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# The Public School Retirement System of The School District of Kansas City, Missouri

Actuarial Valuation Report as of January 1, 2015





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The experience and dedication you deserve

June 1, 2015

The Board of Trustees Public School Retirement System of the School District of Kansas City, Missouri 4600 The Paseo Kansas City, MO 64110

Dear Members of the Board:

In accordance with your request, we have completed an actuarial valuation of the Public School Retirement System of the School District of Kansas City, Missouri as of January 1, 2015. The major findings of the valuation are contained in this report, including the actuarial contribution rate for fiscal year 2015. The actuarial methods are the same as were used in the prior valuation, but there was one change to the actuarial assumptions. The mortality tables used in the valuation are tied to tables published by the Internal Revenue Service which are updated annually to reflect an additional year of mortality improvement. The 2015 mortality tables, reflected in this valuation, increased the liabilities and costs of the System. The only change in the plan provisions reflected in this valuation is the Board's action last June to increase the member and employer contribution rates for 2015 from 8.0% to 8.5% of payroll.

In preparing this report, we relied, without audit, on information (some oral and some in writing) 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 for the last valuation. The valuation results depend on the integrity of the data provided. If any of this information is inaccurate or incomplete, our valuation results may be different and our calculations may need to be revised.

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; 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); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Actuarial computations presented in this report are for purposes of determining the actuarial contribution rates for funding the System. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. 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. For example, actuarial computations for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standard No. 67 are provided in a separate report.

**Board of Trustees** June 1, 2015 Page 2



The consultants who worked on this assignment are pension actuaries. CMC's advice is not intended to be a substitute for qualified legal or accounting counsel.

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries and have experience in performing valuations for public retirement plans, that the valuation was prepared in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C.

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

Sincerely,

Patrice A. Beckham, FSA, EA, FCA, MAAA

Principal and Consulting Actuary

Patrice Beckham

Brent A. Banister, PhD, FSA, EA, FCA, MAAA

Chief Pension Actuary

Brent a Bante



#### **SECTION I: EXECUTIVE SUMMARY**

This report presents the results of the January 1, 2015 actuarial valuation of the Public School Retirement System of the School District of Kansas City, Missouri (System). The primary purposes of performing a valuation are to:

- estimate the liabilities for future benefits expected to be paid by the System;
- determine the actuarial contribution rate required to fund the System and evaluate the sufficiency of the current contribution rate;
- disclose certain asset and liability measurements as of the valuation date;
- monitor any deviation between actual plan experience and experience projected by the actuarial assumptions; and
- analyze and report on any significant trends in assets, liabilities, and contributions over the past several years.

There has been no change in the actuarial methods from the last valuation. However, the mortality tables used in the valuation are tied to tables published by the Internal Revenue Service for use by corporate pension plans and are updated annually to reflect an additional year of mortality improvement. The 2015 updated mortality tables, which were used in this valuation, increased the actuarial accrued liability by \$1.1 million. The only change in the plan provisions reflected in this valuation is the Board's action last June to increase the member and employer contribution rates for 2015 from 8.0% to 8.5% of payroll.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2015. The valuation results reflect net unfavorable experience for the past plan year as demonstrated by an unfunded actuarial accrued liability that was higher than expected based on the actuarial assumptions used in the January 1, 2014 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in an actuarial loss of \$1.4 million and experience on liabilities resulted in a loss of \$11.1 million for an overall actuarial loss of \$12.5 million. As a result, the System's unfunded actuarial accrued liability increased from \$164.6 million in the January 1, 2014 valuation to \$179.2 million in the January 1, 2015 valuation. A detailed analysis of the change in the unfunded actuarial accrued liability is shown on page 4.

The System uses an asset smoothing method in the valuation process. As a result, the System's funded status and the actuarial contribution rate are based on the actuarial (smoothed) value of assets – not the market value. The rate of return on the market value of assets was 3.4%, but due to the asset smoothing process the return on the actuarial value of assets was 7.8%. Because the investment return on the actuarial value of assets was slightly lower than the actuarial assumed rate of return (8.0%), a small actuarial loss on assets occurred. Due to the low return on the market value of assets in 2014, the deferred asset gain from last year has been eliminated and a deferred loss of \$14 million now exists. Actual returns over the next few years will determine if and when the \$14 million of deferred investment loss is recognized.

In the following pages, changes in the assets, liabilities, and contributions of the System over the last year are discussed in more detail.

#### ASSETS

As of January 1, 2015, the System had total assets of \$698.5 million when measured on a market value basis. This was a decrease of \$28.1 million from the January 1, 2014 figure of \$726.6 million. The market value of assets is not used directly in the calculation of the System's funded status and the



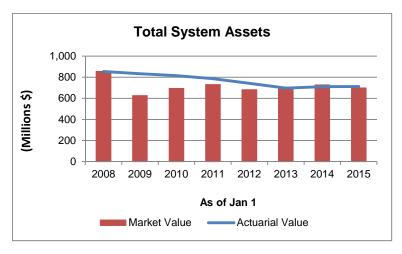
#### **SECTION I: EXECUTIVE SUMMARY**

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". Gains and losses, determined as the difference between the actual and expected value of assets (calculated using the actuarial assumed rate of 8.0%), are recognized equally over a five-year period. See Table 3 for a detailed development of the actuarial value of assets. The rate of return on the actuarial value of assets was 7.8%, slightly below the assumed rate of return of 8.0%. The actuarial value of assets now exceeds the market value of assets and a net deferred investment loss exists.

The components of the change in the market and actuarial value of assets for the System (in millions) are set forth below:

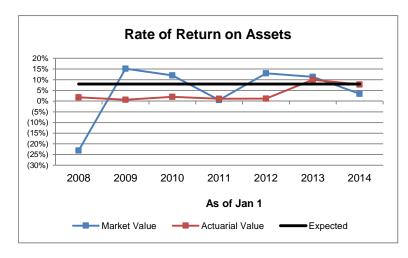
	Market Value (\$M)	Actuarial Value (\$M)
Assets, January 1, 2014	\$726.6	\$710.8
- Employers and Member Contributions	26.6	26.6
- Benefit Payments and Refunds	(78.5)	(78.5)
- Investment, Depreciation and Administrative Expenses	(6.9)	(6.9)
- Investment Income	30.7	60.4
Assets, January 1, 2015	\$698.5	\$712.4
Rate of Return	3.4%	7.8%

The unrecognized investment loss represents about 2% of the market value of assets. Unless offset by future investment gains or other favorable experience, the recognition of the \$14 million loss will flow through the asset smoothing method and negatively impact the funded ratio and actuarial contribution rate in future years. If the deferred loss was recognized immediately in the actuarial value of assets, the funded percentage would decrease slightly from 80% to 78% and the actuarial contribution rate for the System would increase from 11.1% to 11.8% of payroll.



The actuarial value of assets has been greater than the market value of assets over much of this period. However, over the longer term we expect the actuarial value of assets to be both higher and lower than the market value of assets.





The rate of return on the actuarial value of assets has been less volatile than the market value return, which is the main reason for using an asset smoothing method.

## **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 asset values at the same date is referred to as the unfunded actuarial accrued liability (UAAL). 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 earned on the previous balance of the unfunded actuarial accrued liability. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and procedures 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 January 1, 2015 are:

Actuarial Accrued Liability	\$891,543,036
Actuarial Value of Assets	712,390,611
Unfunded Actuarial Accrued Liability	\$179 152 425



### **SECTION I: EXECUTIVE SUMMARY**

Between January 1, 2014 and January 1, 2015, the change in the unfunded actuarial accrued liability for the System was as follows (in millions):

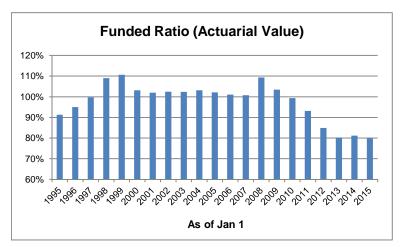
	(\$ M	(Iillions
Unfunded Actuarial Accrued Liability, January 1, 2014	\$	164.6
- Expected decrease from amortization method		(1.4)
<ul><li>Actual versus actuarial contributions</li><li>Investment experience</li></ul>		5.8 1.4
- Liability experience		11.1
- Updated mortality assumption		1.1
- Other experience		(3.4)
Unfunded Actuarial Accrued Liability, January 1, 2015	\$	179.2

The experience loss for the 2014 plan year of \$12.5 million reflects the combined impact of an actuarial loss of \$1.4 million on System assets (actuarial value), and an actuarial loss of \$11.1 million on System liabilities. The two main factors contributing to the liability loss were (1) terminated vested members who actually retired during 2013 or before, but were reported to us as terminated vested in last year's data and (2) terminated vested members who retired during 2014. Together, these two items account for about \$8 million of the liability loss. The first issue is a data-related issue and it is not clear how or why it occurred. The second item occurs each year because members with a status of terminated vested in the prior valuation elect to retire and then appear in the current valuation as a retiree. We currently do not receive sufficient data to value a deferred monthly benefit for this group in the valuation. Therefore, the liability is estimated by multiplying their employee contribution balance by 1.5. While this estimation process for terminated vested members is a common approach when data is unavailable to directly value a deferred monthly benefit, it can be a poor indicator of the actual liability attributable to these members. In discussions with System staff this year, it appears that better data can be provided for this group when the January 1, 2016 valuation is prepared. If that occurs, the liabilities in the valuation for terminated vested members will be directly valued which should provide a better, although likely higher, estimate of the liability for that group.

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). Longer term historical information is shown in the graph following the chart:

	1/1/2011	1/1/2012	1/1/2013	1/1/2014	1/1/2015
Actuarial Accrued Liability (\$M)	\$844.2	\$874.3	\$868.7	\$875.5	\$891.5
Actuarial Value of Assets (\$M)	\$786.3	\$742.3	\$697.0	\$710.8	\$712.4
Funded Ratio (Actuarial Value)	93.1%	84.9%	80.2%	81.2%	79.9%
Market Value of Assets (\$M)	\$730.3	\$681.9	\$703.0	\$726.6	\$698.5
Funded Ratio (Market Value)	86.5%	78.0%	80.9%	83.0%	78.4%





The System's funded ratio has been very strong (near or above 100%) until the last several years when the recognition of the market downturn of 2008 as been fully reflected. Future investment experience will be the largest driver of the System's funded ratio in future years. However. contributions at the full actuarial contribution rate will also important to the System's long-term funding.

As mentioned earlier in this report, due to the asset smoothing method there is currently about a \$14 million difference between the actuarial value and the market value of assets. To the extent there is not favorable investment experience to offset the deferred loss, the \$14 million deferred loss will be recognized in future years and the System's funded status will decline. The System's funded status will continue to be heavily dependent on future investment experience.

## **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, and
- An "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

As of January 1, 2015, the actuarial accrued liability exceeds the actuarial value of assets so an unfunded actuarial accrued liability (UAAL) exists. When amortized over a rolling 30-year period, as a level dollar amount, the resulting contribution is 9.31% of pay. The System's actuarial contribution rate is the sum of the normal cost and the UAAL amortization contribution or 19.56% of pay (10.25% normal cost plus 9.31% UAAL contribution). Given a current contribution rate of 17.00% of pay (8.50% each for employee and employer), the resulting contribution shortfall is 2.56%. However, the measurement of the shortfall is based on the snapshot measurement at January 1, 2015 which assumes no change in either the normal cost rate or the UAL contribution rate.

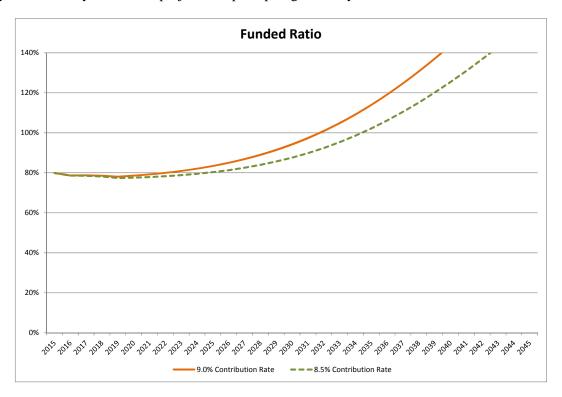
Because the UAAL is amortized as a level dollar amount, the resulting UAAL contribution as a percent of payroll is expected to decline over time as covered payroll increases. For comparative purposes, if the UAAL contribution was determined as a level percentage of payroll rather than a level dollar amount, the payment would be 6.54% rather than 9.31% and the actuarial contribution rate would be 16.79% rather than 19.56%. Of course, the dollar amount of the payment would increase 3.5% each year rather than remain level so the UAAL would be paid off more slowly. Given that the benefits are funded by contribution rates applied to covered payroll, determining the UAAL contribution rate using the level percent of payroll methodology might provide a more appropriate comparison between the actuarial contribution rate and the current contribution rate.



