

NEBRASKA RETIREMENT SYSTEMS COMMITTEE

2015

Report on Political Subdivision Underfunded Defined Benefit Pension Plans

Committee Members

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Report on Underfunded Political Subdivision Defined Benefit Plans

Background

In 2014 Senator Mello introduced LB 759 which was passed by the Legislature. The legislative intent behind this reporting requirement is to provide additional state oversight of defined benefit plans offered by political subdivisions.

LB 759, codified at Neb. Rev. Stat. 13-2402, requires any governing entity that offers a defined benefit plan to file a report with the Nebraska Retirement Systems Committee if the most recent actuarial valuation report indicates that (1) the contributions do not equal the actuarial requirement for funding or (2) the funded ratio of the plan is less than eighty percent. The report must include, at a minimum, an analysis of the future benefit changes, contribution changes, or other proposed corrective action to improve the plan's funding condition.

The Nebraska Retirement Systems Committee may require the entity to present the report to the Committee at a public hearing.

If a governmental entity fails to file the required information with the Committee, the State Auditor is authorized to audit the public pension system, or cause it to be audited at the political subdivision's own expense.

The annual reporting requirement began November 1, 2014. In 2015, the reporting date was changed to October 15 of each year.

2015 Underfunded Pension Plans

In 2015, there were five defined benefit plans offered by political subdivisions that are funded below 80% funding level.

POLITICAL SUBDIVISION	2015 FUNDING STATUS	2014 FUNDING STATUS
Douglas County Employees	66.8%	64.6%
Eastern Nebraska Health Agency	--	76.0%*
Lincoln Police and Fire	66.0%	72%
Omaha Civilian Employees	56.0%	54.0%
Omaha Police and Fire	50.0%	47.0%

*Actuarial Valuations are conducted every other year.

The funding status for Douglas County Employees, Omaha Civilian Employees, and Omaha Police and Fire improved slightly from 2014. Lincoln Police and Fire's funding status declined by 6%.

Required Reporting Information

This year the Committee created a Reporting Form and asked each political subdivision to provide the information provided on the Form. Each political subdivision completed the Form and presented the information to the Committee at a public hearing on November 18, 2015. The Reporting Form required each entity to report the following information:

1. A description of the following data for the current and previous plan year:
 - a. Funding status
 - b. Net assets (actuarial value)
 - c. Unfunded actuarial accrued liability (UAAL)
 - d. Normal cost (as a percentage of compensation)
 - e. Total Actuarial required contribution (as a percentage of compensation)
 - f. Member and employer contribution rates
 - g. Actuarial required contribution (dollar amount)
 - h. Percentage of amount of actuarial required contribution contributed
2. A brief narrative of the circumstances that led to the current underfunding of the retirement plan.
3. A description of any changes in the actuarial methods and/or assumptions since the previous actuarial valuation report.
4. A description of corrective actions implemented to improve the funding status of the plan including, but not limited to, benefit changes, increased contribution rates and/or employer contributions. Include any actuarial projections based on these changes.
5. A description of recent or ongoing negotiations with bargaining groups that may impact plan funding.
6. The most recent Actuarial Valuation Report. If the Valuation Report is completed biannually (or less often), the inclusion of an updated report for the interim year/s.
7. The most recent Actuarial Experience Study

These materials are included in the Appendices to this Report.

Summary of 2011-2015 Actuarial and Investment Information

Douglas County Employees Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVEST. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	COUNTY RATES	% OF ARC PAID
2015	66.8%	7.5%	5.2%	11.3%	16.5%	8.5%	8.5%	
2014	64.6%	7.5%	18.9%	11.5%	17.0%	8.5%	8.5%	104%
2013	60.6%	7.5%	10.3%	11.4%	17.2%	8.5%	8.5%	99%
2012	60.0%	7.5%	.5%	11.4%	16.9%	8.5%	8.5%	91%
2011	61.0%	7.5%	11.0%	11.6%	16.7%	8.5%	8.5%	100%

Eastern Nebraska Health Agency Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVEST. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	AGENCY RATES	% OF ARC PAID
2015*								
2014	76%	7%	15.6%	7.1%	10.8%	2.75%	7.5%	100.4%
2013		7%	9.1%	6.6%	11.8%	2.75%	7.0%	84.6%
2012	64%	7%	.8%	6.8%	11.9%	2.75%	6.5%	79.4%
2011		7%		7.8%	11.7%	2.75%	6.0%	76.2^
2010	62%	7%		7.3%	11.0%	2.75%	5.5%	75.5%

*Eastern Nebraska Human Services Agency Plan year ends December 31 so the 2015 Valuation Report is not yet available. Actuarial Valuations are conducted every other year.

Lincoln Police and Fire Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVEST. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2015*								
2014	66%	6.75%	16.49%	18.33%	24.44%	6.75%	20.76%	101%
2013	72%	7.5%	12.03%	19.13%	21.19%	6.82%	16.92%	96%
2012	77%	7.5%	5.60%	19.01%	19.49%	6.75%	16.67%	109%
2011	81%	7.5%	12.48%	18.89%	18.02%	6.63%	12.12%	93%
2010	88%		3.99%	18.83%	15.62%	6.69%	11.73%	107%

*Lincoln Fire & Police Plan year ends August 31 so the 2015 Valuation Report is not yet available.

Omaha Police and Fire Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVEST. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2015	50%	8%	4.4%	22.191%	50.031%	16.195%	34.386%	96%
2014	47%	8%	18%	23.103%	52.138%	*15.35%-17.23%	32.98 – 33.67%	83%
2013	45%	8%	12.6%	23.525%	62.272%	16.695%	33.366%	65%
2012	43%	8%	-0.2%	25.851%	65.257%	15.896%	27.620%	62%
2011	43%	8%	16%	25.836%	63.469%	15.913%	27.582%	44%

Omaha Civilian Employees Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVEST. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2015	56%	8%	4.7%	9.881%	33.724%	10.075%	18.775%	
2014	54%	8%	16%	13.231%	38.454%	10.075%	17.775%	68%
2013	54%	8%	11%	13.231%	38.454%	10.075%	13.77%	41.33%
2012	56%	8%	-0.8%	13.730%	42.561%	10.075%	11.775%	46.09%
2011	59%	8%	17%	13.716%	34.998%	9.325%	11.025%	45.44%

Conclusion

The funding status of Douglas County, Omaha Civilian and Omaha Police and Fire has improved slightly since 2014, which was the first year the reports were filed with the Committee. The funding status of Lincoln Police and Fire has declined 6%. Since the Eastern Nebraska Health Agency only conducts an actuarial valuation every two years, there is no new funding status reported to date in 2015.

In most of the plans the employer contribution rates have increased, and in all plans the percentage of the actuarial required contribution (ARC) has increased since 2014.

The Committee will continue to monitor the funding progress of each plan and the political subdivision's corrective actions to assure a continued commitment to adequate funding so these obligations are not shifted onto future generations.

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APPENDICES

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Appendix A

Douglas County Employees Retirement Plan Information

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LB 759 Reporting Form

1)	<u>2015</u>	<u>2014</u>
a) Funding Status	66.8%	64.6%
b) Net Assets – Actuarial Value	\$263.8MM	\$245.8MM
c) Unfunded Actuarial Accrued Liability	\$131.1MM	\$134.9MM
d) Normal Cost	\$12.8MM	\$12.7MM
e) Member & Employer Contribution Rates	8.5%	8.5%
f) Actuarial Required Contribution	\$18.7MM	\$18.8MM

2) See attached narrative.

3) In 2015, the disability benefit provision was removed from the Pension Plan and has been replaced by a fully-insured long-term disability plan. Removing the disability benefit from the pension plan is estimated to reduce the plan liability by \$2.4 million (0.6%) as well as eliminate the disability insurance premium from the plan (\$335,000 in 2014).

4) See attached narrative.

5) There are no impacts on the Douglas County Pension Plan from any recent or ongoing labor negotiations.

6) The April 2015 Actuarial Experience Analysis is attached.

7) The January 1, 2015 Interim Actuarial Review is attached.

Douglas County, Nebraska
Analytical Report on Defined Benefit Pension Plan

The most recent actuarial valuation was performed by the Silverstone Group for the Douglas County Employees' Defined Benefit Pension Plan as of January 1, 2015. The report showed the plan was 66.8% funded, had net assets on an actuarial basis of \$263.8 million, and had an unfunded actuarial accrued liability of \$131.1 million. The plan had 3,472 participants and an equal member and employer contribution rate of 8.5% of pay. The normal cost was \$12.8 million and the actuarial required contribution was \$18.7 million. The funded ratio has increased from 64.6% on January 1, 2014.

To understand why the Douglas County DB Plan is only 66.8% funded, it is important to look at the recent history of changes to the Plan. In 1996, the Plan was 97.8% funded. In 1996 for law enforcement and in 1997 for all other plan participants, the following changes were made:

- Unreduced benefit upon Rule of 75.
- Benefit formula increased from 1.5% of pay per year of service to 2% of pay per year of service.

In 1998 a 3% COLA was approved, in 2000 a 4% COLA was approved, and in 2002 a 3% COLA was approved. By 2004, the funding ratio had fallen to 64.8%. The Plan is a contributory plan with the County's contribution equal to the Member's contribution. The County and Member contributions each increased from 5.5% of pay in 2005 to the present level of 8.5% of pay by 2008. Poor stock market performance during the Great Recession also negatively impacted the Plan's funded ratio which reached a low point of 57.8% in 2010.

The members of the Pension Committee and the County Board of Commissioners recognized that substantive changes had to be made to the Plan rules to ensure the financial viability of the Plan for its current participants. Accordingly, effective for all employees hired after December 31, 2011, the following pension provisions were put in place:

- No rule of 75.
- Benefit formula reduced from 2% of pay per year of service to 1.5% of pay per year of service.
- Maximum retirement income reduced from 60% of participants final average compensation to 45%.

Sheriff Deputies (who account for about 10% of total plan participants) have slightly different plan provisions which provide for increased benefits with early retirement.

These plan changes, along with no COLA increases being given since 2002, have increased the plan funding ratio by 9.0 percentage points from its low point in 2010 to 66.8% as of January 1, 2015. These plan changes have also materially impacted the Plan's forecast of funded percentage so that the forecast now projects the plan achieving acceptable funded levels in the future as shown in the following forecast developed by Silverstone in January, 2015:

<u>Year</u>	<u>Estimated Funded Percentage*</u>
2015	66.8%
2020	71.4%
2025	75.1%
2030	80.6%
2035	89.3%

**Forecast based on current plan assumptions.*

In addition, in 2015 the Long-Term Disability (LTD) program was removed from the Pension Plan and put it into a separate fully-insured benefit plan. Pulling the LTD program out of the pension plan will change the actuarial assumptions so as to immediately increase the funded ratio by half a percentage point which will increase to approximately two percentage points over the longer 20 year forecast period. No recent or ongoing negotiations with any employee labor groups are expected to impact the funding of the pension plan.

The Douglas County Pension Committee, Board of Commissioners, and administrative staff believe the aforementioned combination of actions will significantly improve the financial condition of the Douglas County Employee Defined Benefit Pension Plan and ensure the financial viability and payment of benefits to participants going forward.

April 23, 2015

PERSONAL AND CONFIDENTIAL

Mr. Joe Lorenz
Budget & Finance Director
Douglas County Employees' Retirement Plan
1819 Farnam Street
Omaha, NE 68183

RE: 2015 Interim Actuarial Review

Dear Joe:

Enclosed are fifteen copies of the January 1, 2015 interim actuarial review for the Douglas County Employees' Retirement Plan. I look forward to presenting this review to the Pension Committee next week.

If you have any questions about the information provided in the report, please give me a call.

Sincerely,



Glen C. Gahan, FSA
Principal

GCG/km

Enclosures

cc: Ms. Kathy Adair – Douglas County



**DOUGLAS COUNTY
EMPLOYEES' RETIREMENT PLAN**

Interim Actuarial Review

January 1, 2015



SilverStone
GROUP

Wisdom at Work.

SILVERSTONEGROUP.COM

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Purpose of Interim Actuarial Review

Purpose - The interim Actuarial Review is prepared for the year between the biannual Actuarial Valuation of the Employees' Retirement Plan to provide:

- An update of the funding status
- An update of plan liabilities
- An update of contribution requirements

Review of Plan Experience

- Status of Plan Participants
- Value of Plan Assets

Determine Actuarial Accrued Liability and Annual Costs

Evaluate Unfunded Accrued Liability

Actuarial Review Based On:

- Existing Plan Provisions as of January 1, 2015
- Current Active and Non-Active Participant Data
- Actuarial Value of Plan Assets
- Actuarial Methods and Assumptions
- 2015 Experience Analysis

Actuarial Assumption Changes

The 2015 experience analysis reviewed the following actuarial assumptions. Based on a comparison of actual to expected experience, no changes to the actuarial assumptions as of January 1, 2015 are recommended. See the separate 2015 Experience Analysis for details of this review.

Assumptions Reviewed:

- Rates of Termination
- Rates of Retirement
 - Rule of 75

- Other than Rule of 75

- Rates of Salary Increases

Age	Percentage Increase
18-44	5.50%
45-54	5.00%
55+	4.50%

- Rates of Mortality
- Rate of Investment Return

Participant Data

	Plan Year Beginning January 1	
	2014	2015
Active Participants:		
Under Age 65	2,054	2,057
Age 65 & Over	18	24
Total	2,072	2,081
Non-Active Participants:		
Retired	1,123	1,164
Vested Terminated	108	117
Terminated Non-Vested	110	84
Disabled	30	26
Total Participants	3,443	3,472
Annual Compensation:		
Total, Under Age 65	\$110,800,382	\$113,370,010
Average Per Participant	53,944	55,114
Annual Pension Benefit		

Current Retired	19,800,459	21,016,671
Immediate Disability Payments	195,213	184,657
Deferred to Age 65		
Vested Terminated	1,029,257	1,119,342
Disabled	670,219	579,327

Market Value of Plan Assets

Summary of Changes in Value of Plan Assets

Market Value of Plan Assets on January 1, 2014		\$258,340,593
Plus Increases		
Employee Contributions	9,802,777	
County Contributions	9,757,496	
Investment Experience	13,293,472	
	32,853,745	
Less Decreases		
Pensions Paid to Retirees	20,395,617	
Refunds to Terminated EEs	2,255,631	
Disability Premiums/Administration	335,766	
Administrative Expenses	657,842	
	23,644,856	
Market Value of Plan Assets on January 1, 2015		\$267,549,482
Approximate Rate of Return		5.2%

Plan Investments US Bank	% of Total	Market Value
Operating Account - Cash and Cash Equivalents	2.1%	\$5,601,092
Atlanta Capital	11.0%	29,411,701
State Street	9.2%	24,716,586
P J Morgan	4.0%	10,630,872

Winslow	11.3%	30,145,462
Sanderson International	3.9%	10,336,204
Harding Loevner	5.4%	14,326,130
Herndon International	9.7%	25,972,432
Wells Cap	4.2%	11,530,950
United of Omaha Insurance Company		
Retired Contract #6148 - Annuity Program	37.8%	101,027,352
Retired Contract #12795 - Annuity Program	1.4%	3,850,701
Total	100.0%	\$267,549,482

Description of Actuarial Value of Assets

Objective Since January 1, 1986, an actuarial value of plan assets has been used to determine annual contribution requirements and to evaluate the funding status of the Retirement Plan. An actuarial value of plan assets is used to smooth fluctuations in market value from one valuation date to the next.

Description Actuarial value is equal to:

- Adjusted value of plan assets
- Plus, one-half of the excess of market value over the adjusted value of plan assets

Where adjusted value of plan assets equal:

- Actuarial value of plan assets on the prior valuation date
- Plus contributions with expected interest
- Less pensions paid, refunds and other disbursements with expected interest

Actuarial Value of Plan Assets

Actuarial Value of Plan Assets on January 1, 2014		\$245,830,308
Plus Increases		
Employee Contributions	9,802,777	
County Contributions	9,757,496	
Expected Interest	18,284,101	
	<hr/>	37,844,374
Less Decreases		
Pensions Paid to Retirees	20,395,617	
Refunds to Terminated EEs	2,255,631	
Disability Premiums/Administration	335,766	
Administrative Expenses	657,842	
	<hr/>	23,644,856
Adjusted Value on January 1, 2015		260,029,826
Market Value on January 1, 2015		267,549,482

One-Half Excess, Market Value Less Adjusted Value	3,759,828
Actuarial Value of Plan Assets on January 1, 2015	\$263,789,654
Approximate Rate of Return	9.0%
Actuarial Value as a % of Market Value	98.6%

Unfunded Accrued Liability

	Plan Year Beginning January 1	
	2014	2015
	<hr/>	<hr/>
Actuarial Accrued Liability		
1. Active	\$178,296,658	\$182,155,802
2. Vested Terminated Participants	5,947,577	6,622,371
3. Terminated Non-Vested*	765,808	1,045,712
4. Disabled Participants	3,278,138	2,549,704
5. Retirees	192,439,790	202,473,444

6. Total (1) + (2) + (3) + (4) + (5)	380,727,971	394,847,033
Actuarial Value of Plan Assets		
7. Actuarial Value of Plan Assets	245,830,308	263,789,654
Unfunded Accrued Liability		
8. Unfunded Accrued Liability (6) - (7)	134,897,663	131,057,379
9. Ratio of Assets to Accrued Benefits (7) / (6)	64.6%	66.8%

Annual Normal Cost

	Plan Year Beginning January 1	
	2014	2015
Annual Normal Cost		
Retirement, Death, Termination and Disability	\$11,723,789	\$11,653,578
Immediate Disability Benefit	200,000	300,000
Annual Administrative Expense	775,022	802,648
Total	12,698,811	12,756,226
Expected Plan Contributions		
From Employees	9,418,032	9,636,451
From County	9,418,032	9,636,451
Total	18,836,064	19,272,902

Actuarially Determined Contribution

The Members contribute 8.5% of covered payroll annually to the Plan, with Sheriff members hired after July 1, 2011 contributing less after 32 years of service. The County contributes an annual amount equal to the Member contributions.

An actuarially determined contribution provides a measure of the amount of contributions to fund the benefits earned in the current year and provide for the 30year amortization of the unfunded accrued liability. The Plan is not currently being funded on this basis.

	Plan Year Beginning January 1	
	2014	2015
Annual Normal Cost	\$12,698,811	\$12,756,226
30-Year Amortization of the Unfunded Accrued Liability	6,120,752	5,946,505
Actuarially Determined Contribution	18,819,563	18,702,731

Actuarial Methodology

Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level Percent of Pay
Amortization Period	30 Years, Open Period
Actuarial Assumptions	Same, as described in report

Amortization of Unfunded Accrued Liability

	Plan Year Beginning January 1 2014	2015
	_____	_____
Unfunded Accrued Liability (UAL)	\$134,897,663	\$131,057,379
	12,698,811	12,756,226
Annual Normal Cost		
Expected Plan Contributions		
From Employees	9,418,032	9,636,451
From County	9,418,032	9,636,451
Total	18,836,064	19,272,902
Amount Available to Reduce UAL	6,137,253	6,516,676

History of Plan Changes

- 2012 Certain bargaining employees hired after June 30, 2011 and all non-bargaining employees hired after December 31, 2011. It is anticipated that all bargaining units will be under these same benefit provisions after their next contract is negotiated.
- 1.5% of pay per year of service (45% maximum)
 - No Rule of 75
 - 8.5% contribution rate
 - Early Retirement at age 50 and 10 years of service or age 60 and 5 years of service
 - Early Retirement reduction of 5% per year
- Sheriff Deputies hired after June 30, 2011 •
Benefit formula changed to the following:
- 1.0% of pay for 1 to 10 years of service
 - 2.0% of pay for 11 to 20 years of service
 - 2.5% of pay for 21 to 32 years of service
 - Contribution rate changed to the following:
 - 8.5% for 1-32 years of service
 - 7.5% at 33 years of service
 - 6.5% at 34 years of service
 - 5.5% at 35+ years of service
 - Early Retirement at age 53
 - Early Retirement reduction of 4.8% per year
 - No Early Retirement reduction if 30 or more years of service
- 2008 Member and County contribution rate increased from 7.5% to 8.5%
- 2007 Member and County contribution rate increased from 6.5% to 7.5%
- 2006 Member and County contribution rate increased from 5.5% to 6.5%
- 2002 Increase retiree pension by 3%, but not less than \$5 a month
- 2000 Increase retiree pension by 4%, but not less than \$5 a month
- 1998 Increase retiree pension by 3%, but not less than \$5 a month
- 1997 1. Rule of 75 for other than law enforcement
Unreduced benefit upon Rule of 75
2.0% benefit formula after January 1, 1962

History of Plan Changes

5.5% member contributions (continued)

- 1996
1. Rule of 75 for law enforcement
Unreduced benefit upon Rule of 75
2.0% benefit formula after January 1, 1962
5.5% member contributions
 2. Participation begins on first day of employment
 3. Increase retiree pension by 4% but not less than \$10 a month
- 1994
1. Benefit formula change to the following:
1% of pay for service before January 1, 1962
1.5% of pay for service after January 1, 1962
 2. Decrease in interest rate on employee contributions to 5% effective July 1, 1994
 3. Increase retiree pension by 3%
- 1992
1. Early Retirement Incentive Program (112 members elected benefit)
 2. Early Termination of Employment Incentive Program (188 members elected benefit)
 3. Increase retiree pension by 3%
- 1990
1. Benefit formula change to the following:
1% of pay for service before January 1, 1962
1.4625% of pay for service after January 1, 1962
 2. Increase retiree pension by 4%
 3. Vesting changed from 25% after 5 graded to 100% after 15 to 25% after 5 increased 15% a year up to 10
 4. Maximum Disability Benefit increased from \$36,000 to \$57,600
- 1988
1. Benefit formula change to the following:
1.425% of pay for service after January 1, 1962
1% of pay for service before January 1, 1962
 2. Increase retiree pension by 4%, but no less than \$5 a month
 3. Changed eligibility requirements to include participants hired after age 60
- 1986
1. Benefit formula change to the following:
1% of pay for service before January 1, 1962
1.2% of pay for service from January 1, 1962 to January 1, 1972
1.4% of pay for service after January 1, 1972

History of Plan Changes

2. Increase retiree pension by 6% but not less than \$5 a month
(continued)

- 1984
1. Increased benefit formula from 1.1% of pay to 1.2% for service after January 1, 1974
 2. Increase retiree pension by 6%, but not less than \$5 a month

- 1982
1. Added Special Early Retirement
 2. Benefit formula change from 1% of pay to 1.1% of pay for service after January 1, 1972
 3. Increase retiree pension by 6%, but not less than \$10 a month
 4. Changes in disability retirement provisions
 5. Changes in actuarial assumptions
 6. Special provisions for county employees change to state employees

- 1980
1. Special Early Retirement
 2. Change in service definition – unlimited sick leave
 3. \$10/month increase in pension to retirees
 4. Added Late Retirement Benefit

History of Plan Funding

Year	Actuarial Value Of Assets (\$1,000s)	Actuarial Accrued Liability		Funded Ratio	
		Before Changes (\$1,000s)	After Changes (\$1,000s)	Before Changes	After Changes
2015	\$263,790	\$394,847	\$394,847	66.8%	66.8%
2014	245,830	380,727	380,727	64.6%	64.6%
2013	219,494	362,117	362,117	60.6%	60.6%
2012	205,795	343,542	343,178	59.9%	60.0%
2011	196,119	321,700	321,700	61.0%	61.0%
2010	177,797	307,407	307,407	57.8%	57.8%
2009	167,994	290,127	290,127	57.9%	57.9%
2008	177,834	269,970	270,351	65.9%	65.8%
2007	165,309	253,386	248,986	65.2%	66.4%
2006	151,686	239,229	239,602	63.4%	63.3%
2005	142,403	221,642	221,642	64.2%	64.2%
2004	132,769	204,952	204,952	64.8%	64.8%
2003	125,238	188,697	188,697	66.4%	66.4%
2002	126,336	167,690	172,615	75.3%	73.2%
2000	117,626	124,906	127,011	94.2%	92.6%
1998	97,626	107,071	108,391	91.2%	90.1%
1996	81,626	78,202	83,472	104.4%	97.8%
1994	69,860	71,242	72,869	98.1%	95.9%
1992	60,912	59,747	66,161	101.9%	92.1%
1990	48,387	47,474	48,717	101.9%	99.3%
1988	37,662	36,212	37,390	104.0%	100.7%
1986	30,161	27,830	30,455	108.4%	99.0%
1984	21,752	20,912	22,203	104.0%	98.0%
1982	16,115	16,687	17,828	96.6%	90.4%
1980	11,468	15,229	15,597	75.3%	73.5%

Actuarial Cost Method

Annual costs were calculated using the Projected Unit Credit Actuarial Cost Method. Projected Unit Credit is one of the Accrued Benefit Actuarial Cost Methods. Using Projected Unit Credit, annual costs equal the sum of the normal cost and an amount to amortize the unfunded accrued liability. The normal cost is defined as the actuarial value of retirement and ancillary benefits that are allocated to the current year.

The unfunded accrued liability is equal to the accrued liability reduced by the actuarial value of plan assets. The accrued liability is defined as the actuarial value of retirement and ancillary benefits that have been allocated to years of service prior to the current year.

The method allocates an equal amount of a participant's projected retirement benefit to each year of service. The benefit at normal retirement is projected assuming salaries increase at the assumed rates. The projected retirement benefit is then divided by the participant's years of service to determine the portion of the retirement benefit allocated to each year. Service includes years following the later of the date of hire and July 1, 1952 (January 1, 1955 for former Board of Health participants) and prior to the assumed retirement age.

As experience develops under the Retirement Plan, actuarial gains and losses will result. Actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. Actuarial gains result from experience more favorable than assumed and reduce the unfunded accrued liability. Actuarial losses result from experience less favorable than assumed and increase the unfunded accrued liability. All actuarial gains and losses are included in the determination of the unfunded accrued liability as of the valuation date.

The annual costs for the insured disability benefit and annual administrative expense are included in the annual normal cost. The insured disability cost is calculated as the product of the premium rate and an estimate of insurable payroll provided by Douglas County.

Asset Valuation Method

The Actuarial Value of Plan Assets held in the pension trusts was calculated as the sum of the following:

- Adjusted Value of Plan Assets
- One-half of the excess of Market Value over the Adjusted Value of Plan Assets

The Adjusted Value of Plan Assets equals:

- Actuarial Value of Plan Assets on the prior valuation date, plus contributions and expected interest, less
- Pensions paid, refunds and other disbursements with expected interest

Actuarial Assumptions

Interest Rate 7.5% compounded annually.

Salary Scale Salaries were assumed to increase at an annual rate compounded annually following the valuation date varying by age, as illustrated below.

Age	Percentage Increase
18-44	5.50%
45-54	5.00%
55+	4.50%

Mortality Rates RP 2000 Projected to 2007.

Disability Rates Based on an Industry Experience Table

Age	Annual Disabilities Per 100 Members	
	Males	Females
35	0.11	0.20
40	0.16	0.29
45	0.27	0.39
50	0.48	0.53
55	0.87	0.73
60	1.30	0.99

Withdrawal Rates Based on rates as illustrated below:

Age	Rate
22	16.6%
27	15.8%
32	12.8%
37	10.8%
42	9.0%
47	6.3%
52	3.6%
57	0.9%

Accrued Sick Leave 7 days per year.

Actuarial Assumptions
(continued)

Retirement Rate	Age	Rule of 75	Other
	50	30%	5%
	51-54	15%	2%
	55-61	15%	5%
	62	40%	20%
	63-69	30%	10%
	70	100%	100%

Retirement rate is 30% the first year a Member is eligible for Rule of 75.

	Sheriffs Hired after June 30, 2011
Age	
53-54	5%
55	25%
56-57	15%
58	20%
59-61	25%
62	30%
63	35%
64	40%
65	100%

Retirement rate is 100% for sheriffs hired after June 30, 2011 at 30 years of service.

Administrative Expenses

Annual administrative expenses have been estimated as 3/10 of 1% of plan assets.

Summary of Plan Provisions

Participation	Any employee who participates in the Plan as an active participant or a non-active participant entitled to a disability pension, a deferred vested retirement benefit or a current retirement benefit.
Definitions	
Member	Years of service following the later of July 1, 1952 and the date of hire and prior to the normal retirement date. Years of service prior to January 1, 1955 are not considered for members who were participants of the Omaha-Douglas County Board of Health Retirement Plan.
Benefit Service	
Final Average Compensation	Average monthly compensation paid during the 60 consecutive months of the last 120 months of service that produces the largest average monthly compensation. The average monthly compensation is limited for members who were participants of the Omaha-Douglas County Board of Health Retirement Plan prior to 1975.
Normal Retirement Date	First day of calendar month coinciding with or next following the 65th birthday (age 55 for sheriff deputies hired after June 30, 2011).
Rule of 75 Retirement Effective Date	<p>First day of calendar month coincident with or next following the attainment of age 50, and completion of a sufficient number of years of service so that when such years are added to the members attained age, the total equals or exceeds 75. Such service must be exclusive of accumulated sick leave.</p> <p>January 1, 1963</p>
Plan Year	January 1 through December 31.
First day of continuous employment.	<p>There is no Rule of 75</p> <p>Retirement for bargaining employees hired after June 30, 2011 (or later date based on applicable bargaining unit contract) and all non-bargaining employees hired after December 31, 2011.</p>

Summary of Plan Provisions

(continued)

Early Retirement

Following attainment of age 55 and 20 years of service, or age 60 and 5 years of service. Age 53 for sheriff deputies hired after June 30, 2011. Age 50 and 10 years of service or age 60 and 5 years of service for bargaining employees hired after June 30, 2011 (or later date based on applicable bargaining unit contract) and all non-bargaining employees hired after December 31, 2011.

Benefits

Normal Retirement

For participants who were actively employed on October 4, 1997 and retire thereafter, a monthly income equal to the sum of (1) and (2), not to exceed 60% of the participant's final Average Compensation:

- (1) 1% of Final Average Compensation, multiplied by years of benefit service prior to January 1, 1962, plus
- (2) 2.0% of Final Average Compensation multiplied by years of benefit service following January 1, 1962.

For bargaining employees hired after June 30, 2011 (or later date based on applicable bargaining unit contract) and all nonbargaining employees hired after December 31, 2011, a monthly income equal to 1.5% for each year of service not to exceed 45% of the participant's final Average Compensation.

For sheriff deputies hired after June 30, 2011, a monthly income equal to the sum of (1), (2) and (3), not to exceed 60% of the participant's final Average Compensation:

- (1) 1.0% of Final Average Compensation multiplied by 1-10 years of benefit service.
- (2) 2.0% of Final Average Compensation multiplied by 11-20 years of benefit service.
- (3) 2.5% of Final Average Compensation multiplied by 21-32 years of benefit service.

Summary of Plan Provisions

(continued)

Early Retirement

Monthly income computed in the same manner as normal retirement, based on benefit service and final average compensation at the early retirement date, and reduced by 1/4 of 1% for each full calendar month that the initial retirement payment precedes the normal retirement date.

Reduced by .4167% for each full calendar month that the initial retirement payment precedes the normal retirement date for bargaining employees hired after June 30, 2011 (or later date based on applicable bargaining unit contract) and all nonbargaining employees hired after December 31, 2011.

Reduced by .4% for each full calendar month that the initial retirement payment precedes the normal retirement date for sheriff deputies hired after June 30, 2011.

Rule of 75 Retirement

If the eligibility requirements for Rule of 75 Retirement are met, the early retirement benefit will not be reduced for the period that retirement precedes the normal retirement date.

Late Retirement

A member who attains the age of 65 after December 31, 1987, shall be entitled to the Normal Retirement Benefit based on Years of Service and Final Average Compensation determined as of the late Retirement Date.

Disability

Following 6 months of total disability, a pension plan participant with at least 5 years of service is entitled to an annual benefit of 70% of compensation, offset by Social Security and Worker's Compensation.

The maximum annual disability benefit is \$90,000. For disabilities occurring after July 1, 1982, payments will be paid from the pension fund for a period of no more than 5 years. Thereafter, payments continue from the disability insurance policy up to the month in which the participant reaches the maximum payment age prescribed by the plan, as long as the participant remains totally and permanently disabled. If disability is a result of a mental or nervous disorder, such payments will not exceed 24 months in duration.

Following the last disability payment, a monthly retirement benefit will commence, equal to the benefit the participant would have been entitled to under the regular pension provisions if the

Summary of Plan Provisions (continued)

participant had not become disabled and had continued to earn the monthly rate of compensation in effect immediately prior to becoming disabled.

Death A benefit of 60% of earned pension is payable until death of the spouse if an employee has completed 8 years of service at the date of death. The earned pension is based on length of service and final average compensation to the date of death. The participant and spouse must be married for at least one year prior to date of death.

If the employee is not survived by dependents or does not qualify for the spouse benefit, the employee's contributions, plus accumulated interest is paid to the beneficiary upon death.

Disability/Re-employment Supplement If an employee who has been receiving disability benefits is able to return to active employment but receives compensation at a rate less than what was being paid as a disability pension (including Social Security and Worker's Compensation), supplemental payments will be made to him equal to the difference between his compensation and his disability pension. The duration of such supplemental payments will not exceed 36 months.

Termination Benefit Deferred monthly income equal to the earned benefit based on service and compensation to the date of termination and multiplied by a vesting factor:

<u>Completed Years of Service</u> <u>Date of Termination</u>	<u>Vesting on</u> <u>Factor</u>
Less than 5	0.00
5	0.25
6	0.40
7	0.55
8	0.70
9	0.85
10 Years and Over	1.00

If a member's employment is terminated due to a change in employment status as provided by the Nebraska Legislature to that of a state employee, such member's Vested Factor will be

Summary of Plan Provisions (continued)

1.00. The termination benefits to which he is entitled shall be based on the average monthly compensation of the member during Douglas County employment and/or state employment which immediately follows Douglas County employment.

Upon termination prior to qualifying for a vested pension or in lieu of the vested pension, the employee may withdraw his contributions increased by interest. Effective July 1, 1994, the interest rate credited is 5% compounded annually.

Form of Annuity

Normal Form

Joint life annuity, 60% continuing to spouse or dependent children.

Five years certain and life, if no eligible dependents.

Contribution

Participant

Members contributed 5.5% of total earnings prior to January 1, 2006. The annual contribution rate increased to 6.5% as of January 1, 2006, 7.5% as of January 1, 2007 and 8.5% as of January 1, 2008 and thereafter.

Sheriff deputies hired after June 30, 2011 contribute according the following schedule:

Years of Service	Percentage
Less than 33	8.50%
33	7.50%
34	6.50%
35 or more	5.50%

Effective July 1, 1985, the Employee contribution is "picked up" and contributed to the Plan by Douglas County.

County

The County pays the balance of the cost of the plan. By law, the County cannot contribute more than the participants for pension earned after the effective date of the plan. The County pays for all benefits earned for service before the plan was effective.

Participant Census Statistics

January 1, 2015

Active Participants Included in Valuation

Age at Valuation Date	Number		
	Male	Female	Total
Under 20	1	2	3
20-24	21	27	48
25-29	90	95	185
30-34	115	126	241
35-39	115	129	244
40-44	137	148	285
45-49	135	155	290
50-54	126	166	292
55-59	106	138	244
60-64	66	85	151
65 & Over	53	45	98
Total	965	1,116	2,081

Non-Active Participants Included in Valuation

	Number	Annual Benefit
Retired & Beneficiary Participants	1164	\$21,016,671
Vested Terminated Participants	117	1,119,342
Terminated Non-Vested	84	1,045,712
Disabled Participants	26	184,657
Total	1,391	23,366,382

* Amount equal to expected refund of member contributions.

Participant Census Statistics

(continued)

	Active	Non-Active			Beneficiary	Total
		Deferred	Disabled	Retired		
Number on January 1, 2014	2,072	218	30	952	171	3,443
Terminated						
Non-Vested	0	0	0	0	0	0
Vested - Lump Sum	-83	-77	0	0	0	-160
Vested - Deferred	-67	+68	-1	0	0	0
Disabled	-5	0	+5	0	0	0
Deceased						
Vested - Lump Sum	0	0	0	0	0	0
Vested - Beneficiary	-2	0	-1	-15	+20	+2
No Additional Benefit	0	0	0	-18	-11	-29
Retired						
Monthly Benefit	-54	-5	-6	+65	0	0
Lump Sum	0	0	-1	0	0	-1
Certain Period Expired	0	0	0	0	0	0
Return to Active	+3	-3	0	0	0	0
New Entrants or Prior Omissions During Plan Year	+217	0	0	-27	+27	+217
Number on January 1, 2015	2,081	201	26	957	207	3,472
<u>Non-Active Participants</u>			<u>Number</u>		<u>Annual Benefit</u>	
Vested Deferred Participants			201		\$1,119,342*	

Retired & Beneficiary Participants	1164	21,016,671
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* Excludes \$1,045,712 of expected refund of member contributions.

Wisdom at Work.

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Welcome

Douglas County

Employees' Retirement Plan
Actuarial Review
as of January 1, 2015

Presented
April 30, 2015

Actuarial Valuation Overview

An actuarial valuation is performed annually to report on the financial health of the Retirement Plan, including:

- Funded Percentage
- Summary of Plan Liabilities and Assets
- Value of Earned Benefits
- Summary of County and Employee Contributions

Plan Provisions

- Monthly Annuity – the plan provides monthly benefits payable to the members and beneficiaries
- Amount of Benefit – determined by the member’s pay, service and the plan’s benefit formula. Pay is averaged over five years.
- Benefit Formula – depends on the member’s date of hire and classification:
 - All prior to June 30, 2011
 - 2% of Average Pay times Years of Service
 - Maximum of 60% of Average Pay
 - Eligible for Rule of 75 retirement
 - Generally, those hired after December 31, 2011
 - 1.5% of Average Pay times Years of Service
 - Maximum of 45% of Average Pay
 - Not eligible for Rule of 75
 - Sheriff deputies hired after June 30, 2011 have a service-graded benefit formula, with a maximum benefit of 60% of Average Pay
 - No Rule of 75
 - Unreduced benefit after 30 years of service

Plan Provisions (continued)

Full retirement benefits (unreduced) are payable:

	Hired Prior to 2012	Hired After 2011	Sheriff Deputies Hired After 2011
Normal Retirement Date	65	65	55
Rule of 75	50 with Age + Svc > 75	N/A	N/A

Early Retirement – a reduced pension payable after:

Hired Prior to 2012	<ul style="list-style-type: none"> ▪ Age 55 with 20 years of service ▪ Age 60 with five years of service
Hired After 2012	<ul style="list-style-type: none"> ▪ Age 50 with 10 years of service ▪ Age 60 with five years of service
Sheriff Deputies Hired After 2011	<ul style="list-style-type: none"> ▪ Age 53

Other Benefits – may be payable upon death or disability

Plan Provisions (continued)

- Vesting Schedule – a deferred pension is earned based on the vesting schedule

Years of Service	Vesting Percentage
Less than 5	0%
5	25%
6	40%
7	55%
8	70%
9	85%
10 +	100%

Plan Members

Number of Members	2014	2015
Actives	2,072	2,081
Retirees and Beneficiaries	1,123	1,164
Vested Terminated	108	117
Terminated Non-Vested	110	84
Disabled	30	26
Total	3,443	3,472

Actuarial Assumptions

Investment Return 7.5% per year

Salary Increases

Age	Annual Increase
18 – 44	5.5%
45 – 54	5.0%
55 +	4.5%

Mortality Table RP 2000 projected to 2007

Withdrawal Rates (Sample)

Age	Rate
22	16.6%
32	12.8%
42	9.0%
52	3.6%

Actuarial Assumptions (continued)

Retirement Rates*

Age	Rule of 75	Other
50	30%	5%
51 – 54	15%	2%
55 – 61	15%	5%
62	40%	20%
62 – 69	30%	10%
70 +	100%	100%

*30% assumed to retire upon eligibility for Rule of 75.

Actuarial Assumptions (continued)

Retirement Rates* – Sherriffs hired after June 30, 2011:

Age	Rate
53 – 54	5%
55	25%
56 – 57	15%
58	20%
59 – 61	25%
62	30%
63	35%
64	40%
65 +	100%

*100% assumed to retire at 30 years of service

Actuarial Measurements (thousands)

	2014	2015
Actuarial Accrued Liability	\$380,727	\$394,847
Actuarial Value of Assets	\$245,830	\$263,790
Funded Percentage	64.6%	66.8%
Unfunded Liability	\$134,897	\$131,057

Actuarial Measurements

	2014	2015
Expected Member Contributions	\$9,418	\$9,636
Expected County Contributions	\$9,418	\$9,637
Total	\$18,836*	\$19,273
Actuarial Determined Contribution		
▪ Normal Cost (Value Of Benefits Earned In The Year)	\$12,698	\$12,756
▪ 30-Year Amortization of Unfunded Liability	\$6,121	\$5,947
Total	\$18,819	\$18,703

*Actual total for 2014 was \$19,560,273

Plan Asset History

Year	Market Value of Assets	Rate of Return Prior Year
2015	\$267,549,482	5.2%
2014	\$258,340,593	18.9%
2013	\$219,605,063	10.3%
2012	\$200,860,360	0.5%
2011	\$199,988,291	11.0%
2010	\$179,166,378	16.0%
2009	\$151,275,593	-18.7%
2008	\$184,386,700	4.9%
2007	\$175,115,759	12.1%
2006	\$157,653,656	7.1%
2005	\$148,916,100	10.0%
2004	\$137,080,947	15.7%

12-year geometric average return of 7.3%

Historical Funded Percentage

Year	Actuarial Value of Assets (\$1,000s)	Actuarial Accrued Liability (\$1,000s)	Funded Ratio
2015	\$263,790	\$394,847	66.8%
2014	\$245,830	\$380,727	64.6%
2013	\$219,494	\$362,117	60.6%
2012	\$205,795	\$343,178	60.0%
2011	\$196,119	\$321,700	61.0%
2010	\$177,797	\$307,407	57.8%
2005	\$142,403	\$221,642	64.2%
2000	\$117,626	\$127,011	92.6%
1996	\$81,626	\$83,472	97.8%

Looking Forward

- Funding Policy
- GASB Accounting Changes
- Disability Provision
- Mortality Table Update
- Forecasts of Funding Percentage

Funding Policy

The County's funding policy is to contribute amounts to the plan necessary to fund benefits earned under the plan, along with members' contributions

Nebraska State statute limits the County's contribution to no more than the amounts contributed by the members

Member Contributions 8.5% of Pay

- For all members, regardless of date of hire or classification
 - Except for sheriff deputies, reduced after 33 years of service

County Contributions Same Amount as Members

GASB Accounting Changes

Two new GASB accounting standards apply to the pension plan, increasing the amount of information for financial reporting purposes

- GASB 67 Effective FYE December 31, 2014

Financial reporting for pension plans discloses net pension liability
- GASB 68 Effective FYE December 31, 2015

Financial reporting for employers defines new pension expense

Disability Provision

The plan's disability benefit is 70% of compensation, reduced by Social Security and Workers' Compensation

- First five years paid from the plan
- Then, paid from the plan's disability insurance policy

After 2015 – this disability provision will be removed from the plan and replaced by a stand alone Disability Plan

Pension Plan Impact – removing the disability benefit from the pension plan is estimated to reduce the plan liability by \$2.4 million (.6%), as well as eliminate the disability insurance premium from the plan, which was \$335,000 in 2014

Mortality Table Update

There is ongoing discussion of a new standard mortality table for pension plans. The RP-2000 mortality table is used now, which is the current standard

The RP-2014 table with MP-2014 mortality improvement scale was published in 2014. It is expected to become the new standard in 2016 for private corporation-sponsored plans. Governmental plans expected to adopt mortality tables based more on their own mortality experience. This may delay adoption of the RP-2014 table for governmental plans

If adopted, the impact is a \$21.2 million (5.4%) increase in plan liabilities at January 1, 2015

Forecast of Funded Percentage

Forecast Period	Year	Estimated Funded Percentage
Current – actual	2015	66.8%
5 Years	2020	71.4%
10 Years	2025	75.1%
15 Years	2030	80.6%
20 Years	2035	89.3%

Assumptions

Investment Return	7.5%
Salary Scale	Graded 4.5% – 5.5%
Mortality Table	RP2000 Projected to 2007
Member Growth Rate	0%
Plan Provisions	Same as Current
Other Assumptions	Consistent with Valuation

Forecasts are intended for illustrative purposes as an indication of future trends. Actual future funded percentages will differ from these forecasts as actual plan experience differs from the assumptions

Thank you!

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April 23, 2015

PERSONAL & CONFIDENTIAL

Mr. Joe Lorenz
Douglas County Employees' Retirement Plan
1819 Farnam Street
Omaha, NE 68183

RE: 2015 Experience Analysis

Dear Joe:

Enclosed are fifteen copies of the 2015 Experience Analysis for the Douglas County Employees' Retirement Plan. Based on a comparison of actual to expected experience, we do not recommend any changes to the actuarial assumptions as of January 1, 2015.

Please contact me with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Glen C. Gahan". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Glen C. Gahan, FSA
Principal

GCG/bk

Enclosures

cc: Ms. Kathy Adair - Douglas County

**Douglas County
Employees' Retirement Plan**

2015 Experience Analysis

April 2015

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Overview

A Plan Experience Analysis was performed to compare actual plan experience to the expected experience based on the Plan's actuarial assumptions.

The assumptions analyzed were:

- Rates of Termination
- Rates of Retirement
 - Rule of 75
 - Other than Rule of 75
- Rates of Salary Increases
- Rates of Mortality
- Rates of Investment Return

Actuarial Assumptions Recommendation

Based on a review of actual and expected experience over the past several years revisions to the actuarial assumptions are not recommended.

Rates of Termination

No changes recommended

Rates of Retirement

Rule of 75

No changes recommended

Other than Rule of 75

No changes recommended

Rates of Salary Increases

No changes recommended

Rates of Mortality

No changes recommended

Rates of Investment Return

No changes recommended

Comparison of Actual and Expected Rates

Terminations

Age Group	2014 Terminations			2013 Terminations			2012 Terminations		
	Number of Terminations	Expected Terminations	Ratio of Actual to Expected	Number of Terminations	Expected Terminations	Ratio of Actual to Expected	Number of Terminations	Expected Terminations	Ratio of Actual to Expected
20-24	14	7	202%	9	8	119%	7	7	99%
25-29	26	28	92%	24	27	89%	26	28	92%
30-34	26	30	86%	24	32	74%	22	31	71%
35-39	24	26	93%	12	25	48%	23	27	84%
40-44	17	27	64%	17	27	62%	9	28	32%
45-49	19	19	101%	16	20	81%	14	18	77%
50-54	6	10	60%	10	10	98%	6	11	56%
55-59	12	2	518%	8	3	311%	8	2	322%
60-62	3	0	3393%	3	0	2835%	4	0	3603%
Total	147	149	98%	123	152	81%	119	153	78%

Comparison of Actual and Expected Rates

(continued)

Age	Rule of 75 Retirements								
	2014 Active Service Retirements			2013 Active Service Retirements			2012 Active Service Retirements		
	Number of Retirements	Expected Retirements	Ratio of Actual to Expected	Number of Retirements	Expected Retirements	Ratio of Actual to Expected	Number of Retirements	Expected Retirements	Ratio of Actual to Expected
50	4	2.70	148%	5	2.40	208%	2	1.80	111%
51	1	3.75	27%	0	1.65	0%	3	1.95	154%
52	1	2.10	48%	4	2.85	140%	1	1.80	56%
53	1	1.50	67%	1	3.00	33%	2	1.80	111%
54	2	2.40	83%	2	1.20	167%	4	2.85	140%
55	1	1.50	67%	0	2.10	0%	4	2.10	190%
56	1	3.00	33%	2	2.55	78%	0	2.10	0%
57	2	2.55	78%	1	2.10	48%	2	2.25	89%
58	3	2.55	118%	4	3.15	127%	2	2.25	89%
59	1	2.25	44%	0	2.10	0%	1	3.00	33%
60	2	2.55	78%	5	3.60	139%	3	5.10	59%
61	4	3.45	116%	7	4.05	173%	3	1.95	154%
62	6	8.90	67%	4	4.90	82%	3	5.80	52%
63	2	2.70	74%	3	3.90	77%	0	5.40	0%
64	2	3.60	56%	0	6.00	0%	3	5.10	59%
65	0	0.00		0	0.00		0	0.00	
66	0	0.00		0	0.00		0	0.00	
67	0	0.00		0	0.00		0	0.00	
68	0	0.00		0	0.00		0	0.00	
69	0	0.00		0	0.00		0	0.00	
Total	33	45.50	73%	38	45.55	83%	33	45.25	73%

Comparison of Actual and Expected Rates

(continued)

Early and Normal Retirements

Age	2014 Active Service Retirements			2013 Active Service Retirements			2012 Active Service Retirements		
	Number of Retirements	Expected Retirements	Ratio of Actual to Expected	Number of Retirements	Expected Retirements	Ratio of Actual to Expected	Number of Retirements	Expected Retirements	Ratio of Actual to Expected
<=60	1	0.75	133%	2	0.90	222%	3	0.70	429%
61	2	0.85	235%	2	0.70	286%	1	0.55	182%
62	2	2.40	83%	0	1.20	0%	5	2.40	208%
63	0	0.50	0%	0	0.80	0%	1	0.90	111%
64	0	0.70	0%	1	0.70	143%	0	0.60	0%
65	3	2.70	111%	6	2.00	300%	8	2.40	333%
66	6	1.50	400%	3	1.50	200%	0	1.30	0%
67	3	1.20	250%	1	1.20	83%	1	1.50	67%
68	2	1.10	182%	4	1.40	286%	1	0.50	200%
69	1	1.00	100%	0	0.40	0%	3	0.70	429%
Subtotal	20	12.70	157%	19	10.80	176%	23	11.55	199%
70+	3	16.00	19%	1	14.00	7%	2	14.00	14%
Total	23	28.70	80%	20	24.8	81%	25	25.55	98%

Comparison of Actual and Expected Rates

(continued)

Salary Increases

Age Group	2014 Salary Increases			2013 Salary Increases			2012 Salary Increases		
	Average Salary Increase	Expected Salary Increase	Ratio of Actual to Expected	Average Salary Increase	Expected Salary Increase	Ratio of Actual to Expected	Average Salary Increase	Expected Salary Increase	Ratio of Actual to Expected
20-24	7.39%	5.50%	134%	4.74%	5.50%	86%	7.72%	5.50%	140%
25-29	7.26%	5.50%	132%	4.83%	5.50%	88%	8.62%	5.50%	157%
30-34	5.78%	5.50%	105%	3.82%	5.50%	69%	6.48%	5.50%	118%
35-39	5.07%	5.50%	92%	2.84%	5.50%	52%	5.04%	5.50%	92%
40-44	4.28%	5.50%	78%	3.60%	5.50%	65%	4.36%	5.50%	79%
45-49	4.23%	5.00%	85%	2.75%	5.00%	55%	4.61%	5.00%	92%
50-54	3.88%	5.00%	78%	2.36%	5.00%	47%	4.92%	5.00%	98%
55-59	3.55%	4.50%	79%	2.38%	4.50%	53%	4.59%	4.50%	102%
60-65	3.73%	4.50%	83%	2.18%	4.50%	48%	4.81%	4.50%	107%
65+	2.87%	4.50%	64%	1.50%	4.50%	33%	3.98%	4.50%	88%
Totals	4.58%	5.12%	89%	3.03%	5.12%	59%	4.62%	5.13%	90%

Comparison of Actual and Expected Rates

(continued)

Mortality for Retired and Terminated Vested Participants

Age Group	2014 Mortality			2013 Mortality			2012 Mortality		
	Actual Death	Expected Death	Ratio of Actual to Expected	Actual Death	Expected Death	Ratio of Actual to Expected	Actual Death	Expected Death	Ratio of Actual to Expected
<60	2	1.00	201%	2	0.91	220%	3	0.96	314%
60-64	4	1.54	261%	2	1.50	134%	2	1.45	138%
65-69	2	2.47	81%	2	2.49	80%	5	2.39	209%
70-74	4	3.82	105%	2	3.34	60%	3	3.16	95%
75-79	6	4.21	143%	5	4.13	121%	6	4.60	130%
80-84	9	7.67	117%	2	7.21	28%	16	7.81	205%
85-89	7	8.83	79%	7	8.82	79%	15	8.07	186%
90-94	8	7.91	101%	9	7.46	121%	5	6.70	75%
>=95	2	2.20	91%	5	2.77	180%	4	3.23	124%
Total	44	40	111%	36	39	93%	59	38	154%

Historical Rates of Investment Return

Year	Annual Return on Market Value of Assets	Annual Return on Actuarial Value of Assets
1984	8.9%	N/A
1985	20.6%	N/A
1986	15.5%	N/A
1987	4.4%	N/A
1988	11.5%	N/A
1989	15.5%	N/A
1990	6.7%	N/A
1991	15.5%	N/A
1992	7.9%	N/A
1993	10.4%	N/A
1994	2.4%	N/A
1995	17.2%	N/A
1996	10.6%	N/A
1997	13.3%	N/A
1998	7.7%	N/A
1999	7.3%	N/A
2000	2.3%	6.2%
2001	1.3%	2.4%
2002	-4.6%	0.0%
2003	15.7%	7.3%
2004	10.0%	8.7%
2005	7.1%	7.8%
2006	12.1%	10.0%
2007	4.9%	7.2%
2008	-18.7%	-6.4%
2009	16.0%	3.8%
2010	11.0%	9.7%
2011	0.5%	5.0%
2012	10.3%	7.6%
2013	18.9%	13.2%
2014	5.2%	9.1%
Average	8.6% (31 yrs) 6.1% (15 yrs)	6.1% (15 yrs)

Historical Market and Actuarial Value of Assets

Year	<u>Market Value of Assets</u>	<u>Actuarial Value of Assets</u>	AVA as % of MVA
2000	123,913,647	117,625,992	94.9%
2001	125,752,053	123,971,024	98.6%
2002	126,751,547	126,336,366	99.7%
2003	119,929,319	125,237,848	104.4%
2004	137,080,947	132,768,961	96.9%
2005	148,916,100	142,402,678	95.6%
2006	157,653,656	151,686,147	96.2%
2007	175,115,759	165,309,144	94.4%
2008	184,386,700	177,833,982	96.4%
2009	151,275,593	167,993,744	111.1%
2010	179,166,378	177,797,061	99.2%
2011	199,988,291	196,119,468	98.1%
2012	200,860,360	205,795,168	102.5%
2013	219,605,063	219,494,329	99.9%
2014	258,340,593	245,830,308	95.2%
2015	267,549,482	263,768,442	98.6%

Actuarial Assumptions

Interest Rate 7.5%

Salary Scale Salaries were assumed to increase at an annual rate compounded annually following the valuation date varying by age, as illustrated below.

Age	Percentage Increase
18-44	5.50%
45-54	5.00%
55+	4.50%

Mortality Rates IRS 2007.

Disability Rates Based on an Industry Experience Table

Annual Disabilities Per 100 Members		
Age	Males	Females
35	0.11	0.20
40	0.16	0.29
45	0.27	0.39
50	0.48	0.53
55	0.87	0.73
60	1.30	0.99

Withdrawal Rates Based on rates as illustrated below:

Age	Number
22	16.6
27	15.8
32	12.8
37	10.8
42	9.0
47	6.3
52	3.6
57	0.9

Accrued Sick Leave 7 days per year.

Actuarial Assumptions
(continued)

Retirement Rate	Age	Rule of 75	Other
	50	30%	5%
	51-54	15%	2%
	55-61	15%	5%
	62	40%	20%
	63-69	30%	10%
	70	100%	100%

Retirement rate is 30% the first year a Member is eligible for Rule of 75.

Age	Sheriffs Hired after June 30, 2011
53-54	5%
55	25%
56-57	15%
58	20%
59-61	25%
62	30%
63	35%
64	40%
65	100%

Retirement rate is 100% for sheriffs hired after June 30, 2011 at 30 years of service.

Administrative Expenses

Annual administrative expenses have been estimated as 3/10 of 1% of plan assets.

Appendix B

Eastern Nebraska Health Agency Employees Retirement Plan Information

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LB 759 REPORTING FORM

1.

	Most Current Valuation (2014)	Prior Valuation (2012)
Funding Status	76%	64%
Net Assets	30,908,402	23,716,801
Unfunded Actuarial Accrued Liability	9,981,149	13,400,987
Normal Cost	1,446,222	1,470,359
Member Contribution Rates	2.75%	2.75%
Employer Contribution Rates	7.5%	6.5%
Actuarial Required Contribution	2,197,946	2,479,646

2. **Circumstances That Led to Under Funding the Plan:**

In prior periods, equity investment returns did not meet the return assumptions. In addition, interest rates on fixed investments were and remain very low.

3. **Changes in Actuarial Methods/Assumptions:**

When the 2014 Actuarial Valuation was completed, the mortality table was updated to the Static IRS 2014 Annuitant-Distinct Mortality Table. All other assumptions are the same as those used in the 2012 valuation. It is important to note that the agency has always used a 7% investment return assumption.

4. **Description of Corrective Actions Implemented to Improve the Funding Status of the Plan:**

Several years ago, the agency began increasing employer contributions by one-half percent per year. For 2015, the employer contribution is 8.0%, and for 2016, it is scheduled to go to 8.5%. In June 2015, SilverStone completed an updated forecast to determine the effect of the progressive increased contribution. SilverStone provided an analysis of three options to meet the agency's goal of an 85% funding ratio. The agency has decided to maintain the most aggressive approach in which employer contributions would continue to increase to 9.5%. Please see attached. In addition, the agency has moved some of the fixed investments into bonds and REITs which have better returns.

5. **Recent or Ongoing Negotiations:**

The majority of the agency's employees are covered under a collective bargaining agreement. The agency is in negotiations at the present time. An agency proposal to increase employer contributions to 8.5% effective January 1, 2016, has been presented. Historically, these types of increases have been approved without problems.

6. **Most Recent Actuarial Experience:**

The most recent actuarial experience study was completed in July 2012. Please see attached.

7. **Most Recent Actuarial Valuation Report:**

Attached please find the most recent valuation dated January 1, 2014. The valuations are completed every other year with the next one due January 1, 2016. In addition, attached please find the GASB 68 statement for the one-year period ending 06/30/15. This statement provides updated financial information.

July 24, 2014

PERSONAL & CONFIDENTIAL

Mr. Bob Brinker
Eastern Nebraska Human Services Agency
900 South 74th Plaza, Suite 200
Omaha, NE 68114-4675

RE: Employees Retirement Plan

Dear Bob:

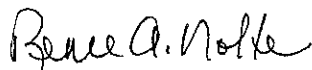
We have completed our work on the actuarial valuation for the Eastern Nebraska Human Services Agency Employees Retirement Plan. Enclosed for your review are 15 copies of the Actuarial Valuation Report for the plan year beginning January 1, 2014.

The Report Highlights section outlines our funding recommendations for the plan year. We recommend that ENHSA contribute an amount equal to the excess of the plan's Normal Cost over the anticipated employee contributions, plus an amount to amortize the unfunded accrued liability over a 30-year period. This is consistent with our recommendations in 2012.

The funding recommendations recognize the updated participant and plan asset information. The mortality table was updated from the IRS 2012 table to the IRS 2014 table. All other actuarial methods and assumptions are the same as those used for the prior valuation. In our opinion, these methods and assumptions are appropriate.

Please call if we can provide additional information.

Sincerely,



Renee A. Nolte, ASA, MAAA
Senior Consultant

RAN/bk

Enclosures

**Eastern Nebraska Human Services Agency
Employees Retirement Plan**

Actuarial Valuation Report

January 1, 2014

July 24, 2014

ACTUARIAL CERTIFICATION

Pension Committee
Eastern Nebraska Human Services Agency
900 South 74th Plaza, Suite 200
Omaha, NE 68114-4675

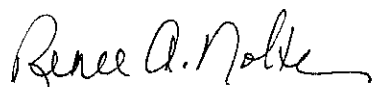
Committee Members:

An actuarial valuation was performed for the Eastern Nebraska Human Services Agency Employees Retirement Plan as of January 1, 2014. The valuation was prepared to determine the value of accrued benefits and annual costs. The results of the valuation are contained in the accompanying report.

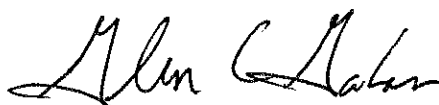
The valuation is based on eligible employees submitted by your office. A statement of plan assets was furnished by United of Omaha, American Funds, and Securities America. We have not made an independent audit of this data, but have relied on the accuracy of the information that was supplied.

To the best of my knowledge, the information supplied in this report is complete and accurate and in my opinion the assumptions are reasonably related to the experience of the Plan and to reasonable expectations and represent my best estimate of anticipated experience under the Plan. The undersigned meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

Sincerely,



Renee A. Nolte, ASA, MAAA
Senior Consultant



Glen Gahan, FSA, MAAA
Enrolled Actuary

RAN/bk

Enclosure

Table of Contents

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Financial Highlights

	<u>2012</u>	<u>2013</u>	<u>2014</u>
Annual Contributions			
Recommended	2,479,646	2,479,646	2,197,946
Actual	2,066,262	2,131,677	N/A
Plan Assets	23,716,801	26,365,362	30,908,402
Prior Year Investment Return	0.8%	9.1%	15.6%
Funding Basis			
Actuarial Accrued Liability	37,117,788		40,889,551
Plan Assets	23,716,801		30,908,402
Unfunded Actuarial Accrued Liability	13,400,987		9,981,149
Accrued Benefit Basis			
Vested Benefit Value	34,079,809		38,311,097
Accrued Benefit Value	35,021,236		39,225,947
Funded Ratios*			
Funding Basis	64%		76%
Accrued Benefit Basis	68%		79%
Normal Cost	1,470,359		1,446,222
As a percent of covered payroll	6.8%		7.1%
Interest Rates			
Funding Basis	7.00%		7.00%
Accrued Benefit Basis	7.00%		7.00%
Annual Covered Payroll	21,781,581		20,402,867
Number of Participants			
Active and Disabled	711		650
Retired and Beneficiary	155		181
Vested Terminations and Transfers	61		66
Total	<u>927</u>		<u>897</u>

* Ratio of plan assets to applicable actuarial liability.

Comments on the Valuation

The results of the actuarial valuation prepared for the Eastern Nebraska Human Services Agency Employees Retirement Plan as of January 1, 2014 are summarized in this report. The following observations are provided regarding the report.

Plan Experience

Examining the overall plan experience since the last valuation on January 1, 2012, we note:

- Since the prior valuation, the number of active participants has decreased from 711 to 650. Annual covered payroll for participants under Normal Retirement Age decreased from \$21,781,581 to \$20,402,867, a 6.3% decrease. The average salary for participants under Normal Retirement Age increased from \$32,413 to \$33,229, a 2.5% increase.
- For active participants included in the valuation, average age increased from 44.6 to 45.5 years and average service increased from 10.1 to 11.0 years.
- The investment return on plan assets since the prior valuation was higher on average than the assumed 7.0% rate. The approximate investment return rate for 2012 was 9.1%, and for 2013 was 15.6%.
- On the same actuarial basis as used in 2012, the Unfunded Accrued Liability (UAL) decreased by \$3,530,000, from \$13,400,000 to \$9,870,000. Contributing factors were:
 - Investment return rates greater than expected decreased the UAL by approximately \$2,800,000.
 - Contributions less than the Normal Cost plus interest on the UAL added about \$790,000 to the UAL.
 - Net actuarial gains from other sources decreased the UAL by approximately \$1,520,000.

Comments on the Valuation

Actuarial Assumptions

The mortality table was updated to the static IRS 2014 annuitant-distinct mortality table. The effect of this change increased the UAL by \$113,958. The corresponding increase in the normal cost was \$3,459.

All other assumptions are the same as those used in the 2012 valuation.

Recommended Contribution

The recommended contribution consists of the plan's normal cost plus a 30-year amortization payment of the unfunded accrued liability.

We recommend ENHSA increase the total contribution to the plan to \$2,197,946 for 2014. Plan contributions include amounts contributed by the employees and by the employer. For 2014, the anticipated employee contributions at the current rate of 2.75% are \$561,079 and the anticipated employer contribution at the current rate of 7.5% are \$1,530,215 for a total of \$2,091,294. The shortfall can be funded by increased contributions by the employees, ENHSA, or both.

Annual Contributions

Annual contributions to the Retirement Plan as illustrated herein are comprised of employee contributions equal to a percentage of expected compensation as of the valuation date and an amount payable by the employer.

	<u>January 1, 2012</u>	<u>January 1, 2014</u>	
		<u>Before Assumption Changes</u>	<u>After Assumption Changes*</u>
Recommended Contribution			
Normal Cost	\$1,470,359	\$1,442,763	\$1,446,222
Unfunded Accrued Liability Payment	1,009,287	743,142	751,724
Total	2,479,646	2,185,905	2,197,946
Expected Employee Contribution			
Employee Contribution Rate	2.75%	2.75%	2.75%
Covered Payroll	21,781,581	20,402,867	20,402,867
Expected Employee Contribution	598,993	561,079	561,079
Recommended Employer Contribution			
Normal Cost less Employee Contribution	871,366	881,684	885,143
Employer Contribution as a Percent of Pay	4.00%	4.32%	4.34%
Total Contribution less Employee Contribution	1,880,653	1,624,826	1,636,867
Employer Contribution as a Percent of Pay	8.63%	7.96%	8.02%

* The mortality table assumption was changed as shown in the Actuarial Assumptions section.

Valuation Results

A summary of the results of the actuarial valuations performed as of January 1, 2012 and January 1, 2014 is displayed below:

	<u>January 1, 2012</u>	<u>January 1, 2014</u>	
		<u>Before Assumption Changes</u>	<u>After Assumption Changes*</u>
Unfunded Accrued Liability			
Accrued Liability	\$37,117,788	\$40,775,593	\$40,889,551
Less: Plan Assets	<u>23,716,801</u>	<u>30,908,402</u>	<u>30,908,402</u>
Unfunded Accrued Liability	\$13,400,987	\$9,867,191	\$9,981,149
Ratio of Assets to Accrued Liability	64%	76%	76%
Annual Normal Cost			
Retirement, Death, Termination and Deferred Disability Benefits	\$1,437,041	\$1,420,253	\$1,423,712
Administrative Expense Load	<u>33,318</u>	<u>22,510</u>	<u>22,510</u>
Total	\$1,470,359	\$1,442,763	\$1,446,222

* The mortality table assumption was changed as shown in the Actuarial Assumptions section.

Plan Assets

All future plan benefits will be derived from plan assets on the valuation date, future contributions and investment income on these amounts. The changes in the value of plan assets since the last valuation and the value of plan assets on the current valuation date are displayed below.

Changes in Value of Plan Assets

Market Value of Assets on January 1, 2012	\$23,667,312
Contribution Receivable	49,489
Adjusted Plan Assets on January 1, 2012	\$23,716,801
Employer Contributions	1,403,808
Employee Contributions	608,489
Investment Income	2,186,398
Monthly Benefit Payments	(1,241,476)
Lump Sum Distributions	(341,356)
Administrative Charges	(21,267)
Market Value of Assets on January 1, 2013	\$26,311,397
Contribution Receivable	53,965
Adjusted Plan Assets on January 1, 2013	\$26,365,362
Employer Contributions	1,528,501
Employee Contributions	603,176
Investment Income	4,158,949
Monthly Benefit Payments	(1,416,225)
Lump Sum Distributions	(308,851)
Administrative Charges	(22,510)
Market Value of Assets on January 1, 2014	\$30,908,402
Contribution Receivable	0
Adjusted Plan Assets on January 1, 2014	\$30,908,402

Asset Allocation

Employee Funds - Annuity Contract	\$4,013,152
Employee Funds - Equities	5,241,347
Employer Funds - Annuity Contract	7,146,738
Employer Funds - Equities	14,507,165
	\$30,908,402

Plan Financial Information

Another objective of preparing the actuarial valuation is to evaluate the funding status of the Plan. The following display compares the funding status of the Plan for the two most recent actuarial valuations.

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
1. Actuarial Present Value of Vested Accrued Benefits		
Retirees and Beneficiaries of Deceased Participants	\$11,458,140	\$14,849,045
Vested Terminated Participants	1,388,143	1,344,111
Active Participants	21,233,526	22,117,941
Total	\$34,079,809	\$38,311,097
2. Actuarial Present Value of Non-Vested Accrued Benefits for Active Participants	\$941,427	\$914,850
3. Actuarial Present Value of Accrued Benefits (1) + (2)	\$35,021,236	\$39,225,947
4. Value of Assets	\$23,716,801	\$30,908,402
5. Funded Ratio*		
Vested Accrued Benefits	70%	81%
Accrued Benefits	68%	79%
Interest Rate	7.00%	7.00%

The actuarial present value of vested and non-vested benefits has been determined based on the actuarial assumptions shown in the Actuarial Assumptions section.

