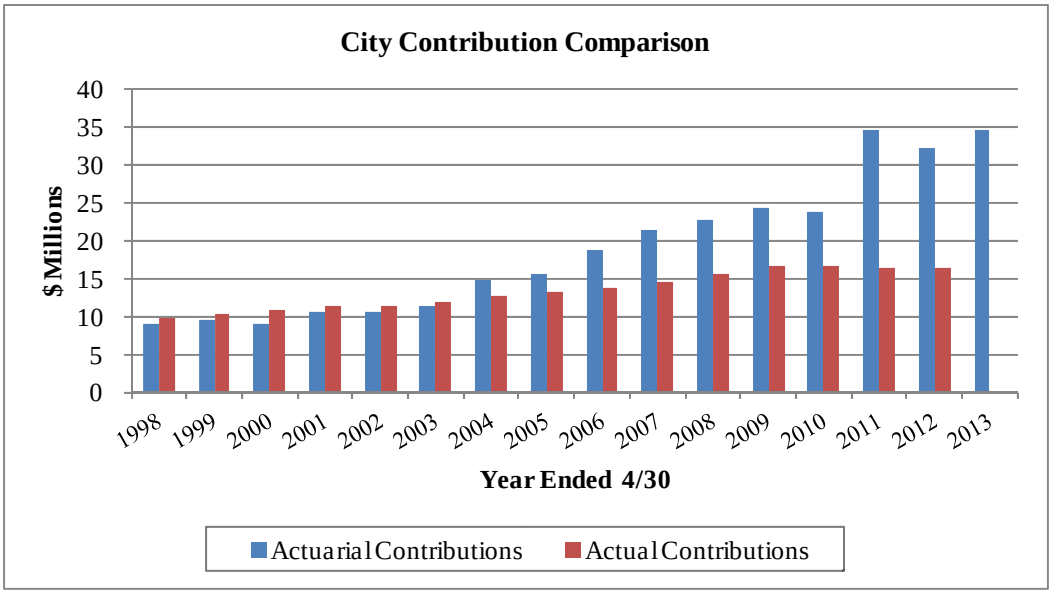
Much of the decline in the funded ratio over the last four years is attributable to the sharp decline in the stock market for FY 2009. The broader decline over the last decade is a reflection of actual contribution rates significantly below the actuarial contribution rate, coupled with investment returns less than the actuarial assumed rate. The System's funded status will continue to be heavily dependent on investment returns as well as the City's contribution policy. The current trend creates concerns about the System's long term funding.

CONTRIBUTION RATES

Generally, contributions to the System consist of:

- A "normal cost" for the portion of projected liabilities allocated to service of members during the year following the valuation date, by the actuarial cost method,
- An "unfunded actuarial accrued liability or (surplus) contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

Contribution rates are computed with the objective of developing costs that are level as a percentage of covered payroll. The actuarial contribution rate for fiscal year end 2014 is computed based on the April 30, 2012 actuarial valuation. The actuarial contribution rate equals the System's normal cost, budgeted expenses and an amortization of the unfunded actuarial accrued liability. The following graph shows the actuarial contribution rate for the City compared to the amount actually received in each year. Again, the trend line creates concern about the System's long term funding.



COMMENTS

As of April 30, 2012, the actuarial accrued liability was $972 million and the actuarial value of assets was $734 million, resulting in an unfunded actuarial accrued liability (UAAL) of $238 million and a funded ratio of 76%. The funded ratio was unchanged from last year's valuation, while the UAAL increased $13 million.

Retirement plans use several mechanisms to create stability in the contribution rates. These mechanisms include an asset smoothing method, which smoothes out the peaks and valleys of investment returns, and amortization of actuarial gains or losses, including investment experience, over a number of years. The System utilizes an asset smoothing method that recognizes the difference between expected and actual returns evenly over a five-year period. Actuarial gains/losses are amortized over a closed 24 year period commencing with the valuation date. The return on the market value of assets was about -1%, but due to the asset smoothing method only part of the FY 2012 investment experience is recognized in the current valuation. As a result, the return on the actuarial value of assets was 6%, which still resulted in an increase in the UAAL since it was less than the assumed rate of return of 7.75%. There was an actuarial gain from demographic experience that was more favorable than expected, based on the actuarial assumptions, with the most significant gains coming from actual salary increases that were lower than the assumption. The demographic gains ($12.3 million) were large enough to offset the recognized experience loss on assets of $11.6 million.

The normal cost rate remained unchanged, but the System's unfunded actuarial accrued liability increased from $225 million last year to $238 million this year. In addition, the total covered payroll for the System decreased 0.60% instead of increasing the expected 4.0%. As a result of lower covered payroll, the contribution rate for the UAAL amortization payment increased. The combined impact on the City's actuarial contribution rate was an increase from 36.79% of pay in last year's valuation to 38.85% of pay in this year's valuation.

During FY 2012, actual contributions by the City of 19.70% of payroll were lower than the actuarial contribution rate of 33.75% of payroll. This contribution shortfall between the actual and actuarial contribution rates increased the unfunded actuarial accrued liability by about $14 million. The long term financial health of the System is dependent on the systematic funding of the Plan, related to the actuarial valuation. Assuming all actuarial assumptions are met in the future and the City continues to contribute at the scheduled rated of 19.70%, the funded status of the System is expected to continue to decline and the actuarial contribution rate is expected to increase. The longer it takes for the City's contributions to increase to the full actuarial contribution rate, the higher the ultimate contribution rate will be.

The long term financial health of this retirement system is heavily dependent on two key items: (1) investment returns and (2) contributions to the System. Over the last ten years, investment experience has been lower than the assumed rate of return and the actual contributions to the System have been below the actuarial contribution rates. Given the System's funded status and the City's current scheduled contribution rate, the long term financial health of the System is a concern. To the extent the City continues to contribute below the actuarial contribution rate, the funding of the System is expected to deteriorate, which is expected to impact the payment of ad hoc COLAs as well as whether the current benefit structure is sustainable over the long term.

In prior valuations, we recommended the City develop a plan to address the long term funding of the System. Over the past year, the City took action to study the long term funding of all four retirement systems that cover City employees by establishing the Pension Task Force. The general recommendations made by the Task Force included increasing contributions for both the City and the members, making the COLAs for current members dependent on the funded status of the System (with higher benchmarks than currently apply to the Police Retirement System), and creating a second "tier" or benefit structure for non-vested actives and new hires that provides lower benefits. Additional studies are currently being performed by another group, the Pension Project Team, to develop recommendations that will address the long term funding of the pension systems and can be consistently implemented across all four retirement systems. However, at the time this report was prepared, no specific recommendations had been released by that group. Hopefully continued activity in this area will result in changes that are sufficient to improve the System's funding over time.

Based on the Board's policy, an ad hoc cost of living adjustment may be granted if the definition of "actuarial soundness," which requires at least one of the three following conditions, is met:

1) The plan's funded ratio (actuarial value of assets/actuarial accrued liability) measured in accordance with GASB 25, rounded to the nearest whole percentage, is 75% or greater.

2) For each of the three most recently completed plan years, the plan has received a combination of employer and employee contributions that in total is, rounded to the nearest whole percentage, 90% or greater of the plan's required contributions (defined to be the sum of the Annual Required Contribution as defined by GASB Statement 25 and any required employee contributions).

3) For at least three out of the last five completed plan years, the plan has received employer contributions that equal or exceed the plan's Annual Required contribution as defined by GASB Statement 25.

Based upon the results of the April 30, 2012 valuation, and the Board's policy, an ad hoc COLA can be granted. However, we believe the Board should consider the following facts before making their decision:

1) The funded ratio of the system, using the market value of assets, is 71%. If it were not for the deferral of recognizing investment losses, the COLA could not be granted.

2) The City has been contributing far less than the actuarial contribution rate and this practice is expected to continue in the future.

3) Based on advice from the investment consultant for the system, asset returns in the short term (the next 5 to 10 years) are expected to be less than the assumed rate of return of 7.75%. If this occurs, the funded ratio will decline, perhaps significantly.

We have not reviewed any legal aspects related to granting the ad hoc COLA. We are not attorneys and cannot give legal advice on such issues. We suggest that you review this policy with your legal counsel.