### **SECTION I: EXECUTIVE SUMMARY**

In addition to the amortization of the UAAL as a level dollar amount, a different benefit structure for new hires limits the usefulness of the snapshot valuation results in evaluating the long-term financial health of the System. In particular, as new hires in the future become members of the System under Plan C, the normal cost rate is expected to decline. As a result, the portion of the total contribution rate available to pay off the UAAL is expected to increase each year in the future until all active members in the valuation are covered by Plan C. While this is expected to improve the System's financial health in future years, it is impossible to anticipate the long-term funding progress without preforming an open group projection of future valuation results.

Such modeling was prepared in connection with the valuation and the following graph reflects the projected funded ratio in future years under two scenarios: (1) the current contribution rate for employers and members remains 8.5% and (2) the contribution rate for employers and members increases to 9.0% for 2016 and beyond. Please note that these projections assume that all actuarial assumptions are met in all future years. To the extent actual experience is different than that assumed, the actual funded ratio of the System will vary from these projections, perhaps significantly.

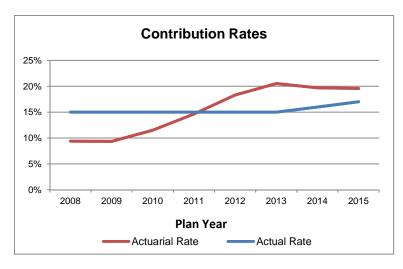


Increasing the member and employer contribution rates by 0.5% each, to 9.0%, moves the System to fully funded status 3 years earlier (from 2035 to 2032). Hopefully this information will assist the Board in evaluating whether or not to increase contribution rates in 2016.





A summary of the System's recent contribution rates is shown below:



The actuarial contribution rate rose dramatically in recent years as the large asset loss from 2008 was reflected in the asset smoothing method. The shortfall has been reduced due to increases in the member and employer contribution rates.

#### **COMMENTS**

Under legislation passed in 2013, the Board may adjust the member and employer contribution rate each year by no more than 0.5% each. The contribution rate can fluctuate between 7.5% and 9.0%. The Board increased the contribution rate for both members and employers to 8.5% of pay, effective January 1, 2015. The higher contribution rate will begin to address the shortfall between the actuarial contribution rate and the actual contribution rate. As a result of the higher employee and employer contribution rate, the System's funding shortfall decreased from 3.68% of pay in last year's valuation to 2.56% of pay in the 2015 valuation.

In addition, legislation in 2013 created a new set of plan provisions for members hired after December 31, 2013, referred to as Plan C. The key differences between Plan B and Plan C are a lower benefit multiplier (1.75% instead of 2.00%) and different requirements for unreduced benefits (age 62 or Rule of 80 rather than age 60 or Rule of 75). These changes are effective for those hired on or after January 1, 2014 so this is the first valuation to include Plan C members. As of January 1, 2015, there are 574 active Plan C members in the System. As discussed earlier, the impact of the new benefit structure on the System's funding will evolve gradually over time as current members (covered by Plan B) leave covered employment and are replaced with new members who are covered by Plan C.

The System does not use the actual market value of assets in developing the actuarial contribution rate, but utilizes an asset valuation method to smooth out the peaks and valleys in investment returns from year to year. Due to the low return on market value of assets in 2014, the System experienced an actuarial loss on assets of \$1.4 million. This loss and the actuarial loss on liabilities of \$11.1 million combined for a total actuarial loss of \$12.5 million.

The System's actuarial contribution rate decreased from 19.68% in the January 1, 2014 valuation to 19.56% in this valuation. The actuarial contribution rate to be paid by the System has been, and will continue to be, heavily impacted by investment returns from year to year. Despite the use of an asset smoothing method, actual returns that are significantly different from the 8.00% assumption will create volatility in the System's actuarial contribution rate.



### **SECTION I: EXECUTIVE SUMMARY**

The deferred investment loss (actuarial value less market value of assets) is \$14 million. Absent investment gains in future years, the deferred investment loss of \$14 million will eventually be reflected in the actuarial value of assets in future years. While the use of an asset smoothing method is a common procedure for public retirement systems, it is important to identify the potential impact of the deferred investment experience. This is accomplished by comparing the key valuation results from the January 1, 2015 actuarial valuation using both the actuarial and market value of assets.

	Using Actuarial Value of Assets	Using Market Value of Assets
	v drue or risseds	varae or rissees
Actuarial Accrued Liability	\$891,543,036	\$891,543,036
Asset Value	\$712,390,611	\$698,523,480
Unfunded Actuarial Accrued Liability	\$179,152,425	\$193,019,556
Funded Ratio	79.9%	78.3%
Normal Cost Rate	10.25%	10.25%
UAAL Contribution Rate	9.31%	10.04%
Total Contribution Rate	19.56%	20.29%
Employee Contribution Rate	(8.50%)	(8.50%)
Employer Contribution Rate	(8.50%)	(8.50%)
Contribution Shortfall	2.56%	3.29%



# **Summary of Principal Valuation Results**

			1/1/2015 Valuation		1/1/2014 Valuation	% Change
1. PARTICIPANT DATA		•		-		
Number of: Active Members			3,493		3,501	(0.23%)
Retirees, Disableds, and	l Beneficiaries		4,011		3,885	3.24%
Inactive Members*		-	2,600	_	2,790	(6.81%)
Total Members			10,104		10,176	(0.71%)
Projected Annual Salaries of	of Active Members	\$	170,845,124	\$	157,014,537	8.81%
Annual Retirement Paymen Disableds, and Beneficiari		\$	75,736,524	\$	73,146,778	3.54%
2. ASSETS AND LIABILITI	ES					
a. Market Value of Assets		\$	698,523,480	\$	726,553,301	(3.86%)
b. Actuarial Value of Assets	s		712,390,611		710,828,744	0.22%
c. Total Actuarial Accrued	Liability		891,543,036		875,451,114	1.84%
d. Unfunded Actuarial Acci [c - b]	rued Liability	\$	179,152,425	\$	164,622,370	8.83%
e. Funded Ratio (Actuarial [b / c]	Value of Assets)		79.91%		81.20%	(1.59%)
f. Funded Ratio (Market V	alue of Assets)		78.35%		82.99%	(5.59%)
g. Projected Benefit Obliga	tion	\$	885,297,319	\$	860,984,705	2.82%
3. CONTRIBUTION RATES	S AS A PERCENT O	F PA	YROLL			
Normal Cost			10.25%		10.37%	(1.14%)
Amortization of Unfunded Accrued Liability	Actuarial		9.31%		9.31%	0.00%
Actuarial Required Contrib	ution Rate		19.56%		19.68%	(0.60%)
Member Contribution Rate			(8.50%)		(8.00%)	6.25%
Employer Contribution Rate	e		(8.50%)	-	(8.00%)	6.25%
Contribution Rate Shortfall			2.56%		3.68%	(30.40%)
Contribution Shortfall		\$	4,376,071	\$	5,778,135	(24.26%)

<sup>\*</sup>Includes former participants entitled to either a refund of contributions or a deferred annuity.



## **SECTION II: SCOPE OF THE REPORT**

This report presents the actuarial valuation of the Public School Retirement System of the School District of Kansas City, Missouri as of January 1, 2015. This valuation was prepared at the request of the System's Board of Trustees. The report is based on plan provisions and actuarial assumptions that are unchanged from last year, except for the update of the mortality table for one additional year of mortality improvement and an increase in the contribution rate from 8.0% to 8.5% of payroll.

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 resulting 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 additional information regarding the System's funding history.

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 the valuation date.
- 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 III: 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 January 1, 2015. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System. 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 over time. On January 1, 2015, the market value of assets for the System was \$698.5 million. Table 1 summarizes the market value of assets by asset category. Table 2 is a comparison, at market values, of System assets as of January 1, 2015, and January 1, 2014, in total.

## **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 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. This methodology smoothes the difference between the actual return and the expected return (based on the actuarial assumption) on the market value of assets equally over a five year period. Table 3 shows the development of the actuarial value of assets (AVA) as of January 1, 2015.



# Net Assets at Market Value as of January 1, 2015

INVESTMENTS, AT MARKET VALUE	
Cash and short term investments	\$ 14,475,712
Commingled domestic fixed income	67,188,432
High yield fixed income	15,236,878
Global fixed income	32,295,070
Domestic equity	157,144,487
International equity	162,685,050
Pooled real estate funds	73,508,872
Alternative equity fund	106,856,338
Private equity	31,867,012
Commodities	 24,629,291
Total Investments, at Market Value	\$ 685,887,143
RECEIVABLES	
Plan member contributions	\$ 688,754
Employer contributions	9,182,422
Securities sold	5,923,587
Accrued interest and dividends	819,312
Total Receivables	\$ 16,614,075
OTHER ASSETS	
Cash	\$ 2,026,321
Fixed assets	1,038,675
Other assets	54,245
Total Other Assets	\$ 3,119,241
TOTAL ASSETS	\$ 705,620,458
LIABILITIES	
Due to broker for securities purchased	\$ 6,110,089
Accounts payable	851,538
Accrued payroll expenses	135,351
Total Liabilities	\$ 7,096,978
NET ASSETS AVAILABLE FOR BENEFITS	\$ 698,523,480

Based on unaudited asset information. Some numbers do not add to totals due to rounding.



TABLE 2
Statement of Changes in Net Assets as of January 1, 2015

# ADDITIONS TO NET ASSETS

Investment Income		
Net appreciation (depreciation) in fair value of investments	\$	23,326,979
Interest		7,392,965
Dividends		0
Other income	_	2,500
Investment income before expenses	\$	30,722,444
Less: investment expenses	_	4,786,025
Total investment income	\$	25,936,419
Contributions		
Employers	\$	13,288,142
Plan members	_	13,358,180
Total Contributions	\$	26,646,322
TOTAL ADDITIONS TO NET ASSETS	\$	52,582,741
DEDUCTIONS FROM NET ASSETS		
Benefits paid directly to participants	\$	75,298,738
Refunds of contributions		3,236,645
Depreciation expense		528,860
Administrative expenses		1,548,320
TOTAL DEDUCTION FROM ASSETS	\$	80,612,562
NET INCREASE (DECREASE)	\$	(28,029,821)
NET ASSETS AVAILABLE FOR BENEFITS		
Beginning of year	\$	726,553,301
End of year	\$	698,523,480

Based on unaudited asset information. Some numbers may not add due to rounding.



TABLE 3

# Development of Actuarial Value of Assets as of January 1, 2015

	2015
1. Deferral of Investment Return for 2014	
a. Market Value, January 1, 2014	\$ 726,553,301
b. Contributions for 2014	26,646,322
c. Benefit Payments for 2014	78,535,383
d. Actual Investment Return, Net of All Expenses	\$ 23,859,239
e. Expected Return Rate	8.00%
f. Expected Return - Weighted for Timing*	\$ 56,088,631
$(a. x e.) + [(b c.) x (((1 + e.)^{.5}) - 1)]$	
g. Investment Gain/(Loss) for the Year	\$ (32,229,392)
(d f.)	
h. Deferred Investment Return	\$ (25,783,514)
(g. x 80%)	
2. Actuarial Value, January 1, 2015	
a. Market Value, January 1, 2015	\$ 698,523,480
b. Total Deferred Investment Gain/(Loss)	(13,867,131)
c. Actuarial Value, January 1, 2015	\$ 712,390,611
(a b.)	
d. Ratio of Actuarial Value of Assets to	
Market Value of Assets	102.0%
e. Approximate Actuarial Value Rate of	
Return for 2014, Net of All Expenses	7.8%

<sup>\*</sup> Contributions and benefit payments are assumed to occur mid-year.

The table below shows the development of gain/(loss) to be recognized in the current year.