* Ratio of plan assets to applicable actuarial present value.

Actuarial Cost Method

Annual costs were calculated using the Projected Unit Credit Actuarial Cost Method. Projected Unit Credit is one of the Accrued Benefit Actuarial Cost Methods. Using Projected Unit Credit, annual costs equal the sum of the normal cost and an amount to amortize the unfunded accrued liability. The normal cost is defined as the actuarial value of retirement and ancillary benefits that are allocated to the current year.

The unfunded accrued liability is equal to the accrued liability reduced by the actuarial value of plan assets. The accrued liability is defined as the actuarial value of retirement and ancillary benefits that have been allocated to years of service prior to the current year.

The method allocates an equal amount of a participant's projected retirement benefit to each year of service. The benefit at normal retirement is projected assuming salaries increase at the assumed rates. The projected retirement benefit is then divided by the participant's years of service to determine the portion of the retirement benefit allocated to each year.

At the end of each year, a determination of actuarial gains and losses is made. Actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. Actuarial gains result from experience more favorable than assumed and reduce the unfunded accrued liability. Actuarial losses result from experience less favorable than assumed and increase the unfunded accrued liability. All actuarial gains and losses are included in the determination of the unfunded accrued liability as of the valuation date.

Asset Valuation Method

The value of plan assets is based on the contract value of assets held at United of Omaha and the market value of assets held at American Funds and Securities America.

Actuarial Assumptions

Interest Rate 7.0% compounded annually.

Salary Scale Salaries were assumed to increase at an annual rate of 2.0% compounded annually following the valuation date.

Mortality Rates The mortality rates are based on the static IRS 2014 annuitant-distinct mortality table.

Turnover Rates Based on years of service and age as follows:

Years of Service	Annual Rate
0	54.0%
1	25.5%
2	15.0%
3 or more	150% of Scale T-7 of the Actuary's Pension Handbook

Elected Form of Distribution

Age	Percent Electing	
	Deferred Annuity	Employee Contribution
Under 55	25%	75%
55 and over	100%	0%

Retirement Rate Participants are assumed to retire in accordance with the following schedule:

Normal Retirement Age	Annual Rate of Retirement
62 with 30 years	15%
63 with 30 years	5%
64 with 30 years	5%
65	100%

Normal Retirement Age Age 65 or Age 62 with 30 years of service earned as of the valuation date.

Actuarial Assumptions (continued)

Marriage Rate

75% of the participants were assumed to be married at retirement. Female spouses are assumed to be 3 years younger than male spouses.

Administrative Expenses

Equal to prior plan year actual expense.

Summary of Plan Provisions

Effective Date	January 1, 1982.
Plan Year	January 1 through December 31.
Participation	Full-time employees are eligible to participate on January 1 or July 1 coinciding with or next following the completion of 6 months of service.
Definitions	
<i>Service</i>	Any period of time the Employee is in the employ of the Employer as a full-time Employee.
<i>Year of Service</i>	A consecutive 12 month period during which 2,000 hours of service has been completed. For purposes of retirement benefits, a Year of Service shall include the fractional portion of the year from the most recent employment anniversary to date of termination.
<i>Average Monthly Compensation</i>	Average of monthly compensation during the five consecutive years of the last ten years of service which produces the highest average.
<i>Normal Retirement Date</i>	First day of the month coinciding with or next following the attainment of age 65, or age 62 with 30 years of service.
<i>Early Retirement Date</i>	First day of any month following the attainment of age 55 and completion of 10 years of service, or age 60 and 5 years of service.
<i>Late Retirement Date</i>	Anytime following Normal Retirement Date.
<i>Disability Retirement</i>	If a participant has completed five years of service and becomes disabled, they will remain active in the plan until their Normal Retirement Date. Mandatory employee contributions will be waived.

Summary of Plan Provisions (continued)

Benefits

<i>Normal Retirement</i>	Monthly annuity equal to 1.75% of Average Monthly Compensation multiplied by the number of Years of Service.
<i>Early Retirement</i>	Monthly annuity computed in the same manner as the Normal Retirement Benefit but based on the service and Average Monthly Compensation as of the Early Retirement Date and reduced by 0.25% for each full month that the Early Retirement Date precedes the Normal Retirement Date.
<i>Late Retirement</i>	Monthly annuity computed in the same manner as the Normal Retirement Benefit but based on the service and Average Monthly Compensation earned as of the Late Retirement Date.
<i>Disability</i>	Monthly annuity payable at Normal Retirement Age computed in the same manner as the Normal Retirement Benefit assuming that compensation as of the date of Disability and service continued to the Normal Retirement Date.
<i>Preretirement Death Benefit</i>	<p>A benefit is payable at the death of an active participant.</p> <p>Death Prior to Early Retirement Date - A lump sum equal to the participant's contributions plus accumulated interest is payable to a designated beneficiary.</p> <p>Death After Early Retirement Date - A monthly income payable to a surviving spouse or dependent children equal to 60% of the earned benefit determined at the participant's death. This amount is payable beginning at the participant's Normal Retirement Date. A reduced monthly income may be selected by the surviving spouse or the dependent children to be payable beginning at any date following the participant's Early Retirement Date. The monthly income is payable for the life of the surviving spouse. If paid to the dependent children, the monthly income will continue until the youngest child attains age 21.</p> <p>If the participant is not survived by an eligible spouse or dependent children a lump sum equal to the participant's contributions plus accumulated interest is payable to a designated beneficiary.</p>

Summary of Plan Provisions (continued)

Termination Benefit

Benefit upon termination equal to a vested interest in the earned pension as of the date of termination determined according to the following schedule:

<u>Years of Service</u>	<u>Vesting %</u>
Less than 5 years	0%
5	50%
6	60%
7	70%
8	80%
9	90%
10 or more years	100%

Normal Forms of Annuity

Married Participant

Joint and 60% Survivor annuity.

Single Participant

Five Year Certain & Life annuity.

Contributions

Participant

A monthly amount equal to 2.75% of monthly compensation. The contributions are picked up by the employer effective July 1, 2013.

Employer

An amount necessary to provide the benefits under the plan based upon the recommendations of periodic actuarial valuations. Currently, the employer has scheduled the following contribution rates as a percentage of payroll:

2010	5.5%
2011	6.0%
2012	6.5%
2013	7.0%
2014	7.5%
2015	8.0%

June 26, 2015

Mr. Bob Brinker
Eastern Nebraska Human Services Agency
900 South 74th Plaza, Suite 200
Omaha, NE 68114-4675

RE: Employees Retirement Plan Forecast Study

Dear Bob:

We have estimated the funded ratios for the Retirement Plan for the next 15 years. Please note, the values presented are only estimates, as the actual amounts will be based on annual census data and plan experience, actual asset values and assumptions applied in future years, as well as other variables.

The funded ratio is the ratio of the plan assets to the actuarial accrued liability. For active participants, the latter amount is the actuarial measure of benefits based on service to date and pay projected to retirement. For all other participants, it is the measure of their actual vested benefit.

Forecast Results

The forecast applies three different employer contribution schedules. Scenario 1 assumes the current 2015 employer contribution of 8% will continue each year following. Scenario 2 assumes the employer contribution will increase to 8.25% in 2016 and then remain level. Under the assumptions applied, this contribution schedule provides a funded ratio above 85% in 2025. The 85% target is consistent with the forecast study completed in 2010. Scenario 3 assumes the employer will continue the contribution schedule recommended in the 2010 forecast study, increasing contributions by 50 basis points each year through 2018 and then remaining level at 9.50%. This scenario shows continued improvement in the funded ratio on a path to 100%. For all scenarios, the employee contribution remains level at 2.75% of compensation. The results of the three scenarios are summarized in the table on the following page.

Assumptions

All assumptions are consistent with those applied to complete the 2014 valuation. Refer to these assumptions on the last page. Each forecast begins with the census and valuation results as of January 1, 2014. Refer to the valuation report for a summary of the census and funding results. Assets are projected beginning with total assets as of December 31, 2014. The estimated funded ratios will be less if plan asset performance is less than the 7% rate of return assumption, and if experience is other than assumed. Consideration was not given for the potential necessary change to the new mortality

Mr. Bob Brinker
June 26, 2015
Page-2-

tables recommended by the Society of Actuaries (RP-2014 with projection scale MP-2014). Measuring liabilities with these tables may decrease the funded ratio in the range of 5 to 10 percentage points.

Please call me at 402.964.5439 to discuss the results or for any alternative assumptions or contribution rates.

Sincerely,

A handwritten signature in cursive script that reads "Renee A. Nolte".

Renee A. Nolte, ASA, MAAA
Senior Consultant

RN/rb

Enclosure

**Eastern Nebraska Human Services Agency
Employees Retirement Plan
Estimated Funded Ratios**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Scenario 1 - Level Contribution Percent Beginning 2015																
Funding Basis	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Total Contribution Percent	10.25%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%
Employer Contribution Percent	7.50%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Employer Contribution (000's)	1,638	1,782	1,818	1,855	1,892	1,929	1,968	2,007	2,048	2,088	2,130	2,173	2,216	2,261	2,306	2,352
Funded Ratio	75.6%	76.6%	78.1%	79.4%	80.6%	81.6%	82.5%	83.2%	83.8%	84.3%	84.6%	84.8%	84.9%	84.8%	84.6%	84.3%
Scenario 2 - Level Contribution Percent Beginning 2016																
Funding Basis	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Total Contribution Percent	10.25%	10.75%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
Employer Contribution Percent	7.50%	8.00%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%	8.25%
Employer Contribution	1,638	1,782	1,875	1,912	1,951	1,990	2,030	2,070	2,112	2,154	2,197	2,241	2,286	2,331	2,378	2,425
Funded Ratio	75.6%	76.6%	78.1%	79.5%	80.8%	82.0%	83.0%	83.8%	84.5%	85.1%	85.5%	85.8%	86.1%	86.1%	86.0%	85.9%
Scenario 3 - Level Contribution Percent Beginning 2018 (Consistent with 2010 Forecast)																
Funding Basis	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Total Contribution Percent	10.25%	10.75%	11.25%	11.75%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%
Employer Contribution Percent	7.50%	8.00%	8.50%	9.00%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%
Employer Contribution	1,638	1,782	1,932	2,086	2,246	2,291	2,337	2,384	2,431	2,480	2,530	2,580	2,632	2,685	2,738	2,793
Funded Ratio	75.6%	76.6%	78.1%	79.7%	81.3%	83.0%	84.6%	86.0%	87.3%	88.5%	89.5%	90.4%	91.2%	91.8%	92.4%	92.8%

Actuarial Assumptions

Interest Rate 7.0% compounded annually.

Salary Scale Salaries were assumed to increase at an annual rate of 2.0% compounded annually following the valuation date.

Mortality Rates The mortality rates are based on the static IRS 2014 annuitant-distinct mortality table.

Turnover Rates Based on years of service and age as follows:

Years of Service	Annual Rate
0	54.0%
1	25.5%
2	15.0%
3 or more	150% of Scale T-7 of the Actuary's Pension Handbook

Elected Form of Distribution

Age	<u>Percent Electing</u>	
	Deferred Annuity	Employee Contributions
Under 55	25%	75%
55 and over	100%	0%

Retirement Rate Participants are assumed to retire in accordance with the following schedule:

Normal Retirement Age	Annual Rate of Retirement
62 with 30 years	15%
63 with 30 years	5%
64 with 30 years	5%
65	100%

Normal Retirement Age Age 65 or Age 62 with 30 years of service earned as of the valuation date.

Marriage Rate 75% of the participants were assumed to be married at retirement. Female spouses are assumed to be 3 years younger than male spouses.

September 3, 2015

PERSONAL AND CONFIDENTIAL

Mr. Bob Brinker
Eastern Nebraska Human Services Agency
900 S. 74th Plaza, Ste. 200
Omaha, NE 68114

RE: Eastern Nebraska Human Services Agency Employees Retirement Plan
GASB Statement 68 Disclosure Report

Dear Bob:

We have completed the June 30, 2015 GASB Statement 68 year end disclosure report for the Eastern Nebraska Human Services Agency Employees Retirement Plan. The report provides a summary of the following determinations:

- Statement of Net Pension Liability under GASB Statement 68
- Statement of Changes in Net Pension Liability under GASB Statement 68
- Statement of Pension Expense under GASB Statement 68

The determinations included in the report are based on plan participant data assembled to prepare the January 1, 2014 actuarial valuation for the Pension Plan and assets as of December 31, 2014. A summary of plan participants, plan provisions and actuarial assumptions may be found in the January 1, 2014 Actuarial Valuation Report.

Actuarial computations based on GASB Statement 68 included in this report have been prepared to fulfill employer accounting requirements. The calculations reported herein have been made on a basis consistent with our understanding of GASB Statement 68. Actuarial determinations prepared for purposes other than meeting employer financial accounting requirements may be significantly different from the results reported herein.

Please call if you have any questions.

Sincerely,



Renee A. Nolte, ASA, MAAA
Senior Consultant

RN/rb

Enclosures



**EASTERN NEBRASKA
HUMAN SERVICES AGENCY
EMPLOYEES RETIREMENT PLAN**

Governmental Accounting Standards Board
Statement No. 68

Year End Disclosure
June 30, 2015

Wisdom at Work.

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September 3, 2015

Pension Committee
Eastern Nebraska Human Services Agency
900 S. 74th Plaza, Ste. 200
Omaha, NE 68114

RE: GASB Statement 68 Disclosure Report

Committee Members:

This report will summarize the plan costs, plan liabilities and plan assets to be reported in your financial statements for the fiscal year ending June 30, 2015. These values have been determined to satisfy the requirements of the Governmental Accounting Standards Board Statement 68.

The determinations included in the report are based on plan participant data assembled to prepare the January 1, 2014 actuarial valuation for the Plan. Plan assets were reported and presented as of December 31, 2014. We have relied on the accuracy of the information that was supplied.

Actuarial computations based on GASB Statement 68 included in this report have been prepared to fulfill employer accounting requirements. The calculations reported herein have been made on a basis consistent with our understanding of GASB Statement 68. Actuarial determinations prepared for purposes other than meeting employer financial accounting requirements may be significantly different from the results reported herein. Accordingly, additional determinations are needed to measure benefit security at plan termination or to evaluate adequacy of plan funding on an ongoing basis.

To the best of our knowledge, the information supplied in this report is complete and accurate, and in our opinion the assumptions are reasonably related to the experience of the Agency and to reasonable expectations under the Agency. The undersigned meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

Sincerely,



Renee A. Nolte, ASA, MAAA
Senior Consultant



Glen C. Gahan, FSA, EA, MAAA
Principal

RN/GG/rb

Overview of Statement No. 68

In an effort to enhance the understandability and usefulness of the pension information that is included in the financial reports of pension plans for state and local governments, the Governmental Accounting Standards Board (GASB) has issued Statement No. 68 - Accounting and Financial Reporting for Pensions (effective for fiscal years beginning after June 15, 2014) which replace the requirements of Statement No. 27.

GASB Statement No. 68 establishes financial reporting standards for state and local governmental employers whose employees are provided with defined benefit pension plans. The statement requires financial statements and accompanying notes disclosing information relative to the funded status of the plan, pension accounting expense, historical contribution patterns and certain other information.

- Notes to the financial statements should include a description of benefits provided, plan investment information, and significant assumptions used to calculate the total pension liability.
- The statement of net pension liability presents plan assets, liabilities, and sensitivity to the net pension liability to changes in the discount rate as of the end of the reporting period.
- The statement of changes in net pension liability presents changes in the total pension liability due to service cost, interest and other items and changes in the plan fiduciary net position due to contributions, investment income and deductions such as benefit payments and administrative expenses for the reporting period.
- The schedule of contributions presents the actuarially determined contributions and any contribution deficiency or excess in relation to the covered employee payroll as of the end of the reporting period.
- The pension expense is the change in the net pension liability from the prior year to the current year, with limited smoothing for deferred items.
- The statement of deferred inflows and outflows of resources presents the gain or loss from economic and demographic changes, changes in assumptions and investment performance.

GASB Statement No. 68 requires the net pension liability to be measured as the present value of projected benefit payments to current active and inactive employees that is attributed to past periods of employee service, or total pension liability, less the plan's fiduciary net position. All assumptions underlying the determination of the total pension liability are required to be made in conformity with Actuarial Standards of Practice.

This statement requires most changes in the net pension liability be included in pension expense in the period of the change. Changes of economic and demographic assumptions and differences between expected and actual experience are to be included in pension expense over a closed period equal to the average remaining service of all active and inactive employees. Differences between projected investment earnings and actual investment earnings are to be included in pension expense over a closed 5 year period.

Notes to Financial Statements

Plan Administration

The Eastern Nebraska Human Services Agency Governing Board established and appointed the Pension Committee with responsibility to manage and administer the Eastern Nebraska Human Services Agency Employees Retirement Plan (the Plan), a defined benefit pension plan that provides pension benefits to eligible employees of the Eastern Nebraska Human Services Agency and Region 6 Behavioral Healthcare. The Chairperson of the Pension Committee is authorized to act on the Pension Committee's behalf in order to implement the decisions made by the committee.

Plan Membership

As of January 1, 2014, pension plan membership consists of the following:

Inactive plan members (or beneficiaries) currently receiving benefits	181
Inactive plan members entitled to but not yet receiving benefits	66
Active plan members	<u>650</u>
Total	897

Benefits Provided

Retirement benefits for members are calculated as 1.75% of the member's highest consecutive 60 months out of the last 120 months of compensation times the member's years of service. Members begin to vest in their monthly benefit after 5 years of service, and become fully vested after 10 years of service, or upon attainment of normal retirement age.

Plan members are eligible to retire at age 65 or age 62 with 30 years of service. Members may retire early at age 55 with 10 years of service or age 60 with 5 years of service.

Disability benefits are determined in the same manner as retirement benefits as if the member continued in active employment until normal retirement. Mandatory employee contributions are waived.

Death benefits are payable to an eligible spouse or dependent children if the member was eligible for early retirement at the date of death. The benefit is reduced for early commencement and to reflect payment as a 60% joint and survivor annuity.

Members are 100% vested in their employee contributions plus interest earnings. Members or beneficiaries may elect to receive this amount and waive their right to the retirement, disability or death benefits.

The Eastern Nebraska Human Services Agency Governing Board has the authority amend the provisions of the plan.

Notes to Financial Statements

Contributions

The plan is a contributory plan, with the members contributing 2.75% of compensation. The employer contribution rate in 2015 is 8.0% of compensation.

Investment Policy

It is the objective of the Fund to maximize the benefits from the Fund for the benefit of the Plan's obligation. The fund will be managed so that:

1. Assets grow sufficiently to offset long-term inflation.
2. Sufficient income and liquidity is provided to meet payment needs.
3. Assets will be held with reasonable safety and principal volatility.

As each of these objectives may be in conflict with one another, the Pension Fund Committee will make decisions in order to balance these objectives over the long term. The target return rate for these assets is 7% annually.

In an effort to increase the value of the Fund's assets, some investment risk must be assumed. In order to minimize and control these risks, the allocation of the Fund's assets between cash, bonds and equities will be established and followed. The allocations of assets will observe the following guidelines.

<u>Asset Class</u>	<u>Minimum</u>	<u>Target</u>	<u>Maximum</u>
Fixed Income & Cash	40%	45%	65%
Equities	30%	50%	60%
Real Estate Securities	0%	5%	10%

Method Used to Value Investments

Investments are reported at fair market value.

Net Pension Liability

The components of the net pension liability at December 31, 2014 are as follows:

Total Pension Liability	\$49,014,759
Plan Fiduciary Net Position	<u>(33,122,811)</u>
Net Pension Liability	15,891,948
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	67.58%

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability, calculated using the discount rate of 7.00%, as well as the net pension liability calculated using a discount rate that is 1-percentage point lower (6.00%) or 1-percentage point higher (8.00%) than the current rate:

	1% Decrease 6.00%	Current Discount Rate 7.00%	1% Increase 8.00%
Net Pension Liability	22,725,787	15,891,948	10,267,698

Schedule of Changes in Net Pension Liability

	2014
Total Pension Liability - Beginning of Year	\$47,983,658
Service Cost	990,532
Interest on the Total Pension Liability	3,272,254
Changes of Benefit Terms	0
Difference between Expected and Actual Experience	(1,360,940)
Changes of Assumptions	137,227
Benefit Payments	(2,007,972)
Net Change in Total Pension Liability	1,031,101
(a) Total Pension Liability - End of Year	49,014,759
Plan Fiduciary Net Position - Beginning of Year	30,908,402
Employer Contributions	1,645,419
Employee Contributions	601,310
Net Investment Income	1,999,321
Benefit Payments	(2,007,972)
Administrative Expenses	(23,669)
Net Change in Plan Fiduciary Net Position	2,214,409
(b) Plan Fiduciary Net Position - End of Year	33,122,811
Net Pension Liability (a) - (b)	15,891,948
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	67.58%
Covered-Employee Payroll	20,402,867
Net Pension Liability as a Percentage of the Covered-Employee Payroll	77.89%

Schedule of Contributions

	<u>2014</u>
Actuarially Determined Contribution	\$1,636,867
Actual Contributions Recognized During the Year	1,645,419
Contribution Deficiency/(Excess)	<u>(8,552)</u>
Covered-Employee Payroll	20,402,867
Contributions as a Percentage of Covered-Employee Payroll	8.06%

Methods and Assumptions for Actuarially Determined Contributions

Valuation Date	1/1/2014
Actuarial Cost Method	Projected Unit Credit
Asset Valuation Method	Market Value of Assets
Investment Rate of Return	7.00%
Salary Scale	2.00%
Mortality Table	IRS 2014

Pension Expense

	Fiscal Year ending June 30, 2015
1. Service Cost	\$990,532
2. Interest on Total Pension Liability	3,272,254
3. Changes in Plan Provisions	0
4. Employee Contributions	601,310
5. Projected Earnings on Pension Plan Investments	2,171,945
6. Pension Plan Administrative Expense	23,669
7. Other Changes in Fiduciary Net Position	0
Recognition of Deferred (Inflows)/Outflows of Resources	
8. Economic/Demographic (Gain)/Loss	(200,138)
9. Assumption Changes	20,180
10. Investment (Gain)/Loss	<u>34,525</u>
11. Total Pension Expense	1,367,767
= (1) + (2) + (3) - (4) - (5) + (6) + (7) + (8) + (9) + (10)	

Deferred Outflows and Deferred Inflows of Resources

The following schedule illustrates the balances of deferred inflows and outflows of resources related to pensions that are reported for differences between expected and actual experience, changes of assumptions and differences between projected and actual returns on pension plan investments.

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$0	(\$1,160,802)
Changes of Assumptions	\$117,047	\$0
Net difference between projected and actual earnings on pension plan investments	\$138,099	\$0
Total	\$255,146	(\$1,160,802)

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Fiscal Year	Amount
2016	(\$145,433)
2017	(\$145,433)
2018	(\$145,433)
2019	(\$145,434)
2020	(\$179,958)
Thereafter	(\$143,965)

Schedule of Deferred Inflows and Outflows of Resources

	Original Amount	Date Established	Original Recognition Period*	Amount Recognized in Expense 6/30/2015	Balance of Deferred Inflows 7/1/2015	Balance of Deferred Outflows 7/1/2015
Economic/ Demographic (Gain)/Loss	(1,360,940)	12/31/2014	6.8	(200,138)	(1,160,802)	0
				(200,138)	(1,160,802)	0
Assumption Changes	137,227	12/31/2014	6.8	20,180	0	117,047
				20,180	0	117,047
Investment (Gain)/Loss	172,624	12/31/2014	5.0	34,525	0	138,099
				34,525	0	138,099

* Investment (gain)/loss is recognized in pension expense over a closed period of five years while economic/demographic (gain)/loss, along with assumption changes, are recognized over a closed period equal to the weighted average of expected remaining service lives for all active and inactive members.

Actuarial Assumptions

The pension liability for GASB Statement 68 reporting purposes was determined by the following actuarial assumptions:

Investment Rate of Return	7.00%
Discount Rate	7.00%
Salary Scale	2.00%
Mortality Table	IRS 2014
Actuarial Cost Method	Entry Age Normal
Valuation Date	1/1/2014
Measurement Date	12/31/2014
Reporting Date	6/30/2015

Discount Rate

The discount rate used to measure the total pension liability as of December 31, 2014 was 7.00%. The projection of cash flows used to determine the discount rate assumed that employee contributions will be made at 2.75% and employer contributions will be made at 8.00% of covered payroll of current plan members for each year in the future. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Allocation Basis of Certain Measures Amongst Employers

The Retirement Plan is a cost-sharing multiple employer plan as defined under GASB 68. Each employer's proportionate share of certain measures such as the net pension liability, pension expense and deferred inflows and outflows of resources is to be based on the proportionate share of the individual employer's projected long-term contributions to the Retirement Plan as compared to the total projected long-term contributions of all employers participating in the Retirement Plan. Since the same contribution rate of covered payroll will apply to the participating employers in the Retirement Plan for future contributions, each employer's proportionate share was based on the January 1, 2014 covered payroll as compared to the total of all employers' covered payroll.

Net Pension Liability by Employer

The allocation of the Net Pension Liability at December 31, 2014 was as follows:

Employer	Proportionate Share (%)	Share of NPL	Covered Payroll	NPL as % of Covered Payroll
Region 6	8.62%	1,370,456	1,759,459	77.89%
ENHSA	91.38%	14,521,492	18,643,408	77.89%
Total	100.00%	15,891,948	20,402,867	77.89%

Sensitivity Analysis of Net Pension Liability by Employer

The allocation of the sensitivity in Net Pension Liability at December 31, 2014 was as follows:

Employer	Proportionate Share (%)	Share of NPL		
		6.00%	7.00%	8.00%
Region 6	8.62%	1,959,778	1,370,456	885,444
ENHSA	91.38%	20,766,009	14,521,492	9,382,254
Total	100.00%	22,725,787	15,891,948	10,267,698

Schedule of Contributions by Employer

The allocation of the contributions for the period ending December 31, 2014 was as follows:

Employer	Proportionate Share (%)	Actuarially Determined Contribution	Actual Contributions Recognized	Contribution Deficiency/ (Excess)	Covered Payroll	% of Covered Payroll
Region 6	8.62%	141,157	141,894	(737)	1,759,459	8.06%
ENHSA	91.38%	1,495,710	1,503,525	(7,815)	18,643,408	8.06%
Total	100.00%	1,636,867	1,645,419	(8,552)	20,402,867	8.06%

Pension Expense by Employer

The allocation of the Pension Expense for the period ending December 31, 2014 was as follows:

Employer	Proportionate Share (%)	Share of Pension Expense
Region 6	8.62%	117,951
ENHSA	<u>91.38%</u>	<u>1,249,816</u>
Total	100.00%	1,367,767

Deferred Inflows of Resources by Employer

The allocation of Deferred (Inflows) at December 31, 2014 was as follows:

Employer	Proportionate Share (%)	Expected and Actual Experience	Changes of Assumptions	Projected and Actual Earnings	Total
Region 6	8.62%	(100,103)	0	0	(100,103)
ENHSA	91.38%	(1,060,699)	0	0	(1,060,699)
Total	100.00%	(1,160,802)	0	0	(1,160,802)

Deferred Outflows of Resources by Employer

The allocation of the Deferred Outflows at December 31, 2014 was as follows:

Employer	Proportionate Share (%)	Expected and Actual Experience	Changes of Assumptions	Projected and Actual Earnings	Total
Region 6	8.62%	0	10,094	11,909	22,003
ENHSA	91.38%	0	106,953	126,190	233,143
Total	100.00%	0	117,047	138,099	255,146

Future Deferred Inflows and Outflows of Resources by Employer

The allocation of the Deferred (Inflows)/Outflows to be recognized in Pension Expense was as follows:

Employer	Proportionate Share (%)	Fiscal Year					
		2016	2017	2018	2019	2020	Thereafter
Region 6	8.62%	(12,542)	(12,542)	(12,542)	(12,542)	(15,519)	(12,415)
ENHSA	91.38%	(132,891)	(132,891)	(132,891)	(132,892)	(164,439)	(131,550)
Total	100.00%	(145,433)	(145,433)	(145,433)	(145,434)	(179,958)	(143,965)

July 2, 2012

PERSONAL AND CONFIDENTIAL

Mr. Bob Brinker
Eastern Nebraska Human Services Agency
900 South 74th Plaza Suite 200
Omaha, NE 68114

RE: Actuarial Experience Review

Dear Bob:

Enclosed are 15 copies of the Actuarial Experience Review. This report summarizes salary, turnover, benefit election and investment return experience of the Employees Retirement Plan.

In the Discussion of Results, we are recommending a decrease in the salary rate from 4% to 3%. No other recommendations are made at this time.

We will proceed with completion of the actuarial valuation based on these assumptions unless you notify us otherwise. Please call to discuss or if you feel other changes in the assumptions are warranted.

Sincerely,



Renee A. Nolte, ASA, MAAA
Senior Consultant

RAN/dm

Enclosures

Eastern Nebraska Human Services Agency
Employees Retirement Plan

Actuarial Experience Review

July 2, 2012

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Discussion of Results

SilverStone Group has conducted an actuarial study of the salary, turnover, benefit election and investment return experience for the Eastern Nebraska Human Services Agency (ENHSA) Employees Retirement Plan (Plan). The study includes data from the 2008 through 2011 plan years. In addition, the results from previous studies conducted on the 2002 through 2007 plan years have been included for comparison.

Experience has been analyzed on annual periods based on the census and asset data provided by ENHSA. An analysis of experience involves:

- Calculation of actual rates of increase (decrease).
- Calculation of expected rates of increase (decrease).
- Comparison of the actual rates to the expected rates (i.e., on absolute terms).
- Comparison of the actual rates divided by the expected rates (i.e., on relative terms).

Salary Experience

The salary change rate was calculated two ways. First, salaries were compared in the aggregate from one year to the next for the last 10 years. This comparison often forms the basis of the assumed rate of salary increase used in an actuarial valuation. These historical annual salary increases were then compared to the current assumed salary rate of 4%. Salary rates over the last three years were also analyzed by 5-year age brackets.

Experience indicates that a reduction in the salary increase assumption is warranted. The average over the last 10 years is 3.1%; the average over the last five years is 2.7%. Assuming the more recent years are somewhat lower due to economic conditions and not indicative of long-term averages, decreasing the assumed salary rate to 3% would seem reasonable.

Turnover Experience

The current turnover assumption consists of rates that vary by age and service. The turnover rates do not depend on age during the first three years of service. After three years of service, the rates are a function of age only.

Because the turnover rate is dependent upon both years of service and age, the turnover rate was calculated two ways. First, turnover rates were calculated for employees who have less than three years of service with ENHSA. Second, employees were grouped in 5-year age brackets. The turnover rate was calculated based on the number of employees in each age group ending their employment with ENHSA.

The turnover rate assumption was reduced 25% in 2006. The experience in the following two years shows that overall, actual turnover experience was very close to expected (99% - first bar of graph on page 6). The experience in the next 2 two-year segments indicates a gradual trend of less turnover than expected (84% for 2008-2009 and 77% for 2010-2011). This may be an indication of recent economic conditions where participants remain in their current job due to lack of other opportunities for employment elsewhere.

The graphs on page 7 and 8 analyze turnover by years of service. The graphs on page 9 and 10 analyze turnover by five-year age brackets. For the most recent experience, the largest variances from expected are for years of service less than 1 (46% of expected) and for age 65 and over (22% of expected). A lower turnover than expected for age 65 and over may also be a sign of recent economic conditions. Participants work beyond retirement age when personal savings are diminished by poor investment performance.

A turnover/retirement age assumption beyond age 65 would be atypical for this size and type of plan. Therefore, we recommend no change to the assumed turnover rates.

Form of Benefit Election Experience

The last experience study in 2008 resulted in a new assumption for elected forms of distribution. For those participants who terminated with a vested deferred annuity option, actual experience was tabulated to determine the percent who elected to forego the annuity option and elect return of their contributions plus interest.

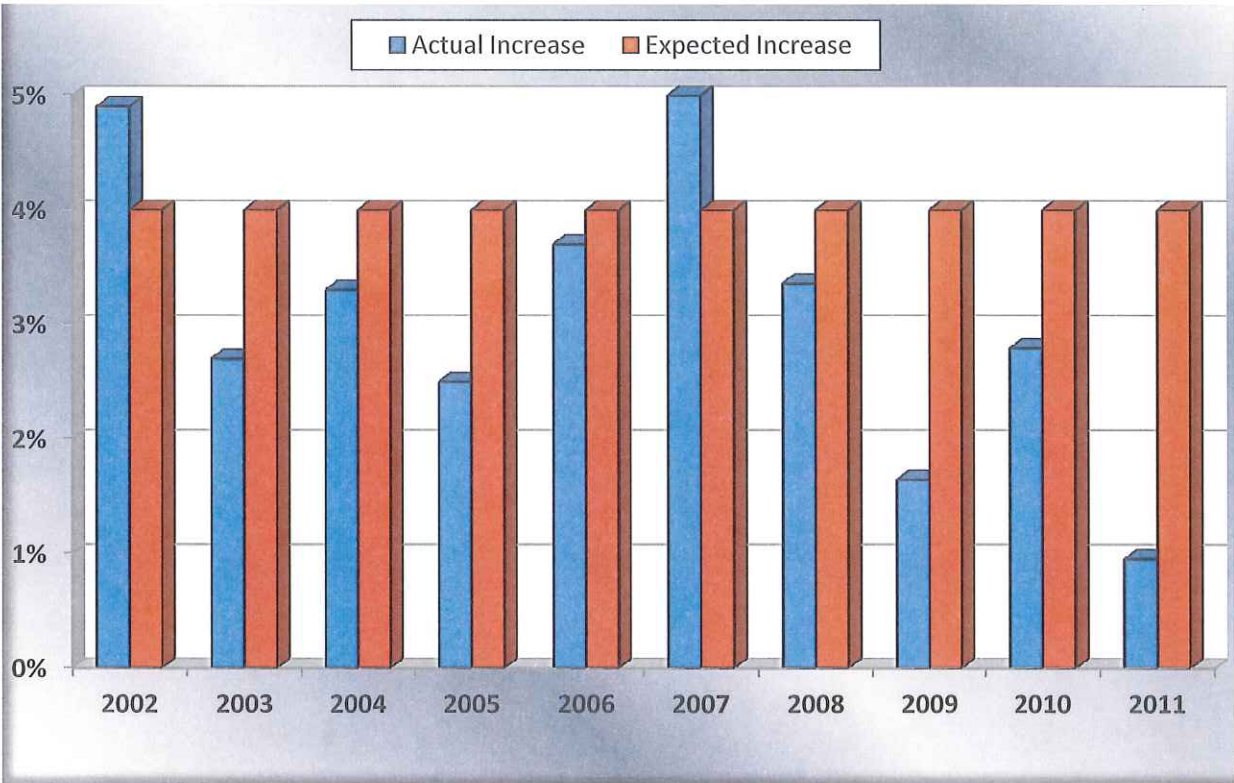
Actual experience for the most recent two-year segments has been slightly below the expectation that 75% of those under age 55 elect return of contributions (73% for 2008-2009 and 70% for 2010-2011). We do not consider this variance significant enough to adjust the current assumption.

Investment Return Experience

The investment return rate was calculated on a simplified basis that assumes cash flow occurs evenly throughout each year. Use of a simplified basis is supported by the fact employee and ENHSA contributions are made bi-monthly. For this reason, the calculated rate may not agree with rates of return reported by United of Omaha.

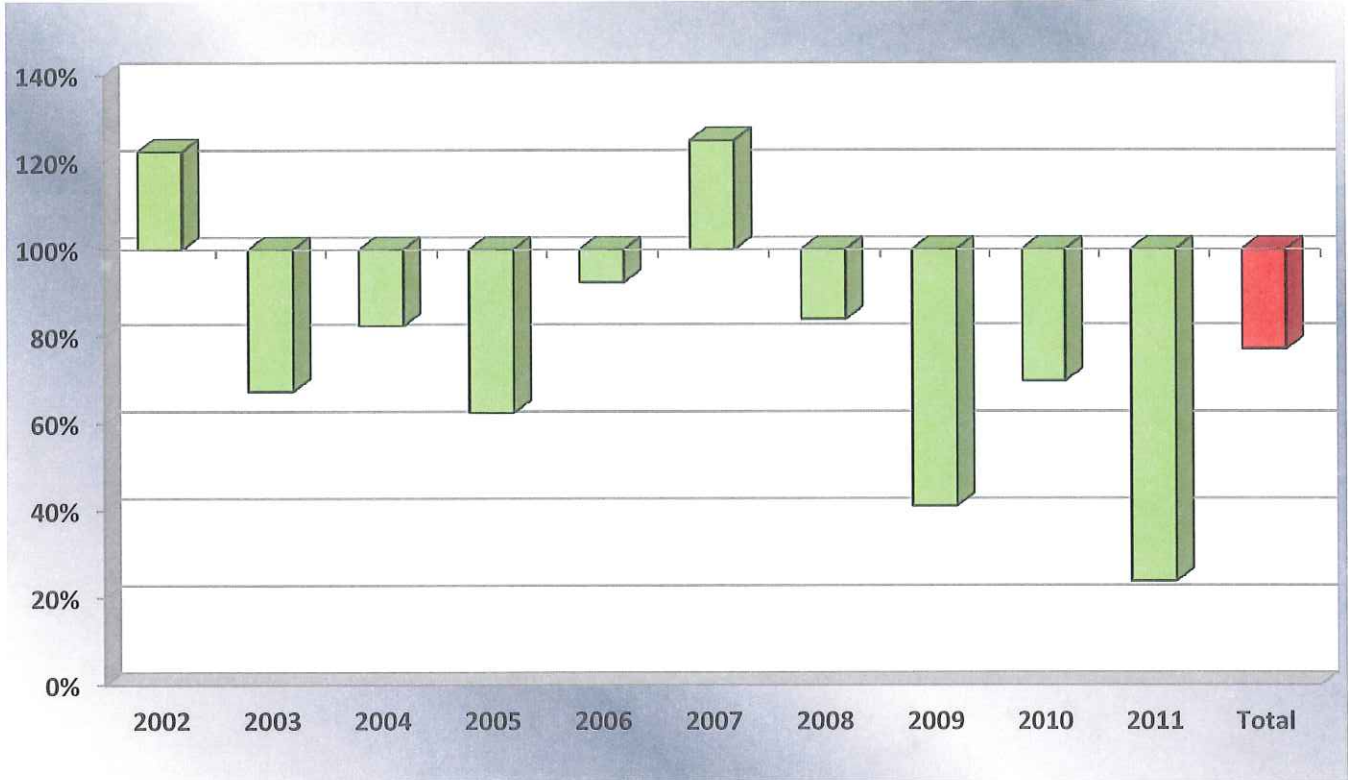
The investment return rate has averaged 3.6% on a compound basis over the 10-year period from 2002 to 2011. For the five-year period from 2007 to 2011, the average return rate is 1.8%. The rate of investment return assumption has been 7.0% since at least 1997. Considering the investment mix of equities and fixed income, 7.0% remains an acceptable assumption.

Salary Experience from 2002 to 2011



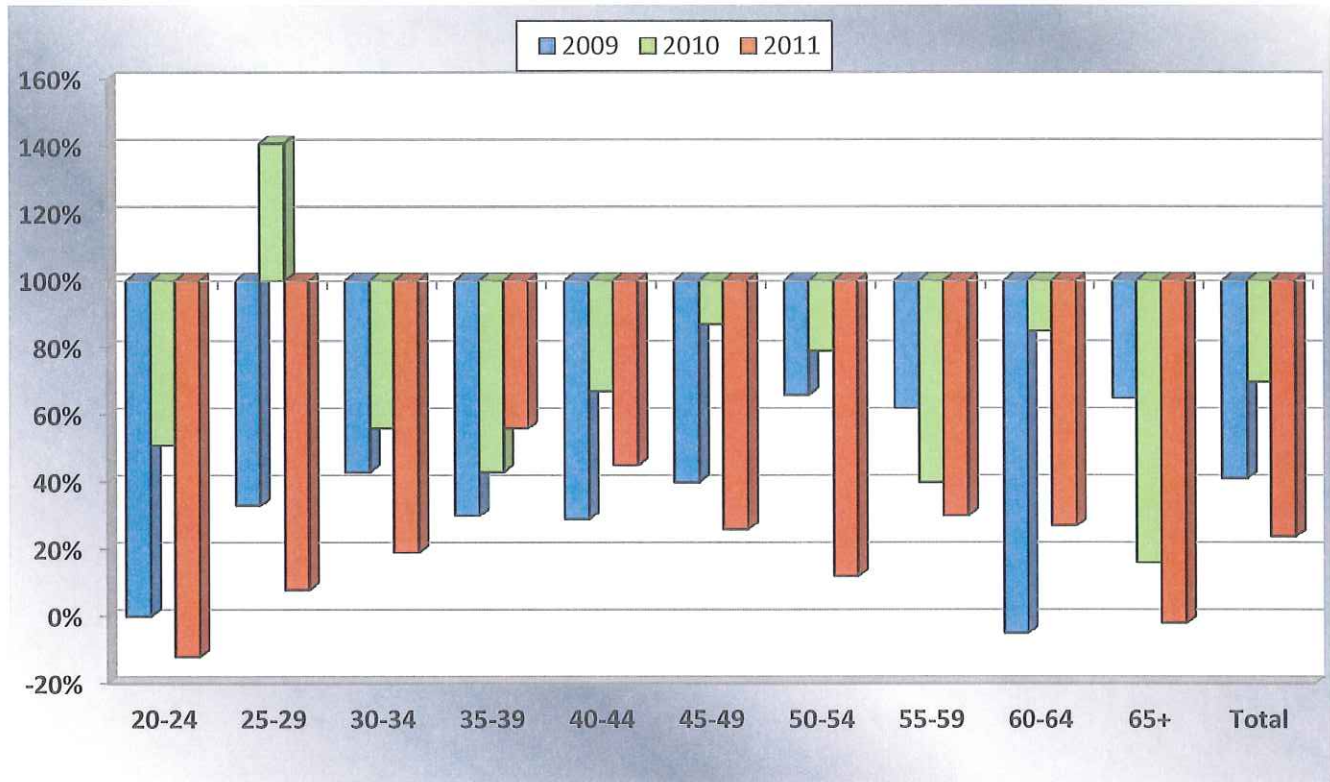
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Actual Increase	4.9%	2.7%	3.3%	2.5%	3.7%	5.0%	3.4%	1.6%	2.8%	1.0%
Expected Increase	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%

Salary Experience from 2002 to 2011 Ratio of Actual vs. Expected Salary Increase



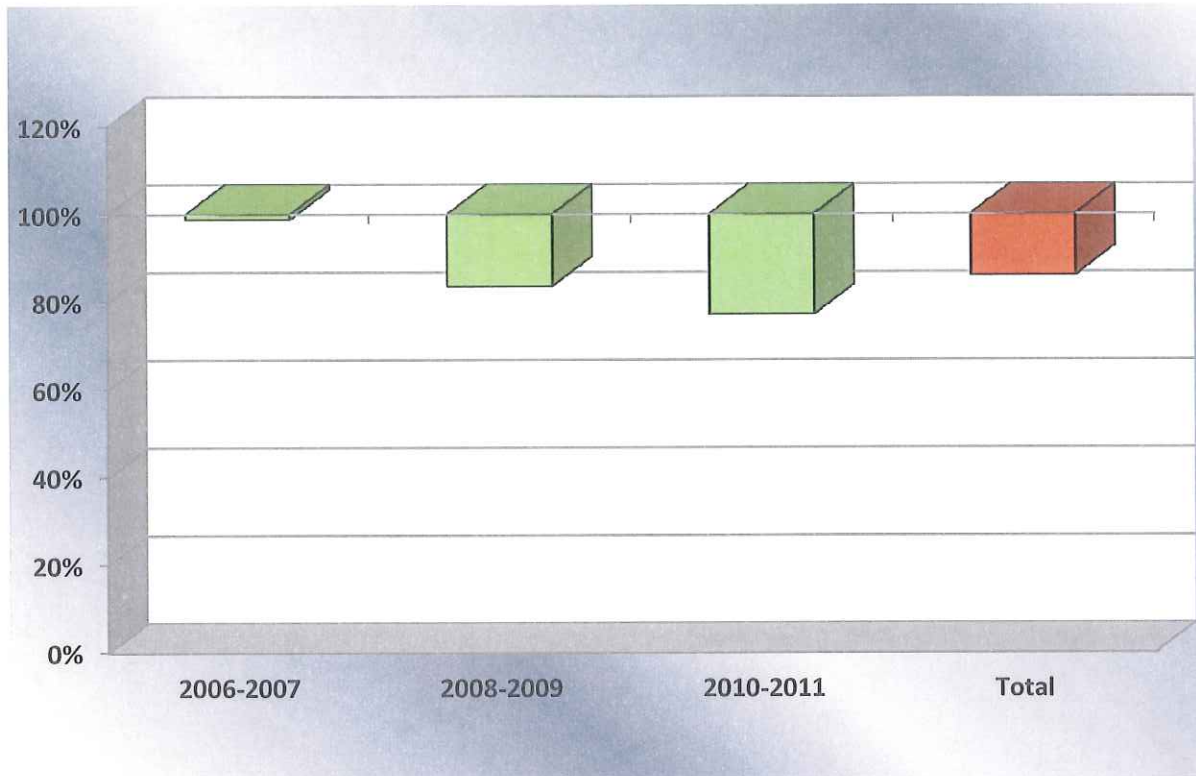
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Actual Increase	4.9%	2.7%	3.3%	2.5%	3.7%	5.0%	3.4%	1.6%	2.8%	1.0%	3.1%
Expected Increase	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Actual vs. Expected	122.5%	67.5%	82.5%	62.5%	92.5%	125.0%	84.0%	41.1%	69.8%	23.8%	77.1%

Salary Experience from 2009 to 2011 Ratio of Actual to Expected Salary Increase by Age Group



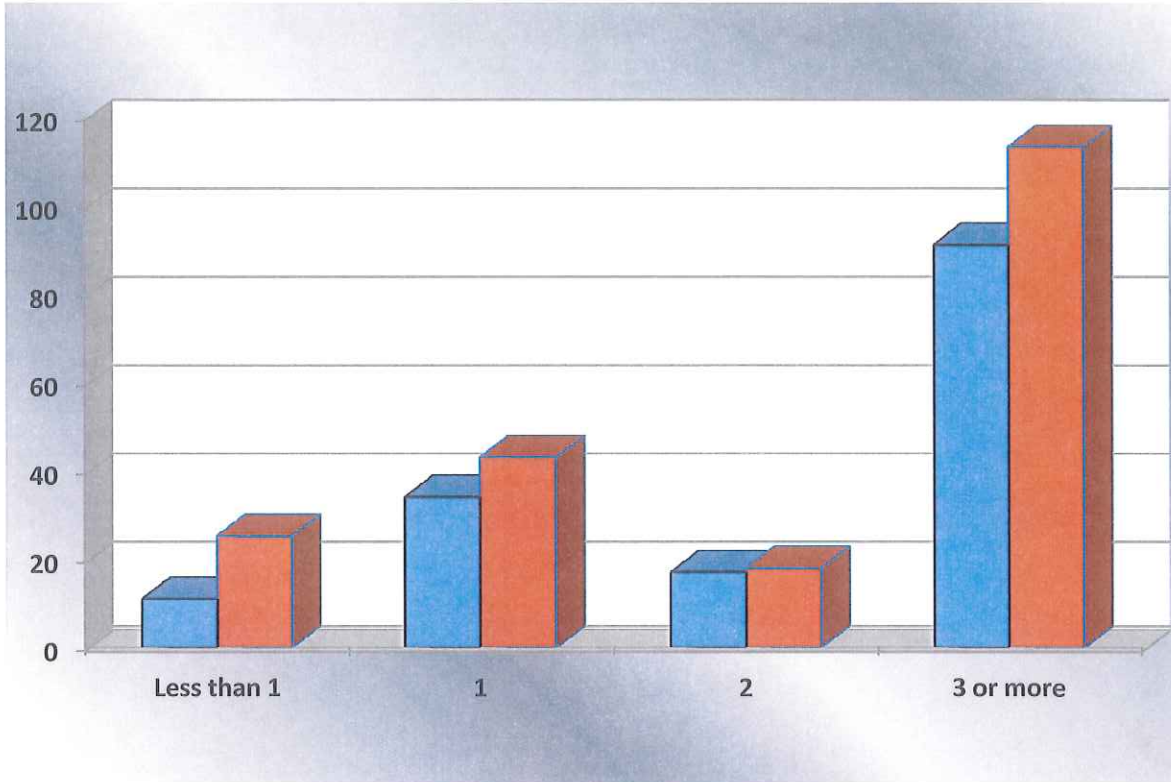
Age	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Actual Increase vs. Expected Increase											
2009	0%	33%	43%	30%	29%	40%	66%	62%	-5%	65%	41%
2010	51%	141%	56%	43%	67%	87%	79%	40%	85%	16%	70%
2011	-12%	8%	19%	56%	45%	26%	12%	30%	27%	-2%	24%

Turnover Experience from 2006 to 2011 Ratio of Actual to Expected Turnover



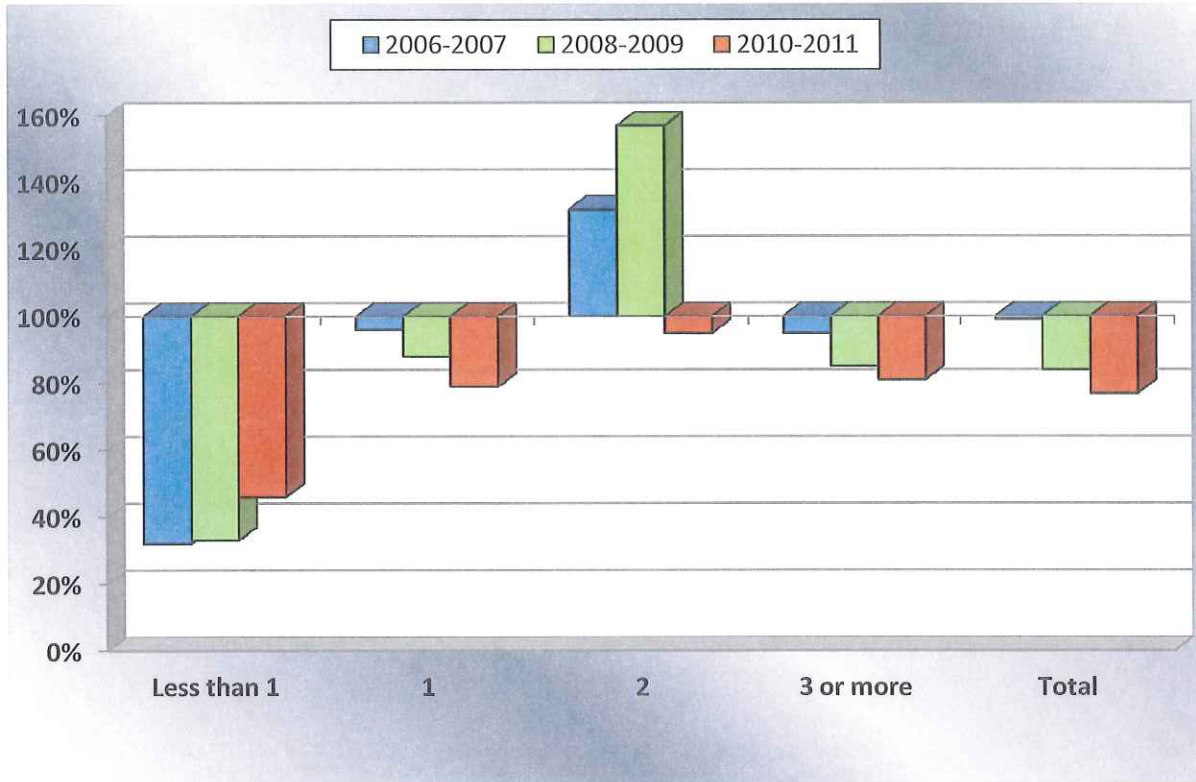
Year	2006-2007	2008-2009	2010-2011	Total
Actual Turnover	175	160	157	492
Expected Turnover	177	191	203	572
Actual vs. Expected	99%	84%	77%	86%

Turnover Experience for 2010 and 2011 Ratio of Actual to Expected Turnover by Years of Service



Years of Service	Less than 1	1	2	3 or more	Total
Actual Turnover	12	35	18	92	157
Expected Turnover	26	44	19	114	203
Actual vs. Expected	46%	79%	95%	81%	77%

Turnover Experience from 2006 to 2011 Ratio of Actual to Expected Turnover by Years of Service

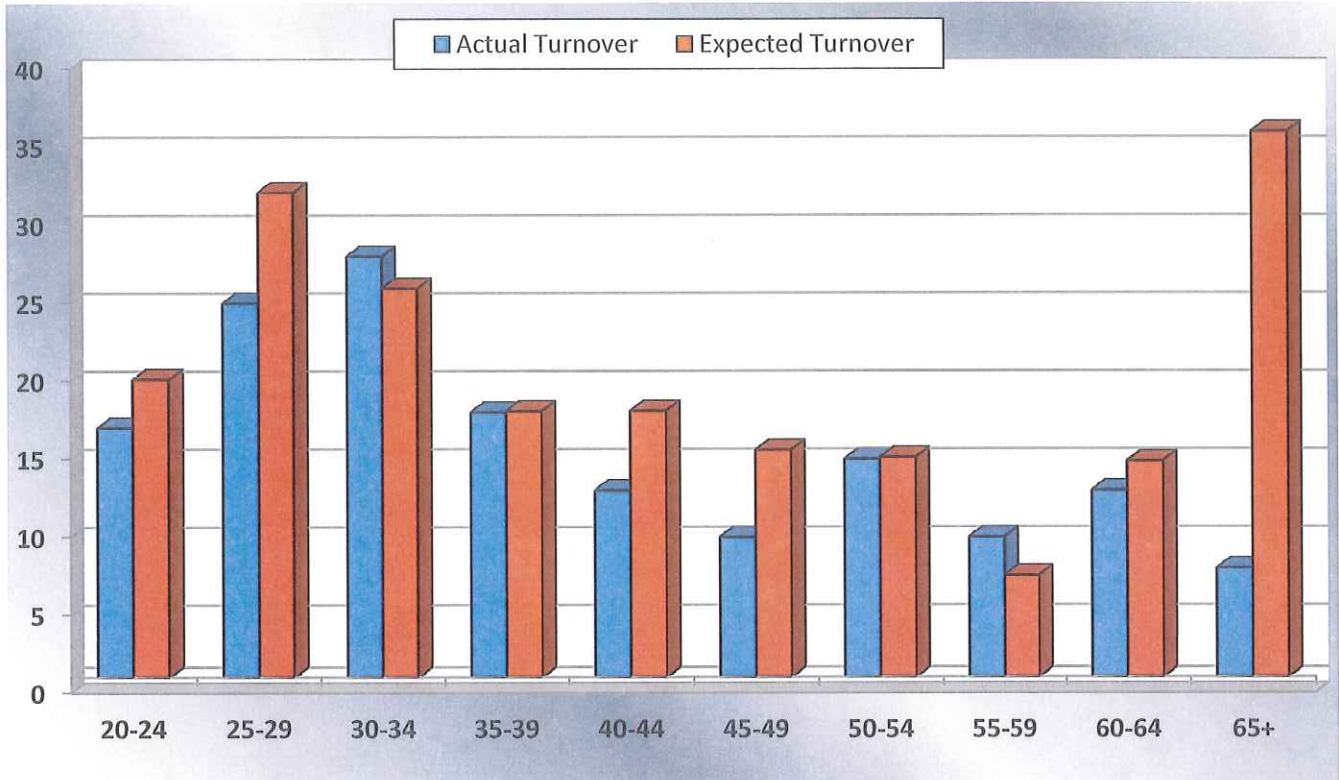


Years of Service	Less than 1	1	2	3 or more	Total
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Actual Turnover vs. Expected Turnover

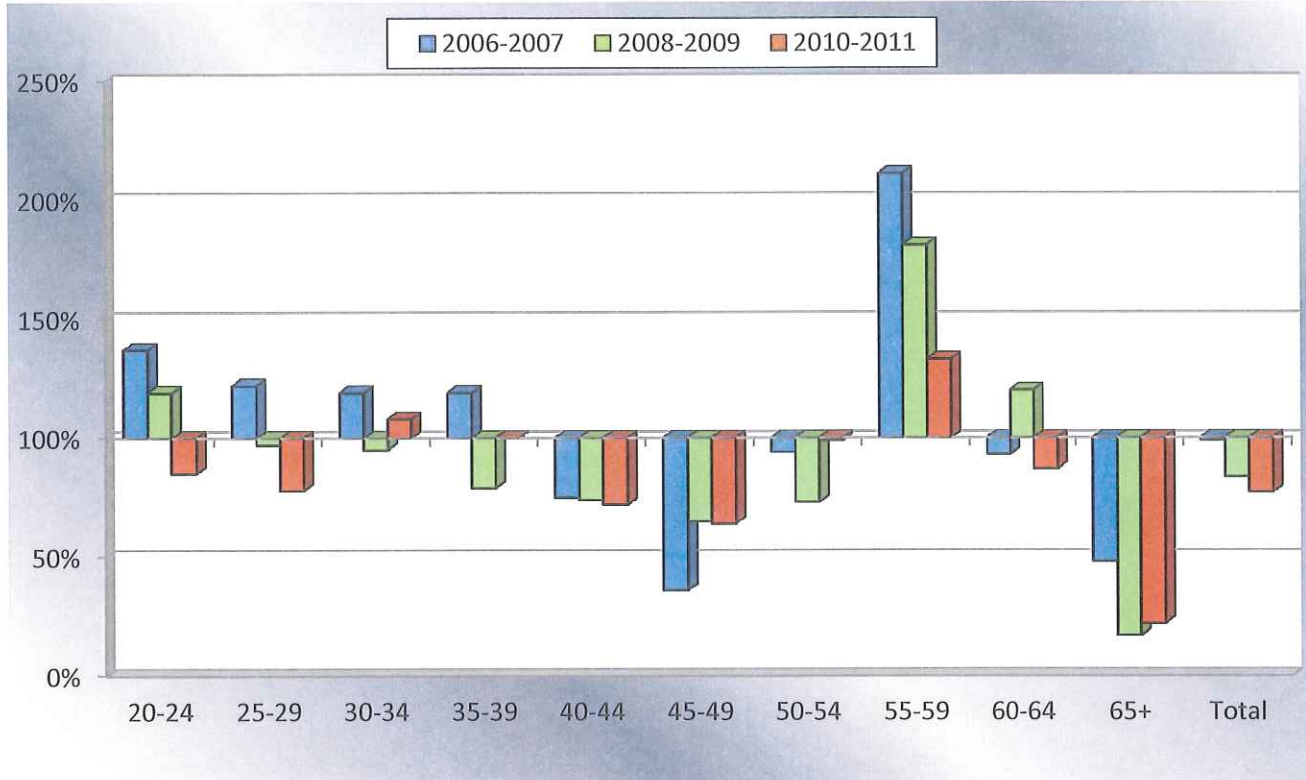
2006-2007	32%	96%	132%	95%	99%
2008-2009	33%	88%	157%	85%	84%
2010-2011	46%	79%	95%	81%	77%

Turnover Experience for 2010 and 2011 Incidence of Turnover by Age Group



Age	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Actual Turnover	17	25	28	18	13	10	15	10	13	8	157
Expected Turnover	20	32	26	18	18	16	15	8	15	36	203

Turnover Experience from 2006 to 2011 Ratio of Actual to Expected Turnover by Age Group

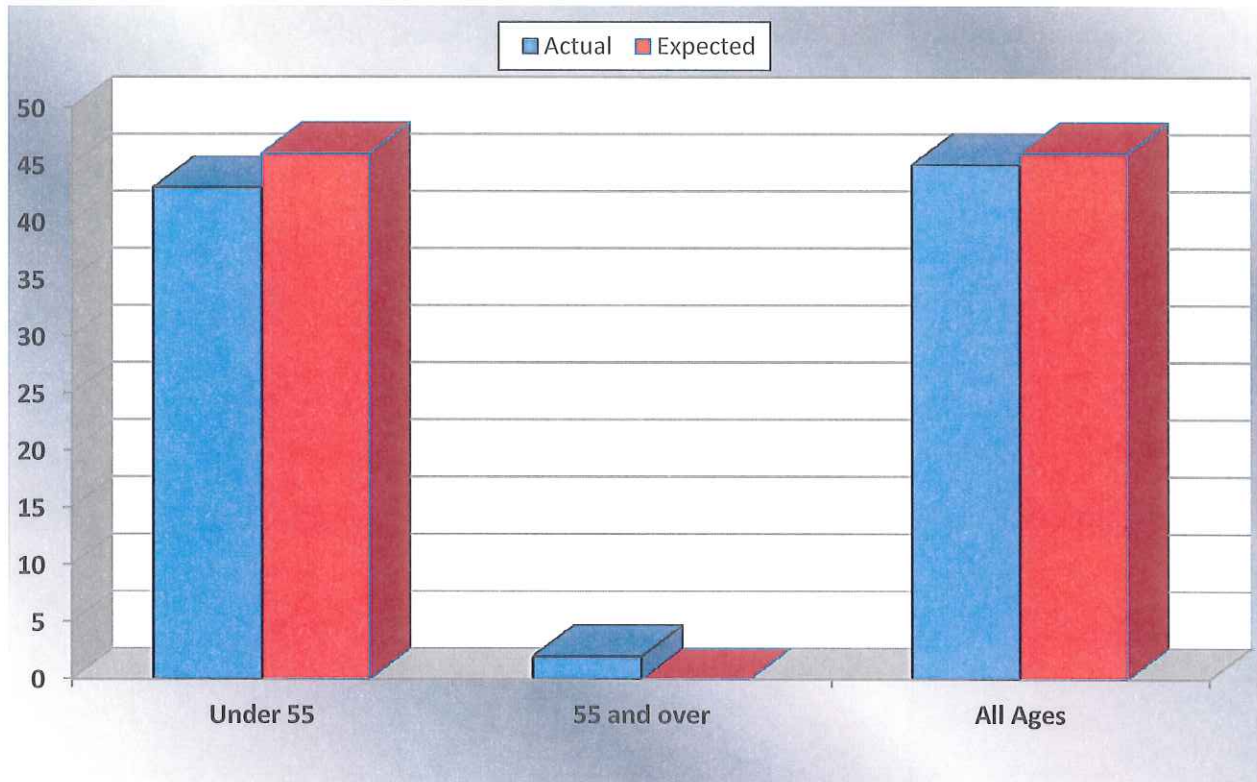


Age	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
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Actual Turnover vs. Expected Turnover

2006-2007	137%	122%	119%	119%	75%	36%	94%	211%	93%	48%	99%
2008-2009	119%	97%	95%	79%	74%	65%	73%	181%	120%	17%	84%
2010-2011	85%	78%	108%	100%	72%	64%	99%	133%	87%	22%	77%

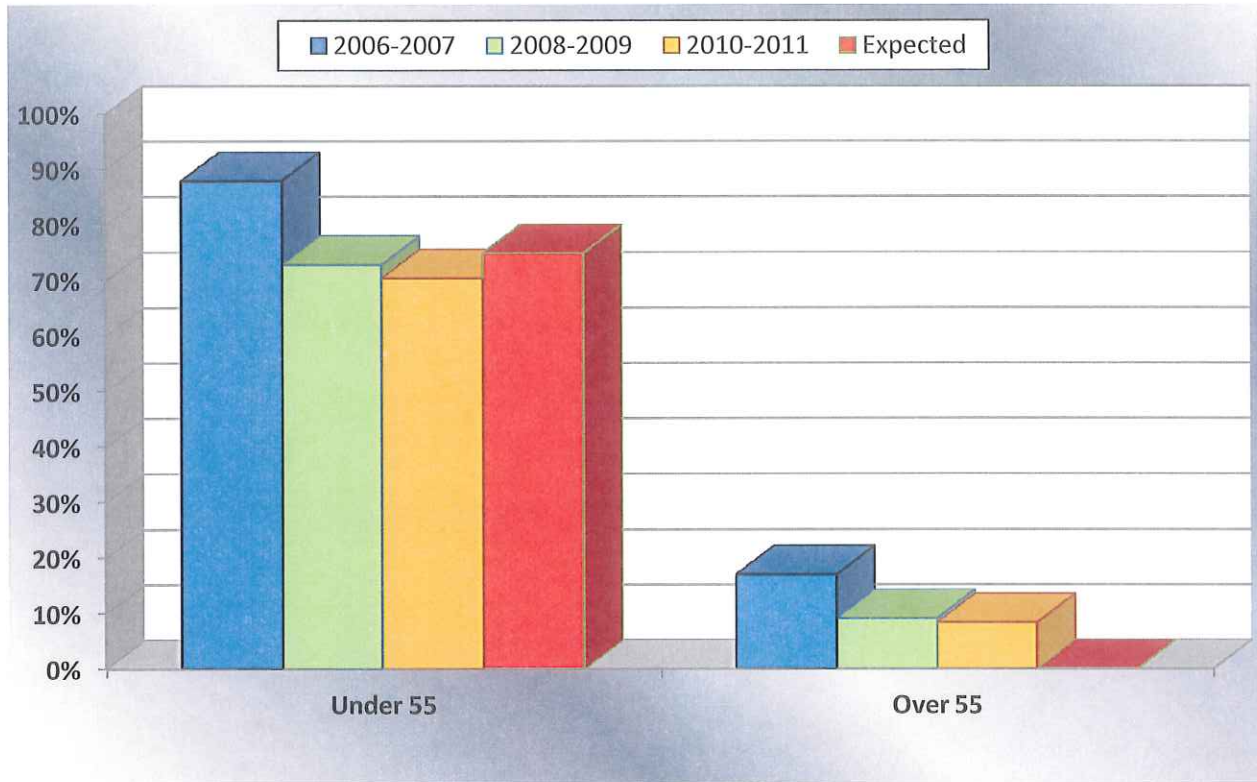
Benefit Election Experience for 2010 and 2011 Incidence of Election to Return Contributions



Age	Under 55	55 and over	All Ages
Number Electing Return of Contributions*			
Actual	43	2	45
Expected	46	0	46
Actual vs. Expected	93%	N/A	98%

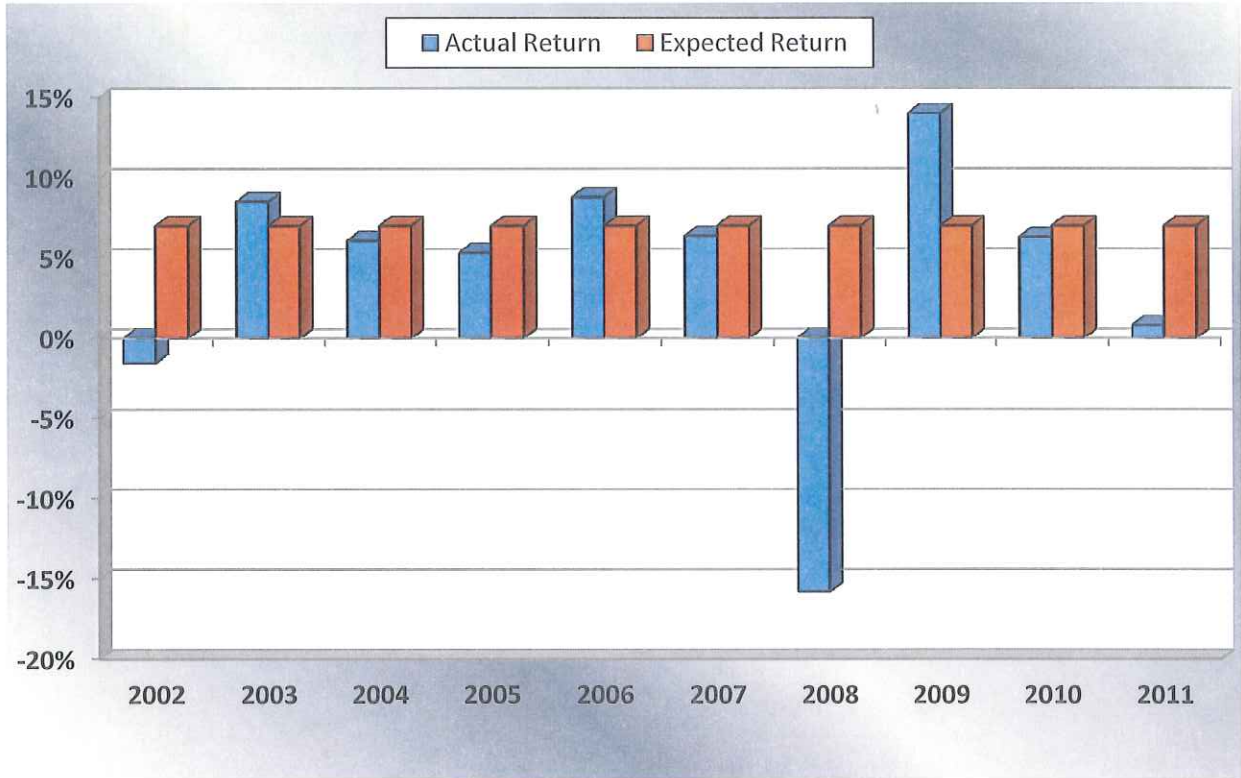
* Excludes those withdrawing before the opportunity to vest in a deferred annuity.

