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## **Wichita Employees' Retirement System**

**Actuarial Valuation as of December 31, 2014**





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# Cavanaugh Macdonald

CONSULTING, LLC

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April 2, 2015

The Board of Trustees  
Wichita Employees' Retirement System  
City Hall, 12<sup>th</sup> Floor  
455 N. Main Street  
Wichita, KS 67202

Dear Members of the Board:

In accordance with your request, we have completed an actuarial valuation of the Wichita Employees' Retirement System as of December 31, 2014. The major findings of the valuation are contained in this report, including the employer contribution rate for fiscal year 2016. The plan provisions are the same as the prior valuation. However, there were some changes to the actuarial assumptions and methods used in the current valuation as a result of an experience study that was performed in 2014. The study covered the System's experience in calendar years 2009 through 2013 and resulted in several recommendations that were ultimately adopted by the Board of Trustees. The changes to the actuarial assumptions and methods are discussed in detail in the Executive Summary section of this report.

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 or additional cost or contribution requirements based on the System's funded status); 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.

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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.

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 principles 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,

A handwritten signature in blue ink that reads 'Patrice Beckham'.

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

A handwritten signature in blue ink that reads 'Brent A. Banister'.

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



## SECTION I: EXECUTIVE SUMMARY

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This report presents the results of the December 31, 2014 actuarial valuation of the Wichita Employees' Retirement System. The primary purposes of performing a valuation are to:

- estimate the liabilities for the benefits provided by the System;
- determine the employer contribution rates required to fund the System on an actuarial basis;
- disclose certain asset and liability measures as of the valuation date;
- monitor any deviation between actual plan experience and experience projected by the actuarial assumptions, so that recommendations for assumption changes can be made when appropriate; and
- analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

There were no changes in the benefit provisions from the last valuation. However, there were some changes to the actuarial assumptions and methods used in the current valuation as a result of an experience study that was performed in 2014. That study covered the System's experience in calendar years 2009 through 2013 and resulted in several recommendations to the Board of Trustees that they adopted, effective with the January 1, 2015 actuarial valuation. The assumption changes included:

- (1) reducing the inflation assumption from 3.50% to 3.25%;
- (2) modifying Plan 2 retirement rates to partially reflect actual, observed experience;
- (3) eliminating the disability assumption;
- (4) changing the termination of employment assumption to a pure service-based assumption; and
- (5) reducing the sick-leave load from 4.0% to 2.5%.

With the implementation of financial reporting under GASB 67 and 68, some technical adjustments to the liability calculations were required. In conjunction with these changes, there were also some minor technical adjustments made to better utilize recent enhancements in our valuation software. The net impact of the revised actuarial assumptions and programming changes was a decrease in the actuarial liability as of December 31, 2014 of \$3.6 million, or 0.6%, and an increase in the normal cost rate of 0.2% of payroll. The net result of these changes was a small decrease in the actuarially determined contribution rate of 0.1%.

There was one minor change to the actuarial methods as a result of the experience study. The current asset valuation method was retained, but a 20% corridor was added so the resulting actuarial value of assets can be no less than 80% of the market value, nor greater than 120% of the market value. This change had no impact on the December 31, 2014 valuation results.

The System had an unfunded actuarial liability of \$40.2 million in the December 31, 2013 valuation, which has decreased to \$30.1 million in the December 31, 2014 valuation. A detailed analysis of the change in the unfunded actuarial liability from December 31, 2013 to December 31, 2014 is shown on page 4. The actuarial valuation results provide a "snapshot" view of the System's financial condition on December 31, 2014. The valuation results reflect net favorable experience for the past plan year as demonstrated by an unfunded actuarial liability that was lower than expected based on the actuarial assumptions used in the December 31, 2013 actuarial valuation. Favorable experience on the actuarial value of assets resulted in an actuarial gain of \$2.2 million and experience on liabilities resulted in a gain of \$3.4 million for an overall actuarial gain of \$5.6 million.

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



## SECTION I: EXECUTIVE SUMMARY

market value. The investment return on the market value of assets during 2014 was 5.1%, which was less than the 7.75% assumption. As a result of the deferred (unrecognized) asset gains, the rate of return on the actuarial value of assets was 8.2%. The actuarial (smoothed) value of assets is less than the market value by \$6.8 million as of December 31, 2014. Actual returns over the next few years will determine if, and how, the \$6.8 million of deferred investment gain will be recognized. For example, a return of around 6.4% on the market value of assets in 2015 would eliminate the deferred investment gains and result in no gain or loss on investment experience for the year.

Additional detail on the impact of the change in actuarial assumptions and methods on the December 31, 2014 valuation is summarized in the following table:

	<u>No Changes</u>	<u>With Assumption Changes</u>	<u>Difference</u>
Total Actuarial Liability	\$ 593,665,571	\$ 590,115,082	\$(3,550,489)
Actuarial Value of Assets	<u>560,031,764</u>	<u>560,031,764</u>	<u>0</u>
Unfunded Actuarial Liability (UAL)	\$ 33,633,807	\$ 30,083,318	\$(3,550,489)
Funded Ratio	94.3%	94.9%	0.6%
Normal Cost	13.2%	13.4%	0.2%
Amortization of Unfunded Actuarial Liability	<u>3.2%</u>	<u>2.9%</u>	<u>(0.3)%</u>
Total Actuarial Required Contribution	16.4%	16.3%	(0.1)%
Member Financed	<u>(4.7)%</u>	<u>(4.7)%</u>	<u>0.0%</u>
Employer Contribution Rate	11.7%	11.6%	(0.1)%

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 December 31, 2014, the System had total assets of \$566.8 million when measured on a market value basis. This was an increase of \$2.6 million from the December 31, 2013 figure of \$564.2 million. The market value of assets is not used directly in the calculation of the City's contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is used to determine the value of assets used in the valuation, called the "actuarial value of assets". The actuarial value of assets is equal to the expected value (calculated using the actuarial assumed rate of 7.75%) plus 25% of the difference between the market and expected value. See Table 3 on page 13 for a detailed development of the actuarial value of assets. The rate of return on the actuarial value of assets was 8.2%. Due to deferred investment experience, the market value of assets exceeds the actuarial value by \$6.8 million.

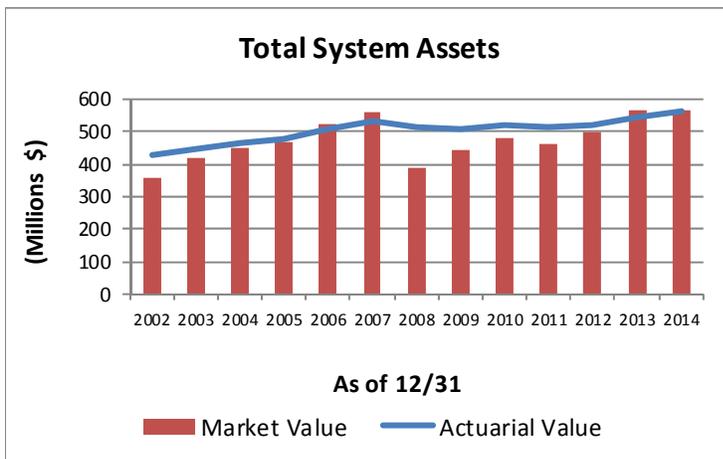


**SECTION I: EXECUTIVE SUMMARY**

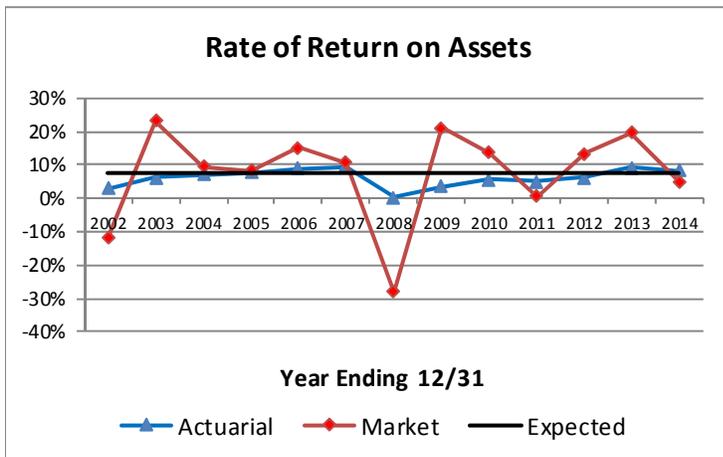
The components of the change in the market and actuarial value of assets for the System (in millions) are set forth below:

	Market Value (\$M)	Actuarial Value (\$M)
Assets, December 31, 2013	\$564.2	\$542.2
- City and Member Contributions	12.8	12.8
- Benefit Payments and Refunds	(38.3)	(38.3)
- Investment Income (net of expenses)	28.1	43.3
Assets, December 31, 2014	\$566.8	\$560.0

The unrecognized investment gain represents about 1% of the market value of assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the \$6.8 million deferred gain is expected to have a positive impact on the future funded ratio and actuarial contribution requirement. If the deferred gain was recognized immediately in the actuarial value of assets, the funded percentage would increase from 95% to 96% and the actuarially determined contribution rate for the City would decrease from 11.6% to 10.9% of payroll.



*The actuarial value of assets has both been greater than and less than the market value of assets during this period, which is expected when using a smoothing method.*



*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.*



## SECTION I: EXECUTIVE SUMMARY

### LIABILITIES

The actuarial 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 liability (UAL), or (surplus) if the asset value exceeds the actuarial liability. The unfunded actuarial 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 liability. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and procedures will also impact the total actuarial liability and the unfunded portion thereof.

As was discussed earlier, an experience study was performed in 2014 and, as a result, several changes were made to the actuarial assumptions. These changes are first reflected in the December 31, 2014 actuarial valuation. The detailed financial impact of the changes was summarized earlier in this section of the report. The unfunded actuarial liability decreased by \$3.6 million due to the assumption changes.

The Actuarial Liability and Unfunded Actuarial Liability for the System as of December 31, 2014 are:

Actuarial Liability	\$590,115,082
Actuarial Value of Assets	<u>560,031,764</u>
Unfunded Actuarial Liability/(Surplus)	\$ 30,083,318

Between December 31, 2013 and December 31, 2014, the change in the unfunded actuarial liability for the System was as follows (in millions):

Change in Unfunded Actuarial Liability		(\$M)
UAL, December 31, 2013		\$40.2
+ Normal cost for year		8.6
+ Assumed investment return for year		3.8
- Actual contributions (member + city)		12.8
- Assumed investment return on contributions		0.5
= Expected Unfunded Actuarial Liability, December 31, 2014		39.3
+ Change from assumption changes		(3.6)
= Expected UAL after changes		35.7
Actual UAL, December 31, 2014		30.1
Experience gain/(loss): Expected UAL - Actual UAL		\$5.6

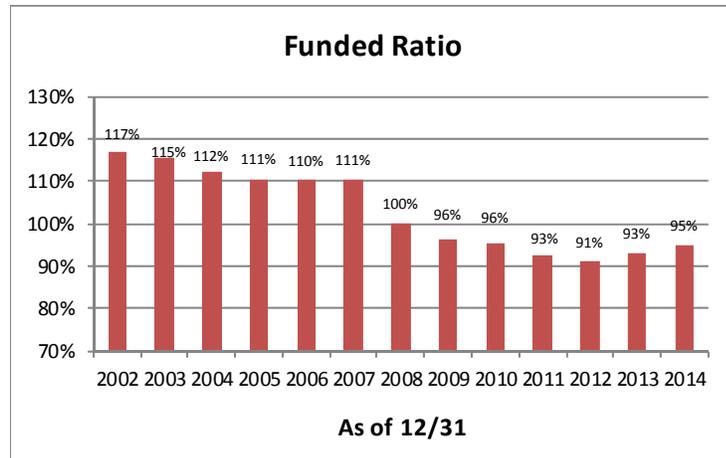
The experience gain for the 2014 plan year of \$5.6 million reflects the combined impact of an actuarial gain of about \$2.2 million on System assets (actuarial value) and an actuarial gain of about \$3.4 million on System liabilities.

Analysis of the unfunded actuarial liability strictly as a dollar amount can be misleading. Another way to evaluate the unfunded actuarial 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 liability. This information for recent years is shown below (in millions). Longer term historical information is shown in the graph following the chart.