Plan Year Ended	Asset Gain/(Loss)	Gain/(Loss) Recognized in Prior Years	Gain/(Loss) Recognized This Year	Gain/(Loss) Deferred to Future Years
12/31/2010	\$ 26,792,898	\$ 21,434,320	\$ 5,358,578	\$ 0
12/31/2011	(52,649,069)	(31,589,442)	(10,529,814)	(10,529,813)
12/31/2012	22,460,154	8,984,062	4,492,031	8,984,061
12/31/2013	22,436,893	4,487,379	4,487,379	13,462,135
12/31/2014	(32,229,392)	0	(6,445,878)	(25,783,514)
Total	\$(13,188,516)	\$ 3,316,319	\$(2,637,704)	\$(13,867,131)



### **SECTION IV: SYSTEM LIABILITIES**

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, January 1, 2015. In this section, the discussion will focus on the commitments 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 January 1, 2015.

### **ACTUARIAL ACCRUED LIABILITY**

A fundamental principle in financing the liabilities of a prefunded 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 to the System. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability (see Table 5).

Table 6 develops the experience gain/(loss) for the year ended December 31, 2014.

Table 7 shows the actuarial balance sheet.

#### PENSION BENEFIT OBLIGATION

Table 8 shows the System's liability on a Pension Benefit Obligation (PBO) basis.



# Present Value of Future Benefits as of January 1, 2015

1. Active Members	
a. Retirement Benefits	\$ 269,552,938
b. Disability Benefits	8,459,704
c. Death Benefits	6,624,966
d. Withdrawal Benefits	33,535,514
e. Subtotal	\$ 318,173,122
2. Benefit Recipients	
a. Retiree Benefits	\$ 618,689,744
b. Survivor Benefits	17,438,358
c. Disability Benefits	8,971,951
d. Subtotal	\$ 645,100,053
3. Inactive Members	
a. Vested Retirement Benefits	\$ 23,072,767
b. Non-vested Account Balance	6,621,834
c. Subtotal	\$ 29,694,601
4. Total	\$ 992,967,776
(1e. + 2d. + 3c.)	



# Actuarial Accrued Liability as of January 1, 2015

1. Present Value of Future Benefits (PVFB)	\$ 992,967,776
2. Present Value of Future Normal Costs (PVFNC)	
a. Retirement benefits	\$ 56,649,497
b. Disability benefits	3,301,101
c. Death benefits	2,732,023
d. Withdrawal benefits	38,742,119
e. Total	\$ 101,424,740
3. Actuarial Accrued Liability (AAL) (1 2e.)	\$ 891,543,036
4. Actuarial Value of Assets (AVA)	\$ 712,390,611
5. Unfunded Actuarial Accrued Liability (UAAL) (3 4.)	\$ 179,152,425
6. Funded Ratio (4. / 3.)	79.9%



# Actuarial Gain/(Loss) for 2014

•	•		•••	•
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_	ш	LUI.		

1. Actuarial accrued liability as of January 1, 2014	\$	875,451,114
2. Normal cost for 2014		14,275,911
3. Interest at 8.00% on (1) and (2) to December 31, 2014		71,178,162
4. Benefit payments during 2014		78,535,383
5. Interest on benefit payments		3,080,981
6. Updated Mortality Assumption		1,133,698
7. Expected actuarial accrued liability as of December 31, 2013 (1. + 2. + 3 4 5. + 6.)	\$	880,422,521
8. Actuarial accrued liability as of December 31, 2014		891,543,036
9. Actuarial Gain / (Loss) on Actuarial Accrued Liability	\$	(11,120,515)
(7 8.)		
<u>Assets</u>		
10. Actuarial value of assets as of January 1, 2014	\$	710,828,744
11. Contributions during 2014		26,646,322
12. Benefit payments during 2014		78,535,383
13. Interest on items (10), (11) and (12)		54,830,667
14. Expected actuarial value of assets as of December 31, 2014	\$	713,770,350
(10. + 11 12. + 13.)		712 200 (11
15. Actuarial value of assets as of December 31, 2014	ф	712,390,611
16. Actuarial Gain / (Loss) on Actuarial Assets (15. – 14.)	\$	(1,379,739)
17. Actuarial Gain / (Loss) (9. + 16.)	\$	(12,500,254)



## **Actuarial Balance Sheet**

# **Assets**

Current assets (actuarial value)	\$	712,390,611
Present value of future normal costs		101,424,740
Present value of future contributions to fund unfunded actuarial accrued liability	_	179,152,425
Total Assets	\$ _	992,967,776
<u>Liabilities</u>		
Present value of future retirement benefits for:		
Active employees	\$	318,173,122
Members currently receiving a benefit		645,100,053
Terminated vested members		23,072,767
Inactive employees due refunds	_	6,621,834
Total Liabilities	\$ _	992,967,776



## **Pension Benefit Obligation Funded Status**

The Pension Benefit Obligation (PBO) is statutorily required to be used in the determination of whether a cost-of-living allowance can be granted to retirees. If the funded ratio, after reflecting the effect of the proposed increase, exceeds 100%, and other safeguards are met, a cost-of-living allowance may be provided. See Appendix B for additional details.

Pro	jecte	d Benefit Obligation	<u>Jar</u>	nuary 1, 2015	Jai	nuary 1, 2014
1.		Retired members and beneficiaries currently receiving benefits and terminated members not yet receiving benefits	\$	674,794,654	\$	652,418,077
2.		Current active participants				
	a.	Accumulated member contributions, including interest		98,966,336		98,272,633
	b.	Employer-financed vested benefits		111,536,329	_	110,293,995
Tot	al Pr	ojected Benefit Obligation	\$	885,297,319	\$	860,984,705
Pro	jecte	d Benefit Obligation funded status				
1.		Actuarial Value of Assets	\$	712,390,611	\$	710,828,744
	a.	Unfunded Projected Benefit Obligation		172,906,708		150,155,961
	b.	Funding Ratio		80%		83%
2.		Market Value of Assets	\$	698,523,480	\$	726,553,301
	a.	Unfunded Projected Benefit Obligation		186,773,839		134,431,404
	b.	Funding Ratio		79%		84%



#### **SECTION V: EMPLOYER CONTRIBUTIONS**

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, except for 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 this 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).

The Board of Trustees may adjust both the employee and employer contribution rates, but not by more than 0.50% per year. The minimum contribution rate is 7.5% and the maximum is 9.0%. In general, contributions are computed in accordance with a level percent-of-payroll funding objective. 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 January 1, 2015, the valuation assets were less than the actuarial accrued liability so an unfunded actuarial accrued liability exists. The System's funding policy is to amortize the UAAL, as a level dollar amount, over a rolling 30-year period.

### **CONTRIBUTION RATE SUMMARY**

Table 9 develops the normal cost rate for the System. In Table 10, the amortization payment related to the unfunded actuarial accrued liability, as of January 1, 2015, is developed, as well as the contribution rate for the System.

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



# **Normal Cost Rate**

1. Normal Cost	
a. Retirement Benefits	6.01%
b. Disability Benefits	0.32%
c. Death Benefits	0.29%
d. Termination Benefits	3.64%
e. Total	10.25%
2. Normal Cost as a Percentage of Pay	10.25%
3. Employee Contribution Rate for 2015	8.50%
4. Employer Normal Cost Rate	1.75%
(2 3.)	



# Development of 2015 Actuarial Required Contribution (ARC)

1.	Unfunded Actuarial Accrued Liability (UAAL)	\$ 179,152,425
2.	30-Year Amortization Factor, End of Year	11.25778
3.	UAAL Contribution Amount (1. / 2.)	\$ 15,913,655
4.	Total Expected Payroll for 2015	\$ 170,845,124
5.	UAAL Contribution as a Percent of Payroll (3. / 4.)	9.31%
6.	Employer Normal Cost Rate	1.75%
7.	Actuarial Required Employer Contribution Rate $(5. + 6.)$	11.06%
8.	Employer Contribution Rate	8.50%
9.	Contribution Shortfall (7 8.)	2.56%



### **SECTION VI: OTHER INFORMATION**

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 actuarial assumptions used in determining the actuarial accrued liability can be found in Appendix C.

In the past, Governmental Accounting Standards Board (GASB) Statements No. 25, Financial Reporting for Defined Benefit Pension Plans, and Statement No. 27, Accounting for Pensions by State and Local Governmental Employers, applied to the preparation of financial reports of pension plans for state and local governments.

GASB 67, which is effective for fiscal year end 2014, replaced GASB 25 and represents a significant departure from the requirements of that older statement. GASB 25 was issued as a "funding friendly" statement that required pension plans to report items consistent with the results of the plan's actuarial valuations, as long as those valuations met certain parameters. GASB 67 basically separates accounting from funding by creating disclosure and reporting requirements that may or may not be consistent with the basis used for funding the System. A separate report that contains all of the information and exhibits of an actuarial nature that are necessary for the System's financial reporting under GASB 67 has been prepared.

GASB 68 replaces GASB 27 and also represents a significant departure from the requirements of the prior statement. GASB 27 required employers providing benefits through pension plans to report items consistent with the results of the plan's actuarial valuations as long as those valuations met certain parameters. GASB 68 creates disclosure and reporting requirements that may or may not be consistent with the basis used to fund the Plan. GASB 68 will be effective for the fiscal year ending in 2015 for the employers who participate in the Public School Retirement System of the School District of Kansas City, Missouri.



**TABLE 11** 

### **Schedule of Funding Progress**

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 an on-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 System'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 System's funding.

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liabilities (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b - a) / c]
1/1/1995	\$ 353,329,957	\$ 386,874,780	\$ 33,544,823	91.3%	\$ 185,374,096	18.1%
1/1/1996	389.103.803	409,428,594	20,324,791	95.0%	171,262,008	11.9%
1/1/1997	428,419,710	429,517,108	1,097,398	99.7%	161,802,480	0.7%
1/1/1998	482,599,919	442,614,693	(39,985,225)	102.3%	168,328,728	(23.8%)
1/1/1999	624,225,667	564,056,509	(60,169,158)	110.7%	153,733,920	(39.1%)
1/1/2000	660,830,255	640,614,688	(20,215,567)	103.2%	151,091,616	(13.4%)
1/1/2001	696,071,310	682,531,577	(13,539,734)	102.0%	165,795,367	(8.2%)
1/1/2001	718,703,692	701,725,938	(16,977,755)	102.4%	171,523,233	(9.9%)
1/1/2002	717,681,067	701,114,370	(16,566,697)	102.4%	168,391,474	(9.8%)
1/1/2003	738,612,110	716,126,707	(22,485,404)	103.1%	186,528,530	(12.1%)
1/1/2004	763,684,602	747,711,194	(15,973,408)	102.1%	195,866,663	(8.2%)
1/1/2005	788,788,666	780,663,389	(8,125,277)	102.1%	187,445,140	(4.3%)
1/1/2007	824.302.795	818.027.315	(6,275,480)	100.8%	199.221.110	(3.2%)
1/1/2007	854,123,580	781,284,025	(72,839,554)	100.8%	202,311,837	(36.0%)
1/1/2008	, ,	804.623.080	` ' ' '	103.5%	, ,	` ,
	832,609,879	,,	(27,986,799)		205,326,108	(13.6%)
1/1/2010	814,536,473	819,534,391	4,997,918	99.4%	194,474,437	2.6%
1/1/2011	786,297,998	844,232,490	57,934,492	93.1%	162,417,257	35.7%
1/1/2012	742,279,611	874,286,498	132,006,887	84.9%	155,893,016	84.7%
1/1/2013	697,028,072	868,663,383	171,635,311	80.2%	157,303,005	109.1%
1/1/2014	710,828,744	875,451,114	164,622,370	81.2%	157,014,537	104.8%
1/1/2015	712,390,611	891,543,036	179,152,425	79.9%	170,845,124	104.9%



TABLE 12
Historical Contribution Rates

Actuarial Valuation Date	Actuarial Contribution Rate	Actual Contribution Rate	Contribution Shortfall/(Margin)
1/1/2005	14.02%	15.00%	(0.98%)
1/1/2006	13.78%	15.00%	(1.22%)
1/1/2007	13.28%	15.00%	(1.72%)
1/1/2008	9.39%	15.00%	(5.61%)
1/1/2009	9.35%	15.00%	(5.65%)
1/1/2010	11.50%	15.00%	(3.50%)
1/1/2011	14.64%	15.00%	(0.36%)
1/1/2012	18.30%	15.00%	3.30%
1/1/2013	20.52%	15.00%	5.52%
1/1/2014	19.68%	16.00%	3.68%
1/1/2015	19.56%	17.00%	2.56%

Note: Years prior to 1/1/2014 were provided by prior Actuary.