Benefit Election Experience from 2006 to 2011 Percent Electing Return of Contributions



Age	Under 55	Over 55	All Ages
Percent Electing Return of Contributions*			
2006-2007	88%	17%	75%
2008-2009	73%	9%	53%
2010-2011	70%	8%	53%
Expected	75%	0%	N/A

Investment Experience from 2002 to 2011



Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Actual Return	-1.5%	8.5%	6.1%	5.3%	8.8%	6.4%	-15.8%	14.0%	6.3%	0.8%
Expected Return	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%

Actuarial Assumptions

The actuarial assumptions included in the experience study are summarized below:

Salary Increase Rate 4% compounded annually

Turnover Rates Rates in the first three years are:

Years of Service	Rate
0	54.0%
1	25.5
2	15.0

After three years, sample rates are as follows:

Age	Rate
25	14.5%
30	14.0
35	13.1
40	11.6
45	9.5
50	6.3
55	2.3
60	0.2

Elected Form of Distribution

Under Age 55	75% Return of Contribution 25% Deferred Annuity
Over age 55	100% Deferred Annuity

Retirement Rates

Age	Rate
62	15%
63	5%
64	5%
65+	100%

Investment Return Rate 7.0% compounded annually

Salary Experience Analysis from 2010 to 2011⁽³⁾

<u>Age Group</u>	<u>2010 Salary</u>	<u>2011 Salary</u>	<u>Actual Increase⁽¹⁾</u>	<u>Expected Increase⁽²⁾</u>	<u>Actual/Expected</u>
20-24	26,055	25,926	-0.49%	4.00%	-12%
25-29	27,436	27,525	0.32%	4.00%	8%
30-34	29,542	29,771	0.78%	4.00%	19%
35-39	32,479	33,210	2.25%	4.00%	56%
40-44	31,179	31,736	1.79%	4.00%	45%
45-49	35,319	35,692	1.06%	4.00%	26%
50-54	35,182	35,352	0.48%	4.00%	12%
55-59	36,126	36,558	1.20%	4.00%	30%
60-64	34,883	35,258	1.08%	4.00%	27%
65+	31,231	31,206	-0.08%	4.00%	-2%
Total	32,543	32,852	0.95%	4.00%	24%

Salary Experience Analysis from 2009 to 2010⁽³⁾

<u>Age Group</u>	<u>2009 Salary</u>	<u>2010 Salary</u>	<u>Actual Increase⁽¹⁾</u>	<u>Expected Increase⁽²⁾</u>	<u>Actual/Expected</u>
20-24	25,534	26,055	2.04%	4.00%	51%
25-29	25,971	27,436	5.64%	4.00%	141%
30-34	28,889	29,542	2.26%	4.00%	56%
35-39	31,925	32,479	1.73%	4.00%	43%
40-44	30,361	31,179	2.69%	4.00%	67%
45-49	34,128	35,319	3.49%	4.00%	87%
50-54	34,104	35,182	3.16%	4.00%	79%
55-59	35,558	36,126	1.60%	4.00%	40%
60-64	33,733	34,883	3.41%	4.00%	85%
65+	31,032	31,231	0.64%	4.00%	16%
Total	31,659	32,543	2.79%	4.00%	70%

⁽¹⁾ The percentage is based on the aggregate amounts.

⁽²⁾ Rate used in actuarial valuations since 2006.

⁽³⁾ Results derived from 2012 valuation census.

Salary Experience Analysis from 2008 to 2009⁽³⁾

<u>Age Group</u>	<u>2008 Salary</u>	<u>2009 Salary</u>	<u>Actual Increase⁽¹⁾</u>	<u>Expected Increase⁽²⁾</u>	<u>Actual/Expected</u>
20-24	25,259	25,263	0.02%	4.00%	0%
25-29	26,340	26,684	1.30%	4.00%	33%
30-34	30,348	30,874	1.73%	4.00%	43%
35-39	32,141	32,529	1.21%	4.00%	30%
40-44	31,463	31,825	1.15%	4.00%	29%
45-49	33,364	33,901	1.61%	4.00%	40%
50-54	35,337	36,277	2.66%	4.00%	66%
55-59	37,257	38,179	2.47%	4.00%	62%
60-64	34,950	34,884	-0.19%	4.00%	-5%
65+	31,662	32,489	2.61%	4.00%	65%
Total	32,275	32,805	1.64%	4.00%	41%

Salary Experience Analysis from 2007 to 2008⁽³⁾

<u>Age Group</u>	<u>2007 Salary</u>	<u>2008 Salary</u>	<u>Actual Increase⁽¹⁾</u>	<u>Expected Increase⁽²⁾</u>	<u>Actual/Expected</u>
20-24	24,823	25,259	1.76%	4.00%	44%
25-29	25,672	26,340	2.60%	4.00%	65%
30-34	29,596	30,348	2.54%	4.00%	64%
35-39	30,162	32,141	6.56%	4.00%	164%
40-44	30,074	31,463	4.62%	4.00%	115%
45-49	32,622	33,364	2.28%	4.00%	57%
50-54	34,753	35,337	1.68%	4.00%	42%
55-59	35,440	37,257	5.13%	4.00%	128%
60-64	33,606	34,950	4.00%	4.00%	100%
65+	30,616	31,662	3.42%	4.00%	85%
Total	31,226	32,275	3.36%	4.00%	84%

⁽¹⁾ The percentage is based on the aggregate amounts.

⁽²⁾ Rate used in actuarial valuations since 2006.

⁽³⁾ Results derived from 2010 valuation census.

Turnover and Early Retirement Experience

Turnover Experience for 2010 and 2011

<u>Years of Service</u>	<u>Actual Turnover</u>	<u>Expected Turnover</u>	<u>Actual/Expected</u>
0	12	26	46%
1	35	44	79%
2	18	19	95%
3 or More	92	114	81%
Total	157	203	77%

<u>Age Group</u>	<u>Actual Turnover</u>	<u>Expected Turnover</u>	<u>Actual/Expected</u>
20-24	17	20	85%
25-29	25	32	78%
30-34	28	26	108%
35-39	18	18	100%
40-44	13	18	72%
45-49	10	16	64%
50-54	15	15	99%
55-59	10	8	133%
60-64	13	15	87%
65+	8	36	22%
Total	157	203	77%

Early Retirement Experience for 2010 and 2011

<u>Age Group</u>	<u>Actual Retirement</u>	<u>Expected Retirement</u>	<u>Actual/Expected</u>
61 and Under	5	0	N/A
62	2	4	50%
63	1	1	100%
64	4	9	44%
65+	8	36	22%
Total	20	50	40%

Turnover and Early Retirement Experience (continued)

Turnover Experience for 2008 and 2009

<u>Years of Service</u>	<u>Actual Turnover</u>	<u>Expected Turnover</u>	<u>Actual/Expected</u>
0	10	30	33%
1	34	39	88%
2	27	17	157%
3 or More	89	105	85%
Total	160	191	84%

<u>Age Group</u>	<u>Actual Turnover</u>	<u>Expected Turnover</u>	<u>Actual/Expected</u>
20-24	21	18	119%
25-29	35	36	97%
30-34	22	23	95%
35-39	16	20	79%
40-44	14	19	74%
45-49	14	22	65%
50-54	10	14	73%
55-59	10	6	181%
60-64	14	12	120%
65+	4	23	17%
Total	160	191	84%

Early Retirement Experience for 2008 and 2009

<u>Age Group</u>	<u>Actual Retirement</u>	<u>Expected Retirement</u>	<u>Actual/Expected</u>
61 and Under	11	0	N/A
62	1	4	25%
63	1	1	100%
64	1	6	17%
65+	4	23	17%
Total	18	34	53%

Benefit Election Experience

Elected Form of Distribution for 2010 and 2011

<u>Age Group</u>	<u>Participants with Annuity Option</u>	<u>Number Electing Return of Contributions</u>	<u>Expected</u>	<u>Actual/Expected</u>	<u>Percent Electing Return of Contributions</u>	<u>Percent Expected</u>
Under 55	61	43	46	93%	70%	75%
55 and over	24	2	0	N/A	8%	0%
Total	85	45	46	98%	53%	54%

Elected Form of Distribution for 2008 and 2009

<u>Age Group</u>	<u>Participants with Annuity Option</u>	<u>Number Electing Return of Contributions</u>	<u>Expected</u>	<u>Actual/Expected</u>	<u>Percent Electing Return of Contributions</u>	<u>Percent Expected</u>
Under 55	48	35	36	97%	73%	75%
55 and over	22	2	0	N/A	9%	0%
Total	70	37	36	103%	53%	51%

Appendix C

Lincoln Police and Fire Retirement Plan Information

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LB 759 Reporting Form

City Lincoln, Nebraska Police and Fire Pension

1. We have included historical information from 1991 forward to the most recent actuarial valuation (August 31, 2014) in Table 1 as we believe it provides a more comprehensive perspective of the retirement system's long term funding. In addition, certain key historical actuarial valuation metrics are also summarized in the slides attached to this report.

2. As of August 31, 2014 the Lincoln Police and Fire Retirement System was 66% funded (actuarial assets divided by actuarial accrued liability). However, historically the Retirement System has been well funded. The August 31, 2008 valuation indicated that the System was 100% funded and it had been at least 90% funded in the prior 25 years. As a result of the financial crisis and the Great Recession, the rate of return on the System's assets for fiscal year end 2008 was -6.62% and for fiscal year 2009 was -16.68%. These returns are significantly below the expected rate of return of 7.50% for each year. Over that two year period, the system assets declined and were about 33% lower than the expected value of assets (if the actuarial assumption had been met). Although the system has had some returns above the 7.5% assumption since 2009, the asset value is still lower than if they had just earned the 7.5% actuarial assumed rate of return. The actuary estimates that, if the plan assets had earned the assumed return of 7.5% per year from August 31, 2008 through 2014, the market value of assets at August 31, 2014 would have been about \$256 million and the System would have been around 97% funded, including the cost of assumption changes mentioned below.

3. The previous report presented to the Committee was as of August 31, 2013. The most recent valuation report was prepared as of August 31, 2014. This report does reflect a number of changes to the actuarial assumptions used in the valuation which were the result of the actuary's recommendations from a five-year experience study that covered the period August 31, 2009 through 2014. The changes in the assumptions included:
 - (1) The investment return assumption was reduced from 7.50% to 6.75%.
 - (2) Salary increase assumption was reduced as shown in Appendix C of the 2014 valuation report.
 - (3) Mortality tables were updated to the RP-2000 Mortality Tables with generational improvements.
 - (4) Assumed rates of retirement were updated as shown in appendix C of the 2014 valuation report.

(5) The payroll growth assumption which is used to determine the amortization of the unfunded actuarial accrued liability, was reduced from 4.25% to 3.00%.

The combined impact of these five changes in assumptions was an increase of \$23 million in the actuarial accrued liability. The decrease in the investment return assumption had the largest impact on the funding and cost of the System.

4. To date, the corrective action taken to improve the funding of the Plan has been to increase contributions. For example, total contributions by the City of Lincoln to the retirement system for the five year period from September 1, 2004 to August 31, 2009 were \$15,928,433. The total contributions by the City of Lincoln for the last five years (September 1, 2009 through August 31, 2014) were \$28,712,646, an increase of approximately 80%. The unfunded actuarial accrued liability is being funded over a 30 year period so improvements in the funded ratio as the result of increased contributions are expected to occur slowly.

A Citizen's Committee of eight members has recently been appointed by the Mayor and City Council to study the long term funding of the Lincoln Police and Fire Retirement System and consider alternatives to improve the funding and sustainability of the retirement system in the future. The Committee is charged with studying the retirement system and making recommendations regarding the funding and sustainability of the System.

5. Although there have been no recent or ongoing negotiations with bargaining groups that may impact the funding of the plan, the Citizen's Committee noted in Question 4 may make recommendations that are subject to negotiations
6. The most recent Experience Study covered the five year period ending August 31, 2014 and was completed in December, 2014. Please see our response in number 3 above for details of the specific assumption changes.

A copy of the most recent Experience Study is attached.

7. A copy of the most recent actuarial valuation report, prepared as of August 31, 2014, is attached. The August 31, 2015 actuarial valuation report will not be completed until December of 2015.



City of Lincoln Police and Fire Pension Fund

Actuarial Valuation as of August 31, 2014

Prepared by:

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Principal & Consulting Actuary

Charles Erickson, FSA
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February 6, 2015

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February 6, 2015

The City Council
City of Lincoln
555 South 10th Street, Room 201
Lincoln, NE 68508

Re: City of Lincoln Police and Fire Pension Fund

Dear Council Members:

At your request, we have performed an annual actuarial valuation of the City of Lincoln Police and Fire Pension Fund as of August 31, 2014 for determining the actuarial contribution rate for fiscal year 2015. The major findings of the valuation are contained in this report. This report reflects the benefit provisions in effect as of August 31, 2014. There were no changes in the benefit provisions from the prior valuation. Changes to assumptions are listed on page 4 of this report. Our findings are set forth in this report.

In preparing this report, we relied, without audit, on information (some oral and some written) supplied by the Plan's staff. This information includes, but is not limited to, plan provisions, member data and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

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

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan 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. The City has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in Appendix B of this report. 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.

Milliman's work is prepared solely for the internal business use of the City of Lincoln. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

- (a) The City may provide a copy of Milliman's work, in its entirety, to the City's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Plan.
- (b) The City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

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

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

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

Respectfully Submitted,

MILLIMAN, INC.



Gregg Rueschhoff, ASA
Principal & Consulting Actuary



Charles Erickson, FSA
Associate Actuary

Executive Summary

OVERVIEW

This report presents the results of the August 31, 2014 actuarial valuation of the City of Lincoln Police and Fire Pension Fund (Plan). The primary purposes of performing a valuation are to:

- determine the employer contribution rate required to fund the Plan on an actuarial basis,
- disclose asset and liability measures as of the valuation date,
- determine the experience of the Plan since the last valuation date, and
- analyze and report on trends in contributions, assets, and liabilities over the past several years.

The valuation results provide a “snapshot” view of the Plan’s financial condition on August 31, 2014. The unfunded actuarial accrued liability increased by approximately \$23.3 million from the last valuation. A detailed analysis of the change in the unfunded actuarial accrued liability from August 31, 2013 to August 31, 2014 is shown on page 3.

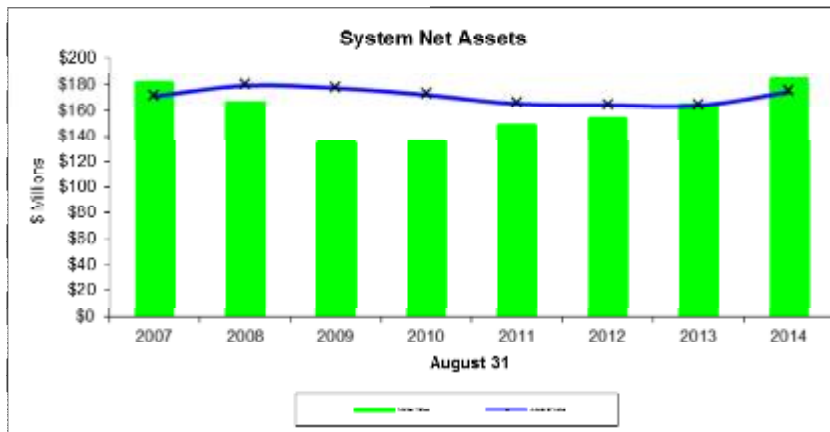
ASSETS

As of August 31, 2014, the Plan had total assets, when measured on a market value basis, of \$184.8 million (excluding the COLA Pool assets). This was an increase of \$20.2 million from the August 31, 2013 figure of \$164.6 million. The market value of assets is not used directly in the calculation of the actuarial contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is used to determine the value of assets used in the valuation (called the “actuarial value of assets”). Differences between actual return on the market value of assets and the assumed return on the actuarial value of assets are phased-in over a five-year period. Prior to the August 31, 2009 actuarial valuation the gains and losses were phased-in over a four-year period.

See Table 4 on page 12 for a detailed development of the actuarial value of assets. The components of the change in the market and actuarial value of assets for the Retirement Plan (in millions) are set forth in the following table.

	Market Value (\$M)	Actuarial Value (\$M)
Assets, August 31, 2013	\$164.6	\$164.2
• City and Member Contributions	10.5	10.5
• Benefit Payments and Refunds	(12.9)	(12.9)
• Administrative Expenses	(0.4)	(0.4)
• Net Investment Income (net of expenses)	23.0	13.2
Assets, August 31, 2014	\$184.8	\$174.6

The annualized dollar-weighted rate of return, measured on the actuarial value of assets was 8.45% and, measured on the market value of assets, was 16.49%. The actuarial value of assets as of August 31, 2014 was \$174.6 million, which reflects an actuarial gain of \$1.0 million resulting from the phase-in of investment returns from the current and preceding four years.



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

Note: Results for years before 2009 were prepared by the prior actuary.

Due to the asset smoothing method, there is a difference of about \$10.2 million between the actuarial value and the market value of assets.

LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the asset value at the same date is referred to as the unfunded actuarial accrued liability (UAAL) or (surplus) if the asset value exceeds the actuarial accrued liability. The unfunded actuarial accrued liability will be reduced if the employer’s contributions exceed the employer’s normal cost for the year, after allowing for interest 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 Unfunded Actuarial Accrued Liability for the Plan as of August 31, 2014 is:

Actuarial Accrued Liability	\$262,918,401
Actuarial Value of Assets	174,569,411
Unfunded Actuarial Accrued Liability	88,348,990

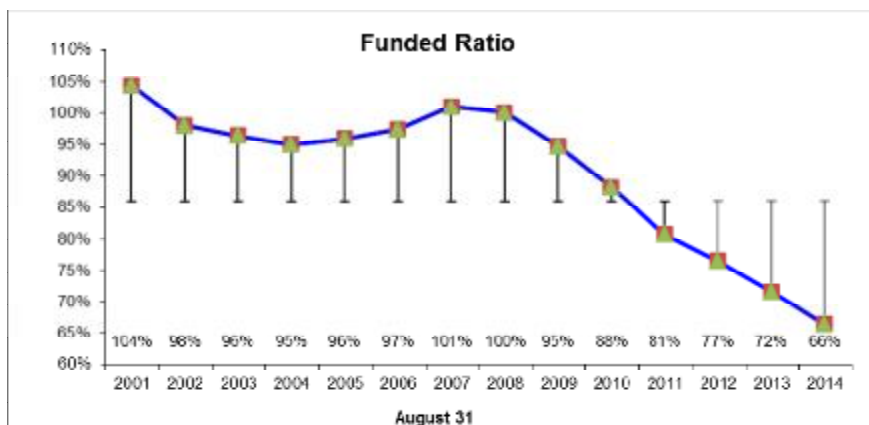
Between August 31, 2013 and August 31, 2014, the change in the unfunded actuarial accrued liability (UAAL) for the Plan was as follows:

	\$(M)
UAAL, August 31, 2013	65.0
+ Normal cost for year	6.1
+ Assumed investment return for year	5.1
- Actual contributions (member + City)	10.5
- Assumed investment return on contributions	0.4
+ Changes in assumptions	22.7
= Expected UAAL, August 31, 2014	88.0
Actual UAAL, August 31, 2014	88.3
Experience gain/(loss) (Expected UAAL – Actual UAAL)	(0.3)

The experience loss for the last plan year of \$0.3 million was the result of an actuarial gain of \$1.0 million on Plan assets (actuarial value) and a \$1.3 million actuarial loss on Plan liabilities.

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

	8/31/07	8/31/08	8/31/09	8/31/10	8/31/11	8/31/12	8/31/13	8/31/14
Actuarial Value of Assets (\$M)	\$171.3	\$179.4	\$177.5	\$172.3	\$165.4	\$164.5	\$164.2	\$174.6
Actuarial Accrued Liability (\$M)	\$169.6	\$179.4	\$187.3	\$195.2	\$205.0	\$214.9	\$229.2	\$262.9
Funded Ratio (Actuarial Assets/AAL)	101%	100%	95%	88%	81%	77%	72%	66%
Market Value of Assets (\$M)	\$181.1	\$165.9	\$134.9	\$135.8	\$148.3	\$153.5	\$164.6	\$184.8
Actuarial Accrued Liability (\$M)	\$169.6	\$179.4	\$187.3	\$195.2	\$205.0	\$214.9	\$229.9	\$262.9
Funded Ratio (MVA/AAL)	107%	92%	72%	70%	72%	71%	72%	70%



Over the past decade, the funded ratio (actuarial value of assets divided by actuarial accrued liability) has been between 66% and 110%.

Note: Results for years before 2009 were prepared by the prior actuary.

As mentioned earlier in this report, due to the asset smoothing method there is about \$10.2 million difference between the actuarial and market value of assets. This deferred investment experience will flow through the asset smoothing method over the next five years. If all actuarial assumptions are met and unfavorable investment experience does not occur, the funded ratio will increase to around 70% in five years as the asset smoothing method recognizes the deferred investment experience. The Plan's funded status will continue to be heavily dependent on future investment returns.

CONTRIBUTION RATES

Generally, contributions to the Plan consist of:

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

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

The City is required to contribute no less than the employer normal cost plus administrative expenses. Given the Plan’s funded status and the unrecognized losses, we recommend the City contribute the full actuarial employer contribution rate. Due to the changes in actuarial assumptions, the employer contribution rate increased by more than 3% from the 2013 to the 2014 valuation, as shown below:

Actuarial Contribution Rate	Actuarial Valuation	
	8/31/14	8/31/13
1) Normal Cost	18.33%	19.13%
a. Member Financed	6.75%	6.82%
b. Employer Portion	11.58%	12.31%
(1) – (2a)		
2. UAL/(Surplus) Contribution	12.86%	8.88%
3. Employer Contribution Rate	24.44%	21.19%

COMMENTS

As of August 31, 2014, the actuarial accrued liability was \$263 million and the actuarial value of assets was \$175 million, resulting in a funded ratio of 66%, down from the funded ratio of 72% last year. Using the market value of assets, the funded ratio is 70%.

Retirement plans use several mechanisms to provide more stability in the contribution levels. These include an asset smoothing method, which smoothes out the peaks and valleys of investment returns, and amortization of any actuarial gains or losses over a period of years. The Plan utilizes an asset smoothing method that spreads the difference between expected and actual return over a five-year period. The rate of return on the actuarial value of assets for the plan year ending in 2014 was about 8% as compared to 16% on the pure market value. The increase in the unfunded actuarial liability from the actuarial loss resulting from experience in FY14 is amortized over a 30-year period, which mitigates the impact of the unfavorable experience.

Actuarial calculations are made based on several economic and demographic assumptions that will affect the level of benefits calculated for future retirees or how long current and future retirees will live. Actuarial results are monitored from year to year and actuarial assumptions should be revised as historical patterns arise and future expectations change. An actuarial experience analysis should be performed from time to time to assess current assumptions and to make recommendations for changes in current assumptions. We have performed a five year actuarial experience analysis on the City of Lincoln Police and Fire Pension Fund and based on the results of that analysis, we have made the following changes to the actuarial assumptions effective for the August 31, 2014 calculations:

- 1) Expected future investment returns have been reduced from 7.50% to 6.75% compounded annually.
- 2) Assumed salary increase rates have been reduced as shown in Appendix C.
- 3) Mortality tables have been updated to the RP2000 Mortality table with generational improvements.
- 4) Assumed rates of retirement have been updated as shown in Appendix C.
- 5) The payroll growth assumption has been reduced from 4.25% to 3.00%.

The unfunded actuarial accrued liability increased by \$22.7 million as a result of the revisions to the plan assumptions. However, the Employer Normal Cost rate decreased from 19.15% to 18.33% of payroll.

As mentioned above, the Plan utilizes an asset smoothing method in the valuation process. While this is a common procedure for public retirement Plans, it is important to identify the potential impact of the deferred (unrecognized) investment experience. The key valuation results from the August 31, 2014 actuarial valuation are shown below using both the actuarial value of assets and the pure market value.

	<u>Using Actuarial Value of Assets</u>	<u>Using Market Value of Assets</u>
Actuarial Liability	\$ 262,918,401	\$ 262,918,401
Asset Value	174,569,411	184,834,762
Unfunded Actuarial Liability	\$ 88,348,990	\$ 78,083,639
Funded Ratio	66%	70%
Normal Cost Rate	18.33%	18.33%
UAL Contribution Rate	<u>12.86%</u>	<u>11.37%</u>
Total Actuarial Contribution Rate	31.19%	29.70%
Member Contribution Rate	<u>(6.75)%</u>	<u>(6.75)%</u>
Employer Actuarial Contribution Rate	24.44%	22.95%

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

SUMMARY OF PRINCIPAL RESULTS

1. PARTICIPANT DATA	8/31/2014 <u>Valuation</u>	8/31/2013 <u>Valuation</u>	% <u>Change</u>
Number of:			
Active Members	555	573	(3.1) %
DROP Members	52	48	8.3 %
Retired Members and Beneficiaries	465	448	3.8 %
Inactive Vested Members	27	24	12.5 %
Total Members	<u>1,099</u>	<u>1,093</u>	0.5 %
Projected Valuation Salaries of Active Members	\$ 37,887,505	\$ 38,107,652	(0.6) %
Annual Retirement Payments for DROP Members, Retired Members and Beneficiaries	\$ 12,354,404	\$ 11,349,256	8.9 %
2. ASSETS AND LIABILITIES			
Total Actuarial Accrued Liability	\$ 262,918,401	\$ 229,192,937	14.7 %
Market Value of Assets*	184,834,762	164,617,759	12.3 %
Actuarial Value of Assets*	174,569,411	164,189,914	6.3 %
Unfunded Actuarial Accrued Liability/(Surplus)	\$ 88,348,990	\$ 65,003,023	35.9 %
Funded Ratio - Actuarial Value	66%	72%	(7.3) %
Funded Ratio - Market Value	70%	72%	(2.1) %
* Excludes the COLA Pool Fund			
3. EMPLOYER ACTUARIAL CONTRIBUTION RATE AS A PERCENT OF PAYROLL			
Normal Cost	18.33%	19.13%	(4.2) %
Member Financed	6.75%	6.82%	(1.0) %
Employer Normal Cost	11.58%	12.31%	(5.9) %
Amortization of Unfunded Actuarial Accrued Liability or (Surplus)	12.86%	8.88%	44.8 %
Employer Actuarial Contribution Rate	24.44%	21.19%	15.3 %

Scope of the Report

This report presents the actuarial valuation of the City of Lincoln Police and Fire Pension Fund as of August 31, 2014. This valuation was prepared at the request of the City.

There was no change in the benefit structure from the prior valuation. However, there were significant changes to the actuarial assumptions as summarized in the Executive Summary of this report.

Please pay particular attention to our cover letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings which result from this valuation is presented in the previous section. Section 3 describes the assets and investment experience of the Plan. Sections 4 and 5 describe how the obligations of the Plan are to be met under the actuarial cost method in use.

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 August 31, 2014.
- 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.

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 August 31, 2014. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the Plan, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the Plan assets and liabilities.

Market Value of Assets

The current market value represents the “snapshot” or “cash-out” value of Plan assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time. Table 1 is a comparison, at market values, of Plan assets as of August 31, 2014, and August 31, 2013, in total and by investment category. Table 2 summarizes the change in the market value of assets from August 31, 2013 to August 31, 2014.

Actuarial Value of Assets

Neither the market value of assets, representing a “cash-out” value of Plan assets, nor the book values of assets, representing the cost of investments, may be the best measure of the Plan’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. Under this methodology, the difference between the actual investment return on the market value of assets and assumed investment return on the actuarial value of assets is phased-in over a four year period. Effective with the August 31, 2009 actuarial valuation, the smoothing period was changed prospectively to five years. Table 4 shows the development of the actuarial value of assets (AVA) as of the current valuation date.

TABLE 1

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
STATEMENT OF NET PLAN ASSETS AT MARKET VALUE**

	Market Value	
	August 31, 2014	August 31, 2013
Cash & Equivalents	\$9,668,120	\$6,820,468
Accrued Interest & Dividends	71,140	963,763
Receivables	0	0
Alternative Investments	46,141,565	54,560,678
Debt	33,197,625	29,794,972
Equity	124,264,365	93,628,068
Global Strategy	0	0
Real Estate	0	0
Total Assets	\$213,342,815	\$185,767,949
Accounts Payable	0	0
Interim Plan Assets	213,342,815	185,767,949
COLA Pool	(28,508,053)	(21,150,190)
Net Assets Available for Benefits	\$184,834,762	\$164,617,759

TABLE 2

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

**STATEMENT OF CHANGES IN NET ASSETS*
DURING YEAR ENDED AUGUST 31, 2014**

(Market Value)

1. Market Value of Assets as of August 31, 2013	\$ 185,767,949
2. Contributions:	
a. Members	\$ 2,613,971
b. City	7,865,929
c. EMS	0
d. Total	\$ 10,479,900
[2(a) + 2(b) + 2(c)]	
3. Investment Income	
a. Interest and Dividends	\$ 3,958,513
b. Realized Gains	11,161,420
c. Investment Expenses	(137,488)
d. Short and Long Term Capital Gains	3,581,000
e. Unrealized Gains	11,842,958
f. Total	\$ 30,406,403
[3(a) + 3(b) + 3(c) + 3(d) + 3(e)]	
4. Expenditures	
a. Refunds of Member Contributions	\$ 171,278
b. Benefits Paid:	
(1) Base Pension and Compensation Payments	10,221,360
(2) DROP Payments	2,491,227
(3) Temporary Total Disability	20,428
(4) COLA Pool Payments	525,870
c. Administrative Expenses	407,146
d. Total	\$ 13,837,309
[4(a) + 4(b) + 4(c)]	
5. Changes and adjustments	\$ 525,872
6. Net Change	\$ 27,574,866
[2(d) + 3(f) - 4(d) + (5)]	
7. Market Value of Assets as of August 31, 2014	\$ 213,342,815

* Includes COLA pool assets of \$28,508,053

TABLE 3

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
STATEMENT OF CHANGES IN COLA POOL ASSETS
FOR THE YEAR ENDED AUGUST 31, 2014**

(Market Value)

1. Market Value of COLA Pool as of August 31, 2013	\$ 21,150,190
2. Additions to COLA Pool	\$ 4,395,295
3. Investment Income on COLA Pool	\$ 3,488,438
4. COLA Pool Payments	
a. Retirants and Beneficiaries	\$ 479,966
b. DROP Members	45,904
c. Total	\$ <u>525,870</u>
5. Net Change	\$ 7,357,863
6. Market Value of COLA Pool as of August 31, 2014	\$ 28,508,053

Cost-of-Living Adjustments

Effective October 1992, the Pension Fund Ordinance provides for cost-of-living (COLA) benefits to pensioners. The source of funding for the COLA benefits is not guaranteed. The City has indicated that the payment of a COLA is not guaranteed and has chosen not to pre-fund this benefit. Therefore, COLA benefits and the corresponding pool of assets were not included in this valuation of the Pension Fund or in the determination of the employer contribution.

TABLE 4

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

Year Ended August 31:	2012	2013	2014
Beginning of Year Values			
(1) Market Value	148,347,670	153,546,978	164,617,759
(2) Actuarial Value	165,436,361	164,500,414	164,189,914
(3) Noninvestment Net Cash Flow	(3,861,790)	(3,683,125)	(3,357,409)
(4) Expected Income (7.5%)	12,265,528	12,201,911	12,190,617
(5) Actual Income	<u>9,061,098</u>	<u>14,753,906</u>	<u>23,574,412</u>
(6) Gain/(Loss)	(3,204,430)	2,551,995	11,383,795
(7) Recognized Income			
(a) Expected	12,265,528	12,201,911	12,190,617
(b) Current Year's Base	(640,886)	510,399	2,276,759
(c) 1 year ago	908,898	(640,886)	510,399
(d) 2 years ago	(1,508,881)	908,898	(640,886)
(e) 3 years ago	(8,098,816)	(1,508,881)	908,898
(f) 4 years ago	<u>(8,098,816)</u>	<u>(8,098,816)</u>	<u>(1,508,881)</u>
(f) Total Income Recognized	2,925,843	3,372,625	13,736,906
End of Year Values			
(8) Market Value	153,546,978	164,617,759	184,834,762
(9) Actuarial Value	164,500,414	164,189,914	174,569,411
(2) + (3) + (7f)			
Actuarial Value / Market Value	107.1%	99.7%	94.4%
Net Return - Market Value	5.42%	12.03%	16.49%
Net Return - Actuarial Value	1.79%	2.07%	8.45%

Note: Beginning in 2009, the gain/(loss) is recognized over five years rather than four. Prior years' schedules were unchanged with respect to the amount of gain/(loss) to be recognized in future years.

Plan 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 City as of the valuation date, August 31, 2014. In this section, the discussion will focus on the commitments (future benefit payments) of the Plan, which are referred to as its liabilities.

Table 5 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 5 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 August 31, 2014. No liabilities have been included in this valuation for any future COLA payments to be made from the COLA pool.

Actuarial Accrued Liability

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

- (1) that which is attributable to the past, and
- (2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the “past service liability” or the “actuarial accrued liability”. The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the “normal cost”. Table 7 contains the calculation of actuarial accrued liability for the Plan. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.

TABLE 5

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

PRESENT VALUE OF FUTURE BENEFITS (PVFB) AS OF AUGUST 31, 2014

1. Active employees		
a. Retirement Benefit	\$	164,812,581
b. Pre-Retirement Death Benefit		7,631,068
c. Deferred Vested Benefit		10,358,855
d. Disability Benefit		2,951,855
e. Return of Contributions		1,271,357
f. Total	\$	187,025,716
2. Inactive Vested Members	\$	3,589,014
3. In Pay Members		
a. Retirees	\$	104,150,869
b. DROP members		28,748,663
c. Beneficiaries		6,596,670
d. Total	\$	139,496,202
4. Total Present Value of Future Benefits (1) + (2) + (3d)	\$	330,110,932

TABLE 6

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

ACTUARIAL BALANCE SHEET AS OF AUGUST 31, 2014

Actuarial value of assets		\$ 174,569,411
Present value of future normal costs		67,192,531
Present value of future payments on the unfunded actuarial accrued liability		<u>88,348,990</u>
Total Assets		\$ <u>330,110,932</u>
Active employees		\$ 187,025,716
Inactive vested members		3,589,014
In pay members		<u>139,496,202</u>
Total Liabilities		\$ <u>330,110,932</u>

TABLE 7

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

**ACTUARIAL ACCRUED LIABILITY
AS OF AUGUST 31, 2014**

1. Active employees		
a. Present Value of Future Benefits	\$	187,025,716
b. Present Value of Future Normal Costs		67,192,531
c. Actuarial Accrued Liability	\$	<u>119,833,185</u>
(1a) - (1b)		
2. Inactive Vested Members	\$	3,589,014
3. In Pay Members		
a. Retirees	\$	104,150,869
b. DROP members		28,748,663
c. Beneficiaries		6,596,670
d. Total	\$	<u>139,496,202</u>
4. Total Actuarial Accrued Liability		
(1c) + (2) + (3d)	\$	262,918,401
5. Actuarial Value of Assets	\$	174,569,411
6. Unfunded Actuarial Accrued Liability	\$	88,348,990
(4) - (5)		

TABLE 8

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
DERIVATION OF PLAN EXPERIENCE GAIN/(LOSS)**

	(\$M)	
	<u>Year Ended</u> <u>08/31/2014</u>	<u>Year Ended</u> <u>08/31/2013</u>
(1) UAAL* at start of year	65.0	50.4
(2) + Normal cost for year	6.1	6.4
(3) + Assumed investment return on (1) & (2)	5.1	4.0
(4) - Actual contributions (member + city)	10.5	9.0
(5) - Assumed investment return on (4)	0.4	0.3
(6) + Death after retirement liability	0.0	4.3
(7) + Changes in assumptions	22.7	0.0
(8) = Expected UAAL at end of year (1) + (2) + (3) - (4) - (5) + (6) + (7)	88.0	55.8
(9) = Actual UAAL at year end	88.3	65.0
(10) = Experience gain (loss) (8) – (9)	(0.3)	(9.2)
(11) = Percent of beginning of year AAL	(0.1%)	(4.3%)

* *Unfunded Actuarial Accrued Liability/(Surplus).*

Valuation Date	Actuarial Gain (Loss) As % of Beginning Accrued Liabilities
Aug. 31, 2002	(5.3%)
Aug. 31, 2003	(0.5%)
Aug. 31, 2004	(0.3%)
Aug. 31, 2005	1.7%
Aug. 31, 2006	2.3%
Aug. 31, 2007	3.2%
Aug. 31, 2008	(0.8%)
Aug. 31, 2009	(7.1%)
Aug. 31, 2010	(6.6%)
Aug. 31, 2011	(7.9%)
Aug. 31, 2012	(4.9%)
Aug. 31, 2013	(4.3%)
Aug. 31, 2014	(0.1%)

TABLE 9

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
PROJECTED CASH FLOWS**

The chart below shows estimated benefits expected to be paid over the next twenty years, based on the assumptions used in this valuation. The “Actives” column shows benefits expected to be paid to members currently active on August 31, 2014. The “Retirees” column shows benefits expected to be paid to all other members. This includes those who, as of August 31, 2014, are receiving benefit payments or who terminated employment and are entitled to a deferred vested benefit. No future members are reflected.

Year Ending August 31	Actives	Retirees	Total
2015	\$ 586,000	\$ 12,289,000	\$ 12,875,000
2016	1,190,000	12,174,000	13,364,000
2017	1,829,000	12,039,000	13,868,000
2018	2,575,000	11,948,000	14,523,000
2019	3,338,000	11,835,000	15,173,000
2020	4,200,000	11,726,000	15,926,000
2021	5,167,000	11,550,000	16,717,000
2022	6,211,000	11,374,000	17,585,000
2023	7,356,000	11,210,000	18,566,000
2024	8,475,000	11,061,000	19,536,000
2025	9,662,000	10,844,000	20,506,000
2026	10,914,000	10,621,000	21,535,000
2027	12,289,000	10,367,000	22,656,000
2028	13,619,000	10,137,000	23,756,000
2029	14,984,000	9,875,000	24,859,000
2030	16,318,000	9,588,000	25,906,000
2031	17,674,000	9,291,000	26,965,000
2032	19,012,000	8,983,000	27,995,000
2033	20,261,000	8,665,000	28,926,000
2034	21,508,000	8,337,000	29,845,000

Employer Contributions

The previous two sections were devoted to a discussion of the assets and liabilities of the Plan. A comparison of Tables 4 and 5 indicates that current assets fall short of meeting the present value of future benefits (total liability). This is expected in all but a completely closed fund, where no further contributions are anticipated. In an active Plan, 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 Plan 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, Plans are not fully funded, either because of past benefit improvements that have not been completely funded or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial accrued liability, a surplus exists.

Description of Contribution Rate Components

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

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rate based on the August 31, 2014 actuarial valuation will be used to determine the actuarial required employer contribution rate to the City of Lincoln Police and Fire Pension Fund for fiscal year end 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 August 31, 2014, the actuarial accrued liability was greater than the valuation assets so an unfunded actuarial accrued liability (UAAL) exists. The UAAL at August 31, 2014 is amortized, as a level percent of payroll, over a period of 30 years.

Contribution Rate Summary

In Table 10, the amortization payment related to the unfunded actuarial accrued liability, as of August 31, 2015, is developed. Table 11 develops the actuarial contribution rate for the employer.

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

TABLE 10

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

AUGUST 31, 2014 VALUATION

DERIVATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY CONTRIBUTION RATE

1. Actuarial Accrued Liability	\$	262,918,401
2. Actuarial Value of Assets	\$	174,569,411
3. Unfunded Actuarial Accrued Liability/(Surplus)	\$	88,348,990
4. Amortization Factor (30 years)		18.7299
5. Amortization Payment (3) / (4) x 1.0675 ⁻⁵	\$	4,873,614
6. Total Projected Payroll for FY 2014	\$	37,887,505
7. Amortization Payment as a Percent of Payroll		12.86%

TABLE 11

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
EMPLOYER ACTUARIAL CONTRIBUTION RATE**

	Valuation Date	
	8/31/2014	8/31/2013
Normal Cost		
Service pensions	14.24%	16.29%
Pre-retirement death pensions	0.88%	0.40%
Disability pensions	0.50%	0.60%
Termination Benefits	2.70%	1.84%
Total Normal Cost	18.33%	19.13%
Total UAAL Amortization Payment	12.86%	8.88%
Total Actuarial Contribution Rate	31.19%	28.01%
Member Portion	6.75%	6.82%
City Portion	24.44%	21.19%

TABLE 12

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
FIVE YEAR BUDGET REQUEST ESTIMATE**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fiscal Year	Valuation Payroll	Employer Normal Cost Percent	Employer Normal Cost Contribution (1) * (2)	Admin. Expenses	Mandated City Contribution (3) + (4)	Recommended UAL Contribution Percent	Recommended UAL Contribution (1) * (6)	Budget Request (5) + (7)
2015-16	37,887,505	11.58%	4,387,373	407,146	4,794,519	12.86%	4,872,333	9,666,852
2016-17	39,024,130	11.48%	4,479,970	419,360	4,899,330	12.50%	4,878,016	9,777,346
2017-18	40,194,854	11.38%	4,574,174	431,941	5,006,115	12.25%	4,923,870	9,929,985
2018-19	41,400,700	11.28%	4,669,999	444,899	5,114,898	12.00%	4,968,084	10,082,982
2019-20	42,642,721	11.18%	4,767,456	458,246	5,225,702	11.75%	5,010,520	10,236,222

Accounting Information

The actuarial accrued liability is a measure intended to help the reader assess (i) a retirement Plan'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 Plan's level percent of payroll annual required contribution between entry age and assumed exit age. Entry age was established by subtracting credited service from current age on the valuation date.

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

The Entry Age Normal actuarial accrued liability was determined as part of an actuarial valuation of the plan as of August 31, 2014. The actuarial assumptions used in determining the actuarial accrued liability can be found in Appendix C.

TABLE 13

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
HISTORICAL FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Accrued Liability (AAL)	Valuation Assets	Unfunded Actuarial Accrued Liability (UAAL)	Actuarial Valuation Assets To AAL	Ratio of UAAL to Valuation Payroll
Dec. 31, 1987	46,239	50,417	(4,178)	109%	-
Dec. 31, 1988	50,820	55,693	(4,873)	110%	-
Dec. 31, 1989	54,676	61,144	(6,468)	112%	-
Dec. 31, 1990 ^{#@}	55,127	66,511	(11,384)	121%	-
Aug. 31, 1991 [#]	59,149	68,390	(9,241)	116%	-
Aug. 31, 1992 [@]	63,407	77,980	(14,573)	123%	-
Aug. 31, 1993	67,910	86,583	(18,673)	127%	-
Aug. 31, 1994	70,517	83,308	(12,791)	118%	-
Aug. 31, 1995 [#]	79,202	92,235	(13,033)	116%	-
Aug. 31, 1996	81,583	94,348	(12,765)	116%	-
Aug. 31, 1997 [*]	91,023	101,476	(10,453)	111%	-
Aug. 31, 1998	94,848	109,213	(14,365)	115%	-
Aug. 31, 1999 ^{#@}	104,692	113,902	(9,210)	109%	-
Aug. 31, 2000	115,671	121,404	(5,733)	105%	-
Aug. 31, 2001	122,661	128,070	(5,409)	104%	-
Aug. 31, 2002 ^{#@}	130,875	128,319	2,556	98%	10%
Aug. 31, 2003	137,508	132,578	4,930	96%	18%
Aug. 31, 2004	144,179	136,974	7,205	95%	26%
Aug. 31, 2005	151,978	145,730	6,248	96%	22%
Aug. 31, 2006	161,583	157,527	4,056	97%	13%
Aug. 31, 2007 [@]	169,587	171,264	(1,677)	101%	-
Aug. 31, 2008	179,376	179,390	(14)	100%	-
Aug. 31, 2009	187,292	177,527	9,766	95%	29%
Aug. 31, 2010	195,206	172,317	22,889	88%	67%
Aug. 31, 2011	204,990	165,436	39,554	81%	111%
Aug. 31, 2012	214,879	164,500	50,379	77%	139%
Aug. 31, 2013	229,193	164,190	65,003	72%	171%
Aug. 31, 2014	262,918	174,569	88,349	66%	233%

- # After changes in benefit provisions
- @ After changes in actuarial assumptions or methods
- * After inclusion of "old" plan

Note: Results for years prior to 2009 were taken from the prior actuary's report.

TABLE 13 (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

Two tests of funding progress based on the relationship between valuation assets and actuarial accrued liabilities are shown above. These tests are, however, dependent upon the actuarial cost method.

The Ratio of Valuation Assets to Actuarial Accrued Liabilities is a traditional measure of a Plan's funding progress. Except in years when the benefit provisions are amended or actuarial assumptions are revised, the ratio can be expected to gradually tend toward 100%, assuming computed contribution amounts are received by the plan.

The Ratio of Unfunded Actuarial Accrued Liabilities to Valuation Payroll is another relative index of condition. In an inflationary economy, the value of dollars is decreasing. This environment results in employee pays increasing in dollar amounts, retirement benefits increasing in dollar amounts, and then, unfunded actuarial accrued liabilities increasing in dollar amounts – all at a time when the actual substance of these items may be decreasing. When looking at dollar amounts, the effects of inflation can hide the actual funding progress from year to year. Unfunded actuarial accrued liabilities dollars divided by active employee payroll dollars provides an index which attempts to eliminate the misleading effects of inflation. The smaller the ratio of unfunded liabilities to active member payroll, the stronger the Plan. Observation of this relative index over a period of years will give an indication of whether the Plan is becoming financially stronger or weaker.

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

TABLE 14

**CITY OF LINCOLN POLICE AND FIRE PENSION FUND
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF FUNDING PROGRESS**

	(1)	(2)	(3)	(4)	(5)	(6)
Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Percent Funded (1)/(2)	Unfunded AAL (2) – (1)	Payroll**	Unfunded AAL As a Percentage of Covered Payroll (4)/(5)
8/31/2002	\$128,319,145	\$130,875,473	98.00%	\$2,556,328	\$26,606,881	9.60%
8/31/2003	132,577,506	137,507,824	96.40%	4,930,318	27,415,330	18.00%
8/31/2004	136,973,679	144,178,758	95.00%	7,205,079	28,124,862	25.60%
8/31/2005	145,730,474	151,978,408	95.90%	6,247,934	29,029,309	21.50%
8/31/2006	157,527,392	161,583,285	97.50%	4,055,893	30,724,333	13.20%
8/31/2007	171,263,791	169,587,458	101.00%	(1,676,333)	30,546,235	(5.50%)
8/31/2008	179,390,472	179,376,149	100.00%	(14,323)	32,265,715	0.00%
8/31/2009	177,526,641	187,292,374	94.79%	9,765,733	33,449,977	29.20%
8/31/2010	172,317,463	195,206,353	88.27%	22,888,890	34,233,197	66.86%
8/31/2011	165,436,361	204,990,324	80.70%	39,553,963	35,763,446	110.60%
8/31/2012	164,500,414	214,878,992	76.55%	50,378,578	36,310,880	138.74%
8/31/2013	164,189,914	229,192,937	71.64%	65,003,023	38,107,652	170.58%
8/31/2014	174,569,411	262,918,401	66.40%	88,348,990	37,887,505	233.19%

Note: For valuation dates prior to 2009, information shown is from the prior actuary's report

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Beginning September 1	Actuarial Valuation Date	Annual Required Contribution
2003	8/31/2002	\$3,297,577
2004	8/31/2003	3,684,264
2005	8/31/2004	4,077,037
2006	8/31/2005	4,056,195
2007	8/31/2006	4,076,536
2008	8/31/2007	3,316,464
2009	8/31/2008	3,752,124
2010	8/31/2009	4,651,872
2011	8/31/2010	5,574,482
2012	8/31/2011	6,718,467
2013	8/31/2012	7,377,763
2014	8/31/2013	8,418,199
2015	8/31/2014	9,537,497

* Annual required contribution is equal to the contribution percent times the valuation payroll (item (5)) projected to the appropriate fiscal year. The employer contribution rate from 8/31/02 to 8/31/08 is based on a 10-year amortization of the UAAL/(Surplus). The UAAL is amortized over 30 years effective 8/31/09.

** Non-DROP payroll in 2002 and later.

Appendices

APPENDIX A

SUMMARY OF MEMBERSHIP DATA

MEMBER DATA RECONCILIATION

August 31, 2013 to August 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 Plan for members as of the valuation date.

	Active Participants	DROP Members	Retirees	Disableds	Beneficiaries	Inactive Vested	Total
Members as of 08/31/13	573	48	350	45	53	24	1,093
New Members	+20	0	0	0	0	0	+20
Terminations							
Refunded	-10	0	0	0	0	0	-10
Deferred Vested	-4	0	0	0	0	+4	0
Retirements							
Service	-5	-11	+17	0	0	-1	0
Disability	-4	0	0	+4	0	0	0
DROP	-15	+15	0	0	0	0	0
Deaths							
Cashed Out	0	0	0	0	0	0	0
With Beneficiary	0	0	0	0	0	0	0
Without Beneficiary	0	0	-2	0	-2	0	-4
Data Adjustments	0	0	0	0	0	0	0
Members as of 08/31/14	555	52	365	49	51	27	1,099

APPENDIX A (continued)

RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS

Year Ended	Added to Rolls			Removed from Rolls		Rolls End of Year		% Incr. Annual Benefits	Average Annual Benefit	Expected Removals
	No.**	Annual Benefits	Post-Ret. Increases	No.	Annual Benefits	No.	Annual Benefits			
Dec. 31, 1982	8	\$ 84,321	\$	2	\$ 9,043	82	\$ 478,419	18.7%	\$ 5,834	2.0
Dec. 31, 1983	3	21,512		4	17,233	81	482,698	0.9%	5,959	2.2
Dec. 31, 1984	6	75,732		1	3,600	86	554,830	14.9%	6,452	2.1
Dec. 31, 1985	12	102,224		6	26,240	92	630,814	13.7%	6,857	2.1
Dec. 31, 1986	8	89,719		2	4,810	98	715,723	13.5%	7,303	2.2
Dec. 31, 1987	12	123,986		4	21,530	106	818,178	14.3%	7,719	2.4
Dec. 31, 1988	6	109,203		2	11,578	110	915,803	11.9%	8,325	2.5
Dec. 31, 1989	7	114,257		3	10,800	114	1,019,260	11.3%	8,941	2.6
Dec. 31, 1990	11	116,420		3	19,220	122	1,116,460	9.5%	9,151	2.6
Aug. 31, 1991	22 #	308,940	42,470	2	7,200	142	1,460,670	30.8%	10,286	2.9
Aug. 31, 1992	16	221,944		1	3,816	157	1,678,798	14.9%	10,693	3.0
Aug. 31, 1993	17	219,974		1	10,698	173	1,888,074	12.5%	10,914	3.4
Aug. 31, 1994	16	218,777		4	17,829	185	2,089,022	10.6%	11,292	3.9
Aug. 31, 1995	16	211,219		4	37,158	197	2,263,083	8.3%	11,488	4.0
Aug. 31, 1996	8	149,099		2	16,566	203	2,395,616	5.9%	11,801	4.4
Aug. 31, 1997	73 ##	590,041		4	56,890	272	3,042,547	27.0%	11,186	4.8
Aug. 31, 1998	10	155,262		11	71,670	271	3,126,139	2.7%	11,536	9.5
Aug. 31, 1999	23	414,130		1	22,889	293	3,517,380	12.5%	12,005	9.1
Aug. 31, 2000	17	335,244		7	62,014	303	3,790,610	7.8%	12,510	9.3
Aug. 31, 2001	14	225,737		16	105,022	301	3,911,325	3.2%	12,994	9.3
Aug. 31, 2002	18	278,160		14	115,340	305	4,074,145	4.2%	13,358	9.1
Aug. 31, 2003	15	219,569		11	119,499	309	4,174,215	2.5%	13,509	9.1
Aug. 31, 2004	12	175,551		5	74,835	316	4,274,931	2.4%	13,528	9.4
Aug. 31, 2005	30	702,721		12	73,072	334	4,904,580	14.7%	14,684	9.5
Aug. 31, 2006	10	262,420		4	36,362	340	5,130,638	4.6%	15,090	10.3
Aug. 31, 2007	38	1,101,713		8	55,280	370	6,177,071	20.4%	16,695	10.8
Aug. 31, 2008	24	621,708		10	128,736	384	6,670,043	8.0%	17,370	11.2
Aug. 31, 2009	20	560,105		2	28,641	402	7,185,166	7.7%	17,874	11.7
Aug. 31, 2010	14	408,351		8	66,170	408	7,477,874	4.1%	18,328	12.9
Aug. 31, 2011	15	455,866		8	84,553	415	7,846,879	4.9%	18,908	12.7
Aug. 31, 2012	30	1,083,442		7	101,972	438	8,828,349	12.5%	20,156	13.1
Aug. 31, 2013	21	700,308		11	165,739	448	9,362,919	6.06%	20,899	13.6
Aug. 31, 2014	20	771,356		3	21,973	465	10,112,391	8.01%	21,747	13.9

** Includes retirements from the DROP

Includes one member not previously reported

Includes the addition of "old Plan" members

APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF ACTIVE MEMBERS

NOT-IN-PAY MEMBERS INCLUDED IN VALUATION

Valuation Date	Active Members	Inactive Vested Members	Valuation Payroll**	Average			% Increase
				Age	Service	Pay	
Dec. 31, 1989	496	24	\$13,742,308	39.5	14.7	\$ 27,706	3.4%
Dec. 31, 1990	510	30	15,014,896	39.6	14.7	29,441	6.3%
Aug. 31, 1991	490	36	15,157,150	39.3	14.4	30,933	5.1%
Aug. 31, 1992	471	37	15,364,976	40.0	15.0	32,622	5.5%
Aug. 31, 1993	516	38	16,721,658	39.3	14.5	32,406	(0.7)%
Aug. 31, 1994	521	42	17,698,377	39.0	13.4	33,970	4.8%
Aug. 31, 1995	526	41	18,561,302	39.1	14.5	35,288	3.9%
Aug. 31, 1996	545	42	19,224,719	39.1	14.3	35,275	0.0%
Aug. 31, 1997	549	43	20,908,549	38.9	13.3	38,085	8.0%
Aug. 31, 1998	561	47	21,860,493	38.8	13.2	38,967	2.3%
Aug. 31, 1999	545	48	23,611,284	39.1	13.5	43,323	11.2%
Aug. 31, 2000	543	45	25,808,088	39.5	13.8	47,529	9.7%
Aug. 31, 2001	584	41	28,215,685	39.3	13.3	48,315	1.7%
Aug. 31, 2002	536	36	26,606,881	38.4	12.3	49,640	2.7%
Aug. 31, 2003	535	31	27,415,330	38.7	12.5	51,244	3.2%
Aug. 31, 2004	533	25	28,124,862	38.8	12.5	52,767	3.0%
Aug. 31, 2005	533	25	29,029,309	39.1	12.9	54,464	3.2%
Aug. 31, 2006	558	25	30,724,333	39.2	12.8	55,062	1.1%
Aug. 31, 2007	531	28	30,546,235	39.5	13.0	57,526	4.5%
Aug. 31, 2008	549	30	32,265,715	39.3	12.7	58,772	2.2%
Aug. 31, 2009	553	27	33,449,977	39.3	12.6	60,488	2.9%
Aug. 31, 2010	561	26	34,233,197	39.4	12.4	61,022	0.9%
Aug. 31, 2011	562	28	35,763,446	39.6	12.7	63,636	4.3%
Aug. 31, 2012	559	26	36,310,880	39.5	12.6	64,957	2.1%
Aug. 31, 2013	573	24	38,107,652	39.4	12.4	66,506	2.4%
Aug. 31, 2014	555	27	37,887,505	39.6	12.5	68,266	2.6%

** Reflects Non-DROP payroll in 2002 and later

APPENDIX A (continued)

ADDITIONS TO AND REMOVALS FROM ACTIVE MEMBERSHIP ACTUAL AND EXPECTED NUMBERS

Year Ended	Number Added During Year		Normal Retirement*		Disability Retirement		Died-In-Service		Terminations		Active Members End of Year
	A	E	A	E	A	E	A	E	A	E	
Aug. 31, 1996	34	15	8	9.2	0	1.2	0	1.4	7	15.8	545
Aug. 31, 1997	31	27	20	8.3	0	1.4	0	1.4	7	16.6	549
Aug. 31, 1998	42	30	8	8.1	0	1.3	0	1.3	22	18.6	561
Aug. 31, 1999	23	39	19	9.4	1	1.3	0	1.3	19	16.8	545
Aug. 31, 2000	29	31	8	12.5	0	0.5	0	0.6	23	13.9	543
Aug. 31, 2001	61	20	6	14.3	3	0.6	0	0.6	11	14.0	584
Aug. 31, 2002	21	69	54	15.7	0	0.6	0	0.6	15	16.5	536
Aug. 31, 2003	21	22	13	11.1	0	0.5	0	0.5	9	15.3	535
Aug. 31, 2004	28	30	19	12.4	0	0.5	0	0.4	11	14.3	533
Aug. 31, 2005	24	24	9	12.7	2	0.5	0	0.4	13	14.6	533
Aug. 31, 2006	42	17	7	14.7	0	0.5	0	0.5	10	14.1	558
Aug. 31, 2007	19	46	23	17.2	3	0.6	1	0.5	19	14.9	531
Aug. 31, 2008	45	27	11	16.4	2	1.0	0	0.4	14	12.3	549
Aug. 31, 2009	32	30	18	15.4	0	0.9	0	0.9	10	12.8	553
Aug. 31, 2010	36	30	17	16.2	2	0.6	0	0.5	9	12.8	561
Aug. 31, 2011	22	30	10	17.0	0	0.6	1	0.4	10	13.2	562
Aug. 31, 2012	28	30	20	19.5	4	0.6	1	0.5	6	12.5	559
Aug. 31, 2013	40	30	13	20.6	0	0.6	2	0.4	11	12.3	573
Aug. 31, 2014	20	30	20	18.5	4	0.6	0	0.4	14	12.9	555
5-Year Total	146	150	80	97.8	10	3.0	4	2.2	50	63.7	

A: Represents actual number

E: Represents expected number based on assumptions outlined in Section C

* Includes new retirements and DROP members (from active status) beginning with August 31, 2002 valuation

APPENDIX A (continued)

MEMBERSHIP DATA - AUGUST 31, 2014

Active Members (Not Participating in DROP)

Valuation Division	Number	Employee Contribution Percentage For Those Contributing	Employee Contribution Percentage Total	Annual Payroll Total	Average Age	Average Service	Average Pay
Police							
- Old Plan	2	7.60%	7.60%	\$ 136,315	46.0	22.0	\$ 68,158
- Plan A	260	8.00%	8.00%	16,207,201	36.2	10.9	62,335
- Plan B *	27	7.60%	0.25%	2,096,871	48.1	24.0	77,662
- Plan C *	9	7.00%	0.00%	736,916	62.0	40.6	81,880
Fire							
- Plan A	215	8.00%	8.00%	15,156,806	39.4	10.7	70,497
- Plan B *	42	7.60%	0.00%	3,553,396	50.8	25.7	84,605
Total	555	7.92%	6.75%	\$ 37,887,505	39.6	12.5	\$ 68,266

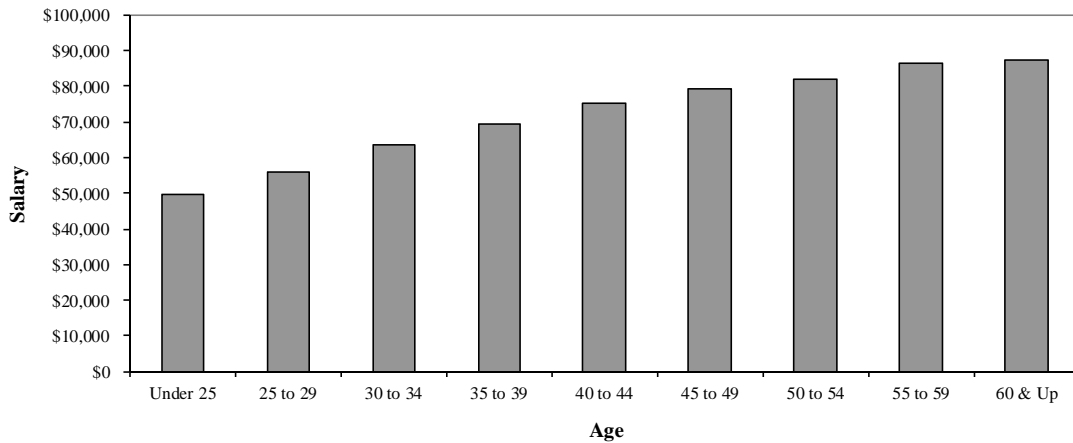
* Employee contributions stop after 21 years of service for this group, therefore the total employee contribution rate will be reduced because not all employees are contributing.

APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF ACTIVE MEMBERS as of August 31, 2014 (Fire)

Age	Number			Annual Reported Compensation		
	Male	Female	Total	Male	Female	Total
Under 25	1	0	1	\$ 49,610	\$ -	\$ 49,610
25 to 29	20	2	22	1,124,123	104,301	1,228,424
30 to 34	35	5	40	2,195,958	341,525	2,537,483
35 to 39	48	2	50	3,351,046	121,722	3,472,768
40 to 44	45	5	50	3,423,677	345,816	3,769,493
45 to 49	40	2	42	3,180,393	155,423	3,335,816
50 to 54	39	1	40	3,174,035	102,477	3,276,512
55 to 59	8	0	8	690,743	-	690,743
60 & Up	4	0	4	349,353	-	349,353
Total	240	17	257	\$ 17,538,938	\$ 1,171,264	\$ 18,710,202

Average Salary by Age

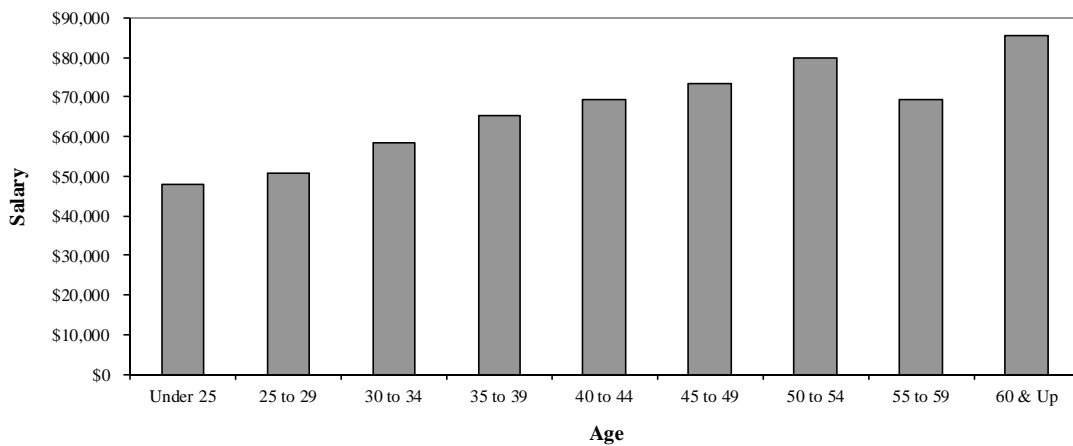


APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF ACTIVE MEMBERS as of August 31, 2014 (Police)

Age	Number			Annual Reported Compensation		
	Male	Female	Total	Male	Female	Total
Under 25	7	0	7	\$ 336,914	\$ -	\$ 336,914
25 to 29	41	9	50	2,093,272	454,989	2,548,261
30 to 34	49	11	60	2,851,366	648,360	3,499,726
35 to 39	46	7	53	2,960,620	493,147	3,453,767
40 to 44	44	8	52	3,033,381	562,314	3,595,695
45 to 49	48	6	54	3,561,950	405,129	3,967,079
50 to 54	9	4	13	732,582	306,363	1,038,945
55 to 59	2	0	2	138,438	-	138,438
60 & Up	6	1	7	487,010	111,468	598,478
Total	252	46	298	\$ 16,195,533	\$ 2,981,770	\$ 19,177,303

Average Salary by Age

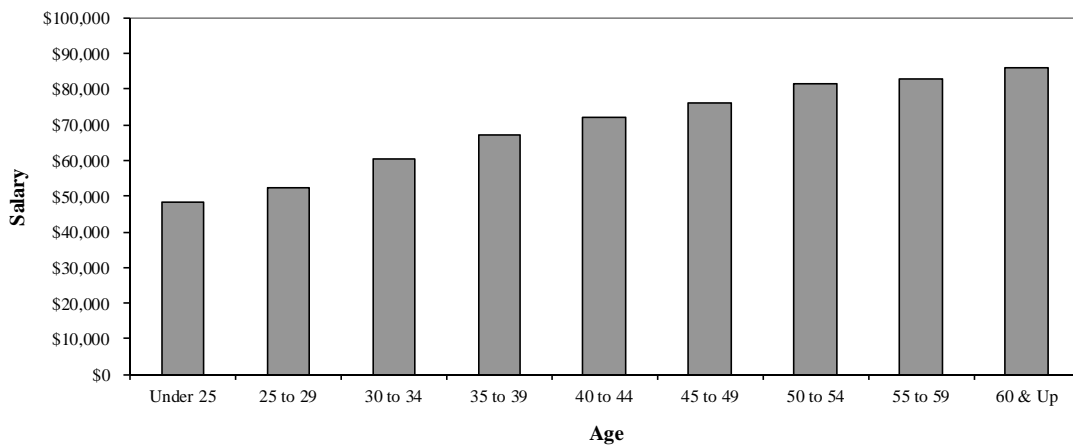


APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF ACTIVE MEMBERS as of August 31, 2014 (Combined Fire and Police)

Age	Number			Annual Reported Compensation		
	Male	Female	Total	Male	Female	Total
Under 25	8	0	8	\$ 386,524	\$ -	\$ 386,524
25 to 29	61	11	72	3,217,395	559,290	3,776,685
30 to 34	84	16	100	5,047,324	989,885	6,037,209
35 to 39	94	9	103	6,311,666	614,869	6,926,535
40 to 44	89	13	102	6,457,058	908,130	7,365,188
45 to 49	88	8	96	6,742,343	560,552	7,302,895
50 to 54	48	5	53	3,906,617	408,840	4,315,457
55 to 59	10	0	10	829,181	-	829,181
60 & Up	10	1	11	836,363	111,468	947,831
Total	492	63	555	\$ 33,734,471	\$ 4,153,034	\$ 37,887,505

Average Salary by Age

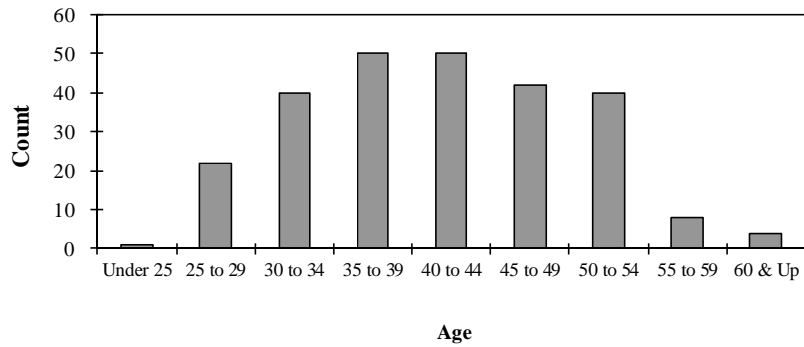


APPENDIX A (continued)

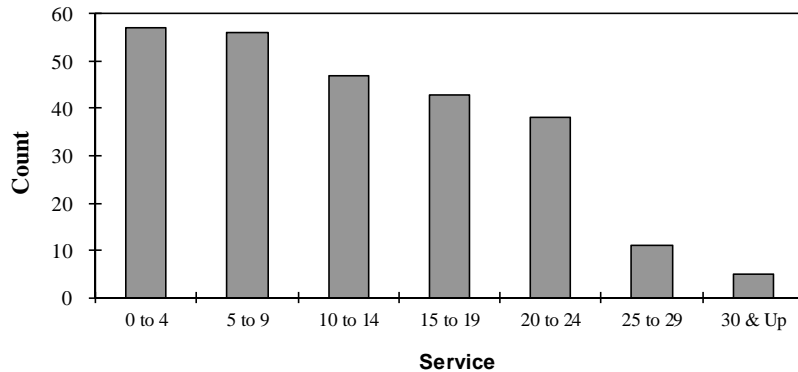
CITY OF LINCOLN POLICE AND FIRE PENSION FUND DISTRIBUTION OF ACTIVE MEMBERS as of August 31, 2014 (Fire)

Age	Years of Service							Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	1	0	0	0	0	0	0	1
25 to 29	20	2	0	0	0	0	0	22
30 to 34	18	20	2	0	0	0	0	40
35 to 39	12	21	16	1	0	0	0	50
40 to 44	3	10	15	20	2	0	0	50
45 to 49	2	2	8	11	16	3	0	42
50 to 54	0	1	5	7	18	8	1	40
55 to 59	1	0	1	3	2	0	1	8
60 & Up	0	0	0	1	0	0	3	4
Total	57	56	47	43	38	11	5	257

Age Distribution



Service Distribution

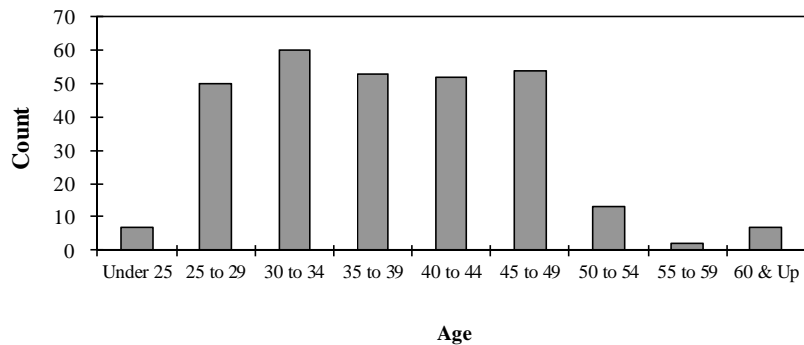


APPENDIX A (continued)

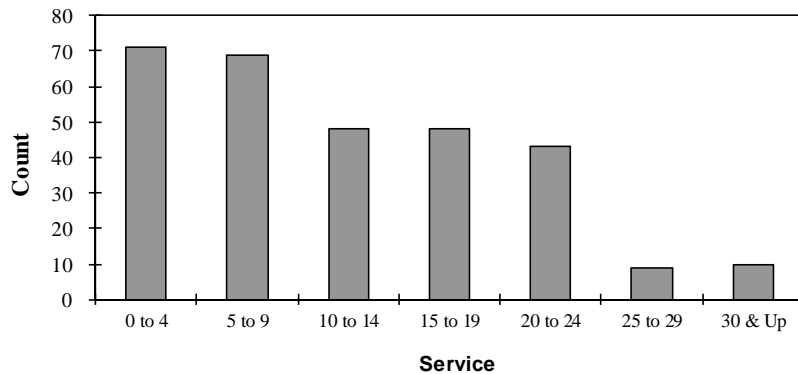
CITY OF LINCOLN POLICE AND FIRE PENSION FUND DISTRIBUTION OF ACTIVE MEMBERS as of August 31, 2014 (Police)

Age	Years of Service							Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	7	0	0	0	0	0	0	7
25 to 29	41	9	0	0	0	0	0	50
30 to 34	17	37	6	0	0	0	0	60
35 to 39	6	19	21	7	0	0	0	53
40 to 44	0	3	16	30	3	0	0	52
45 to 49	0	1	3	9	37	4	0	54
50 to 54	0	0	2	2	3	5	1	13
55 to 59	0	0	0	0	0	0	2	2
60 & Up	0	0	0	0	0	0	7	7
Total	71	69	48	48	43	9	10	298

Age Distribution



Service Distribution

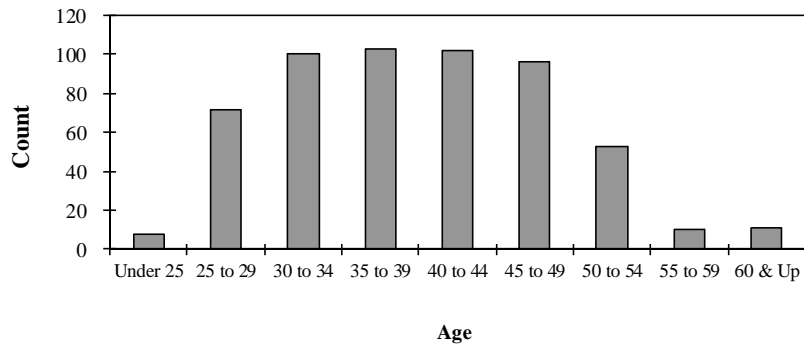


APPENDIX A (continued)

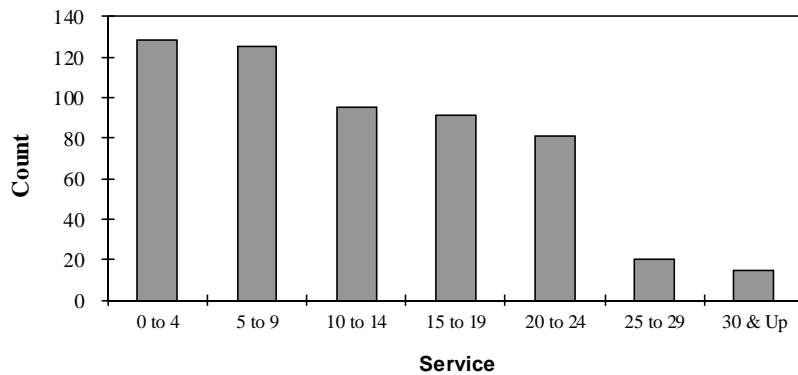
CITY OF LINCOLN POLICE AND FIRE PENSION FUND DISTRIBUTION OF ACTIVE MEMBERS as of August 31, 2014 (Combined Fire and Police)

Age	Years of Service							Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	8	0	0	0	0	0	0	8
25 to 29	61	11	0	0	0	0	0	72
30 to 34	35	57	8	0	0	0	0	100
35 to 39	18	40	37	8	0	0	0	103
40 to 44	3	13	31	50	5	0	0	102
45 to 49	2	3	11	20	53	7	0	96
50 to 54	0	1	7	9	21	13	2	53
55 to 59	1	0	1	3	2	0	3	10
60 & Up	0	0	0	1	0	0	10	11
Total	128	125	95	91	81	20	15	555

Age Distribution



Service Distribution

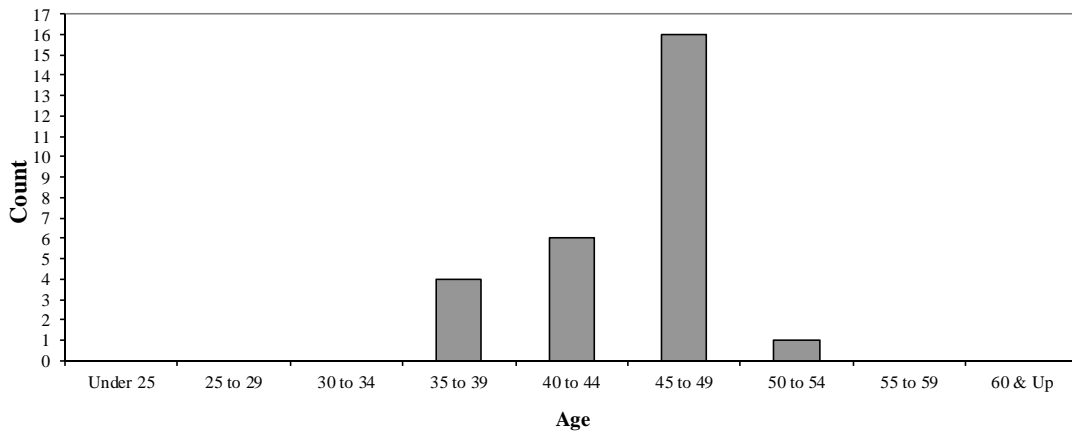


APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF INACTIVE VESTED MEMBERS as of August 31, 2014

Age	Number			Annual Benefit at Retirement		
	Male	Female	Total	Male	Female	Total
Under 25	0	0	0	\$ -	\$ -	\$ -
25 to 29	0	0	0	-	-	-
30 to 34	0	0	0	-	-	-
35 to 39	3	1	4	52,685	19,521	72,206
40 to 44	5	1	6	108,964	15,225	124,189
45 to 49	8	8	16	115,615	112,611	228,226
50 to 54	1	0	1	1,919	-	1,919
55 to 59	0	0	0	-	-	-
60 & Up	0	0	0	-	-	-
Total	17	10	27	\$ 279,184	\$ 147,357	\$ 426,541

Age Distribution



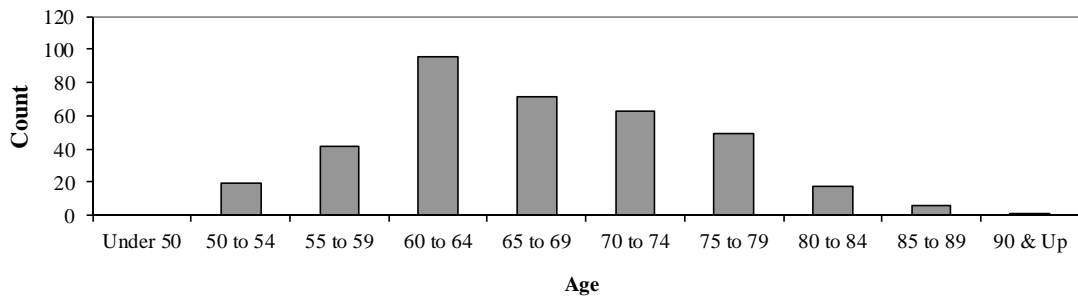
APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF RETIRED MEMBERS as of August 31, 2014

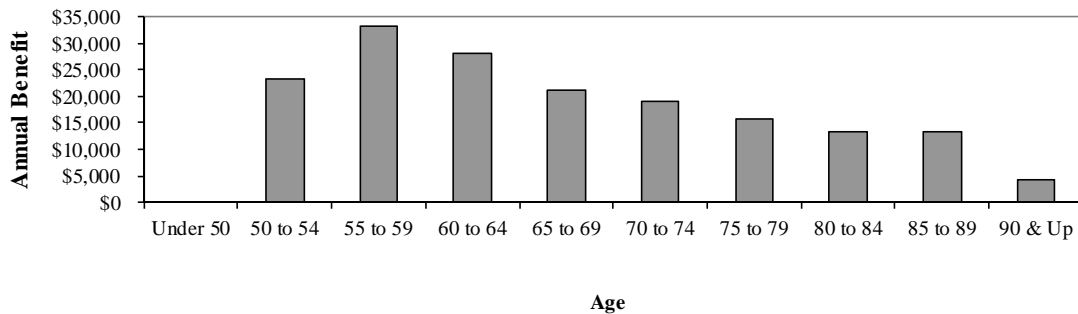
Age and Service Retirees

Age	Number			Annual Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	0	0	0	\$ -	\$ -	\$ -
50 to 54	15	4	19	368,248	71,833	440,081
55 to 59	39	3	42	1,340,118	56,571	1,396,689
60 to 64	92	4	96	2,597,749	99,312	2,697,061
65 to 69	71	0	71	1,494,959	-	1,494,959
70 to 74	61	2	63	1,174,936	24,767	1,199,703
75 to 79	48	1	49	747,366	17,770	765,136
80 to 84	18	0	18	240,181	-	240,181
85 to 89	6	0	6	79,868	-	79,868
90 & Up	1	0	1	4,140	-	4,140
Total	351	14	365	\$ 8,047,566	\$ 270,253	\$ 8,317,819

Age Distribution



Average Benefit



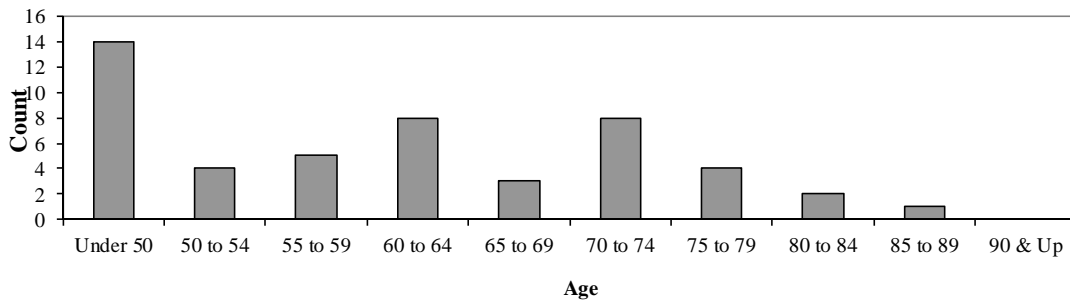
APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF RETIRED MEMBERS as of August 31, 2014

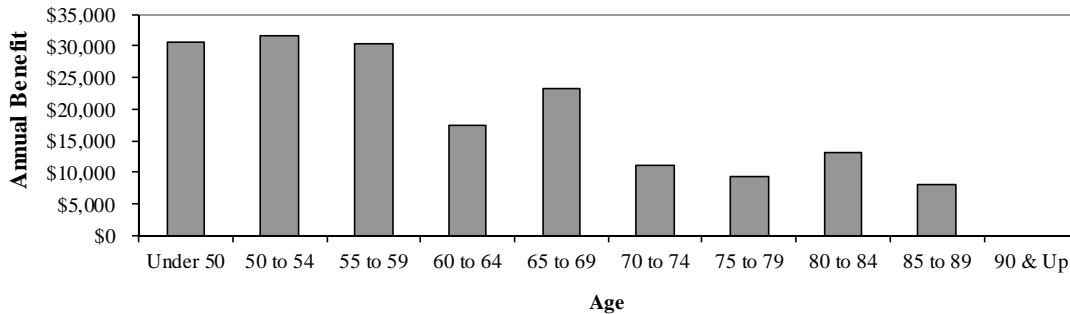
Disabled Retirees

Age	Number			Annual Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	11	3	14	\$ 357,800	\$ 70,227	\$ 428,027
50 to 54	3	1	4	108,137	18,177	126,314
55 to 59	5	0	5	151,221	-	151,221
60 to 64	7	1	8	129,567	9,812	139,379
65 to 69	3	0	3	69,748	-	69,748
70 to 74	8	0	8	89,720	-	89,720
75 to 79	4	0	4	37,779	-	37,779
80 to 84	2	0	2	26,498	-	26,498
85 to 89	1	0	1	7,983	-	7,983
90 & Up	0	0	0	-	-	-
Total	44	5	49	\$ 978,454	\$ 98,216	\$ 1,076,670

Age Distribution



Average Benefit



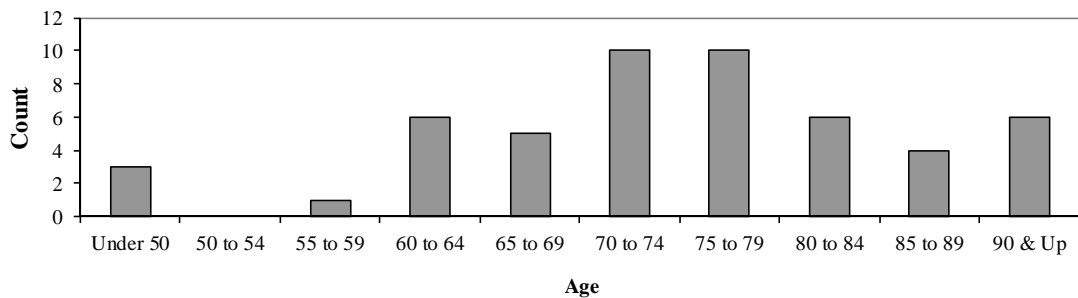
APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF RETIRED MEMBERS as of August 31, 2014

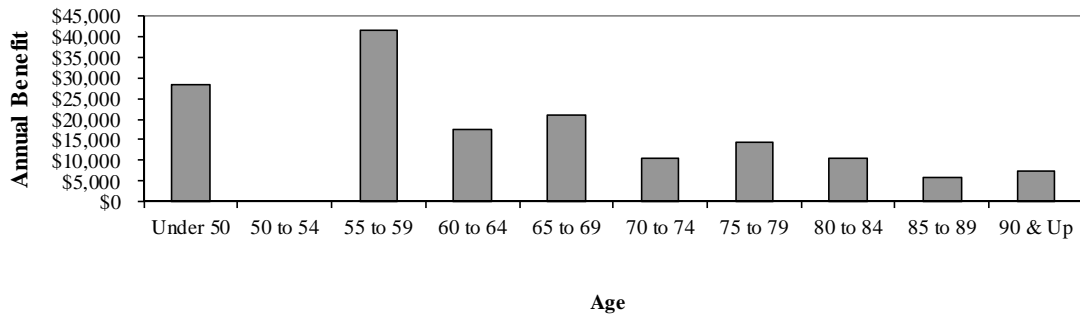
Beneficiaries

Age	Number			Annual Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	2	1	3	\$ 71,349	\$ 13,945	\$ 85,294
50 to 54	0	0	0	-	-	-
55 to 59	1	0	1	41,387	-	41,387
60 to 64	0	6	6	-	105,625	105,625
65 to 69	1	4	5	9,206	95,268	104,474
70 to 74	1	9	10	4,014	101,508	105,522
75 to 79	2	8	10	26,644	117,358	144,002
80 to 84	0	6	6	-	62,804	62,804
85 to 89	1	3	4	4,104	19,663	23,767
90 & Up	1	5	6	3,870	41,158	45,028
Total	9	42	51	\$ 160,574	\$ 557,328	\$ 717,902

Age Distribution



Average Benefit



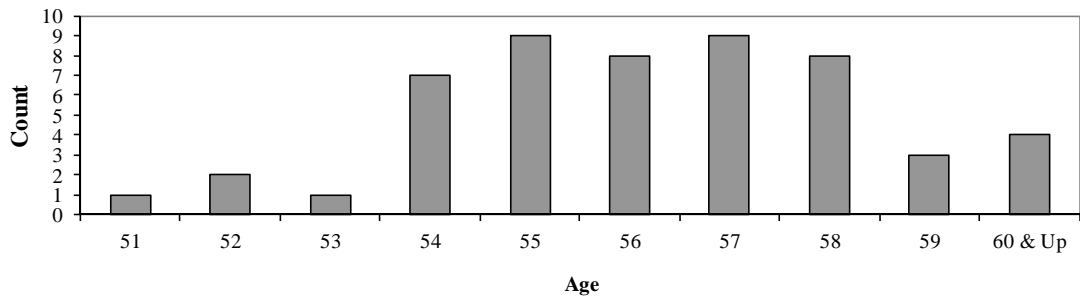
APPENDIX A (continued)

CITY OF LINCOLN POLICE AND FIRE PENSION FUND SUMMARY OF RETIRED MEMBERS as of August 31, 2014

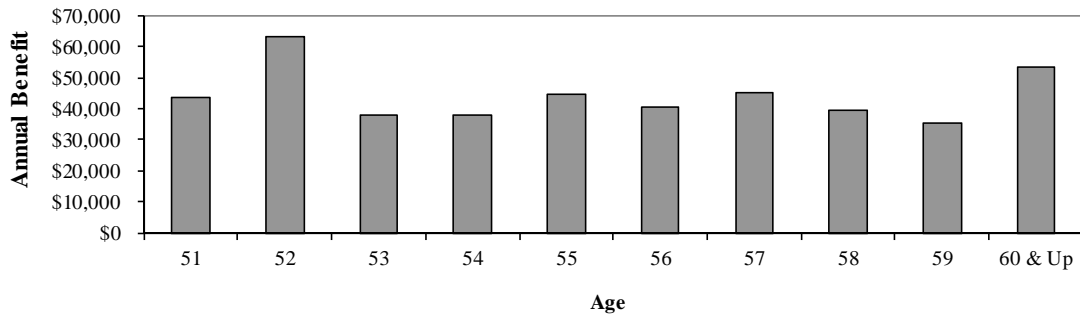
DROP Members

Age	Number			Annual Benefit		
	Male	Female	Total	Male	Female	Total
51	0	1	1	\$ -	\$ 43,811	\$ 43,811
52	2	0	2	125,997	-	125,997
53	1	0	1	38,113	-	38,113
54	7	0	7	266,389	-	266,389
55	8	1	9	355,323	47,478	402,801
56	7	1	8	276,010	48,087	324,096
57	8	1	9	339,483	65,933	405,416
58	7	1	8	249,741	65,339	315,080
59	3	0	3	105,561	-	105,561
60 & Up	4	0	4	214,749	-	214,749
Total	47	5	52	\$ 1,971,365	\$ 270,648	\$ 2,242,013

Age Distribution



Average Benefit



APPENDIX B

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

SUMMARY OF BENEFIT PROVISIONS

(AUGUST 31, 2014)

Plan A is applicable to members who were hired on/after April 1, 1995 or who were hired prior to that date, but elected Plan A coverage.

Plan B is applicable to members who were employed on/after April 11, 1984 or who, prior to April 11, 1984, elected Plan B coverage.

Plan C is applicable to members who were employed before April 11, 1984 and did not elect to move to Plan B or A.

Regular Pay

All plans: Member's base pay and City's contributions to the Post-Employment Health Plan for the last consecutive 26 bi-weekly pay periods. In case of a demotion, or out of class pay, it shall mean the highest consecutive 26 bi-weekly pay periods.

Normal Retirement Age

Plan A: Age 50
Plans B and C: Age 53

Normal Retirement

Eligibility – Plan A: Normal retirement age and 25 years of service.
Plans B and C: Normal retirement age and 21 years of service.

Amount of Pension – Plan A: 2.56% of regular pay times years of service to a maximum of 64% of regular pay.

Plan B: 58% of regular pay with 21 years of service plus 2% of regular pay for each year of service rendered after becoming eligible for retirement to a maximum increase of 10%.

Plan C: 54% of regular pay with 21 years of service plus 2% of regular pay for each year of service rendered after becoming eligible for retirement to a maximum increase of 10%.

APPENDIX B (continued)

Early Retirement

Eligibility – All Plans: Age 50 and 21 years of service

Amount of Pension – Plan A: 2.56% of regular pay times years of service up to a maximum of 64% of regular pay.

Plan B: 52% of regular pay plus 2% of regular pay for each year of service rendered after becoming eligible to a maximum increase of 6%.

Plan C: 48% of regular pay plus 2% of regular pay for each year of service rendered after becoming eligible to a maximum increase of 6%.

Deferred Annuity (Vested Termination)

Eligibility – all plans: 10 years of service until eligibility for early retirement.

Amount of Pension – Plan A: 2.56% of regular pay times years of service.

Plan B: 58% of regular pay with 21 years of service. Members with less than 21 years of service receive a ratio of years of service to 21 years of 58% of regular pay.

Plan C: 54% of regular pay with 21 years of service. Members with less than 21 years of service receive a ratio of years of service to 21 years of 54% of regular pay.

Duty-Related Disability

Eligibility – all plans: permanent inability to perform the duties of position from a cause occurring while in line of duty.

Amount of Pension – Plan A: 58% of regular pay.

Plan B and C: A pension equal to 58% or 54% of regular pay respectively, plus 2% of regular pay for each year of service rendered after becoming eligible for retirement, to a maximum increase of 10% of regular pay.

Such pension shall continue after the member's death to the member's surviving spouse, until death or remarriage, minor children or designated Option A beneficiary (a reduced amount in this case). The above amounts are subject to deduction of the amount received from worker's compensation.

APPENDIX B (continued)

Non-Duty Disability

Eligibility – all plans: permanent inability to perform duties of position from a cause not occurring in the line of duty.

Amount of Pension – A pension equal to the following percent of regular pay:

Years of Service (YOS)	Plan A	Plan B	Plan C
5 ≤ YOS < 10	23%	23%	21%
10 ≤ YOS < 15	39%	39%	36%
YOS ≥ 15	53%	53%	49%

Duty-Related Death

Eligibility – all plans: Active member dies in the line of duty or as a result of injuries received while in the line of duty.

Spouse beneficiary paid at Duty Related Disability rate until remarriage or death.

Upon spouse's remarriage or death, dependent children paid prorata at same rate until age 19.

Non-spouse beneficiary paid at 100% survivor rate for lifetime.

The above amounts are subject to deduction of the amount received from worker's compensation.

Non-Duty Death

Eligibility – All Plans: 5 years of service.

Amount of Pension – All Plans: Pension which would have been payable as a Non-Duty Disability awarded the day prior to death and elected Option A (joint & 100% survivor).

Death After Retirement

Eligibility – all plans: Monthly benefit may continue to surviving spouse or non-spouse beneficiary, and is dependent on form of payment.

After monthly benefits cease a lump sum benefit is payable to survivors of members employed on January 1, 1992 or hired January 1, 1992 to March 31, 2010 equal to the member's unrefunded accumulated contributions and interest multiplied by the ratio of the number of expected payments not received to the number of expected payments. Survivors of other members receive a death benefit after monthly benefits cease, equal to the member's unrefunded accumulated contributions and interest less the sum of monthly benefits received.

APPENDIX B (continued)

Non-Vested Termination

Eligibility – all plans: termination of employment and no pension is or will become payable.

Amount of Benefit – all plans: refund of member's contributions plus annual interest.

Employee Contributions

Plan A: 8.0% of pay.

Plan B: 7.6% of pay.

Plan C: 7.0% of pay.

Upon reaching 21 years of service, member contributions are discontinued for Plan B and Plan C members.

(DROP) Deferred Retirement Option Plan

Eligibility for the DROP:

Members of Plans B and C may join the DROP within 1 year of becoming eligible for Normal retirement benefits as described earlier in this section.

Grandfather provision allows members of Plans B and C who were eligible to retire on the date of DROP implementation, a one time opportunity to join the DROP.

Members of Plan A may join the DROP at any time after meeting the eligibility conditions for normal retirement.

DROP benefits

100% of the member's accrued benefit at the time of DROP will be contributed to the member's DROP account.

If the member elects annuity withdrawal (available to members of Plans B and C) the lump sum payment and corresponding reduced annuity will be credited to the member's DROP account.

DROP funding Period

Both the City and the employee will contribute (in accordance with the provisions of each Plan) to the Plan until the employee enters the DROP.

DROP Period

Maximum of 5 years.

APPENDIX C

CITY OF LINCOLN POLICE AND FIRE PENSION FUND

Investment Return (net of investment expenses):

6.75% a year, compounded annually.

Salary Increases: These assumptions are used to project current salaries to those upon which benefits will be based. The base economic assumption was first used for the August 31, 2014 valuation.

Sample Ages	Annual Rate of Pay Increase for Sample		
	Base (Economic)	Merit and Longevity	Total
20	3.0%	4.3%	7.3%
25	3.0%	3.5%	6.5%
30	3.0%	3.1%	6.1%
35	3.0%	2.7%	5.7%
40	3.0%	2.5%	4.5%
45	3.0%	1.0%	4.0%
50	3.0%	0.5%	3.5%
55	3.0%	0.5%	3.5%

If the number of active members remains constant, the total active member payroll is eventually expected to increase by 3.0% annually, the base portion of the individual pay increase assumptions. This increasing payroll was recognized in amortizing the unfunded actuarial accrued liability.

Mortality Table: RP2000 mortality table with Scale AA full generational improvement projection table.

This assumption is used to measure the probabilities of each benefit payment being made after retirement and was first used in the August 31, 2014 valuation.

Rates of separation from active membership: The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	% Separating within Next Year	
		Police	Fire
ALL	0	12.00%	8.00%
	1	8.00%	6.00%
	2	7.00%	4.50%
	3	6.00%	3.00%
	4	5.00%	2.00%
25	5 & Over	4.50%	2.00%
30		4.35%	1.40%
35		3.50%	1.00%
40		2.10%	0.80%
45		1.00%	0.60%
50		0.62%	0.10%
55		0.50%	0.10%

The rates were first used for the August 31, 2007 valuation.

APPENDIX C (continued)

Rates of Disability: These assumptions represent the probabilities of active members becoming disabled as a result of non-duty related causes or as a result of duty related causes.

Sample Ages	% Becoming Disabled Within Next Year
20	0.05%
25	0.05%
30	0.06%
35	0.09%
40	0.14%
45	0.23%
50	0.40%
55	0.60%
60	0.80%

Fifty percent of assumed liabilities were assumed to be duty related and 50% were assumed to be non-duty related.

Rates of Retirement and DROP Entry: These rates are used to measure the probabilities of an eligible member retiring and/or “dropping” at the indicated age.

Ages	Old Plan	Proposed Rates of Retirement and/or DROP Entry			
		Plan A		Plans B & C	
		Police	Fire	Police	Fire
50	35%	15.0%	10.0%	5.0%	6.0%
51	15%	15.0%	10.0%	5.0%	6.0%
52	15%	15.0%	10.0%	5.0%	6.0%
53	15%	25.0%	20.0%	25.0%	24.0%
54	15%	35.0%	20.0%	35.0%	35.0%
55	40%	35.0%	20.0%	35.0%	35.0%
56	15%	25.0%	20.0%	25.0%	18.0%
57	15%	10.0%	20.0%	10.0%	30.0%
58	15%	10.0%	20.0%	10.0%	42.0%
59	15%	10.0%	15.0%	10.0%	15.0%
60	100%	10.0%	15.0%	10.0%	15.0%
61	100%	10.0%	15.0%	10.0%	15.0%
62	100%	35.0%	35.0%	35.0%	35.0%
63	100%	20.0%	25.0%	20.0%	15.0%
64	100%	20.0%	25.0%	20.0%	15.0%
65	100%	100.0%	100.0%	100.0%	100.0%

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

Active Member Group Size: The number of active members was assumed to remain constant. This assumption is unchanged from previous valuations.

APPENDIX C (continued)

ACTUARIAL METHODS

Funding Method

Under the EAN cost method, the actuarial present value of each member's projected benefits allocates on a level basis over the member's compensation 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 actuarial present value of benefits allocated to prior years of service is called the actuarial accrued liability. The unfunded actuarial accrued liability represents the difference between the actuarial 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 UAL is amortized as a level percentage of payroll. The payroll growth assumption is 3.00% so the annual amortization payments will increase 3.00% each year. As a result, if total payroll grows 3.00% per year, as assumed, the amortization payment will remain level as a percentage of total current payroll. The amortization period is 30 years.

Asset Valuation Method

For actuarial purposes, assets are valued using an asset smoothing method. The difference between the actual return on the market value of assets and the expected return (based on the actuarial assumed rate of return) on the actuarial value of assets is calculated each year and recognized equally over a five-year period (prior to 2009, the period was four years).

APPENDIX C (continued)

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Marriage Assumption:	100% of both males and females are assumed to be married for purposes of death-in-service benefits.
Decrement Timing:	All decrements are assumed to occur mid year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and years of service on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service on the decrement date is used to determine the amount of benefit payable.
Decrement Operation:	Disability decrements do not operate during the first five years of service. They also do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the applicable fiscal year based upon the contribution rate shown in this report, and the actual payroll at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.
Funding Period:	Both the City and employee contribute (in accordance with the provisions of each plan) to the Plan until the employee enters the DROP or otherwise exits the Plan.

APPENDIX D

GLOSSARY OF TERMS

Actuarial Accrued Liability	The difference between the actuarial present value of Plan benefits and the actuarial value of future normal costs. Also referred to as “accrued liability” or “actuarial liability.”
Actuarial Assumptions	Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Accrued Service	Service credited under the Plan which was rendered before the date of the actuarial valuation.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate assumptions.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement Plan benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”
Experience Gain (Loss)	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
Normal Cost	The actuarial present value of retirement Plan benefits allocated to the current year by the actuarial cost method.

APPENDIX D (continued)

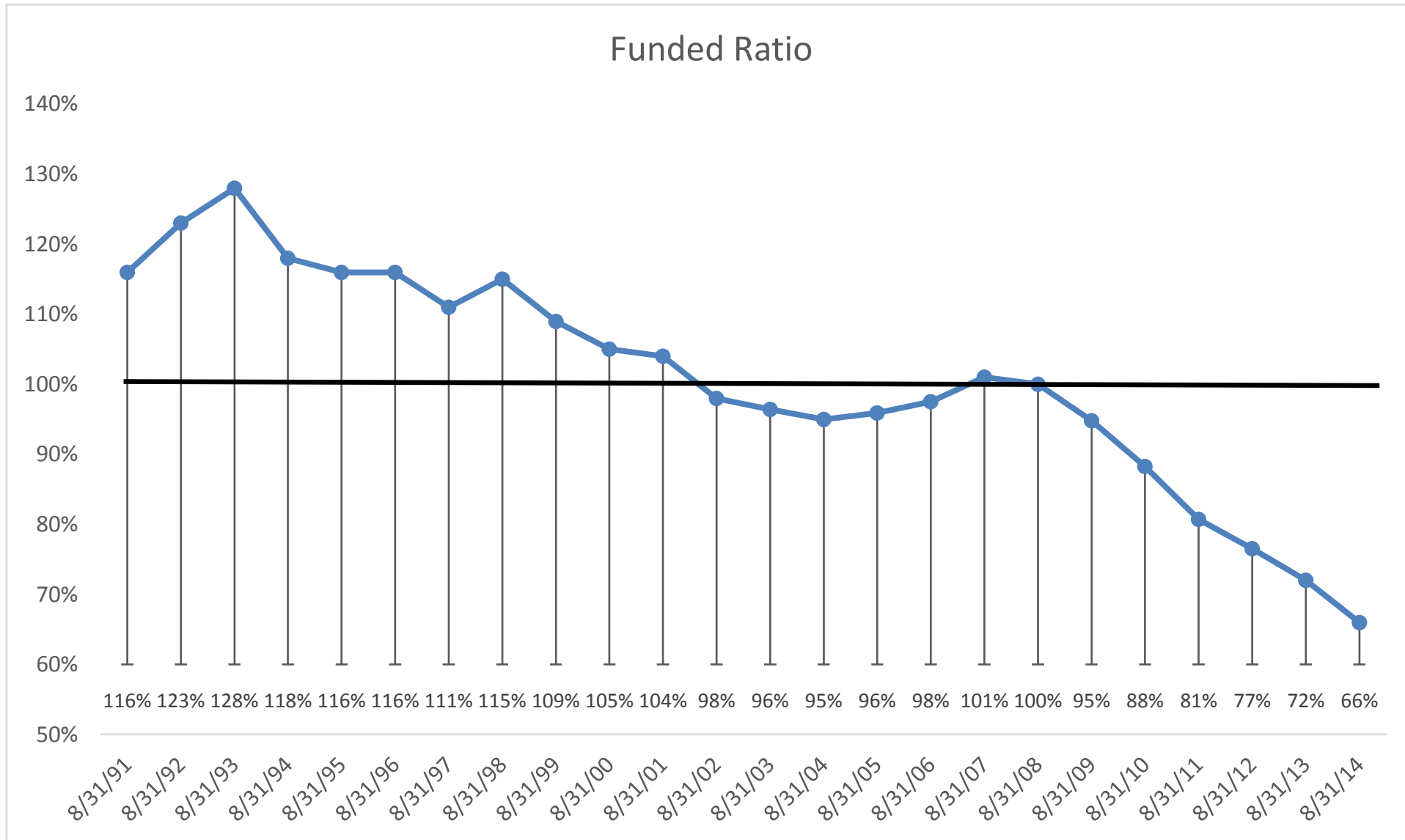
Unfunded Actuarial Accrued Liability

The difference between actuarial accrued liability and the valuation assets.

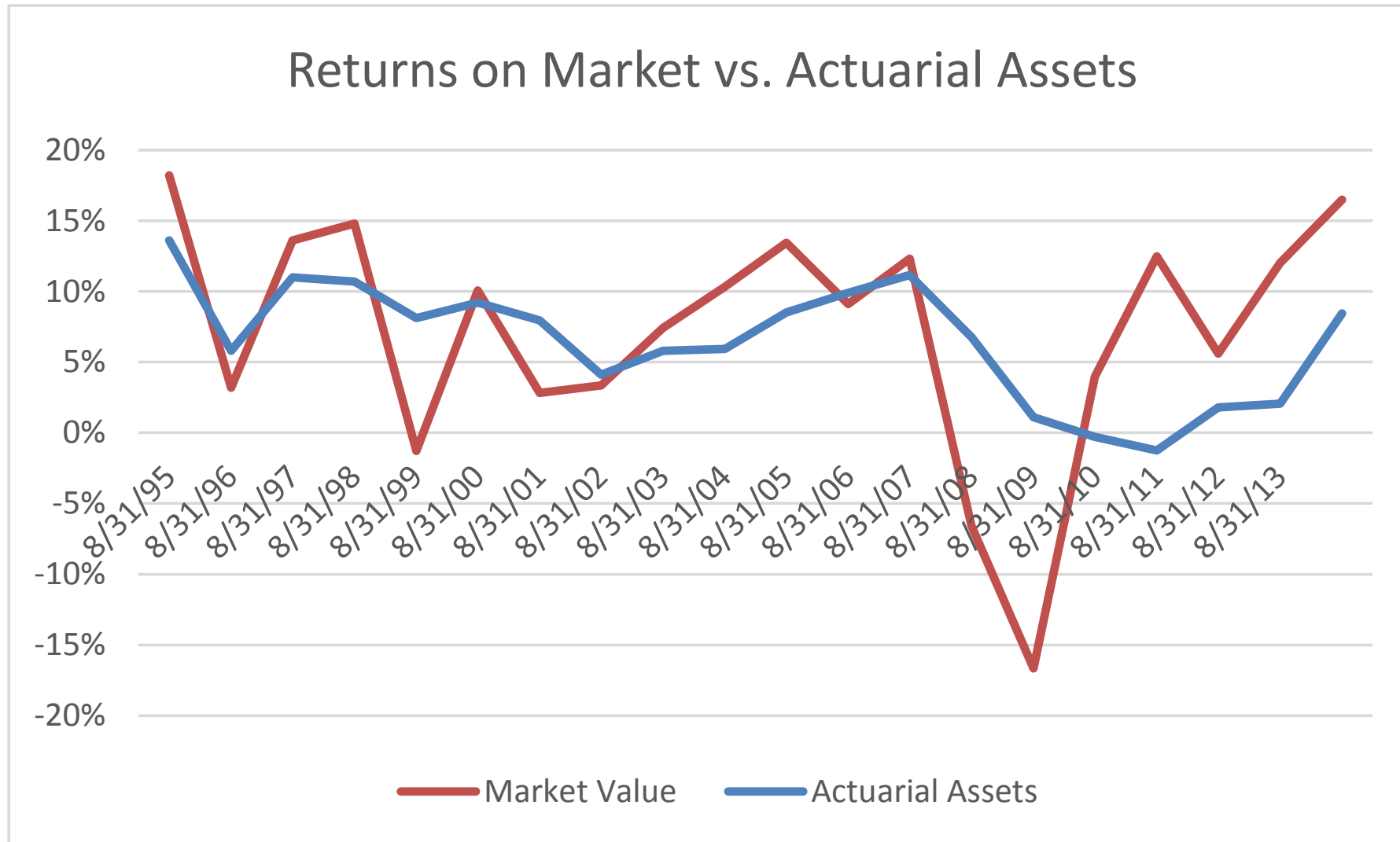
Most retirement Plans have an unfunded actuarial accrued liability. They arise each time new benefits are added and each time an actuarial loss is realized.

The existence of unfunded actuarial accrued liability is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial accrued liability does not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liability and the trend in its amount.

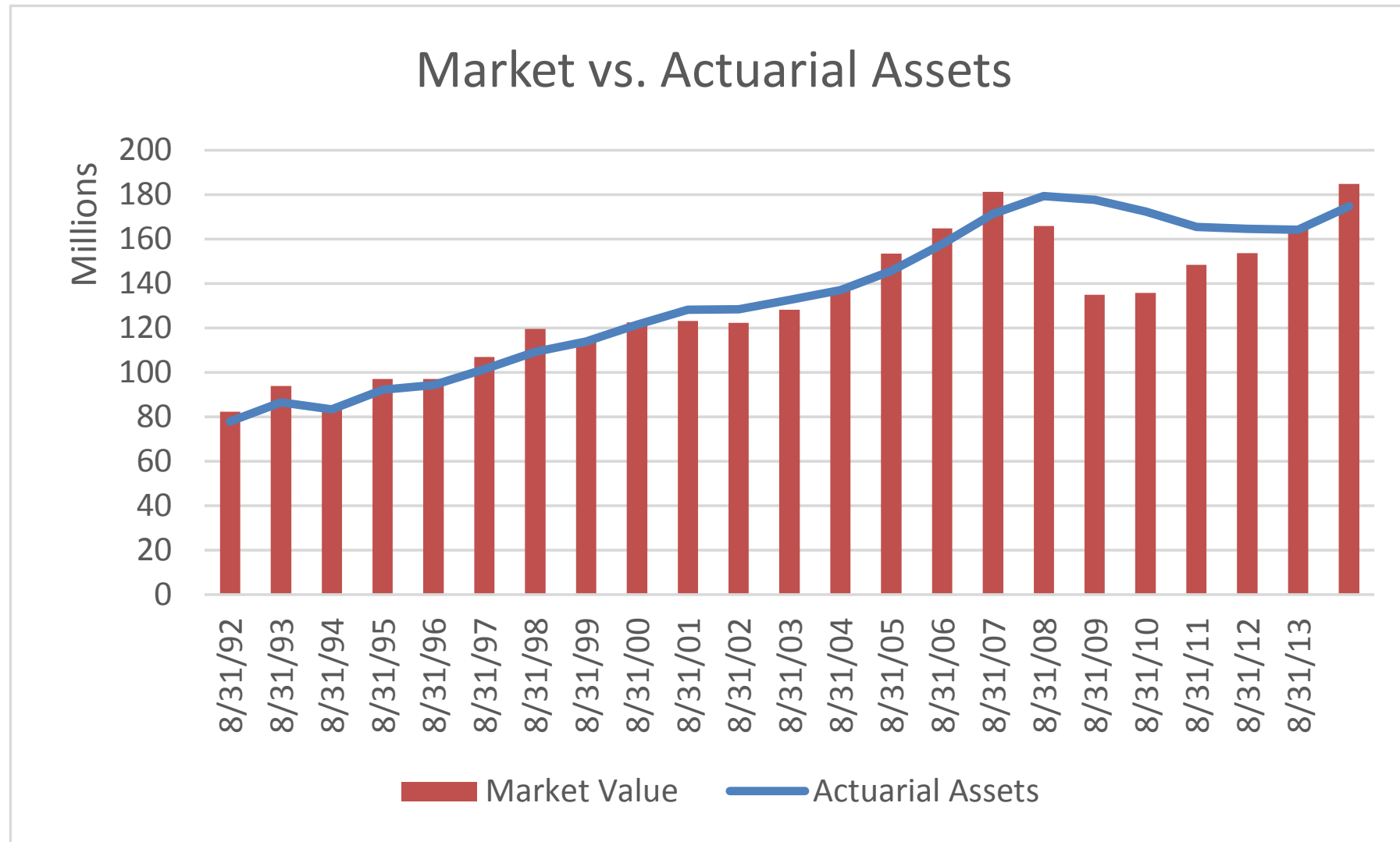
Lincoln Police and Fire Pension Plan



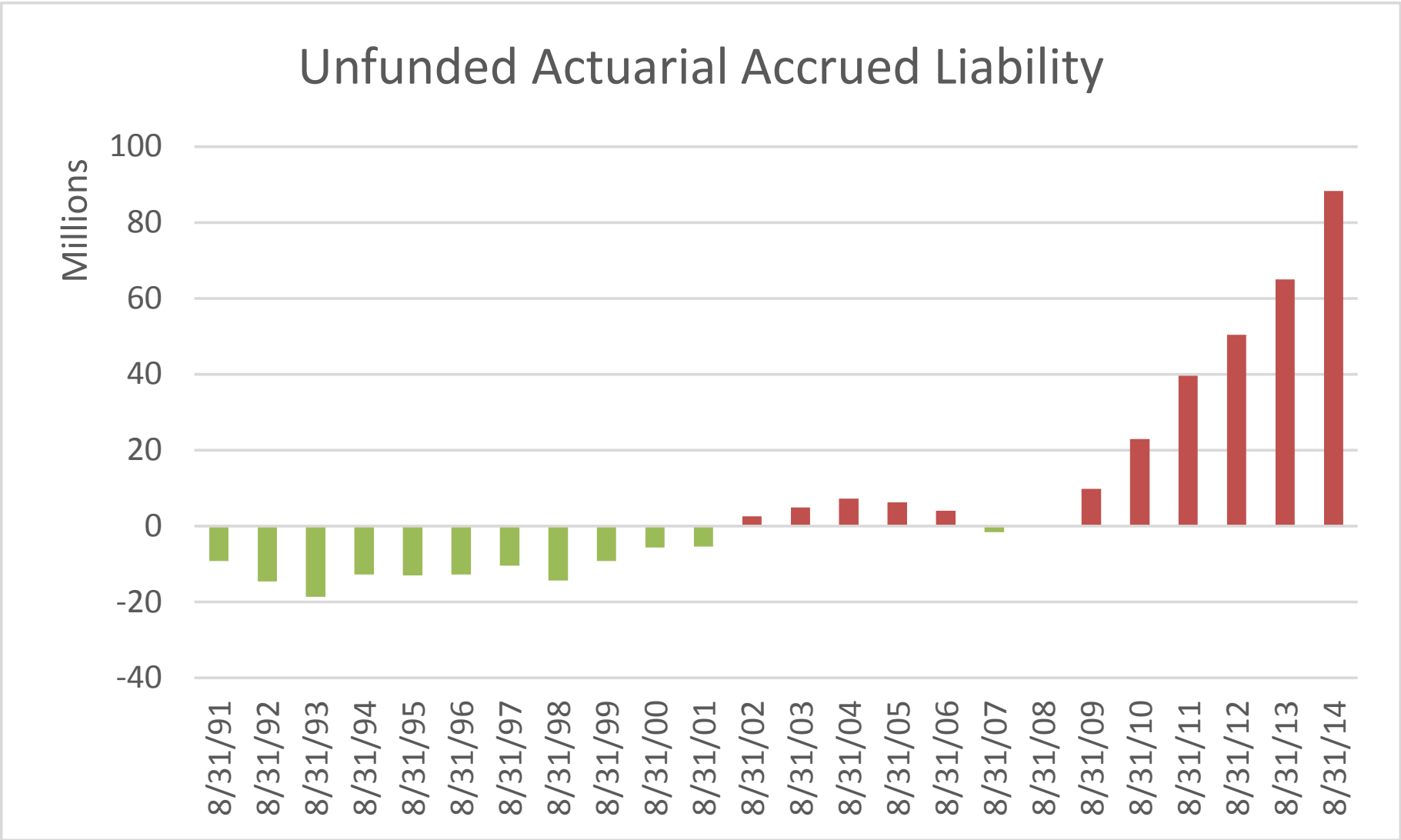
Lincoln Police and Fire Pension Plan



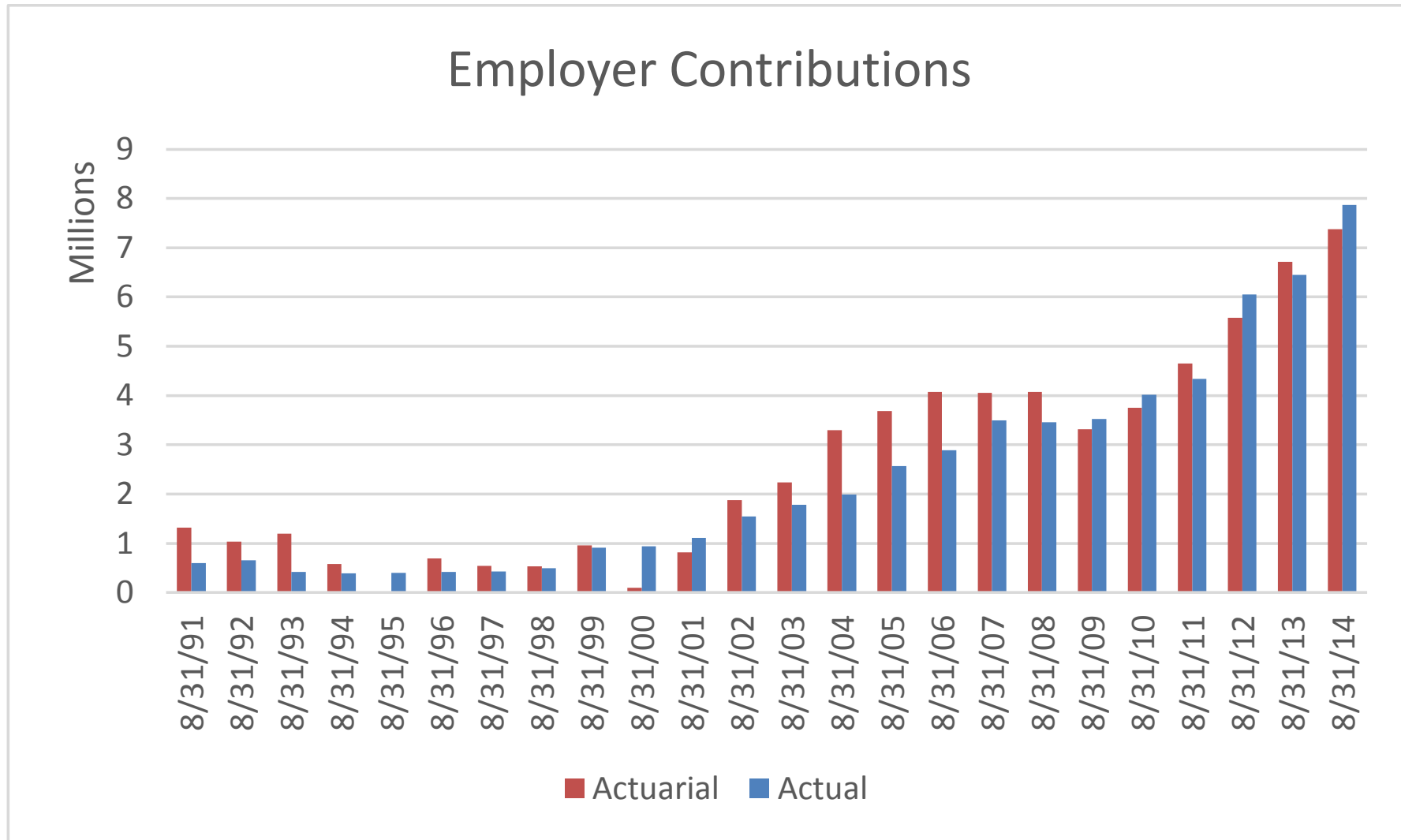
Lincoln Police and Fire Pension Plan



Lincoln Police and Fire Pension Plan



Lincoln Police and Fire Retirement Plan



Appendix D

Omaha Civilian Employees Retirement Plan Information

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City of Omaha
Jean Stothert, Mayor

Finance Department

Omaha/Douglas Civic Center
1819 Farnam Street, Suite 1004
Omaha, Nebraska 68183-1004
(402) 444-5417
Telefax (402) 546-1150

Stephen Curtiss
Finance Director

Allen Herink
City Comptroller

October 15, 2015

Senator Al Davis, Interim Chairperson
Nebraska Retirement Systems Committee
PO BOX 94604
State Capitol
Lincoln, NE 68509-4604

Dear Senator Davis:

Neb. Rev. Stat § 13-2402(3) requires a governing entity that offers a defined benefit retirement plan to file a report if contributions do not equal the actuarial requirement for funding or the funded ratio is less than eighty percent. The City of Omaha is submitting this report regarding the City of Omaha Employees Retirement System (COERS) because the funded ratio is less than eighty percent.

The City through its negotiations with the bargaining agents has made efforts to address the funding shortfall in COERS. Some of those efforts are addressed below. The table below compares the actuarial data for the current and previous plan years:

ITEM	2014	2015
Funding Status	54%	56%
Net Assets (actuarial value)	\$237,579,690	\$242,248,074
Unfunded Actuarial Accrued Liability	\$205,174,113	\$188,911,964
Normal Cost	\$7,808,536	\$5,822,238
Member Contribution Rate	10.075%	10.075%
Employer Contribution Rate	17.775%*	18.775%*
Actuarial Required Contribution	\$17,406,168 (2013)	\$17,996,034 (2014)
Actuarial Rate of Contribution (ARC)	38.454%	33.724%
Contribution Shortfall/(Margin)	10.604%	4.874%

* The City entered into labor agreements in December, 2014 through February, 2015 that increased the employer contribution rate from 11.775%

COERS has been underfunded for a number of years and the circumstances leading to it being underfunded are varied. When the system was fully funded in the late 1990s, benefits were increased and even though the actuarial cost was calculated, the benefits appear to have exceeded those costs. There also have been some years where the investment loss was historically large. Other factors include reduction in the number of civilian employees over the past 20 years, lack of wage increases in some instances, and the delay in replacing retired personnel.

The actuarial assumptions and methods are unchanged from the prior valuation, however in an effort to improve the conditions of the system, the City entered into new labor agreements with all its civilian bargaining groups at the end of 2014/beginning of 2015. These bargaining agreements addressed 2013

through 2017 and included increased contributions by the City for wages paid 2013 until the contracts became effective.

The summary of some of the changes in the agreements addressing civilian employees are:

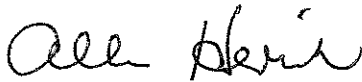
- Contributions by the City increased 7% over the four years of the agreements from 11.775% to 18.775%.
- Existing employees will receive 1.9% per year for future years of service instead of 2.25%.
- The City went from the Rule of 80 to the Rule of 85 and raised the minimum retirement age with some grandfathering of these provisions. The retirement age went from 60 to 65 over the course of the agreements.
- The smoothing of the salary on which a person's pension was calculated from a highest one year in your last five years to the average of your last five years of employment.
- Dramatically decreased the disability benefit for the existing employees.
- Implementing a Cash Balance Plan for employees hired on or after 3/1/2015. A cash balance plan is a type of defined benefit plan which allows for the employer and employee to share some of the risk of poor investment returns. The pay credit for the plan starts at 13% and goes up 1% for each 8 years of service. The interest credit is guaranteed at 4% with an additional amount being three quarters of the amount earned by the Plan over 7% on a 5 year rolling average, with the interest credit being capped at 7%. One has to have 10 years of service to vest.

As of January 1, 2015, the system had a market value of \$239 million in assets and a funded ratio of 56%. It had a funded ratio of 54% in 2014. The actuarial contribution to the system has improved significantly, resulted in the contribution shortfall of 4.874% in 2015 from 10.604% in 2014. Additional savings should be seen in the future years as members covered by the provisions of the Cash Balance Plan begin. The most recent actuarial report projects the system to fully funded status in about 25 years.

As requested, we enclose the most recent Actuarial Experience Study which was submitted in January, 2013 and the most recent Actuarial Valuation Report which was completed in September, 2015 and will be subject to approval by COERS on October 21, 2015.

If you or the Committee should have any questions regarding this report please let me know.

Sincerely,



Allen R. Herink
City Comptroller

Enclosures

Civilian Pension System

Prepared by:

CITY OF OMAHA
Finance Department



November 18, 2015

**REPORT TO MEMBERS OF THE CIVILIAN EMPLOYEES' RETIREMENT SYSTEM
YEAR ENDING DECEMBER 31, 2014**

The City of Omaha Employees' Retirement System became effective on January 1, 1949. Certain of its provisions, which are governed by Chapter 22.21 of the Omaha Municipal Code, are summarized herein.

All City employees except the following are covered by the plan: police officers, firefighters, persons paid on a contractual or fee basis; seasonal, temporary, and part-time employees; and elective officials who do not make written application to the plan.

Employee Contributions by payroll deduction and the City's contributions in 2014 were made as follows:

	Civilian Barg	Functional	CMPTEC	AEC
Employee Contributions	10.075%	10.625%	10.075%	10.075%
City Contributions	17.775%	17.775%	17.775%	17.775%

Employees earn 2.25% of pay for each full year of service and fraction thereof. Compulsory military duty and voluntary military duty in time of war count as service. Deferred vesting rights are attained at 5 years of service.

Retirement is optional at age 50. To receive a pension, an employee must have at least 5 years of service. Full benefit is realized at age 50 with 30 years of service or age 60 with 5 years of service.

**Civilian Employees' Retirement System
Cash Flow Analysis - Last Five Fiscal Years**

Receipts:	2010	2011	2012	2013	2014
Employee Contributions	\$ 4,858,097	\$ 5,628,888	\$ 6,201,924	\$ 6,173,254	\$ 6,321,141
Employer Contributions	\$ 5,717,610	\$ 6,618,110	\$ 7,216,050	\$ 7,194,482	\$ 12,326,643
Investment Income	\$ 36,431,935	\$ (401,034)	\$ 24,485,826	\$ 35,568,999	\$ 14,194,059
Security Lending Income	\$ 18,558	\$ 16,808	\$ 44,131	\$ 19,041	\$ (1,817,507)
	\$ 47,026,201	\$ 11,862,772	\$ 37,947,931	\$ 48,955,776	\$ 31,024,336
Disbursements:					
Retirement Pensions	\$ 25,956,829	\$ 26,789,295	\$ 28,024,628	\$ 29,426,983	\$ 30,458,477
Death Benefits	\$ 175,000	\$ 148,333	\$ 201,667	\$ 105,000	\$ 189,286
Refunds	\$ 205,017	\$ 387,969	\$ 557,950	\$ 945,190	\$ 668,480
Investment Counseling Fees	\$ 1,561,382	\$ 1,448,069	\$ 1,364,199	\$ 1,368,324	\$ 1,318,321
Other Expenditures	\$ 1,022	\$ 905	\$ 1,183	\$ 553	\$ 2,141
	\$ 27,899,250	\$ 28,774,572	\$ 30,149,626	\$ 31,846,050	\$ 32,636,704
Excess of Receipts Over Disbursements	\$ 19,126,952	\$ (16,911,800)	\$ 7,798,304	\$ 17,109,726	\$ (1,612,368)

Financial Information - Last Five Fiscal Years

	2010	2011	2012	2013	2014
System Total Assets	\$ 232,346,584	\$ 215,434,784	\$ 223,233,089	\$ 240,342,815	\$ 238,730,446
Employee Contributions	\$ 4,858,097	\$ 5,628,888	\$ 6,201,924	\$ 6,173,254	\$ 6,321,141
Employer Contributions	\$ 5,717,610	\$ 6,618,110	\$ 7,216,050	\$ 7,194,482	\$ 12,326,643

Percentage Distribution of Receipts

	2010	2011	2012	2013	2014
Employee Contributions	10.3	N/A	16.3	12.6	20.4
Employer Contributions	12.2	N/A	19.1	14.7	39.7
Investment Income	77.5	N/A	64.6	72.7	39.9
	100.0	N/A	100.0	100.0	100.0

CIVILIAN EMPLOYEES' RETIREMENT SYSTEM

RETIRED MEMBERSHIP

	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100	TOTAL
	Service Retirees	Surviving Spouse	Service Disability	Non-Service Disability	Children	Ex-Spouse	Age 65 Conv.	Service Disability	Service Disability	Non-Service Disability	Non-Service Disability	Child
	988	202	46	33	6	10	42	3	0	36	4	1370
Pensions Granted	57	20	1	0	1	4	1	0	0	0	0	84
Pensions Ceased:												
Deaths	-26	-15	-2	-2	0	0	-4	0	0	-1	0	-50
Corrections												0
Other			-1							-2	-1	-4
December 31, 2014 TOTAL:	1019	207	44	31	7	14	39	3	0	33	3	1400

Respectfully submitted,

Stephen Curtiss
Finance Director

Board of Trustees:

- Buster Brown, Chairperson
- Donna Waller, Vice-Chairperson
- Dave Felber MD, Trustee
- Aimee Melton, City Councilmember
- Scott McIntyre, Public Works
- Mikki Frost, Human Resources Director
- Allen Henrik, City Comptroller
- Janine Kirk, Recording Secretary

Total Fund Performance Review

Performance & Benchmarks

9/30/2015

	One Quarter	Year To Date	One Year	Three Years	Five Years	Ten Years	Since Inception 3Q 1980
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Domestic Equity	(11.5)	(8.2)	(3.1)	11.3	11.1	6.2	
International Equity	(9.7)	(2.3)	(4.7)	6.6	5.7	4.2	
Domestic Fixed Income	(0.9)	0.4	1.6	2.2	3.4	5.2	
Domestic Real Estate	5.6	14.3	19.6	15.8	16.9	6.8	
Domestic Private Equity	6.9	15.7	19.5	17.4	15.2		
Domestic Commodities	(13.8)	(14.9)	(24.7)	(15.7)	(8.1)		
Global Hedge Funds	(3.4)	(1.8)	(4.9)				
Domestic Cash	0.4	1.2	1.6	1.6	1.9		
Total Fund	(3.6)%	1.1 %	2.9 %	8.0 %	8.1 %	5.1 %	9.2 %
Absolute Objective¹	1.9	5.9	8.0	8.0	8.0	7.9	7.4
Relative Objective²	(4.4)	(0.6)	0.8	6.8	7.5	5.0	
Russell 1000	(6.8)	(5.2)	(0.6)	12.7	13.4	7.0	
Russell 2000	(11.9)	(7.7)	1.2	11.0	11.7	6.5	
Russell Midcap	(8.0)	(5.8)	(0.2)	13.9	13.4	7.9	
MSCI EAFE	(10.2)	(5.3)	(8.7)	5.6	4.0	3.0	
MSCI EAFE Small Cap	(6.8)	2.6	0.3	10.2	7.3	4.7	
MSCI Emerging Markets	(17.9)	(15.5)	(19.3)	(5.3)	(3.6)	4.3	
Barclays Govt/Credit	1.2	0.9	2.7	1.6	3.1	4.6	
Merrill Lynch US High Yield Cash Pay	(4.9)	(2.5)	(3.5)	3.4	5.9	7.0	
NCREIF Property	3.1	10.1	13.5	11.9	12.5	8.0	
Omaha Civilian PE	0.3	6.2	7.4	14.1	13.2		
Bloomberg Commodity Index	(14.5)	(15.8)	(26.0)	(16.0)	(8.9)	(5.7)	
HFRI - FOF Conservative	(1.8)	0.3	0.6	4.2	2.8	2.1	

¹ + 8% - Objective has changed since inception

² 10% R1000, 9.8% R2000, 5% RusMc, 5% EAFE, 7.5% EAFE SC, 2.5% MSCI EM, 10.5% BC GC, 10% ML HY, 18% NCREIF, 8.7% CivPE, 5% BB Comm, 8% HFR Cns - Objective has changed since inception

2015 Negotiated Changes to Civilian Pension System

- I. A reduction in the benefit multiplier for credited years of service from 2.25% to 1.90%
- II. A change in the normal retirement age from the rule of 80 (age plus years of credited service equals or exceeds 80) or age 60 with 5 years of service to the rule of 85 or age 65 with 5 years of service. Certain special provisions apply if a member is within 5 or 10 years of normal retirement.
- III. A change in the calculation of the average final monthly compensation from the average of the highest consecutive 26 pay periods of compensation during the final 130 pay periods of service to the average of the final 130 pay periods of service. If a member is within 5 years of normal retirement, it is based on the average of the highest consecutive 78 pay periods of compensation during the final 130 pay periods of service. The average final monthly compensation will not lower than the current average final monthly salary at December 31, 2014.
- IV. The disability benefit changed from 60% of the average final monthly compensation to years of service times 1.50% for non-service related or 1.75% for service related disabilities times the average final monthly compensation.
- V. The creation of a cash balance plan for new hires.
- VI. To increase the City's contribution rate from 11.775% to 17.775% in 2014 and 18.775% in 2015 and beyond.



Key Valuation Measurements

	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Actuarial Liability (\$M)	\$ 431.2	\$ 442.8	\$ 436.3	\$ 420.8
Actuarial Assets (\$M)	<u>242.2</u>	<u>237.6</u>	<u>235.6</u>	<u>236.7</u>
Unfunded Actuarial Liability	\$ 188.9	\$ 205.2	\$ 200.7	\$ 184.1
Funded Ratio (Actuarial Assets)	56%	54%	54%	56%
Funded Ratio (Market Assets)	55%	54%	51%	51%
Actuarial Contribution Rate	33.724%	38.454%	37.561%	34.998%
Scheduled Rate (Total)*	<u>(28.850%)</u>	<u>(27.850%)</u>	<u>(23.850%)</u>	<u>(21.850%)</u>
Contribution Shortfall	4.874%	10.604%	13.711%	13.148%

* Includes City Contribution Rate moving from 11.775% to 13.775% in 2013, 17.775% in 2014 and 18.775% in 2015 and beyond.

Note: numbers may not add due to rounding.



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

The City of Omaha Employees' Retirement System

Actuarial Valuation as of January 1, 2015





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

September 25, 2015

Board of Trustees
City of Omaha Employees' Retirement System
1819 Farnam Street
Omaha, NE 68183

RE: January 1, 2015 Actuarial Valuation

Members of the Board:

In accordance with your request, we have completed an actuarial valuation of the City of Omaha Employees' Retirement System as of January 1, 2015 for the plan year ending December 31, 2015. The major findings of the valuation are contained in this report. The actuarial assumptions and methods are unchanged from the prior valuation, however the valuation reflects the impact of a number of changes to the pension plan provisions as a result of recent labor agreements. In addition to the changes in the benefit structure for current and future members, the City's contribution rate increases from 11.75% in 2012 to an ultimate rate of 18.775% in 2015 and beyond. Please see the Summary of Plan Provisions in Appendix A of this report for a more detailed description of the changes that impacted this valuation.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information provided in prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, 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: 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.

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

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Board of Trustees
September 25, 2015
Page 2

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, have experience in performing valuations for public retirement plans, and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board and 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 B.

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



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EXECUTIVE SUMMARY

This report presents the results of the January 1, 2015 actuarial valuation of the City of Omaha Employees' Retirement System. The primary purposes of performing the valuation are:

- to estimate the liabilities for the future benefits expected to be paid by the System;
- to determine the actuarial contribution rate, based on the System's funding policy;
- to measure and disclose various asset and liability measures;
- to monitor any deviation between actual System experience and experience predicted by the actuarial assumptions so that recommendations for assumption changes can be made when appropriate;
- to analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

The actuarial assumptions and methods are unchanged from the prior valuation, however the current valuation results reflect a number of changes to the plan provisions that were the result of recent labor agreements. These changes include certain adjustments to the benefit provisions for current members as well as changes to the City's contribution rate. A short summary of the changes follows:

- (1) Reduce the benefit multiplier from 2.25% to 1.90% for years of service after March 1, 2015.
- (2) Final average compensation is based on the last five years rather than the last one year (transitional rules apply).
- (3) Normal retirement age (age at which the benefit is payable without reduction) changes from age 60 with 5 years of service or Rule of 80 with a minimum of age 50 to age 65 and 5 years of service or Rule of 85 with a minimum age of 55 (transitional rules apply).
- (4) The service-connected disability benefit is 1.75% times Final Average Compensation times years of service less any Social Security disability payments or Workers Compensation payments (previously 60% of final monthly compensation offset by Social Security and Workers Compensation).
- (5) The non-service-connected disability benefit is 1.50% times Final Average Compensation times years of service less any Social Security disability payments (previously 60% of final monthly compensation offset by Social Security).
- (6) Members hired on or after March 1, 2015 are covered by a different type of retirement plan, called a Cash Balance plan. Due to the effective date of this provision, there are no Cash Balance members in this valuation and, therefore, this change had no effect on the valuation results.
- (7) The City retroactively contributed an additional 2% of pay for 2013 (total of 13.775%) and an additional 4% of pay for 2014 (total of 17.775%). For 2015 and beyond, the City contribution rate is 18.775%.