We conclude this Board Summary with the following exhibit which compares the principal results of the current and prior actuarial valuation.

SUMMARY OF PRINCIPAL RESULTS

1. MEMBER DATA	4/30/2012 Valuation	4/30/2011 Valuation	% Change
Number of:			
Active members	1,366	1,391	(1.8%)
Retired Members and Beneficiaries	1,209	1,202	0.6%
Inactive Vested Members, including officers past 30 years of service	19	20	(5.0%)
Total Members	2,594	2,613	(0.7%)
Annual Projected Salaries of Active Members	$ 87,880,774	$ 88,444,971	(0.6%)
Annual Retirement Payments for Retired Members and Beneficiaries* *Does not include supplemental benefits	$ 42,319,348	$ 40,616,224	4.2%
2. ASSETS AND LIABILITIES			
Total Actuarial Accrued Liability	$ 972,127,874	$ 940,609,092	3.4%
Market Value of Assets	687,870,657	715,764,084	(3.9%)
Actuarial Value of Assets	734,375,923	715,764,084	2.6%
Unfunded Actuarial Accrued Liability	$ 237,751,951	$ 224,845,008	5.7%
Funded Ratio	76%	76%	0.0%
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost	25.57%	25.57%	0.0%
Member Financed	10.55%	10.55%	0.0%
Employer Normal Cost	15.02%	15.02%	0.0%
Amortization of Unfunded Actuarial Accrued Liability	23.83%	21.77%	9.5%
Employer Contribution Rate	38.85%	36.79%	5.6%

SECTION 2 – SCOPE OF THE REPORT

This report presents the actuarial valuation of the Police Retirement System of Kansas City, Missouri as of April 30, 2012. This valuation was prepared at the request of the System's Board of Trustees. There was no change in the benefit structure from the prior valuation, nor in the actuarial assumptions and methods.

Please pay particular attention to our cover letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon 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.

A summary of the findings which result from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the System. Sections 4 and 5 describe how the obligations of the System are to be met under the actuarial cost method in use. Section 6 includes the information required for the financial reporting standards established by the Governmental Accounting Standards Board (GASB).

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on April 30, 2012.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.

SECTION 3 - ASSETS

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is April 30, 2012. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the System assets and liabilities.

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time. Table 1 is a comparison, at market values, of System assets as of April 30, 2012, and April 30, 2011, in total and by investment category. Table 2 summarizes the change in the market value of assets from April 30, 2011 to April 30, 2012.

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book values of assets, representing the cost of investments, may be the best measure of the System's ongoing ability to meet its obligations.

To arrive at a suitable value of assets for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. The Board adopted a new asset smoothing method effective with the April 30, 2011 valuation. Under the asset smoothing methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five year period. The new method was implemented by resetting the actuarial value of assets at April 30, 2011 equal to the market value of assets.

TABLE 1

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

STATEMENT OF NET PLAN ASSETS AT MARKET VALUE

	Market Value	
	April 30, 2012	**April 30, 2011**
Cash & Equivalents	$33,106,141	$29,404,495
Receivables	3,001,138	2,098,612
Stocks:		
Common & Preferred Corporate	188,671,535	333,722,866
Foreign	81,554,796	49,468,960
Bonds:		
U.S. Government	114,856,782	123,343,191
Corporate	77,376,986	63,808,560
Exchange traded fixed income funds	21,506,419	18,526,117
Asset Backed Securities	14,613,204	19,622,286
Real Estate	28,543,714	20,082,869
Commodities, including futures account	27,655,094	25,061,861
Partnerships and Hedge Funds	111,506,964	31,508,953
Building and Other Property Used in Plan Operations	8,739	1,606
Total Assets	$702,401,512	$716,650,376
Accounts Payable	(14,530,855)	(886,292)
Net Assets Available for Benefits	$687,870,657	$715,764,084

TABLE 2

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

STATEMENT OF CHANGES IN NET ASSETS
DURING YEAR ENDED APRIL 30, 2012

(Market Value)

1. Market Value of Assets as of April 30, 2011	$	715,764,084
2. Contributions:		
a. Members	$	8,894,208
b. City		16,476,608
c. Miscellaneous		0
d. Total [2a] + [2b] + [2c]	$	25,370,816
3. Investment Income		
a. Interest and Dividends	$	13,563,643
b. Net Securities Lending Income		219,810
c. Investment Expenses		(4,118,018)
d. Net Appreciation (Depreciation) in Fair Value		(13,249,705)
e. Net Investment Income (Loss) [3a] + [3b] + [3c] + [3d]	$	(3,584,270)
4. Deductions		
a. Refunds of Member Contributions	$	549,026
b. Benefits Paid:		
(1) Retirement Benefits		46,855,266
(2) Death Benefits		25,000
(3) Partial Lump Sums		1,697,930
c. Administrative Expenses		552,751
d. Total [4a] + [4b] + [4c]	$	49,679,973
5. Net Change [2d] + [3e] - [4d]	$	(27,893,427)
6. Market Value of Assets as of April 30, 2012 [1] + [5]	$	687,870,657

TABLE 3

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

The Board adopted a new asset smoothing method effective with the April 30, 2011 valuation. Under the new methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five year period. The new method was implemented by resetting the actuarial value of assets at April 30, 2011 equal to the market value of assets.

	Plan Year End			
	4/30/2009	**4/30/2010**	**4/30/2011**	**4/30/2012**
1. Market Value of Assets, Beginning of Year	N/A	N/A	N/A	$ 715,764,084
2. Contributions During Year	N/A	N/A	N/A	25,370,816
3. Benefits and Expenses During Year	N/A	N/A	N/A	49,679,973
4. Expected Net Investment Income	N/A	N/A	N/A	54,547,313
5. Expected Value of Assets, End of Year	N/A	N/A	N/A	746,002,240
6. Market Value of Assets, End of Year	N/A	N/A	N/A	687,870,657
7. Excess/(Shortfall) of Net Investment Income*	N/A	N/A	N/A	$ (58,131,583)

** AVA was set to equal MVA due to a change in smoothing method for 2011 valuation. As a result, investment excess/shortfalls prior to the 2012 valuation are not shown*

TABLE 3
(continued)

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

1. Excess/(Shortfall) of Investment Income		
a. Year ending 4/30/2012	$	(58,131,583)
b. Year ending 4/30/2011		0
c. Year ending 4/30/2010		0
d. Year ending 4/30/2009		0
e. Total	$	(58,131,583)
2. Deferral of Excess/(Shortfall) of Investment Income		
a. Year ending 4/30/2012 (80%)	$	(46,505,266)
b. Year ending 4/30/2011 (60%)		0
c. Year ending 4/30/2010 (40%)		0
d. Year ending 4/30/2009 (20%)		0
e. Total	$	(46,505,266)
3. Market Value End of Year		687,870,657
4. Actuarial Value End of year (3) - (2e)		734,375,923
5. Ratio of Actuarial Value to Market Value		106.8%
6. Difference Between Actuarial & Market Value	$	46,505,266
7. Rate of Return on Actuarial Value of Assets		6.1%
8. Rate of Return on Market Value of Assets		(0.5%)

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, April 30, 2012. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities.

Table 4 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries.

The liabilities summarized in Table 4 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes the measurement of both benefits already earned and future benefits to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and for the lives of the surviving beneficiaries.

All liabilities reflect the benefit provisions in place as of April 30, 2012, with one exception. When certain funding ratio and contribution criteria are met, the Board has discretion to grant a COLA (it is not part of the statutory benefit structure). Even though the COLA is not guaranteed to be paid, the liabilities reflect a 3% annual cost of living adjustment for all future years as it better reflects the long term liabilities.

Actuarial Accrued Liability

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "breakdown" the present value of future benefits into two components:

(1) that which is attributable to the past and

(2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability." The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the "normal cost." Table 5 contains the calculation of actuarial accrued liability for the System. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.