# **Summary of Actuarial Methods and Assumptions**

Valuation Date	January 1, 2015
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Dollar, open
Remaining Amortization Period	30 years
Asset Valuation Method	5-Year Smoothed Market Value
Actuarial Assumptions:	
Investment Rate of Return*	8.00%
Projected Salary Increases*	5.00%
No future COLAs	
*Includes Inflation at	3.50%



### **Solvency Test**

In a system that has been following the discipline of level percent of payroll financing, the liabilities for active participant accumulated contributions (liability 1) and the liabilities for future benefits to retirees, beneficiaries, and inactive participants (liability 2) will be fully covered by assets if all assumptions are met. In addition, the liabilities for service already rendered by active participants (liability 3) are normally partially covered by the remainder of the present assets. Generally, if the system has been using level cost financing, the funded portion of liability 3 will increase over time. The schedule below illustrates the history of the liabilities of the system and is indicative of the system following the discipline of level percent of compensation funding.

	(1)		Active Participants (Employer Valuation Financed) Assets		Valu	nt Cover nation As	ssets
		(2)	(3)		(1)	(2)	(3)
1987	\$ 54,703,473	\$ 60,096,766	\$ 45,027,324	\$ 157,538,001	100%	100%	95%
1988	60,631,019	68,133,929	45,164,333	172,932,203	100%	100%	98%
1989	68,032,000	72,476,675	50,436,314	192,074,767	100%	100%	102%
1990	77,843,936	79,855,895	52,384,902	220,844,765	100%	100%	121%
1991	86,392,672	77,212,948	62,859,420	241,369,537	100%	100%	124%
1992	91,688,784	101,408,720	69,055,820	278,065,508	100%	100%	123%
1993	98,482,791	102,336,338	61,479,865	307,050,085	100%	100%	173%
1994	99,547,061	123,475,760	121,674,513	336,466,320	100%	100%	93%
1995	110,658,079	144,027,489	124,562,502	353,451,344	100%	100%	79%
1996	108,123,636	177,617,507	117,169,151	389,103,803	100%	100%	88%
1997	104,554,877	231,762,583	91,329,968	428,419,710	100%	100%	101%
1998	115,847,655	228,328,855	108,592,620	482,599,919	100%	100%	127%
1999	117,478,379	274,442,924	172,607,724	624,225,667	100%	100%	135%
2000	113,334,820	343.382.932	184.049.309	660,830,255	100%	100%	111%
2001	115,781,706	389,055,603	184,779,937	696,071,310	100%	100%	103%
2002	119,968,776	406,094,033	187,309,245	718,703,692	100%	100%	103%
2003	112,468,027	435,548,298	165,766,206	717,681,067	100%	100%	102%
2004	125,754,562	430,145,689	179,264,397	738,612,110	100%	100%	102%
2005	127,221,118	431,366,177	201,836,083	763,684,602	100%	100%	102%
2006	133,811,729	477,844,206	177,531,611	788,788,666	100%	100%	100%
2007	136,978,872	498,841,373	187,966,845	824,302,795	100%	100%	100%
2008	140.844.707	492,273,102	156,840,245	854.123.580	100%	100%	141%
2009	140,096,771	503,450,518	161,075,791	832,609,879	100%	100%	117%
2010	139,860,248	524,692,426	154,981,717	814,536,473	100%	100%	97%
2010	110,538,745	611,806,997	121,886,748	786,297,998	100%	100%	52%
2012	99,513,420	654,828,752	119,944,326	742,279,611	100%	98%	0%
2012	100,767,726	653,949,421	113,946,236	697,028,072	100%	91%	0%
2013	98.272.633	660.003.861	117,174,620	710.828.744	100%	93%	0%
2014	98,966,336	674,794,654	117,774,020	710,828,744	100%	93%	0%

Note: Years prior to 1/1/2014 were provided by prior Actuary.



# APPENDIX A: SUMMARY OF MEMBERSHIP DATA

# MEMBER CENSUS INFORMATION

A. ACTIVE MEMBERS	Jan	uary 1, 2015	Janua	ry 1, 2014	% Change
1. Number of Active Members		3,493		3,501	(0.2%)
2. Active Member Averages					
(a) Age		44.4		44.5	(0.2%)
(b) Service		8.3		8.5	(2.4%)
(c) Expected Annual Pay	\$	48,911	\$	44,848	9.1%
B. TERMINATED VESTED MEMBERS					
Number of Terminated Vested Members		476		560	(15.0%)
2. Terminated Vested Members Averages					
(a) Age		50.2		51.6	(2.7%)
(b) Account Balance	\$	32,315	\$	37,105	(12.9%)
C. TERMINATED NON-VESTED MEMBERS					
Number of Terminated Non-Vested Members		2,124		2,230	(4.8%)
		_,		_,	(11373)
2. Terminated Non-Vested Members Averages (a) Age		44.3		45.6	(2.9%)
(b) Account Balance	\$	3,118	\$	3,402	(8.3%)
· /		3,110	Ψ	3,102	(0.570)
D. RETIREES, DISABLEDS, AND BENEFICIA	RIES				
1. Number of Members					
(a) Retired		3,715		3,594	3.4%
(b) Disabled		94		96	(2.1%)
(c) Beneficiaries	_	202		195	3.6%
(e) Total		4,011		3,885	3.2%
2. Average Age					
(a) Retired		71.8		71.7	0.1%
(b) Disabled		65.7		65.4	0.5%
(c) Beneficiaries		74.4		74.3	0.1%
(e) Total		/1./		/1./	0.0%
3. Average Monthly Benefit					
(a) Retired	\$	1,615	\$	1,613	0.1%
(b) Disabled		1,016		993	2.3%
(c) Beneficiaries	. —	1,067		1,050	1.6%
(e) Total	\$	1,574	\$	1,569	0.3%



## MEMBER DATA RECONCILIATION

January 1, 2014 to January 1, 2015

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 Members	Retirees	Beneficiaries	Disabled	Terminated Vested	Non-vested with Balance	Total
Total as of January 1, 2014	3,501	3,594	195	96	560	2,230	10,176
New Entrants	594	0	18	0	0	56	668
Rehires/Transfers	46	0	0	0	(19)	(27)	0
Retirements	(132)	234	0	0	(102)	0	0
Disablements	(2)	0	0	3	(1)	0	0
Deaths	(2)	(115)	(11)	(5)	0	0	(133)
Vested Terminations	(61)	0	0	0	61	0	0
Non-vested Terminations	(226)	0	0	0	0	226	0
Refunds Paid	(226)	0	0	0	(24)	(360)	(610)
Payments Ended	0	0	0	0	0	0	0
Data Adjustments	1	2	0	0	1	(1)	3
Total as of January 1, 2015	3,493	3,715	202	94	476	2,124	10,104

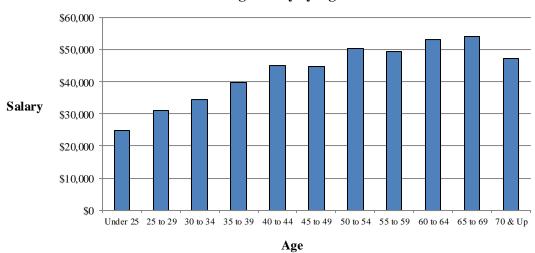


# SUMMARY OF ACTIVE MEMBERS as of January 1, 2015

Total – All Plans

	Number			2014 Reported Compensation			
Age	Male	Female	Total	Male	Female	Total	
Under 25	51	162	213	\$ 1,185,394	\$ 4,078,382	\$ 5,263,776	
25 to 29	118	348	466	3,693,557	10,759,626	14,453,183	
30 to 34	100	289	389	3,711,748	9,709,344	13,421,092	
35 to 39	96	265	361	4,019,155	10,387,211	14,406,366	
40 to 44	88	211	299	4,288,984	9,211,060	13,500,044	
45 to 49	124	264	388	5,848,949	11,454,917	17,303,866	
50 to 54	125	313	438	6,235,433	15,779,849	22,015,282	
55 to 59	132	326	458	7,205,601	15,388,657	22,594,258	
60 to 64	99	275	374	5,853,531	14,011,700	19,865,231	
65 to 69	24	66	90	1,190,309	3,671,559	4,861,868	
70 & Up	5	12	17	179,374	624,809	804,183	
Total	962	2,531	3,493	\$43,412,035	\$105,077,114	\$148,489,149	

## Average Salary by Age



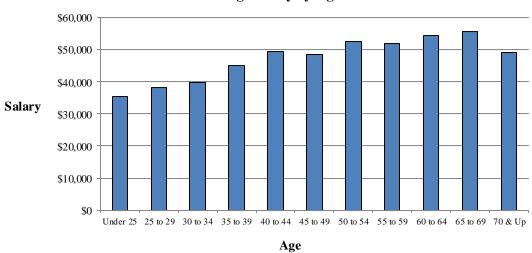


# SUMMARY OF ACTIVE MEMBERS as of January 1, 2015

Total – Plan B

	Number			2014 Reported Compensation			
Age	Male	Female	Total	Male	Female	Total	
Under 25	22	85	107	\$ 798,634	\$ 2,988,629	\$ 3,787,263	
25 to 29	86	234	320	3,230,687	9,023,988	12,254,675	
30 to 34	78	227	305	3,342,294	8,801,058	12,143,352	
35 to 39	76	222	298	3,659,842	9,745,228	13,405,070	
40 to 44	73	183	256	3,950,601	8,736,670	12,687,271	
45 to 49	114	224	338	5,656,918	10,769,440	16,426,358	
50 to 54	118	294	412	6,133,076	15,464,514	21,597,590	
55 to 59	125	299	424	7,063,003	14,896,902	21,959,905	
60 to 64	91	266	357	5,587,773	13,850,772	19,438,545	
65 to 69	22	64	86	1,146,529	3,637,905	4,784,434	
70 & Up	5	11	16	179,374	604,374	783,748	
Total	810	2,109	2,919	\$40,748,731	\$98,519,480	\$139,268,211	

## Average Salary by Age



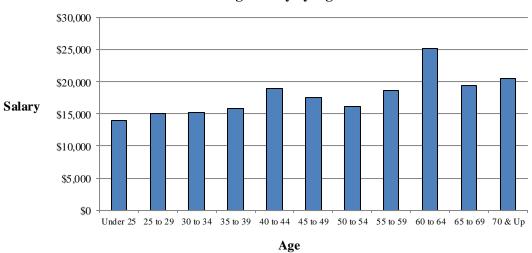


# SUMMARY OF ACTIVE MEMBERS as of January 1, 2015

Total – Plan C

	Number			2014 Reported Compensation			
Age	Male	Female	Total	Male	Female	Total	
Under 25	29	77	106	\$ 386,760	\$ 1,089,753	\$ 1,476,513	
25 to 29	32	114	146	462,870	1,735,638	2,198,508	
30 to 34	22	62	84	369,454	908,286	1,277,740	
35 to 39	20	43	63	359,313	641,983	1,001,296	
40 to 44	15	28	43	338,383	474,390	812,773	
45 to 49	10	40	50	192,031	685,477	877,508	
50 to 54	7	19	26	102,357	315,335	417,692	
55 to 59	7	27	34	142,598	491,755	634,353	
60 to 64	8	9	17	265,758	160,928	426,686	
65 to 69	2	2	4	43,780	33,654	77,434	
70 & Up	0	1	1	0	20,435	20,435	
Total	152	422	574	\$2,663,304	\$6,557,634	\$9,220,938	

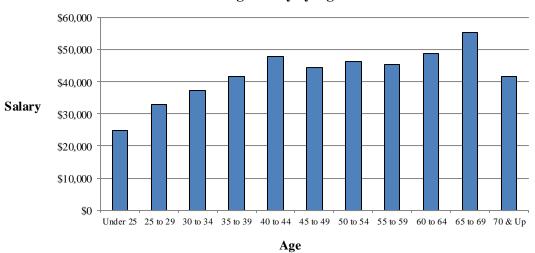
## Average Salary by Age





Charter Schools - All Plans

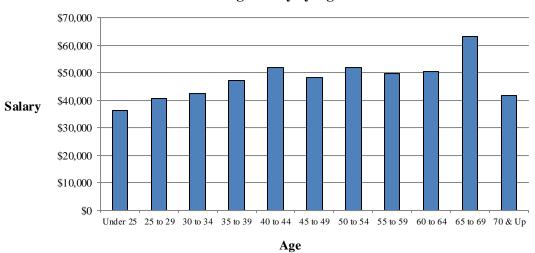
		Number		2014 Reported Compensation				
Age	Male	Female	Total	Male	Female	Total		
Under 25	26	84	110	\$ 634,720	\$ 2,090,368	\$ 2,725,088		
25 to 29	69	212	281	2,374,135	6,894,530	9,268,665		
30 to 34	54	159	213	1,997,727	5,924,946	7,922,673		
35 to 39	39	115	154	1,607,015	4,811,731	6,418,746		
40 to 44	37	75	112	1,974,394	3,374,198	5,348,592		
45 to 49	39	79	118	1,842,958	3,384,810	5,227,768		
50 to 54	33	52	85	1,545,112	2,384,312	3,929,424		
55 to 59	35	47	82	1,888,031	1,841,114	3,729,145		
60 to 64	19	54	73	889,034	2,665,739	3,554,773		
65 to 69	7	9	16	337,010	549,036	886,046		
70 & Up	1	0	1	41,510	0	41,510		
Total	359	886	1,245	\$15,131,646	\$33,920,784	\$49,052,430		