## SECTION I: EXECUTIVE SUMMARY

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
Actuarial Liability (\$M)	\$540.4	\$555.2	\$571.8	\$582.4	\$590.1
Actuarial Value of Assets (\$M)	\$516.3	\$513.3	\$520.3	\$542.2	\$560.0
Funded Ratio (Actuarial Value)	95.5%	92.5%	91.0%	93.1%	94.9%
Funded Ratio (Market Value)	88.9%	82.6%	86.5%	96.9%	96.1%



*The funded ratio has generally declined over this period due to various reasons including assumption changes and more significantly, investment experience. The deferred investment losses have been eliminated and a deferred gain now exists. Absent investment returns below the 7.75% assumption, the deferred gain will be recognized and the funded ratio will increase moving toward the market value percentage shown in the table above.*

As mentioned earlier in this report, due to the asset smoothing method there is currently about a \$6.8 million difference between the actuarial value and the market value of assets. To the extent there is not unfavorable investment experience to offset the deferred gain, the \$6.8 million deferred gain will be recognized in future years and the System's funded status will improve. 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 liability or (surplus) contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

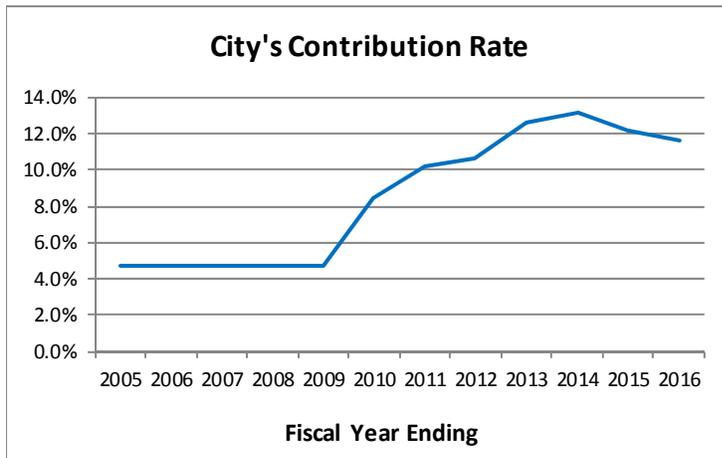
Contribution rates are computed with the objective of developing costs that are level as a percentage of covered payroll. The contribution rate for fiscal year 2016 is based on the December 31, 2014 actuarial valuation results.

As of December 31, 2014, the actuarial liability exceeds the actuarial value of assets so an unfunded actuarial liability (UAL) exists. When amortized over a rolling 20-year period, the resulting contribution is 2.9% of pay. The City's contribution rate is the sum of employer normal cost rate and the UAL amortization contribution. This valuation indicates the City's contribution should be 11.6% of pay (8.7% employer normal cost rate plus 2.9% UAL contribution).



## SECTION I: EXECUTIVE SUMMARY

A summary of the City's historical contribution rate for the System is shown below:



*After increasing from 2010 through 2014, the City's contribution rate has declined in the last two years. The City's contribution rate is 12.2% and 11.6% for the Fiscal Year Ending 12/31/2015 and 12/31/2016, respectively.*

### COMMENTS

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. Under the asset valuation method, the actuarial value of assets is determined as 75% of the expected value (using the actuarial assumed rate of return) and 25% of the actual market value. The net return on the market value of assets for 2014 was 5.1%. Due to deferred assets gains, the return on the actuarial value of assets was 8.2%. As a result, the System experienced an actuarial gain on assets of \$2.2 million. This gain and the actuarial gain on liabilities of \$3.4 million combined for a total actuarial gain of \$5.6 million.

The deferred investment gain (market value less actuarial value of assets) is \$6.8 million as of December 31, 2014. Absent investment losses in future years, the deferred investment gain of \$6.8 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 December 31, 2014 actuarial valuation using both the actuarial and market value of assets (see table on next page).



## SECTION I: EXECUTIVE SUMMARY

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	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Liability	\$590,115,082	\$590,115,082
Asset Value	560,031,764	566,807,293
Unfunded Actuarial Liability	30,083,318	23,307,789
Funded Ratio	94.9%	96.1%
Normal Cost Rate	13.4%	13.4%
UAL Contribution Rate	<u>2.9%</u>	<u>2.2%</u>
Total Contribution Rate	16.3%	15.6%
Employee Contribution Rate	<u>(4.7%)</u>	<u>(4.7%)</u>
Employer Contribution Rate	11.6%	10.9%

The actuarial gain resulting from experience in 2014 lowered the City's contribution rate from 12.2% in the December 31, 2013 valuation to 11.6% in this valuation. The actuarial contribution rate to be paid by the City 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 7.75% assumption tend to create volatility in the City's contribution rate.

**SECTION I: EXECUTIVE SUMMARY****SUMMARY OF PRINCIPAL RESULTS**

<b>1. PARTICIPANT DATA</b>	<u>12/31/2014</u> <u>Valuation</u>	<u>12/31/2013</u> <u>Valuation</u>	<u>%</u> <u>Change</u>
Number of:			
Active Members			
Plan 1	0	2	(100.0)%
Plan 2	943	927	1.7%
Plan 3 (excluding Plan 3b)	520	517	0.6%
Total	<u>1,463</u>	<u>1,446</u>	1.2%
DROP Members			
Plan 1	8	13	(38.5)%
Plan 2	46	30	53.3%
Total	<u>54</u>	<u>43</u>	25.6%
Retired Members and Beneficiaries	1,341	1,327	1.1%
Inactive Vested Members	<u>147</u>	<u>147</u>	0.0%
Total Members	3,005	2,963	1.4%
Annual Projected Payroll (Including DROP)			
Plan 1	\$ 373,381	\$ 940,816	(60.3)%
Plan 2	53,011,068	50,731,542	4.5%
Plan 3	21,639,627	21,198,908	2.1%
Total	<u>\$ 75,024,076</u>	<u>\$ 72,871,266</u>	3.0%
Annual Retirement Payments for Retired Members and Beneficiaries	\$ 36,079,608	\$ 34,794,864	3.7%
<b>2. ASSETS AND LIABILITIES</b>			
Total Actuarial Liability	\$ 590,115,082	\$ 582,385,829	1.3%
Market Value of Assets	566,807,293	564,204,318	0.5%
Actuarial Value of Assets	560,031,764	542,157,342	3.3%
Unfunded Actuarial Liability (UAL)	\$ 30,083,318	\$ 40,228,487	(25.2)%
Funded Ratio	94.9%	93.1%	1.9%
<b>3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL</b>			
Normal Cost	13.4%	13.0%	3.1%
Member Financed	(4.7)%	(4.7)%	0.0%
Employer Normal Cost	<u>8.7%</u>	<u>8.3%</u>	4.8%
Amortization of Unfunded Actuarial Liability or (Surplus)	<u>2.9%</u>	<u>3.9%</u>	(25.6)%
Employer Contribution Rate	11.6%	12.2%	(4.9)%



## SECTION II: SCOPE OF THE REPORT

---

This report presents the actuarial valuation of the Wichita Employees' Retirement System as of December 31, 2014. This valuation was prepared at the request of the System's Board of Trustees. The report is based on plan provisions that are unchanged from last year. Due to the experience study performed in 2014, there were some changes to the actuarial assumptions used in last year's valuation.

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**

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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 December 31, 2014. 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 from time to time. On December 31, 2014, the market value of assets for the System was \$567 million. Table 1 is a comparison, at market values, of System assets as of December 31, 2014, and December 31, 2013, in total and by investment category. Table 2 summarizes the change in the market value of assets from December 31, 2013 to December 31, 2014.

#### **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, first adopted for the December 31, 2002 valuation, smoothes market experience by recognizing 25% of the difference between the expected value (based on the actuarial assumption) and the actual market value. Table 3 shows the development of the actuarial value of assets (AVA) as of December 31, 2014.



SECTION III: ASSETS

TABLE 1

Analysis of Net Assets at Market Value

	As of December 31, 2014		As of December 31, 2013	
	<u>Amount</u> <u>(\$ Millions)</u>	<u>% of</u> <u>Total</u>	<u>Amount</u> <u>(\$ Millions)</u>	<u>% of</u> <u>Total</u>
Cash and Equivalents	\$ 0.3	0.1 %	\$ 0.3	0.1 %
Government Securities	37.5	6.8	33.2	6.1
Corporate Debt	43.1	7.8	40.6	7.4
Mortgage Backed Securities	36.5	6.6	34.7	6.3
Pooled Funds	148.1	26.8	101.9	18.6
Domestic Equity	204.2	37.0	206.0	37.6
International Equity	47.4	8.6	96.0	17.5
Real Estate	30.2	5.5	29.2	5.3
Timber	11.1	2.0	11.7	2.1
Securities Lending Collateral Pool	34.5	6.2	38.5	7.0
Other	0.0	0.0	0.1	0.0
Receivables	7.3	1.3	11.5	2.1
Liabilities	(48.0)	(8.7)	(55.5)	(10.1)
<b>Total Plans 1 and 2</b>	<u>\$ 552.2</u>	<u>100.0 %</u>	<u>\$ 548.2</u>	<u>100.0 %</u>
<b><u>Plan 3 Assets</u></b>				
Members Electing to Stay in Plan 3 (3b)	\$ 6.6		\$ 5.9	
Other Plan 3 Members	14.6		16.0	
<b>Total Plan 3 Assets</b>	<u>21.2</u>		<u>21.9</u>	
<b>Net Assets (Plans 1, 2, 3, and 3b)</b>	<u>\$ 573.4</u>		<u>\$ 570.1</u>	

**SECTION III: ASSETS****TABLE 2****Summary of Changes in Net Assets  
During Year Ended December 31, 2014**

(Market Value)

	<u>Plans 1 &amp; 2</u>	<u>Plan 3*</u>	<u>Total</u>
1. Market Value of Assets as of December 31, 2013	\$ 548,180,102	\$ 16,024,216	\$ 564,204,318
2. Adjustment to Tie to Audited Financial Statements	\$ (517)	\$ (439)	\$ (956)
3. Contributions:			
a. Employee	\$ 2,435,831	\$ 958,713	\$ 3,394,544
b. Employer	8,464,927	958,713	9,423,640
c. Transfers	2,942,734	(3,513,976)	(571,242)
d. Total	\$ 13,843,492	\$ (1,596,550)	\$ 12,246,942
4. Investment Income:			
a. Interest and Dividends	\$ 14,605,740	\$ 408,545	\$ 15,014,285
b. Net Appreciation in Fair Value	15,871,731	383,499	16,255,230
c. Commission Recapture	10,114	283	10,397
d. Net Securities Lending Income	138,815	3,881	142,696
e. Investment Expenses	2,799,289	82,484	2,881,773
f. Net Investment Income	\$ 27,827,111	\$ 713,724	\$ 28,540,835
5. Expenditures:			
a. Refunds of Member Contributions	\$ 400,433	\$ 501,920	\$ 902,353
b. Benefits Paid:			
(1) Pension and Death Benefits	33,980,293	0	33,980,293
(2) DROP Payments	2,798,396	0	2,798,396
c. Administrative Expenses	441,869	60,935	502,804
d. Total	\$ 37,620,991	\$ 562,855	\$ 38,183,846
6. Net Change [3(d) + 4(f) - 5(d)]	\$ 4,049,612	\$ (1,445,681)	\$ 2,603,931
7. Market Value of Assets as of December 31, 2014 (1) + (2) + (6)	\$ 552,229,197	\$ 14,578,096	\$ 566,807,293

\* Excludes assets for Plan 3b members. The December 31, 2014 market value of the assets for this group was \$6,578,677.



**SECTION III: ASSETS**

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**TABLE 3**

**Development of Actuarial Value of Assets  
as of December 31, 2014**

	<u>Plans 1 &amp; 2</u>	<u>Plan 3*</u>	<u>Total</u>
1. Actuarial Value of Assets as of December 31, 2013	\$ 526,700,569	\$ 15,456,773	\$ 542,157,342
2. Actual Contributions/Disbursements			
a. Contributions	\$ 10,900,758	\$ 1,917,426	\$ 12,818,184
b. Transfers	2,942,734	(3,513,976)	(571,242)
c. Benefit Payments and Refunds	(37,179,122)	(501,920)	(37,681,042)
d. Net	\$ (23,335,630)	\$ (2,098,470)	\$ (25,434,100)
3. Expected Value of Assets as of December 31, 2014 [(1) * 1.0775] + [2(d) * (1.0775) <sup>-5</sup> ]	\$ 543,296,850	\$ 14,476,404	\$ 557,773,254
4. Market Value of Assets as of December 31, 2014	\$ 552,229,197	\$ 14,578,096	\$ 566,807,293
5. Difference Between Actual and Expected Values	\$ 8,932,347	\$ 101,692	\$ 9,034,039
6. Initial Actuarial Value of Assets (3) + [(5) * 0.25]	\$ 545,529,937	\$ 14,501,827	\$ 560,031,764
7. Corridor for Actuarial Value of Assets			
a. 80% of Market Value of Assets	441,783,358	11,662,477	453,445,834
b. 120% of Market Value of Assets	662,675,036	17,493,715	680,168,752
8. Actuarial Value of Assets as of December 31, 2014	545,529,937	14,501,827	560,031,764
9. Actuarial Value of Assets Divided by Market Value of Assets	98.8%	99.5%	98.8%
10. Market Value of Assets Less Actuarial Value of Assets	\$ 6,699,260	\$ 76,269	\$ 6,775,529

\* Excludes Plan 3b



## **SECTION IV: SYSTEM LIABILITIES**

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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, December 31, 2014. 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 December 31, 2014.

### **ACTUARIAL 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 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 liability to the System. The Entry Age Normal actuarial cost method is used to develop the actuarial liability.