TABLE 4

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

PRESENT VALUE OF FUTURE BENEFITS (PVFB)
AS OF APRIL 30, 2012

1. Active employees		
a. Retirement Benefit	$	498,973,065
b. Pre-Retirement Death Benefit		5,410,944
c. Withdrawal Benefit		19,274,519
d. Disability Benefit		56,006,263
e. Supplemental Benefit		33,809,365
f. Total	$	613,474,156
2. Inactive Vested Members		
a. Retirement Benefit	$	8,007,600
b. Supplemental Benefit		814,567
c. Total	$	8,822,167
3. Inactive Nonvested Members	$	0
4. In Pay Members		
a. Retirees	$	378,696,464
b. Disabled Members		67,698,130
c. Beneficiaries		47,550,239
d. Supplemental Benefit		57,732,942
e. Total	$	551,677,775
5. Total Present Value of Future Benefits		
[1f] + [2c] + [3] + [4e]	$	1,173,974,098

TABLE 5

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

ACTUARIAL ACCRUED LIABILITY
AS OF APRIL 30, 2012

1. Active employees		
a. Present Value of Future Benefits	$	613,474,156
b. Present Value of Future Normal Costs		201,846,224
c. Actuarial Accrued Liability [1a] - [1b]	$	411,627,932
2. Inactive Vested Members	$	8,822,167
3. Inactive Nonvested Members	$	0
4. In Pay Members		
a. Retirees	$	378,696,464
b. Disabled Members		67,698,130
c. Beneficiaries		47,550,239
d. Supplemental Benefit		57,732,942
e. Total	$	551,677,775
5. Total Actuarial Accrued Liability [1c] + [2] + [3] + [4e]	$	972,127,874
6. Actuarial Value of Assets	$	734,375,923
7. Unfunded Actuarial Accrued Liability [5] - [6]	$	237,751,951

TABLE 6

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

AMORTIZATION SCHEDULE FOR THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

			Balances			
Base	Date Created	Last Payment	Initial	Outstanding	2012/2013 Amortization	2013/2014 Amortization
5/1/1998 Base	5/1/1998	FY 2022	$ 60,092,542	$ 55,712,273	$ 6,776,249	$ 7,047,299
5/1/1999 Base	5/1/1999	FY 2023	(23,794,584)	(22,886,991)	(2,572,870)	(2,675,785)
5/1/2000 Base	5/1/2000	FY 2024	(15,860,433)	(15,697,421)	(1,644,428)	(1,710,205)
5/1/2001 Base	5/1/2001	FY 2025	(6,685,610)	(6,761,740)	(664,645)	(691,231)
5/1/2002 Base	5/1/2002	FY 2026	12,470,529	12,813,223	1,188,696	1,236,244
5/1/2003 Base	5/1/2003	FY 2027	43,654,725	45,338,732	3,989,729	4,149,318
5/1/2004 Base	5/1/2004	FY 2029	36,731,553	41,654,818	3,339,688	3,473,275
5/1/2005 Base	5/1/2005	FY 2030	24,225,252	27,162,074	2,089,672	2,173,259
5/1/2006 Base	5/1/2006	FY 2031	391,606	446,858	35,221	36,630
5/1/2007 Base	5/1/2007	FY 2032	(30,886,670)	(32,395,100)	(2,293,763)	(2,385,514)
5/1/2008 Base	5/1/2008	FY 2033	(1,504,998)	(1,379,449)	(154,052)	(160,214)
5/1/2009 Base	5/1/2009	FY 2034	144,208,694	146,704,446	10,857,049	11,291,331
5/1/2010 Base	5/1/2010	FY 2035	(59,608,724)	(65,302,839)	(4,358,505)	(4,532,845)
5/1/2011 Base	5/1/2011	FY 2036	45,929,232	39,179,770	2,540,055	2,641,657
5/1/2012 Base	5/1/2012	FY 2037	13,163,297	13,163,297	898,652	859,048
Total Unfunded Actuarial Accrued Liability				$ 237,751,951	$ 20,026,747	$ 20,752,267
Expected Contribution Shortfall in FY 2013			16,317,634	16,317,634	0	1,029,418
Total Amortization Payment Including Shortfall					$ 20,026,747	$ 21,781,685
Equivalent Single Amortization Period						14.16

Note: Years prior to 2011 are from prior actuary's report

TABLE 7

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

DERIVATION OF SYSTEM EXPERIENCE GAIN/(LOSS)

			($M) Year Ended 4/30/2012	Year Ended 4/30/2011
[1]		UAAL* at start of year	224.8	193.0
[2]	+	Normal cost and expenses for year	21.8	22.0
[3]	+	Assumed investment return on [1] & [2]	18.3	16.6
[4]	-	Actual contributions (member + city)	25.4	25.8
[5]	-	Assumed investment return on [4]	1.0	1.0
[6]	=	Expected UAAL at end of year [1] + [2] + [3] - [4] - [5]	238.5	204.8
[7]	+	Increase (decr.) from assumption change	0.0	(6.9)
[8]	+	Increase (decr.) from change in actuary	0.0	6.7
[9]	+	Increase (decr.) from change in asset smoothing	0.0	(4.4)
[10]	=	Expected UAAL after changes [6] + [7] + [8] + [9]	238.5	200.2
[11]	=	Actual UAAL at year end	237.8	224.8
[12]	=	Experience gain (loss) [10] - [11]	0.7	(24.6)
[13]	=	Percent of beginning of year AAL	0.1%	(2.7%)

* *Unfunded Actuarial Accrued Liability/ (Surplus)*

Year Ended April 30	Actuarial Gain/(Loss) As % of Actuarial Accrued Liability
2007	5.4%
2008	1.1%
2009	(16.2%)
2010	8.5%
2011	(2.7%)
2012	0.1%

TABLE 8

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

GAIN/(LOSS) ANALYSIS BY SOURCE

Retiree Mortality	0.5
Withdrawal	(0.9)
Retirement	2.1
Death	0.1
Disability	0.5
Salary	10.1
New actives	(0.2)
Total Liability Gain/(Loss)	12.3
Asset Gain/(Loss)	(11.6)
Total Gain/(Loss)	0.7

TABLE 9

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

PROJECTED BENEFIT PAYMENTS

The chart below shows estimated benefits expected to be paid over the next twenty years, based on the assumptions used in this valuation. The "Actives" column shows benefits expected to be paid to members currently active on April 30, 2012. The "Retirees" column shows benefits expected to be paid to all other members. This includes those who, as of April 30, 2012, are receiving benefit payments or who are inactive vested and are entitled to a benefit in the future (including officers past 30 years of service). No future members are reflected.

Retirement, Survivor, Withdrawal and Supplemental Benefits

Year Ending April 30	Actives	Retirees	Total
2013	$ 2,184,000	$ 48,042,000	$ 50,226,000
2014	4,419,000	48,768,000	53,187,000
2015	7,046,000	49,024,000	56,070,000
2016	10,005,000	49,192,000	59,197,000
2017	12,951,000	49,358,000	62,309,000
2018	15,917,000	49,414,000	65,331,000
2019	19,067,000	49,364,000	68,431,000
2020	22,543,000	49,319,000	71,862,000
2021	26,231,000	49,164,000	75,395,000
2022	30,310,000	48,860,000	79,170,000
2023	34,975,000	48,490,000	83,465,000
2024	39,931,000	47,980,000	87,911,000
2025	45,362,000	47,372,000	92,734,000
2026	50,955,000	46,656,000	97,611,000
2027	56,679,000	45,859,000	102,538,000
2028	62,486,000	44,950,000	107,436,000
2029	68,439,000	43,905,000	112,344,000
2030	74,528,000	42,753,000	117,281,000
2031	80,454,000	41,499,000	121,953,000
2032	86,303,000	40,149,000	126,452,000

The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 3 and 4 indicates that current assets fall short of meeting the present value of future benefits (total liability). This is expected in all but a completely closed fund, where no further contributions are anticipated. In an active system, there will almost always be a difference between the actuarial value of assets and total liabilities. This deficiency has to be made up by future contributions and investment returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost rate and (2) the unfunded actuarial accrued liability contribution rate.

The term "fully funded" is often applied to a system in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, systems are not fully funded, either because of past benefit improvements that have not been completely funded or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial accrued liability, a surplus exists.