Charter Schools - Plan B

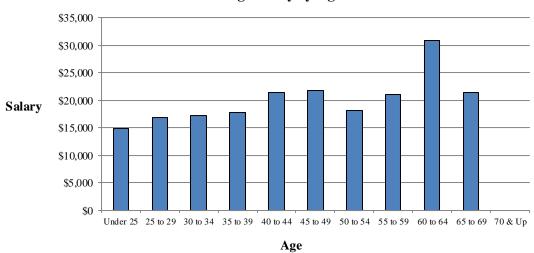
		Number		2014 Reported Compensation				
Age	Male	Female	Total	Male	Female	Total		
Under 25	11	40	51	\$ 422,990	\$ 1,423,705	\$ 1,846,695		
25 to 29	52	139	191	2,070,295	5,690,370	7,760,665		
30 to 34	39	130	169	1,729,042	5,439,254	7,168,296		
35 to 39	31	94	125	1,465,665	4,438,753	5,904,418		
40 to 44	33	64	97	1,848,957	3,177,755	5,026,712		
45 to 49	33	67	100	1,711,556	3,126,538	4,838,094		
50 to 54	30	41	71	1,500,967	2,174,001	3,674,968		
55 to 59	32	38	70	1,828,968	1,647,824	3,476,792		
60 to 64	16	51	67	759,632	2,610,022	3,369,654		
65 to 69	5	8	13	293,230	528,786	822,016		
70 & Up	1	0	1	41,510	0	41,510		
Total	283	672	955	\$13,672,812	\$30,257,008	\$43,929,820		





Charter Schools – Plan C

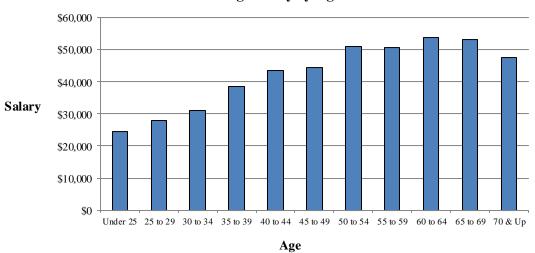
		Number		2014 Reported Compensation							
Age	Male	Female	Total		Male	l	Female		Total		
Under 25	15	44	59	\$	211,730	\$	666,663	\$	878,393		
25 to 29	17	73	90		303,840	1	,204,160	1	,508,000		
30 to 34	15	29	44		268,685		485,692		754,377		
35 to 39	8	21	29		141,350		372,978		514,328		
40 to 44	4	11	15		125,437		196,443		321,880		
45 to 49	6	12	18		131,402		258,272		389,674		
50 to 54	3	11	14		44,145		210,311		254,456		
55 to 59	3	9	12		59,063		193,290		252,353		
60 to 64	3	3	6		129,402		55,717		185,119		
65 to 69	2	1	3		43,780		20,250		64,030		
70 & Up	0	0	0		0		0		0		
Total	76	214	290	\$	1,458,834	\$3	,663,776	\$5	,122,610		





School District & Retirement System – All Plans

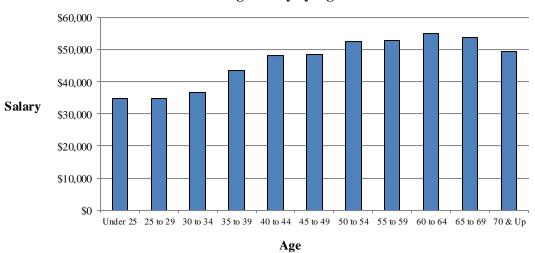
		Number		2014	Reported Compen	sation
Age	Male	Female	Total	Male	Female	Total
Under 25	24	77	101	\$ 514,662	\$ 1,963,570	\$ 2,478,232
25 to 29	46	130	176	1,270,010	3,661,588	4,931,598
30 to 34	44	122	166	1,634,621	3,527,982	5,162,603
35 to 39	50	142	192	2,128,054	5,261,327	7,389,381
40 to 44	47	130	177	2,091,469	5,581,314	7,672,783
45 to 49	77	179	256	3,582,800	7,830,091	11,412,891
50 to 54	85	246	331	4,299,414	12,573,741	16,873,155
55 to 59	84	266	350	4,769,306	13,006,299	17,775,605
60 to 64	72	213	285	4,438,511	10,905,941	15,344,452
65 to 69	15	47	62	764,727	2,530,615	3,295,342
70 & Up	4	12	16	137,864	624,809	762,673
Total	548	1,564	2,112	\$25,631,438	\$67,467,277	\$93,098,715





School District & Retirement System – Plan B

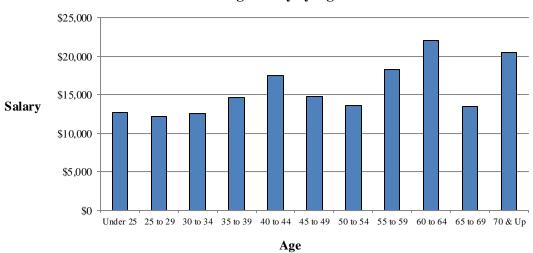
		Number		2014 Reported Compensation				
Age	Male	Female	Total	Male	Female	Total		
Under 25	10	44	54	\$ 339,632	\$ 1,540,480	\$ 1,880,112		
25 to 29	33	91	124	1,123,581	3,175,524	4,299,105		
30 to 34	37	90	127	1,533,852	3,138,080	4,671,932		
35 to 39	38	121	159	1,910,091	4,997,055	6,907,146		
40 to 44	36	113	149	1,878,523	5,303,367	7,181,890		
45 to 49	73	153	226	3,522,171	7,447,035	10,969,206		
50 to 54	81	238	319	4,241,202	12,468,717	16,709,919		
55 to 59	81	249	330	4,688,610	12,722,211	17,410,821		
60 to 64	67	207	274	4,302,155	10,800,730	15,102,885		
65 to 69	15	46	61	764,727	2,517,211	3,281,938		
70 & Up	4	11	15	137,864	604,374	742,238		
Total	475	1,363	1,838	\$24,442,408	\$64,714,784	\$89,157,192		





School District & Retirement System – Plan C

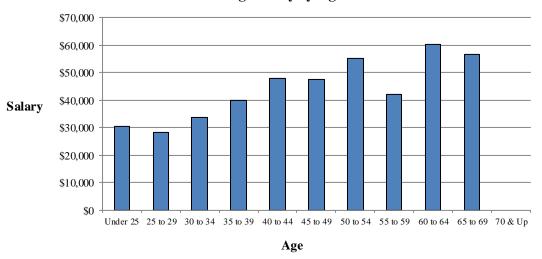
		Number		2014 Reported Compensation					
Age	Male	Female	Total	Male	Female	Total			
Under 25	14	33	47	\$ 175,030	\$ 423,090	\$ 598,120			
25 to 29	13	39	52	146,429	486,064	632,493			
30 to 34	7	32	39	100,769	389,902	490,671			
35 to 39	12	21	33	217,963	264,272	482,235			
40 to 44	11	17	28	212,946	277,947	490,893			
45 to 49	4	26	30	60,629	383,056	443,685			
50 to 54	4	8	12	58,212	105,024	163,236			
55 to 59	3	17	20	80,696	284,088	364,784			
60 to 64	5	6	11	136,356	105,211	241,567			
65 to 69	0	1	1	0	13,404	13,404			
70 & Up	0	1	1	0	20,435	20,435			
Total	73	201	274	\$1,189,030	\$2,752,493	\$3,941,523			





Library – All Plans

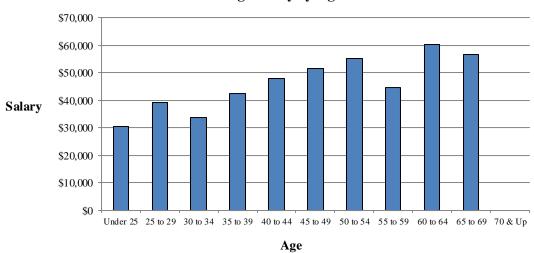
		Number		2014 Reported Compensation							
Age	Male	Female	Total	Male	Female	Total					
Under 25	1	1	2	\$ 36,012	\$ 24,444	\$ 60,456					
25 to 29	3	6	9	49,412	203,508	252,920					
30 to 34	2	8	10	79,400	256,416	335,816					
35 to 39	7	8	15	284,086	314,153	598,239					
40 to 44	4	6	10	223,121	255,548	478,669					
45 to 49	8	6	14	423,191	240,016	663,207					
50 to 54	7	15	22	390,907	821,796	1,212,703					
55 to 59	13	13	26	548,264	541,244	1,089,508					
60 to 64	8	8	16	525,986	440,020	966,006					
65 to 69	2	10	12	88,572	591,908	680,480					
70 & Up	0	0	0	0	0	0					
Total	55	81	136	\$2,648,951	\$3,689,053	\$6,338,004					





Library – Plan B

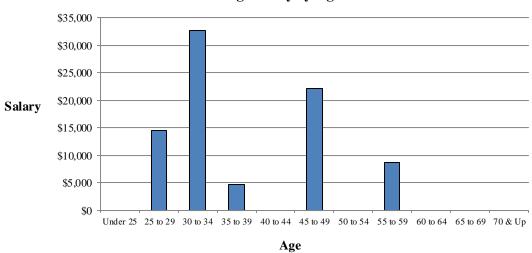
		Number		2014 Reported Compensation							
Age	Male	Female	Total	Male	Female	Total					
Under 25	1	1	2	\$ 36,012	\$ 24,444	\$ 60,456					
25 to 29	1	4	5	36,811	158,094	194,905					
30 to 34	2	7	9	79,400	223,724	303,124					
35 to 39	7	7	14	284,086	309,420	593,506					
40 to 44	4	6	10	223,121	255,548	478,669					
45 to 49	8	4	12	423,191	195,867	619,058					
50 to 54	7	15	22	390,907	821,796	1,212,703					
55 to 59	12	12	24	545,425	526,867	1,072,292					
60 to 64	8	8	16	525,986	440,020	966,006					
65 to 69	2	10	12	88,572	591,908	680,480					
70 & Up	0	0	0	0	0	0					
Total	52	74	126	\$2,633,511	\$3,547,688	\$6,181,199					





Library – Plan C

		Number		2014 Reported Compensation						
Age	Male	Female	Total	Ma	Male		ale	Tot	al	
Under 25	0	0	0	\$	0	\$	0	\$	0	
25 to 29	2	2	4	12	2,601	4:	5,414	58	3,015	
30 to 34	0	1	1		0	32	2,692	32	2,692	
35 to 39	0	1	1		0	4	4,733	4	4,733	
40 to 44	0	0	0		0		0		0	
45 to 49	0	2	2		0	4	4,149	44	4,149	
50 to 54	0	0	0		0		0		0	
55 to 59	1	1	2	2	2,839	14	4,377	17	7,216	
60 to 64	0	0	0		0		0		0	
65 to 69	0	0	0		0		0		0	
70 & Up	0	0	0		0		0		0	
Total	3	7	10	\$ 15	5,440	\$ 14	1,365	\$ 150	5,805	