**SECTION IV: SYSTEM LIABILITIES****TABLE 4****Present Value of Future Benefits (PVFB)  
as of December 31, 2014**

	<u>Plan 1</u>	<u>Plan 2</u>	<u>Plan 3</u>	<u>Total</u>
1. Active Employees				
a. Retirement Benefit	\$ 0	\$ 216,819,857	\$ 32,558,663	\$ 249,378,520
b. Pre-Retirement Death Benefit	0	3,490,716	912,654	4,403,370
c. Withdrawal Benefit	0	10,474,041	5,440,154	15,914,195
d. Total	\$ 0	\$ 230,784,614	\$ 38,911,471	\$ 269,696,085
2. DROP Members				
a. DROP Account Balance	\$ 1,689,993	\$ 1,780,890	\$ 0	\$ 3,470,883
b. Monthly Retirement Benefit	4,934,805	15,213,489	0	20,148,294
c. Total	\$ 6,624,798	\$ 16,994,379	\$ 0	\$ 23,619,177
3. Inactive Vested Members	\$ 0	\$ 28,089,882	\$ 0	\$ 28,089,882
4. Inactive Nonvested Members	\$ 0	\$ 0	\$ 75,084	\$ 75,084
5. In Pay Members				
a. Retirees	\$ 214,103,385	\$ 101,310,863	\$ 0	\$ 315,414,248
b. Disabled Members	1,142,579	1,702,570	0	2,845,149
c. Beneficiaries	16,624,777	6,877,768	0	23,502,545
d. Total	\$ 231,870,741	\$ 109,891,201	\$ 0	\$ 341,761,942
6. Total Present Value of Future Benefits 1(d) + 2(c) + 3 + 4 + 5(d)	\$ 238,495,539	\$ 385,760,076	\$ 38,986,555	\$ 663,242,170

**SECTION IV: SYSTEM LIABILITIES****TABLE 5****Actuarial Liability  
as of December 31, 2014**

	<u>Plan 1</u>	<u>Plan 2</u>	<u>Plan 3</u>	<u>Total</u>
1. Active Employees				
a. Present Value of Future Benefits	\$ 0	\$ 230,784,614	\$ 38,911,471	\$ 269,696,085
b. Present Value of Future Normal Costs	0	45,073,629	28,053,459	73,127,088
c. Actuarial Liability 1(a) - 1(b)	\$ 0	\$ 185,710,985	\$ 10,858,012	\$ 196,568,997
2. DROP Members	\$ 6,624,798	\$ 16,994,379	\$ 0	\$ 23,619,177
3. Inactive Vested Members	\$ 0	\$ 28,089,882	\$ 0	\$ 28,089,882
4. Inactive Nonvested Members	\$ 0	\$ 0	\$ 75,084	\$ 75,084
5. In Pay Members				
a. Retirees	\$ 214,103,385	\$ 101,310,863	\$ 0	\$ 315,414,248
b. Disabled Members	1,142,579	1,702,570	0	2,845,149
c. Beneficiaries	16,624,777	6,877,768	0	23,502,545
d. Total	\$ 231,870,741	\$ 109,891,201	\$ 0	\$ 341,761,942
6. Reserve for Plan 3 Members	\$ 0	\$ 0	\$ 0	\$ 0
7. Total Actuarial Liability 1(c) + 2 + 3 + 4 + 5(d) + 6	\$ 238,495,539	\$ 340,686,447	\$ 10,933,096	\$ 590,115,082



**SECTION IV: SYSTEM LIABILITIES**

**TABLE 6**

**Present Value of Accrued Benefits  
as of December 31, 2014**

The present value of accrued benefits for the System reflects the benefits earned based on service, earnings, and the System provisions as of the valuation date. It also reflects the on-going nature of the System by using the same actuarial assumptions as are used for funding purposes. Further, because the System provides that the accrued benefits of deferred vested members are indexed until benefits begin, the present value of the accrued benefit liability for active members reflects this provision from the assumed termination of employment to the assumed benefit commencement date.

	<u>Plan 1</u>	<u>Plan 2</u>	<u>Plan 3</u>	<u>Total</u>
1. Active Employees	\$ 0	\$ 129,573,004	\$ 4,959,811	\$ 134,532,815
2. DROP Members	\$ 6,624,798	\$ 16,994,379	\$ 0	\$ 23,619,177
3. Inactive Vested Members	\$ 0	\$ 28,089,882	\$ 0	\$ 28,089,882
4. Inactive Nonvested Members	\$ 0	\$ 0	\$ 75,084	\$ 75,084
5. In Pay Members				
a. Retirees	\$ 214,103,385	\$ 101,310,863	\$ 0	\$ 315,414,248
b. Disabled Members	1,142,579	1,702,570	0	2,845,149
c. Beneficiaries	16,624,777	6,877,768	0	23,502,545
d. Total	\$ 231,870,741	\$ 109,891,201	\$ 0	\$ 341,761,942
6. Total	\$ 238,495,539	\$ 284,548,466	\$ 5,034,895	\$ 528,078,900
7. Market Value of Assets*	\$ 256,154,759	\$ 305,617,639	\$ 5,034,895	\$ 566,807,293
8. Funded Ratio (7)/(6)	107%	107%	100%	107%

\* Split of assets between Plan 1 and Plan 2 is in proportion to the liabilities for illustrative purposes only.



## **SECTION V: EMPLOYER CONTRIBUTIONS**

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The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 3 and 4 indicates that current assets fall short of meeting the present value of future benefits (total liability). This is expected in all but a completely closed plan, 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 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 liability (UAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial 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 liability. The unfunded actuarial liability/(surplus) represents the difference between the actuarial liability and the actuarial value of assets as of the valuation date. The unfunded actuarial liability is calculated each year and reflects experience gains/(losses).

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rates based on this December 31, 2014 actuarial valuation will be used to determine employer contribution rates to the Wichita Employees’ Retirement System for fiscal year 2016. 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 December 31, 2014, the valuation assets were less than the actuarial liability so an unfunded actuarial liability exists. The City’s funding policy is to amortize the UAL over a rolling 20-year period. The amortization of the UAL results in an employer contribution that is more than the employer normal cost rate.

### **CONTRIBUTION RATE SUMMARY**

In Table 7, the amortization payment related to the unfunded actuarial liability/(surplus), as of December 31, 2014, is developed. Table 8 develops the normal cost rate for the System. The derivation of the total contribution rate for the City is shown in Table 9. Table 10 shows the historical summary of the City’s contribution rates. Table 11 develops the experience gain/(loss) for the year ended December 31, 2014.

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



**SECTION V: EMPLOYER CONTRIBUTIONS**

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**TABLE 7**

**Derivation of Unfunded Actuarial Liability Contribution Rate**

1. Actuarial Accrued Liability	\$	590,115,082
2. Actuarial Value of Assets	\$	560,031,764
3. Unfunded Actuarial Liability (UAL)	\$	30,083,318
4. Payment (Adjusted to Mid-Year) to Amortize Unfunded Actuarial Liability/(Surplus) Over 20 Years*	\$	2,141,065
5. Total Projected Payroll for the Year	\$	75,024,076
6. Amortization Payment as a Percent of Payroll		2.9%

\* *The UAL is amortized as a level percent of payroll over a rolling 20-year period.*



**SECTION V: EMPLOYER CONTRIBUTIONS**

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**TABLE 8**

**Derivation of Normal Cost Rate**

Normal Cost for Year End December 31, 2014	
Service pensions	\$ 7,235,788
Survivor Pensions	220,993
Termination Benefits	1,493,990
Total Normal Cost	\$ <u>8,950,771</u>
Expected Payroll in 2015 for Current Actives	\$ 66,776,616
Total Normal Cost Rate for Year	13.4%



**SECTION V: EMPLOYER CONTRIBUTIONS**

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**TABLE 9**

**Employer Contribution Rates  
for Fiscal Year Commencing in 2016**

	<b>Contribution Requirement as a % of Payroll</b>
Normal Cost	
Service pensions	10.9%
Survivor pensions	0.3%
Termination pensions	2.2%
Total Normal Cost	13.4%
Unfunded Actuarial Liability	
Retired members and beneficiaries <sup>(1)</sup>	0.0%
Active and former members <sup>(2)</sup>	2.9%
Total UAL Contribution	2.9%
Total Contribution Requirement	
Member Financed Portion <sup>(3)</sup>	4.7%
City Financed Portion	11.6%
Total	16.3%

<sup>(1)</sup> Actuarial liability for retired members and beneficiaries was fully funded as of December 31, 2014.

<sup>(2)</sup> The excess of the actuarial liability over actuarial value of assets is amortized as a level percent of active member payroll over a rolling 20-year period.

<sup>(3)</sup> The weighted average of member contribution rates: 6.4% for Plan 1 and 4.7% for Plans 2 & 3.



**SECTION V: EMPLOYER CONTRIBUTIONS**

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**TABLE 10**

**Historical Summary of City Contribution Rates**

Contribution rates are computed in accordance with a level percent of payroll funding objective. As of December 31, 2014, the actuarial value of assets is less than actuarial liabilities resulting in an unfunded actuarial liability (UAL). The UAL is amortized over a rolling 20-year period.

<b>Valuation Date</b>	<b>Fiscal Year</b>	<b>City Contributions as Percents of Active Member Pensionable Payroll</b>	
		<b>Funding Objective</b>	<b>Amortization (Credit)/Payment</b>
11/30/1992	1994	9.5%	0.0%
11/30/1993	1995	9.5	0.0
11/30/1994	1996	9.4	0.0
12/31/1995	1997	9.0	0.0
12/31/1996	1998	6.9 - 8.4	(1.5)
12/31/1997	1999	4.6 - 8.5	(3.9)
12/31/1998	2000	0.8 - 8.3	(7.5)
12/31/1999	2001	2.5 - 9.8	(7.3)
12/31/2000	2002	0.5 - 9.7	(9.2)
12/31/2001	2003	1.9 - 9.4	(7.5)
12/31/2002	2004	2.7 - 8.8	(6.1)
12/31/2003	2005	3.1 - 8.9	(5.8)
12/31/2004	2006	3.5 - 8.2	(4.7)
12/31/2005	2007	3.9 - 8.2	(4.3)
12/31/2006	2008	4.2 - 8.3	(4.1)
12/31/2007	2009	4.2 - 8.4	(4.2)
12/31/2008	2010	8.4	0.0
12/31/2009	2011	10.2	1.7
12/31/2010	2012	10.6	2.1
12/31/2011	2013	12.6	4.1
12/31/2012	2014	13.2	5.0
12/31/2013	2015	12.2	3.9
12/31/2014	2016	11.6	2.9



**SECTION V: EMPLOYER CONTRIBUTIONS**

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**TABLE 11**

**Derivation of System Experience Gain/(Loss)**

	(\$M) <b>Year Ended</b> <u><b>12/31/2014</b></u>
(1) UAL* at start of year	\$ 40.2
(2) + Normal cost for year	8.6
(3) + Assumed investment return on (1) and (2)	3.8
(4) - Actual contributions (member + City)	12.8
(5) - Assumed investment return on (4)	0.5
(6) = Expected UAL at end of year	39.3
(7) + Increase (decrease) from assumption changes	(3.6)
(8) = Expected UAL after changes	35.7
(9) = Actual UAL at year end	30.1
(10) = Experience gain/(loss) (8) - (9)	\$5.6 **
(11) = Percent of beginning of year AL	1.0%

\* *Unfunded actuarial liability/(surplus)*

\*\* *Of this amount, \$2.2 million of the experience gain is due to an experience gain on the actuarial value of assets and \$3.4 million represents an experience gain on liabilities.*



**SECTION VI: OTHER INFORMATION**

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The actuarial liability is a measure intended to help the reader assess (i) a retirement system’s funded status on an on-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 Entry Age Normal actuarial liability was determined as part of an actuarial valuation of the System as of December 31, 2014. Significant actuarial assumptions used in determining the actuarial liability include:

- (a) A rate of return on the investment of present and future assets of 7.75% per year compounded annually,
- (b) Projected salary increases of 4.00% per year compounded annually, (3.25% attributable to inflation, and 0.75% attributable to productivity),
- (c) Additional projected salary increases of 0.25% to 3.20% per year attributable to seniority/merit, and
- (d) The assumption that benefits will increase 3.00% per year of retirement, non-compounded, for Plan 1 members and 2.00% per year of retirement, non-compounded, for Plan 2 members.

Actuarial Liability:

Active members	\$ 196,568,997
DROP members	23,619,177
Retired members and beneficiaries currently receiving benefits	341,761,942
Nonvested terminated members due a refund	75,084
Vested terminated members not yet receiving benefits	<u>28,089,882</u>
Total Actuarial Liability	\$ 590,115,082
Actuarial Value of Assets (market value was \$566,807,293)	\$ 560,031,764
Unfunded Actuarial Liability	\$ 30,083,318

During the year ended December 31, 2014, the System experienced a net increase of \$8 million in the actuarial liability.