Description of Contribution Rate Components

The Entry Age Normal (EAN) actuarial cost method is used for the valuation. Under that method, the normal cost for each year from entry age to assumed exit age is a constant percentage of the member's year by year projected compensation. The portion of the present value of future benefits not provided by the present value of future normal costs is the actuarial accrued liability. The unfunded actuarial accrued liability/ (surplus) represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is calculated each year and reflects experience gains/losses.

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rate based on the April 30, 2012 actuarial valuation will be used to determine the actuarial required employer contribution rate to the Police Retirement System of Kansas City, Missouri for fiscal year end 2014. In this context, the term "contribution rate" means the percentage, which is applied to a particular active member payroll to determine the actual employer contribution amount (i.e., in dollars) for the group.

As of April 30, 2012, the actuarial accrued liability was greater than the valuation assets so an unfunded actuarial accrued liability (UAAL) exists. The Board elected to amortize the UAAL as a level percent of payroll over a closed initial period of 24 years beginning in 1998. A new amortization base is established each valuation date with a new 24-year amortization period. Effective with the 2008 valuation, active member payroll is assumed to increase 4.0% per year (previously 4.5%).

Contribution Rate Summary

In Table 10 the amortization payment related to the unfunded actuarial accrued liability/(surplus), as of April 30, 2012, is developed. Table 11 develops the actuarial contribution rate for the System. A historical summary of the actual and actuarial contribution rates for the City is shown in Table 12.

The contribution rates shown in this report are based on the actuarial assumptions and cost methods described in Appendix C.

TABLE 10

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

APRIL 30, 2012 VALUATION

DERIVATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY CONTRIBUTION RATE

1. Actuarial Accrued Liability	$	972,127,874
2. Actuarial Value of Assets	$	734,375,923
3. Unfunded Actuarial Accrued Liability/ (Surplus)	$	237,751,951
4. Amortization Payment Including Expected Shortfall	$	21,781,685
5. Total Projected Payroll for FY 2014	$	91,396,005
6. Amortization Payment as a Percent of Payroll		23.83%

TABLE 11

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

EMPLOYER CONTRIBUTION RATES

	Valuation Date	
	4/30/2012	**4/30/2011**
Normal Cost		
Service pensions	17.95%	17.93%
Pre-retirement death pensions	0.49%	0.49%
Disability pensions	3.72%	3.74%
Termination benefits	1.95%	1.93%
Supplemental retirement benefit	1.06%	1.07%
Administrative expenses	0.40%	0.40%
Total Normal Cost	25.57%	25.57%
Total UAAL Amortization payment	23.83%	21.77%
Total Actuarial Contribution Rate	49.40%	47.34%
Member Portion	10.55%	10.55%
City Portion	38.85%	36.79%

TABLE 12

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

COMPUTED AND ACTUAL CITY CONTRIBUTIONS COMPARATIVE STATEMENT

			Fiscal Year Contributions				
			As a % of Projected Pay		$ Contributions		
Fiscal Year Beginning May 1	Valuation Date April 30	Projected Annual Payroll	Annual Required Contribution	Reported FY City Contribution	Annual Required Contribution	Projected FY City Contribution	Actual Dollar Contribution
1998	1998	$49,872,090	19.81 %	20.60 %	9,880,286	10,273,651	$10,318,583
1999	1999	51,963,858	17.65	20.60	9,172,029	10,704,555	10,789,963
2000	2000	57,791,028	18.66	20.60	10,785,784	11,904,952	11,392,871
2001	2001	57,505,238	18.85	19.70	10,837,294	11,328,532	11,312,754
2002	2002	59,228,848	19.55	19.70	11,579,240	11,668,083	12,017,801
2003 *	2003	65,234,614	23.14	19.70	15,095,290	12,851,219	12,817,176
2004	2003	68,170,172	23.14	19.70	15,774,578	13,429,524	13,297,605
2005	2004	72,325,478	26.26	19.70	18,992,671	14,248,119	13,729,225
2006	2005	73,794,574	29.06	19.70	21,444,703	14,537,531	14,526,734
2007	2006	78,446,156	29.00	19.70	22,749,385	15,453,893	15,747,111
2008	2007	83,716,533	29.04	19.70	24,311,281	16,492,157	16,700,688
2009	2008	90,168,869	26.22	19.70	23,642,278	17,763,267	16,645,229
2010	2009	93,479,787	36.76	19.70	34,363,170	18,415,518	16,532,015
2011	2010	94,094,251	33.75	19.70	31,756,810	18,536,567	16,476,608
2012 *	2011	91,982,770	36.79	19.70	33,840,461	18,120,606	
2013	2012	91,396,005	38.85		35,507,348		

**After changes in actuarial assumptions or methods.*

Note: For years prior to 2011, information is shown from the prior actuary's report.

The actuarial accrued liability is a measure intended to help the reader assess (i) a retirement system's funded status on a going concern basis and (ii) progress being made toward accumulating the assets needed to pay benefits as due. Allocation of the actuarial present value of projected benefits between past and future service was based on service using the Entry Age Normal actuarial cost method. Assumptions, including projected pay increases, were the same as used to determine the System's level percent of payroll annual required contribution between entry age and assumed exit age. Entry age was established by subtracting credited service from current age on the valuation date.

The preceding methods comply with the financial reporting standards established by the Governmental Accounting Standards Board.

The Entry Age Normal actuarial accrued liability was determined as part of an actuarial valuation of the plan as of April 30, 2012. The actuarial assumptions used in determining the actuarial accrued liability can be found in Appendix C.

TABLE 13

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

NOTES TO FINANCIAL STATEMENTS
SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Valuation Date	April 30, 2012
Actuarial cost method	Individual entry age
Amortization method for unfunded actuarial accrued liabilities	Level percent closed
Equivalent single amortization period	14 years
Asset valuation method	5-year smoothing of actual vs expected return on market value
Actuarial assumptions:	
Investment rate of return	7.75%
Projected salary increases including wage inflation at 4.0%	4.25% to 9.75%
Cost-of-living adjustments	3.0% simple

Membership of the plan consisted of the following at April 30, 2012, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	1,209
Inactive vested members entitled to but not yet receiving benefits*	19
Active plan members	1,366
Total	2,594

*Note: Officers who are actively working and have 30 or more years of service are included with the inactive vested members entitled to a future benefit since they are currently not accruing benefits nor contributing to the system but are entitled to a benefit in the future.

TABLE 14

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date		Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Active Member Covered Payroll** (c)	UAAL as a Percentage of Active Member Covered Payroll [(b) - (a)] / (c)
4/30/1998		$433,090,523	$493,183,065	$60,092,542	88%	$49,872,090	120%
4/30/1999		484,396,958	521,600,003	37,203,045	93%	51,963,858	72%
4/30/2000		584,514,972	589,566,248	5,051,276	99%	57,791,028	9%
4/30/2001		600,051,893	615,291,156	15,239,263	98%	57,505,238	27%
4/30/2002		620,948,986	648,632,789	27,683,803	96%	56,678,323	49%
4/30/2003	*	611,246,928	682,690,968	71,444,040	90%	62,425,468	114%
4/30/2004		603,418,620	712,273,616	108,854,996	85%	66,230,606	164%
4/30/2005		604,560,607	741,001,020	136,440,413	82%	67,575,902	202%
4/30/2006		635,621,582	775,271,985	139,650,403	82%	71,835,495	194%
4/30/2007		698,078,688	807,902,176	109,823,488	86%	80,111,515	137%
4/30/2008		742,060,223	850,763,745	108,703,522	87%	86,700,836	125%
4/30/2009		641,176,940	893,559,090	252,382,150	72%	89,884,411	281%
4/30/2010		722,464,003	915,463,037	192,999,034	79%	90,475,241	213%
4/30/2011	*	715,764,084	940,609,092	224,845,008	76%	88,444,971	254%
4/30/2012		734,375,923	972,127,874	237,751,951	76%	87,880,774	271%

* *After changes in actuarial assumptions or methods.*

***For valuation years 2001 and prior, and 2007 and later, valuation payroll includes projected increases for year following valuation. For valuation years 2002 through 2006, valuation payroll is payroll reported in data after annualization of pays for new hires.*

Note: Results for years prior to 2011 were taken from the prior actuary's report.