These changes were made to address concerns about the sustainability of the System, which was projected, based on the 2014 valuation, to run out of assets in 2036. If all assumptions are met in the future, the changes in both the benefit structure and City contribution rate are expected to move the System to fully funded status in about 25 years. As a result of these changes, the actuarial liability as of January 1, 2015 decreased by \$19.7 million and the total actuarial contribution rate decreased by 5.636%. The contribution shortfall is down to 4.874%. This shortfall only indicates that the System will not meet its goal of being fully funded in 17 years.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2015. The valuation results reflect net favorable experience for the past plan year as demonstrated by an unfunded actuarial liability that was less than what was expected based on the actuarial assumptions used in the January 1, 2014 actuarial valuation. Unfavorable experience on the actuarial value of assets



EXECUTIVE SUMMARY

resulted in a loss of \$1.2 million, while favorable experience on liabilities resulted in an experience gain of \$3.2 million. Actual contributions during 2014 were lower than the actuarial contribution rate which increased the unfunded actuarial liability by \$6.0 million. As discussed earlier, the plan provision changes lowered the actuarial liability by \$19.7 million. The overall impact was a decrease of \$16.3 million in the UAL from January 1, 2014 to January 1, 2015.

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 pure market value. The investment return, net of expenses, on the market value of assets during 2014 was 4.7%. Coupled with the deferred investment gain, the rate of return on the actuarial value of assets was 7.5% for 2014, lower than the assumed 8% return, which generated an actuarial loss. As of January 1, 2015, the actuarial value of assets exceeds the market value by \$3.5 million or 1.5% of the market value, so a deferred investment loss now exists. Actual market returns over the next few years will determine when the deferred investment loss is actually recognized.

The change in the assets, liabilities, and contribution rate of the System over the last year are discussed in more detail in the following sections.

ASSETS

As of January 1, 2015, the System had total funds of \$238.7 million, when measured on a market value basis. This was a decrease of \$1.6 million from the prior year, and represents an approximate rate of return, net of expenses, of 4.7%.

The market value of assets is not used directly in the actuarial calculation of the System’s funded status and the actuarial contribution rate. An asset valuation method is used to smooth the effects of market fluctuations. The actuarial value of assets is equal to the expected asset value (based on last year’s actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 8.0%) plus 25% of the difference between the actual market value and the expected asset value. See Exhibit 2 for the detailed development of the actuarial value of assets as of January 1, 2015. The rate of return on the actuarial value of assets was 7.5%. The portion of the deferred and current year’s investment experience recognized in the calculation of the January 1, 2015 actuarial value of assets resulted in an actuarial loss of \$1 million.

The components of the change in the market value and actuarial value of assets are shown below:

	Market Value (\$M)	Actuarial Value (\$M)
Net Assets, January 1, 2014	\$ 240.3	\$ 237.6
City and Member Contributions	+ 18.6	+ 18.6
Benefit Payments and Refunds	- 31.3	- 31.3
Investment Gain/(Loss)	+ 11.1	+ 17.3
Net Assets, January 1, 2015	238.7	242.2
Estimated Rate of Return	4.7%	7.5%



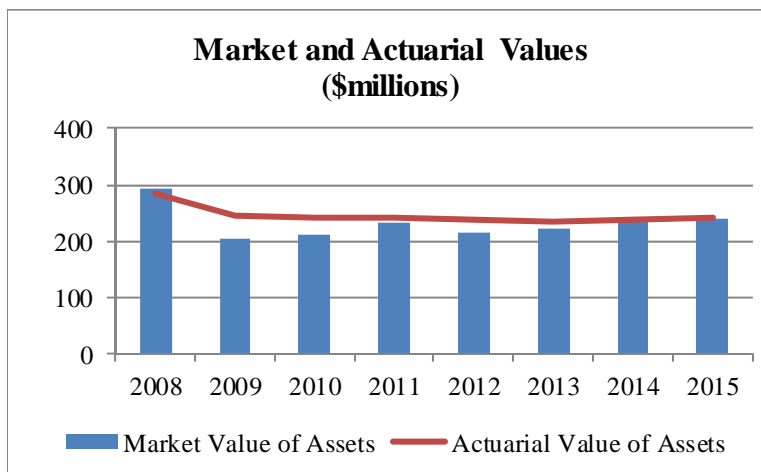
EXECUTIVE SUMMARY

The net investment loss that is not recognized as of January 1, 2015 is \$3.5 million, compared with a \$2.7 million unrecognized gain in last year's valuation. The unrecognized losses of \$3.5 million will be reflected in the determination of the actuarial value of assets for funding purposes in the next few years to the extent they are not offset by the recognition of gains derived from future experience. This means that earning the assumed rate of investment return of 8% per year (net of investment expenses) on a market value basis will result in small actuarial losses on the actuarial value of assets over the next few years.

The unrecognized investment losses represent about 1.5% of the market value of assets (compared to deferred gains equal to 1.2% of the market value in the 2014 valuation). If the deferred losses were recognized immediately in the actuarial value assets, the unfunded actuarial liability would increase by \$3.5 million to \$192.4 million, the funded ratio would decrease to 55%, the actuarial contribution rate would increase from 33.724% to 34.118%, and the contribution shortfall would increase to 5.268%.

A comparison of asset values on both a market and actuarial basis for the last five years is shown in the following tables.

	2015	2014	2013	2012	2011
Actuarial Value of Assets	\$242	\$238	\$236	\$237	\$240
Market Value of Assets	\$239	\$240	\$223	\$215	\$232
Actuarial Value/Market Value	101%	99%	106%	110%	103%



An asset smoothing method is used to mitigate the volatility in the market value of assets. By using a smoothing method, the actuarial (or smoothed) value can be either above or below the pure market value

LIABILITIES

The first step in determining the actuarial contribution rate for the System is to calculate the liabilities for all expected future benefit payments. These liabilities represent the present value of future benefits (PVFB) expected to be earned by the current System members, assuming that all actuarial assumptions are realized. Thus, the PVFB reflects service and salary increases that are expected to occur in the future before the benefit becomes payable. The PVFB for the various types of benefit provided by the System can be found in the liabilities portion of the valuation balance sheet (see Exhibit 3).



EXECUTIVE SUMMARY

The other critical measurement of System liabilities in the valuation process is the actuarial liability (AL). This is the portion of the PVFB that will not be paid by the future normal costs (i.e. it is the portion of the PVFB that is allocated to prior service periods). As of January 1, 2015, the actuarial liability for the System was \$431,160,038.

The following chart compares the Actuarial Liability (AL) and System assets for the current and prior valuation:

	As of January 1	
	2015	2014
Actuarial Liability (AL)	\$431,160,038	\$442,754,113
Assets at Actuarial Value	\$242,248,074	\$237,579,690
Unfunded Actuarial Liability (AVA)	\$188,911,964	\$205,174,423
Funded Ratio (Actuarial Value)	56%	54%
Assets at Market Value	\$238,730,446	\$240,342,815
Unfunded Actuarial Liability (MVA)	\$192,429,592	\$202,411,298
Funded Ratio (Market Value)	55%	54%

The valuation reflects a number of changes to the plan provisions that were the result of recent labor agreements. These changes include certain adjustments to the benefit provisions for current members, including reducing the benefit multiplier for future years of service, changing the period used to determine final average compensation, and extending normal retirement age for most members (see discussion on page 1 for details). In addition, the City’s contribution rate increased to 18.775%. As a result of the benefit provision changes, the actuarial liability, as of January 1, 2015, decreased by \$19.7 million.

EXPERIENCE FOR THE 2014 PLAN YEAR

The difference between the actuarial liability and the actuarial value of assets at the same date is referred to as the unfunded actuarial liability (UAL). Benefit improvements, experience gains/losses, changes in the actuarial assumptions or methods, and actual contributions made will impact the amount of the unfunded actuarial liability.

Actuarial gains (or losses) result from actual experience that is more (or less) favorable than anticipated based on the actuarial assumptions. These “experience” (or actuarial) gains or losses are reflected in the unfunded actuarial liability and are measured as the difference between the expected unfunded actuarial liability and the actual unfunded actuarial liability, taking into account any changes due to assumptions/methods or benefit provision changes. The experience, in total, was favorable (a lower unfunded actuarial liability than expected). There was an actuarial loss for 2014 of around \$1.2 million on the actuarial value of assets and an actuarial gain of about \$3.2 million on liabilities.

The change in the unfunded actuarial liability between January 1, 2014 and January 1, 2015 is shown below (in millions):



EXECUTIVE SUMMARY

Unfunded Actuarial Liability, January 1, 2014	205
• Expected change in UAL	0
• Contribution shortfall in 2014	6
• Investment experience	1
• Demographic and other experience	(3)
• Changes in plan provisions	(20)
Unfunded Actuarial Liability, January 1, 2015	189

Due to the use of an asset smoothing method, there were deferred investment gains in the prior valuation which had not been fully recognized. As a result, the loss on the actuarial value of assets due the actual investment return in 2014 was smaller than would otherwise have occurred. The experience loss on the actuarial value of assets increased the unfunded actuarial liability by \$1 million. There was a \$3 million gain on demographic experience, resulting largely from lower than expected salaries. However, there was also an increase in the UAL due to actual contributions during 2014 that were less than the full actuarial contribution rate. This increased the UAL by \$6 million. Lastly, there was a decrease in the UAL of \$20 million which was due to changes in the pension plan provisions for current employees.

CONTRIBUTION LEVELS

The actuarial contribution rate of the System is composed of two parts:

- (1) The normal cost (which is the allocation of costs attributed to the current year's membership service) and,
- (2) The amortization payment on the Unfunded Actuarial Liability (UAL).

The normal cost rate is independent of the System's funded status and represents the cost, as a percent of payroll, of the benefits provided by the System which is allocated to the current year of service. The total normal cost for the System is 9.881% of pay, or about \$6 million this year. The normal cost rate represents the long-term cost of the current benefit structure. The pension plan changes that resulted from recent labor agreements reduced the normal cost rate.

The System's total actuarial contribution rate (payable as a percentage of member payroll) decreased by 4.730% of pay, to 33.724% on January 1, 2015, from 38.454% on January 1, 2014. The primary components of the change in the actuarial contribution rate are shown in the following table:

	Rate
Total Actuarial Contribution Rate, January 1, 2014	38.454 %
• Actuarial (Gain) / Loss - Investment Experience	0.148
• Actuarial (Gain) / Loss - Demographic Experience	(0.404)
• Other Experience	0.354
• Contributions Less Than Actuarial Rate	0.753
• Change in Plan Provisions	(5.636)
• Change in Normal Cost Rate	0.055
Total Actuarial Contribution Rate, January 1, 2015	33.724 %



EXECUTIVE SUMMARY

As the result of the changes to the plan provisions as well as experience during 2014, the System has an unfunded actuarial liability of \$189 million (actuarial liability is greater than actuarial assets). The unfunded actuarial liability is being funded using a “layered” approach. The UAL that existed as of January 1, 2013 (the largest base) is amortized over a closed 30-year period that began January 1, 2002 (17 years remain on this base as of January 1, 2015). The changes that occurred in the UAL each year since 2013 are established as a new amortization base with payments determined as a level percentage of payroll over a closed 20 year period beginning on that valuation date (see page 13 for more details). The total UAL amortization payment is the sum of the amortization payments on all of the bases. For the current valuation, the resulting total UAL payment is 23.843% of pay. As a result, the total contribution rate for 2015 is 33.724% of pay (9.881% + 23.843%). The City’s required contribution rate in the city ordinance for 2015 is 18.775% and the employee contribution rate is 10.075%, for a total of 28.850%. The difference between the actuarial contribution rate and the actual contribution rates creates a contribution shortfall for 2015 of 4.874% of pay or approximately \$3 million. The contribution shortfall indicates only that the targeted 17 years to reach full funding will not be met at the current contribution rates. However, the long term projections that were performed when the benefit changes were negotiated indicated the System is expected to be fully funded in about 25 years.

COMMENTS

The return on the market value of assets in 2014 was about 5%, which eliminated the deferred investment gains that existed on January 1, 2014 and created an actuarial loss in the current valuation. The funded ratio of the system, on a market value basis, is 55% in the January 1, 2015 actuarial valuation. The System has made significant progress toward addressing the long term funding problems identified in prior valuations, but it should continue to be monitored to ensure the actual impact of the plan changes unfolds as expected. In order to provide insight into expectations about the future funding of the System, we recommend a projection model be prepared as part of the annual actuarial valuation process in the future.

The actual contributions to the System for 2014 of 27.850% of pay were significantly below the actuarial contribution rate of 38.454%. This shortfall in the contribution rate of 10.604% of pay, or about \$6 million, resulted in an increase in the unfunded actuarial liability. The actuarial contribution rate in the 2015 valuation is 33.724% compared to the total contribution rate for 2015 in the City ordinance of 28.850%, which results in a shortfall of 4.874% of pay for 2015 or \$3 million. A fundamental principle of sound funding for any defined benefit plan is to consistently pay the full actuarial contribution rate. Contributions to the City of Omaha Employees’ Retirement System have been less than the full actuarial contribution rate for more than ten years. This situation, exacerbated by adverse investment experience over the last decade that was lower than the 8% assumed rate of return, has resulted in a sharp decline in the System’s funded status.

The changes to the pension plan provisions reflected in the recent labor agreements reduced the UAL by \$19.7 million and reduced the contribution shortfall by 5.636%. Additional saving should be seen in future years as members covered by the provisions of the Cash Balance Plan begin to replace current members who are covered by the Final Pay Plan. If all actuarial assumptions are met (including the 8% return on plan assets) in the future, the System’s funded ratio is expected to increase and eventually reach 100% in about 25 years.



EXECUTIVE SUMMARY

As mentioned earlier in this report, the System uses an asset smoothing method in the actuarial valuation. While this is a very common procedure for public retirement systems, it is important to be aware of the potential impact of the unrecognized investment experience. The System currently has a deferred loss of about \$3.5 million. It is valuable to compare the key valuation results from the 2015 valuation using both the actuarial and market value of assets (see following table).

	\$ Millions	
	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Liability	\$431.2	\$431.2
Asset Value	242.2	238.7
Unfunded Actuarial Liability	\$189.0	\$192.5
Funded Ratio	56.2%	55.4%
Normal Cost Rate	9.881%	9.881%
UAL Contribution Rate	<u>23.843%</u>	<u>24.237%</u>
Actuarial Contribution Rate	33.724%	34.118%



EXECUTIVE SUMMARY

THE CITY OF OMAHA EMPLOYEES' RETIREMENT SYSTEM

PRINCIPAL VALUATION RESULTS

	January 1, 2015	January 1, 2014	% Chg
MEMBERSHIP			
1. Active Membership			
- Number of Members	1,143	1,116	2.4
- Projected Payroll for Upcoming Fiscal Year	\$64,876,227	\$63,413,206	2.3
- Average Projected Payroll	\$56,760	\$56,822	(0.1)
- Average Attained Age	46.6	47.1	(1.1)
- Average Entry Age	36.5	36.7	(0.5)
2. Inactive Membership			
- Number of Retirees / Beneficiaries	1,286	1,249	3.0
- Number of Disabled Members	114	121	(5.8)
- Number of Deferred Vested Members	74	77	(3.9)
- Average Annual Benefit	\$22,238	\$21,983	1.2
ASSETS AND LIABILITIES			
1. Net Assets			
- Market Value	\$238,730,446	\$240,342,815	(0.7)
- Actuarial Value	242,248,074	237,579,690	2.0
2. Projected Liabilities			
- Retired Members and Beneficiaries	\$283,499,476	\$275,480,078	2.9
- Disabled Members	22,016,233	23,378,166	(5.8)
- Other Inactive Members	4,922,153	5,412,234	(9.1)
- Active Members	<u>165,303,113</u>	<u>196,306,331</u>	(15.8)
- Total Liability	\$475,740,975	\$500,576,809	(5.0)
3. Actuarial Liability	431,160,038	442,754,113	(2.6)
4. Unfunded Actuarial Liability	\$188,911,964	\$205,174,423	(7.9)
5. Funded Ratios			
Actuarial Value Assets / Actuarial Liability	56.19%	53.66%	4.7
Market Value Assets / Actuarial Liability	55.37%	54.28%	2.0
CONTRIBUTIONS			
1. Normal Cost Rate	9.881%	13.231%	(25.3)
2. UAL Contribution Rate	<u>23.843%</u>	<u>25.223%</u>	(5.5)
3. Total Actuarial Contribution Rate (1) + (2)	33.724%	38.454%	(12.3)
4. Less Employee Contribution Rate	(10.075%)	(10.075%)	0.0
5. Less City Contribution Rate Per Ordinance	<u>(18.775%)</u>	<u>(17.775%)</u>	5.6
6. Contribution Shortfall	4.874%	10.604%	(54.0)



SECTION I – VALUATION RESULTS

EXHIBIT 1
SUMMARY OF FUND ACTIVITY
(Market Value Basis)
For Year Ended December 31, 2014

Assets at January 1, 2014	\$ 240,342,815
Receipts:	
City Contributions	12,326,643
Employee Contributions	6,321,141
Investment Earnings, Net of Expenses	11,121,873
Total Receipts	<u>29,769,657</u>
Disbursements:	
Benefit Payments	30,647,763
Refund of Contributions	668,480
Administrative Expenses	65,783
Total Disbursements	<u>31,382,026</u>
Assets as of December 31, 2014	\$ 238,730,446
Annualized Net Yield	4.7%



SECTION I – VALUATION RESULTS

EXHIBIT 2

DETERMINATION OF ACTUARIAL VALUE OF ASSETS

The actuarial value of assets is used to minimize the impact of annual fluctuations in the market value of investments on the contribution rate. The current asset valuation method is called the “Expected +25% Method.”

The “expected value” of assets is determined by applying the investment return assumption to last year’s actuarial value of assets and the net difference of receipts and disbursements for the year. The actual market value is compared to the expected value and 25% of the difference (positive or negative) is added to the expected value to arrive at the actuarial value of assets for the current year.

1. Actuarial Value of Assets as of January 1, 2014	\$	237,579,690
2. Actual Receipts / Disbursements		
a. Total Contributions		18,647,784
b. Benefit Payments/Other		(31,316,243)
c. Net Change		<u>(12,668,459)</u>
3. Expected Actuarial Value of Assets as of January 1, 2015 [(1) * 1.08] + [(2c) * 1.08 ^{1/2}]		243,420,616
4. Market Value of Assets as of January 1, 2015		238,730,446
5. Excess of Market Value over Expected Actuarial Value as of January 1, 2015		(4,690,170)
6. Preliminary Actuarial Value of Assets as of January 1, 2015 [(3) + 25% of (5)]		242,248,074
7. 20% Calculation of Corridor		
a. 80% of (4)		190,984,357
b. 120% of (4)		286,476,535
8. Final Actuarial Value of Assets as of January 1, 2015 (6) but not < (7a) nor > (7b)	\$	242,248,074
9. Rate of Return on Actuarial Value of Assets		7.5%

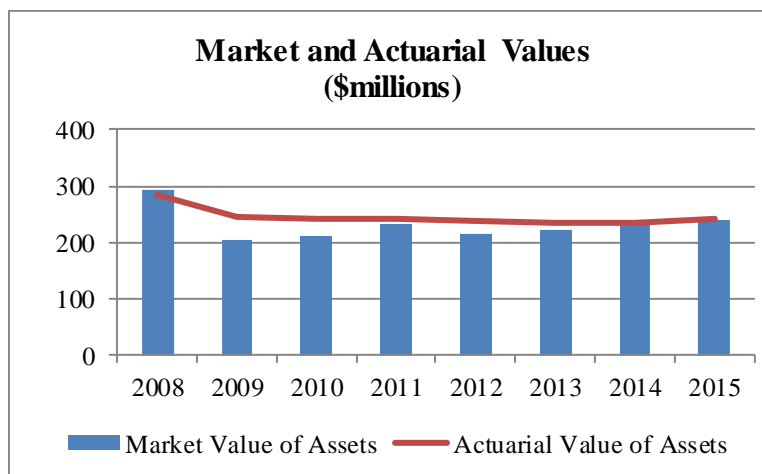


SECTION I – VALUATION RESULTS

EXHIBIT 2 (continued)

A historical comparison of the market and actuarial value of assets is shown below:

Date	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	AVA / MVA
1/1/2008	\$294,658,022	\$283,243,750	96.13%
1/1/2009	204,452,506	245,343,007	120.00%
1/1/2010	213,219,632	240,109,413	112.61%
1/1/2011	232,346,583	240,291,310	103.42%
1/1/2012	215,434,784	236,741,347	109.89%
1/1/2013	223,233,088	235,591,941	105.54%
1/1/2014	240,342,815	237,579,690	98.85%
1/1/2015	238,730,446	242,248,074	101.47%





SECTION I – VALUATION RESULTS

EXHIBIT 3 ACTUARIAL BALANCE SHEET

An actuarial statement of the status of the System in balance sheet form as of January 1, 2015 is as follows:

Assets

Current assets (actuarial value)	\$	242,248,074
Present value of future normal costs		44,580,937
Present value of future employer contributions to fund unfunded actuarial liability		<u>188,911,964</u>
Total Assets	\$	<u><u>475,740,975</u></u>

Liabilities

Present value of future retirement benefits for:

Active employees	\$	151,737,599
Retired employees, contingent annuitants and spouses receiving benefits		283,499,476
Deferred vested employees		4,699,570
Inactive employees due refunds		222,583
Inactive employees – disabled		<u>22,016,233</u>
Total	\$	462,175,461
Present value of future death benefits payable upon death of active members		2,467,939
Present value of future benefits payable upon termination of active members		<u>11,097,575</u>
Total Liabilities	\$	<u><u>475,740,975</u></u>



SECTION I – VALUATION RESULTS

EXHIBIT 4
UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2015

The actuarial liability is the portion of the present value of future benefits which will not be paid by future normal costs. The actuarial value of assets is subtracted from the actuarial liability to determine the unfunded actuarial liability.

1. Present Value of Future Benefits	\$	475,740,975
2. Present Value of Future Normal Costs		<u>44,580,937</u>
3. Actuarial Liability (1) – (2)		431,160,038
4. Actuarial Value of Assets		<u>242,248,074</u>
5. Unfunded Actuarial Liability (3) – (4)	\$	188,911,964
6. Funded Ratio (4) / (3)		56.19%



SECTION I – VALUATION RESULTS

EXHIBIT 5

SCHEDULE OF AMORTIZATION BASES

The System amortizes the unfunded actuarial liability (UAL) using a “layered” approach for the UAL where the UAL as of January 1, 2013 is amortized over the remainder of its initial closed amortization period of 17 years. Changes to the UAL in subsequent years are set up as a new amortization base with payments determined as a level percentage of payroll over a closed 20 year period beginning on that valuation date. The total UAL payment is the sum of the amortization payments on each of the amortization bases.

Amortization Bases	January 1, 2015			Outstanding Balance as of January 1, 2015	Annual Contribution (mid-year)
	Original Amount	Remaining Years	Year of Last Payment		
2013 Initial UAL Base	\$ 200,678,468	17	2032	\$ 200,822,065	\$ 16,323,006
2014 Experience Base	4,125,355	19	2034	4,143,976	\$ 311,638
2015 Plan Changes Base	(19,702,625)	20	2035	(19,702,625)	(1,431,132)
2015 Experience Base	3,648,548	20	2035	3,648,548	265,018
Total				\$ 188,911,964	\$ 15,468,530



SECTION I – VALUATION RESULTS

EXHIBIT 6

DEVELOPMENT OF 2015 ACTUARIAL CONTRIBUTION RATE

The actuarial cost method used to determine the required level of annual contributions to support the expected benefits is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate and the unfunded actuarial liability (UAL) payment. The System is financed by contributions from the employees and the City.

1. (a)	Normal Cost	\$	5,822,238
(b)	Expected Payroll in 2015 for Current Actives	\$	58,926,534
(c)	Normal Cost Rate		
(a) / (b)			9.881%
2.	Unfunded Actuarial Liability at Valuation Date	\$	188,911,964
3.	Unfunded Actuarial Liability Payment	\$	15,468,530
4.	Total Projected Payroll for 2015	\$	64,876,227
5.	Unfunded Actuarial Liability Payment as Percent of Pay (3) / (4)		23.843%
6.	Total Contribution Rate (1c) + (5)		33.724%
7.	Employee Contribution Rate		10.075%
8.	City Contribution Rate		18.775%
9.	Contribution Shortfall (6) – (7) – (8)		4.874%



SECTION I – VALUATION RESULTS

EXHIBIT 7

CALCULATION OF ACTUARIAL GAIN/(LOSS) For Plan Year Ending December 31, 2014

Liabilities

1. Actuarial liability as of January 1, 2014	\$ 442,754,113
2. Normal cost for 2014	7,808,536
3. Interest at 8.00% on (1) and (2) to December 31, 2014	36,045,012
4. Benefit payments during 2014	31,316,243
5. Interest on benefit payments	1,228,551
6. Change in Plan provisions	(19,702,625)
7. Expected actuarial liability as of December 31, 2014 (1) + (2) + (3) - (4) - (5) + (6)	\$ 434,360,242
8. Actuarial liability as of December 31, 2014	\$ 431,160,038

Assets

9. Actuarial value of assets as of January 1, 2014	\$ 237,579,690
10. Contributions during 2014	18,647,784
11. Benefit payments during 2014	31,316,243
12. Interest on items (9), (10) and (11)	18,509,385
13. Expected actuarial value of assets as of December 31, 2014 (9) + (10) - (11) + (12)	\$ 243,420,616
14. Actual actuarial value of assets as of December 31, 2014	\$ 242,248,074

Gain / (Loss)

15. Expected unfunded actuarial liability / (surplus) (7) - (13)	\$ 190,939,626
16. Actual unfunded actuarial liability / (surplus) (8) - (14)	188,911,964
17. Actuarial Gain / (Loss) (15) - (16)	2,027,662
18. Actuarial Gain / (Loss) on Actuarial Assets (14) - (13)	(1,172,542)
19. Actuarial Gain / (Loss) on Actuarial Liability (7) - (8)	\$ 3,200,204



SECTION I – VALUATION RESULTS

EXHIBIT 8

ANALYSIS OF EXPERIENCE

The purpose of conducting an actuarial valuation of a retirement plan is to estimate the costs and liabilities for the benefits expected to be paid from the plan, to determine the annual level of contributions for the current plan year that should be made to support these benefits, and finally, to analyze the plan's experience. The costs and liabilities of this retirement plan depend not only upon the benefit formula and plan provisions but also upon factors such as the investment return on the system assets, mortality rates among active and retired members, withdrawal and retirement rates among active members, and rates at which salaries increase.

The actuarial assumptions employed as to these and other contingencies in the current valuation are set forth in Appendix B of this report.

Since the overall results of the valuation will reflect the choice of assumptions made, periodic studies of the various components comprising the plan's experience are conducted in which the experience for each component is analyzed in relation to the assumption used for that component (called an experience study). This summary is not intended to be an actual "experience study" but rather an analysis of sources of gain and loss in the past plan year.

Gain/(Loss) By Source

The System experienced a net actuarial gain on liabilities of \$3,200,000 during the plan year ended December 31, 2014, and an actuarial loss on assets of \$1,173,000. The total actuarial gain was \$2,027,000. The major components of this net actuarial experience gain are shown below:

Liability Sources	Gain/(Loss)
Salary Increases	\$ 2,527,000
Mortality	1,360,000
Terminations	(908,000)
Retirements	176,000
Disability	(132,000)
New Entrants/Rehires	(325,000)
Miscellaneous	502,000
Total Liability Gain/(Loss)	\$ 3,200,000
Asset Gain/(Loss)	\$ (1,173,000)
Total Actuarial Gain/(Loss)	\$ 2,027,000



**SECTION II
OTHER INFORMATION**

The actuarial liability is a measure intended to help the reader assess (i) a retirement system’s funded status on an ongoing 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 January 1, 2015. The actuarial assumptions used in determining the actuarial liability can be found in Appendix B.

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 was effective for the plan 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 will be prepared.

GASB 68 will replace GASB 27 for fiscal year end 2015. It 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 meet certain parameters. GASB 68 will create disclosure and reporting requirements that may or may not be consistent with the basis used to fund the System.



SECTION II – OTHER INFORMATION

EXHIBIT 9

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending	Annual Required Contribution* (a)	Total Employer Contribution* (b)	Percentage of ARC Contributed* (b/a)
12/31/1999	\$ 3,055,718	\$ 3,129,693	102.42%
12/31/2000	3,014,845	3,282,203	108.87%
12/31/2001	3,231,662	3,415,119	105.68%
12/31/2002	6,245,299	3,653,704	58.50%
12/31/2003	6,191,651	4,349,621	70.25%
12/31/2004	6,848,743	4,449,203	64.96%
12/31/2005	6,877,913	4,500,192	65.43%
12/31/2006	6,213,801	4,145,033	66.71%
12/31/2007	8,883,617	4,975,039	56.00%
12/31/2008	9,212,669	5,374,082	58.33%
12/31/2009	12,893,331	5,310,754	41.19%
12/31/2010	14,149,386	5,717,610	40.41%
12/31/2011	14,564,847	6,618,110	45.44%
12/31/2012	15,658,045	7,216,050	46.09%
12/31/2013	17,406,168	7,194,482	41.33%
12/31/2014	17,996,034	12,326,643	68.50%

*Information prior to 2011 was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting.



SECTION II – OTHER INFORMATION

EXHIBIT 10

DEVELOPMENT OF THE NET PENSION OBLIGATION
IN ACCORDANCE WITH GASB STATEMENT NO. 27

Fiscal Year End:	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014
Assumptions and Methods							
Interest Rate	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Payroll Growth	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Amortization Period (years)	30	30	30	21	20	19	Varies
Cost Method	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal	EA Normal
Annual Pension Cost							
Annual Required Contribution (ARC)	\$9,212,669	\$12,893,331	\$14,149,386	\$14,564,847	\$15,658,045	\$17,406,168	\$17,996,034
Interest on NPO	1,112,817	1,410,080	2,004,239	2,661,089	3,322,571	4,022,396	4,858,628
Adjustment to ARC	(1,235,608)	(1,565,673)	(2,225,393)	(2,339,292)	(3,016,753)	(3,781,184)	(4,920,311)
Annual Pension Cost	\$9,089,878	\$12,737,738	\$13,928,232	\$14,886,644	\$15,963,863	\$17,647,380	\$17,934,351
Contribution for the Year	\$5,374,082	\$5,310,754	\$5,717,610	\$6,618,110	\$7,216,050	\$7,194,482	\$12,326,643
Net Pension Obligation (NPO)							
NPO at beginning of year	\$13,910,207	\$17,626,003	\$25,052,987	\$33,263,609	\$41,532,143	\$50,279,956	\$60,732,854
Annual Pension Cost for Year	9,089,878	12,737,738	13,928,232	14,886,644	15,963,863	17,647,380	17,934,351
Contributions for year	(5,374,082)	(5,310,754)	(5,717,610)	(6,618,110)	(7,216,050)	(7,194,482)	(12,326,643)
NPO at end of year	\$17,626,003	\$25,052,987	\$33,263,609	\$41,532,143	\$50,279,956	\$60,732,854	\$66,340,562

Note: All information prior to 2011 in this exhibit was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting, LLC.



SECTION II – OTHER INFORMATION

EXHIBIT 11

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date¹	Actuarial Value of Assets (a)	Actuarial Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (P/R) (c)	UAAL as a Percentage of Covered P / R [(b-a)/c]
12/31/2008	\$204,500,000	\$387,700,000	\$ 183,200,000	52.7%	\$56,400,000	324.8%
12/31/2009	213,200,000	402,800,000	189,600,000	52.9%	55,700,000	340.4%
12/31/2010	232,400,000	414,500,000	182,100,000	56.1%	56,700,000	321.2%
1/1/2011	240,291,310	409,442,601	169,151,291	58.7%	59,235,591	285.6%
1/1/2012	236,741,347	420,810,359	184,069,012	56.3%	62,825,685	293.0%
1/1/2013	235,591,941	436,270,409	200,678,468	54.0%	63,327,394	316.9%
1/1/2014	237,579,690	442,754,113	205,174,423	53.7%	63,413,206	323.6%
1/1/2015	242,248,074	431,160,038	188,911,964	56.2%	64,876,227	291.2%

1. Results prior to 2011 were provided by the prior actuary and were reported at the end of the year rather than the valuation date.



APPENDIX A

SUMMARY OF PLAN PROVISIONS

This valuation reflects the benefit provisions used in this valuation (January 1, 2015). A different benefit structure will apply to employees hired on or after March 1, 2015. A description of that benefit structure is not included here as there were no such members in this valuation.

Effective Date:

Section 22 - 21

January 1, 1949

Active Member:

Section 22 – 24 and 25

All City employees except: policemen, firemen, persons paid on a contractual or fee basis, seasonal, temporary and part-time employees, and elected officials who do not make written application.

Final Average Compensation:

Section 22 - 32

Highest 78 pay periods in the employee's last 130 pay periods of employment divided by three for members who are within five years of normal retirement as of March 1, 2015 under the eligibility criteria set forth in the 2009 through 2012 labor agreements; or the last 130 pay periods divided by five for all other employees. Minimum FAC, regardless of retirement date, shall never be less than the FAC determined as of 2/28/2015 (highest consecutive 26 pay periods in 130 pay periods prior to 2/28/2015).

Member Contributions:

Section 22 – 26(a)

Each member will contribute 10.075% of total compensation.

City of Omaha Contributions:

Section 22 – 26(e)

The City will contribute a percentage of each member's total compensation as shown in the following table.

<u>Year</u>	<u>Percent Contributed</u>
2013	13.775%
2014	17.775%
2015	18.775%

Service Credits

Section 22 – 28 and 29

The member shall receive membership service credit for each full pay period of employment. Intervening periods of military service in time of emergency shall be counted, provided the member is honorably discharged and returns to work within 90 days after such discharge.

Membership credits shall be earned by those receiving a disability pension. However, the total credited service will not exceed 30, unless more than 30 years were earned as an active member.



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Service Retirement Eligibility:
Section 22 - 30

Members who are within five years of normal retirement as of March 1, 2015 under the eligibility criteria set forth in the 2009 through 2012 labor agreement will remain eligible for a service retirement if (a) they are age 60 with 5 years of service or (b) meet the Rule of 80 with a minimum age of 50. A member is eligible for a service retirement after reaching age 55 with 5 years of service, but the pension is reduced 8% per year for years prior to age 60.

Members who are more than five but less than ten years of normal retirement as of March 1, 2015 under the eligibility criteria set forth in the 2009 through 2012 labor agreement are eligible to retire after age 55 if their age plus service is 85 or more (Rule of 85). Otherwise, a member is eligible to retire after age 57 and 5 years of service, but the pension is reduced 8% per year for years prior to age 62.

Members who are not within ten years of normal retirement as of March 1, 2015 under the eligibility criteria set forth in the 2009 through 2012 labor agreement, are eligible to retire after age 55 if their age plus service is 85 or more (Rule of 85). Otherwise, such member is eligible to retire after age 60 and 5 years of service, but the pension is reduced 8% per year for years prior to age 65.

Service Retirement Pension:
Section 22 - 32

A monthly pension equal to 2.25% of Final Average Compensation times years of service during and before 2014, plus 1.90% for years of service during and after 2015.

Disability Benefits:

1. Non-Service Related
Section 22 - 35

An employee who sustains an injury or illness not in the line of duty and as a result becomes unfit for active duty shall be granted a non-service-connected disability retirement of 1.50% multiplied by the employee's years of service multiplied by their Final Average Compensation. This benefit is available only if the member has served a minimum of five years of service.



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

- 2. Service-Related
Section 22 - 35

An employee who is a member of the system who sustains an injury or illness in the line of duty and as a result becomes unfit for active duty shall be granted a service-connected disability retirement of 1.75% multiplied by the employee's years of service multiplied by their Final Average Compensation. This benefit is available only if the member has served a minimum of six months of service.

Spouse's Pension:

- 1. Death of Active Member
Section 22 - 36
- 2. Death of a Member Eligible for Retirement or Death of Retired Member
Section 22 - 36

A monthly pension equal to 75% of the member's accrued pension is paid to the surviving spouse until death or remarriage. The member must have had five years of service or had a service-connected death and six months of service.

If legally married to the member for at least one year, surviving spouse shall be entitled to 75% of the pension the member was receiving or was eligible to receive at the time of death. Upon the spouse's remarriage, all benefits cease.

- Children's Pension:
Section 22 - 36

Upon the death of an active or retired member, the following benefit will be paid to the surviving children until age 18 or prior to death or marriage, except that if a child is totally disabled, the full pension continues until the cessation of total disability or dependency for support whichever occurs first:

<u>Number of Dependent Children</u>	<u>Percentage of Accrued Benefit</u>
1	5%
2	10%
3	15%
4 or more	20%

Lump Sum Death Benefits:

- 1. Active Member without Eligible Dependents
Section 22 - 37

Accumulated member's contributions, plus \$5,000.



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

2. Retired Member without Eligible Dependents Section 22 - 37	Accumulated member's contribution less previous pension payments made, plus \$5000.
3. Active Member with Eligible Dependents: Section 22 - 37	\$5,000
4. Retired Member with Eligible Dependents Section 22 - 37	\$5,000
Vesting: Section 22 – 39	Upon severance of employment by a member with less than 5 years of service and prior to obtaining eligibility under Section 22 – 30, a refund of such member's accumulated contributions, including credited interest, will be paid.
Section 22 – 40	Upon severance of employment by a member with more than 5 years of service and prior to obtaining eligibility for retirement, the member may elect, in lieu of receiving a refund of contributions, to receive a monthly pension, reduced for early retirement if applicable. Such deferred pension shall be based on service credited to the date of severance.
Supplemental Pension: Section 22 – 123	Retirees (including widows, widowers and children) receive a supplemental pension (Cost of Living Adjustment – COLA) after five years equal to the lesser of 3% or \$50 per month. The COLA is granted for the full remaining period that benefits are payable. No COLAs will be available for members who retire after January 28, 1998.
Cash Balance Plan:	Employees who are hired by the City on or after March 1, 2015 will become members of the System's Cash Balance Plan. Since there are no members in the Cash Balance Plan as of January 1, 2015 a description of those provisions is not included in this valuation.



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Cost Method

Valuation of the System uses the “*entry age-normal*” cost method. Under this actuarial method, the value of future costs attributable to future employment of participants is determined. This is called present value of future normal costs. The following steps indicate how this is determined for benefits expected to be paid upon normal retirement.

1. The expected pension benefit at normal retirement is determined for each participant.
2. A normal cost, as a level percent of pay, is determined for each participant assuming that such level percent is paid from the employee’s entry age into employment to his normal retirement. This normal cost is determined so that its accumulated value at normal retirement is sufficient to provide the expected pension benefits.
3. The sum of the normal costs for all participants for one year determines the total normal cost of the System for one year.
4. The value of future payments of normal cost in future years is determined for each participant based on his years of service to normal retirement age.
5. The sum of the value of future payments of normal cost for all participants determines the present value of future normal costs.

The value of future costs attributable to past employment of participants, which is called the actuarial liability, is equal to the present value of benefits less the present value of future normal costs. The unfunded actuarial liability is equal to the excess of the actuarial liability over assets.

As experience develops with the System, actuarial gains and losses result. These actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. In each year, as they occur, actuarial gains and losses are recognized in the unfunded actuarial liability as of the valuation date.

Actuarial Value of Assets

The actuarial value of assets is equal to the expected asset value (based on last year’s actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 8.0%) plus 1/4 of the difference between the actual market value and the expected asset value. The actuarial value of assets cannot exceed 120% or fall below 80% of the market value of assets.

Unfunded Actuarial Liability Amortization Method

The unfunded actuarial liability (UAL) is funded on a “layered” basis, with the first part being funded as a level percent of payroll over a 30-year closed period that began January 1, 2002. A new base is created each valuation and is equal to the additional UAL created in that year. Each base is funded as a level percent of payroll over a 20-year closed period.



APPENDIX B

**ACTUARIAL METHODS AND ASSUMPTIONS
(continued)**

Interest: 8.00% per year, net of investment expenses.

Inflation: 3.25% per year, net of investment expenses.

Salary Increases:

<u>Years of Service</u>	<u>Annual Rate of Increase For Sample Years</u>			<u>Total Increase</u>
	<u>Inflation</u>	<u>Productivity</u>	<u>Merit & Longevity</u>	
1	3.25%	.75%	5.0%	9.0%
5	3.25%	.75%	1.5%	5.5%
10	3.25%	.75%	1.0%	5.0%
15	3.25%	.75%	0.5%	4.5%
20+	3.25%	.75%	0.0%	4.0%

Payroll Growth Assumption 4.0%

Service Retirement Age **Members within 5 Years of Unreduced Retirement Eligibility as of March 1, 2015**

<u>Age</u>	<u>Eligible for Unreduced Retirement</u>	
	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
50-53	40%	25%
54-58	40%	20%
59	35%	20%
60	25%	20%
61		20%
62		30%
63-64		25%
65-69		30%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 5% per year from age 55 to 59.



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Members within 6-10 Years of Unreduced Retirement Eligibility as of March 1, 2015

<u>Eligible for Unreduced Retirement</u>		
<u>Age</u>	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
50-53	40%	25%
54-60	40%	20%
61	35%	20%
62	35%	30%
63-64		25%
65-69		30%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 5% per year from age 57 to 61.

Members more than 10 Years from Unreduced Retirement Eligibility as of March 1, 2015

<u>Eligible for Unreduced Retirement</u>		
<u>Age</u>	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
50-53	40%	25%
54-61	40%	20%
62	40%	30%
63-64	35%	25%
65	35%	30%
66-69		30%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 5% per year from age 60 to 64.

Deferred vested members are assumed to begin receiving benefits at age 60.

Decrement Timing

Middle of year



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Mortality:	
Active Members	RP-2000 Employee Table with generational improvements using scale AA, set forward one year
Pensioners	RP-2000 Healthy Annuitant Table with generational improvements using scale AA, set forward one year
Disabled	RP-2000 Disabled Table with generational improvements

Disability:		
	<u>Age</u>	<u>Annual Rate</u>
	20	0.11%
	30	0.14%
	40	0.19%
	50	0.41%
	60	1.48%

20% of disabilities are assumed to be service-connected.

Percent Married at Death or Retirement:	75%
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Spouse Age Difference:	Husbands assumed to be three years older than wives.
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Number of Children per Married Member:	0
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Termination:	SAMPLE RATES	
	<u>Years of Service</u>	<u>Annual Rate</u>
	1	11.00%
	5	6.00%
	10	4.25%
	15	3.00%
	17+	2.50%

Vested Terminations Electing Refund:		
	<u>Age</u>	<u>Percent</u>
	34 and Below	100%
	35-41	70%
	42-46	50%
	47	40%
	48	30%
	49	20%
	50 and Above	0%



APPENDIX C

HISTORICAL SUMMARY OF MEMBERSHIP

The following table displays selected historical data as available.

Valuation		Active Members							Number	
Date	Total	Number	Age	Entry	Average	Annual	Pay	Disabled	Deferred	Retired
1-Jan	Count			Age	Service	Pay (\$)*	Increase		Vested	
2009	2,440	1,116	47.3	36.4	10.9	47,495	2.21%	122	81	1,121
2010	2,456	1,116	47.8	37.1	10.8	49,667	4.57%	124	83	1,133
2011	2,493	1,130	47.4	36.9	10.5	49,030	(1.28)%	120	82	1,161
2012	2,541	1,156	47.3	36.8	10.5	50,335	2.66%	121	77	1,187
2013	2,580	1,150	46.9	36.7	10.2	50,842	1.01%	122	75	1,233
2014	2,563	1,116	47.1	36.7	10.4	51,501	1.30%	121	77	1,249
2015	2,617	1,143	46.6	36.5	10.1	50,774	(1.41)%	114	74	1,286

* Annual Pay is the actual pay reported for the prior plan year.



MEMBERSHIP DATA FOR VALUATION

The summary of employee characteristics presented below covers the employee group as of January 1, 2015. The schedules at the end of the report show the distribution of the various employee groups by present age along with other pertinent data.

Total number of employees in valuation:

(a) Active employees	1,143
(b) Deferred vested employees	74
(c) Disabled employees	114
(d) Retired employees, spouses and children receiving benefits	<u>1,286</u>
(e) Total employees in valuation	2,617

Average age of employees in valuation:

(a) Active employees	
Attained Age	46.6
Hire Age	36.5
(b) Deferred vested employees	48.7
(c) Disabled employees	62.3
(d) Retired employees	68.9
(e) Spouses and children receiving benefits	71.9

Active employees eligible for vested benefits as of January 1, 2015:

(a) Employees under age 55 with 5 or more years of service – eligible for deferred vested benefits	473
(b) Employees age 55 and over with 5 or more years of service – eligible for early or normal retirement benefits	280
(c) Employees eligible for refund of contributions only	<u>390</u>
(d) Total	1,143



APPENDICES

MEMBERSHIP 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 eligible employees as of the valuation date.

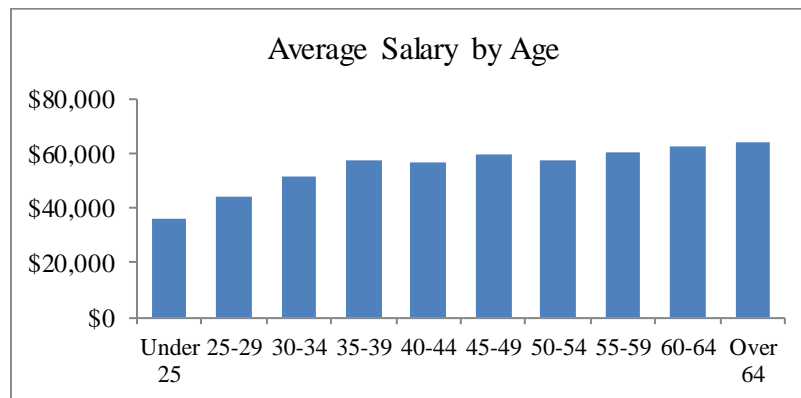
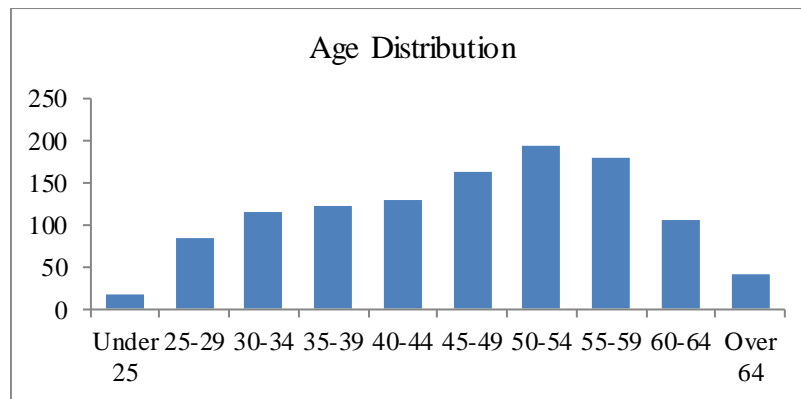
	<u>Active Members</u>	<u>Deferred Vested</u>	<u>Disabled</u>	<u>Retirees</u>	<u>Beneficiaries</u>	<u>Total</u>
Members as of 1/1/2014	1,116	77	121	988	261	2,563
New Members	122	0	0	0	0	122
Terminations						
Rehired	2	(2)	0	0	0	0
Refunded	(22)	(2)	0	0	0	(24)
Terminated, refund due	(12)	0	0	0	0	(12)
Deferred Vested	(7)	7	0	0	0	0
LTD	(1)	0	1	0	0	0
Retirements	(51)	(6)	0	57	0	0
Alternate Payees (QDRO)	0	0	0	0	0	0
Benefits Expired	0	0	0	0	(3)	(3)
Data Corrections	0	0	0	0	0	0
Deaths						
With Beneficiary	(4)	0	(1)	(18)	25	2
Without Beneficiary	0	0	(7)	(8)	(16)	(31)
Total Members 1/1/2015	1,143	74	114	1,019	267	2,617



SCHEDULE I

ACTIVE MEMBERS AS OF JANUARY 1, 2015

Age	Count of Members			Valuation Salaries of Members		
	Males	Females	Total	Males	Females	Total
Under 25	15	2	17	\$ 534,878	\$ 81,371	\$ 616,249
25-29	52	31	83	2,260,954	1,380,612	3,641,566
30-34	72	42	114	3,660,752	2,200,131	5,860,883
35-39	83	39	122	4,673,587	2,284,618	6,958,205
40-44	96	32	128	5,614,862	1,613,571	7,228,433
45-49	124	39	163	7,445,793	2,216,028	9,661,821
50-54	136	56	192	8,024,995	2,956,839	10,981,834
55-59	118	60	178	7,162,744	3,581,128	10,743,872
60-64	68	38	106	4,328,017	2,295,663	6,623,680
Over 64	29	11	40	1,986,586	573,098	2,559,684
Total	793	350	1,143	\$45,693,168	\$19,183,059	\$64,876,227



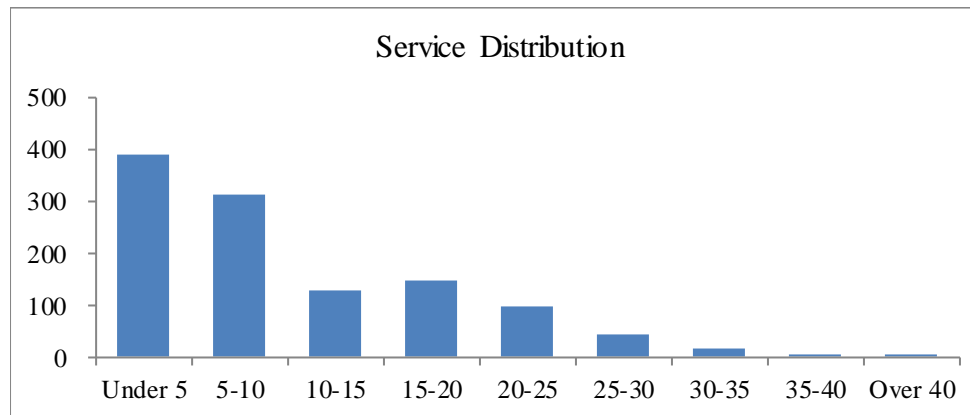


APPENDICES

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2015

Age	Service									Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	
Under 25	17	0	0	0	0	0	0	0	0	17
25-29	77	6	0	0	0	0	0	0	0	83
30-34	70	40	4	0	0	0	0	0	0	114
35-39	63	43	10	6	0	0	0	0	0	122
40-44	45	45	17	20	1	0	0	0	0	128
45-49	37	48	27	34	13	4	0	0	0	163
50-54	37	45	25	28	34	17	6	0	0	192
55-59	32	51	25	27	23	11	7	2	0	178
60-64	10	24	12	28	16	8	4	3	1	106
Over 64	2	11	7	5	9	4	1	0	1	40
Total	390	313	127	148	96	44	18	5	2	1,143

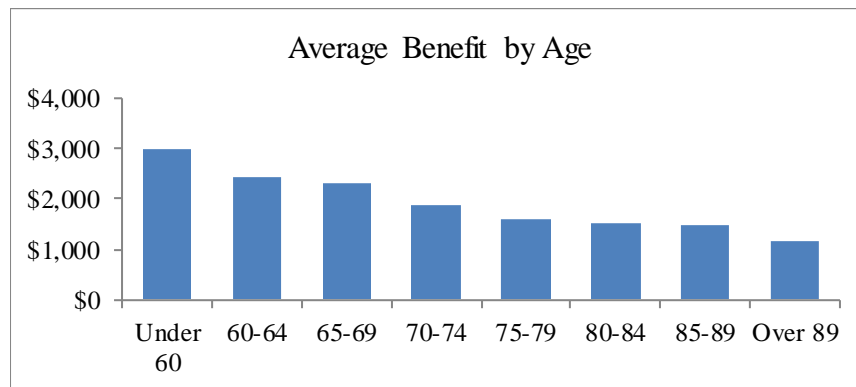
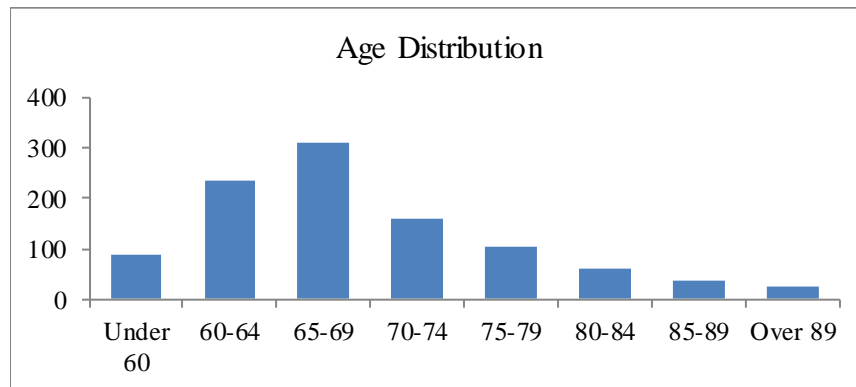




SCHEDULE II

RETIRED MEMBERS AS OF JANUARY 1, 2015

<u>Age</u>	<u>Count of Retirees</u>			<u>Current Monthly Benefits</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 60	46	41	87	\$ 137,364	\$122,362	\$ 259,726
60-64	156	80	236	400,634	168,896	569,530
65-69	210	100	310	518,246	198,570	716,816
70-74	113	47	160	226,776	73,249	300,025
75-79	74	29	103	127,017	38,284	165,301
80-84	43	18	61	75,953	15,887	91,840
85-89	27	11	38	45,039	10,909	55,948
Over 89	12	12	24	18,252	9,948	28,200
Total	681	338	1,019	\$1,549,281	\$638,105	\$2,187,386

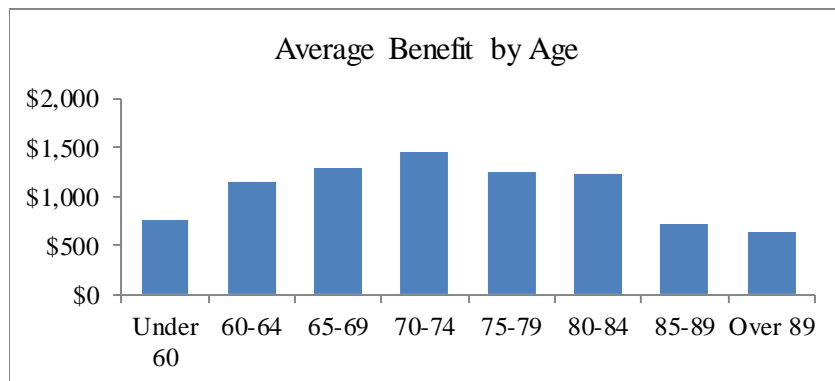
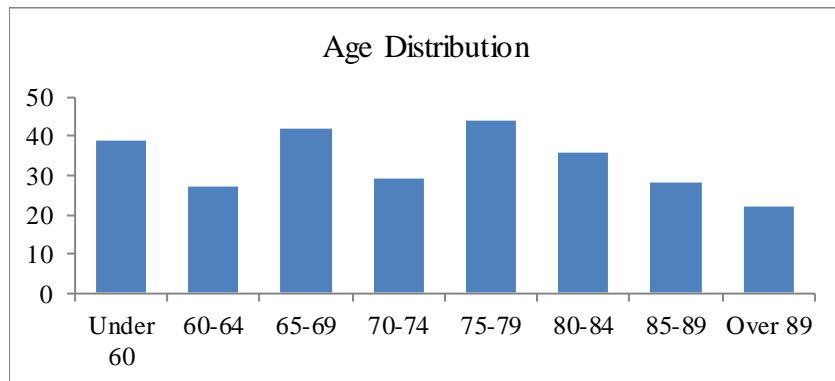




SCHEDULE III

BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2015

Age	Count of Beneficiaries			Current Monthly Benefits		
	Males	Females	Total	Males	Females	Total
Under 60	4	35	39	\$ 1,119	\$ 28,794	\$ 29,913
60-64	5	22	27	4,886	26,248	31,134
65-69	6	36	42	5,799	48,633	54,432
70-74	0	29	29	0	42,177	42,177
75-79	0	44	44	0	54,634	54,634
80-84	3	33	36	4,614	39,724	44,338
85-89	2	26	28	1,670	18,390	20,060
Over 89	1	21	22	618	13,197	13,815
Total	21	246	267	\$18,706	\$271,797	\$290,503





SCHEDULE IV

DEFERRED VESTED MEMBERS AS OF JANUARY 1, 2015

<u>Age</u>	<u>Count of Members</u>			<u>Expected Monthly Benefit</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25-29	0	0	0	0	0	0
30-34	1	2	3	840	1,316	2,156
35-39	4	3	7	3,138	2,650	5,788
40-44	3	10	13	2,684	9,881	12,565
45-49	9	2	11	7,803	1,614	9,417
50-54	13	5	18	14,606	5,804	20,410
55-59	6	14	20	5,558	12,897	18,455
Over 59	1	1	2	1,681	911	2,592
Total	37	37	74	\$36,310	\$35,073	\$71,383



SCHEDULE V

DISABLED MEMBERS RECEIVING BENEFITS AS OF JANUARY 1, 2015

<u>Age</u>	<u>Count of Members</u>			<u>Current Monthly Benefit</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	3	0	3	5,639	0	5,639
45-49	6	0	6	12,009	0	12,009
50-54	13	1	14	23,897	1,319	25,216
55-59	22	5	27	40,782	10,220	51,002
Over 59	52	12	64	74,503	13,912	88,415
Total	96	18	114	\$156,830	\$25,451	\$182,281



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

CITY OF OMAHA EMPLOYEES RETIREMENT SYSTEM

**Five Year Experience Study
For Period Ending December 31, 2011**

Submitted: January, 2013





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Cavanaugh Macdonald

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The experience and dedication you deserve

August 13, 2013

Board of Trustees
City of Omaha Employees' Retirement System
1819 Farnam Street
Omaha , NE 68183

Dear Trustees:

It is a pleasure to submit this report of our investigation of the experience of the City of Omaha Employees' Retirement System (System) for the period of January 1, 2007 through December 31, 2011.

The purpose of this report is to communicate the results of our review of the actuarial methods and the economic and demographic assumptions to be used in the completion of the upcoming valuation. In some cases, we recommend changes from the prior assumptions that are designed to better anticipate the emerging experience of the Plan. Actual future experience, however, may differ from these assumptions.

In preparing this report, we relied without audit on information supplied by the City for the annual actuarial valuations. If any data or other information is inaccurate or incomplete, our analysis and recommendation may be impacted and a revised report may need to be issued.

We hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

We further certify that the assumptions developed in this report satisfy ASB Standards of Practice, in particular, No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* and No. 35, *Selection of Demographic and Other Non-economic Assumptions for Measuring Pension Obligations*.

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Board of Trustees
August 13, 2013
Page 2

We look forward to our discussions and the opportunity to respond to your questions and comments.

I, Patrice A. Beckham, am a member of the American Academy of Actuaries, an Enrolled Actuary and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I, Brent A. Banister, am a member of the American Academy of Actuaries, an Enrolled Actuary and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

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

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal & 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 1 – INTRODUCTION

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs of a retirement system. Actuarial valuations of the City of Omaha Employees' Retirement System (COERS or the System) are prepared annually to determine the actuarial contribution rate to fund the System on an actuarial reserve basis, i.e. the current assets plus future contributions, along with investment earnings will be sufficient to provide the benefits promised by the System. The valuation requires the use of certain assumptions with respect to the occurrence of future events, such as rates of death, disability, termination of employment, retirement age and salary changes to estimate the obligations of the System.

The basic purpose of an experience study is to determine whether the actuarial assumptions currently in use have accurately anticipated actual emerging experience. This information, along with the professional judgment of the Board, its advisors, and the actuary, is used to evaluate the appropriateness of continued use of the current actuarial assumptions. When analyzing experience and assumptions, it is important to realize that actual experience is reported short term while assumptions are intended to be long term estimates of experience. Therefore, no single experience study period should be given full credibility in setting actuarial assumptions. If significant differences exist between what is expected from our assumptions and actual experience, our strategy is usually to recommend a change in assumptions that would produce results somewhere between the actual and expected experience.

Our Philosophy

Similar to an actuarial valuation, the calculation of actual and expected experience is a fairly mechanical process. From one actuary to another, there should be very little difference in numerical results. However, the setting of assumptions is a different story, as it is more art than science. In this report, we have recommended a few changes to certain assumptions. To allow a better understanding of our thought process, we offer a brief summary of our philosophy:

- **Don't Overreact:** When we see significant differences in actual versus expected experience, we generally do not adjust our rates to reflect the entire difference. If the experience is credible and we believe it reflects future expectations, we will typically recommend rates somewhere between the old rates and the new experience. If the experience during the next study period shows the same result, we will probably recognize the trend at that point in time or at least move further in the direction of the observed experience. On the other hand, if actual experience in the next study is closer to its prior level, we will not have overreacted, possibly causing volatility in the actuarial contribution rates.
- **Anticipate Trends:** If there is an identified trend that is expected to continue, we believe that this should be recognized. An example is the retiree mortality assumption. It is an established trend that people are living longer. Therefore, we believe the best estimate of liabilities in the valuation should reflect the expected increase in life expectancy.
- **Simplify:** In general, we attempt to identify which factors are significant and eliminate or ignore the ones that do not materially improve the accuracy of the liability projections.



SECTION 1 – INTRODUCTION

At the request of the Board of Trustees, Cavanaugh Macdonald Consulting, LLC performed a study of the experience of the City of Omaha Employees Retirement System for the period January 1, 2007 through December 31, 2011. This report presents the results and recommendations of our study which, if approved, will be implemented in the January 1, 2014 actuarial valuation of the System.

These assumptions have been developed in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries.

SCOPE OF THIS REPORT

The actuarial valuation utilizes various actuarial methods and two different types of assumptions: economic and demographic. Economic assumptions are related to the general economy and its impact on the System. Demographic assumptions are based on the emergence of the specific experience of the Systems' members.

All of the major actuarial assumptions that will be used in the January 1, 2014 Actuarial Valuation have been reviewed in this Study. The remainder of this report is divided as follows:

- SECTION 2 EXECUTIVE SUMMARY**
- SECTION 3 ACTUARIAL METHODS**
- SECTION 4 ECONOMIC ASSUMPTIONS**
- SECTION 5 DEMOGRAPHIC ASSUMPTIONS**
- SECTION 6 MORTALITY**
- SECTION 7 RETIREMENT**
- SECTION 8 DISABILITY**
- SECTION 9 TERMINATION OF EMPLOYMENT**
- SECTION 10 SALARY INCREASES**



SECTION 2 – EXECUTIVE SUMMARY

A brief summary of the results of our findings and recommendations is shown below:

Actuarial Methods

We are recommending that the current actuarial cost method and asset smoothing method be retained. However, we are recommending a new approach for the amortization of the unfunded actuarial liability (UAL) that is expected to provide more stability in the contribution rate. Currently, one amortization base, equal to the total UAL, is maintained and the UAL payment is determined over the remainder of the closed amortization period (20 years at January 1, 2012). We are recommending that the System move to a “layered” approach for the UAL where the existing UAL will continue to be amortized over the closed period but changes to the UAL in each future year will be set up as a new amortization base with payments determined as a level percentage of payroll over a closed 20 year period. The total UAL payment would be the sum of the amortization payments on all of the amortization bases.

Economic Assumptions

Preliminary projections for COERS indicate that, even if all actuarial assumptions are met, plan assets will be exhausted in about 20 years, absent changes in the contributions and/or benefit structure of the System,. This has serious implications for setting the investment return assumption since the appropriate timeframe is much shorter than normal and liquidity needs may be impacted if plan assets are continually shrinking. However, it is our understanding that the City and the member groups covered by the retirement system are working together to find a solution to the funding problem facing the System. This solution may involve increases in the contributions, changes to the benefit provisions or both. These changes should impact the net cash flow (contributions less benefit payments) for the System in a positive way, but the actual impact cannot be measured until the details of the solution are known. Given the funding outlook of the System, we are not comfortable making a specific assumption for the investment return assumption with such key issues unresolved at this time. The analysis we would normally include in the experience study, and which is appropriate for a long term perspective, is provided on the following pages. However, no recommendation for the investment return is made in this report.

The following set of economic assumptions is recommended:

- Investment Return: No recommendation at this time
- Inflation Assumption: 3.25% (Decrease from 3.5%)
- General Wage Increase: 4.0% (Same in total but inflation/productivity components changed)

Demographic Assumptions

As mentioned above, there may be changes to the current benefit structure for current active members as well as future hires to help address the System’s funding concerns. If such changes occur for current members, it may impact the appropriateness of the assumption changes recommended in this report. We will need to reevaluate the entire set of assumptions used in the valuation process once all changes to the Retirement System have been finalized.



SECTION 2 – EXECUTIVE SUMMARY

The study period (2007 through 2011) covered a timeframe that included several years during the severe economic downturn. This likely impacted the actual, observed experience for certain events such as retirement, termination of employment, and salary increases. Thus, we believe it is appropriate to be cautious in making any adjustments to the current assumptions based on the results of this study period alone. Having said that, we are recommending a few modest changes to some of the current demographic assumptions:

- Modify the retirement rates at first eligibility date and for those who retire after first eligibility to better reflect the different retirement experience observed during both the current and prior study periods.
- Modify the termination of employment assumption for years of service less than 16 to reflect the observed experience, with more credibility assigned to experience in 2007 and 2008.
- Modify the assumption regarding vested members leaving their contributions in the System to better reflect the actual experience and reasonable expectations in general.

Financial Impact

The estimated financial impact of the proposed change, based on results of the January 1, 2012 actuarial valuation, is summarized on the following page. The actual impact, which will be reflected in the January 1, 2014 actuarial valuation, may vary from the numbers shown on the exhibit on the following page.



**Estimate of Financial Impact of Assumption Changes
Based on January 1, 2012 Valuation**

	<u>Baseline</u>	<u>Retirement Rate</u>	<u>Termination Rate</u>	<u>Refund by Vest Members</u>
1. Present Value of Future Benefits	\$476,554,290	\$475,182,448	\$474,639,806	\$474,242,554
2. Present Value Future Normal Costs	<u>55,743,931</u>	<u>56,977,882</u>	<u>57,053,536</u>	<u>56,738,657</u>
3. Actuarial Accrued Liability (1) – (2)	420,810,359	418,204,566	417,586,270	417,503,897
4. Actuarial Value of Assets	<u>236,741,347</u>	<u>236,741,347</u>	<u>236,741,347</u>	<u>236,741,347</u>
5. Unfunded Actuarial Accrued Liability (UAAL) (3) – (4)	184,069,012	181,463,219	180,844,923	180,762,550
6. Normal Cost Rate	13.716%	13.553%	13.579%	13.511%
7. UAAL Payment	<u>21.282%</u>	<u>20.980%</u>	<u>20.909%</u>	<u>20.899%</u>
8. Actuarial Contribution Rate	34.998%	34.533%	34.488%	34.410%

Note: Actual impact of the assumption change on the January 1, 2014 valuation results may vary from that shown in this table which is based on the January 1, 2012 actuarial valuation.



SECTION 3 – ACTUARIAL METHODS

ACTUARIAL COST METHOD

The systematic financing of a pension plan requires that contributions be made in an orderly fashion while a member is actively employed, so that the accumulation of these contributions, together with investment earnings should be sufficient to provide promised benefits and cover administration expenses. The actuarial valuation is the process used to determine when money should be contributed; i.e., as part of the budgeting process.

The actuarial valuation will not impact the amount of benefits paid or the actual cost of those benefits. In the long run, actuaries cannot change the costs of the pension plan, regardless of the funding method used or the assumptions selected. However, actuaries **will** influence the incidence of costs by their choice of methods and assumptions.

The valuation or determination of the present value of all future benefits to be paid by the System reflects the assumptions that best seem to describe anticipated future experience. The choice of a funding method does not impact the determination of the present value of future benefits. The funding method, determines only the incidence of cost. In other words, the purpose of the funding method is to allocate the present value of future benefits determination into annual costs. In order to perform this allocation, it is necessary for the funding method to “break down” the present value of future benefits into two components: (1) that which is attributable to the past (2) and that which is attributable to the future. The excess of that portion attributable to the past over the plan assets is then amortized over a period of years. Actuarial terminology calls the part attributable to the past the “past service liability” or the “actuarial liability”. The portion of the present value of future benefits allocated to the future is commonly 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”. The difference between the plan assets and actuarial liability is called the “unfunded actuarial liability”.

Two key points should be noted. First, there is no single “correct” funding method. Second, the allocation of the present value of future benefits and hence cost to the past for amortization and to the future for annual normal cost payments is not necessarily in a one-to-one relationship with service credits earned in the past and future service credits to be earned.

There are various actuarial cost methods, each of which has different characteristics, advantages and disadvantages. A brief summary of the main cost methods is included below.