Total – All Plans

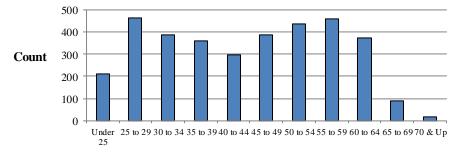
### Years of Service

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	213	0	0	0	0	0	0	0	0	213
25 to 29	445	21	0	0	0	0	0	0	0	466
30 to 34	287	78	24	0	0	0	0	0	0	389
35 to 39	214	72	65	10	0	0	0	0	0	361
40 to 44	147	53	53	40	5	1	0	0	0	299
45 to 49	173	56	53	45	38	22	1	0	0	388
50 to 54	131	60	72	49	53	60	12	1	0	438
55 to 59	134	65	82	51	50	51	17	8	0	458
60 to 64	96	53	75	41	48	42	8	5	6	374
65 to 69	19	13	24	7	8	6	3	2	8	90
70 & Up	3	2	4	5	1	1	0	0	1	17
Total	1,862	473	452	248	203	183	41	16	15	3,493

### **Service Distribution**



#### Service



Age

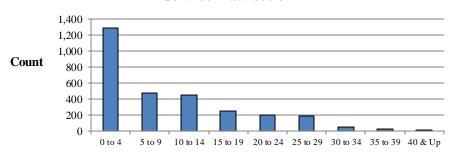


Total – Plan B

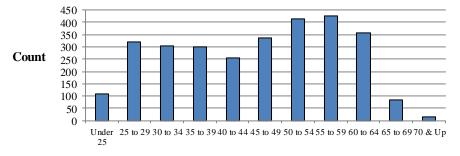
### Years of Service

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	107	0	0	0	0	0	0	0	0	107
25 to 29	299	21	0	0	0	0	0	0	0	320
30 to 34	203	78	24	0	0	0	0	0	0	305
35 to 39	151	72	65	10	0	0	0	0	0	298
40 to 44	104	53	53	40	5	1	0	0	0	256
45 to 49	123	56	53	45	38	22	1	0	0	338
50 to 54	105	60	72	49	53	60	12	1	0	412
55 to 59	100	65	82	51	50	51	17	8	0	424
60 to 64	79	53	75	41	48	42	8	5	6	357
65 to 69	15	13	24	7	8	6	3	2	8	86
70 & Up	2	2	4	5	1	1	0	0	1	16
Total	1,288	473	452	248	203	183	41	16	15	2,919

### **Service Distribution**



#### Service



Age



# DISTRIBUTION OF ACTIVE MEMBERS

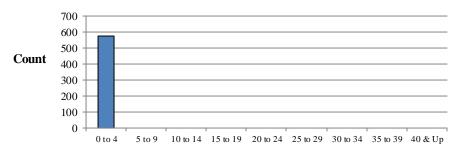
as of January 1, 2015

Total – Plan C

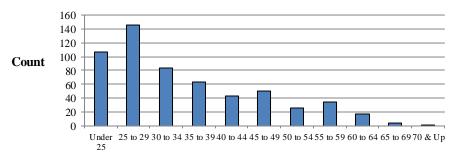
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	106	0	0	0	0	0	0	0	0	106
25 to 29	146	0	0	0	0	0	0	0	0	146
30 to 34	84	0	0	0	0	0	0	0	0	84
35 to 39	63	0	0	0	0	0	0	0	0	63
40 to 44	43	0	0	0	0	0	0	0	0	43
45 to 49	50	0	0	0	0	0	0	0	0	50
50 to 54	26	0	0	0	0	0	0	0	0	26
55 to 59	34	0	0	0	0	0	0	0	0	34
60 to 64	17	0	0	0	0	0	0	0	0	17
65 to 69	4	0	0	0	0	0	0	0	0	4
70 & Up	1	0	0	0	0	0	0	0	0	1
Total	574	0	0	0	0	0	0	0	0	574

### **Service Distribution**



#### Service



Age

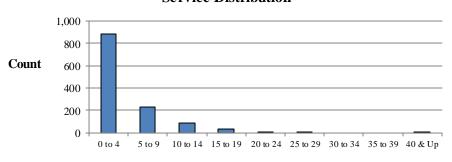


Charter Schools - All Plans

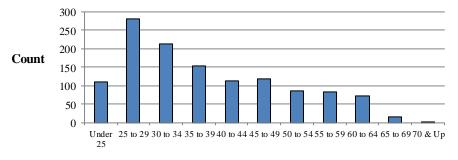
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	110	0	0	0	0	0	0	0	0	110
25 to 29	268	13	0	0	0	0	0	0	0	281
30 to 34	153	53	7	0	0	0	0	0	0	213
35 to 39	93	36	21	4	0	0	0	0	0	154
40 to 44	61	30	14	7	0	0	0	0	0	112
45 to 49	65	30	13	7	2	1	0	0	0	118
50 to 54	52	20	10	2	1	0	0	0	0	85
55 to 59	47	22	10	1	1	1	0	0	0	82
60 to 64	30	20	12	8	1	1	0	0	1	73
65 to 69	7	6	2	1	0	0	0	0	0	16
70 & Up	1	0	0	0	0	0	0	0	0	1
Total	887	230	89	30	5	3	0	0	1	1,245

### **Service Distribution**



#### Service



Age

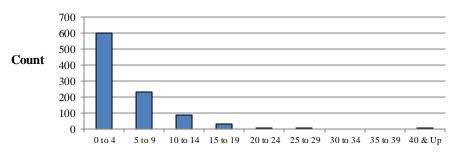


Charter Schools - Plan B

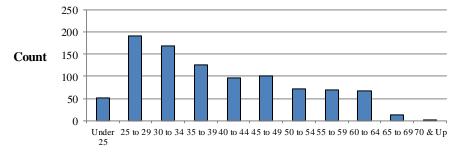
### Years of Service

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	51	0	0	0	0	0	0	0	0	51
25 to 29	178	13	0	0	0	0	0	0	0	191
30 to 34	109	53	7	0	0	0	0	0	0	169
35 to 39	64	36	21	4	0	0	0	0	0	125
40 to 44	46	30	14	7	0	0	0	0	0	97
45 to 49	47	30	13	7	2	1	0	0	0	100
50 to 54	38	20	10	2	1	0	0	0	0	71
55 to 59	35	22	10	1	1	1	0	0	0	70
60 to 64	24	20	12	8	1	1	0	0	1	67
65 to 69	4	6	2	1	0	0	0	0	0	13
70 & Up	1	0	0	0	0	0	0	0	0	1
Total	597	230	89	30	5	3	0	0	1	955

### **Service Distribution**



#### Service



Age

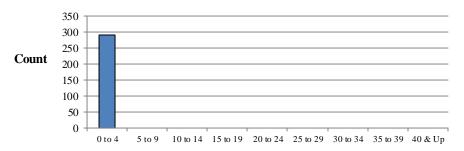


Charter Schools - Plan C

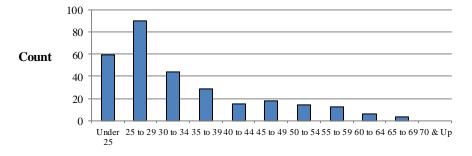
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	59	0	0	0	0	0	0	0	0	59
25 to 29	90	0	0	0	0	0	0	0	0	90
30 to 34	44	0	0	0	0	0	0	0	0	44
35 to 39	29	0	0	0	0	0	0	0	0	29
40 to 44	15	0	0	0	0	0	0	0	0	15
45 to 49	18	0	0	0	0	0	0	0	0	18
50 to 54	14	0	0	0	0	0	0	0	0	14
55 to 59	12	0	0	0	0	0	0	0	0	12
60 to 64	6	0	0	0	0	0	0	0	0	6
65 to 69	3	0	0	0	0	0	0	0	0	3
70 & Up	0	0	0	0	0	0	0	0	0	0
Total	290	0	0	0	0	0	0	0	0	290

### **Service Distribution**



#### Service



Age

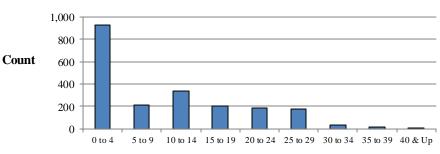


School District & Retirement System – All Plans

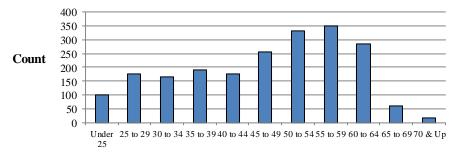
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	101	0	0	0	0	0	0	0	0	101
25 to 29	169	7	0	0	0	0	0	0	0	176
30 to 34	125	25	16	0	0	0	0	0	0	166
35 to 39	113	31	42	6	0	0	0	0	0	192
40 to 44	82	19	38	32	5	1	0	0	0	177
45 to 49	102	25	38	36	34	21	0	0	0	256
50 to 54	74	34	57	44	52	60	10	0	0	331
55 to 59	83	37	67	45	46	49	15	8	0	350
60 to 64	63	30	59	31	46	40	8	5	3	285
65 to 69	12	6	19	6	6	6	1	2	4	62
70 & Up	2	2	4	5	1	1	0	0	1	16
Total	926	216	340	205	190	178	34	15	8	2,112

### **Service Distribution**



#### Service



Age

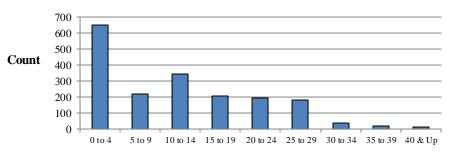


School District & Retirement System – Plan B

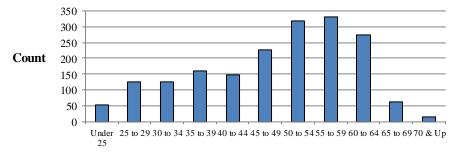
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	54	0	0	0	0	0	0	0	0	54
25 to 29	117	7	0	0	0	0	0	0	0	124
30 to 34	86	25	16	0	0	0	0	0	0	127
35 to 39	80	31	42	6	0	0	0	0	0	159
40 to 44	54	19	38	32	5	1	0	0	0	149
45 to 49	72	25	38	36	34	21	0	0	0	226
50 to 54	62	34	57	44	52	60	10	0	0	319
55 to 59	63	37	67	45	46	49	15	8	0	330
60 to 64	52	30	59	31	46	40	8	5	3	274
65 to 69	11	6	19	6	6	6	1	2	4	61
70 & Up	1	2	4	5	1	1	0	0	1	15
Total	652	216	340	205	190	178	34	15	8	1,838

# **Service Distribution**



#### Service



Age

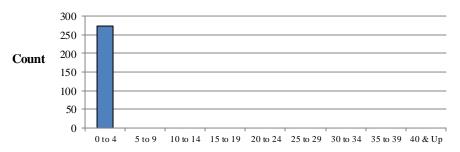


School District & Retirement System – Plan C

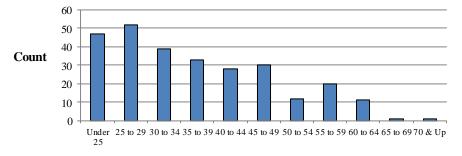
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	47	0	0	0	0	0	0	0	0	47
25 to 29	52	0	0	0	0	0	0	0	0	52
30 to 34	39	0	0	0	0	0	0	0	0	39
35 to 39	33	0	0	0	0	0	0	0	0	33
40 to 44	28	0	0	0	0	0	0	0	0	28
45 to 49	30	0	0	0	0	0	0	0	0	30
50 to 54	12	0	0	0	0	0	0	0	0	12
55 to 59	20	0	0	0	0	0	0	0	0	20
60 to 64	11	0	0	0	0	0	0	0	0	11
65 to 69	1	0	0	0	0	0	0	0	0	1
70 & Up	1	0	0	0	0	0	0	0	0	1
Total	274	0	0	0	0	0	0	0	0	274

### **Service Distribution**



#### Service



Age

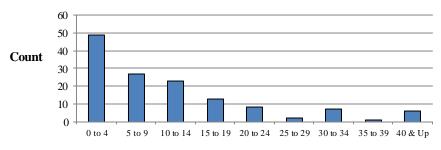


Library – All Plans

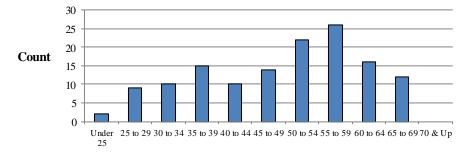
### Years of Service

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	2	0	0	0	0	0	0	0	0	2
25 to 29	8	1	0	0	0	0	0	0	0	9
30 to 34	9	0	1	0	0	0	0	0	0	10
35 to 39	8	5	2	0	0	0	0	0	0	15
40 to 44	4	4	1	1	0	0	0	0	0	10
45 to 49	6	1	2	2	2	0	1	0	0	14
50 to 54	5	6	5	3	0	0	2	1	0	22
55 to 59	4	6	5	5	3	1	2	0	0	26
60 to 64	3	3	4	2	1	1	0	0	2	16
65 to 69	0	1	3	0	2	0	2	0	4	12
70 & Up	0	0	0	0	0	0	0	0	0	0
Total	49	27	23	13	8	2	7	1	6	136