**SECTION VI: OTHER INFORMATION**

**TABLE 12**

**Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Liability (AL) (b)</b>	<b>Unfunded AL (UAL) (b)-(a)</b>	<b>Funded Ratio (a)/(b)</b>	<b>Active Member Covered Payroll (c)</b>	<b>UAL as a Percentage of Active Member Covered Payroll [(b)-(a)]/(c)</b>
11/30/1992	\$182,186	\$204,730	\$22,544	89.0 %	\$49,552	45.5 %
11/30/1993	200,853	218,603	17,750	91.9	52,093	34.1
11/30/1994	215,385	230,217	14,832	93.6	52,169	28.4
12/31/1995	238,441	242,354	3,913	98.4	54,039	7.2
12/31/1996	266,404	252,968	(13,436)	105.3	53,534	(25.1)
12/31/1997	296,705	263,573	(33,132)	112.6	54,346	(61.0)
12/31/1998	340,417	276,980	(63,437)	122.9	56,093	(113.1)
12/31/1999 *	383,338	319,289	(64,049)	120.1	57,562	(111.3)
12/31/2000	414,643	329,390	(85,253)	125.9	61,112	(139.5)
12/31/2001	428,204	353,158	(75,046)	121.2	65,347	(114.8)
12/31/2002	433,366 **	370,399	(62,967)	117.0	68,117	(92.4)
12/31/2003	446,794 **	387,037	(59,757)	115.4	69,161	(86.4)
12/31/2004 *	462,994 **	413,159	(49,835)	112.1	72,154	(69.1)
12/31/2005 *	479,275 **	433,297	(45,978)	110.6	72,367	(63.5)
12/31/2006 *	505,756 **	459,062	(46,694)	110.2	75,881	(61.5)
12/31/2007 *	533,911 **	483,387	(50,524)	110.5	78,736	(64.2)
12/31/2008 *	512,853 **	512,374	(479)	100.1	81,580	(0.6)
12/31/2009 *	509,494 **	529,271	19,777	96.3	82,704	23.9
12/31/2010 *	516,308 **	540,436	24,128	95.5	79,636	30.3
12/31/2011 *	513,298 **	555,174	41,876	92.5	75,444	55.5
12/31/2012	520,320 **	571,805	51,485	91.0	70,783	72.7
12/31/2013	542,157 **	582,386	40,228	93.1	70,953	56.7
12/31/2014 *	560,032 **	590,115	30,083	94.9	71,391	42.1

*Rounded dollar amounts are in thousands.*

*Note: Years prior to 12/31/2012 were provided by prior Actuary.*

\* *After changes in benefits and/or actuarial assumptions and/or actuarial cost methods.*

\*\* *Includes all members except Plan 3b.*

Analysis of the dollar amounts of actuarial value of assets, actuarial liability, or unfunded actuarial liability in isolation can be misleading. Expressing the actuarial value of assets as a percentage of the actuarial 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 liability and annual covered payroll are both affected by inflation. Expressing the unfunded actuarial 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.



**SECTION VI: OTHER INFORMATION**

**TABLE 13**

**Schedule of Employer Contributions**

<b>Fiscal Year</b>	<b>Actuarial Valuation Date</b>	<b>Annual Required Contribution</b>	<b>Percent Contributed</b>
1997	12/31/1995	\$4,459,654	100 %
1998	12/31/1996	4,140,163	100
1999	12/31/1997	4,134,826	100
2000	12/31/1998	2,751,084	100
2001	12/31/1999	1,843,213	100
2002	12/31/2000	3,137,912 *	100
2003	12/31/2001	3,189,513 *	100
2004	12/31/2002	3,266,706 *	100
2005	12/31/2003	3,589,063 *	100
2006	12/31/2004	3,566,429 *	100
2007	12/31/2005	3,700,590 *	100
2008	12/31/2006	3,834,270 *	100
2009	12/31/2007	3,887,085 *	100
2010	12/31/2008	6,689,450 *	100
2011	12/31/2009	7,695,317 *	100
2012	12/31/2010	7,503,003 *	100
2013	12/31/2011	8,940,135 *	100
2014	12/31/2012	9,423,640 *	100

\* Reflects contributions to Plans 1, 2, and 3. Excludes contributions for Plan 3b members.  
 Note: Years prior to 2012 were provided by prior Actuary.

**Summary of Actuarial Methods and Assumptions**

Valuation Date	December 31, 2014
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percent of payroll, open
Remaining Amortization Period	20 years
Asset Valuation Method	Expected + 25% of (Market – Expected Values)
Actuarial Assumptions:	
Investment Rate of Return*	7.75%
Projected Salary Increases*	4.25% - 7.20%
*Includes Inflation at	3.25%
Cost-of-Living Adjustment Provisions	3.00% Non-compounded (Plan 1) 2.00% Non-compounded (Plan 2)



SECTION VI: OTHER INFORMATION

TABLE 14  
Solvency Test

Valuation Date	Aggregate Actuarial Liability For				Portion of Actuarial Liabilities Covered by Reported Assets					
	(1)	(2)	(3)	Reported Valuation Assets	(1)		(2)		(3)	
	Active Member Contributions	Retirants and Beneficiaries*	Active Members (Employer Financed Portion)			%	%	%	%	%
12/31/1995	\$28,549,082	\$123,759,638	\$90,046,029	\$238,441,351	100.0	%	100.0	%	95.7	%
12/31/1996	28,996,944	133,093,326	90,877,809	266,403,759	100.0		100.0		114.8	
12/31/1997	29,881,922	141,922,445	91,768,436	296,704,769	100.0		100.0		136.1	
12/31/1998	29,694,389	156,764,183	90,521,375	340,417,265	100.0		100.0		170.1	
12/31/1999	32,017,194	169,602,958	117,669,351	383,337,991	100.0		100.0		154.4	
12/31/2000	34,189,528	177,095,907	118,104,491	414,642,694	100.0		100.0		172.2	
12/31/2001	33,516,616	179,374,487	140,266,410	428,204,828	100.0		100.0		153.5	
12/31/2002	38,291,472	192,615,216	139,492,410	433,365,890	100.0		100.0		145.1	
12/31/2003	39,847,119	205,799,341	141,390,445	446,794,052	100.0		100.0		142.3	
12/31/2004	41,852,724	218,518,676	152,632,267	462,994,047	100.0		100.0		132.8	
12/31/2005	43,397,403	228,408,201	161,491,272	479,274,508	100.0		100.0		128.5	
12/31/2006	45,475,389	237,860,848	175,725,905	505,755,995	100.0		100.0		126.6	
12/31/2007	46,189,489	256,374,002	180,823,537	533,911,465	100.0		100.0		127.9	
12/31/2008	46,541,280	272,176,420	193,655,822	512,853,345	100.0		100.0		100.2	
12/31/2009	49,152,328	279,396,973	200,722,170	509,493,888	100.0		100.0		90.1	
12/31/2010	50,473,365	293,227,477	196,734,871	516,307,845	100.0		100.0		87.7	
12/31/2011	45,440,569	349,202,490	160,530,664	513,298,382	100.0		100.0		73.9	
12/31/2012	49,519,050	347,350,296	174,936,109	520,320,051	100.0		100.0		70.6	
12/31/2013	50,337,976	362,224,034	169,823,819	542,157,342	100.0		100.0		76.3	
12/31/2014	51,408,059	369,926,908	168,780,115	560,031,764	100.0		100.0		82.2	

\* Includes vested and nonvested terminated members.

During the twelve months ended December 31, 2014, the Wichita Employees' Retirement System generated a net actuarial gain of \$5.6 million. The amount is 1.0% of the actuarial liability at the beginning of the year.

Note: Years prior to 12/31/2012 were provided by prior Actuary.



**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**MEMBER DATA RECONCILIATION**

December 31, 2013 to December 31, 2014

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 of the valuation date.

	Active Participants			DROP Participants		Retirees And Beneficiaries		Inactive Vested		Total
	Plan 1	Plan 2	Plan 3	Plan 1	Plan 2	Plan 1	Plan 2	Plan 1	Plan 2	
Members as of 12/31/2013	2	927	517	13	30	795	532	0	147	2,963
New Members	0	+2	+148	0	0	+7	+11	0	0	+168
Transfers	0	+87	-97	0	0	0	0	0	0	-10
Rehires	0	+1	+6	0	0	0	0	0	0	+7
Terminations										
Refunded	0	-9	-34	0	0	0	0	0	-1	-44
Refund Due	0	0	-18	0	0	0	0	0	-3	-21
Deferred Vested	0	-14	0	0	0	0	0	0	+14	0
Retirements										
Service	0	-27	0	-6	-6	+6	+43	0	-10	0
Disability	0	-1	0	0	0	0	+1	0	0	0
DROP	-1	-22	0	+1	+22	0	0	0	0	0
Payment Ended	0	0	0	0	0	0	0	0	0	0
Deaths										
Cashed Out	0	0	0	0	0	0	0	0	0	0
With Beneficiary	0	-1	0	0	0	-7	-9	0	0	-17
Without Beneficiary	-1	0	-2	0	0	-33	-5	0	0	-41
Data Adjustments	0	0	0	0	0	0	0	0	0	0
<b>Members as of 12/31/2014</b>	<b>0</b>	<b>943</b>	<b>520</b>	<b>8</b>	<b>46</b>	<b>768</b>	<b>573</b>	<b>0</b>	<b>147</b>	<b>3,005</b>



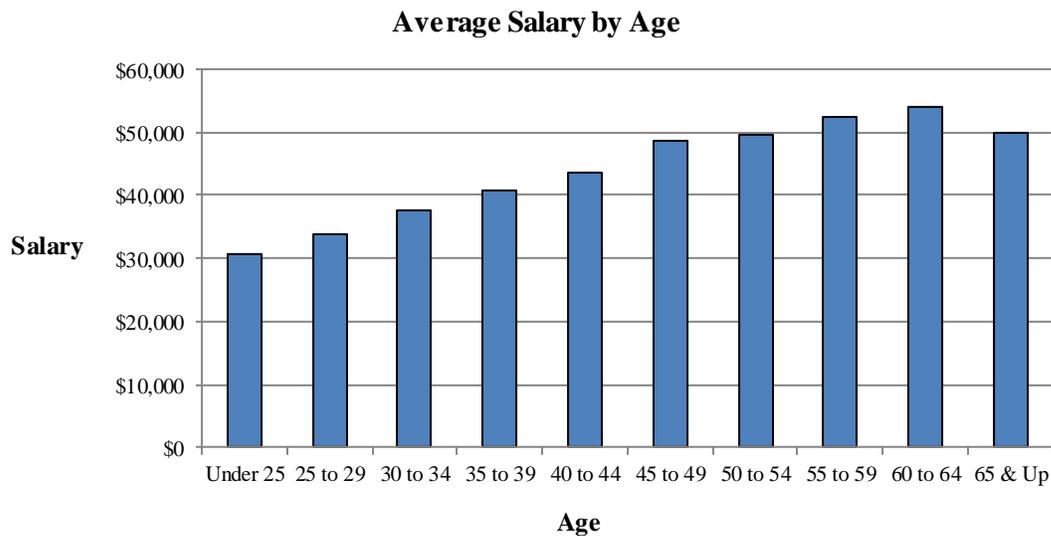
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF ACTIVE MEMBERS  
(Excluding DROP Members)  
as of December 31, 2014**

All Plans

Age	Number			Valuation Salaries*		
	Male	Female	Total	Male	Female	Total
Under 25	26	4	30	\$ 787,517	\$ 135,194	\$ 922,711
25 to 29	49	34	83	1,681,252	1,114,723	2,795,975
30 to 34	87	42	129	3,325,606	1,537,914	4,863,520
35 to 39	83	60	143	3,211,017	2,627,237	5,838,254
40 to 44	77	67	144	3,445,180	2,853,509	6,298,689
45 to 49	131	76	207	6,401,587	3,689,835	10,091,422
50 to 54	141	93	234	7,044,430	4,570,474	11,614,904
55 to 59	175	108	283	9,363,908	5,470,057	14,833,965
60 to 64	114	72	186	6,267,876	3,776,046	10,043,922
65 & Up	11	13	24	649,559	545,516	1,195,075
<b>Total</b>	<b>894</b>	<b>569</b>	<b>1,463</b>	<b>\$42,177,932</b>	<b>\$26,320,505</b>	<b>\$68,498,437</b>

\* Actual salary as reported by System for year ending 12/31/2014.





**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF ACTIVE MEMBERS  
(Excluding DROP Members)  
as of December 31, 2014**

Plan 2

Age	Number			Valuation Salaries*		
	Male	Female	Total	Male	Female	Total
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25 to 29	5	0	5	169,051	0	169,051
30 to 34	32	7	39	1,248,807	284,980	1,533,787
35 to 39	36	26	62	1,568,511	1,230,635	2,799,146
40 to 44	45	34	79	2,105,001	1,556,206	3,661,207
45 to 49	98	54	152	5,078,487	2,741,431	7,819,918
50 to 54	120	74	194	6,125,067	3,841,490	9,966,557
55 to 59	147	90	237	8,054,891	4,782,723	12,837,614
60 to 64	98	58	156	5,413,259	3,164,991	8,578,250
65 & Up	8	11	19	429,548	469,311	898,859
<b>Total</b>	<b>589</b>	<b>354</b>	<b>943</b>	<b>\$30,192,622</b>	<b>\$18,071,767</b>	<b>\$48,264,389</b>

\* Actual salary as reported by System for year ending 12/31/2014.