- Entry-Age-Normal Cost Method

The rationale of the entry age normal (EAN) funding method is that the cost of each member’s benefit is determined to be a level percentage of his salary from date of hire to the end of his employment with the employer. This level percentage multiplied by the member’s annual salary is referred to as the normal cost and is that portion of the total cost of the employee’s benefit which is allocated to the current year. The portion of the present value of future benefits allocated to the future is determined by multiplying this percentage times the present value of the member’s assumed earnings for all future years including the current year. The entry age normal actuarial liability is then developed by subtracting from the present value of future benefits that portion of costs allocated to the future. To determine the unfunded actuarial liability, the value of plan assets is subtracted from the entry age normal actuarial liability. The current year’s cost to amortize the unfunded actuarial liability is developed by applying an amortization factor.



SECTION 3 – ACTUARIAL METHODS

It is to be expected that future events will not occur exactly as predicted by the actuarial assumptions in each year. Actuarial gains/losses from experience under this actuarial cost method can be directly calculated and are reflected as a decrease/increase in the unfunded actuarial liability. Consequently, the gain/loss results in a decrease/increase in the amortization payment, and therefore the contribution rate.

- Projected Unit Credit

The projected unit credit (PUC) funding method defines the actuarial liability to be the value of the employee's accrued benefit based upon his service as of the valuation date and his estimated final average earnings at the time he retires or otherwise exits. The normal cost is the present value of benefits accruing during the year with projected salary increases. The unfunded actuarial liability is determined by subtracting the actuarial value of assets from the actuarial liability. The current year's cost to amortize the unfunded actuarial liability is developed by applying an amortization factor.

As with the entry age normal funding method, the actuarial gains and losses that accrue each year modify the unfunded actuarial liability and the payment thereon.

- Aggregate

This cost method does not develop individual normal costs, but calculates a normal cost rate for the entire plan. The total value of future normal costs is found by subtracting the actuarial value of assets from the present value of future benefits. This amount is then spread as a level percentage of future payroll for the entire group. Gain/losses are included in the present value of future benefits and thereby incorporated into the normal cost percentage for future years. The basic premise of the aggregate cost method is to develop a normal cost which, from the valuation date forward, will fund the whole unfunded portion of the plan's future benefits as a level percentage of payroll.

This method does not differentiate between past service costs and current costs. Therefore, no actuarial liability exists under the aggregate cost method and actuarial gains and losses are not directly calculated as in the other cost methods.

- Frozen Entry Age

The frozen entry age cost method is a blend of the entry age normal and aggregate cost methods. The unfunded actuarial liability is initially determined using the entry age normal funding method. Each year the unfunded actuarial liability (UAL) is set equal to the expected unfunded actuarial liability. Actuarial gains and losses are not reflected in the amount of the unfunded actuarial liability, but rather are reflected in the normal cost. The frozen actuarial liability is changed only to reflect plan amendments and changes in the actuarial assumptions. The amortization payments for the current and all future years are fixed at the time the unfunded actuarial liability is determined. The normal cost is developed similarly to that under the aggregate cost method. The present value of all future benefits is determined and then reduced by the valuation assets and the unfunded frozen actuarial liability. The resulting amount is then spread as a level percentage of future payroll.

COERS currently uses the Entry Age Normal cost method, which is popular with governmental plans because it develops a normal cost rate that tends to be stable and less volatile. It is used by about 85% of all public sector plans. **We recommend the Entry Age Normal actuarial cost method be retained.**



SECTION 3 – ACTUARIAL METHODS

ACTUARIAL VALUE OF ASSETS

In preparing an actuarial valuation, the actuary must assign a value to the assets of the fund. An adjusted market value (called the actuarial value of assets) is often used to smooth out the volatility in the market value. This is because most plan sponsors would rather have annual costs remain relatively level, as a percentage of payroll or in actual dollars, rather than a cost pattern that is extremely volatile.

The actuary does not have complete freedom in assigning this value. GASB has certain requirements related to the calculations prepared under GASB Number 25. The American Academy of Actuaries (AAA) also has basic principles regarding the calculation of a smoothed value, *Actuarial Standard of Practice No. 44 (ASOP 44), Selection and Use of Asset Valuation Methods for Pension Valuations*.

ASOP 44 provides that the asset valuation method should bear a reasonable relationship to the market value. Furthermore, the asset valuation method should be likely to satisfy both of the following:

- Produce values within a reasonable range around market value AND
- Recognize differences from market value in a reasonable amount of time.

In lieu of both of the above, the standard will be met if either of the following requirements is satisfied:

- There is a sufficiently narrow range around the market value OR
- The method recognizes differences from market value in a sufficiently short period.

These rules or principles prevent the asset valuation methodology from being used to distort annual funding patterns. No matter what asset valuation method is used, it is important to note that, like a cost method or actuarial assumptions, the asset valuation method does not affect the true cost of the plan; it only impacts the incidence of cost.

COERS values assets, for actuarial valuation purposes, based on the principle that the difference between actual and expected investment returns should be subject to partial recognition to smooth out fluctuations in the total return achieved by the fund from year to year. This philosophy is consistent with the long-term nature of a retirement system. Under this method, the actuarial value of the assets is the expected value of assets plus 25% of the difference between market value and expected value, where the expected value is last year's actuarial value and subsequent cash flows into and out of the fund accumulated with interest at the valuation rate (8%). This is mathematically equivalent to using a weighted average of 75% of the expected value and 25% of actual market value.

The current asset valuation method for COERS also includes what is known as a “corridor”, which provides that once the initial determination of the actuarial value of assets is made it is compared to a corridor around market value (80% of market value to 120% of market value). If the initial actuarial value lies outside the corridor, the final actuarial value of assets is set equal to the corresponding corridor value. For example, if the initial calculation of the actuarial value of assets is 132% of market value, the actuarial value is set equal to 120% of market value. We believe the corridor is necessary to ensure actuarial standards are met.

An asset valuation method is used to “smooth out” the volatility that occurs in the market value of assets. We believe the current method, with the corridor adopted in 2007, is reasonable and meets actuarial standards. **We recommend the current asset valuation method, including the corridor, be retained.**



SECTION 3 – ACTUARIAL METHODS

AMORTIZATION OF UAL

As described above, actuarial liabilities are the portion of the actuarial present value of future benefits that are not included in future normal costs. Thus it represents the liability that, in theory, should have been funded through normal costs for past service. Unfunded actuarial liabilities (UAL) exist when actuarial liabilities exceed plan assets. These deficiencies can result from (i) plan improvements that have not been completely paid for, (ii) experience that is less favorable than expected, (iii) assumption changes that increase liabilities or (iv) contributions that are less than the actuarial contribution rate. If the actuarial value of assets (AVA) exceeds the actuarial liability (AL), “surplus” exists.

There are a variety of different methods that can be used to amortize the UAL. Each method results in a different payment stream and, therefore, has cost implications. For each methodology, there are three characteristics:

- The period over which the UAL is amortized,
- The rate at which the amortization amount increases, and
- The number of components of UAL with separate amortization bases.

The parameters in Governmental Accounting Standard Board Statement No. 25 (GASB 25) have evolved as a *de facto* funding standard for governmental plans. GASB 25 sets parameters for all of these characteristics. The maximum amortization period permitted is 30 years. The annual amortization amount can be either a level dollar amount or a level percentage of payroll. The UAL may be amortized as one amount or components may be amortized separately. A new GASB standard for Pension Reporting (GASB 67 and 68) will be effective in a few years which eliminates any linkage between the funding and accounting numbers. However, it is still useful to recognize the impact that the current GASB standards have had on funding policies in the recent past.

The amortization period can be either closed or open. If it is a closed amortization period, the number of year remaining in the amortization period declines each year. Alternatively, if the amortization period is an open or rolling period, the amortization period does not decline but is reset to the same number each year. This approach essentially “refinances” the System’s debt (UAL) every year, pushing off the payment of the UAL to future years. While the funded ratio may possibly increase over time under the open amortization period, the System is not expected to reach a funded ratio of 100%. The open amortization policy is especially of concern when the amortization period is very long (i.e. 25 or 30 years) due to the negative amortization that occurs (UAL payment is less than the interest on the UAL so the dollar amount of the UAL continually increases).

The level dollar amortization policy is similar to the method in which a home owner pays off a mortgage. The liability, once calculated, is financed by a constant fixed dollar amount, based on a predetermined number of years, until the liability is extinguished. This results in the liability steadily decreasing while the payments, though remaining level in dollar terms, in all probability decrease as a percentage of payroll. (Even if a plan sponsor’s population is not growing or even slightly diminishing, inflationary increases will usually be sufficient to increase the aggregate covered payroll).

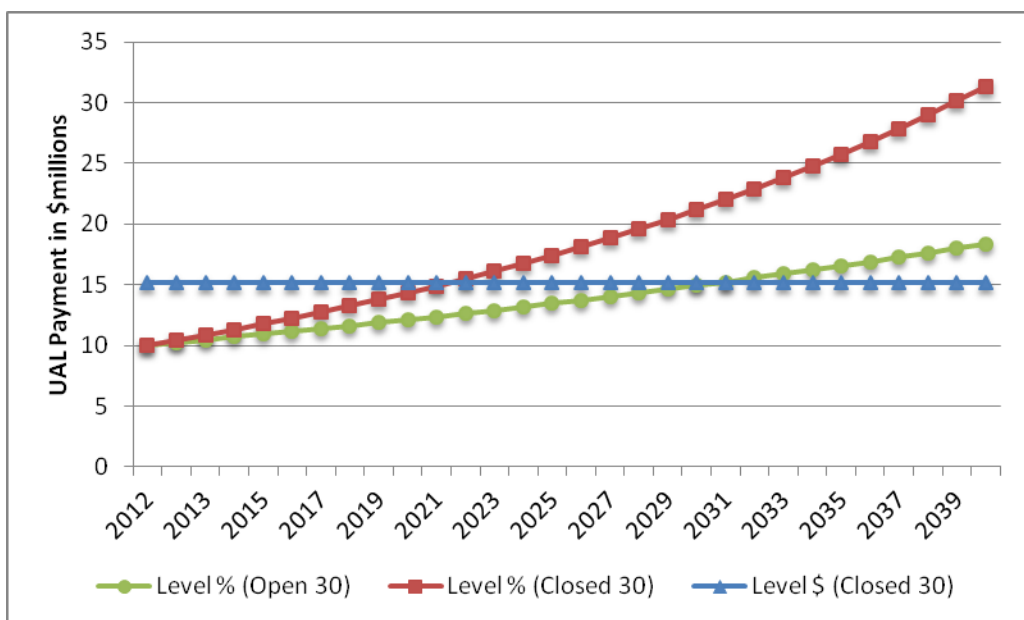
The rationale behind the level percentage of payroll amortization method is that since normal costs are calculated to be a constant percentage of pay, unfunded actuarial liabilities should be paid off in the same manner. When this method of amortizing the unfunded actuarial liability is adopted, the initial amortization payments are lower than they would be under a level dollar amortization payment method,



SECTION 3 – ACTUARIAL METHODS

but the payments increase at a fixed rate so that ultimately the annual payment far exceeds the level dollar payment. The expectation is that total payroll will increase as rapidly so that the amortization payments will remain constant, as a percentage of payroll. In the initial years, the level percentage of payroll amortization payment is often less than the interest accruing on the unfunded actuarial liability meaning that even if there are no experience losses, the dollar amount of the unfunded actuarial liability will grow (called negative amortization). This is particularly true if the plan sponsor is paying off the unfunded actuarial liability over a long period, such as 30 years.

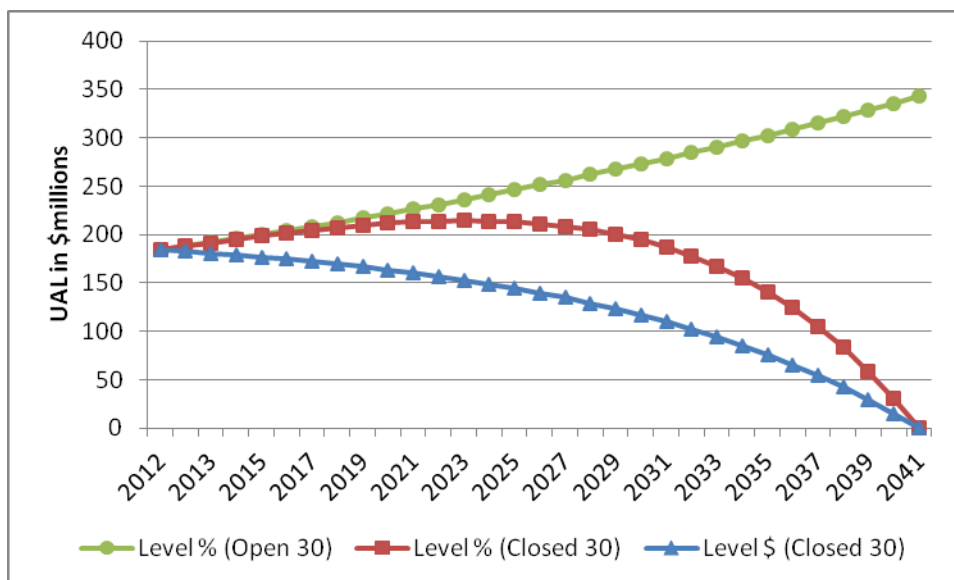
The following graph shows the dollar amount of amortization payment under the three different amortization methods, discussed earlier:



Use of the level percentage of payroll amortization has its advantages and disadvantages. From a budgetary standpoint, it makes sense to develop UAL contribution rates that are level as a percentage of payroll, since contributions to fund the Plan are made as a percent of payroll and normal cost is developed as a level percent of payroll. However, if payroll doesn't grow as expected, the UAL payment will increase as a percent of payroll rather than remain level. In addition, this approach clearly results in slower funding of the UAL, as illustrated in the following graph:



SECTION 3 – ACTUARIAL METHODS



COERS currently develops the actuarial contribution rate using a closed 30 year period for amortizing the UAL. As of the January 1, 2012 valuation, 20 years remain in the amortization period. While this approach could be maintained (where the period declines by one each year and eventually reaches one), it will create volatility as the remaining years become shorter and shorter over time. More than likely the amortization period would be reset at some point in the future.

We believe that another approach to amortizing the UAL is worth further discussion and consideration. The proposed methodology would create a new amortization base each year equal to the change in the UAL for that year and that “piece” of the UAL would be amortized as a level percent of payroll over a closed 20 year period. The total UAL payment would be the sum of all of the individual amortization bases in place on the valuation date. By amortizing each based over a new 20 year period the payments are continually spreading the UAL payment over a period of years. The existing UAL would remain on the current amortization schedule with the closed amortization period and any changes to the UAL would be amortized over a new 20 year period. **We recommend this approach to the amortization of the UAL be adopted by the Board.**

We would note that, given the low salary increases being granted to public employees in the current economic environment, it should be expected that covered payroll will not increase as much as the assumed rate in the short term. Under these circumstances, the UAL contribution, as a percentage of payroll, is expected to increase rather than remain level. A lower payroll growth assumption for amortizing the UAL would introduce some conservatism into the amortization of the UAL. It would, however, result in a higher but more stable contribution rate. We would be happy to discuss this further with the Board if you desire.



SECTION 4 – ECONOMIC ASSUMPTIONS

ECONOMIC ASSUMPTIONS

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* provides guidance to actuaries giving advice on the selection of economic assumptions for measuring obligations under defined benefit plans, such as COERS. A new draft of ASOP 27 has been published, but has not yet been adopted so our discussion in this report reflects the current ASOP 27 standard.

Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

Recognizing that there is not one “right answer”, the standard calls for the actuary to develop a best estimate range for each economic assumption, and then recommend a specific point within that range. Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with all other economic assumptions over the measurement period.

An actuary’s best-estimate range with respect to a particular measurement of pension obligations may change from time to time due to changing conditions or emerging plan experiences. The actuary may change assumptions frequently in certain situations, even if the best-estimate range has not changed materially, and less frequently in other situations. Even if assumptions are not changed, the actuary needs to be satisfied that each of the economic assumptions selected for a particular measurement complies with the Actuarial Standard of Practice No. 27.

The remaining section of this report will address the relevant types of economic assumptions used in the actuarial valuation to determine the obligations of COERS. In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27. The following table summarizes the economic assumptions:

	Current Assumptions	Recommended Assumptions
A. Consumer Price Inflation	3.50%	3.25%
B. Investment Return	8.00%	None at this time
C. Payroll Growth	4.00%	4.00%

Based on our review and this study, we are recommending some changes to the economic assumptions. However, there is a range of reasonable assumptions. If the Board wishes to be more conservative, Cavanaugh Macdonald would not have a problem supporting such a set of economic assumptions.



SECTION 4 – ECONOMIC ASSUMPTIONS

CONSUMER PRICE INFLATION

Use in the Valuation: Future price inflation has an indirect impact on the results of the actuarial valuation through the development of the assumptions for investment return and general wage growth.

The long-term relationship between price inflation and investment return has long been recognized by economists. The basic principle is that the investor demands a more or less level “real return” – the excess of actual investment return over price inflation. If inflation rates are expected to be high, investment return rates are also expected to be high, while low inflation rates will result in lower expected investment returns, at least in the long run.

The long term inflation rate cannot be predicted with a significant degree of confidence. This uncertainty would present severe problems in funding a retirement plan were it not for the fact that the effects of inflation on investment return and salary level are, in part, offsetting at least for active members. Salaries increasing faster than expected produce unexpected liabilities. Investment returns which exceed the assumed rate result in unanticipated assets. Although not directly equal in amount, it is expected that these additional assets and liabilities will have some offset on one another over the long term.

The current assumption for price inflation is 3.50% per year.

Past Experience: Although economic activities, in general, and inflation in particular, do not lend themselves to prediction on the basis of historical analysis, historical patterns and long term trends are factors to be considered in developing the inflation assumption. The Consumer Price Index, US City Average, All Urban Consumers, CPI (U), has been used as the basis for reviewing historical levels of price inflation. The table below provides historical annualized rates and annual standard deviation of the CPI-U over periods ending December 31st.

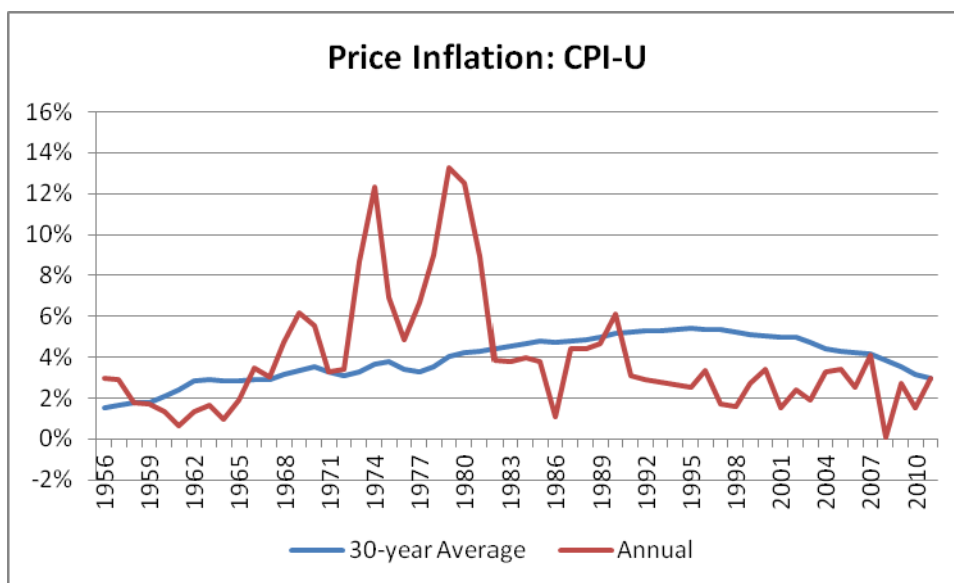
Period	Number of Years	Annualized Rate of Inflation	Annual Standard Deviation
1926 – 2011	85	2.99%	4.16%
1951 - 2011	60	3.63	2.94
1961 – 2011	50	4.12	2.95
1971 - 2011	40	4.35	3.15
1981 – 2011	30	2.96	1.22
1991 - 2011	20	2.49	0.90
2001 - 2011	10	2.48	1.12

The following graph illustrates the historical annual change in price inflation, measured as of December 31 of each for the last 55 years, as well as the thirty year rolling average.



SECTION 4 – ECONOMIC ASSUMPTIONS

Annual Rate of CPI (U) Increases



Over more recent periods, measured from December 31, 2011, the average annual rate of increase in the CPI-U has been 3.00% or lower. The period of high inflation from 1973 to 1982 has a significant impact on the averages over periods which include these rates. Further, the average rate of 3.07% over the entire 85 year period is close to the average rate of 2.97% for the prior 30 years (1981 to 2011) but the volatility of the annual rates in the more recent years has been markedly lower as indicated by the significantly lower annual standard deviations (see earlier table). Many experts attribute the lower average annual rates and lower volatility to the increased efforts of the Federal Reserve since the early 1980’s to stabilize price inflation. As the Fed’s efforts to promote stability in price inflation are expected to continue, we give greater weight to the 30-year historical period in our analysis.

Forecasts of Inflation

Additional information to consider in formulating this assumption is obtained from measuring the spread on Treasury Inflation Protected Securities (TIPS) and from the prevailing economic forecasts. The spread between the nominal yield on treasury securities (bonds) and the inflation indexed yield on TIPS of the same maturity is referred to as the “breakeven rate of inflation” and represents the bond market’s expectation of inflation over the period to maturity. The table below provides the calculation of the breakeven rate of inflation as of December 31, 2011.

Years to Maturity	Nominal Bond Yield	TIPS Yield	Breakeven Rate of Inflation
10	1.89%	-0.07%	1.96%
20	2.57	0.53	2.04
30	2.89	0.78	2.11



SECTION 4 – ECONOMIC ASSUMPTIONS

Although many economists forecast lower inflation than the current assumption used by COERS, they are generally looking at a shorter time horizon than is appropriate for a pension valuation. To consider a longer, similar time frame, we looked at the expected increase in the CPI by the Office of the Chief Actuary for the Social Security Administration. In the May 2012 report, the projected average annual increase in the CPI over the next 75 years was estimated to be 2.80%, under the intermediate cost assumptions. The lower cost assumption used a forecast of 1.80% and the high cost assumption was 3.8%, indicating a reasonable range for their projections of 1.8% to 3.8%.

The COERS investment consultant, DeMarche Associates also provided a long term assumption for inflation of 3.1% as part of their capital market assumptions.

Reasonable Range and Recommendation: Given the longer term perspective for pension funding, we believe that a range between 2.5% and 4.05% is reasonable for an actuarial valuation of a retirement system. Based on the information presented above, we believe it is reasonable to reduce the inflation assumption, but we prefer to make a small adjustment now and then evaluate whether another adjustment is appropriate in the next experience study. **Therefore, we recommend that the long-term price inflation assumption be lowered from 3.50% to 3.25%.**

Consumer Price Inflation	
Current Assumption	3.50%
Reasonable Range	2.50% - 4.00%
Recommended Assumption	3.25%



SECTION 4 – ECONOMIC ASSUMPTIONS

INVESTMENT RETURN

Use In The Valuation: The investment return assumption is one of the primary determinants in the allocation of the expected cost of the System’s benefits, providing a discount of the estimated future benefit payments to reflect the time value of money. Generally, the investment return assumption should represent the long-term rate of return on the plan assets, considering the asset allocation policy, expected long term real rates of return on the specific asset classes, the underlying inflation rate, and investment expenses.

Preliminary projections for COERS indicate that plan assets will be exhausted in about 20 years, absent changes in the contributions and/or benefit structure of the System, even if all actuarial assumptions are met. This has serious implications for setting the investment return assumption since the appropriate timeframe is much shorter than normal and liquidity needs may be impacted if plan assets are continually shrinking. However, it is our understanding that the City and the member groups covered by the retirement system are working together to find a solution to the funding problem facing the System. This solution may involve increases in the contributions, changes to the benefit provisions or both. These changes should impact the net cash flow (contributions less benefit payments) for the System in a positive way, but the actual impact cannot be measured until the details of the solution are known. Given the funding outlook of the System, we are not comfortable making a specific assumption for the investment return assumption with such key issues unresolved at this time. The analysis we would normally include in the experience study, and which is appropriate for a long term perspective, is provided on the following pages. However, no recommendation for the investment return is made in this report.

The current assumption for investment return is 8.0% per year, net of all investment-related expenses (administrative expenses are paid directly by the City). The 8.0% rate of return is referred to as the nominal rate of return and is composed of two components. The first component is price inflation (previously discussed). Any excess return over price inflation is referred to as the real rate of return. The real rate of return, based on the current set of assumptions, is 4.5% (8.0% nominal return and 3.5% inflation).

The Actuarial Standards Board Statement Number 27 provides guidance to actuaries on selecting economic assumptions. It lists specific factors that can be considered in constructing the best-estimate investment return range and/or selecting an investment return assumption within the range. Such factors are:

- 1. The purpose of the measurement.** The measurement of obligations for an ongoing plan will differ from those of a terminating or frozen plan. An ongoing plan will typically reflect a longer time horizon and a more diversified investment portfolio.

For a governmental plan, benefit security is tied to the funding agency’s ability to provide the required funding. Since all governmental funding sources are ultimately some type of tax, the funding of the retirement system is dependent on the ability to increase or decrease allocated tax revenues to the system. Given the normal processes, it is much easier to lower the required funding allocations than to increase it, as it is easy enough to either lower the tax income or reallocate it to another need. A primary funding goal of most governmental plans is a stable contribution rate so that the budgeting and allocation of tax revenues are not subject to a great deal of fluctuations.

It is reasonable, when setting actuarial assumptions for a governmental plan to consider the impact not only on its membership, but on the taxpayers, and the agency’s ability to provide



SECTION 4 – ECONOMIC ASSUMPTIONS

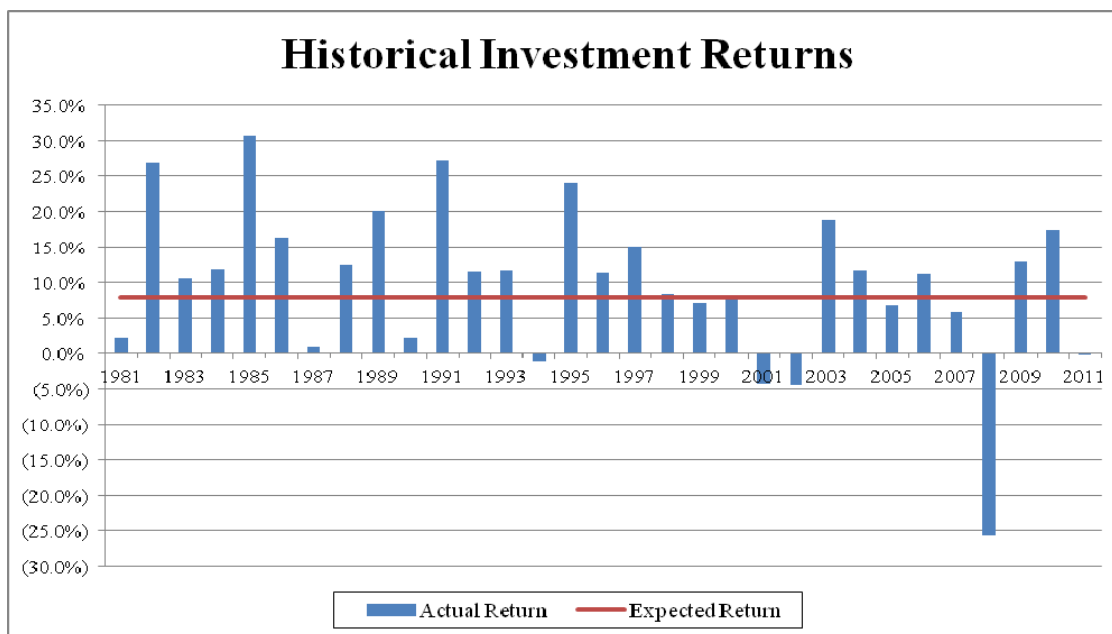
- sufficient income to maintain and secure a stable funding for the benefit security of the membership. This is sometimes reflected in a more conservative approach, as experience gains are more easily absorbed into the funding than are experience losses which may result in a required increase in funding.
2. **Investment policy.** This usually refers to the plan's current asset allocation, the types of securities the system is eligible to invest in, and the target allocation, if different. It may also reflect the investment philosophy regarding risk tolerance and social investing.
 3. **Reinvestment Risk.** This should reflect the reinvestment of moneys not immediately required to pay plan benefits.
 4. **Investment Volatility.** If a system is required to liquidate assets at depressed values to meet benefit obligations, a higher risk is present.
 5. **Investment Manager Performance.** Few investment managers consistently outperform the market. Those who consistently underperform may be replaced. We do not believe this is a significant factor to consider for COERS.
 6. **Investment Expenses.** Investment returns are assumed both with and without expenses. Actual expenses are measured periodically and taken into account when setting the investment return assumption.
 7. **Cash Flow Timing.** The expected stream of contributions and benefit payments may affect the liquidity of a plan's investment opportunities. In 2011, benefit payments exceed contributions by about \$15 million, more than 6% of the market value of assets at the beginning of the 2011. While this trend is expected to continue absent any changes, discussions are occurring now between the City and the various member groups covered by the retirement system to address the long term funding shortfall. If contributions are increased and the benefit structure for current active members is modified, it may impact the net cash flows in a positive manner.
 8. **Benefit Volatility.** This is a consideration for small plans, plans with full lump sum payment options and supplemental benefits. The concern with these factors is a need to liquidate securities at depressed values. We do not expect benefit volatility to be a factor in considering the COERS investment return assumption.

Historical Perspective: One of the inherent problems with analyzing historical data is that the results can look significantly different depending on the time frame used if the year-to-year results vary widely. Even though history provides a valuable perspective for setting this assumption, the economy of the past is not necessarily the economy of the future. In addition, asset allocations may have changed over the period so returns may not be directly comparable.



SECTION 4 – ECONOMIC ASSUMPTIONS

The System's actual investment return on the market value of assets is shown in the graph below:



The geometric average return has varied significantly when viewed over different time periods. For example, the rate of return over the ten year period ending December 31, 2011 was 4.6%, but over the thirty year period ending December 31, 2011 the compound return was 9.6%.

Historical Market Analysis: Actual historical returns of COERS alone are not credible for the purpose of analyzing the long-term assumed future rate of return. In determining the reasonable range for this assumption, we looked at long-term historical returns of broad market indices. We focus on the returns of stocks and high-quality bonds because they are two major asset classes of typical allocations and have significant amounts of associated historical data.

Utilizing the historical real rates of return of the S&P 500 and the Intermediate Government Bond Index for the last 85 years and as contained in the latest data from Ibbotson, we determine the historical compound average annual rate of return of common asset allocations of large retirement funds (40% stocks/60% bonds to 70% stocks/30% bonds). On this basis the initial reasonable range for expected real rates of return is from 4.55% to 5.77%. We then add the historical inflation rate of 3.0% to the reasonable range of real returns. This yields an initial reasonable range for the long-term investment rate of return assumption of 7.55% to 8.77% based upon historical returns of the broad market indices under common allocations of stocks and bonds.

Forward Looking Analysis

A more dynamic forward looking analysis of expected investment return is also an appropriate analysis to perform in setting this assumption. In assessing the future expectation of investment returns, we prefer to utilize the capital market assumptions of the investment professionals assisting the Board in determining its investment policies and asset allocations. This approach is referred to as the building block method in ASOP No. 27.



SECTION 4 – ECONOMIC ASSUMPTIONS

We are aware that the Board is considering making some changes to the target asset allocation. However, those changes had not yet been decided when work commenced on this experience study. Therefore, the current asset allocation of the fund, which is shown below, was used in our forward looking analysis of expected returns:

Asset Category	Asset Allocation	Expected Real Rate of Return (Arithmetic)	Standard Deviation
US Large Cap Equity	25%	6.90%	17.69%
US Small Cap Equity	15%	9.37%	19.10%
International Equity	25%	7.45%	17.06%
Fixed Income	25%	0.91%	4.70%
Real Estate	5%	6.27%	6.74%
Hedge Funds	5%	0.81%	0.58%
Total	100%		

The current capital market assumptions as provided by the Board’s investment consultant, DeMarche Associates, are shown in Appendix C. Using the target asset allocation as shown in the table above, we assumed that investment returns approximately follow a lognormal distribution with no correlation between years. The results below provide an expected range of real rates of return over a 50 year time horizon using DeMarche’s capital market assumptions. Looking at one year’s results produces an expected real return of 5.62% but also has a high standard deviation or measurement of volatility illustrated by the range of results, i.e. -13.01% to 28.08%. By expanding the time horizon, the average return does not change much, but the volatility declines significantly (range for 30 year time span is 1.95% to 9.41%). The following table provides a summary of the results.

Time Span In Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5 th	25 th	50 th	75 th	95 th
1	6.33%	12.54%	-13.01%	-2.45%	5.62%	14.32%	28.08%
5	5.76	5.56	-3.15	1.93	5.62	9.43	15.14
10	5.69	3.93	-0.66	3.00	5.62	8.30	12.27
20	5.65	2.78	1.14	3.76	5.62	7.50	10.28
30	5.64	2.27	1.95	4.10	5.62	7.16	9.41
50	5.63	1.76	2.77	4.44	5.62	6.81	8.54

Based on this analysis, there is 50% likelihood that the average real rate of return over a 50-year period will be 5.62%. It can also be inferred that for the 10 year time span, 5% of the resulting real rates of return were below -0.66% and 95% were above that. As the time span increases, the expected results narrow. Over a 50 year time span, the results indicate there is a 25% chance that real returns will be below 4.44% and a 25% chance they will be above 6.81%. In other words, there is a 50% chance the real returns will be between 4.44% and 6.81%.



SECTION 4 – ECONOMIC ASSUMPTIONS

Typically, using the building block approach of ASOP No. 27 and the projection results outlined above, a range for the investment return assumption is determined as the 25th to 75th percentile real returns over the 50 year time span plus the inflation assumption. The following table details the range using DeMarche's long term capital market assumptions.

Item	25 th Percentile	50 th Percentile	75 th Percentile
Real Rate of Return	4.44%	5.62%	6.81%
Inflation	<u>3.25</u>	<u>3.25</u>	<u>3.25</u>
Net Investment Return	7.69%	8.85%	10.06%

From the table above, an 8.00% average annual return over the 50 year period ranks at the 31st percentile. In other words, there is approximately a 69% likelihood that the long term average rate of return over a 50 year period will be at least 8.00%. In conversations with DeMarche, their outlook for the short term (the next five to ten years) is lower than 8%. This means that returns in later years (after ten years) are expected to exceed 8% in order for the compound return over the long term to be more than 8%.

As explained earlier, we are not including a specific recommendation for the investment return assumption because the ultimate analysis and recommendation will be dependent on the plan changes made in the next few months. We will revisit the investment return assumption with the Board once the plan changes to address the System's long term funding have been finalized.



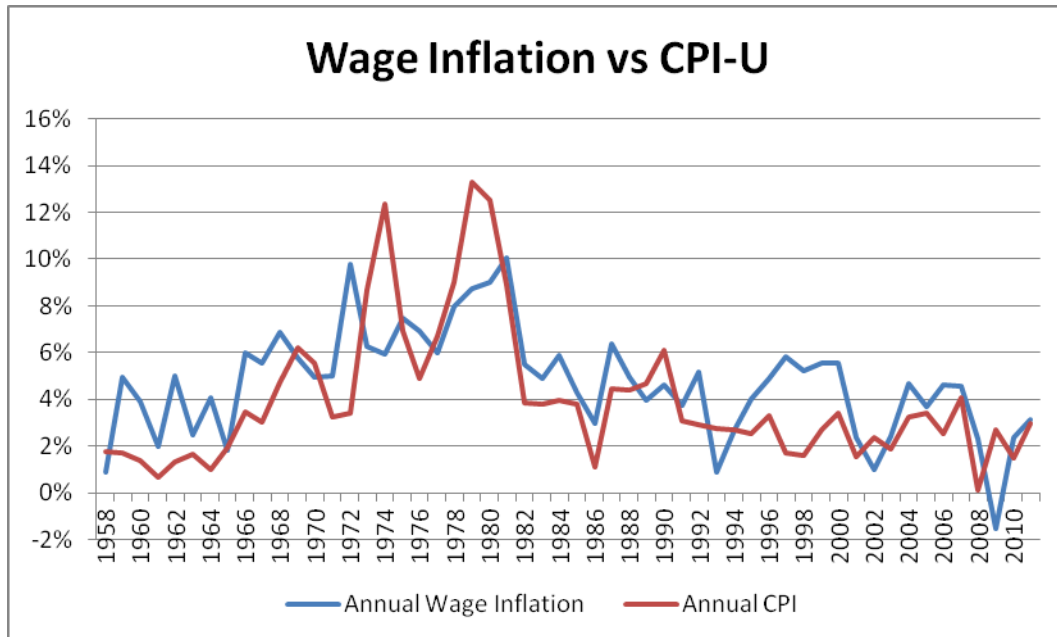
SECTION 4 – ECONOMIC ASSUMPTIONS

WAGE GROWTH

Use in the Valuation: The assumed future increases in salaries consist of a wage inflation component and a component for promotion and longevity, often called merit increases. The latter are generally age and or service related, and will be dealt with in the demographic assumption section of the report. Wage inflation normally is greater than price inflation as a reflection of the overall return on labor in the economy. The rate of wage inflation above price inflation is called the real rate of wage inflation (or productivity) and is the focus of our analysis.

The current wage growth assumption is 4.0% per year, which is composed of a 3.50% inflation assumption and a 0.50% productivity component.

The National Average Wage (utilized by Social Security to index the historical wages used in determining benefits) is often used for historical analysis of the overall wage growth in the United States. A graph of wage inflation, as measured by the change in the National Average Wage Growth, and price inflation, as measured by CPI-U, is shown in the following graph. As can be seen, there are a few periods where price inflation is above wage inflation, but in general wage inflation exceeds price inflation so we believe that expectation should be reflected in the actuarial assumptions.





SECTION 4 – ECONOMIC ASSUMPTIONS

Past Experience: The Social Security Administration publishes data on wage growth in the United States. As with our analysis of price inflation, data on wage inflation along with a comparison to price inflation over various time periods is presented in the table below. If the rate of price inflation is subtracted from the data for each year, the result is the historical real rate of wage inflation.

Period	Wage Inflation	Price Inflation	Real Wage Growth
2001-2011	2.70%	2.48%	0.22%
1991-2001	4.20	2.51	1.69
1981-1991	4.70	3.91	0.79
1971-1981	7.80	8.62	-0.82
1961-1971	4.75	3.20	1.55
1991-2011	3.45%	2.49	0.96
1981-2011	3.87	2.96	0.91
1971-2011	4.84	4.35	0.49
1961-2011	4.82	4.12	0.70

Thus over the last 50 years, annual real wage growth has averaged 0.70%. Over the last 20 years, the National Average Wage increased 3.45% on average and 2.70% over the last 10 years. Wage increases for public sector employment have fallen below private sector wage increases in recent years, a trend which may continue in the short term, but should not persist indefinitely.

Forecasts of Future Wages: The wage index we used for the historical analysis has been projected forward by the Office of the Chief Actuary of the Social Security Administration. In a report in May of 2012, the annual increase in the National Average Wage Index over the next 30 years under the intermediate cost assumptions was 4.0%, 1.2% higher than the Social Security intermediate inflation assumption. The low cost assumption was 3.6%, or 1.8% above the inflation assumption of 1.8%. The high cost assumption was 4.4%, 0.6% above the inflation assumption of 3.8%.

Reasonable Range and Recommendation: Based on our recommended inflation assumption of 3.25%, we believe that a range between 3.50% and 4.50% is reasonable for the actuarial valuation. **We recommend that the long-term assumed wage inflation rate remain at 4.0%, which implies a productivity component of 0.75%.** However, given the current economic conditions, we believe it is unlikely that general wage increases of 4.0% are likely to be granted to governmental employees until the economy fully recovers and tax revenues improve. Therefore, it may be reasonable to use a lower general wage increase assumption in the short term (called a select and ultimate assumption), particularly if the Board adopts a more conservative investment return assumption. In fact, if that occurs, the entire set of economic assumptions, including this assumption, should be revisited. We would be happy to discuss this further with the Board when we review the results of the experience study report.



SECTION 4 – ECONOMIC ASSUMPTIONS

A summary of the reasonable range and our recommended assumption are shown below:

	Wage Growth
Current Assumption	4.0%
Reasonable Range	3.50% - 4.50%
Recommended Assumption	4.00%*

*Although the assumption did not change, the components of the assumption did change. The price inflation assumption was lowered from 3.5% to 3.25% and the productivity assumption was increased from 0.50% to 0.75%.



SECTION 5 – DEMOGRAPHIC ASSUMPTIONS

DEMOGRAPHIC ASSUMPTIONS

Actuarial Standard of Practice (ASOP) No. 35 provides guidance to actuaries regarding the selection of demographic and other non-economic assumptions for measuring pension obligations. A revised edition of this standard was adopted by the Actuarial Standards Board of the American Academy of Actuaries in September 2010, effective for actuarial valuations with a measurement date on or after June 30, 2011.

ASOP 35 General Considerations and Application

Each individual demographic assumption should satisfy the criteria of ASOP 35. In selecting demographic assumptions the actuary should also consider: the internal consistency between the assumptions, materiality, cost effectiveness, and the combined effect of all assumptions. At each measurement date the actuary should consider whether the selected assumptions continue to be reasonable, but the actuary is not required to do a complete assumption study at each measurement date. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with ASOP 35.

Overview of Analysis

The purpose of a study of demographic experience is to compare what actually happened to the individual members of the System during the study period (calendar years 2007 through 2011) with what was expected to happen based on the actuarial assumptions. A single five year period is still a relatively short observation period, particularly given the size of the group. In addition, the study period includes the economic downturn in 2008 and 2009. Therefore, some of the experience observed in the study may not be representative of long term trends. In addition, the System's size limits the credibility of the findings. Therefore, we have considered the results of the prior Experience Study when deemed appropriate.

Studies of demographic experience generally involve three steps:

- First, the number of members changing membership status, called decrements, during the study is tabulated by age, duration, gender, group, and membership class (active, retired, etc.).
- Next, the number of members expected to change status is calculated by multiplying certain membership statistics, called exposure, by the expected rates of decrement.
- Finally, the number of actual decrements is compared with the number of expected decrements. The comparison is called the actual to expected ratio (A/E Ratio), and is expressed as a percentage.

In general, if the actual experience differs significantly from the overall expected results, or if the pattern of actual decrements, or rates of decrement, by age, sex, or duration deviates significantly from the expected pattern, new assumptions are considered. Recommended revisions are normally not an exact representation of the experience during the observation period. Judgment is required to anticipate future experience from past trends and current evidence, including a determination of the amount of weight to assign to the most recent experience.

It takes a fair amount of data to provide experience study results that are fully credible for demographic assumptions. Because the membership or certain subsets of the membership are relatively small, some



SECTION 5 – DEMOGRAPHIC ASSUMPTIONS

assumptions have been selected based more on our professional judgment of reasonable future outcomes than actual experience.

ASOP 35 states that the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Pursuant to ASOP 35 the actuary should follow the following steps in selecting the demographic assumptions:

1. Identify the types of assumptions. Types of demographic assumptions include but are not limited to retirement, mortality, termination of employment, disability, election of optional forms of payment, administrative expenses, family composition, and treatment of missing or incomplete data. The actuary should consider the purpose and nature of the measurement, the materiality of each assumption, and the characteristics of the covered group in determining which types of assumptions should be incorporated into the actuarial model.
2. Consider the relevant assumption universe. The relevant assumption universe includes experience studies or published tables based on the experience of other representative populations, the experience of the plan sponsor, the effects of plan design, and general trends.
3. Consider the assumption format. The assumption format includes whether assumptions are based on parameters such as gender, age or service. The actuary should consider the impact the format may have on the results, the availability of relevant information, the potential to model anticipated plan experience, and the size of the covered population.
4. Select the specific assumptions. In selecting an assumption the actuary should consider the potential impact of future plan design as well as the factors listed above.
5. Evaluate the reasonableness of the selected assumption. The assumption should be expected to appropriately model the contingency being measured. The assumption should not be anticipated to produce significant cumulative actuarial gains or losses over the measurement period.



SECTION 6 – MORTALITY

MORTALITY

One of the most important demographic assumptions is mortality because this assumption predicts when retirement payments will stop. The life expectancies of current and future retirees are predicated on the assumed rates of mortality at each age. It is commonly known that rates of mortality have been declining, which means people, in general, are living longer.

ASOP 35 states that the actuary should consider the effect of mortality improvement both prior to and subsequent to the valuation date. This implies the need to make a specific assumption with respect to future improvements in mortality, even if the assumption is zero future improvement. It is an established trend that people are living longer and we believe that trend will continue. Therefore, we believe it is appropriate to reflect future mortality improvements in the mortality assumption. Sometimes this is accomplished by including a “margin” in the rates (predicting fewer deaths than are actually occurring in the present experience). This results in a ratio of actual to expected deaths (A/E ratio) of over 100%. Another way to reflect the trend in long term mortality improvements is to use generational mortality where the probability of death at a given age is projected to be lower each year in the future.

Healthy Retirees: The valuation currently uses separate mortality assumptions for male and female members. The RP-2000 Healthy Annuitant Mortality Table for Males and Females, with generational mortality using Projection Scale AA to anticipate mortality improvements in future years, with ages set forward one year (so an individual who is age 65 is assumed to have the mortality of a 66-year old) is used to predict the probability of death for members receiving benefits.

In examining the results of the Experience Study, if the A/E Ratio is greater than 100% the assumptions have predicted fewer deaths than actually occurred and with an A/E Ratio less than 100% the assumptions have predicted more deaths than have actually occurred. Sometimes a mortality table is selected with the explicit purpose of anticipating fewer deaths so there is room for mortality improvements in the future (called “margin”). However, using the RP-2000 Mortality Table with generational mortality, the A/E Ratio should be around 100% as mortality improvements in future years are directly reflected in the valuation process by projecting lower mortality rates in future years so no margin is needed.

The aggregate observed experience for healthy (not disabled) male and female retirees during the study period is shown in the following chart. There is an insufficient number of disabled retirees to provide any reasonable analysis for the group so that information is not shown.



SECTION 6 – MORTALITY

	All Healthy Retirees		
	Observations		A/E Ratio
	Actual	Expected	Current
Males	89	86	103%
Females	43	30	143%

Actual deaths for healthy males were slightly higher than the number expected (89 compared to 86 over a five year study period) based on the current assumption with a resulting A/E ratio of 103%. We also analyzed the data by year as shown in the following table. Due to the small size of the group, there is considerable volatility in results from year to year. A similar pattern was observed in the last experience study.

	Healthy Male Retirees		
	Observations		A/E Ratio
Year	Actual	Expected	Current
2007	10	16	63%
2008	21	17	124%
2009	14	17	82%
2010	24	18	133%
2011	<u>20</u>	<u>18</u>	111%
Total	89	86	103%

Over the entire study period actual deaths for females were significantly higher than the expected number. At first glance, these results suggest that female mortality rates may be too low – that is, females are not living as long as expected. However, when the data was analyzed by year the number of actual and expected deaths was very close in all but one year (2008). If 2008 is excluded, the resulting A/E ratio is close to 100%. Based on this information, along with the relatively small size of the group, which increases the likelihood of volatility in the results, we recommend the current assumption for both males and females be retained.

	Healthy Female Retirees		
	Observations		A/E Ratio
Year	Actual	Expected	Current
2007	8	6	133%
2008	19	6	317%
2009	5	6	83%
2010	6	6	100%
2011	<u>5</u>	<u>6</u>	83%
Total	43	30	143%



SECTION 6 – MORTALITY

We would note that the Society of Actuaries is in the process of developing a new mortality table that would replace the RP-2000 Table. In the interim, they have issued a new mortality improvement projection scale table, Scale BB, to replace the existing Scale AA. For the ages of the COERS retirees, Scale BB generally projects more mortality improvement in the future, and thus would predict fewer deaths. Because the observed deaths in the most recent five years indicate that Scale AA has closely modeled actual experience, we have not recommended a change at this time. However, the Board may wish to adopt Scale BB at this time because it reflects broader trends in mortality that cannot be detected in a smaller group of retirees such as the COERS retirees.

We recommend the postretirement mortality assumption remain the same as the current assumption, i.e. the RP-2000 Healthy Annuitant Mortality Table for males and females (ages set forward one year) with generational mortality improvements anticipated by Projection Scale AA.

Beneficiaries: The mortality of beneficiaries applies to the survivors of members who have elected a joint and survivor option. There is typically little data on the mortality experience of beneficiaries prior to the death of the member because there is no requirement that the death be reported. **Therefore, we recommend that standard convention be followed and mortality for beneficiaries be the same basis as is used for retired members.**

Disabled Members: The valuation assumes that disabled members, in general, will not live as long as retired members who met the regular service retirement eligibility. There is an insufficient number of disabled retirees to provide statistically reliable results since there were only 9 deaths during the study period. The table currently used is a standard table that should be appropriate for the System. **We recommend the disabled mortality assumption remain unchanged, i.e. the RP-2000 Disabled Annuitant Mortality Tables for males and females with generational mortality improvements anticipated by Scale AA.**

Active Members: This assumption predicts eligibility for death benefits prior to retirement, rather than the expected lifetime for pension payments. In smaller groups, the mortality rates for active members are often set based on the same assumption as is used for healthy retirees. Given the low probability of death while active, the results cannot be credible on their own without much larger numbers of employees than are in COERS. We prefer to keep the mortality assumption for active and retired members on a consistent basis. **Therefore, we recommend the active member mortality be set to the RP-2000 Employee Mortality Table for males and females with a 1 year set forward and Scale AA to anticipate mortality improvements in future years.**



SECTION 7– RETIREMENT

SERVICE RETIREMENT

Service retirement measures the change in status from active membership directly to retirement. This assumption does not include the retirement patterns of members who terminated from active membership years prior to their retirement. A separate assumption addresses that situation.

Members of the Omaha Employees’ Retirement System are eligible to retire on or after age 50 if their age plus service is 80 or more (referred to as Rule of 80). Otherwise, a member may retire on or after age 55 with 5 years of service. The benefit amount is reduced 8% per year for commencement prior to age 60 unless the Rule of 80 is met. Separate retirement assumptions are used for early retirement, retirement when the member is first eligible for unreduced benefits (referred to as the “select” period) and then after the initial year the member is eligible for unreduced benefits (referred to as the “ultimate” period) if they are still working.

We analyzed retirements for those eligible for each type of retirement, i.e. early (reduced) retirement, those in their first year of eligibility for unreduced retirement, and those who have been eligible for unreduced retirement for over a year. Our findings are summarized in the following table:

	All Retirements 2007 Through 2011				
	Observations			A/E Ratio	
	Actual	Expected	Proposed	Current	Proposed
Early Retirement	19	29	N/A	66%	N/A
1st Year Eligible for Unreduced Benefit	66	71	72	93%	92%
After 1st Year Eligible for Unreduced Benefit	116	198	157	59%	74%
Total	201	298	258	67%	78%

The data was further reviewed by analyzing the actual and expected experience for each year in the study period to see if any anomalies were evident. The study period included several years during a period of significant economic downturn. The low A/E ratios suggests that those eligible to retire may have delayed retiring in the face of economic uncertainty. Thus, we believe it is appropriate to be cautious in making any adjustments to the retirement rates based on the results of this study period alone.

The results by year for each type of retirement are shown in the tables on the following pages. In addition, graphs illustrating the actual rate, current assumption and proposed assumption are also included. It should be noted that while overall actual retirement rates were below those expected, at the younger ages there were actually more retirements than expected. Based on these results, we believe there are some adjustments to the retirement rates that are warranted.

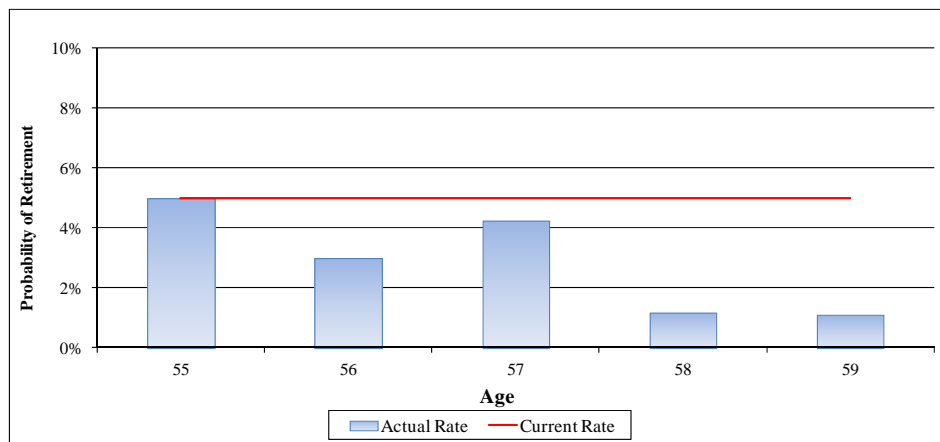


SECTION 7– RETIREMENT

	Early Retirements		
	Observations		A/E Ratio
	Actual	Expected	Current
2007	3	6	50%
2008	4	5	80%
2009	7	6	117%
2010	3	6	50%
2011	<u>2</u>	<u>6</u>	33%
Total	19	29	66%

The actual retirement rates for early retirement are compared to the current actuarial assumptions in the graph below:

Early Retirement



The current early retirement rates are fairly low, 5% per year. However, during the study period there were 19 actual retirements compared to 29 expected, with a resulting A/E ratio of 66%. Although the A/E ratio appears low, it is important to remember that the number of retirements is small. One additional retirement in each year would have moved the A/E ratio from 66% to 83%. In addition, the prior experience study indicated that the current assumption resulted in an A/E ratio of 100%. We believe the unusual economic conditions during this study period may have impacted the actual experience. **Therefore, we recommend the current retirement rates for early retirement be retained.**



SECTION 7– RETIREMENT

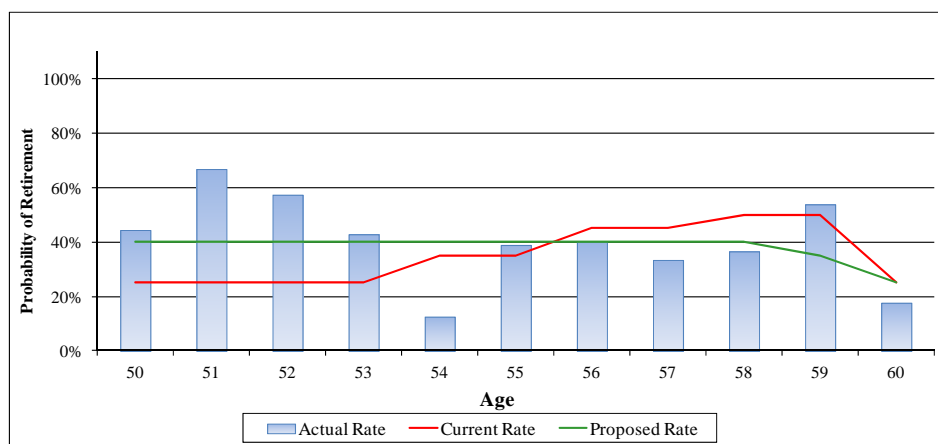
The following table shows the number of members who retired when they first reached the age at which retirement benefits could be paid without a reduction (earliest unreduced retirement age) regardless of whether they met it under the Rule of 80 provision or the age 60 provision.

	1st Eligible for Unreduced Benefits		
	Observations		A/E Ratio
	Actual	Expected	Current
2007	13	15	87%
2008	19	17	112%
2009	9	13	69%
2010	16	16	100%
2011	<u>9</u>	<u>10</u>	90%
Total	66	71	93%

While the overall A/E ratio is 93%, the “fit” of actual to expected experience is not good. In addition, actual retirements in 2009 were very low, likely due to the economic conditions.

The actual retirement rates for service retirements in the first year of eligibility are compared to the current and proposed actuarial assumptions in the following graph:

**1st Year Eligible for Unreduced Benefits
(Select Period)**



In the last experience study, the current assumption resulted in an A/E ratio of 122% indicating there were more retirements in that study period than the assumption would have anticipated. During the current study period, overall there were slightly fewer retirements in the select period than expected (63 actual vs 71 expected with an A/E ratio of 93%). When the actual experience is viewed by age, the current assumption does not appear to be a good fit. In both the prior and current study periods, the actual retirement rates at the younger ages were higher than the assumed rates and actual retirements at the older



SECTION 7– RETIREMENT

ages were lower than expected. Retirement at younger ages generally produces higher liabilities, so it is important to accurately reflect earlier benefit commencement if that is expected to continue. **We recommend the current rates be adjusted to better fit the observed experience, as shown in the green line in the graph above. The resulting A/E ratio using the recommended assumption changes slightly to 92%, but the fit to actual experience is much better.**

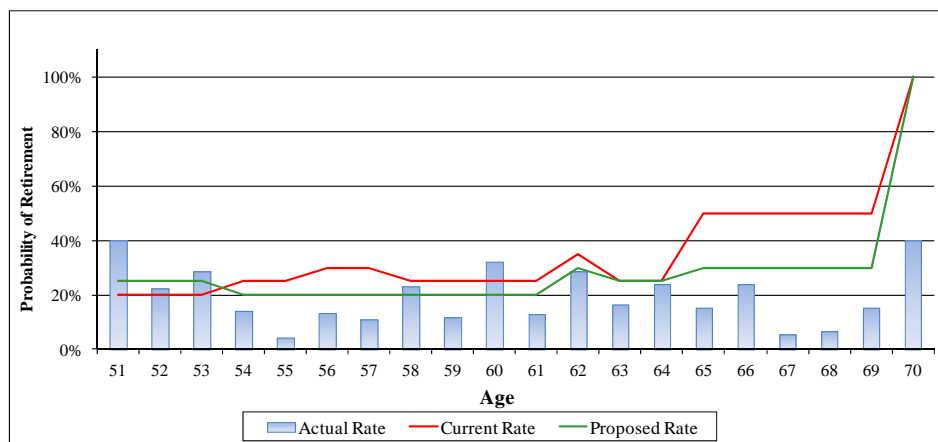
The actual retirement experience, by year, for those who retired at least one year after reaching their earliest unreduced retirement date (ultimate retirement rates) is summarized in the table below:

	After 1 st Eligible for Unreduced Benefits		
	Observations		A/E Ratio
	Actual	Expected	Current
2007	23	34	68%
2008	27	38	71%
2009	19	39	49%
2010	28	42	67%
2011	<u>19</u>	<u>45</u>	41%
Total	116	198	59%

The actual retirements under the ultimate retirement were lower than expected in each of the five years in the study period. Calendar year 2009 could likely have been impacted by the economic conditions at the time, but there were also significantly fewer retirements in 2011. There appears to be a consistent pattern of fewer than expected retirements over the entire study period.

The actual retirement rates for service retirements after the first year of eligibility for unreduced benefits are compared to the current and proposed actuarial assumptions in the following graph:

**After 1st Year Eligible for Unreduced Benefits
(Ultimate)**





SECTION 7– RETIREMENT

In the prior experience study, this assumption resulted in an A/E ratio of 106%, with the assumed rates below the actual observed experience for ages 51 through 55. In the current study period, we also observed retirement rates that were higher than the current assumption at ages 51 through 55. The current assumption also reflects rates that were much higher than actual experience for most of the ages from 65 through 69. As a result, **we are recommending some changes to the current assumption, as shown in the prior graphs, to better fit the actual experience observed in the last two studies.** The resulting A/E ratio using the new assumption is 74%.

Inactive Vested Members: The current assumption is that inactive vested members will retire at age 60. There are few such members so no reliable data is available to evaluate this assumption. However, since age 60 is the first age at which benefits can commence unreduced, it is reasonable to expect most, if not all, of these members to retire at that time. **We recommend keeping the current assumption that benefits for inactive vested members will commencement at age 60 as it is a reasonable assumption and provides a conservative estimate of the liability for inactive vested members.**



SECTION 8– DISABILITY

DISABILITY

The size of the System, coupled with the small probability of disablement at most ages, does not permit credible derivation of disability rates based solely on the System’s experience. Nonetheless, the actual to expected ratio was calculated. The following table shows both the experience in the prior and the current study.

	Disabilities		
	Observations		A/E Ratio
	Actual	Expected	Current
2002-2006	30	27	111%
2007-2011	11	9	122%
Total	41	36	114%

Over the last two experience studies, the current assumption reasonably anticipated the actual number of disabilities (five more disabilities than expected over a ten year period). **Therefore, we recommend the current disability rates be retained.**



SECTION 9– TERMINATION OF EMPLOYMENT (WITHDRAWAL)

TERMINATION OF EMPLOYMENT

This section of the report summarizes the results of our study of terminations of employment for reasons other than death, retirement, or disability. Rates of termination can vary by both age and years of service. In general, rates of termination tend to be highest at younger ages and in the early years of employment. In the last experience study, this assumption was changed from an age based assumption to an assumption based on years of service. The current termination of employment rates start at 15% in the first year and grade down to 2.5% at 11 or more years of service. The last experience study showed an A/E ratio of 84% using this assumption, indicating that the assumption was not set to exactly match the observed experience (actual terminations were less than expected using the assumption). Given that this is the first experience study since the assumption was changed to a service based assumption, the need for adjustment is not unexpected.

As was noted earlier in this report, the current study period (2007 through 2011) included several years of severely bad economic conditions, which likely is not representative of the long term experience in the future. Since termination of employment often involves a decision by the member to voluntarily leave covered employment, the actual experience can be heavily influenced by economic conditions. In order to analyze the experience in a more comprehensive manner, the study period was divided into two periods to determine if there were material differences in the observed experience. The following graph indicates that the actual experience in the two periods was different, especially at the lower service durations. The blue bars are the actual rates of termination in 2007 and 2008 while the green bars are the actual rates of termination in 2009 through 2011. In general, the green bars are below the blue bars at most durations.



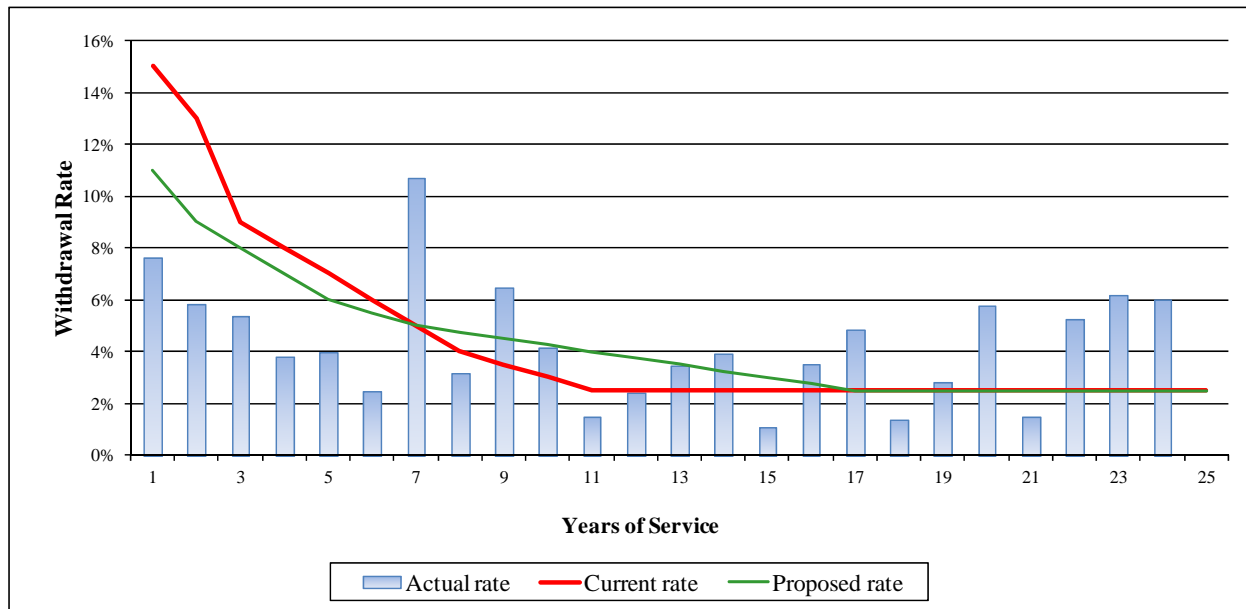


SECTION 9– TERMINATION OF EMPLOYMENT (WITHDRAWAL)

When the current termination of employment assumption was developed in the last experience study, the recommended termination rates were higher than the actual observed experience (the A/E ratio was 84%). During the current study period there were also fewer terminations than expected (actual rates were lower than the assumed rates) even when the 2009 through 2011 experience is excluded. Overall, the A/E ratio for the current five year period was 70%, but the ratio was 85% for 2007 through 2008 and 62% for 2009 through 2011 as the following table shows:

	Terminations				
	Observations			A/E Ratio	
	Actual	Expected	Proposed	Current	Proposed
2007-2008	79	93	82	85%	97%
2009-2011	93	151	130	62%	71%
Total	172	244	212	70%	81%

Based on the observed data, we are recommending some revisions to the termination of employment assumption to better match the experience in the prior study and that observed in 2007 and 2008. Given the economic conditions, little credibility was assigned to the results in 2009 through 2011. **Therefore, we recommend the termination of employment rates be adjusted during the first 16 years of employment, as shown in the following graph:**

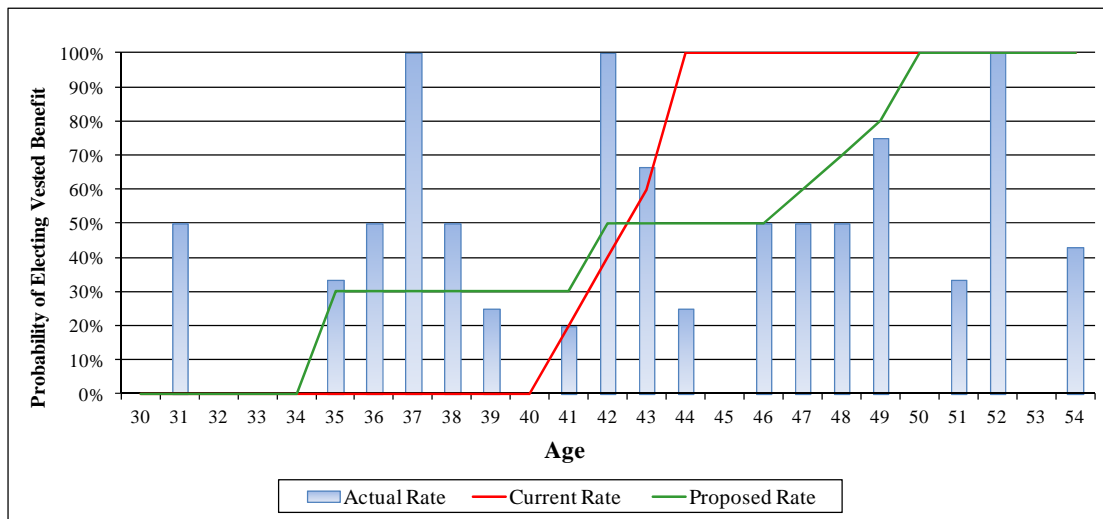




SECTION 9– TERMINATION OF EMPLOYMENT (WITHDRAWAL)

Withdrawal of Employee Contributions by Vested Terminating Members

For vested members who terminate employment, an age-based assumption is utilized to anticipate whether they will leave their member contributions with the System and receive a deferred benefit or elect to take a refund of the contributions and forfeit future benefits. Members who terminated in the last year of the study were excluded from our analysis due to potential timing issues. There may have been insufficient time to process their refund and thus it may not appear in the data, thus skewing the results. There were 73 vested members under age 55 who terminated employment during the five year study period. Based on the current assumption, we expected 34 of them to take a deferred benefit, while 27 actually did with a resulting A/E ratio of 79%. (Note that some of them could have elected to withdraw their contributions in years not included in the study period.) Additional analysis of the actual versus expected experience by age indicates the fit could be improved (see graph below). **Therefore, we recommend some modifications to the current assumption as shown in the following graph.** The recommended assumption only moves the A/E ratio to 82%, but the fit of the assumption to actual experience improves.





SECTION 10– SALARY INCREASES

SALARY INCREASE ASSUMPTION

Estimates of future salaries are based on assumptions for two types of increases:

1. Increases in each individual’s salary due to promotion or longevity (often called merit scale), and
2. Increases in the general wage level of the membership, which are directly related to price and wage inflation.

Earlier in this report, we recommended that the second of these rates, general wage inflation be left at 4.00% (3.25% price inflation and 0.75% real wage growth).