# **Service Distribution**



### Service



Age

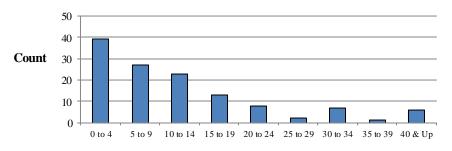


Library – Plan B

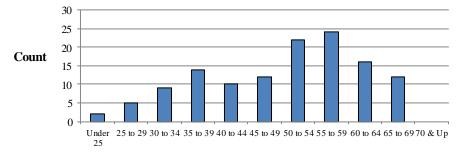
### Years of Service

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	2	0	0	0	0	0	0	0	0	2
25 to 29	4	1	0	0	0	0	0	0	0	5
30 to 34	8	0	1	0	0	0	0	0	0	9
35 to 39	7	5	2	0	0	0	0	0	0	14
40 to 44	4	4	1	1	0	0	0	0	0	10
45 to 49	4	1	2	2	2	0	1	0	0	12
50 to 54	5	6	5	3	0	0	2	1	0	22
55 to 59	2	6	5	5	3	1	2	0	0	24
60 to 64	3	3	4	2	1	1	0	0	2	16
65 to 69	0	1	3	0	2	0	2	0	4	12
70 & Up	0	0	0	0	0	0	0	0	0	0
Total	39	27	23	13	8	2	7	1	6	126

### **Service Distribution**



### Service



Age

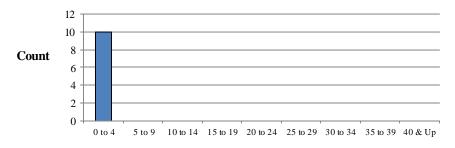


Library – Plan C

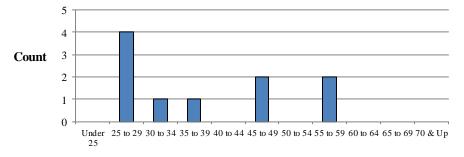
### **Years of Service**

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	4	0	0	0	0	0	0	0	0	4
30 to 34	1	0	0	0	0	0	0	0	0	1
35 to 39	1	0	0	0	0	0	0	0	0	1
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	2	0	0	0	0	0	0	0	0	2
50 to 54	0	0	0	0	0	0	0	0	0	0
55 to 59	2	0	0	0	0	0	0	0	0	2
60 to 64	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	0	0	0	0	0	0	0	0
70 & Up	0	0	0	0	0	0	0	0	0	0
Total	10	0	0	0	0	0	0	0	0	10

### **Service Distribution**



### Service

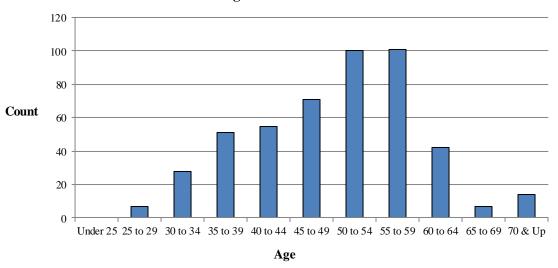


Age



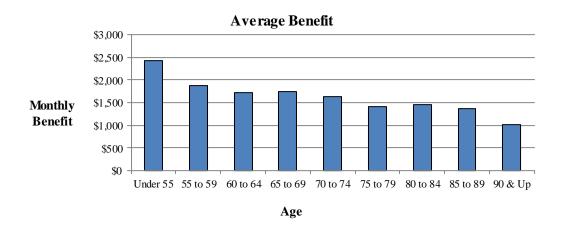
# SUMMARY OF TERMINATED VESTED MEMBERS as of January 1, 2015

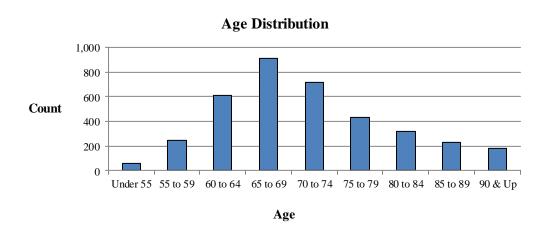
		Number				Account	Balances				
Age	Male	Female	Total	Male	<del>)</del>	Fen	nale	То	tal		
11 1 27	0	0	0	ф	\$ 0		0	ф	0		
Under 25	0	0	0	\$	·		0	\$	0		
25 to 29	0	7	7		0		0,788	10	0,788		
30 to 34	8	20	28	149,	368	37	8,465	52	7,833		
35 to 39	13	38	51	304,	304,628		8,706	1,19	3,334		
40 to 44	15	40	55	402,	402,626		7,795	1,44	0,421		
45 to 49	18	53	71	630,	850	2,01	3,278	2,64	4,128		
50 to 54	29	71	100	1,424,0	1,424,024 2,383,223		3,223	3,80	7,247		
55 to 59	22	79	101	750,2	234	2,92	8,498	3,67	8,732		
60 to 64	7	35	42	141,	195	1,11	4,134	1,25	5,329		
65 to 69	3	4	7	131,	131,636		131,636 73,607		3,607	20	5,243
70 & Up	6	8	14	399,	164	129,625		52	8,789		
Total	121	355	476	\$4,333,	725	\$11,048,119		\$15,381,844			





		Number		Monthly Benefit					
Age	Male	Female	Total	Male			Female		Total
Under 55	21	39	60	\$	47,589	\$	98,140	\$	145,729
55 to 59	72	172	244	Ψ	123,465	Ψ	334,526	Ψ	457,991
60 to 64	155	457	612		226,166		823,526		1,049,692
65 to 69	245	665	910		381,790	1,199,944			1,581,734
70 to 74	154	565	719		219,752		961,258		1,181,010
75 to 79	85	349	434		131,397		479,301		610,698
80 to 84	31	292	323		44,282		427,554		471,836
85 to 89	18	215	233		27,637		289,640		317,277
90 & Up	11	169	180		15,359		169,030		184,389
Total	792	2,923	3,715	\$	1,217,437	\$ 4	,782,919	\$	6,000,356

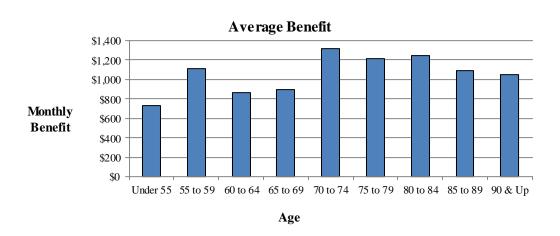


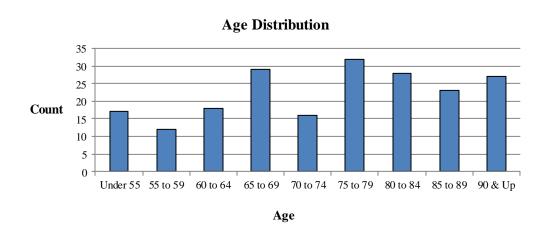




# SUMMARY OF BENEFICIARIES as of January 1, 2015

		Number		Monthly Benefit						
Age	Male Female T		Total		Male	Fe	emale	Total		
Under 55	9	8	17	9	\$ 6,912	\$	5,525	\$	12,437	
55 to 59	11	1	12		12,367		989		13,356	
60 to 64	17	1	18		13,848		1,691		15,539	
65 to 69	18	11	29		16,549		9,522		26,071	
70 to 74	11	5	16		14,615		6,464		21,079	
75 to 79	26	6	32		32,018		6,849		38,867	
80 to 84	24	4	28		28,510		6,313		34,823	
85 to 89	21	2	23		22,903		2,081		24,984	
90 & Up	25	2	27		27,529		840		28,369	
Total	162	40	202	\$	175,251	\$	40,274	\$	215,525	

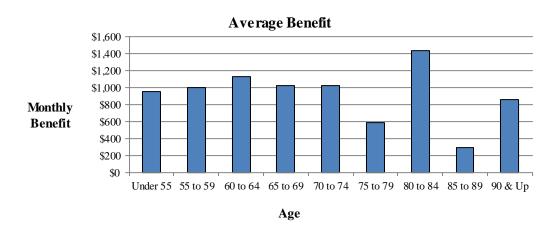


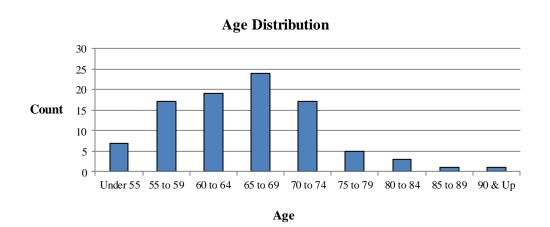




# SUMMARY OF DISABLED MEMBERS as of January 1, 2015

	Number			Monthly Benefit		
Age	Male	Female	Total	Male	Female	Total
Under 55	2	5	7	\$ 2,023	\$ 4,660	\$ 6,683
55 to 59	4	13	17	3,420	13,602	17,022
60 to 64	2	17	19	2,969	18,567	21,536
65 to 69	7	17	24	6,538	17,947	24,485
70 to 74	2	15	17	1,507	15,865	17,372
75 to 79	0	5	5	0	2,955	2,955
80 to 84	0	3	3	0	4,291	4,291
85 to 89	0	1	1	0	297	297
90 & Up	0	1	1	0	855	855
Total	17	77	94	\$ 16,457	\$ 79,039	\$ 95,496







#### **Summary of Plan Provisions**

#### **Effective Date**

January 1, 1944, most recently amended in 2013.

### Plan Type

Plan B applies to anyone who retires on or after June 30, 1999 and was hired prior to January 1, 2014. Plan C applies to members hired on or after January 1, 2014. All members with Plan A benefits have terminated or retired.

#### Eligibility for coverage

All regular, full-time employees of the School District of Kansas City, Missouri, the library district or the retirement system and employees of charter schools become participants as a condition of employment. Regular employment means working at least five hours per day, five days per week, nine months per year. Temporary and part-time employees are excluded.

#### Service

Creditable service is participant service, which is service for which required contributions have been made. There is no cap on creditable service. Prior to 1990, creditable service could not exceed 35 years. The maximum retirement benefit is 60% of Average final compensation, which will be reached upon attainment of 30 years of service.

#### **Annual compensation**

A participant's annual compensation level will be the regular compensation shown on the salary and wage schedules, excluding extra pay, overtime pay, or any pay not on the schedule.

### **Average final compensation**

The average final compensation is the highest average annual compensation paid during any four consecutive years of service.

#### **Normal retirement**

#### **Eligibility**

Plan B: Participants may retire after (a) the completion of five years of creditable service and the attainment of age 60, or (b) having a total of at least 75 credits, with each year of creditable service and year of age, both prorated for fractional years, equal to one credit.



Plan C: Participants may retire after (a) the completion of five years of creditable service and the attainment of age 62, or (b) having a total of at least 80 credits, with each year of creditable service and year of age, both prorated for fractional years, equal to one credit.

#### Benefit

Plan B: The normal retirement benefit payable monthly equals one twelfth of 2.00% (1.75% for participants who retired prior to June 30, 1999) of the participant's average final compensation multiplied by years of creditable service, subject to a maximum of 60% of average final compensation. Any participant whose years of creditable service exceed 34.25 years on August 28, 1993 shall have a maximum greater than 60%, which shall be equal to 1.75% times the participant's years of creditable service on August 28, 1993.

Plan C: The normal retirement benefit payable monthly equals one twelfth of 1.75% of the participant's average final compensation multiplied by years of creditable service, subject to a maximum of 60% of average final compensation.

#### Minimum benefit

Effective January 1, 1996, any participant with at least 20 years of creditable service at retirement is entitled to a minimum benefit of \$300 per month, or the actuarial equivalent of \$300 if an option was elected. Any participant with at least 10 years of creditable service, but less than 20 years, is entitled to a minimum benefit of \$150 per month, plus \$15 for each full year of creditable service in excess of 10 years, or its actuarial equivalent if an option was elected. Beneficiaries of deceased participants who elected an option and who retired with at least 10 years of creditable service receive the actuarial equivalent of the minimum benefit. If a participant's accumulated contributions provide more than the participant's retirement benefit (under the actuarial assumptions adopted by the Board of Trustees), the participant's benefit will be increased by this excess.