Analysis of the dollar amounts of actuarial value of assets, actuarial accrued liability, or unfunded actuarial accrued liability in isolation can be misleading. Expressing the actuarial value of assets as a percentage of the actuarial accrued liability provides one indication of the System's funded status on a going-concern basis. Analysis of this percentage over time indicates whether the System is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the plan's funding. The unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Expressing the unfunded actuarial accrued liability as a percentage of covered payroll approximately adjusts for the effects of inflation and aids analysis of the progress being made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the plan's funding.

TABLE 15

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending April 30	Annual Required Contribution	Percent Contribution
1998	$9,355,956	107%
1999	9,880,286	104%
2000	9,172,029	118%
2001	10,785,784	106%
2002	10,837,294	104%
2003	11,579,240	104%
2004	15,095,290	85%
2005	15,774,578	84%
2006	18,992,671	72%
2007	21,444,703	68%
2008	22,749,385	69%
2009	24,311,281	69%
2010	23,642,278	70%
2011	34,363,170	48%
2012	31,756,810	52%

Note: For years prior to 2011, information shown is from the prior actuary's report

TABLE 16

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

DEVELOPMENT OF ANNUAL PENSION COST AND NET PENSION OBLIGATION

UNDER GASB STATEMENT NUMBER 27

Fiscal Year End	Annual Required Contribution (ARC) (a)	Interest on NPO (b)	ARC Adjustment (c)	Annual Pension Cost (APC) (d) = (a) + (b) - (c)	Annual Actual Contribution (e)	Change in NPO (f) = (d) - (e)	Net Pension Obligation (NPO) at End of Year (g) = sum of (f)
2000	$9,172,029	($878,811)	($657,096)	$8,950,314	$10,789,963	($1,839,649)	($13,179,147)
2001	10,785,784	(1,021,384)	(763,699)	10,528,099	11,392,871	(864,772)	(14,043,919)
2002	10,837,294	(1,088,404)	(813,810)	10,562,700	11,312,754	(750,054)	(14,793,973)
2003	11,579,240	(1,146,533)	(889,665)	11,322,372	12,017,801	(695,429)	(15,489,402)
2004	15,095,290	(1,200,429)	(931,486)	14,826,347	12,817,176	2,009,171	(13,480,231)
2005	15,774,578	(1,044,718)	(810,661)	15,540,521	13,297,605	2,242,916	(11,237,315)
2006	18,992,671	(870,892)	(675,778)	18,797,557	13,729,225	5,068,332	(6,168,983)
2007	21,444,703	(478,096)	(370,984)	21,337,591	14,526,734	6,810,857	641,874
2008	22,749,385	49,745	38,609	22,760,521	15,747,111	7,013,410	7,655,284
2009	24,311,281	593,285	460,473	24,444,093	16,700,688	7,743,405	15,398,689
2010	23,642,278	1,193,398	971,445	23,864,231	16,645,229	7,219,002	22,617,691
2011	34,363,170	1,752,871	1,426,865	34,689,176	16,532,015	18,157,161	40,774,852
2012	31,756,810	3,160,051	2,572,332	32,344,529	16,476,608	15,867,921	56,642,773
2013	33,840,461	4,389,815	3,573,380	34,656,896			

Note: Results for years prior to FY 2012 were prepared by the prior actuary

TABLE 17

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

SOLVENCY TEST

Valuation Date April 30		Entry Age Actuarial Accrued Liabilities (1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Members (Employer Financed Portion)	Valuation Assets	Portion of Actuarial Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
2003	*	$46,015,271	$436,805,624	$199,870,073	$611,246,928	100 %	100 %	64 %
2004		50,340,747	448,521,694	213,411,175	603,418,620	100	100	49
2005		55,220,395	460,235,649	225,544,976	604,560,607	100	100	40
2006		59,717,930	476,677,326	238,876,729	635,621,582	100	100	42
2007		64,314,276	487,633,976	255,953,924	698,078,688	100	100	57
2008		70,012,081	511,571,757	269,179,907	742,060,223	100	100	60
2009		76,321,890	521,607,916	295,629,284	641,176,940	100	100	15
2010		81,310,956	526,521,860	307,630,221	722,464,003	100	100	37
2011	*	86,306,128	537,670,377	316,632,587	715,764,084	100	100	29
2012		91,427,576	551,677,775	329,022,523	734,375,923	100	100	28

**After changes in actuarial assumptions or methods*
Note: Results for years before 2011 were prepared by the prior actuary

MEMBER DATA RECONCILIATION

April 30, 2011 to April 30, 2012

The number of members included in the valuation, as summarized in the table below, is in accordance with the data submitted by the System for members as of the valuation date.

	Active Participants	Retirees	Disableds	Beneficiaries	Inactive Vested	Total
Members as of 04/30/2011	1,391	801	162	239	20	2,613
New Members	21	0	0	1	0	22
Rehires	0	0	0	0	0	0
Terminations						
Refunded	(19)	0	0	0	0	(19)
Inactive Vested	(2)	0	0	0	2	0
Retirements						
Service	(22)	25	0	0	(3)	0
Disability	(2)	0	2	0	0	0
Deaths						
Cashed Out/Payments Ended	0	0	0	(2)	0	(2)
With Beneficiary	0	(14)	(1)	15	0	0
Without Beneficiary	(1)	(8)	(1)	(10)	0	(20)
Data Adjustments	0	0	0	0	0	0
Members as of 04/30/2012	**1,366**	**804**	**162**	**243**	**19**	**2,594**

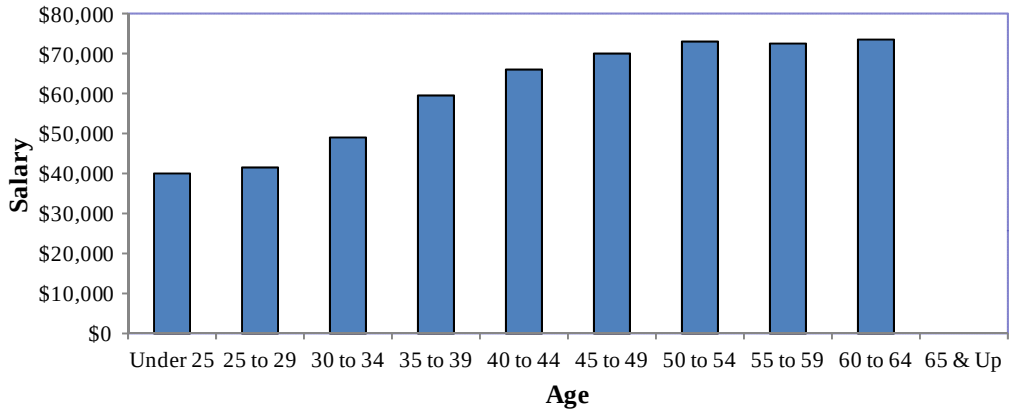
Note: Officers who have continued employment past 30 years of service are counted with the Inactive Vested members.

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI
SUMMARY OF ACTIVE MEMBERS
as of Apri1 30, 2012

	Number			Annual Reported Compensation*		
Age	Male	Female	Total	Male	Female	Total
Under 25	6	1	7	$ 241,029	$ 39,432	$ 280,461
25 to 29	113	19	132	4,700,696	797,102	5,497,798
30 to 34	209	28	237	10,234,038	1,358,566	11,592,604
35 to 39	216	41	257	12,889,329	2,414,292	15,303,622
40 to 44	287	39	326	19,026,188	2,495,204	21,521,392
45 to 49	212	28	240	14,816,719	1,955,878	16,772,597
50 to 54	91	23	114	6,684,365	1,648,735	8,333,099
55 to 59	37	7	44	2,628,693	561,450	3,190,143
60 to 64	6	2	8	446,160	140,163	586,322
65 & Up	1	0	1	65,886	0	65,886
Total	1,178	188	1,366	$ 71,733,102	$ 11,410,822	$ 83,143,924