As noted above, future salary increases are the result of two components. Actual salary experience is reported in total, rather than by components, so the experience study reviewed total salary increases for the study period. The percentage attributable to general wage growth (which has already been analyzed and an assumption set) is eliminated so the merit scale is isolated. In order to isolate the merit scale, we determined the “across the board” increases that were granted during the study period.

Actual Across the Board Increases					
Year	Administrative & Executive	Civilian Bargaining	Civilian Management	Functional Positions	Expected Increase (all Groups)
2007	4.5%	2.5%	2.5%	3.25%	4.0%
2008	2.5%	2.5%	2.5%	0.75%	4.0%
2009	0.0%	0.0%	0.0%	1.53%	4.0%
2010	0.0%	0.0%	0.0%	2.75%	4.0%
2011	2.5%	3.5%	3.5%	2.75%	4.0%
2007-2011	1.9%	1.7%	1.7%	2.2%	4.0%

The Civilian Bargaining and Civilian Management groups compose the majority of the active members in the retirement system so more weight is assigned to the experience for that group. As can be observed in the table above, actual general wage increases during the study period for those two groups was 1.7%. The change in the national Average Wage Index for the same period was 2.1%. The actual experience was considerably lower than the actuarial assumption of 4.0%. Given this information, we would expect the total salary increases during the study period to be, on average, about 2% lower than the increase expected based on the current actuarial assumption.

As has been previously noted, the economic environment during this study period was very atypical. There was considerable pressure on government budgets to reduce expenses as revenues declined. As a result, salary increases for many public employees have been very low in recent years. To isolate this potential impact, we compared individual salary increases for all members active in any two consecutive periods (e.g. 2006 and 2007, 2007 and 2008, etc.). The results for the years in the current study period are shown in the following table:

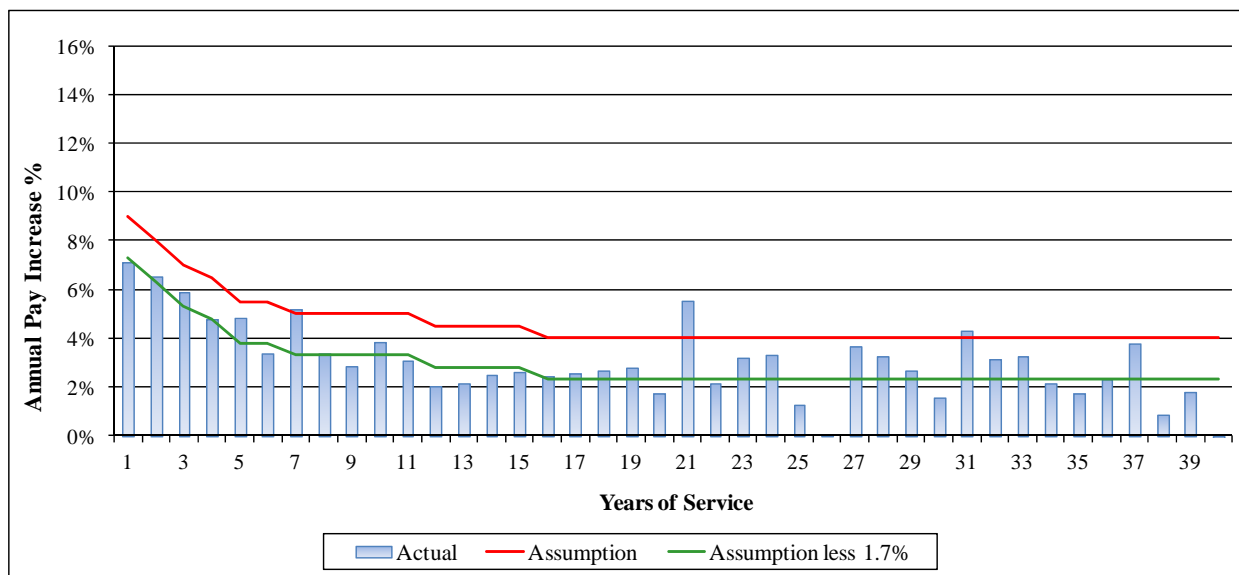


SECTION 10– SALARY INCREASES

Total Salary Increases			
Year	Actual	Expected	Difference
2007	6.09%	5.16%	0.93%
2008	5.36%	5.33%	0.03%
2009	1.33%	5.36%	(4.03%)
2010	4.29%	5.40%	(1.11%)
2011	2.43%	5.40%	(2.97%)
2007-2011	3.83%	5.33%	(1.50%)

Recognizing that the economic conditions during much of the study period were unusual, we are hesitant to make significant adjustments to the salary scale based on the findings in this report. We can, however, analyze the pattern of pay increases to see how well our current merit scale (total salary scale less general wage increase of 4%) fits the actual experience. If the current merit scale is a good fit, we should see a pattern of pay increases by service that is the same general shape as the current assumption, but just lower.

The following graph shows the observed increases for all years (the bars) compared to the current assumption (the red line). Recognizing that the across the board increases during the study period were roughly 2% below the expected increase, we have included an adjusted assumption (the green line) which is simply the current assumption less 2%. As can be seen, the shape of the assumption/adjusted assumption lines and the actual salary increases exhibit a similar pattern. We believe this supports the continued use of the current merit salary scale assumption.



Since we find the fit of the merit scale to be adequate and we earlier recommended that the payroll growth assumption remain at 4%, it follows that we believe that the current salary scale is a reasonable assumption for the long term. **We recommend that the current salary increase assumption continue to be used.**



APPENDIX A – CURRENT ACTUARIAL ASSUMPTIONS

Interest: 8.00% per year, net of investment expenses.

Inflation: 3.5% per year, net of investment expenses.

Salary Increases:

<u>Years of Service</u>	<u>Annual Rate of Increase For Sample Years</u>			<u>Total Increase</u>
	<u>Inflation</u>	<u>Productivity</u>	<u>Merit & Longevity</u>	
1	3.5%	.5%	6.0%	10.0%
5	3.5%	.5%	2.5%	6.5%
10	3.5%	.5%	1.0%	5.0%
15	3.5%	.5%	0.5%	4.5%
20+	3.5%	.5%	0.0%	4.0%

Payroll Growth Assumption 4.0%

Service Retirement Age

<u>Age</u>	<u>Eligible for Unreduced Retirement</u>	
	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
50-53	25%	20%
54-55	35%	25%
56-57	45%	30%
58-59	50%	25%
60	25%	25%
61		25%
62		35%
63		25%
64		25%
65-69		50%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 5% per year from age 55 to 59.

Mortality:

Active Members RP-2000 Employee Table with generational improvements using scale AA, set forward one year

Pensioners RP-2000 Healthy Annuitant Table with generational improvements using scale AA, set forward one year

Disabled RP-2000 Disabled Table with generational improvements



APPENDIX A – CURRENT ACTUARIAL ASSUMPTIONS

Disability:

<u>Age</u>	<u>Annual Rate</u>
20	0.11%
30	0.14%
40	0.19%
50	0.41%
60	1.48%

**Percent Married at Death
or Retirement:** 75%

**Number of Children per
Married Member:** 0

Termination:

SAMPLE RATES	
<u>Years of Service</u>	<u>Annual Rate</u>
1	15%
5	7%
10	3%
11+	2.5%

Assets: Actuarial Value of Assets equals 75% of Expected Value plus 25% of Market Value.

Vested Terminations

Electing Refund:

<u>Age</u>	<u>Percent</u>
40 and Below	100%
41	80%
42	60%
43	40%
44 and Above	0%



APPENDIX B – PROPOSED ACTUARIAL ASSUMPTIONS

Interest: 8.00% per year, net of investment expenses.

Inflation: 3.25% per year, net of investment expenses.

Salary Increases:

<u>Years of Service</u>	<u>Annual Rate of Increase For Sample Years</u>			<u>Total Increase</u>
	<u>Inflation</u>	<u>Productivity</u>	<u>Merit & Longevity</u>	
1	3.25%	.75%	6.0%	10.0%
5	3.25%	.75%	2.5%	6.5%
10	3.25%	.75%	1.0%	5.0%
15	3.25%	.75%	0.5%	4.5%
20+	3.25%	.75%	0.0%	4.0%

Payroll Growth Assumption 4.0%

Service Retirement Age

<u>Age</u>	<u>Eligible for Unreduced Retirement</u>	
	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
50-53	40%	25%
54-58	40%	20%
59	35%	20%
60	25%	20%
61		20%
62		30%
63-64		25%
65-69		30%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 5% per year from age 55 to 59.

Mortality:

Active Members RP-2000 Employee Table with generational improvements using scale AA, set forward one year

Pensioners RP-2000 Healthy Annuitant Table with generational improvements using scale AA, set forward one year

Disabled RP-2000 Disabled Table with generational improvements



APPENDIX B – PROPOSED ACTUARIAL ASSUMPTIONS

Disability:

<u>Age</u>	<u>Annual Rate</u>
20	0.11%
30	0.14%
40	0.19%
50	0.41%
60	1.48%

**Percent Married at Death
or Retirement:** 75%

**Number of Children per
Married Member:** 0

Termination:

SAMPLE RATES	
<u>Years of Service</u>	<u>Annual Rate</u>
1	11.00%
5	6.00%
10	4.25%
15	3.00%
17+	2.50%

Assets: Actuarial Value of Assets equals 75% of Expected Value plus 25% of Market Value.

Vested Terminations

<u>Age</u>	<u>Percent</u>
34 and Below	100%
35-41	70%
42-46	50%
47	40%
48	30%
49	20%
50 and Above	0%



APPENDIX C – DEMARCHE CAPITAL MARKET ASSUMPTIONS

Model Inputs - 2012

Assumes 3.1% long-term inflation rate.

Asset Class	Expected Return	Standard Deviation	Geometric Return	Asset Class	Expected Return	Standard Deviation	Geometric Return
Large Cap Stocks	9.0	18.5	7.4	Emerging Mkt Debt	8.0	11.2	7.4
Mid Cap Stocks	9.4	20.5	7.5	TIPS	5.1	6.0	4.9
Small Cap Stocks	10.3	24.0	7.7	Cash Equivalents	4.1	1.5	4.1
International Stocks	9.2	20.0	7.4	Private Real Estate	8.6	7.5	8.3
International Small Cap Stocks	10.5	24.7	7.7	Public REITS	9.5	21.0	7.5
Emerging Markets Stocks	12.0	29.0	8.2	Venture	15.0	30.0	11.0
Long Bonds	6.5	11.3	5.9	Buyouts	13.0	18.0	11.6
Intermediate Bonds	6.6	6.7	6.4	Mezzanine	11.0	11.5	10.4
Short Bonds	5.9	4.0	5.8	Distressed Debt	11.0	13.0	10.2
High Yield Bonds	8.4	11.0	7.8	Hedge Funds Conservative	7.2	6.5	7.0
International Bonds	7.0	11.0	6.4	Hedge Funds Strategic	9.0	9.0	8.6
Bank Loans	6.8	8.0	6.5	Commodities	10.0	20.0	8.2

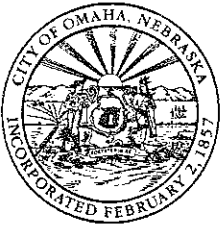
Asset Class Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Large Cap Stocks	1.00																							
2. Mid Cap Stocks	0.92	1.00																						
3. Small Cap Stocks	0.88	0.94	1.00																					
4. International Stocks	0.73	0.69	0.62	1.00																				
5. International Small Cap Stocks	0.66	0.66	0.66	0.90	1.00																			
6. Emerging Markets Stocks	0.69	0.71	0.75	0.69	0.72	1.00																		
7. Long Bonds	0.26	0.15	0.18	0.22	-0.07	-0.15	1.00																	
8. Intermediate Bonds	-0.08	-0.13	-0.19	0.27	0.12	-0.18	0.98	1.00																
9. Short Bonds	0.09	0.01	0.04	0.07	-0.33	-0.29	0.81	0.91	1.00															
10. High Yield Bonds	0.62	0.62	0.62	0.56	0.56	0.61	0.14	0.15	-0.04	1.00														
11. International Bonds	-0.08	-0.13	-0.19	0.27	0.12	-0.16	0.51	0.54	0.49	0.04	1.00													
12. Bank Loans	0.55	0.56	0.52	0.55	0.59	0.51	-0.27	-0.23	-0.35	0.84	-0.13	1.00												
13. Emerging Mkt Debt	0.52	0.53	0.52	0.44	0.36	0.61	0.13	0.13	-0.02	0.48	-0.08	0.29	1.00											
14. TIPS	-0.27	-0.20	-0.27	-0.20	-0.07	-0.08	0.40	0.54	0.43	0.13	0.27	0.13	0.134	1.00										
15. Cash Equivalents	-0.03	0.01	-0.07	-0.08	-0.18	-0.04	0.01	0.10	0.39	-0.06	0.05	-0.055	0.016	0.01	1.00									
16. Private Real Estate	0.10	0.06	0.05	0.12	0.09	0.00	-0.13	-0.12	0.00	-0.09	-0.06	0.023	-0.005	0.03	0.43	1.00								
17. Public REITS	0.55	0.58	0.66	0.53	0.56	0.43	0.12	0.08	-0.06	0.59	0.07	0.575	0.389	0.08	-0.04	0.19	1.00							
18. Venture	0.48	0.47	0.49	0.32	0.23	0.35	-0.08	-0.10	-0.11	0.16	-0.18	0.168	0.325	-0.14	0.07	0.14	0.12	1.00						
19. Buyouts	0.63	0.54	0.56	0.49	0.49	0.48	-0.20	-0.25	-0.33	0.29	-0.31	0.422	0.438	-0.12	0.00	0.21	0.40	0.40	1.00					
20. Mezzanine	0.33	0.32	0.34	0.28	0.22	0.30	-0.14	-0.17	-0.23	0.23	-0.11	0.177	0.208	0.01	0.08	0.21	0.26	0.50	0.38	1.00				
21. Distressed Debt	0.71	0.73	0.75	0.70	0.74	0.68	-0.22	-0.26	-0.43	0.75	-0.15	0.692	0.513	0.06	-0.05	0.19	0.66	0.35	0.64	0.30	1.00			
22. Hedge Funds Conservative	0.65	0.66	0.62	0.62	0.52	0.60	-0.15	-0.15	-0.27	0.62	-0.19	0.655	0.507	0.14	0.24	0.34	0.46	0.58	0.67	0.51	0.83	1.00		
23. Hedge Funds Strategic	0.56	0.58	0.55	0.46	0.37	0.57	-0.01	-0.01	-0.06	0.41	-0.08	0.442	0.453	-0.03	0.24	0.05	0.31	0.62	0.44	0.34	0.60	0.76	1.00	
24. Commodities	0.15	0.19	0.14	0.32	0.38	0.29	-0.17	-0.15	-0.25	0.33	0.00	0.492	0.195	0.35	-0.01	0.24	0.32	0.16	0.25	0.27	0.46	0.54	0.25	1.00

Appendix E

Omaha Police and Fire Retirement Plan Information

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City of Omaha
Jean Stothert, Mayor

October 15, 2015

Senator Al Davis, Interim Chairperson
Nebraska Retirement Systems Committee
PO BOX 94604
State Capitol
Lincoln, NE 68509-4604

Dear Senator Davis:

Neb. Rev. Stat § 13-2402(3) requires a governing entity that offers a defined benefit retirement plan to file a report if contributions do not equal the actuarial requirement for funding or the funded ratio is less than eighty percent. The City of Omaha is submitting this report regarding the City of Omaha Police & Fire Retirement System (COPFRS) because the funded ratio is less than eighty percent.

The City through its negotiations with the public safety bargaining agents has made efforts to address the funding shortfall in COPFRS. Some of those efforts are addressed below. The table below compares the actuarial data for the current and previous plan years:

ITEM	2014	2015
Funding Status	47%	50%
Net Assets (actuarial value)	\$548,360,223	\$590,191,585
Unfunded Actuarial Accrued Liability	\$662,607,530	\$598,810,636
Normal Cost	\$27,285,957	\$26,946,719
Member Contribution Rate	15.35%-17.23%	15.35%-17.23%
Employer Contribution Rate	32.97%-33.67%	32.97%-33.67%
Actuarial Required Contribution	\$52,895,180 (2013)	\$43,524,890 (2014)
Blended Combined Contribution Rate	50.594%	50.581%
Actuarial Rate of Contribution (ARC)	52.138%	50.031%
Contribution Shortfall/(Margin)	1.544%	(0.550%)

In 2015, the Actuarial Committee elected to change the valuation methodology for the members who are currently participating or are expected to participate in the Deferred Retirement Option Plan (DROP) in the future. Under the new methodology, the Entry Age Normal Cost calculation spreads the cost of benefits over the member's entire career. As part of the change in methodology, certain actuarial assumptions related to the DROP were developed. These include the percentage of eligible members assumed to elect to participate in the DROP, the DROP period, and the interest rate assumed to be credited to the DROP account.

There are numerous circumstances that led to the current underfunding. When the system was funded in the late 1990s, benefits were increased and even though the actuarial cost was calculated, the benefits appear to have exceeded those costs. There also have been some years where the investment loss was

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Stephen Curtiss
Finance Director

Allen Herink
City Comptroller

historically large. During the economic downturn of early 2000s, there were some additional benefits (comp time) negotiated as part of wage and other compensation deferments. It was anticipated that people would take advantage of the additional time off, but many did not, resulting in an increase in the compensation amount upon which the pension was calculated. Another factor has been that wages have not increased at the rate in the actuarial assumptions.

Significant efforts were made to address the funding status of COPFRS starting in 2008. In 2008, then Mayor Mike Fahey established the Bates Commission to examine the issue. The Bates Commission, made up of business leaders, union leaders, and City leaders, made a number of recommendations in their final report. The report was the impetus for collaborative efforts between the City and its unions to address the funding issue in labor negotiations. In an effort to improve the funding status, the City increased contributions and modified pension benefits through labor agreements with the police union in October, 2010 and with the fire union in December, 2012. The changes in contributions and benefits included:

- Changing minimum retirement age from 45 to 50
- Requiring 30 years of service instead of 25 years to get the maximum benefit
- Implementing a Career Overtime Average (COTA) so that employees could not artificially enhance their pension by working a lot of overtime or selling comp time in their last year of employment
- Smoothing the salary on which a pension calculation was based from highest 1 year to highest 3 years
- Pensions for new hires was based only on base salary
- For all groups excluding the police union, capping pension for new hires at 65% and requiring 30 years of service
- Increased City contributions to the system by 13% to 14%

We believe some of the changes described above are starting to see a positive effect. As of January 1, 2015, the system had market assets of approximately \$600 million and a funded ratio of 50%. It had a funded ratio of 49% in 2014 and 44% in 2013. The actuarial contribution rate needed for the system on 1/1/2015 was 50.031% and the total amount being contributed was 50.581% demonstrating that the amount being put is sufficient for the first time in many years. The most recent projection had the system fully funded in approximately 21 to 22 years.

As requested, we enclosed the most recent Actuarial Experience Study which was submitted in September 2013, a Projection of Long Term Funding dated October 10, 2014 and the most recent Actuarial Valuation Report which was completed in August, 2015.

If you or the Committee should have any questions regarding this report please let me know.

Sincerely,



Stephen B. Curtiss
Finance Director

Police & Fire Pension System

Prepared by:

CITY OF OMAHA
Finance Department



Finance Director Stephen B. Curtiss
November 18, 2015

**REPORT TO MEMBERS OF THE POLICE AND FIRE RETIREMENT SYSTEM
YEAR ENDING DECEMBER 31, 2014**

The City of Omaha Police & Fire Retirement System became effective on January 1, 1961. Certain of its provisions, which are governed by Chapter 22; Article III of the Omaha Municipal Code and by current labor contracts, are summarized herein.

Membership in the plan is limited to and shall include only probationary and regular uniformed personnel of the Police & Fire Departments. In addition to contributions itemized below, the City contributes \$1,327,600 annually to liquidate accrued liability for prior service credit.

Fire Bargaining employees contribute by payroll deduction 17.15% of their total bi-weekly salary. The City contributes 32.97% of each member's total bi-weekly salary.

Fire Management employees contribute by payroll deduction 17.23% of their total bi-weekly salary. The City contributes 33.17% of each member's total bi-weekly salary.

Police Bargaining employees contribute by payroll deduction 15.35% of their bi-weekly salary. The City contributes 33.67% of each member's bi-weekly salary.

Police Management employees contribute by payroll deduction 16.35% of their bi-weekly salary. The City contributes 33.17% of each member's bi-weekly salary.

**Police and Fire Retirement System
Cash Flow Analysis - Last Five Fiscal Years**

Receipts:	2010	2011	2012	2013	2014
Employee Contributions	\$ 16,271,773	\$ 16,916,367	\$ 19,641,660	\$ 21,659,947	\$ 19,623,633
Employer Contributions	\$ 22,855,893	\$ 29,447,968	\$ 33,974,437	\$ 42,511,150	\$ 40,524,386
Prior Service Contributions	\$ 1,327,600	\$ 1,327,600	\$ 1,327,600	\$ 1,327,600	\$ 1,327,600
Investment Income	\$ 66,848,504	\$ 1,473,015	\$ 57,435,625	\$ 90,514,372	\$ 28,486,311
Security Lending Income	\$ 10,410	\$ 108,677	\$ 96,605	\$ 50,328	\$ 8,484
	<u>\$ 107,314,179</u>	<u>\$ 49,273,627</u>	<u>\$ 112,475,927</u>	<u>\$ 156,063,397</u>	<u>\$ 89,970,414</u>
Disbursements:					
Retirement Pensions	\$ 55,911,664	\$ 58,101,622	\$ 59,622,531	\$ 62,548,572	\$ 64,781,852
Death Benefits	\$ 156,507	\$ 25,500	\$ 148,885	\$ 16,208	\$ 240,605
Refunds	\$ 520,997	\$ 295,730	\$ 585,861	\$ 559,981	\$ 1,174,594
Investment Management Fees	\$ 2,481,747	\$ 2,435,175	\$ 2,459,489	\$ 2,813,925	\$ 2,966,034
Other Expenditures	\$ 992,998	\$ 626,511	\$ 288,413	\$ 430,200	\$ 374,813
	<u>\$ 60,063,914</u>	<u>\$ 61,484,538</u>	<u>\$ 63,105,179</u>	<u>\$ 66,368,886</u>	<u>\$ 69,537,898</u>
Excess of Receipts Over Disbursements	<u>\$ 47,250,266</u>	<u>\$ (12,210,911)</u>	<u>\$ 49,370,748</u>	<u>\$ 89,694,512</u>	<u>\$ 20,432,516</u>

Financial Information - Last Five Fiscal Years

	2010	2011	2012	2013	2014
System Total Assets	\$ 452,640,303	\$ 440,429,393	\$ 489,800,140	\$ 579,494,652	\$ 599,927,167
Employee Contributions	\$ 16,271,773	\$ 16,916,367	\$ 19,641,660	\$ 21,659,947	\$ 19,623,633
Employer Contributions	\$ 24,183,493	\$ 30,775,568	\$ 35,302,037	\$ 43,838,750	\$ 41,851,986

Percentage Distribution of Receipts

	2010	2011	2012	2013	2014
Employee Contributions	15.2	34.3	17.5	13.9	21.8
Employer Contributions	22.5	62.5	31.4	28.1	46.5
Investment Income	62.3	3.2	51.1	58.0	31.7
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

POLICE & FIRE EMPLOYEES' RETIREMENT SYSTEM

RETIRED MEMBERSHIP

132016

POLICE:

	3100	3200	3300	3400	3500	3600	3800	3900	4000	4100	
	Service Retirees	Surviving Spouse	Service Disability	Non-Service Disability	Children	Ex-Spouse	Service Widow	Service Child	Non-Service Widow	Non-Service Child	
January 1, 2014	480	68	132	12	16	12	47	6	8	0	781
Pensions Granted	10	5	4	0	0	2	7	5	0	0	33
Pensions Ceased:											
Deaths	-6	-2	-8	-1	0	0	-1	0	-2	0	-20
Corrections			-1		-5		-1				-1
Other								-1			-6
December 31, 2014 TOTAL:	484	71	127	11	11	14	53	10	6	0	787

132015

FIRE:

	Service Retirees	Surviving Spouse	Service Disability	Non-Service Disability	Children	Ex-Spouse	Service Widow	Service Child	Non-Service Widow	Non-Service Child	
January 1, 2014	481	60	81	8	2	22	43	0	5	0	702
Pensions Granted	16	6	0	0	3	0	3	3	1	0	32
Pensions Ceased:											
Deaths	-7	-4	-4	-1	0	0	-2	0	0	0	-18
Corrections											0
Other						-1					-2
December 31, 2014 TOTAL:	490	61	77	7	5	21	44	3	6	0	714

Respectfully submitted,

Stephen Curtiss
Finance Director

Board of Trustees:

- Jim Sklenar, Chairperson
- Michael Henrich, Vice-Chairperson
- Aaron Hanson, Secretary
- Franklin Thompson, City Councilmember
- Robert A Mooney, Citizen Representative
- Mikki Frost, Human Resources Director
- Stephen Curtiss, Finance Director
- Janine Kirk, Recording Secretary

Total Fund Performance Review

Performance & Benchmarks

9/30/2015

	One Quarter	Year To Date	One Year	Three Years	Five Years	Ten Years	Since Inception 2Q 1980 (%)
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Domestic Equity	(11.5)	(7.2)	(2.0)	11.8	11.8	6.3	
International Equity	(13.4)	(9.0)	(12.9)	3.3	2.4	3.0	
Domestic Fixed Income	(1.5)	0.5	1.7	4.0	6.0	6.5	
Domestic Real Estate	5.5	13.8	18.7	15.1	15.8	6.7	
Domestic Timberland	(0.8)	(1.3)	(1.4)	1.8	(0.0)		
Domestic Commodities	(13.9)	(17.9)	(33.7)	(19.1)	(9.7)		
Domestic Private Equity	6.9	12.1	21.5				
Domestic Cash	0.0	0.0	0.0	0.0	0.6		
Total Fund	(6.0)%	(1.7)%	(0.0)%	7.9 %	8.4 %	5.3 %	9.3 %
Absolute Objective¹	1.9	5.9	8.0	8.0	8.0	8.0	8.0
Relative Objective²	(6.1)	(2.0)	(0.6)	7.2	7.8	5.7	
Russell 1000	(6.8)	(5.2)	(0.6)	12.7	13.4	7.0	
Russell 2000	(11.9)	(7.7)	1.2	11.0	11.7	6.5	
MSCI EAFE	(10.2)	(5.3)	(8.7)	5.6	4.0	3.0	
MSCI EAFE Small Cap	(6.8)	2.6	0.3	10.2	7.3	4.7	
MSCI Emerging Markets	(17.9)	(15.5)	(19.3)	(5.3)	(3.6)	4.3	
Barclays Govt/Credit	1.2	0.9	2.7	1.6	3.1	4.6	
Merrill Lynch US High Yield Cash Pay	(4.9)	(2.5)	(3.5)	3.4	5.9	7.0	
Barclays US TIPS	(1.1)	(0.8)	(0.8)	(1.8)	2.5	4.0	
Citigroup 3 Mo. T-Bills	0.0	0.0	0.0	0.0	0.1	1.3	
NCREIF Property	3.1	10.1	13.5	11.9	12.5	8.0	
NCREIF Timberland Lagged	0.5	8.4	10.0	9.8	6.1	8.0	
Bloomberg Commodity Index	(14.5)	(15.8)	(26.0)	(16.0)	(8.9)	(5.7)	
Omaha Police & Fire PE	6.9	12.1	21.5				

¹ + 8%

² 16% R1000, 12% R2000, 7% EAFE, 10% EAFE SC, 10% EM, 5% BC GC, 15% ML HY, 0% BC TIPS, 0% 3MTBill, 13.5% NCREIF, 3.5% Timberld, 3% BB Comm, 5% PF PE - Objective has changed since inception



Key Valuation Measurements

	<u>2015</u>	<u>2014</u>	<u>2013</u>
Actuarial Liability (\$M)	\$1,189	\$1,171	\$1,109
Actuarial Assets (\$M)	<u>590</u>	<u>548</u>	<u>496</u>
Unfunded Actuarial Liability	\$599	\$623	\$613
Funded Ratio (Actuarial Assets)	50%	47%	45%
Funded Ratio (Market Assets)	50%	49%	44%
Actuarial Contribution Rate	50.031%	52.138%	62.272%
Scheduled Rate (Total)	<u>(50.581%)</u>	<u>(50.594%)</u>	<u>(51.205%)</u>
Contribution Shortfall/(Margin)	(0.550%)	1.544%	11.067%

Note: numbers may not add due to rounding.
 Amortization period reset to 30 years in 2014 valuation.



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October 10, 2014

Board of Trustees
City of Omaha Police and Fire Retirement System
1819 Farnam Street
Omaha, NE 68183

Re: Projections of Long Term Funding

Dear Members of the Board:

At your request, we have completed an actuarial projection of the future valuation results for the City of Omaha Police and Fire Retirement System (System) over the next 30 years. This projection, which is based on the January 1, 2014 actuarial valuation results, was done to examine the long-term impact of the DROP program. Because it is the first study that has been performed since the Fire contract was finalized late in 2012, there is an added benefit in that the projection reflects the current plan provisions, including the benefit and contribution changes in the most recent Police and Fire contracts and the actual experience on both the System's assets and liabilities in the past.

As you know, the Deferred Retirement Option Plan (DROP) was added to the plan design of the System as part of the last round of union negotiations. The DROP was designed to be "at least cost neutral to the pension system" which, in general, means the System's funding is not negatively impacted by the DROP. In conjunction with the projection study we were asked to estimate the long-term impact of the DROP provision on the System's funding, a difference in focus from the short-term analysis we have provided in the past in conjunction with the annual actuarial valuations.

This letter summarizes the results of our study and quantifies the impact of the DROP provision on the funded ratio, the unfunded actuarial liability, and the full funding date (the year in which the actuarial assets is equal to or greater than the System's liability, i.e., no unfunded actuarial liability exists). To make this comparison, the System's funding was studied each year over the long term under two scenarios:

- (1) the current plan provisions, including the DROP, and
- (2) the current plan provisions except the DROP is removed.

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The basic plan provisions related to the DROP are summarized below:

- (1) Police members with at least 20 years of service at the time of the legal execution and ratification of the labor agreement are eligible to participate in DROP at 22.5 years of service, if they are at least age 45. All other Police members who have reached minimum pension age may participate at 25 years of service. Fire members with at least 20 years of service and who were at least age 50 or Fire members with at least 25 years of service and age 45 at the time of the legal execution and ratification of the labor agreement are eligible to participate in DROP. All other Fire members may participate in DROP at the minimum pension age if they have at least 25 years of service.
- (2) The member must make an irrevocable election to participate in DROP for a minimum of three and a maximum of five years.
- (3) During the DROP election period, an amount equal to the retirement benefit that the DROP participant would have received if he had retired the day before he elected into DROP shall be credited to the DROP participant's DROP account (a notional account within the pension plan).
- (4) The DROP participant continues to pay pension contributions into the system as if the participant were an active employee. The City also contributes to the retirement system on the DROP participants' compensation. None of the contributions are applied to the member's DROP account.
- (5) The member's DROP account shall be credited annually with interest, as determined by the Pension Board in consultation with the actuary, in the range of 0% to 7%. The interest rate is intended to be cost-neutral. To further this goal, interest may only be credited in a year in which the actual rate of return on the investments (on the market value) of the plan reach the assumed investment return and may not exceed 50% of the actual rate of return.
- (6) Upon actual retirement at the end of the DROP election period, a DROP participant is entitled to receive the DROP account balance and to begin receiving the monthly retirement benefit being paid into the DROP account.

Actuarial Assumptions for DROP

In the annual actuarial valuation, the liability for members in DROP is determined by valuing the DROP members as retirees and then increased by their DROP balances. Therefore, the valuation does not require or use specific assumptions related to DROP such as the probability of election into DROP by active members, the length of DROP period, and the interest rate credited to the DROP account. While the annual valuation treats the members in DROP as retirees for purposes of calculating their liability, the covered payroll of members in DROP is included in determining the contribution rate for the payment on the unfunded actuarial liability.



This projection study required a different approach to ensure the impact of DROP on covered payroll and the timing of new entrants was appropriately reflected. The approach used reflected the impact of the DROP directly in the ongoing cost (normal cost) of the System so the actuarial liability for members is accrued over the entire working career, including years while participating in DROP. With this approach, the contributions made by both the members and the City during DROP are also directly reflected because the estimated total covered payroll includes those members in DROP. As a result, assumptions regarding the probability of electing into DROP, the length of the DROP period, and the interest rate credited on the DROP account balance were all needed to perform the calculations in the projections. The DROP provision has been in place a relatively short amount of time: since September, 2010 for Police members and January, 2013 for Fire members. From September, 2010 through December, 2013 there were 31 Police officers who participated in DROP and 2 Fire members. This provides very little data upon which to develop an assumption regarding DROP participation although we did study the DROP election rate for this group. In addition, the benefit structure for members in the last few years is not the same as the benefit structure for many of the other current active members and the future members. Therefore, the probability of electing into DROP can be expected to vary through time for members in the different benefit structures.

The specific DROP assumptions used in the projections are summarized below:

Group	No DROP Provision	With DROP Provision
Police members with at least 20 years of service at latest contract effective date or Fire members with at least 15 years of service at latest contract date	Retire at the earlier of completion of 25 years of service or age 62	30% retire and 70% elect DROP for 5 years, but not past age 60
Police members who did not have at least 20 years of service at latest contract effective date or Fire members who did not have at least 15 years of service at latest contract date	Retire at the earlier of completion of 27 years of service or age 62	30% retire and 70% elect DROP for 5 years, but not past age 60
Police members hired after 1/1/2010 or Fire members hired after 1/1/2013	Retire at the earlier of completion of 30 years of service or age 62	30% retire and 70% elect DROP for 5 years, but not past age 60
Interest rate credited on DROP account	Not applicable	4% per annum
DROP period	Not applicable	5 years (but not past age 60 and not less than 3 years)
Salaries	Same as valuation assumptions	Longevity pay of 4.5% of total salary ceases to be paid once a member enters DROP.



Results

The projection results that were used in our analysis require the use of many assumptions. Please see the “Disclaimers, Caveats, and Limitations” section later in this letter for a detailed discussion of the assumptions and methods used to produce the projected financial results for the System. To the extent actual experience deviates from that assumed, the future valuation results will also vary, perhaps significantly, from those in our projections.

Based on our projections, the System is expected to reach fully funded status (no unfunded actuarial liability) in the January 1, 2036 valuation under the current plan design which includes the DROP. If the DROP is excluded from the plan design, the System is not expected to reach fully funded status until the January 1, 2038 valuation.

Exhibit 1, attached to this letter, shows the projected funded ratio (actuarial assets divided by actuarial liability) for each year in the thirty year projection period under the two scenarios, with and without the DROP provision. Exhibit 2 shows the same asset and liability information, but presented in a different format. The black bar is the portion of the total actuarial liability that is funded (which is equal to the lesser of the asset value and the actuarial liability) and the red bar represents the unfunded actuarial liability. The green bars near the end of the projection period reflect the fact that assets exceed the actuarial liability. As these exhibits indicate, the System is projected to reach full funding (no unfunded actuarial liability) in 2036 with the current DROP provision and in 2038 without the DROP provision.

The projections are dependent on a number of factors including the actuarial assumption used. If other assumptions were used, the results would vary perhaps significantly.

Disclaimers, Caveats, and Limitations

This analysis is based primarily upon the benefit provisions and actuarial assumptions used in the January 1, 2014 actuarial valuation (with and without the DROP), additional actuarial assumptions as disclosed in this letter, and the actuarial projection model prepared by Cavanaugh Macdonald Consulting, LLC. Significant items are noted below:

- An investment return assumption of 8% was used to project both assets and liabilities.
- The liabilities and costs used in our analysis were based on the actuarial assumptions regarding mortality, disability, retirement, salary increases, and termination of employment used in the most recent actuarial valuation. Additional assumptions, other than the valuation assumptions, are set out elsewhere in this letter.
- Changes in the plan design (with or without DROP) and the resulting benefit amounts may have an effect on future termination and retirement patterns. Whether, and how, retirement and termination of employment patterns will ultimately be impacted cannot be known at this time.



- The number of active members in the Police group and the Fire group was assumed to remain at the current level over the entire projection period. When current members were assumed to terminate or retire, they were replaced by new hires with a similar entry age as recent new hires.
- All plan provisions in both projections were the same other than whether or not the plan design included the DROP.
- The entry age normal cost method was used to develop the normal costs.
- We relied upon the membership data as provided by the City for the January 1, 2014 actuarial valuation. The numerical results depend on the integrity of this information. If there are material inaccuracies in the data, the results presented herein may be different and our calculations may need to be revised.

The projections used in our analysis are based on one set of assumptions out of a range of many possibilities over a 30 year projection period. A different set of assumptions could lead to different results. The projections do not predict the System's financial condition or its ability to pay benefits in the future, and do not provide any guarantee of future financial soundness of the System. Over time, a defined benefit plan's total cost will depend on a number of factors including the amount of benefits paid, the number of people paid benefits, the duration of the benefit payments, plan expenses, and the amount of earnings on assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the time our calculations were prepared. Because not all of the assumptions will unfold exactly as expected, actual results will differ from the projections. To the extent that actual experience deviates significantly from the assumptions, the funded status of the System could be significantly better or significantly worse than indicated in this study.

Please note that this analysis applies only to the financial impact of the DROP on the Retirement System and is intended to be comparative in nature, not predictive. The election of a member into DROP may also have a cost impact outside of the Retirement System. Any such cost impact outside the System has not been included in this analysis.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We are available to provide additional information if it is necessary or desirable.

Please feel free to contact me if you have questions or need anything further.

Sincerely,

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

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

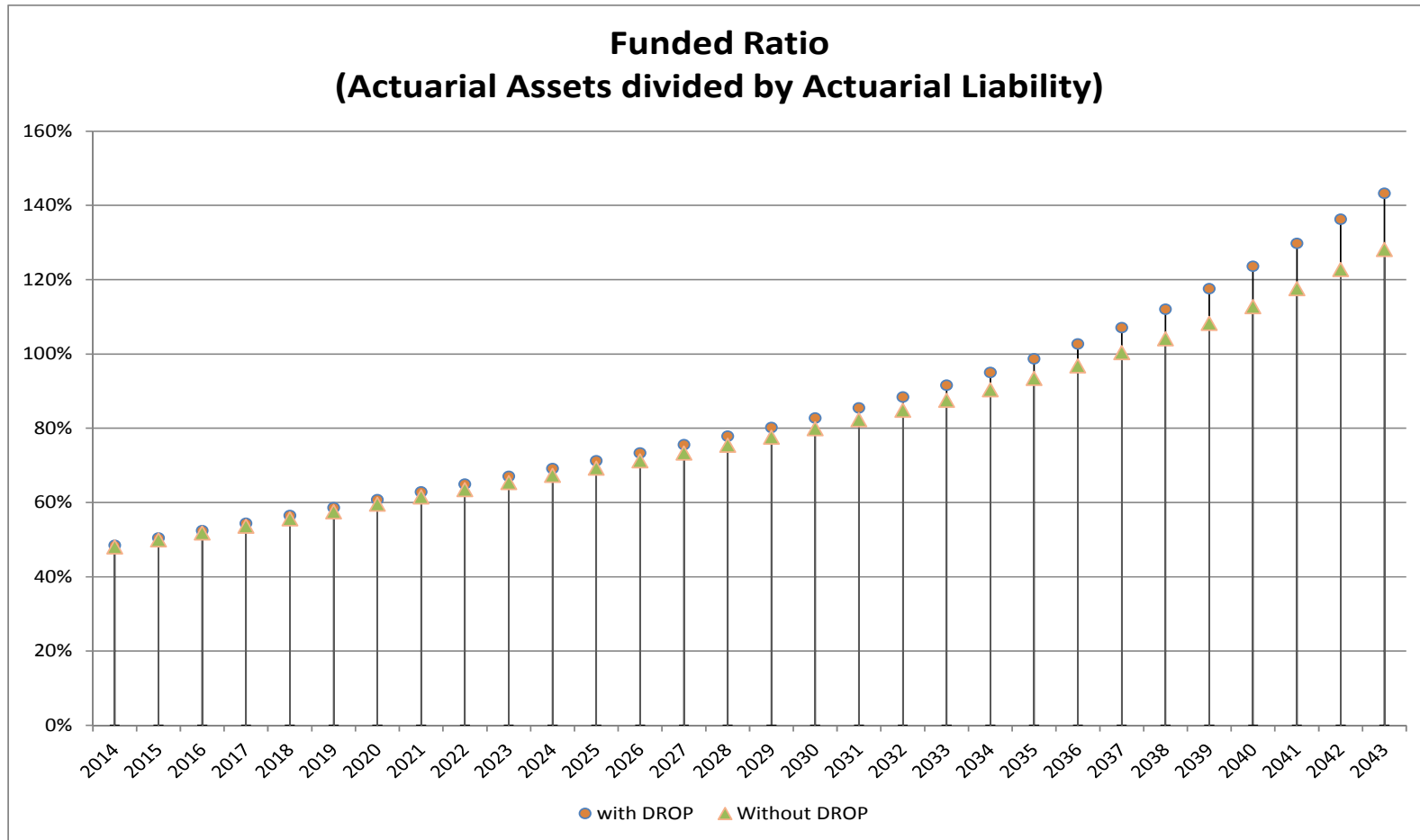
A handwritten signature in blue ink that reads 'Brent A. Banister'.

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



Exhibit 3

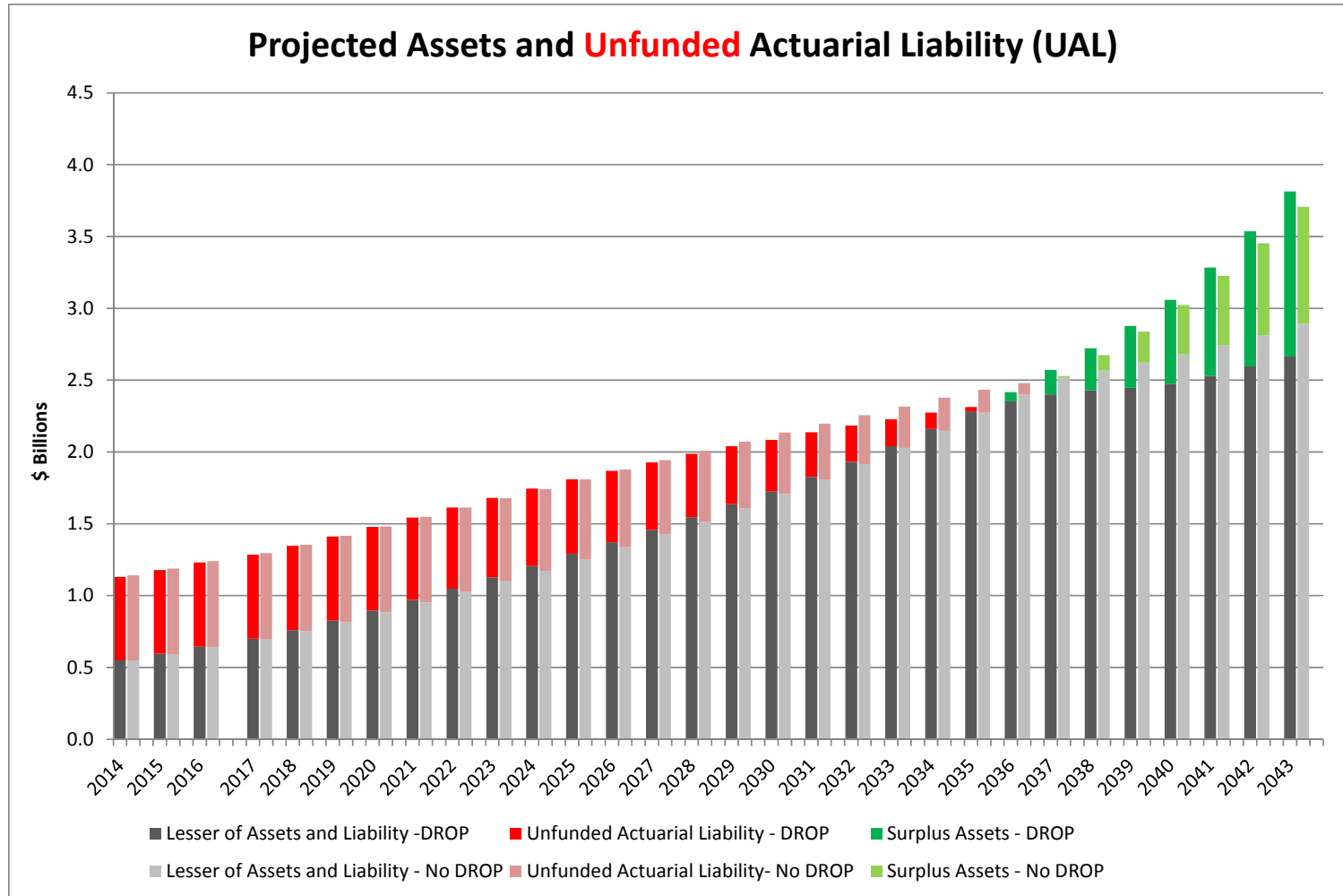
Omaha Police and Fire Retirement System



These projections assume that all actuarial assumptions are met in each future year, including the 8% assumed rate of return on assets. This graph should only be considered with the letter from Cavanaugh Macdonald Consulting dated October 10, 2014 which contains important information regarding the assumptions and methods used in the projections.



Exhibit 2 Omaha Police and Fire Retirement System



These projections assume that all actuarial assumptions are met in each future year, including the 8% assumed rate of return on assets. This graph should only be considered with the letter from Cavanaugh Macdonald Consulting dated October 10, 2014 which contains important information regarding the assumptions and methods used in the projections.



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**CITY OF OMAHA POLICE AND FIRE
RETIREMENT SYSTEM**

**Five Year Experience Study
For Period Ending December 31, 2011**

Submitted: September 27, 2013





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Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

September 17, 2013

Board of Trustees
City of Omaha Police and Fire Retirement System
1819 Farnam Street
Omaha, NE 68183

Dear Trustees:

It is a pleasure to submit this report of our investigation of the experience of the City of Omaha Police and Fire Retirement System (System) for the period of January 1, 2007 through December 31, 2011. This report was delayed at the request of the Board until negotiations with the fire union had been completed, which occurred in January, 2013.

The purpose of this report is to communicate the results of our review of the actuarial methods and the economic and demographic assumptions to be used in the completion of the next actuarial valuation. In some cases, we recommend changes from the prior assumptions that are designed to better anticipate the emerging experience of the Plan. Actual future experience, however, may still differ from these assumptions.

In preparing this report, we relied without audit on information supplied by the City for the annual actuarial valuations. Some of this data was provided by the prior actuarial firm, Milliman, Inc. If any data or other information is inaccurate or incomplete, our analysis and recommendation may be impacted and a revised report may need to be issued.

We hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

We further certify that the assumptions developed in this report satisfy ASB Standards of Practice, in particular, No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* and No. 35, *Selection of Demographic and Other Non-economic Assumptions for Measuring Pension Obligations*.

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Board of Trustees
September 17, 2013
Page 2

We look forward to our discussions and the opportunity to respond to your questions and comments.

I, Patrice A. Beckham, am a member of the American Academy of Actuaries, an Enrolled Actuary and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I, Brent A. Banister, am a member of the American Academy of Actuaries, an Enrolled Actuary and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

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

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal & 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 1 – INTRODUCTION

The purpose of an actuarial valuation is to provide a timely best estimate of the ultimate costs of a retirement system. Actuarial valuations of the City of Omaha Police and Fire Retirement System (COPFRS or the System) are prepared annually to determine the actuarial contribution rate to fund the System on an actuarial reserve basis, i.e. the current assets plus future contributions, along with investment earnings will be sufficient to provide the benefits promised by the System. The valuation requires the use of certain assumptions with respect to the occurrence of future events, such as rates of death, disability, termination of employment, retirement age and salary changes to estimate the obligations of the System.

The basic purpose of an experience study is to determine whether the actuarial assumptions currently in use have accurately anticipated actual emerging experience. This information, along with the professional judgment of the Board, its advisors, and the actuary, is used to evaluate the appropriateness of continued use of the current actuarial assumptions. When analyzing experience and assumptions, it is important to realize that actual experience is reported short term while assumptions are intended to be long term estimates of experience. Therefore, no single experience study period should be given full credibility in setting actuarial assumptions. If significant differences exist between what is expected from our assumptions and actual experience, our strategy is usually to recommend a change in assumptions that would produce results somewhere between the actual and expected experience.

Our Philosophy

Similar to an actuarial valuation, the calculation of actual and expected experience is a fairly mechanical process. From one actuary to another, there should be very little difference in numerical results. However, the setting of assumptions is a different story, as it is more art than science. In this report, we have recommended a few changes to certain assumptions. To allow a better understanding of our thought process, we offer a brief summary of our philosophy:

- **Don't Overreact:** When we see significant differences in actual versus expected experience, we generally do not adjust our rates to reflect the entire difference. If the experience is credible and we believe it reflects future expectations, we will typically recommend rates somewhere between the old rates and the new experience. If the experience during the next study period shows the same result, we will probably recognize the trend at that point in time or at least move further in the direction of the observed experience. On the other hand, if actual experience in the next study is closer to its prior level, we will not have overreacted, possibly causing volatility in the actuarial contribution rates.
- **Anticipate Trends:** If there is an identified trend that is expected to continue, we believe that this should be recognized. An example is the retiree mortality assumption. It is an established trend that people are living longer. Therefore, we believe the best estimate of liabilities in the valuation should reflect the expected increase in life expectancy.
- **Simplify:** In general, we attempt to identify which factors are significant and eliminate or ignore the ones that do not materially improve the accuracy of the liability projections.



SECTION 1 – INTRODUCTION

At the request of the Board of Trustees, Cavanaugh Macdonald Consulting, LLC performed a study of the experience of the City of Omaha Police and Fire Retirement System for the period January 1, 2007 through December 31, 2011. This report presents the results and recommendations of our study which, if approved, will be implemented in the January 1, 2014 actuarial valuation of the System.

These assumptions have been developed in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the applicable Standards of Practice adopted by the Actuarial Standards Board of the American Academy of Actuaries.

SCOPE OF THIS REPORT

The actuarial valuation utilizes various actuarial methods and two different types of assumptions: economic and demographic. Economic assumptions are related to the general economy and its impact on the System. Demographic assumptions are based on the emergence of the specific experience of the Systems' members.

All of the major actuarial assumptions that will be used in the January 1, 2014 Actuarial Valuation have been reviewed in this Study. The remainder of this report is divided as follows:

- SECTION 2 EXECUTIVE SUMMARY**
- SECTION 3 ACTUARIAL METHODS**
- SECTION 4 ECONOMIC ASSUMPTIONS**
- SECTION 5 DEMOGRAPHIC ASSUMPTIONS**
- SECTION 6 MORTALITY**
- SECTION 7 RETIREMENT**
- SECTION 8 DISABILITY**
- SECTION 9 TERMINATION OF EMPLOYMENT**
- SECTION 10 SALARY INCREASES**
- SECTION 11 MISCELLANEOUS ASSUMPTIONS**



SECTION 2 – EXECUTIVE SUMMARY

A brief summary of the results of our findings and recommendations is shown below:

Actuarial Methods

Asset Valuation Method

COPFRS values assets, for actuarial valuation purposes, based on the principle that the difference between actual and expected investment returns should be subject to partial recognition to smooth out fluctuations in the total return achieved by the fund from year to year. This philosophy is consistent with the long-term nature of a retirement system. Under the COPFRS method, the actuarial value of the assets is the expected value of assets plus 33% of the difference between market value and expected value, where the expected value is last year's actuarial value and subsequent cash flows into and out of the fund accumulated with interest at the valuation rate (8%). This is mathematically equivalent to using a weighted average of $2/3^{\text{rds}}$ of the expected value and $1/3^{\text{rd}}$ of actual market value.

Although the current method is a reasonable method and it meets actuarial standards we believe moving to a different weighting of actual and expected values will provide more smoothing of market returns. Therefore, we recommend the current asset valuation method be retained, but that 25% of the difference between actual and market value of assets be recognized, rather than 33%. This is equivalent to using a weighted average of 75% of the expected value and 25% of actual market value.

Amortization of Unfunded Actuarial Liability (UAL)

COPFRS currently develops the actuarial contribution rate using a closed 30 year period for amortizing the UAL as determined on the valuation date. As of the January 1, 2013 valuation, 20 years remain in the current amortization period. Under the current approach, changes in the UAL (experience gains/losses, assumption changes and plan changes) will be spread over a shorter and shorter number of years as time passes and the years to amortize decline. By the time the next experience study is performed there will be fifteen years remaining in the initial amortization period. This will increase the volatility of the actuarial contribution rate.

There is a different approach for the amortization of the unfunded actuarial liability (UAL) that would eliminate this concern. Rather than in each valuation calculating one single amortization base equal to the UAL and amortizing that single base over the remaining years in the amortization period, we recommend creating a new amortization base each year that is equal to the unscheduled change in the UAL and then amortizing each of the new bases over a closed 20-year period. This approach results in multiple amortization bases which, when added together, are equal to the System's total UAL. The total UAL amortization payment would then be the sum of the scheduled payments for that year for all of the amortization bases. The advantage of this approach is that it creates a more stable contribution rate for the payments on the UAL. The disadvantage is that the method is more complex than the current method and harder to communicate, especially to lay persons.

Significant changes have been made in both the police and fire contracts to address the concerns about COPFRS' long term funding. As a result of increased contributions and benefit reductions for both current and future employees, the System is projected to be 100% funded in 2055, if all actuarial assumptions are met. Over time the amount of the total contributions available to pay off the UAL increases significantly. Recognizing that the current financing plan in place is very long term in nature, it



SECTION 2 – EXECUTIVE SUMMARY

is reasonable to reset the amortization period so the calculation of the Actuarial Contribution Rate reflects the long term nature of the funding plan for the System. Under current Governmental Accounting Standards, the maximum number of years to amortize the UAL is 30 years. Therefore, we recommend the existing UAL on January 1, 2014 be amortized over a closed 30-year period and new bases, as described earlier, be established in each subsequent valuation (January 1, 2015 and beyond) and amortized over a closed 20-year period. This change should make the Actuarial Contribution Rate more meaningful when used as a benchmark for evaluating the sufficiency of the actual contribution rates.

Economic Assumptions

The following set of economic assumptions is recommended:

	<u>Current</u>	<u>Proposed</u>
• Investment Return:	8.00%	8.00%
• Inflation Assumption:	3.50%	3.25%
• General Wage Increase:	4.00%	4.00%

Please note that although the general wage increase remains 4.00%, the components of that assumption have changed. The inflation assumption was lowered from 3.50% to 3.25%, while the productivity component was increased from 0.50% to 0.75%.

Given the current economic conditions, we believe it is unlikely that general wage increases of 4.0% will be granted to governmental employees until the economy fully recovers and tax revenues improve. To the extent that actual salary increases are below the 4.0% assumption in the short term, actuarial liabilities will be lower than expected and an actuarial gain will occur. This approach provides some conservatism in the valuation process as it results in higher liabilities and only recognizes the impact of lower salary increases as they actually occur.

Demographic Assumptions

The demographic information gathered in this experience study had limited credibility due to a number of factors. The study period (calendar years 2007 through 2011) included one year (2007) where significant increases in the benefit formula were effective. It also included several years during a severe economic downturn. In addition, during this period significant pension changes were implemented for Police members and labor negotiations occurred for Fire members. These factors likely impacted the actual, observed experience for certain events such as retirement, termination of employment, and salary increases. Thus, we believe it is appropriate to be cautious in making significant adjustments to the current assumptions based on the results of this study period alone. Having said that, we are recommending three changes to the current demographic assumptions:

- The number of actual disabilities in this study period was much lower than expected based on the current actuarial assumption. This experience is consistent with that observed in the prior experience study. Therefore, we recommend the disability rates be reduced by 20% across the board. This reduction still provides for a reasonable margin of conservatism in the new rates.



SECTION 2 – EXECUTIVE SUMMARY

- We are recommending the mortality rates used to anticipate the duration of benefit payments for disabled members be changed to reflect better mortality than the current assumption. Our recommendation is to use the same mortality table as is used for service retirements, but apply a five year age set forward to reflect the shorter life expectancy of disabled members.
- A review of the current pay scales indicates that structural changes have occurred since the last experience study. As a result, we recommend the merit salary scale be modified to reflect the current pay scales. Because different pay scales apply to Police and Fire members, we recommend separate salary increase assumptions for each group.

It is very difficult to evaluate the appropriateness of the actuarial assumptions in use when changes to the benefit provisions are occurring or are expected to occur. The situation in 2010 and 2011 limited the credibility of the data observed in the current study period. Hopefully, the actual experience observed in the next experience study, covering calendar years 2012 to 2016, can be given more credibility. That will depend on the overall economic conditions as well as whether pension changes are part of the labor negotiations that occur during that time period. To the extent any of the pension plan provisions are changed or expected to change, it may impact the behavior of the members and reduce the reliability of the experience in setting long term assumptions.

Financial Impact

The estimated financial impact of the proposed changes, based on results of the January 1, 2013 actuarial valuation, is summarized on the following page. The actual impact, which will be reflected in the January 1, 2014 actuarial valuation, will vary from the numbers shown on the exhibit on the following page.



**Estimate of Financial Impact of Assumption Changes
Based on January 1, 2013 Valuation**

	<u>Baseline (Current Assumptions)</u>	<u>Proposed Assumptions Only</u>	<u>Proposed Assumptions/Methods</u>
1. Present Value of Future Benefits	\$1,367,743,210	\$1,364,942,418	\$1,364,942,418
2. Present Value Future Normal Costs	<u>258,868,432</u>	<u>261,962,139</u>	<u>261,962,139</u>
3. Actuarial Accrued Liability (1) – (2)	1,108,874,778	1,102,980,279	\$1,102,980,279
4. Actuarial Value of Assets	<u>495,847,234</u>	<u>495,847,234</u>	<u>496,603,121</u>
5. Unfunded Actuarial Accrued Liability (UAAL) (3) – (4)	613,027,544	607,133,045	606,377,158
6. Normal Cost Rate	23.525%	23.434%	23.434%
7. UAAL Payment	<u>38.747%</u>	<u>36.973%</u>	<u>30.510%</u>
8. Actuarial Contribution Rate (6) + (7)	62.272%	60.407%	53.944%

Note: The actual impact of the assumption change on the January 1, 2014 valuation results will vary from that shown in this table which are based on the January 1, 2013 actuarial valuation.



SECTION 3 – ACTUARIAL METHODS

ACTUARIAL COST METHOD

The systematic financing of a pension plan requires that contributions be made in an orderly fashion while a member is actively employed, so that the accumulation of these contributions, together with investment earnings should be sufficient to provide promised benefits and cover administration expenses. The actuarial valuation is the process used to determine when money should be contributed; i.e., as part of the budgeting process.

The actuarial valuation will not impact the amount of benefits paid or the actual cost of those benefits. In the long run, actuaries cannot change the costs of the pension plan, regardless of the funding method used or the assumptions selected. However, actuaries **will** influence the incidence of costs by their choice of methods and assumptions.

The valuation or determination of the present value of all future benefits to be paid by the System reflects the assumptions that best seem to describe anticipated future experience. The choice of a funding method does not impact the determination of the present value of future benefits. The funding method, determines only the incidence of cost. In other words, the purpose of the funding method is to allocate the present value of future benefits determination into annual costs. In order to perform this allocation, it is necessary for the funding method to “break down” the present value of future benefits into two components: (1) that which is attributable to the past (2) and that which is attributable to the future. The excess of that portion attributable to the past over the plan assets is then amortized over a period of years. Actuarial terminology calls the part attributable to the past the “past service liability” or the “actuarial liability”. The portion of the present value of future benefits allocated to the future is commonly 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”. The difference between the plan assets and actuarial liability is called the “unfunded actuarial liability”.

Two key points should be noted. First, there is no single “correct” funding method. Second, the allocation of the present value of future benefits and hence cost to the past for amortization and to the future for annual normal cost payments is not necessarily in a one-to-one relationship with service credits earned in the past and future service credits to be earned.

There are various actuarial cost methods, each of which has different characteristics, advantages and disadvantages. A brief summary of the main cost methods is included below.

- Entry-Age-Normal Cost Method

The rationale of the entry age normal (EAN) funding method is that the cost of each member’s benefit is determined to be a level percentage of his salary from date of hire to the end of his employment with the employer. This level percentage multiplied by the member’s annual salary is referred to as the normal cost and is that portion of the total cost of the employee’s benefit which is allocated to the current year. The portion of the present value of future benefits allocated to the future is determined by multiplying this percentage times the present value of the member’s assumed earnings for all future years including the current year. The entry age normal actuarial liability is then developed by subtracting from the present value of future benefits that portion of costs allocated to the future. To determine the unfunded actuarial liability, the value of plan assets is subtracted from the entry age normal actuarial liability. The current year’s cost to amortize the unfunded actuarial liability is developed by applying an amortization factor.



SECTION 3 – ACTUARIAL METHODS

It is to be expected that future events will not occur exactly as predicted by the actuarial assumptions in each year. Actuarial gains/losses from experience under this actuarial cost method can be directly calculated and are reflected as a decrease/increase in the unfunded actuarial liability. Consequently, the gain/loss results in a decrease/increase in the amortization payment, and therefore the contribution rate.

- Projected Unit Credit

The projected unit credit (PUC) funding method defines the actuarial liability to be the value of the employee's accrued benefit based upon his service as of the valuation date and his estimated final average earnings at the time he retires or otherwise exits. The normal cost is the present value of benefits accruing during the year with projected salary increases. The unfunded actuarial liability is determined by subtracting the actuarial value of assets from the actuarial liability. The current year's cost to amortize the unfunded actuarial liability is developed by applying an amortization factor.

As with the entry age normal funding method, the actuarial gains and losses that accrue each year modify the unfunded actuarial liability and the payment thereon.

- Aggregate

This cost method does not develop individual normal costs, but calculates a normal cost rate for the entire plan. The total value of future normal costs is found by subtracting the actuarial value of assets from the present value of future benefits. This amount is then spread as a level percentage of future payroll for the entire group. Gain/losses are included in the present value of future benefits and thereby incorporated into the normal cost percentage for future years. The basic premise of the aggregate cost method is to develop a normal cost which, from the valuation date forward, will fund the whole unfunded portion of the plan's future benefits as a level percentage of payroll.

This method does not differentiate between past service costs and current costs. Therefore, no actuarial liability exists under the aggregate cost method and actuarial gains and losses are not directly calculated as in the other cost methods.

- Frozen Entry Age

The frozen entry age cost method is a blend of the entry age normal and aggregate cost methods. The unfunded actuarial liability is initially determined using the entry age normal funding method. Each year the unfunded actuarial liability (UAL) is set equal to the expected unfunded actuarial liability. Actuarial gains and losses are not reflected in the amount of the unfunded actuarial liability, but rather are reflected in the normal cost. The frozen actuarial liability is changed only to reflect plan amendments and changes in the actuarial assumptions. The amortization payments for the current and all future years are fixed at the time the unfunded actuarial liability is determined. The normal cost is developed similarly to that under the aggregate cost method. The present value of all future benefits is determined and then reduced by the valuation assets and the unfunded frozen actuarial liability. The resulting amount is then spread as a level percentage of future payroll.

COPFRS currently uses the Entry Age Normal cost method, which is popular with governmental plans because it develops a normal cost rate that tends to be stable and less volatile. It is used by about 85% of all public sector plans. **We recommend the Entry Age Normal actuarial cost method be retained.**



SECTION 3 – ACTUARIAL METHODS

ACTUARIAL VALUE OF ASSETS

In preparing an actuarial valuation, the actuary must assign a value to the assets of the fund. An adjusted market value (called the actuarial value of assets) is often used to smooth out the volatility in the market value. This is because most plan sponsors would prefer to have annual costs remain relatively level, as a percentage of payroll or in actual dollars, rather than a cost pattern that is extremely volatile.

The actuary does not have complete freedom in assigning this value. GASB has certain requirements related to the calculations prepared under GASB Number 25. The American Academy of Actuaries (AAA) also has basic principles regarding the calculation of a smoothed value, *Actuarial Standard of Practice No. 44 (ASOP 44), Selection and Use of Asset Valuation Methods for Pension Valuations*.

ASOP 44 provides that the asset valuation method should bear a reasonable relationship to the market value. Furthermore, the asset valuation method should be likely to satisfy both of the following:

- Produce values within a reasonable range around market value AND
- Recognize differences from market value in a reasonable amount of time.

In lieu of both of the above, the standard will be met if either of the following requirements is satisfied:

- There is a sufficiently narrow range around the market value OR
- The method recognizes differences from market value in a sufficiently short period.

These rules or principles prevent the asset valuation methodology from being used to distort annual funding patterns. No matter what asset valuation method is used, it is important to note that, like a cost method or actuarial assumptions, the asset valuation method does not affect the true cost of the plan; it only impacts the incidence of cost.

COPFRS values assets, for actuarial valuation purposes, based on the principle that the difference between actual and expected investment returns should be subject to partial recognition to smooth out fluctuations in the total return achieved by the fund from year to year. This philosophy is consistent with the long-term nature of a retirement system. Under this method, the actuarial value of the assets is the expected value of assets plus 33% of the difference between market value and expected value, where the expected value is last year's actuarial value and subsequent cash flows into and out of the fund accumulated with interest at the valuation rate (8%). This is mathematically equivalent to using a weighted average of $2/3^{\text{rds}}$ of the expected value and $1/3^{\text{rd}}$ of actual market value.

The current asset valuation method for COPFRS also includes what is known as a “corridor”, which provides that once the initial determination of the actuarial value of assets is made it is compared to a corridor around market value (80% of market value to 120% of market value). If the initial actuarial value lies outside the corridor, the final actuarial value of assets is set equal to the corresponding corridor value. For example, if the initial calculation of the actuarial value of assets is 132% of market value, the actuarial value is set equal to 120% of market value. We believe the corridor is necessary to ensure actuarial standards are met.

An asset valuation method is used to “smooth out” the volatility that occurs in the measurement of assets using pure market value. Although the current method, with the corridor adopted in 2007, is a reasonable



SECTION 3 – ACTUARIAL METHODS

method and it meets actuarial standards we believe moving to a different weighting of actual and expected values will provide more smoothing of market returns. **Therefore, we recommend the current asset valuation method be retained, but that 25% of the difference between actual and market value of assets be recognized, rather than 33%.**

AMORTIZATION OF UAL

As described above, actuarial liabilities are the portion of the actuarial present value of future benefits that are not included in future normal costs. Thus it represents the liability that, in theory, should have been funded through normal costs for past service. Unfunded actuarial liabilities (UAL) exist when actuarial liabilities exceed plan assets. These deficiencies can result from (i) plan improvements that have not been completely paid for, (ii) experience that is less favorable than expected, (iii) assumption changes that increase liabilities or (iv) contributions that are less than the actuarial contribution rate. If the actuarial value of assets (AVA) exceeds the actuarial liability (AL), “surplus” exists.

There are a variety of different methods that can be used to amortize the UAL. Each method results in a different payment stream and, therefore, has cost implications. For each methodology, there are three basic characteristics:

- The period over which the UAL is amortized,
- The rate at which the amortization amount increases, and
- The number of components of UAL with separate amortization bases.

The parameters in Governmental Accounting Standard Board Statement No. 25 (GASB 25) have evolved as a *de facto* funding standard for governmental plans. GASB 25 sets parameters for all of these characteristics. The maximum amortization period permitted is 30 years. The annual amortization amount can be either a level dollar amount or a level percentage of payroll. The UAL may be amortized as one amount or components may be amortized separately. New GASB standards for Pension Reporting (GASB 67 and 68), effective in the next two years, eliminate any link between the funding and accounting numbers. However, it is still useful to recognize the impact that the current GASB standards have had on funding policies in the recent past.

The amortization period can be either closed or open. If it is a closed amortization period, the number of years remaining in the amortization period declines each year. Alternatively, if the amortization period is an open or rolling period, the amortization period does not decline but is reset to the same number each year. This approach essentially “refinances” the System’s debt (UAL) every year, pushing off the payment of the UAL to future years. While the funded ratio may possibly increase over time under the open amortization period, the System is not expected to reach a funded ratio of 100%. The open amortization policy is especially of concern when the amortization period is very long (i.e. 25 or 30 years) due to the negative amortization that occurs (UAL payment is less than the interest on the UAL so the dollar amount of the UAL continually increases).