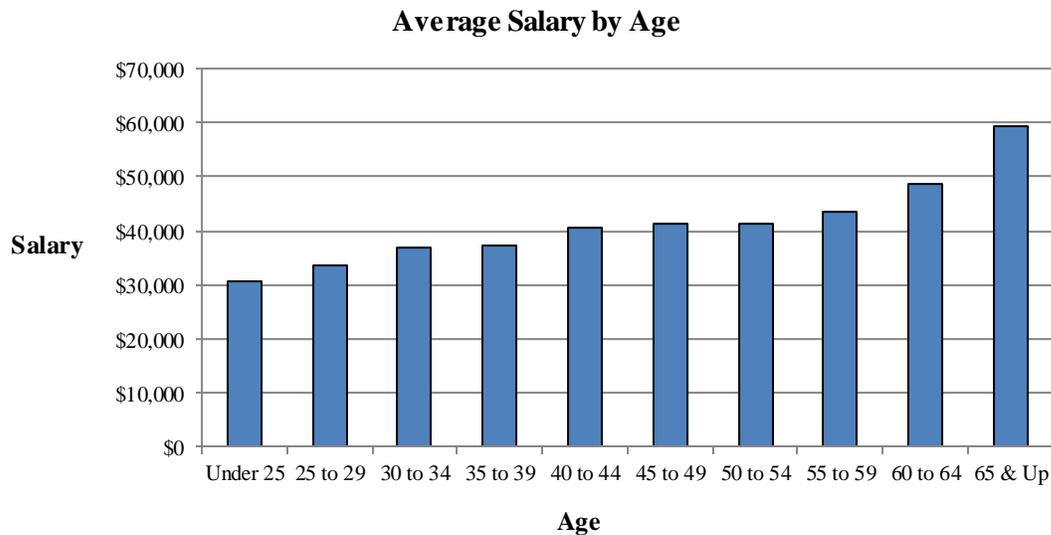
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF ACTIVE MEMBERS**  
as of December 31, 2014

Plan 3

Age	Number			Valuation Salaries*		
	Male	Female	Total	Male	Female	Total
Under 25	26	4	30	\$ 787,517	\$ 135,194	\$ 922,711
25 to 29	44	34	78	1,512,201	1,114,723	2,626,924
30 to 34	55	35	90	2,076,799	1,252,934	3,329,733
35 to 39	47	34	81	1,642,506	1,396,602	3,039,108
40 to 44	32	33	65	1,340,179	1,297,303	2,637,482
45 to 49	33	22	55	1,323,100	948,404	2,271,504
50 to 54	21	19	40	919,363	728,984	1,648,347
55 to 59	28	18	46	1,309,017	687,334	1,996,351
60 to 64	16	14	30	854,617	611,055	1,465,672
65 & Up	3	2	5	220,011	76,205	296,216
<b>Total</b>	<b>305</b>	<b>215</b>	<b>520</b>	<b>\$11,985,310</b>	<b>\$8,248,738</b>	<b>\$20,234,048</b>

\* Actual salary as reported by System for year ending 12/31/2014.





**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

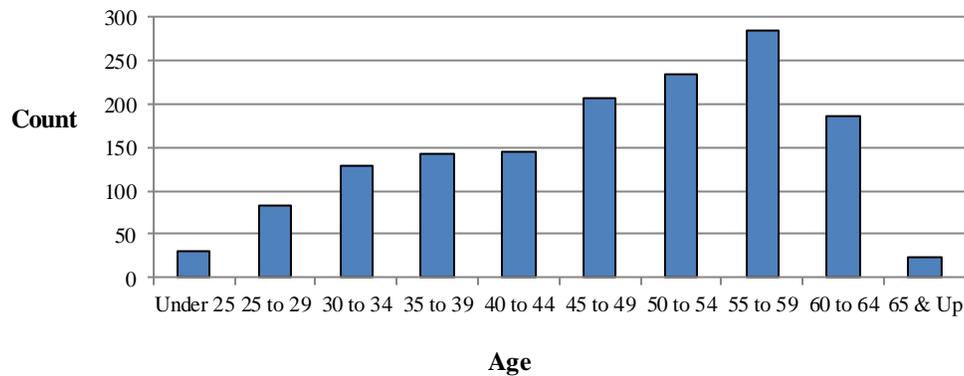
**DISTRIBUTION OF ACTIVE MEMBERS  
(Excluding DROP Members)  
as of December 31, 2014**

All Plans

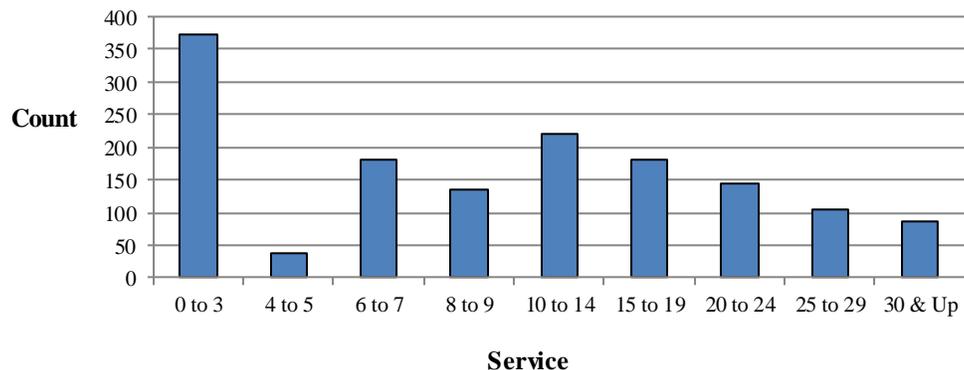
**Years of Service**

Age	0 to 3	4 to 5	6 to 7	8 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	30	0	0	0	0	0	0	0	0	30
25 to 29	66	4	10	3	0	0	0	0	0	83
30 to 34	65	7	26	15	16	0	0	0	0	129
35 to 39	61	6	27	18	22	9	0	0	0	143
40 to 44	40	7	23	16	30	23	4	1	0	144
45 to 49	33	4	31	18	38	31	41	11	0	207
50 to 54	31	4	18	15	42	34	38	32	20	234
55 to 59	29	5	20	24	47	42	40	38	38	283
60 to 64	16	1	19	23	17	37	22	23	28	186
65 & Up	1	0	6	4	8	4	0	0	1	24
<b>Total</b>	<b>372</b>	<b>38</b>	<b>180</b>	<b>136</b>	<b>220</b>	<b>180</b>	<b>145</b>	<b>105</b>	<b>87</b>	<b>1,463</b>

**Age Distribution**



**Service Distribution**





**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

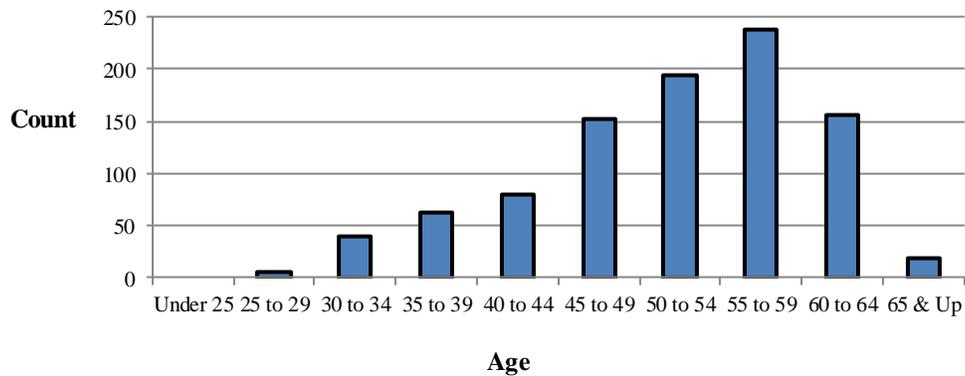
**DISTRIBUTION OF ACTIVE MEMBERS  
(Excluding DROP Members)  
as of December 31, 2014**

Plan 2

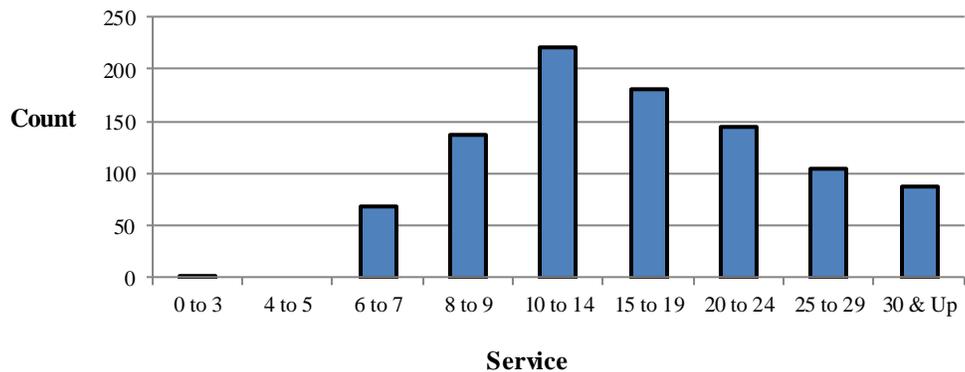
**Years of Service**

Age	0 to 3	4 to 5	6 to 7	8 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	2	3	0	0	0	0	0	5
30 to 34	0	0	8	15	16	0	0	0	0	39
35 to 39	0	0	13	18	22	9	0	0	0	62
40 to 44	0	0	5	16	30	23	4	1	0	79
45 to 49	1	0	12	18	38	31	41	11	0	152
50 to 54	0	0	13	15	42	34	38	32	20	194
55 to 59	0	0	8	24	47	42	40	38	38	237
60 to 64	0	0	6	23	17	37	22	23	28	156
65 & Up	0	0	2	4	8	4	0	0	1	19
<b>Total</b>	<b>1</b>	<b>0</b>	<b>69</b>	<b>136</b>	<b>220</b>	<b>180</b>	<b>145</b>	<b>105</b>	<b>87</b>	<b>943</b>

**Age Distribution**



**Service Distribution**





**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

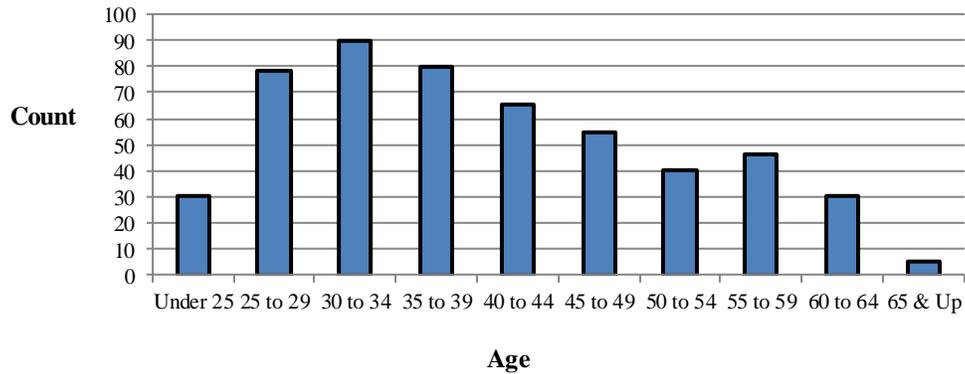
**DISTRIBUTION OF ACTIVE MEMBERS**  
as of December 31, 2014

Plan 3

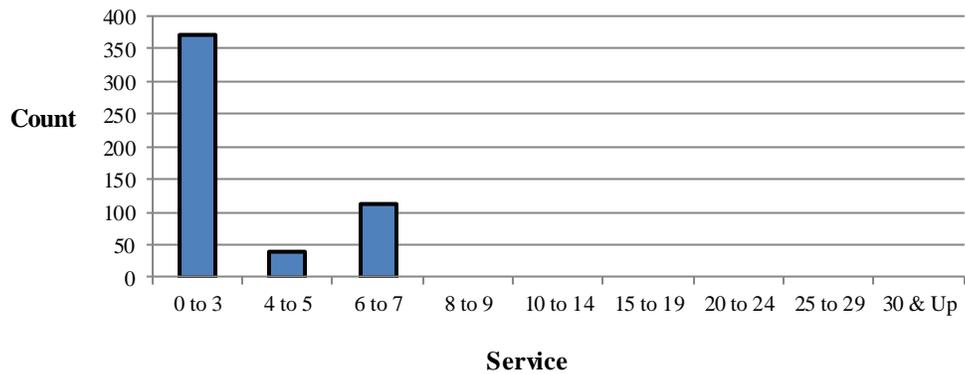
**Years of Service**

Age	0 to 3	4 to 5	6 to 7	8 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	30	0	0	0	0	0	0	0	0	30
25 to 29	66	4	8	0	0	0	0	0	0	78
30 to 34	65	7	18	0	0	0	0	0	0	90
35 to 39	61	6	14	0	0	0	0	0	0	81
40 to 44	40	7	18	0	0	0	0	0	0	65
45 to 49	32	4	19	0	0	0	0	0	0	55
50 to 54	31	4	5	0	0	0	0	0	0	40
55 to 59	29	5	12	0	0	0	0	0	0	46
60 to 64	16	1	13	0	0	0	0	0	0	30
65 & Up	1	0	4	0	0	0	0	0	0	5
<b>Total</b>	<b>371</b>	<b>38</b>	<b>111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>520</b>

**Age Distribution**



**Service Distribution**





**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**DISTRIBUTION OF DROP MEMBERS**  
as of December 31, 2014

Plan 1

Age	Service					Total
	Under 20	20 to 24	25 to 29	30 to 34	35 & Up	
Under 50	0	0	0	0	0	0
50-54	0	0	0	0	0	0
55-59	0	0	0	4	0	4
60-64	0	0	0	2	1	3
65 & Up	0	0	0	1	0	1
Total	0	0	0	7	1	8

Age	DROP Duration Elected (months)					Total
	1 to 12	13 to 24	25 to 36	37 to 48	49 to 60	
Under 50	0	0	0	0	0	0
50-54	0	0	0	0	0	0
55-59	0	0	0	0	4	4
60-64	0	0	0	0	3	3
65 & Up	0	0	0	0	1	1
Total	0	0	0	0	8	8