** Compensation reported in the valuation data for the prior plan year with annualization of pay for new hires.*

Average Salary by Age

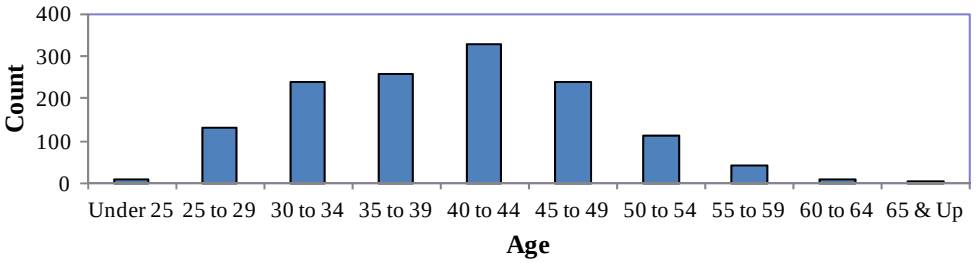


Average age:	40.08
Average service:	13.34
Average salary:	$60,867

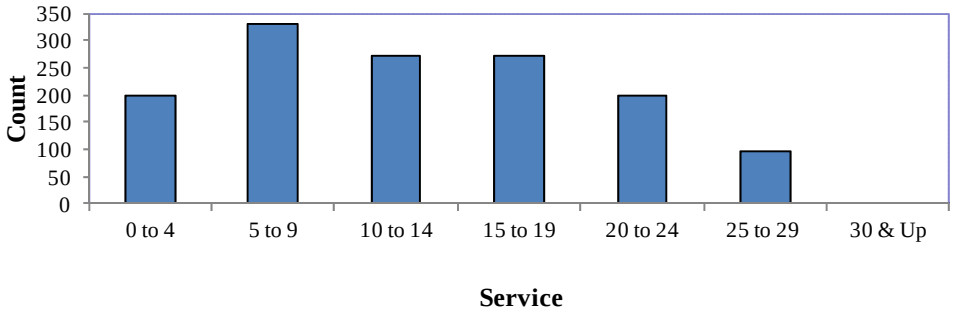
POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI
DISTRIBUTION OF ACTIVE MEMBERS
as of April 30, 2012

	Years of Service							
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	7	0	0	0	0	0	0	7
25 to 29	94	38	0	0	0	0	0	132
30 to 34	59	154	24	0	0	0	0	237
35 to 39	23	80	124	30	0	0	0	257
40 to 44	13	41	91	160	21	0	0	326
45 to 49	2	14	27	65	104	28	0	240
50 to 54	1	3	4	12	51	43	0	114
55 to 59	0	1	1	2	20	20	0	44
60 to 64	0	0	0	1	3	4	0	8
65 & Up	0	0	0	1	0	0	0	1
Total	199	331	271	271	199	95	0	1,366

Age Distribution



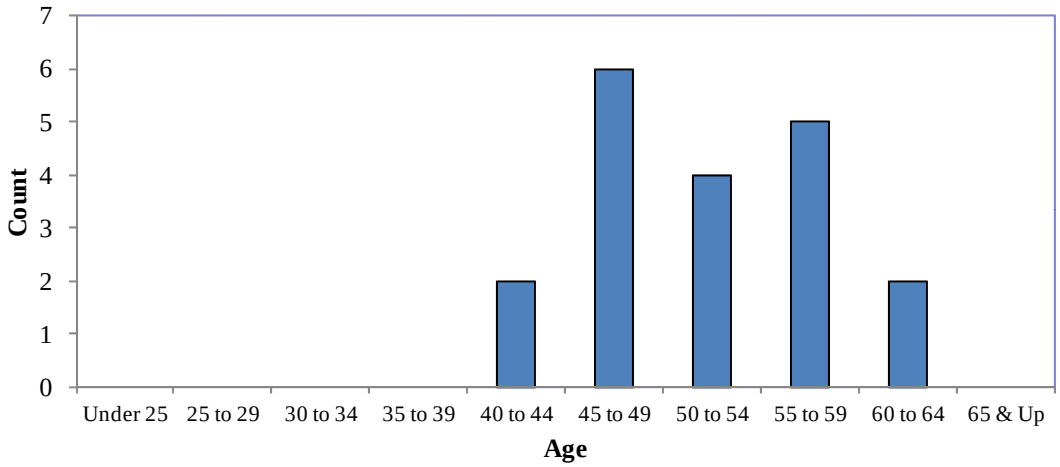
Service Distribution



POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI
SUMMARY OF INACTIVE VESTED MEMBERS
as of April 30, 2012

	Number			Current Monthly Benefit at Retirement		
Age	Male	Female	Total	Male	Female	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25 to 29	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0
40 to 44	2	0	2	3,997	0	3,997
45 to 49	3	3	6	7,541	6,700	14,241
50 to 54	3	1	4	9,942	2,099	12,041
55 to 59	4	1	5	16,984	4,592	21,576
60 to 64	2	0	2	5,589	0	5,589
65 & Up	0	0	0	0	0	0
Total	14	5	19	$ 44,053	$ 13,391	$ 57,444

Age Distribution



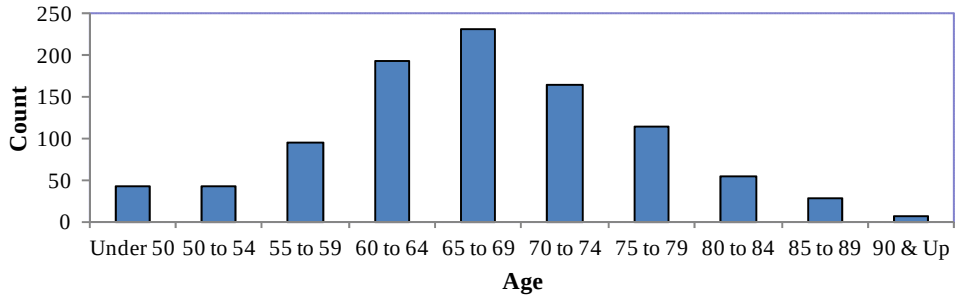
POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI
SUMMARY OF RETIRED MEMBERS
as of Apri1 30, 2012

Healthy & Disabled Retirees

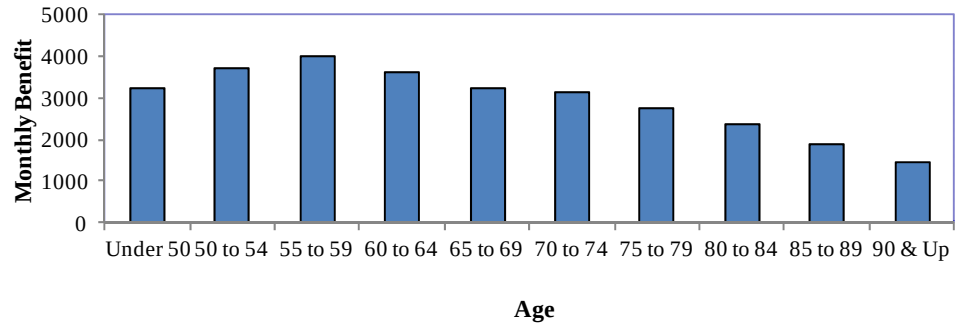
	Number			Monthly Benefit*		
Age	Male	Female	Total	Male	Female	Total
Under 50	32	10	42	$ 102,610	$ 33,002	$ 135,612
50 to 54	35	8	43	130,826	28,131	158,957
55 to 59	74	20	94	299,209	74,092	373,300
60 to 64	170	22	192	618,437	76,207	694,644
65 to 69	224	6	230	720,246	21,215	741,461
70 to 74	163	1	164	506,202	3,511	509,713
75 to 79	112	1	113	307,064	2,720	309,784
80 to 84	53	0	53	125,615	0	125,615
85 to 89	28	0	28	53,283	0	53,283
90 & Up	6	1	7	8,737	1,458	10,195
Total	897	69	966	$ 2,872,229	$ 240,335	$ 3,112,565