#### **Early retirement**

#### **Eligibility**

Participants may retire at any time after the completion of five years of creditable service and the attainment of age 55.

#### **Benefit**

Plan B: A participant eligible for early retirement will receive a reduced benefit, with the reduction based on the number of months preceding eligibility for a normal retirement benefit. The reduction factors are as follows:

Age	Reduction Factor
59	0.91662
58	0.84138
57	0.77334
56	0.71168
55	0.65572



Plan C: A participant eligible for early retirement will receive a reduced benefit, with the reduction based on the number of months preceding eligibility for a normal retirement benefit. The reduction factors are as follows:

Age	Reduction Factor
61	0.91329
60	0.83548
59	0.76548
58	0.70235
57	0.64531
56	0.59366
55	0.54680

#### **Disability retirement**

#### **Eligibility**

A participant with at least five years of creditable service who is certified to be totally incapacitated for performance of duty by the Medical Board is eligible for a disability retirement.

#### **Benefit**

A disabled participant will receive an unreduced benefit, calculated as for normal retirement, based on service and average final compensation at actual retirement date. The minimum disability retirement benefit will be the lesser of (a) 25% of the participant's average final compensation, or (b) the participant's service retirement allowance calculated on the participant's average final compensation and the maximum number of years of creditable service the participant would have earned had the participant remained an employee until age 60. Disability benefits are payable immediately.

#### **Vested termination benefits**

### **Eligibility**

A participant who has at least five years of creditable service earns a vested interest in his or her accrued benefit, provided the participant leaves his or her contributions in the System.

#### Benefit

The vested benefit is calculated as a normal retirement benefit based on service and average final compensation at date of termination and is payable at minimum normal retirement date.



#### Non-vested benefits

#### **Benefit**

If the participant's termination is for reasons other than death or retirement and if the participant has not met the vesting or retirement requirements, the participant's contributions with interest will be refunded.

#### **Death Benefit**

#### Prior to retirement

For a participant who dies before retirement, the participant's designated beneficiary is entitled to receive a monthly retirement benefit if (a) the participant was an active employee, or (b) the participant was a terminated vested member who met the age requirements for either normal or early retirement. The participant's designated beneficiary has the option of selecting a monthly benefit under Option 1 with immediate commencement, or receiving a refund of contributions accumulated with interest.

For a terminated vested participant who dies before retirement and has not met the age requirements for retirement, the participant's accumulated contributions with interest will be paid to the participant's designated beneficiary.

The designated beneficiary is the participant's spouse, dependent child or dependent parent. If the deceased participant was an actively contributing member and the beneficiary elects Option 1, such benefit shall be calculated as if the deceased participant had at least ten years of creditable service at the time of death. If the beneficiary is a child, the benefit in only payable until age nineteen.

#### **Postretirement**

The optional form of benefit payment selected will determine what, if any, benefits are payable upon death after retirement. Participants are guaranteed to receive at least their accumulated contributions at retirement, if they die before electing an option.

### Normal form of benefit payments

The normal form of benefit payment is the normal retirement benefit amount paid monthly for the life of the participant. If the participant should die before receiving payments totaling the amount of their contributions to the plan, the designated beneficiary shall receive a lump sum payment of the remaining amount.

# Optional forms of benefit payments

Participants may elect from the following optional forms of benefit payment:



#### Option 1

Option 1 provides a reduced retirement benefit that will continue on to a designated beneficiary. Upon a retiree's death, the retiree's designated beneficiary will receive for life, the same level of monthly retirement benefit. In the event the retiree's designated beneficiary predeceases the retiree, the retiree's monthly retirement benefit will be adjusted to the amount that would have been paid in the normal form of payment.

#### Option 2

Option 2 provides a reduced retirement benefit that will continue on to a designated beneficiary. Upon a retiree's death, the retiree's designated beneficiary will receive for life, a monthly benefit equal to one-half of the retiree's monthly retirement benefit. In the event the retiree's designated beneficiary predeceases the retiree, the retiree's monthly retirement benefit will be adjusted to the amount that would have been paid in the normal form of payment.

#### Option 3

Option 3 provides that upon a retiree's death, no benefits are payable to the retiree's estate or any beneficiary. Retirement benefits payable under this option will be actuarially increased from the normal form.

Each of the above options produces benefits which are actuarially equivalent to the normal form of benefit which is a monthly annuity payable for the lifetime of the retiree.

#### **Cost-of-living allowances**

The Board of Trustees shall determine annually whether or not the system can provide an increase in benefits for those retirees who, as of the January 1 preceding the date of such increase, have been retired at least one year. Any such increase also applies to optional retirement allowances paid to a retiree's beneficiary. The Board makes its determination as follows:

- 1. The actuary recommends to the Board what portion of the investment return is available for increases and the amount available to be paid on the first day of the 14<sup>th</sup> month following the end of the valuation year. The actuary's recommendation is subject to the following safeguards:
  - a. The System's funded ratio as of the January 1<sup>st</sup> of the preceding year of the proposed increase must be at least 100% after adjusting for the effect of proposed increase. The funded ratio is the ratio of assets to the pension benefit obligation.
  - b. The actuarially required contribution rate, after adjusting for the effect of the proposed increase, may not exceed the statutory contribution rate.
  - c. The actuary must certify that the proposed increase will not impair the actuarial soundness of the System.



- 2. The Board reviews the actuary's recommendation and shall, in their discretion, determine if an increase may be granted. In accordance with Board policy, if an increase is permissible, the amount of the increase will be equal to the lesser of 3% or the percentage increase in the CPI for the preceding year, subject to a cumulative increase of 100% subsequent to December 31, 2000.
- 3. This provision does not guarantee an annual increase to any retired participant.

#### **Administration of the retirement system**

The Board of Trustees is responsible for the general administration and proper operation of the retirement system. The Board consists of 12 members – four member appointed by the Board of Education, one member appointed by the Board of Trustees of the library district, four members elected by and from the participants of the retirement system, two members elected by and from the retirement system, and the Superintendent of Schools of the School District of Kansas City, Missouri. Administrative expenses are paid out of the general reserve fund.

### **Employee contributions**

Effective January 1, 2015, participants contribute 8.5% of earnable annual compensation. Prior to January 1, 2015, participants contributed 8.0%. Prior to January 1, 2014, participants contributed 7.5%. Prior to January 1, 1999, participants contributed 5.9%. Prior to 1990, participants contributed 5.0% of earnable annual compensation plus 2.0% of earnable annual compensation in excess of \$6,500, the contribution earnings base.

# **Employer contributions**

The employers of participants contribute at the fixed rate of 1.99% of covered compensation effective July 1, 1993; 3.99% effective July 1, 1995; 5.99% effective July 1, 1996; 7.50% effective January 1, 1999; 8.0% effective January 1, 2014; and 8.5% effective January 1, 2015. Prior to July 1, 1993, employer contributions were actuarially determined.

#### **Changes from the Prior Valuation**

Legislation passed in the 2013 session allows the Board to adjust the contribution rate annually in 0.50% increments to as much as 9% for both employers and members. The Board adopted a contribution rate of 8.5% each (employer and member) beginning January 1, 2015.



#### 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 have 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 unfunded actuarial accrued liability/(surplus) is financed as a level dollar amount over an open 30-year period.

#### **ACTUARIAL ASSUMPTIONS**

System contribution requirements and actuarial present values are calculated by applying assumptions to the benefit provisions and membership information of the System, using the actuarial cost method.

The principal areas of risk which require assumptions about future activities of the System are:

- (i) Long-term rates of investment return to be generated by the assets of the System
- (ii) Patterns of pay increases to members
- (iii) Rates of mortality among members, retirees and beneficiaries
- (iv) Rates of withdrawal of active members
- (v) Rates of disability among active members
- (vi) The age patterns of actual retirements



### APPENDIX C: ACTUARIAL COST METHOD AND ASSUMPTIONS

In making a valuation, the monetary effect of each assumption is calculated for as long as a presently covered person survives – a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experiences. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time, one or more of the assumptions are modified to reflect experience trends (but not random or temporary year-to-year fluctuations).

**Long-term Rate of Return:** (net of administrative expenses): 8.00% per year, compounded annually (3.50% long-term price inflation and a 4.50% real rate of return).

**Interest Crediting Rate on Member Accounts:** 5.00% per year.

Salary Increase Rates: 5.00% per year.

**Mortality Table:** This assumption is used to measure the probabilities of members dying and the probabilities of each pension payment being made after retirement.

Healthy Retirees

And Beneficiaries: IRS Prescribed Static Table: RP-2000 Healthy Annuitant Table projected 7 years

from valuation date using Scale AA

Disabled Retirees: RP-2000 Disabled Table for Males and Females

Active Members: IRS Prescribed Static Table: RP-2000 Healthy Non-Annuitant Table projected 15

years from valuation date using Scale AA



**Rates of Retirement:** These rates are used to measure the probability of eligible members retiring under the regular retirement provisions.

Retirements occur at rates based on the actual experience of the retirement system. The age-related rates used are shown in the below table. However, 20% of participants are assumed to retire in their first year of eligibility for normal retirement. The first year of normal retirement eligibility is the earlier of age 60 and 5 years of creditable service or 75 credits for Plan B members, and the earlier of age 62 and 5 years of creditable service or 80 credits for Plan C members.

Retirement	
Age	Rate
45-59	5%
60	12
61	12
62	25
63	15
64	20
65	35
66-69	25
70	100

**Rates of Separation from Active Membership:** This assumption measures the probabilities of a member terminating employment. The rates do not apply to members who are eligible to retire.

Sample Ages	Years of Service	Probability of Terminating During Year
ALL	1	27.00%
	2	24.00
	3	21.00
	4	18.00
	5	15.00
	6	13.00
	7	11.00
	8	9.00
25	Over 8	12.20
30		9.20
35		7.10
40		5.60
45		4.70
50		4.20
55		3.80
60		3.80

After 8 years of service, termination rates vary by age, however, not all ages are shown above.





**Forfeiture of Vested Benefits:** Participants terminating in vested status are given the option of taking a refund of their accumulated participant contributions (and thereby forfeiting the employer-provided benefit) or deferring their vested benefit. Active members who terminate in the future with a vested benefit are assumed to take a deferred vested annuity, unless a refund of contributions and interest is greater than the actuarial present value of their vested deferred benefit.

Rates of Disability: This assumption measures the probabilities of a member becoming disabled.

Sample Ages	% of Active Members Becoming Disabled During Next Year
25	0.05%
30	0.10
35	0.10
40	0.10
45	0.15
50	0.25
55	0.40
60	0.50

Disability probabilities vary by age, however, not all ages are shown above.

Administrative Expenses: Assumed to be paid from investment earnings.

Active Member Group Size: Assumed to remain constant.

**Vested Deferred Pensions:** The value of deferred vested liabilities is 150% of the total value of individual participant account balances to reflect the fact that some members will take a deferred annuity.

**Future Benefit Increases or Additional Benefits:** When funding is adequate, the Board may authorize cost of living adjustments (COLAs), as noted in the summary of plan provisions. In the past, the Board has also sometimes granted an additional monthly payment to retirees (13th check.) This valuation assumes that no future COLAs and no future 13th checks will be awarded.

#### MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

**Marriage Assumption:** All participants are assumed to be married for purposes of death benefits. In each case, the male was assumed to be 4 years older than the female.

**Decrement Timing:** Decrements of all types are assumed to occur mid-year.

**Other:** The turnover decrement does not operate during retirement eligibility.





**Missing Gender:** Records that are missing a gender are assumed to be female if the record belongs to a member, and male if the record belongs to a beneficiary.

### **CHANGES FROM THE PRIOR VALUATION**

The mortality table for non-disabled members, the IRS Static Mortality Table mandated for use by private pension plans, was updated to the applicable table for 2015. This uses a separate table for precommencement and post-commencement.



#### **APPENDIX D: GLOSSARY OF TERMS**

**Actuarial Accrued Liability** 

The difference between the actuarial present value of system benefits and the actuarial present value of future normal costs. Also referred to as "accrued liability" or "actuarial accrued 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 singe 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 a 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

The difference between actuarial accrued liability and the valuation assets.

Liability

Most retirement systems have 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.