Age	Monthly Benefits	Current Balance
Under 50	\$ 0	\$ 0
50-54	0	0
55-59	15,905	888,479
60-64	10,869	549,433
65 & Up	4,652	252,080
Total	\$ 31,426	\$ 1,689,992

Covered Payroll                      \$358,159



**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**DISTRIBUTION OF DROP MEMBERS**  
as of December 31, 2014

Plan 2

Age	Service					Total
	Under 20	20 to 24	25 to 29	30 to 34	35 & Up	
Under 50	0	0	0	0	0	0
50-54	0	0	0	0	0	0
55-59	0	0	0	0	0	0
60-64	10	6	5	10	0	31
65 & Up	8	2	1	2	2	15
Total	18	8	6	12	2	46

Age	DROP Duration Elected (months)					Total
	1 to 12	13 to 24	25 to 36	37 to 48	49 to 60	
Under 50	0	0	0	0	0	0
50-54	0	0	0	0	0	0
55-59	0	0	0	0	0	0
60-64	5	4	6	8	8	31
65 & Up	0	1	4	3	7	15
Total	5	5	10	11	15	46

Age	Monthly Benefits	Current Balance
Under 50	\$ 0	\$ 0
50-54	0	0
55-59	0	0
60-64	72,841	734,246
65 & Up	33,418	1,046,644
Total	\$ 106,259	\$ 1,780,890

Covered Payroll \$2,226,958



**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

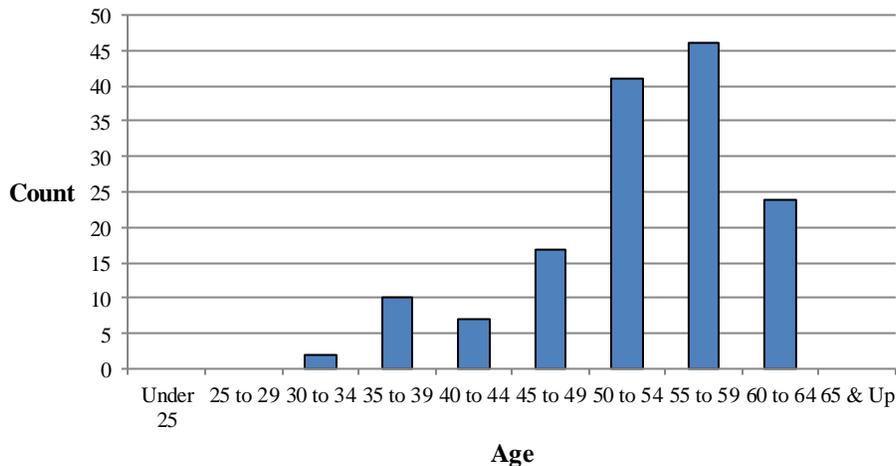
**SUMMARY OF INACTIVE VESTED MEMBERS**  
as of December 31, 2014

All Plans\*

Age	Number			Current Monthly Benefit at Retirement		
	Male	Female	Total	Male	Female	Total
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0
30 to 34	2	0	2	1,408	0	1,408
35 to 39	6	4	10	4,486	4,787	9,273
40 to 44	3	4	7	4,678	4,706	9,384
45 to 49	10	7	17	11,047	12,240	23,287
50 to 54	23	18	41	30,570	32,965	63,535
55 to 59	21	25	46	43,574	41,997	85,571
60 to 64	11	13	24	21,798	29,326	51,124
65 & Up	0	0	0	0	0	0
<b>Total</b>	<b>76</b>	<b>71</b>	<b>147</b>	<b>\$ 117,561</b>	<b>\$ 126,021</b>	<b>\$ 243,582</b>

\*All Inactive Vested Members are Plan 2 Members

**Age Distribution**





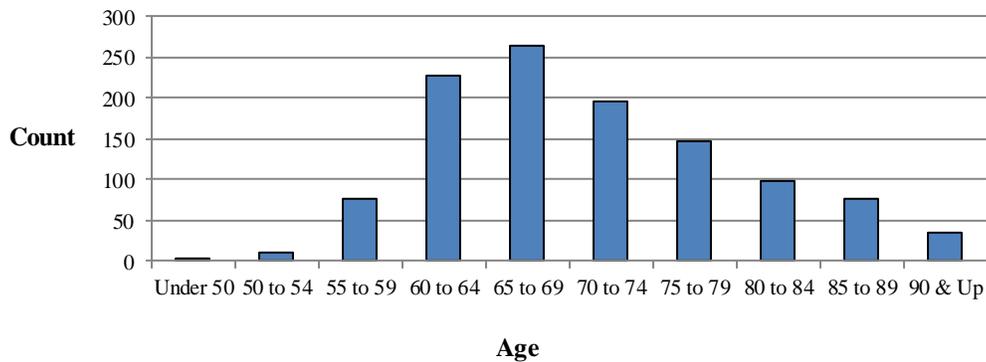
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF RETIRED MEMBERS\***  
as of December 31, 2014

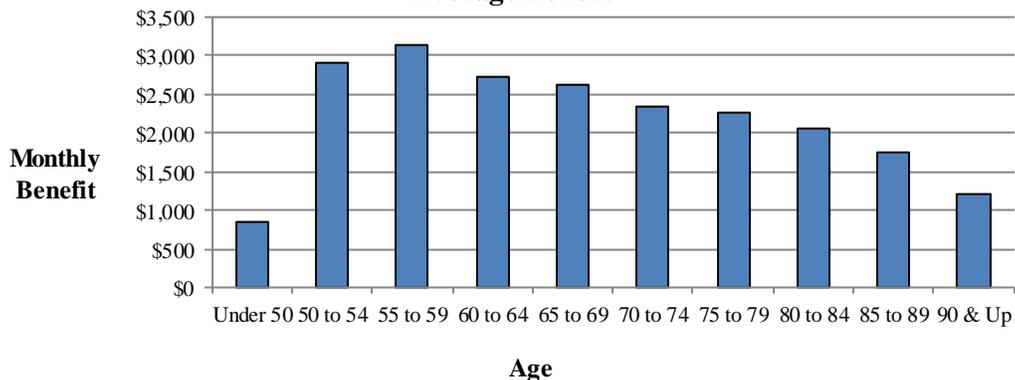
All Plans

Age	Number			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	1	0	1	\$ 846	\$ 0	\$ 846
50 to 54	7	3	10	23,509	5,598	29,107
55 to 59	50	27	77	163,687	77,585	241,272
60 to 64	148	79	227	438,035	178,712	616,747
65 to 69	164	99	263	478,964	212,052	691,016
70 to 74	117	79	196	309,821	151,559	461,380
75 to 79	86	61	147	221,423	111,047	332,470
80 to 84	52	47	99	115,551	87,500	203,051
85 to 89	41	35	76	88,245	43,981	132,226
90 & Up	10	24	34	21,336	20,110	41,446
<b>Total</b>	<b>676</b>	<b>454</b>	<b>1,130</b>	<b>\$ 1,861,417</b>	<b>\$ 888,144</b>	<b>\$ 2,749,561</b>

**Age Distribution**



**Average Benefit**



\*Includes DROP members



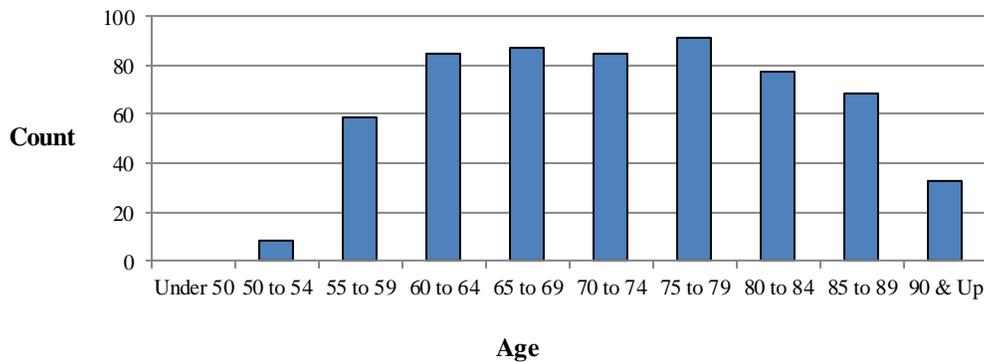
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF RETIRED MEMBERS\***  
as of December 31, 2014

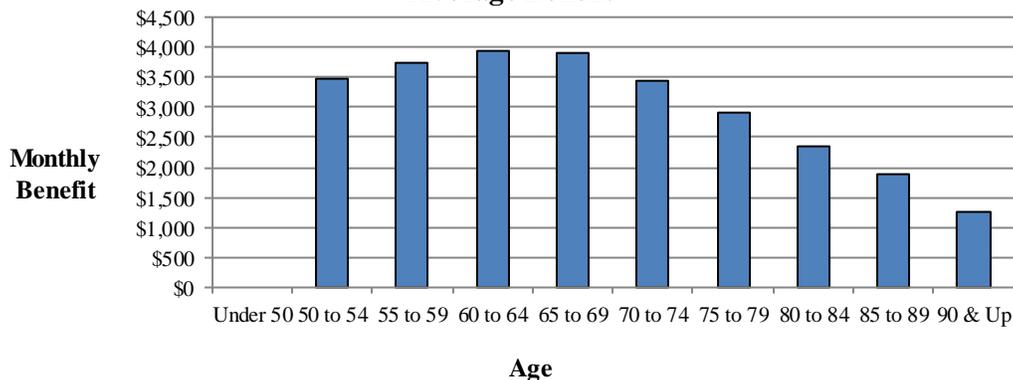
Plan 1

Age	Number			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	0	0	0	\$ 0	\$ 0	\$ 0
50 to 54	6	2	8	23,015	4,750	27,765
55 to 59	39	20	59	150,602	69,679	220,281
60 to 64	61	24	85	258,047	76,681	334,728
65 to 69	61	26	87	253,678	85,456	339,134
70 to 74	55	30	85	216,922	75,212	292,134
75 to 79	60	31	91	189,530	76,657	266,187
80 to 84	39	38	77	102,159	78,737	180,896
85 to 89	38	30	68	86,631	41,467	128,098
90 & Up	10	23	33	21,336	19,762	41,098
<b>Total</b>	<b>369</b>	<b>224</b>	<b>593</b>	<b>\$ 1,301,920</b>	<b>\$ 528,401</b>	<b>\$ 1,830,321</b>

**Age Distribution**



**Average Benefit**



\*Includes DROP members



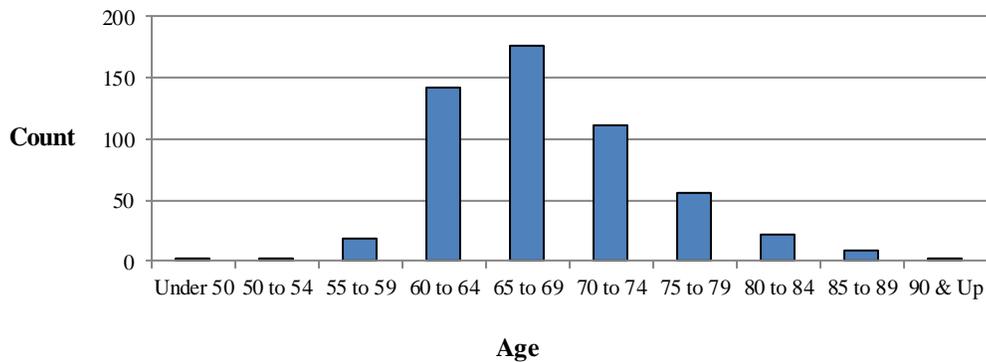
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF RETIRED MEMBERS\***  
as of December 31, 2014

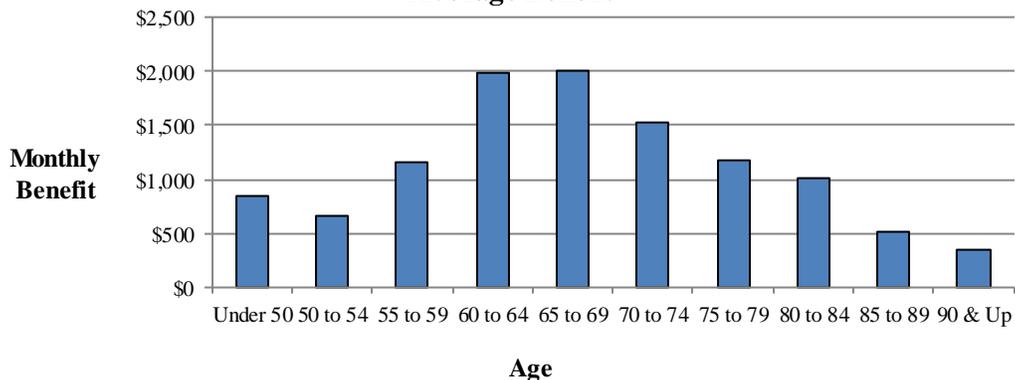
Plan 2

Age	Number			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	1	0	1	\$ 846	\$ 0	\$ 846
50 to 54	1	1	2	494	848	1,342
55 to 59	11	7	18	13,085	7,906	20,991
60 to 64	87	55	142	179,988	102,031	282,019
65 to 69	103	73	176	225,286	126,596	351,882
70 to 74	62	49	111	92,899	76,347	169,246
75 to 79	26	30	56	31,893	34,390	66,283
80 to 84	13	9	22	13,392	8,763	22,155
85 to 89	3	5	8	1,614	2,514	4,128
90 & Up	0	1	1	0	348	348
<b>Total</b>	<b>307</b>	<b>230</b>	<b>537</b>	<b>\$ 559,497</b>	<b>\$ 359,743</b>	<b>\$ 919,240</b>