*Does not include supplemental benefits

Age Distribution



Average Benefit

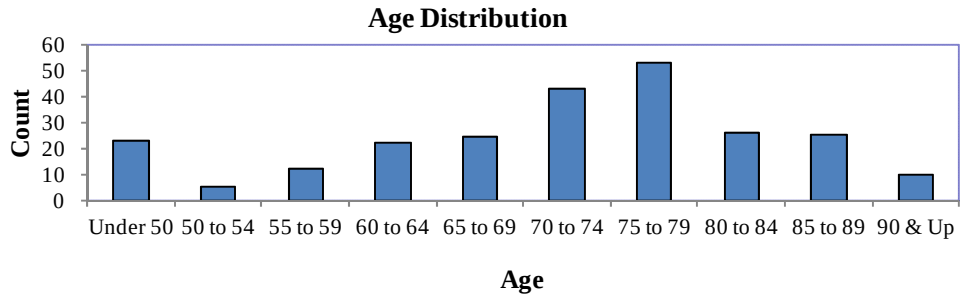


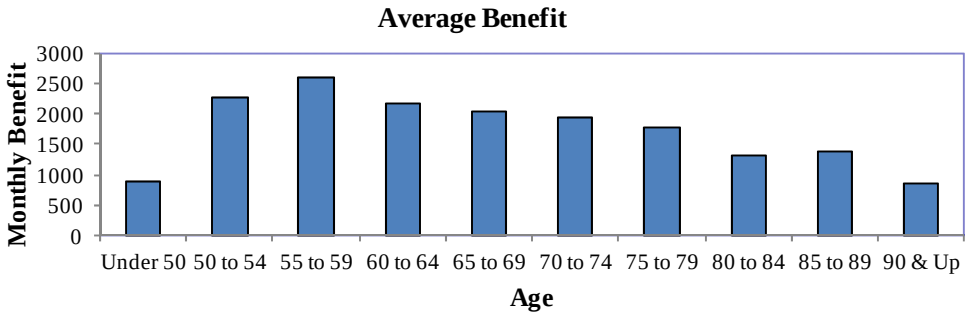
POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI
SUMMARY OF RETIRED MEMBERS
as of Apri1 30, 2012

Beneficiaries

	Number			Monthly Benefit*		
Age	Male	Female	Total	Male	Female	Total
Under 50	9	14	23	$ 2,472	$ 17,935	$ 20,407
50 to 54	1	4	5	1,263	10,029	11,292
55 to 59	1	11	12	600	30,363	30,963
60 to 64	1	21	22	1,535	45,958	47,492
65 to 69	0	24	24	0	48,762	48,762
70 to 74	0	43	43	0	83,465	83,465
75 to 79	0	53	53	0	94,563	94,563
80 to 84	0	26	26	0	34,257	34,257
85 to 89	0	25	25	0	34,390	34,390
90 & Up	0	10	10	0	8,507	8,507
Total	12	231	243	$ 5,870	$ 408,228	$ 414,098

*Does not include supplemental benefits





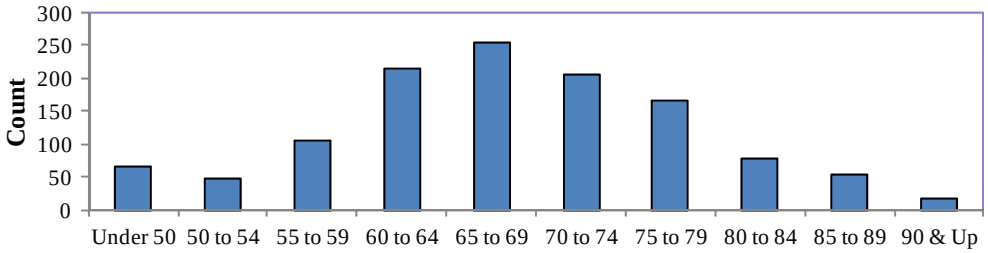
POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI
SUMMARY OF RETIRED MEMBERS
as of April 30, 2012

Combined Retirees & Beneficiaries

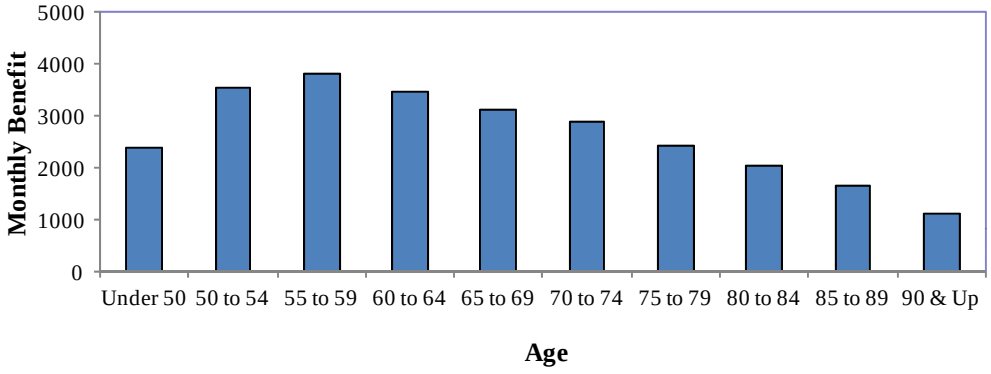
	Number			Monthly Benefit*		
Age	Male	Female	Total	Male	Female	Total
Under 50	41	24	65	$ 105,082	$ 50,936	$ 156,019
50 to 54	36	12	48	132,089	38,160	170,249
55 to 59	75	31	106	299,809	104,454	404,263
60 to 64	171	43	214	619,972	122,164	742,136
65 to 69	224	30	254	720,246	69,977	790,223
70 to 74	163	44	207	506,202	86,976	593,178
75 to 79	112	54	166	307,064	97,283	404,347
80 to 84	53	26	79	125,615	34,257	159,872
85 to 89	28	25	53	53,283	34,390	87,673
90 & Up	6	11	17	8,737	9,965	18,702
Total	909	300	1,209	$ 2,878,099	$ 648,563	$ 3,526,662

*Does not include supplemental benefits

Age Distribution



Average Benefit



POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

SUMMARY OF BENEFIT PROVISIONS

Membership

All police officers who serve as law enforcement officers for compensation. Does not include police commissioners, reserve officers or civilian employees.

Service Retirement

Eligibility **-** Age 60 with 10 or more years of service or 25 years of service, without regard to age. Members must retire at the completion of 32 years of service, or after attaining age 60, whichever occurs first. The Board of Police Commissioners may, however, with the recommendation of the Chief of Police, permit a member to continue in service until age 65, at which time the member must retire.

Amount of Pension **-** For a member retiring prior to August 28, 2000, benefit equal to 2.0% of Final Compensation times years of creditable service, subject to a maximum benefit of 60% of Final Compensation.

For a member retiring on or after August 28, 2000, benefit equal to 2.5% of Final Compensation times years of creditable service, subject to a maximum benefit of 75% of Final Compensation.

Final Compensation **-** Average annual compensation during the two years of service with the highest salary, whether consecutive or otherwise, or during the entire period of service if less than two years. No compensation for service after the thirtieth full year of membership service shall be included.

Deferred Retirement (Vested Termination)

Eligibility **-** 15 years of creditable service.

Amount of Pension **-** Computed as service retirement but based upon service, Final Compensation and benefit formula in effect at termination of employment. Benefit begins at age 55, (unreduced).

Duty Disability

Eligibility **-** Payable to an active member, as the exclusive result of an accident or disease occurring in the line of duty, who has become permanently unable to perform the full and unrestricted duties of a police officer as established by the Board of Police Commissioners.

Amount of Pension **-** 75% of Final Compensation payable for the remainder of the officer's life, or as long as the permanent disability continues. The pension may be subject to offset or reduction by amounts paid or payable under any Workers' Compensation law.

Non-Duty Disability

Eligibility **-** Payable to an active member who has 10 years of service and who has become permanently unable to perform the full and unrestricted duties of a police officer as established by the Board of Police Commissioners. Disability is not exclusively caused by the actual performance of official duties.

Amount of Pension **-** 2.5% of Final Compensation multiplied by years of creditable service payable for the officer's lifetime or as long as the permanent disability continues.

Non-Duty Death in Service

Eligibility **-** Death while an active Police Officer but not resulting from the performance of duties as a police officer; no service requirement.

Amount of Pension **-** 40% of Final Compensation payable to surviving spouse, if any, for their lifetime. If there is no surviving spouse, payable to an eligible child or children in equal shares until age 18. Children: $600 annually for each child under age 18 years, if any, until the child reaches age 18 or age 21 if a full time student or if mentally or physically incapacitated from earning wages until incapacity no longer exists.