**Age Distribution**



**Average Benefit**



\*Includes DROP members



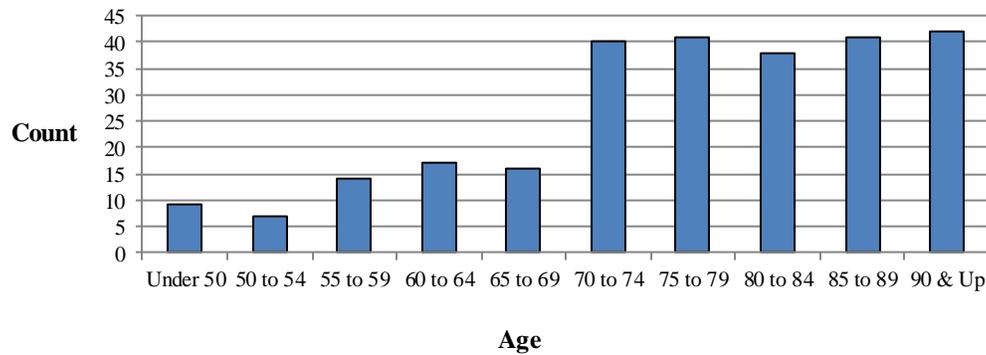
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF BENEFICIARIES**  
as of December 31, 2014

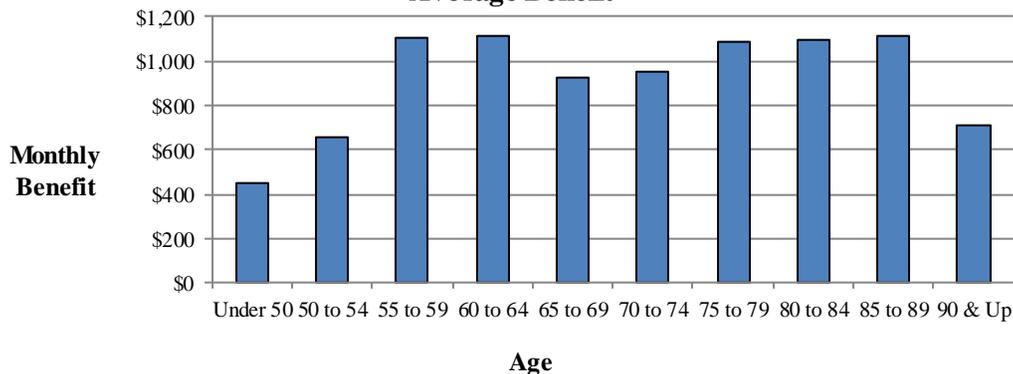
All Plans

Age	Number			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	1	8	9	\$ 564	\$ 3,484	\$ 4,048
50 to 54	2	5	7	1,550	3,070	4,620
55 to 59	3	11	14	3,455	11,997	15,452
60 to 64	3	14	17	3,158	15,834	18,992
65 to 69	2	14	16	1,376	13,370	14,746
70 to 74	5	35	40	2,656	35,448	38,104
75 to 79	4	37	41	2,957	41,522	44,479
80 to 84	5	33	38	4,732	36,732	41,464
85 to 89	6	35	41	2,990	42,536	45,526
90 & Up	5	37	42	2,514	27,128	29,642
<b>Total</b>	<b>36</b>	<b>229</b>	<b>265</b>	<b>\$ 25,952</b>	<b>\$ 231,121</b>	<b>\$ 257,073</b>

**Age Distribution**



**Average Benefit**





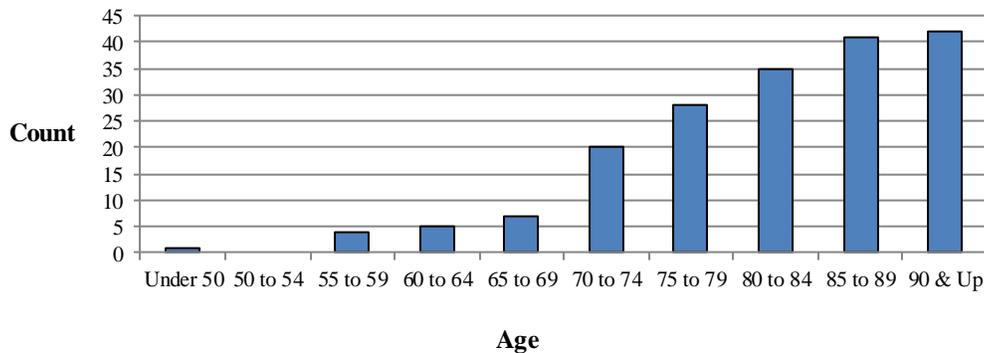
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF BENEFICIARIES**  
as of December 31, 2014

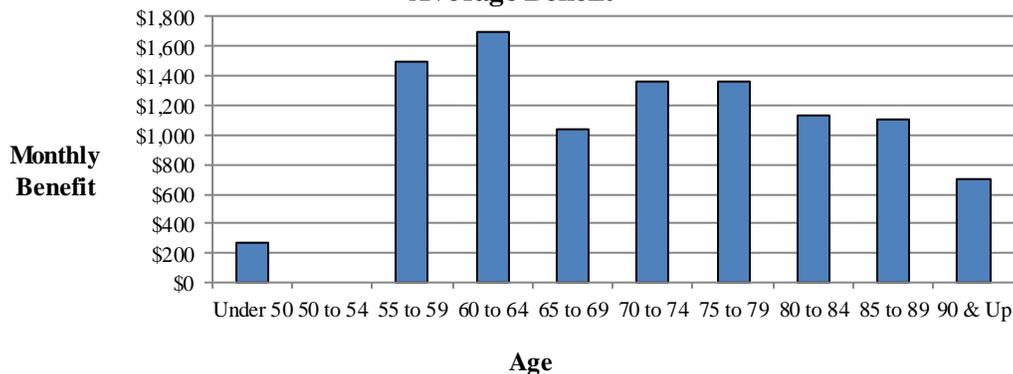
Plan 1

Age	Number			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	0	1	1	\$ 0	\$ 272	\$ 272
50 to 54	0	0	0	0	0	0
55 to 59	0	4	4	0	5,971	5,971
60 to 64	2	3	5	2,662	5,791	8,453
65 to 69	0	7	7	0	7,221	7,221
70 to 74	2	18	20	1,506	25,766	27,272
75 to 79	3	25	28	2,608	35,299	37,907
80 to 84	5	30	35	4,732	35,080	39,812
85 to 89	6	35	41	2,990	42,536	45,526
90 & Up	5	37	42	2,514	27,128	29,642
<b>Total</b>	<b>23</b>	<b>160</b>	<b>183</b>	<b>\$ 17,012</b>	<b>\$ 185,064</b>	<b>\$ 202,076</b>

**Age Distribution**



**Average Benefit**





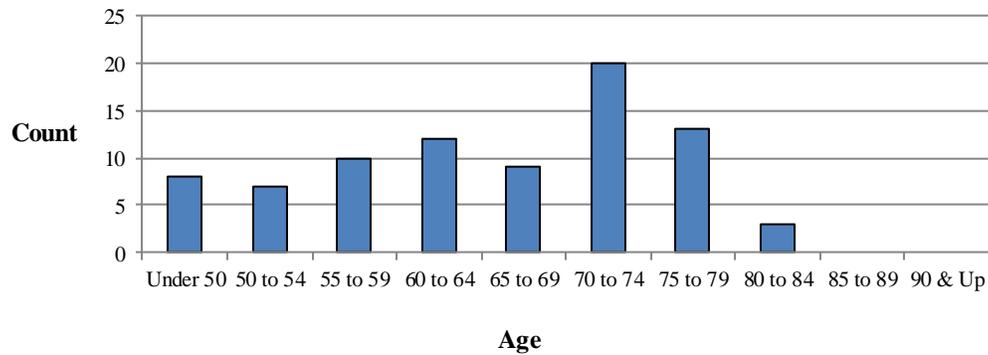
**APPENDIX A: SUMMARY OF MEMBERSHIP DATA**

**SUMMARY OF BENEFICIARIES**  
as of December 31, 2014

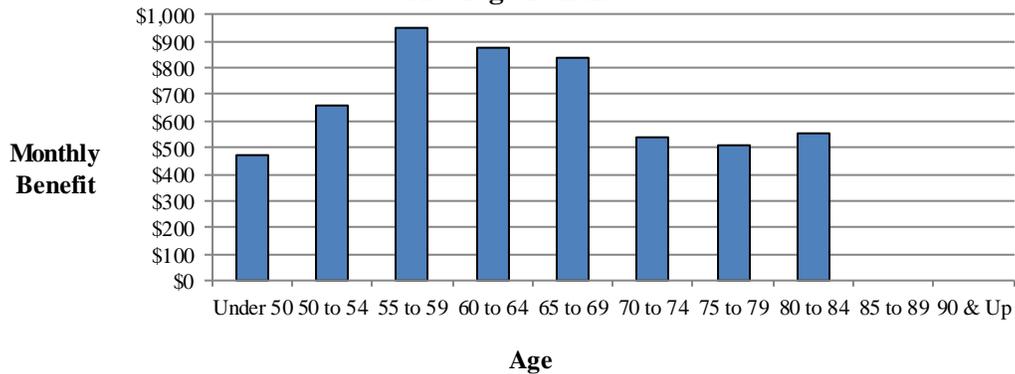
Plan 2

Age	Number			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	1	7	8	\$ 564	\$ 3,212	\$ 3,776
50 to 54	2	5	7	1,550	3,070	4,620
55 to 59	3	7	10	3,455	6,026	9,481
60 to 64	1	11	12	496	10,043	10,539
65 to 69	2	7	9	1,376	6,149	7,525
70 to 74	3	17	20	1,150	9,682	10,832
75 to 79	1	12	13	349	6,223	6,572
80 to 84	0	3	3	0	1,652	1,652
85 to 89	0	0	0	0	0	0
90 & Up	0	0	0	0	0	0
<b>Total</b>	<b>13</b>	<b>69</b>	<b>82</b>	<b>\$ 8,940</b>	<b>\$ 46,057</b>	<b>\$ 54,997</b>

**Age Distribution**



**Average Benefit**





## **Summary of Benefit Provisions**

### **Defined Benefit Plans 1 and 2**

**Plan 1** is applicable to members employed prior to July 18, 1981 who have not elected to be covered by Plan 2.

**Plan 2** is applicable to members employed or re-employed on or after July 18, 1981 and before January 1, 1994 and to other employees who have elected Plan 2 coverage.

**Plan 3** is applicable to members employed on or after January 1, 1994 who have not become covered by Plan 2. Plan 3 members are automatically transferred to Plan 2 after they have 7 years of service unless they file an irrevocable election to remain in Plan 3.

#### **NORMAL RETIREMENT (NO REDUCTION FACTOR)**

**Eligibility – Plan 1:** Age 60 with 7 or more years of service, or any age with 30 or more years of service.

**Eligibility – Plan 2:** Age 62 with 7 or more years of service (effective August 1, 1990).

**Amount of Pension – Plan 1:** Service times 2.5% of Final Average Salary to a maximum of 75% of Final Average Salary.

**Amount of Pension – Plan 2:** Service times 2.25% of Final Average Salary to a maximum of 75% of Final Average Salary (effective January 1, 2000).

**Final Average Salary – all plans:** Average for the 3 consecutive years of service which produce the highest average and which are within the last 10 years of service.

#### **EARLY RETIREMENT (WITH REDUCTION FACTOR)**

**Eligibility – all plans:** Age 55 with 7 or more years of service.

**Amount of Pension – Plan 1:** Computed as for normal retirement, but reduced for each month retirement precedes age 60. The reduction is 0.05 of 1% if service is 29 years but less than 30 years, increasing by 0.05 of 1% for each additional year of service less than 30 years, to a maximum of 0.50 of 1% if service is less than 21 years.

**Amount of Pension – Plan 2:** Computed as for normal retirement, but reduced for each month retirement precedes age 62. The reduction is 0.6% per month for every year of age less than 62 with a maximum reduction of 50.4% at age 55.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **DEFERRED RETIREMENT (VESTED TERMINATION)**

**Eligibility – all plans:** 7 or more years of service. A terminated employee may apply for a reduced pension upon meeting the applicable age requirement for early retirement or an unreduced pension upon meeting the applicable age requirement for normal retirement. A terminated employee may elect a refund of employee contributions, plus applicable interest, in lieu of a deferred retirement benefit.

**Amount of Pension – all plans:** An amount computed as for normal retirement. Vested deferred pensions are adjusted during the deferral period based on changes in National Average Earnings, up to 5.5% annual adjustments.

### **DEFERRED RETIREMENT OPTION PLAN (DROP)**

**Eligibility – all plans:** Member must be eligible to retire under early reduced or normal age and/or service requirements and elect to participate in DROP for up to 5 years.

**Amount of Benefit – all plans:** Benefit computed based on years of service, Final Average Salary as of the DROP election date, and length of DROP period. Benefit is paid into member's notional DROP account during the deferral period. Member and City continue to make required employee and employer contributions during the deferral period. Interest at an annual rate of 5%, compounded monthly, is credited to the notional DROP account. Voluntary termination of employment during the DROP period results in loss of accrued interest. Balance of DROP account is payable within 90 days of actual termination of employment.

### **SERVICE-CONNECTED DISABILITY**

**Eligibility – all plans:** No age or service requirement. Requires total and permanent disability, as defined in State worker's compensation act, for employment by the City in a position commensurate with the employee's training, experience and education.

**Amount of Pension – Plan 1:** 60% of final rate of Salary.

**Amount of Pension – Plan 2:** 50% of final rate of Salary.

### **NON-SERVICE DISABILITY**

**Eligibility – all plans:** 7 or more years of service. Requires total and permanent disability for employment by the City in a position commensurate with the employee's training, experience and education.

**Amount of Pension – Plan 1:** 30% of Final Average Salary plus 1% of Final Average Salary times service over 7 years; maximum is 50% of Final Average Salary.

**Amount of Pension – Plan 2:** 25% of final rate of Salary.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **POST-RETIREMENT SURVIVOR BENEFITS**

**Eligibility – all plans Surviving Spouse:** Must have been married to retired employee for one year or more, at time of death if retired after January 1, 2000. If retired prior to January 1, 2000, must have been married to retired employee at retirement.

**Eligibility – all plans Minor Children:** Must be less than 18 years old.

**Amount of Pension – all plans Surviving Spouse:** 50% of amount that was being paid to retiree.

**Amount of Pension – all plans Minor Child with Surviving Spouse:** 10% of the member's Final Average Salary for each child under age 18. Maximum, including surviving spouse benefit, is 75% of Final Average Salary.

**Amount of Pension – all plans Minor Child without Surviving Spouse:** 20% of the member's Final Average Salary for each child under age 18. Maximum benefit is 60% of Final Average Salary.

### **POST-RETIREMENT FUNERAL BENEFITS**

**Eligibility – Designated Beneficiary:** Must have been designated by the retired employee.

**Amount of Benefit – Plan 1:** \$1,500

**Amount of Benefit – Plan 2:** None

### **PRE-RETIREMENT SURVIVOR BENEFITS**

**Eligibility – Surviving Spouse:** Death of employee with 7 or more years of service.

**Eligibility – Designated Beneficiary:** The beneficiary designated by an unmarried member or by a member who fails to meet the 7 year service requirement for the surviving spouse benefit.

**Amount of Pension – Surviving Spouse:** 50% of amount that that the deceased employee would have been entitled to had he/she been on an unreduced retirement at time of death.

**Amount of Pension –Designated Beneficiary:** The deceased employee's contributions, plus applicable interest, plus one month's Salary for each full year of service up to a maximum benefit of 6 months of Salary.

### **OTHER TERMINATION BENEFITS**

**Eligibility – all plans:** Termination of employment without eligibility for any other benefit.

**Amount of Benefit – all plans:** Accumulated employee contributions with interest at 5% per year compounded monthly are refunded.



## **APPENDIX B: SUMMARY OF BENEFIT PROVISIONS**

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### **POST-RETIREMENT ADJUSTMENTS OF PENSIONS**

**Eligibility – Plan 1:** Completion of 12 months of retirement.

**Eligibility – Plan 2:** If retired on or after January 1, 2000, completion of 12 months of retirement. If retired before January 1, 2000, there is no adjustment (effective February 19, 2000).

**Annual Amount – Plan 1:** 3% of the original base amount of benefit (simple COLA).

**Annual Amount – Plan 2:** 2% of the original base amount of benefit (simple COLA).

### **EMPLOYEE CONTRIBUTIONS**

Plan 1: 6.4% of total compensation

Plan 2: 4.7% of base salary and longevity pay

Plan 3: 4.7% of base salary and longevity pay

### **CITY CONTRIBUTIONS**

Actuarially determined amount which together with employee contributions and investment earnings will fund the obligations of the System in accordance with accepted actuarial principles

Plan 3: 4.7% of base salary and longevity pay, less forfeitures from non-vested terminations.

### **UNUSED SICK LEAVE**

Each bi-weekly service credit of accumulated unused sick leave is converted to a service credit for the purpose of computing annual benefit amounts.

### **VESTING OF CONTRIBUTIONS**

**Plan 3:** Member contributions and investment earnings thereon are 100% vested. City contributions and investment earnings thereon are 25% vested after 3 years of service, 50% vested after 5 years of service, and 100% vested after 7 years of service.

### **DISTRIBUTION OF VESTED ACCOUNTS**

**Plan 3:** Vested accounts are payable upon termination of City employment or death. Available forms of payment are prescribed by the Board.

### **DISABILITY RETIREMENT**

**Plan 3:** Service and non-service connected disability benefits are the same as those of Plan 2. Plan 3 members may alternatively elect to receive a refund of their Plan 3 vested account.



## **APPENDIX C: ACTUARIAL COST METHOD AND ASSUMPTIONS**

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### **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 liability. Deducting actuarial assets from the actuarial liability determines the unfunded actuarial liability or (surplus). The unfunded actuarial liability/(surplus) is financed as a level percent of member payroll over an open 20-year period.

### **ACTUARIAL ASSUMPTIONS**

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

The principal areas of risk which require experience assumptions about future activities of the Retirement 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 termination of employment by active members
- (v) 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 present covered person survives – a period of time which can be as long as a century.

Actual experience of the Retirement 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). A complete review of the actuarial assumptions was completed in 2014. The use of updated assumptions was first effective with the December 31, 2014 valuation.

**Investment Rate of Return** (net of administrative expenses): This assumption is 7.75% a year, compounded annually and consists of 3.25% long-term price inflation and a 4.50% real rate of return over price inflation. This assumption, used to equate the value of payments due at different points in time, was adopted by the Board and was first used for the December 31, 1981 valuation, although the allocation between inflation and real return has changed periodically, most recently in 2014.

**Salary Increase Rates:** These rates are used to project current pay amounts to those upon which a benefit will be based. This table was first used in the December 31, 2014 valuation.

Years of Service	Annual Rate of Salary Increase for Sample Service Durations			
	Inflation Component	Productivity Component	Merit and Longevity	Total
1	3.25%	0.75%	3.20%	7.20%
2	3.25	0.75	3.00	7.00
3	3.25	0.75	2.80	6.80
4	3.25	0.75	2.60	6.60
5	3.25	0.75	2.40	6.40
6	3.25	0.75	2.20	6.20
7	3.20	0.75	2.00	6.00
8	3.25	0.75	1.80	5.80
9	3.25	0.75	1.70	5.70
10	3.25	0.75	1.60	5.60
11	3.25	0.75	1.50	5.50
12	3.25	0.75	1.40	5.40
13	3.25	0.75	1.30	5.30
14	3.25	0.75	1.20	5.20
15	3.25	0.75	1.06	5.06
16	3.25	0.75	0.92	4.92
17	3.25	0.75	0.78	4.78
18	3.25	0.75	0.64	4.64
19	3.25	0.75	0.50	4.50
20	3.25	0.75	0.50	4.50
21	3.25	0.75	0.50	4.50
22	3.25	0.75	0.50	4.50
23	3.25	0.75	0.50	4.50
24	3.25	0.75	0.50	4.50
25	3.25	0.75	0.50	4.50
Over 25	3.25	0.75	0.25	4.25



**APPENDIX C: ACTUARIAL COST METHOD AND ASSUMPTIONS**

The salary increase assumptions will produce 4.0% annual increases in active member payroll (the inflation and productivity base rate) given a constant active member group size. This is the same payroll growth assumption used to amortize the unfunded actuarial liability. The real rate of return over assumed wage growth is 3.75% per year.

Changes actually experienced in average pay and total payroll (excluding DROP participants) have been as follows:

	Year Ended					5 Year (Average) Compounded Annual Increase
	12/31/14	12/31/13	12/31/12	12/31/11	12/31/10	
Average Payroll	1.7%	0.8%	3.2%	(1.1)%	1.1%	1.1%
Total Payroll	3.0%	(0.2)%	2.3%	(10.0)%	(4.3)%	(2.0)%

**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: RP-2000 Healthy Annuitant Table (ages set forward two years for males, zero for females)

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

Active Members: RP-2000 Employee Table (ages set forward two years for males, zero for females)

The RP-2000 Tables are used with generational mortality.

Sample Ages <sup>(1)</sup>	Present Value of \$1 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
50	\$136.27	\$141.98	30.4	34.6
55	128.67	135.41	25.7	29.7
60	118.41	127.04	21.2	25.1
65	150.86	116.91	16.9	20.7
70	91.20	104.80	13.0	16.7
75	75.12	90.90	9.7	13.0
80	58.98	75.76	6.9	9.8
85	44.42	60.20	4.8	7.1

(1) Reflects values from the basic table based on ages in 2000

This table was first used for the December 31, 2004 actuarial valuation.



**APPENDIX C: ACTUARIAL COST METHOD AND ASSUMPTIONS**

**Rates of Retirement and Deferred Retirement Option Plan (DROP) Elections:** These rates are used to measure the probability of eligible members retiring under either the regular retirement provisions or from the Deferred Retirement Option Plan.

**Percent Retiring During Year**

Retirement		
Age	Plan 1	Plan 2
55	15%	3%
56	15	3
57	15	3
58	15	3
59	15	3
60	40	3
61	40	20
62	20	40
63	20	25
64	20	25
65	100	50
66	N/A	35
67	N/A	20
68	N/A	20
69	N/A	20
70	N/A	100

In addition, the following assumptions would apply to members in this category:

**Plan 1:** 70% of members with 30 or more years of service will elect the DROP with an average DROP period of 48 months. The remaining 30% are assumed to retire immediately.

**Plan 2:** 70% of members with 33.33 or more years of service and are at least age 62 will elect the DROP with an average DROP period of 36 months.

All members of the retirement system were assumed to retire on or before age 70.

Deferred vested members are assumed to retire at age 62.

This assumption was first used in the December 31, 2014 actuarial valuation.



## APPENDIX C: ACTUARIAL COST METHOD AND ASSUMPTIONS

**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.

Years of Service	Probability of Terminating During Year
0	13.00%
1	13.00
2	11.00
3	9.00
4	8.00
5	7.00
6	6.00
7	5.00
8-12	4.50
13	4.00
14	3.50
15	3.00
16	2.75
17	2.50
18	2.50
19	2.25
20 or more	2.00

These rates were first used for the December 31, 2014 valuation.

**Forfeiture of Vested Benefits:** The assumption is that a percentage of the actuarial present value of vested termination benefits will be forfeited by a withdrawal of accumulated contributions.

Years of Service	Percent Forfeiting
Under 15	60%
15-19	40
20-24	20
25 or more	0

This table was first used for the December 31, 2004 actuarial valuation.

**Rates of Disability:** There is no disability assumption. This assumption was first eliminated in the December 31, 2014 valuation.

**Administrative Expenses:** Assumed to be paid from investment earnings.

**Active Member Group Size:** Assumed to remain constant.

**Vested Deferred Pensions:** Amounts are assumed to increase during the deferral period at 4.0% per year, compounded annually. This assumption was first used for the December 31, 2009 valuation.



## APPENDIX C: ACTUARIAL COST METHOD AND ASSUMPTIONS

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### MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

**Marriage Assumption:** 70% of non-retired participants are assumed to be married for purposes of death benefits. In each case, the male was assumed to be three years older than the female.

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

**Eligibility Testing:** Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year at the start of the year in which the decrement is assumed to occur.

**Benefit Service:** Service calculated to the nearest month, as of the decrement date, is used to determine the amount of benefit payable.

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

**Miscellaneous Loading Factors:** The calculated normal retirement benefits are increased by 2.5% to account for the inclusion of unused sick leave in the calculation of Service. This assumption was changed with the December 31, 2014 valuation.

**Plan 3 Transfer Assumption:** For purposes of the valuation, Plan 3 members are assumed to transfer to Plan 2 if they acquire 7 years of service. An additional reserve is held for this group and equals the excess, if any, of the actuarial value of assets over the market value of assets. This assumption was changed with the December 31, 2004 valuation.



## APPENDIX D: GLOSSARY OF TERMS

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<b>Actuarial Liability</b>	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 liability”
<b>Actuarial Assumptions</b>	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.
<b>Accrued Service</b>	Service credited under the system which was rendered before the date of the actuarial valuation.
<b>Actuarial Equivalent</b>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate assumptions.
<b>Actuarial Cost Method</b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement system benefit between future normal cost and actuarial liability; sometimes referred to as the “actuarial funding method”.
<b>Experience Gain (Loss)</b>	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
<b>Actuarial Present Value</b>	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.
<b>Amortization</b>	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
<b>Normal Cost</b>	The actuarial present value of retirement system benefits allocated to the current year by the actuarial cost method.
<b>Unfunded Actuarial Liability</b>	<p>The difference between actuarial liability and the valuation assets.</p> <p>Most retirement systems have unfunded actuarial liability. They arise each time new benefits are added and each time an actuarial loss is realized.</p> <p>The existence of unfunded actuarial liability is not in itself bad, anymore than a mortgage on a house is bad. Unfunded actuarial liability does not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial liability and the trend in its amount.</p>