Funeral Benefit - of $1,000 is payable upon the death of the active member.

Duty Death in Service

Eligibility - Payable to surviving spouse, if any, or if no surviving spouse, to children under age 21 or children over age 21 if mentally or physically incapacitated. Death resulting from performance of duty as a Police Officer; no service requirement.

Amount of Pension **-** In addition to benefits payable under non-duty death, a lump sum of $50,000.

Death After Retirement

Eligibility **-** Payable to an eligible surviving spouse, if any, upon the death of a retired member. Benefit is payable until death of surviving spouse.

Amount of Pension **-** Spouse's pension equals 80% of the straight life pension the deceased retirant was receiving. The 80% benefit amount calculated under this provision is in addition to the Supplemental Retirement Benefit.

Funeral Benefit - of $1,000 is payable upon the death of the retired member.

Non-Vested Termination

Eligibility **-** termination of employment and no pension is or will become payable.

Amount of Benefit **-** refund of member's contributions without interest.

Minimum Pension Benefit

Eligibility **-** Any member who retired entitled to a pension benefit and who either has at least 25 years of creditable service or is retired as a result of an injury or illness. A surviving spouse qualifies for the minimum monthly benefit if the officer had at least 25 years of creditable service, died in service, or was retired as a result of an injury or illness.

Amount of Benefit **-** Minimum monthly benefit of not less than $600 in combined pension benefit and cost-of-living adjustments. The minimum monthly pension benefit is in addition to the Supplemental Retirement Benefit.

Post-Retirement Benefit Increases

Dependent on the actuarial condition of the System, a member may receive during each year, in addition to the officer's base pension, a cost of living adjustment in an amount not to exceed 3% of the officer's base pension. Base pension is the pension computed under the provisions of the law at the date of retirement, without regard to the cost of living adjustment. The cost of living adjustment also applies to benefits being paid to a surviving spouse. The adjustment is normally effective with the May 31st benefit payment. The liabilities in this report assume a 3% ad hoc COLA will be granted in each future year.

Member Contributions

10.55% of base pay. No contributions are required for members after they retire or complete 30 years of service.

Supplemental Retirement Benefit

Current and future retired and disabled members and their surviving spouses are eligible to receive $420 per month in addition to pension benefits.

Optional Form of Benefit Payment

Members retiring with at least 26 or more years of service may elect to take a portion of their benefit as a lump-sum distribution (PLOP). Members electing PLOP will receive an actuarially reduced monthly benefit for their lifetime.

POLICE RETIREMENT SYSTEM OF KANSAS CITY, MISSOURI

ACTUARIAL COST METHOD AND ASSUMPTIONS

Actuarial Cost Method

The actuarial cost method is a procedure for allocating the actuarial present value of pension benefits and expenses to time periods. The method used for the valuation is known as the Entry Age Normal actuarial cost method, and has the following characteristics.

(i) The annual normal costs for each individual active member are sufficient to accumulate the value of the member's pension at time of retirement.

(ii) Each annual normal cost is a constant percentage of the member's year-by-year projected covered compensation.

The Entry Age Normal actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's assumed pensionable compensation rates between the entry age of the member and the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called actuarial accrued liability. Deducting actuarial assets from the actuarial accrued liability determines the unfunded actuarial accrued liability or (surplus). The difference in the actual and expected UAAL is set up as a separate base each year, which is amortized over a closed 24 year period.

Asset Valuation Method

The Board adopted a new asset smoothing method effective with the April 30, 2011 valuation. Under the new methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five year period. No corridor is used with the new method. The change to a new asset smoothing method was implemented by resetting the actuarial value of assets at April 30, 2011 equal to the market value of assets.

Actuarial Assumptions

The assumptions and the methods comply with the requirements of Statement No. 25 of the Governmental Accounting Standards Board. Valuations beginning with the April 30, 2008 actuarial valuation include assumptions and methods resulting from the experience study covering the 5-year period from May 1, 2002 to April 30, 2007.

ECONOMIC ASSUMPTIONS

Investment return: 7.75% per year, compounded annually.

Pay increase assumption: Rates for sample years of service are shown below.

	Annual Rate of Pay Increase		
Years of Service	General Wage Growth	Merit and Longevity	Total
0	4.0%	5.75%	9.75%
1	4.0%	5.50%	9.50%
2	4.0%	4.50%	8.50%
3	4.0%	4.00%	8.00%
4	4.0%	4.00%	8.00%
5	4.0%	4.00%	8.00%
10	4.0%	3.50%	7.50%
15	4.0%	0.00%	4.00%
20	4.0%	0.00%	4.00%
25	4.0%	0.00%	4.00%

Price inflation: 3.0% per year, compounded annually.

Active member payroll growth: 4.0% per year, compounded annually.

Mortality Tables:

Healthy Retirees: RP-2000 Healthy Annuitant Table using Scale AA to model future mortality improvement.

Disabled Retirees: RP-2000 Healthy Annuitant Table set forward 5 years using Scale AA to model future mortality improvement.

Actives: RP-2000 Employee Table using Scale AA to model future mortality improvement.

Rates of termination from active membership:

	% of Active Members Terminating Within Next Year	
Sample Ages	Male	Female
25	5.8%	6.3%
30	3.8%	5.0%
35	2.4%	3.5%
40	1.6%	1.6%
45	1.1%	0.5%
50	0.6%	0.0%

The rates do not apply to members eligible to retire and do not include separation on account of death or disability. All vested members are assumed to leave their contribution with the System and receive a deferred benefit.

Rates of Disability:

	% of Active Members Becoming Disabled Within Next Year	
Sample Ages	**Male**	**Female**
30	0.062%	0.134%
35	0.312%	0.672%
40	0.416%	0.896%
45	0.437%	0.941%
50	0.759%	1.635%
55	1.456%	3.136%
60	2.579%	5.555%

55% of disabilities are assumed to be duty related

Rates of Retirement:

Active Members Retiring Within Next Year	
Years of Service	**Percent Retiring**
25	25%
26	25%
27	25%
28	25%
29	25%
30	35%
31	55%
32	100%

Members actively working with more than 30 years of service are assumed to retire in one year or at attainment of 32 years of service, if sooner.

Inactive vested members are assumed to retire at age 55.

Miscellaneous and Technical Assumptions

Marriage Assumption:	85% of males and 55% of females are assumed to be married for purposes of death-in-service benefits and death-after-retirement benefits. Males are assumed to be 3 years older than their spouses. Actual reported data is utilized for retirees and beneficiaries.
Pay Increase Timing:	Assumed to occur at the start of the fiscal year.
Pay Annualization:	Reported pays for members with less than 1 year of service were annualized for valuation purposes.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year at the start of the year in which the decrement is assumed to occur.
Benefit Service:	Service calculated to the nearest month, as of the decrement date, is used to determine the amount of benefit payable.
Child Beneficiaries:	None assumed.
Other:	Turnover decrement does not operate during retirement eligibility.
Form of Payment:	The assumed normal form of payment is an 80% joint and survivor annuity, if married. Otherwise, a single life annuity.
Administrative Expense:	0.40% of payroll each year. Administrative expenses beyond this allocation and all investment expenses are assumed to be funded by investment return in excess of the actuarial assumed rate of return.
Cost of Living Adjustment:	It was assumed the Retirement Board will grant the full 3% cost of living adjustment each year.

GLOSSARY OF TERMS

Actuarial Accrued Liability	The difference between the actuarial present value of system benefits and the actuarial value of future normal costs. Also referred to as "accrued liability" or "actuarial liability."
Actuarial Assumptions	Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long term average rate of inflation.
Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate assumptions.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement system benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the "actuarial funding method."
Experience Gain (Loss)	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
Normal Cost	The actuarial present value of retirement system benefits allocated to the current year by the actuarial cost method.
Unfunded Actuarial Accrued Liability	The difference between actuarial accrued liability and the valuation assets. Most retirement systems have an unfunded actuarial accrued liability. They arise each time new benefits are added and each time an actuarial loss is realized. The existence of unfunded actuarial accrued liability is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial accrued liability does not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liability and the trend in its amount.