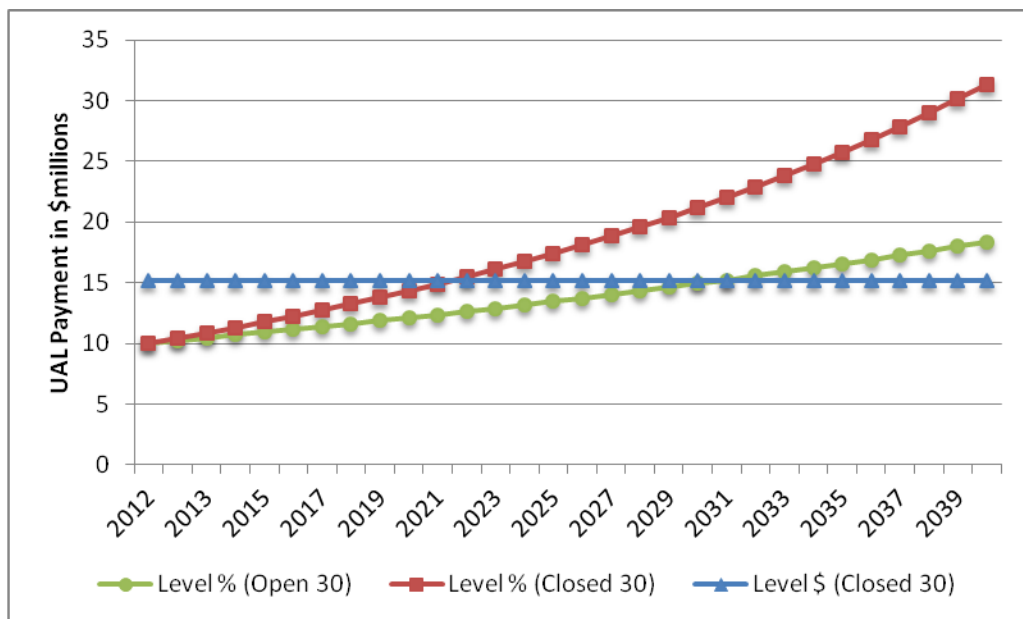
The level dollar amortization policy is similar to the method in which a home owner pays off a mortgage. The liability, once calculated, is financed by a constant fixed dollar amount, based on a predetermined number of years, until the liability is extinguished. This results in the amount of the liability steadily decreasing while the payments, though remaining level in dollar terms, in all probability decrease as a percentage of payroll. (Even if a plan sponsor’s population is not growing or even slightly diminishing, inflationary increases will usually be sufficient to increase the aggregate covered payroll).



SECTION 3 – ACTUARIAL METHODS

The rationale behind the level percentage of payroll amortization method is that since normal costs are calculated to be a constant percentage of pay, unfunded actuarial liabilities should be paid off in the same manner. This is also consistent with funding the benefits with contributions that are calculated as a percentage of payroll. When this method of amortizing the unfunded actuarial liability is adopted, the initial amortization payments are lower than they would be under a level dollar amortization payment method, but the payments increase at a fixed rate so that ultimately the annual payment far exceeds the level dollar payment. The expectation is that total payroll will increase as rapidly so that the amortization payments will remain constant, as a percentage of payroll. In the initial years, the level percentage of payroll amortization payment is often less than the interest accruing on the unfunded actuarial liability meaning that even if there are no experience losses, the dollar amount of the unfunded actuarial liability will grow (called negative amortization). This is particularly true if the plan sponsor is paying off the unfunded actuarial liability over a long period, such as 30 years.

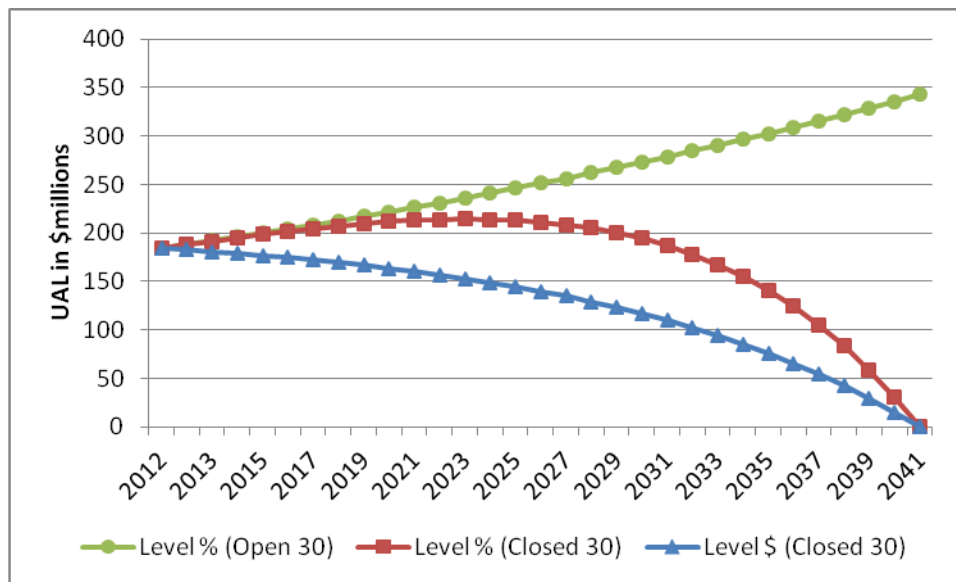
The following graph shows the pattern of amortization payments under the three different amortization methods, discussed earlier:



Use of the level percentage of payroll amortization has its advantages and disadvantages. From a budgetary standpoint, it makes sense to develop UAL contribution rates that are level as a percentage of payroll, since contributions to fund the Plan are made as a percent of payroll and normal cost is developed as a level percent of payroll. However, if payroll doesn't grow as expected the UAL payment, determined as a percent of payroll, will increase rather than remain level. In addition, this approach clearly results in slower funding of the UAL, as illustrated in the following graph:



SECTION 3 – ACTUARIAL METHODS



COPFRS currently develops the actuarial contribution rate using a closed 30 year period for amortizing the UAL as determined on the valuation date. As of the January 1, 2013 valuation, 20 years remain in the current amortization period. Under the current approach, changes in the UAL (experience gains/losses, assumption changes and plan changes) will be spread over a shorter and shorter number of years as time passes and the years to amortize decline. By the time the next experience study is performed there will be fifteen years remaining in the initial amortization period. This will increase the volatility of the actuarial contribution rate.

There is a different approach for the amortization of the unfunded actuarial liability (UAL) that would eliminate this concern. Rather than in each valuation calculating one single amortization base equal to the UAL and amortizing that single base over the remaining years in the amortization period, we recommend creating a new amortization base each year that is equal to the unscheduled change in the UAL and then amortizing each of the new bases over a closed 20-year period. This approach results in multiple amortization bases which, when added together, are equal to the System's total UAL. The total UAL amortization payment would then be the sum of the scheduled payments for that year for all of the amortization bases. The advantage of this approach is that it creates a more stable contribution rate for the payments on the UAL. The disadvantage is that the method is more complex than the current method and harder to communicate, especially to lay persons.

As you know, significant changes have been made in both the police and fire contracts to address the concerns about the Retirement System's long term funding. As a result of increased contributions and benefit reductions for both current and future employees, the System is projected to be 100% funded in 2055, if all actuarial assumptions are met. Over time the amount of the total contributions available to pay off the UAL increases significantly. Recognizing that the current financing plan in place is very long term in nature, it is reasonable to reset the amortization period so the calculation of the Actuarial Contribution Rate reflects the long term nature of the funding plan for the System. Under current Governmental Accounting Standards, the maximum number of years to amortize the UAL is 30 years. Therefore, we recommend the existing UAL on January 1, 2014 be amortized over a closed 30-year



SECTION 3 – ACTUARIAL METHODS

period and new bases, described above, be established in each subsequent valuation (January 1, 2015 and beyond) and amortized over a closed 20-year period. This change should make the Actuarial Contribution Rate more meaningful when used as a benchmark for evaluating the sufficiency of the actual contribution rates.

We would note that, given the low salary increases being granted to public employees in the current economic environment, it should be expected that covered payroll will not increase as much as the assumed increase in the short term. Under these circumstances, the UAL contribution, as a percentage of payroll, is expected to increase rather than remain level. A lower payroll growth assumption for amortizing the UAL would introduce some conservatism into the amortization of the UAL. It would, however, result in a higher, but likely more stable contribution rates. Because the actuarial contribution rates are not used to set contribution rates from year to year such a change would not impact the actual contributions to the System. We would be happy to discuss this further with the Board if they desire.



SECTION 4 – ECONOMIC ASSUMPTIONS

ECONOMIC ASSUMPTIONS

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations* provides guidance to actuaries giving advice on the selection of economic assumptions for measuring obligations under defined benefit plans, such as COPFRS. A new draft of ASOP 27 has been published, but has not yet been adopted so our discussion in this report reflects the current ASOP 27 standard.

Because no one knows what the future holds, the best an actuary can do is to use professional judgment to estimate possible future economic outcomes. These estimates are based on a mixture of past experience, future expectations, and professional judgment. The actuary should consider a number of factors, including the purpose and nature of the measurement, and appropriate recent and long-term historical economic data. However, the standard explicitly advises the actuary not to give undue weight to recent experience.

Recognizing that there is not one “right answer”, the standard calls for the actuary to develop a best estimate range for each economic assumption, and then recommend a specific point within that range. Each economic assumption should individually satisfy this standard. Furthermore, with respect to any particular valuation, each economic assumption should be consistent with all other economic assumptions over the measurement period.

An actuary’s best-estimate range with respect to a particular measurement of pension obligations may change from time to time due to changing conditions or emerging plan experiences. The actuary may change assumptions frequently in certain situations, even if the best-estimate range has not changed materially, and less frequently in other situations. Even if assumptions are not changed, the actuary needs to be satisfied that each of the economic assumptions selected for a particular measurement complies with the Actuarial Standard of Practice No. 27.

The remainder of this section will discuss the relevant types of economic assumptions used in the actuarial valuation to determine the obligations of COPFRS. In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27. The following table summarizes the economic assumptions:

	Current Assumptions	Recommended Assumptions
A. Consumer Price Inflation	3.50%	3.25%
B. Investment Return	8.00%	8.00%
C. Payroll Growth	4.00%	4.00%



SECTION 4 – ECONOMIC ASSUMPTIONS

CONSUMER PRICE INFLATION

Use in the Valuation: Future price inflation has an indirect impact on the results of the actuarial valuation through the development of the assumptions for investment return and general wage growth.

The long-term relationship between price inflation and investment return has long been recognized by economists. The basic principle is that the investor demands a more or less level “real return” – the excess of actual investment return over price inflation. If inflation rates are expected to be high, investment return rates are also expected to be high, while low inflation rates will result in lower expected investment returns, at least in the long run.

The long term inflation rate cannot be predicted with a significant degree of confidence. This uncertainty would present severe problems in funding a retirement plan were it not for the fact that the effects of inflation on investment return and salary level are, in part, offsetting at least for active members. Salaries increasing faster than expected produce unexpected liabilities. Investment returns which exceed the assumed rate result in unanticipated assets. Although not directly equal in amount, it is expected that these additional assets and liabilities will have some offset on one another over the long term.

The current assumption for price inflation is 3.50% per year.

Past Experience: Although economic activities, in general, and inflation in particular, do not lend themselves to prediction on the basis of historical analysis, historical patterns and long term trends are factors to be considered in developing the inflation assumption. The Consumer Price Index, US City Average, All Urban Consumers, CPI (U), has been used as the basis for reviewing historical levels of price inflation. The table below provides historical annualized rates and annual standard deviation of the CPI-U over periods ending December 31st.

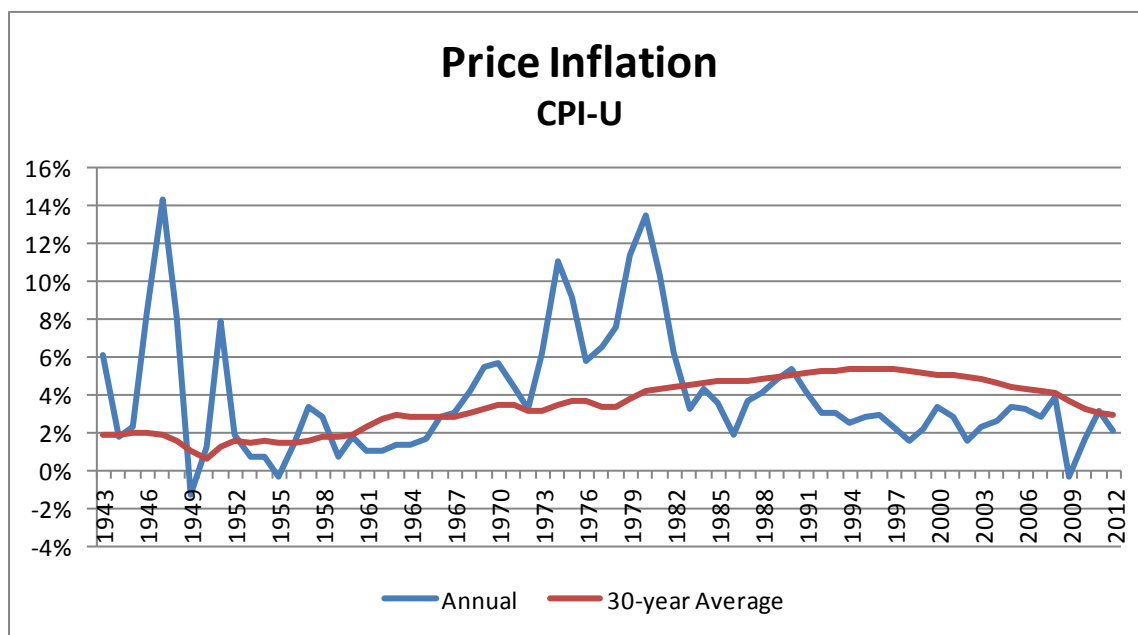
Period	Number of Years	Annualized Rate of Inflation	Annual Standard Deviation
1922 – 2012	90	2.95%	3.96%
1952 – 2012	60	3.65	2.80
1962 – 2012	50	4.14	2.82
1972 – 2012	40	4.35	2.99
1982 – 2012	30	2.93	1.25
1992 – 2012	20	2.49	0.90
2002 - 2012	10	2.47	1.16



SECTION 4 – ECONOMIC ASSUMPTIONS

The following graph illustrates the historical annual change in price inflation, measured as of December 31 of each year, as well as the thirty year rolling average.

Annual Rate of CPI (U) Increases



Over more recent periods, measured from December 31, 2012, the average annual rate of increase in the CPI-U has been 3.00% or lower. The period of high inflation from 1973 to 1982 has a significant impact on the averages over periods which include these years. Further, the average rate of 2.95% over the entire 90 year period is close to the average rate of 2.93% for the prior 30 years (1982 to 2012), but the volatility of the annual rates in the more recent years has been markedly lower as indicated by the significantly lower annual standard deviations (see earlier table). Many experts attribute the lower average annual rates and lower volatility to the increased efforts of the Federal Reserve since the early 1980's to stabilize price inflation. As the Fed's efforts to promote stability in price inflation are expected to continue, we feel greater weighting should be given to the last 30-year historical period in our analysis.

Forecasts of Inflation

Additional information to consider in formulating this assumption is obtained from measuring the spread on Treasury Inflation Protected Securities (TIPS) and from the prevailing economic forecasts. The spread between the nominal yield on treasury securities (bonds) and the inflation indexed yield on TIPS of the same maturity is referred to as the "breakeven rate of inflation" and represents the bond market's expectation of inflation over the period to maturity. The following table provides the calculation of the breakeven rate of inflation as of December 31, 2012.



SECTION 4 – ECONOMIC ASSUMPTIONS

Years to Maturity	Nominal Bond Yield	TIPS Yield	Breakeven Rate of Inflation
10	1.78	-0.67%	2.45%
20	2.54	0.15	2.39
30	2.95	0.41	2.54

Although many economists forecast lower inflation than the current assumption, they are generally looking at a shorter time period than is appropriate for a pension valuation. To consider a longer, similar timeframe, we looked at the expected increase in the CPI by the Office of the Chief Actuary for the Social Security Administration. In the May 2012 report, the projected average annual increase in the CPI over the next 75 years was estimated to be 2.80%, under the intermediate cost assumptions. The lower cost assumption used a forecast of 1.80% and the high cost assumption was 3.8%, indicating a reasonable range for their projections of 1.8% to 3.8%.

The COPFRS investment consultant, DeMarche Associates also provided a long term assumption for inflation of 3.1% as part of their capital market assumptions.

Reasonable Range and Recommendation: Given the longer term perspective for pension funding, we believe that a range between 2.5% and 4.0% is reasonable for an actuarial valuation of a retirement system. Based on the information presented above, we would prefer to reduce the inflation assumption by making a small adjustment now and then evaluating whether another adjustment is appropriate in the next experience study. **Therefore, we recommend that the long-term price inflation assumption be lowered from 3.50% to 3.25%.**

Consumer Price Inflation	
Current Assumption	3.50%
Reasonable Range	2.50% - 4.00%
Recommended Assumption	3.25%



SECTION 4 – ECONOMIC ASSUMPTIONS

INVESTMENT RETURN

Use In The Valuation: The investment return assumption is one of the primary determinants in the allocation of the expected cost of the System’s benefits, providing a discount of the estimated future benefit payments to reflect the time value of money. Generally, the investment return assumption should represent the long-term rate of return on the plan assets, considering the asset allocation policy, expected long term real rates of return on the specific asset classes, the underlying inflation rate, and investment expenses.

The current investment return assumption is 8.0% per year, net of all investment-related expenses. Administrative expenses are paid directly by the City so no adjustment to the gross rate of return is necessary for this item.. The 8.0% rate of return is referred to as the nominal rate of return and is composed of two components. The first component is price inflation (previously discussed). Any excess return over price inflation is referred to as the real rate of return. The real rate of return, based on the current set of assumptions, is 4.5% (8.0% nominal return less 3.5% inflation).

The Actuarial Standards Board Statement Number 27 provides guidance to actuaries on selecting economic assumptions. It lists specific factors that can be considered in constructing the best-estimate investment return range and/or selecting an investment return assumption within the range. Such factors are:

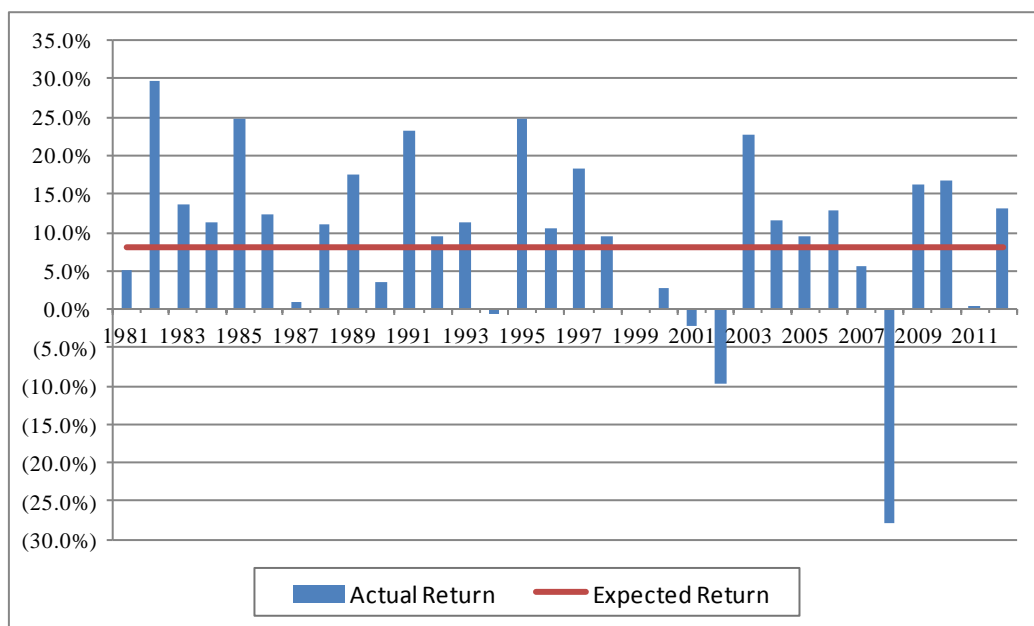
- 1. The purpose of the measurement.** The measurement of obligations for an ongoing plan will differ from those of a terminating, closed or frozen plan. An ongoing plan will typically reflect a longer time horizon and a more diversified investment portfolio.
- 2. Investment policy.** This usually refers to the plan’s current asset allocation, the types of securities the system is eligible to invest in, and the target allocation, if different. It may also reflect the investment philosophy regarding risk tolerance and social investing.
- 3. Reinvestment Risk.** This should reflect the reinvestment of moneys not immediately required to pay plan benefits.
- 4. Investment Volatility.** If a system is required to liquidate assets at depressed values to meet benefit obligations, a higher risk is present.
- 5. Investment Manager Performance.** Few investment managers consistently outperform the market. Those who consistently underperform may be replaced.
- 6. Investment Expenses.** Investment returns can be assumed both with and without expenses. Actual expenses are measured periodically and taken into account when setting the investment return assumption.
- 7. Cash Flow Timing.** The expected stream of contributions and benefit payments may affect the liquidity of a plan’s investment opportunities.
- 8. Benefit Volatility.** This is typically a consideration for small plans, plans with full lump sum payment options and supplemental benefits. The concern with these factors is a need to liquidate securities at depressed values.



SECTION 4 – ECONOMIC ASSUMPTIONS

Historical Perspective: One of the inherent problems with analyzing historical data is that the results can look significantly different depending on the time frame used if the year-to-year results vary widely. Even though history provides a valuable perspective for setting this assumption, the economy of the past is not necessarily the economy of the future. In addition, asset allocations may have changed over the period so returns may not be directly comparable.

The System's actual investment return on the market value of assets is shown in the graph below (the return for 2012 was included since it was available when the report was prepared):



The geometric average return has varied significantly when viewed over different time periods. For example, the rate of return over the ten year period ending December 31, 2012 was around 7%, but over the entire thirty-two year period ending December 31, 2012 the compound return was about 9%.

Forward Looking Analysis

A more dynamic forward looking analysis of the expected investment return is also an appropriate analysis to perform in setting this assumption. In assessing the future expectation of investment returns, we prefer to utilize the capital market assumptions of the investment professionals assisting the Board in determining its investment policies and asset allocation. This approach is referred to as the building block method in ASOP No. 27. The current asset allocation of the fund, which is shown below, was used in our forward looking analysis of expected returns:



SECTION 4 – ECONOMIC ASSUMPTIONS

Asset Category	Asset Allocation	Expected Rate of Return (Arithmetic)	Standard Deviation
Large Cap Equity	16.0%	9.0%	18.5%
Small Cap Equity	12.0%	10.3%	24.0%
International Developed Equity	7.0%	9.2%	20.0%
International Small Cap	6.5%	10.5%	24.7%
Emerging Markets	6.5%	12.0%	29.0%
Intermediate Fixed Income	5.0%	6.6%	6.7%
High Yield Fixed Income	15.0%	8.4%	11.0%
Real Estate	17.0%	8.6%	7.5%
Commodities	3.0%	10.0%	20.0%
Private Equity	5.0%	15.0%	30.0%
Total	100.0%		

The full set of the current capital market assumptions, as provided by the Board’s investment consultant, DeMarche Associates, is shown in Appendix C. Using the target asset allocation as shown in the table above, we assumed that investment returns approximately follow a lognormal distribution with no correlation between years. The results below provide an expected range of rates of return over a 50 year time horizon using DeMarche’s capital market assumptions, including price inflation of 3.1%. Looking at one year’s results produces an expected return (mean) of 9.57% but also has a high standard deviation or measurement of volatility illustrated by the range of results, i.e. -10.76% to 32.60%. By expanding the time horizon, the average return does not change much, but the volatility declines significantly (range for 50 year time span is 5.78% to 11.87%). The following table provides a summary of the results.

Time Span In Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5th	25th	50th	75th	95th
1	9.57%	13.24%	-10.76%	0.30%	8.78%	17.98%	32.60%
5	8.94	5.87	-0.44	4.90	8.78	12.80	18.85
10	8.86	4.15	2.18	6.02	8.78	11.61	15.81
20	8.82	2.93	4.07	6.82	8.78	10.77	13.71
30	8.81	2.39	4.92	7.18	8.78	10.41	12.79
50	8.79	1.51	5.78	7.54	8.78	10.04	11.87

Based on this analysis, there is 50% likelihood that the average rate of return over a 50-year period will be 8.78%. It can also be inferred that for the 10 year time span, 5% of the resulting real rates of return were below 2.18% and 95% were above that. As the time span increases, the expected results narrow. Over a 50 year time span, the results indicate there is a 25% chance that returns will be below 7.54% and a 25% chance they will be above 10.04%. In other words, there is a 50% chance the returns will be between 7.54% and 10.04%.



SECTION 4 – ECONOMIC ASSUMPTIONS

From the table above, an 8.00% average annual return over the 50 year period ranks at the 40th percentile. In other words, there is approximately a 60% likelihood that the long term average rate of return over a 50 year period will be at least 8.00%. DeMarche uses a different set of capital market assumptions for purposes of asset allocation, called their strategic assumptions. The timeframe for use of these assumptions is three to five years. On that basis, the median return (50th percentile) is 6.77%. This means that returns in later years (beyond the next five years) are expected to exceed 8.78% in order for the compound return over the 50 years to be 8.78%. The use of an 8.0% investment return assumption recognizes that short term experience is expected to be below 8.0% even if experience in the long term is expected to be higher than 8.0%.

Typically, using the building block approach of ASOP No. 27 and the projection results outlined above, a range for the investment return assumption is determined as the 25th to 75th percentile real returns over the 50 year time span plus an adjustment if the underlying inflation assumption is different than the actuarial inflation assumption. Because the DeMarche's capital market assumptions reflect an inflation assumption close to our recommended inflation assumption no further adjustment for the difference in the inflation assumptions has been made.

	25 th Percentile	50 th Percentile	75 th Percentile
Rate of Return	7.54%	8.78%	10.04%

Given the results of the forward looking analysis using the investment consultant's long term assumption, the 8% assumption remains a reasonable estimate of long term returns.



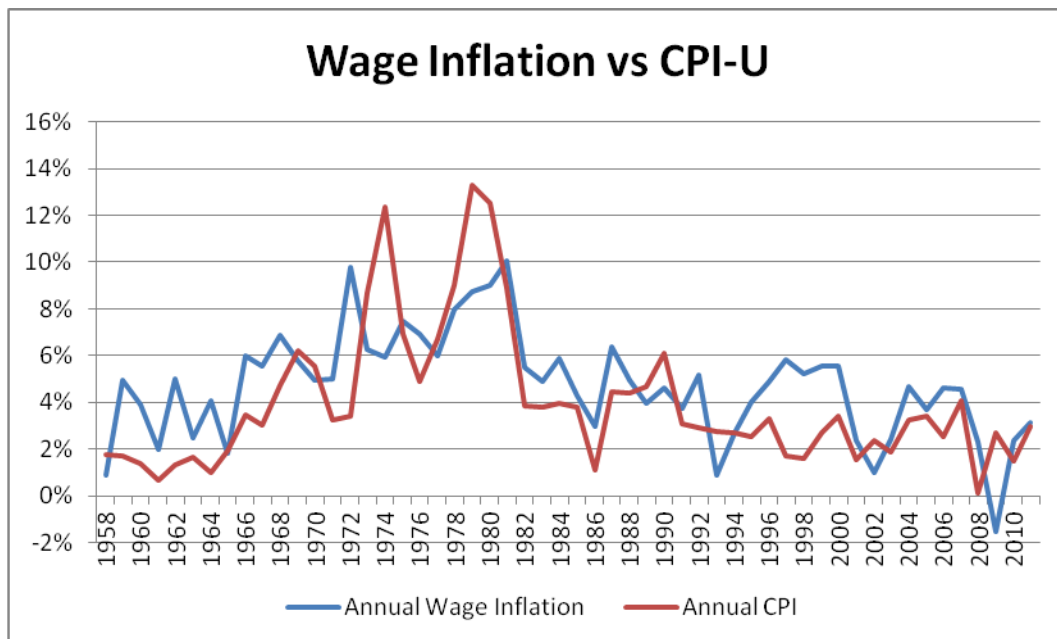
SECTION 4 – ECONOMIC ASSUMPTIONS

WAGE GROWTH

Use in the Valuation: The assumed future increases in salaries consist of a wage inflation component and a component for promotion and longevity, often called merit increases. The latter are generally age and/or service related, and will be dealt with in the demographic assumption section of the report. Wage inflation normally is greater than price inflation as a reflection of the overall return on labor in the economy. The rate of wage inflation above price inflation is called the real wage growth (or productivity) and is the focus of our analysis.

The current wage growth assumption is 4.0% per year, which is composed of a 3.50% inflation assumption and a 0.50% productivity component.

The National Average Wage (utilized by Social Security to index the historical wages used in determining benefits) is often used for historical analysis of the overall wage growth in the United States. A graph of wage inflation, as measured by the change in the National Average Wage Growth, and price inflation, as measured by CPI-U, is shown in the following graph. As can be seen, there are a few periods where price inflation is above wage inflation, but in general, wage inflation exceeds price inflation so we believe that expectation should be reflected in the actuarial assumptions.





SECTION 4 – ECONOMIC ASSUMPTIONS

Past Experience: The Social Security Administration publishes data on wage growth in the United States. As with our analysis of price inflation, data on wage inflation along with a comparison to price inflation over various time periods is presented in the table below. If the rate of price inflation is subtracted from the data for each year, the result is the historical real wage growth or productivity.

Period	Wage Inflation	Price Inflation	Real Wage Growth
2001-2011	2.70%	2.48%	0.22%
1991-2001	4.20	2.51	1.69
1981-1991	4.70	3.91	0.79
1971-1981	7.80	8.62	-0.82
1961-1971	4.75	3.20	1.55
1991-2011	3.45%	2.49%	0.96%
1981-2011	3.87	2.96	0.91
1971-2011	4.84	4.35	0.49
1961-2011	4.82	4.12	0.70

Thus over the last 50 years, annual real wage growth has averaged 0.70%. Over the last 20 years, the National Average Wage increased 3.45% on average while price inflation averaged 2.49%, resulting in real wage growth of 0.96%. Wage increases for public sector employment have fallen below private sector wage increases in recent years, a trend which may continue in the short term, but should not persist indefinitely.

Forecasts of Future Wages: The wage index used for the historical analysis has been projected forward by the Office of the Chief Actuary of the Social Security Administration. In a report in May of 2012, the annual increase in the National Average Wage Index over the next 30 years under the intermediate cost assumptions was 4.0%, 1.2% higher than the Social Security intermediate inflation assumption. The low cost assumption was 3.6%, or 1.8% above the inflation assumption of 1.8%. The high cost assumption was 4.4%, 0.6% above the inflation assumption of 3.8%. The resulting range for real wage growth is 0.6% to 1.2%.

Reasonable Range and Recommendation: Based on our recommended inflation assumption of 3.25%, we believe that a range between 3.50% and 4.50% is reasonable for the actuarial valuation. **We recommend that the long-term assumed wage inflation rate remain at 4.0%, which implies a productivity component of 0.75%.** However, given the current economic conditions, we believe it is unlikely that general wage increases of 4.0% are likely to be granted to governmental employees until the economy fully recovers and tax revenues improve. To the extent that actual salary increases are below the 4.0% assumption, actuarial liabilities will be lower than expected and an actuarial gain will occur. This approach provides some conservatism in the valuation process as it results in higher liabilities and only recognizes lower salaries as they actually occur.



SECTION 4 – ECONOMIC ASSUMPTIONS

A summary of the reasonable range and our recommended assumption are shown below:

Wage Growth	
Current Assumption	4.0%
Reasonable Range	3.50% - 4.50%
Recommended Assumption	4.00%*

*Although the assumption did not change, the components of the assumption did change. The price inflation assumption was lowered from 3.5% to 3.25% and the productivity assumption was increased from 0.50% to 0.75%.



SECTION 5 – DEMOGRAPHIC ASSUMPTIONS

DEMOGRAPHIC ASSUMPTIONS

Actuarial Standard of Practice (ASOP) No. 35 provides guidance to actuaries regarding the selection of demographic and other non-economic assumptions for measuring pension obligations. A revised edition of this standard was adopted by the Actuarial Standards Board of the American Academy of Actuaries in September 2010, effective for actuarial valuations with a measurement date on or after June 30, 2011.

ASOP 35 General Considerations and Application

Each individual demographic assumption should satisfy the criteria of ASOP 35. In selecting demographic assumptions the actuary should also consider: the internal consistency between the assumptions, materiality, cost effectiveness, and the combined effect of all assumptions. At each measurement date the actuary should consider whether the selected assumptions continue to be reasonable, but the actuary is not required to do a complete assumption study at each measurement date. In our opinion, the demographic assumptions recommended in this report have been developed in accordance with ASOP 35.

Overview of Analysis

The purpose of a study of demographic experience is to compare what actually happened to the individual members of the System during the study period (calendar years 2007 through 2011) with what was expected to happen based on the actuarial assumptions. A single five year period is still a relatively short observation period, particularly given the size of the group. In addition, the study period includes the economic downturn in 2008 and 2009. Therefore, some of the experience observed in the study may not be representative of long term trends. In addition, the System's size limits the credibility of the findings. Our recommendations were made after taking these factors into account.

Studies of demographic experience generally involve three steps:

- First, the number of members changing membership status, called decrements, during the study is tabulated by age, duration, gender, group, and membership class (active, retired, etc.).
- Next, the number of members expected to change status is calculated by multiplying certain membership statistics, called exposure, by the expected rates of decrement.
- Finally, the number of actual decrements is compared with the number of expected decrements. The comparison is called the actual to expected ratio (A/E Ratio), and is expressed as a percentage.

In general, if the actual experience differs significantly from the overall expected results, or if the pattern of actual decrements, or rates of decrement, by age, sex, or duration deviates significantly from the expected pattern, new assumptions are considered. Recommended revisions are normally not an exact representation of the experience during the observation period. Judgment is required to anticipate future experience from past trends and current evidence, including a determination of the amount of weight to assign to the most recent experience.



SECTION 5 – DEMOGRAPHIC ASSUMPTIONS

It takes a fair amount of data to provide experience study results that are fully credible for demographic assumptions. Because the membership or certain subsets of the membership are relatively small, some assumptions have been selected based more on our professional judgment of reasonable future outcomes than actual experience.

ASOP 35 states that the actuary should use professional judgment to estimate possible future outcomes based on past experience and future expectations, and select assumptions based upon application of that professional judgment. The actuary should select reasonable demographic assumptions in light of the particular characteristics of the defined benefit plan that is the subject of the measurement. A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Pursuant to ASOP 35 the actuary should follow the following steps in selecting the demographic assumptions:

1. Identify the types of assumptions. Types of demographic assumptions include but are not limited to retirement, mortality, termination of employment, disability, election of optional forms of payment, administrative expenses, family composition, and treatment of missing or incomplete data. The actuary should consider the purpose and nature of the measurement, the materiality of each assumption, and the characteristics of the covered group in determining which types of assumptions should be incorporated into the actuarial model.
2. Consider the relevant assumption universe. The relevant assumption universe includes experience studies or published tables based on the experience of other representative populations, the experience of the plan sponsor, the effects of plan design, and general trends.
3. Consider the assumption format. The assumption format includes whether assumptions are based on parameters such as gender, age or service. The actuary should consider the impact the format may have on the results, the availability of relevant information, the potential to model anticipated plan experience, and the size of the covered population.
4. Select the specific assumptions. In selecting an assumption the actuary should consider the potential impact of future plan design as well as the factors listed above.
5. Evaluate the reasonableness of the selected assumption. The assumption should be expected to appropriately model the contingency being measured. The assumption should not be anticipated to produce significant cumulative actuarial gains or losses over the measurement period.



SECTION 6 – MORTALITY

MORTALITY

One of the most important demographic assumptions is mortality because this assumption predicts when retirement payments will stop. The life expectancies of current and future retirees are predicated on the assumed rates of mortality at each age. It is commonly known that rates of mortality have been declining, which means people, in general, are living longer.

ASOP 35 states that the actuary should consider the effect of mortality improvement both prior to and subsequent to the valuation date. This implies the need to make a specific assumption with respect to future improvements in mortality (beyond the valuation date), even if that assumption is no future improvement. It is an established trend that people are living longer and we believe that trend will continue. Therefore, we believe it is appropriate to reflect future mortality improvements in the mortality assumption. Sometimes this is accomplished by including a “margin” in the rates (predicting fewer deaths than are actually occurring in the present experience). Under this approach the resulting ratio of actual to expected deaths (A/E ratio) is over 100%. Another way to reflect the trend in long term mortality improvements is to use generational mortality where the probability of death at a given age is projected to be lower each year in the future thereby reflecting greater mortality improvement for younger members.

Healthy Retirees: The valuation currently uses separate mortality assumptions for male and female members. The RP-2000 Healthy Annuitant Mortality Table for Males and Females, with generational mortality using Projection Scale AA to anticipate mortality improvements in future years, with ages set forward one year (e.g. an individual who is age 65 is assumed to exhibit the mortality of a 66-year old) is used to predict the probability of death for members receiving benefits.

In examining the results of the Experience Study, if the A/E Ratio is greater than 100% the assumptions have predicted fewer deaths than actually occurred and with an A/E Ratio less than 100% the assumptions have predicted more deaths than have actually occurred. Sometimes a mortality table is selected with the explicit purpose of anticipating fewer deaths so there is room for mortality improvements in the future (called “margin”). However, using the RP-2000 Mortality Table with generational mortality, the A/E Ratio should be around 100% as mortality improvements in future years are directly reflected in the valuation process by projecting lower mortality rates in future years so no margin is needed.

The aggregate observed experience for healthy (not disabled) male retirees during the study period is shown in the following chart. There is an insufficient number of female retirees to provide any reasonable analysis for the group so that information is not shown.



SECTION 6 – MORTALITY

	Healthy Male Retirees		
	Observations		A/E Ratio
	Actual	Expected	Current
Police	30	32	94%
Fire	<u>31</u>	<u>37</u>	84%
Total	61	69	88%

Actual deaths for healthy males were lower than the number expected (61 compared to 69 over a five year study period) based on the current assumption with a resulting A/E ratio of 88%. We also analyzed the data by year as shown in the following table. Due to the small size of the group, there is considerable volatility in results from year to year. A similar pattern was observed in the last experience study.

	Healthy Male Retirees		
	Observations		A/E Ratio
Year	Actual	Expected	Current
2007	8	11	73%
2008	9	13	69%
2009	11	14	79%
2010	22	15	147%
2011	<u>11</u>	<u>16</u>	69%
Total	61	69	88%

The current mortality assumption uses a one year age set forward, i.e. a member is assumed to exhibit the mortality of a person one year older. The results of the experience study indicate that mortality during the study period was better than expected (i.e. there were fewer deaths than expected). However, in the prior experience study the current assumption produced an actual to expected ratio of 116% indicating the number of deaths was higher than expected using this assumption (actual deaths were 46 and expected deaths were 40). If the experience of both studies is combined the resulting A/E ratio is 98% (107 actual deaths and 109 expected).

We would note that the Society of Actuaries is in the process of developing a new mortality table that will replace the RP-2000 Table. In the interim, they have issued a new mortality improvement projection scale table, Scale BB, to replace the existing Scale AA. For the ages of the COPFRS retirees, Scale BB generally projects more mortality improvement in the future, and thus would predict fewer deaths. While we are not recommending a change in the mortality table at this time, the Board may wish to adopt Scale BB at this time because it reflects broader trends in mortality that cannot be detected in a smaller group of retirees such as the COPFRS retirees.

We recommend the postretirement mortality assumption remain the same as the current assumption, i.e. the RP-2000 Healthy Annuitant Mortality Table for males and females (ages set forward one year) with generational mortality improvements anticipated by Projection Scale AA.



SECTION 6 – MORTALITY

Beneficiaries: The mortality of beneficiaries applies to the survivors of members who received benefits under a joint and survivor form of payment. There is typically little data on the mortality experience of beneficiaries prior to the death of the member because there is no requirement that the death be reported. **Therefore, we recommend that standard convention be followed and mortality for beneficiaries be set on the same basis as is used for retired members.**

Disabled Members: The valuation assumes that disabled members, in general, will not live as long as retired members who met the regular service retirement eligibility. There is an insufficient number of disabled retirees to provide fully credible results. There were 31 deaths during the study period and 61 were expected based on the current mortality table for disabled retirees. The table currently used is a standard disabled life table, but given that police and fire members are considered disabled if they cannot perform the duties of their job, it seems reasonable to assume their mortality is expected to be better than a disabled retiree in a non-public safety job. **As a result, we recommend the disabled mortality assumption be changed to the RP-2000 Healthy Annuitant Mortality Tables for males and females, set forward 5 years, with generational mortality improvements anticipated by Scale AA.**

Active Members: This assumption predicts eligibility for active member death benefits prior to retirement, rather than the expected lifetime for pension payments. In smaller groups, the mortality rates for active members are often set based on the same assumption as is used for healthy retirees. Given the low probability of death while active, the results cannot be credible on their own without much larger numbers of employees than are in COPFRS. We prefer to keep the mortality assumption for active and retired members on a consistent basis. **Therefore, we recommend the active member mortality be set to the RP-2000 Employee Mortality Table for males and females with a 1 year set forward and Scale AA to anticipate mortality improvements in future years.**



SECTION 7– RETIREMENT

SERVICE RETIREMENT

Service retirement measures the change in status from active membership directly to retirement. This assumption does not include the retirement patterns of members who terminated from active membership years prior to their retirement. A separate assumption addresses that situation.

There were significant changes to the benefit structure during much of the study period and, as a result, the actual experience may be a poor indicator of future rates of retirement. For example, the benefit formula increased to the maximum level of 75% of final average pay on July 1, 2007. There were many active members who delayed retirement until the 75% maximum benefit (with 25 years of service) was effective. This is evidenced by the dramatic spike in service retirements in 2007 (143 actual retirements) compared to other years.

In addition, after the market downturn in 2008 the System faced a significant long term funding issue that was projected to result in the depletion of System assets in about twenty years even if all actuarial assumptions were met. As a result, changes to the retirement system were part of labor negotiations with the police union in 2010 and the fire union in 2011 and 2012. As a result of the negotiations, there were significant changes to the pension provisions in the police contract dated September, 2010. The elimination of the inclusion of lump sum payments of certain bank hours in the determination of final average pay likely impacted the retirement experience in late 2010 because plan changes could have resulted in a lower benefit amount for many members if they did not retire at that time. The contract with the fire union was not settled until December, 2012. However, the issue of pension plan reform may still have impacted the behavior of fire members during the study period. As a result, we do not believe we can rely on the actual retirement experience in this period as a reliable indicator of future rates of retirement. For both the police and fire members, the new contracts create different retirement eligibility criteria and modify the benefit structures for various groups of active members. Those differences vary between the police and fire contracts.

Even though the observed data is not credible for the reasons outlined earlier, we did study the actual retirement rates at which members elected service retirements over the study period,. The current assumption, for both police and fire members, is that they work until they reach 25 years of service and then retire or enter DROP. The following table is a summary of the actual service retirements for the period 2007 through 2011:

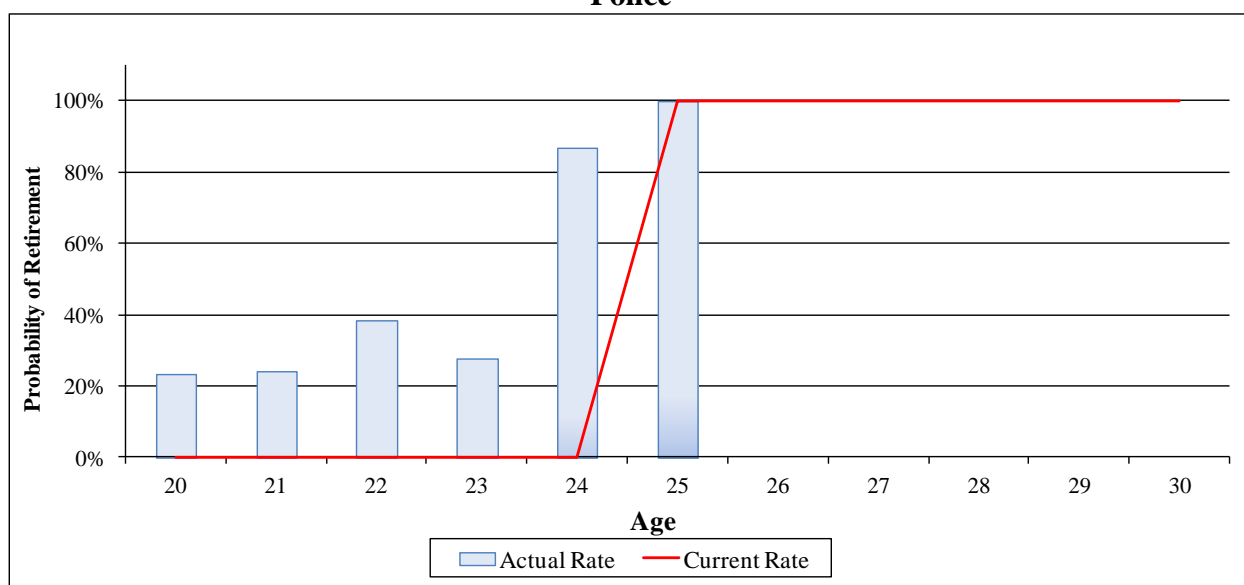
Calendar Year	Retirements		
	Observations		
	Actual	Expected	A/E Ratio
2007	143	60	238%
2008	83	9	922
2009	31	2	1550
2010	42	15	280
2011	<u>12</u>	<u>4</u>	300
Total	311	90	345



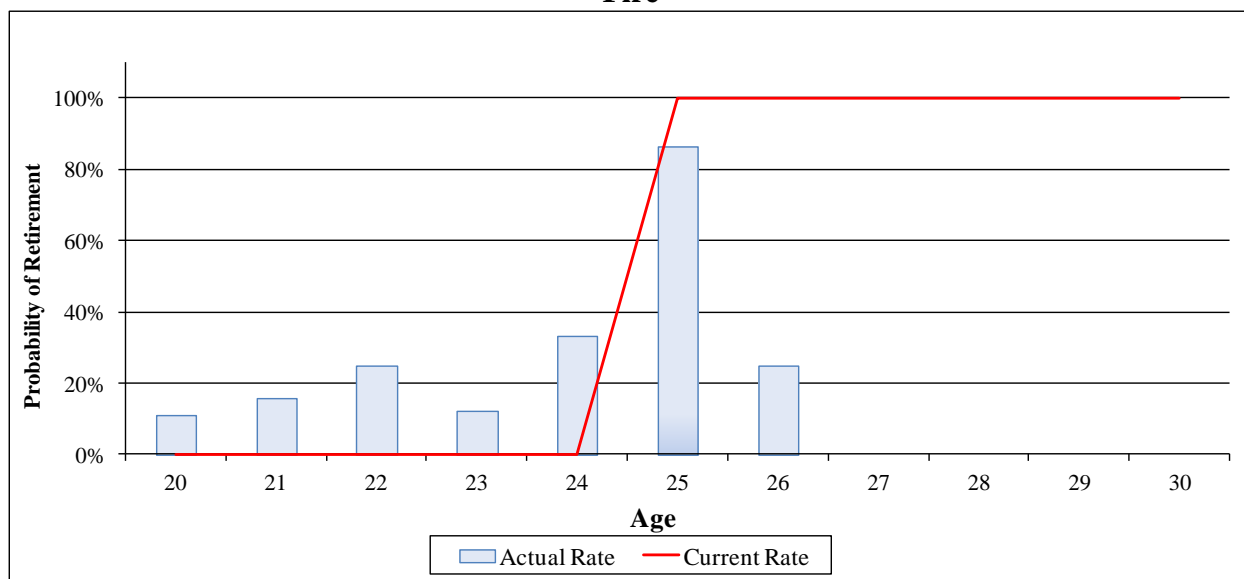
SECTION 7— RETIREMENT

Even if the experience in 2007 is eliminated, the actual number of retirements far exceeds the expected number. In addition, the pattern of actual retirements was very different than the current assumption. The assumption reflects no probability (0%) of retirement prior to 25 years of service and 100% probability of retirement at 25 years of service. The actual experience in 2008 through 2011 indicates that while nearly all members retire (or elect DROP) by the time they reach 25 years of service, some members retire with less than 25 years of service. This was evident in the retirement patterns as shown in the graph below of retirement experience for 2008 through 2011. Given the lack of credibility during the current study period, we are not recommending a change be made at this time. However, the retirement pattern should be closely analyzed in the next experience study so a determination can be made as to whether the retirement rates should be modified.

Police



Fire





SECTION 7– RETIREMENT

Given the plan design for current active members, we believe that it is appropriate to have different assumptions for different groups to reflect the expected retirement behavior by members covered under the different benefit structures. A summary of the retirement eligibility and benefit formulas for Police members are summarized below:

	Police Members		
	At least 20 YOS at contract date	Less than 20 YOS at contract date	Hired after January 1, 2010
Eligible to retire with unreduced benefits	Age 45 and 20 YOS or age 55 and 10 YOS	Age 45 and 20 YOS or age 55 and 10 YOS	Age 50 and 30 YOS or age 55 and 10 YOS
Eligible to retire with reduced benefits	None	None	Age 50, but 7% reduction for each year before age 55 if less than 30 YOS
Benefit formula	10 YOS: 20% 15 YOS: 30% 20 YOS: 50% 25 YOS: 75%	10 YOS: 20% 15 YOS: 30% 20 YOS: 50% 25 YOS: 70% 30 YOS: 75%	10 YOS: 20% 15 YOS: 30% 20 YOS: 50% 25 YOS: 65% 30 YOS: 75%

The benefit structures for Fire members are summarized below:

	Fire Members		
	At least 15 YOS at contract date	Less than 15 YOS at contract date	Hired after January 1, 2013
Eligible to retire with unreduced benefits	Age 45 and 25 YOS, age 50 and 20 YOS or age 55 and 10 YOS	Age 45 and 25 YOS, age 50 and 20 YOS or age 55 and 10 YOS	Age 50 and 30 YOS or age 55 and 10 YOS
Eligible to retire with reduced benefits	None	None	Age 50, but 7% reduction for each year before age 55 if less than 30 YOS
Benefit formula	10 YOS: 20% 15 YOS: 30% 20 YOS: 55% 25 YOS: 75%	10 YOS: 20% 15 YOS: 30% 20 YOS: 50% 25 YOS: 70% 30 YOS: 75%	10 YOS: 20% 15 YOS: 30% 20 YOS: 45% 25 YOS: 55% 30 YOS: 65%



SECTION 7– RETIREMENT

For the group of active Police officers who were hired prior to January 1, 2010 we believe the current assumption that all members will elect to retire at 25 years of service is still a reasonable assumption. The structure of the benefit formula provides a strong incentive for employees to remain in covered employment for 25 years and less incentive for members to remain working from 25 to 30 years of service. Police members hired after January 1, 2010 receive a pension of 65% of final average pay with 25 years of service and 75% with 30 years of service. The benefit increase from 65% to 75% of final average pay is significant enough that we expect many, but not all, members will delay retirement in order to receive the higher benefit of 75% of final average pay. Therefore, we recommend a different assumption be used for the new tier (post-2010 hires) as shown below:

Years of Service	Probability of Retirement
20 to 24	3%
25	5%
26	5%
27	5%
28	10%
29	10%
30	100%

We believe it is reasonable to use the same assumption for Fire members hired after January 1, 2013. For those hired before January 1, 2013, we believe the current assumption of 100% after 25 years remains reasonable. It will be many years before there is any credible retirement experience for the police members hired after January 1, 2010 and fire members hired after January 1, 2013. Until such time we must rely on our professional judgment in setting this assumption.

Inactive Vested Members: The current assumption is that inactive vested members will retire at their first eligible retirement date. There are few such members so no reliable data is available to evaluate this assumption. However, it is reasonable to expect most, if not all, of these members to retire at their earliest retirement date. **We recommend keeping the current assumption that benefits for inactive vested members will commencement at the earliest retirement date. It is a reasonable assumption and provides a conservative estimate of the liability for inactive vested members.**



SECTION 8– DISABILITY

DISABILITY

The size of the System, coupled with the small probability of disablement at most ages, does not permit credible derivation of disability rates based solely on the System’s experience. Nonetheless, the actual to expected ratio was calculated as a general indicator of how well the assumption anticipated actual experience. The following table shows both the experience in the prior and the current study.

	Disabilities		
	Observations		A/E Ratio
	Actual	Expected	
2002-2006	19	29	66%
2007-2011	<u>18</u>	<u>37</u>	49
Total	37	66	56

We also analyzed the actual versus expected experience separately by group, i.e. police and fire. The following table summarizes those results:

	Disabilities (2007-2011)		
	Observations		A/E Ratio
	Actual	Expected	
Police	11	20	55%
Fire	<u>7</u>	<u>17</u>	41
Total	18	37	49

The disability assumption was lowered in the last experience study with rates set so that the actual to expected ratio would increase, but remain well below 100%. This approach increased the probability that actual experience would not result in a higher number of disabled members than assumed. Given that the observed experience in this study period continues to show fewer disabilities than expected, **we are recommending that the current disability rates be reduced by 20%. The A/E ratio using the new assumption is 60% so anticipated disabilities are still above the actual experience, thus providing a margin of conservatism.**



SECTION 9– TERMINATION OF EMPLOYMENT (WITHDRAWAL)

TERMINATION OF EMPLOYMENT

This section of the report summarizes the results of our study of terminations of employment for reasons other than death, retirement, or disability. Rates of termination can vary by both age and years of service. In general, rates of termination tend to be highest at younger ages and in the early years of employment. The current termination of employment rates are age based.

As was noted earlier in this report, the current study period (2007 through 2011) included several years of difficult economic conditions, so the observed experience may not be representative of future experience. Since termination of employment often involves a decision by the member to voluntary leave covered employment, the actual experience can be heavily influenced by economic conditions. However, the impact on public safety groups may be less dramatic than that observed in the general work force.

In the prior experience study, the A/E ratio using the current assumption was 91% (39 actual terminations and 43 expected). As the following table illustrates, the actual number of terminations in this study period was much lower than expected.

	Terminations		
	Observations		A/E Ratio
	Actual	Expected	Current
Police	28	31	90%
Fire	<u>6</u>	<u>25</u>	24%
Total	34	56	61%

During the current study period, the termination rates for Fire members were much lower than for Police members. However, as discussed earlier, the credibility of the data in this study is limited. In addition, actual termination experience was not reported separately for Police and Fire in the prior experience studies. Therefore, we are not comfortable recommending a new assumption at this time. However, the experience should continue to be analyzed separately in the future so the use of different assumptions for each group can be further evaluated. Therefore, **we recommend the current assumption be retained.**



SECTION 10– SALARY INCREASES

SALARY INCREASE ASSUMPTION

Estimates of future salaries are based on assumptions for two types of increases:

1. Increases in each individual's salary due to promotion or longevity (often called merit scale), and
2. Increases in the general wage level of the membership, which are directly related to price and wage inflation.

Earlier in this report, we recommended that the second of these rates, general wage inflation be left at 4.00% (3.25% price inflation and 0.75% real wage growth).

As noted above, future salary increases are the result of two components. Actual salary experience is reported in total, rather than by components, so the experience study reviewed total salary increases for the study period. As has been previously noted, the economic environment during this study period was very atypical. There was considerable pressure on government budgets to reduce expenses as revenues declined. As a result, salary increases for many public employees were very low during the study years. In addition, the union contracts were being negotiated and the salary increases for Fire members were delayed for certain years due with the final determination of wages being set by the Court of Industrial Relations. The inclusion of back pay in the actual salary amounts included in the study created some unusual salary increase patterns. In our study, we compared individual salary increases for any members active in any two consecutive periods (e.g. 2007 and 2008, 2008 and 2009, etc.). The average actual increase during this period was 5.13% while the expected increase was 5.26%.

Recognizing the limitations of the data in the study period, the actual salary experience has very little credibility and it is not appropriate to make significant adjustments to the salary scale based on to the observed data. However, the structure of the pay scales has changed since the last experience study so we felt that further study was needed. We analyzed the pay scales currently in use to determine if, and how, the current merit scale should be modified so it better reflects expected salary increases. The current pay scales for Police and Fire members are different which leads us to recommend that different merit salary scales be developed for each group.

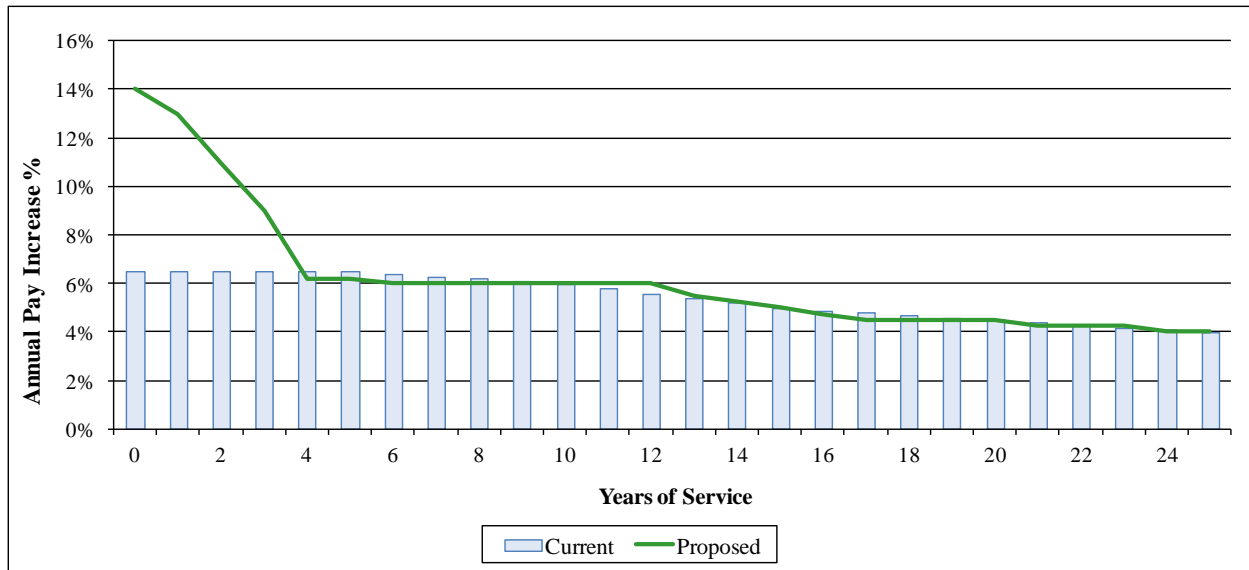
Police: The pay scale for police officers reflects nine steps (A through I) starting with entry as a probationary police officer. Over the nine steps, the pay rate increases vary from a low of 2% to a high of 15%. It is our understanding that the requirement to move from one step to another is dependent on the officer's date of hire. The differences between the requirements for the pre and post-December 27, 2009 groups are minimal. In general, for movement to Steps A through E the requirement is one year. For movement from Step E up to the next Step ultimately reaching Step I, the requirement is two years. Thirteen (13) years after academy graduation, an officer would reach Step I. In addition to reflecting the movement through the various steps, the merit scale should reflect some component of promotion to a higher rank for some members.

Based on the structure and timing requirements of the current pay scale we believe the salary scale (total of general wage growth of 4% and merit scale) should be modified as shown in the graph below.



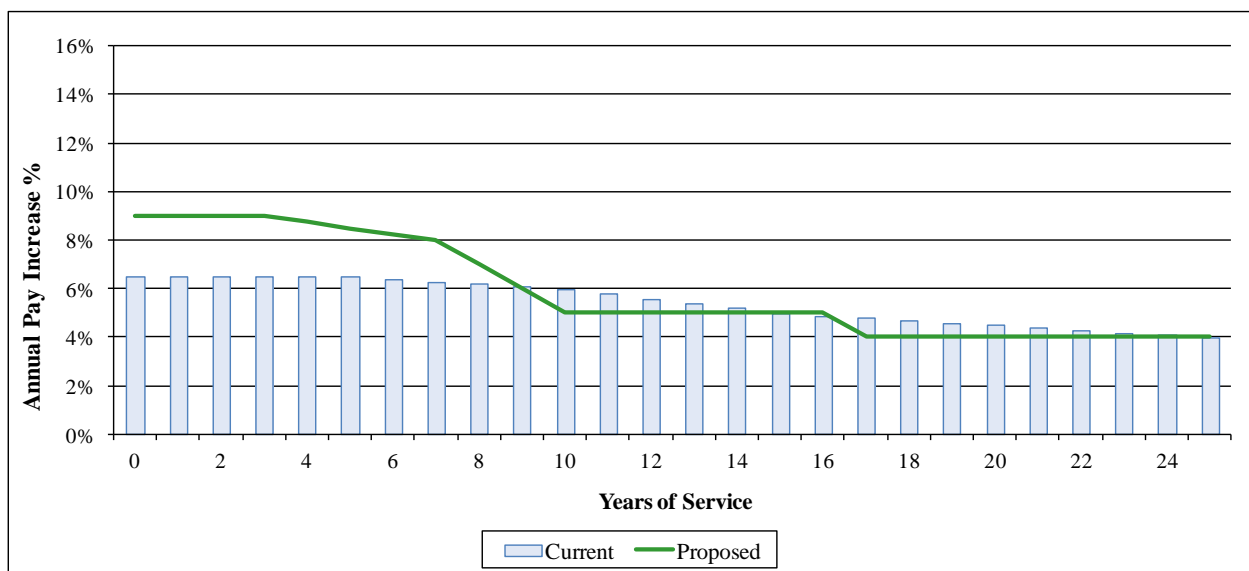
SECTION 10– SALARY INCREASES

Police



Fire: The pay scales for Fire are different than the Police pay scales and thus, we believe a different merit salary scale is appropriate for the fire group. In general, there are seven (7) steps, Steps A through G, for both the firefighters and the fire apparatus engineers. Movement between each step occurs after 12 months other than the movement from Step T (probationary firefighter) to Step A which happens after 6 months. The step increases vary from a low of 4.35% to a high of 5.6%. Again, the merit scale should reflect a component of promotion to a higher rank in addition to movement through the steps of the merit scale. Our recommended salary scale (both 4% general wage growth and merit scale) is shown below:

Fire





SECTION 11– MISCELLANEOUS ASSUMPTIONS

MISCELLANEOUS ASSUMPTIONS

Final Year Wage Adjustment

Prior to the most recent union contracts, the final average pay used to determine the member’s monthly benefit was based on the highest 26 pay periods over the final five years of employment. The definition of pensionable pay for this purpose included cash payments for regular pay, overtime pay, and lump sum cash payments for hours in a member’s “hours bank”. Recent experience indicated that the inclusion of the cash payments from the hours bank created a spike in final average pay at retirement and higher benefit amounts. A specific assumption of 10% of active liability was used in the valuation to estimate the impact of the final year spike in pay on system liabilities.

New plan provisions for both Police and Fire members eliminate spiking by using a high three year average to determine final average pay and averaging overtime hours over a member’s entire career (career overtime average referred to as COTA). The COTA hours are provided to the actuary in the data each year. The actual regular pay, as reported, is adjusted to reflect the current COTA hours. As a result, the assumption that was used to anticipate the spike in final average pay at retirement from lump sum payments is no longer needed. This assumption was no longer used for Police members beginning with the January 1, 2011 valuation and was no longer used for Fire members in the January 1, 2013 valuation, except for a few members who maintained the old definition of pay. Discussion is included here to provide documentation for the change in the assumption.

After using the data provided by the city for three valuations, we have a better understanding of the data items including the COTA hours. While we believe the current use of the actual COTA is a reasonable way to estimate the impact of COTA on the ultimate retirement benefit, we believe it merits further study to determine if the current method provides the best estimate of the retirement benefits expected to be paid from the System. This study would be performed as a standalone project sometime in the next year so that any change in the assumption could be reflected in the 2014 valuation.

Other Minor Assumptions

While we did not specifically include the following assumptions in our review of actual experience in the last five years, we believe the current assumptions remain reasonable and should be continued.

	Current Assumption
• % of total disabilities that are service related	85%
• Medical expenses for disabilities in line of duty	5% load on current and future disabled liabilities
• % married at death or retirement	75%
• % with dependents at death of active member	77%
• Average number of children per married member	1
• Age difference if unknown	Females are 3 years younger than males



SECTION 11– MISCELLANEOUS ASSUMPTIONS

Based on data tracked by the city, 86% of all disabilities that occurred in the study period from January 1, 2007 to December 31, 2011 were service related. Therefore, we believe the current assumption is reasonable and should be retained.

There is significant variability in the size of medical payments for disabilities from year to year, but based on the actual experience over the last five years, the current load appears to be a reasonable estimate.

While we did not include the other minor assumptions in our review of actual experience in the study period, we believe the current assumptions are reasonable and should continue to be used. Changes in these assumptions would have a relatively minor impact of the liabilities and costs of the System.



APPENDIX A – CURRENT ACTUARIAL ASSUMPTIONS

Interest:	8.00% per year, (net of investment expenses).
Salary Increases:	Merit increases based on service plus a general wage increase.
Service Retirement Age:	Graduated rates based on service.
Mortality:	
Active Members	RP-2000 Employee Table with generational improvements, set forward one year
Service Pensioners and Beneficiaries	RP-2000 Healthy Annuitant Table with generational improvements, set forward one year
Disabled	RP-2000 Disabled Retiree Mortality Table with generational improvements
Disability:	Graduated rates by age. See table on next page.
Percent of Disabilities in Line of Duty:	85%
Medical Expenses for Disabilities in Line of Duty:	5% load on liability for current and future disabled members.
Percent Married at Death or Retirement:	75%
Turnover	Graduated rates by age. See table on next page.
Assets:	Actuarial value of assets equal to 1/3 of market value, plus 2/3 of expected value. Actuarial value of assets cannot exceed 120% of Market value of assets.
Load on Active Member liability to reflect final wage adjustments	10% for Fire members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of most recent contract date, 0% for all other Fire members and Police members
Increase in total annual payroll	4.0%
Assumed annual rate of inflation	3.5%



APPENDIX A – CURRENT ACTUARIAL ASSUMPTIONS

SAMPLE RATES

Annual Rates

Age on 1/1/2010	Mortality		Disability	Turnover
	Males	Females		
	20	.03%	.02%	.26%
30	.05	.03	.30	1.69
40	.10	.07	.52	.63
50	.19	.15	.95	.00
60	.46	.41	1.45	.00

Salary Progression

Years of Service	Inflation	Productivity	Merit & Longevity	Total Increase
1	3.5%	0.5%	2.5%	6.5%
5	3.5%	0.5%	2.5	6.5
10	3.5%	0.5%	2.0	6.0
15	3.5%	0.5%	1.0	5.0
20	3.5%	0.5%	0.5	4.5
25	3.5%	0.5%	0.0	4.0

Service Requirements

Assumed retirement rates are based on the number of years of credited service as follows:

Years of Service	Distribution	Annual Rate
Less than 25	0.0%	0.0%
25	100.0	100.0

If a member was hired after age 37, then it is assumed that member would retire at the later of age 62 or 10 years of service.



APPENDIX B – PROPOSED ACTUARIAL ASSUMPTIONS

Interest:	8.00% per year, (net of investment expenses).
Salary Increases:	Merit increases based on service plus a general wage increase.
Service Retirement Age:	Graduated rates based on service.
Mortality:	
Active Members	RP-2000 Employee Table with generational improvements, set forward one year
Service Pensioners and Beneficiaries	RP-2000 Healthy Annuitant Table with generational improvements, set forward one year
Disabled	RP-2000 Healthy Annuitant Table with generational improvements, set forward five years
Disability:	Graduated rates by age. See table on next page.
Percent of Disabilities in Line of Duty:	85%
Medical Expenses for Disabilities in Line of Duty:	5% load on liability for current and future disabled members.
Percent Married at Death or Retirement:	75%
Turnover	Graduated rates by age. See table on next page.
Assets:	Actuarial value of assets equal to 1/3 of market value, plus 2/3 of expected value. Actuarial value of assets cannot exceed 120% of Market value of assets.
Load on Active Member liability to reflect final wage adjustments	10% for Fire members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of most recent contract date, 0% for other Fire members and all Police members
Increase in total annual payroll	4.0%
Assumed annual rate of inflation	3.25%



APPENDIX B – PROPOSED ACTUARIAL ASSUMPTIONS

SAMPLE RATES

Annual Rates

Age on 1/1/2010	Mortality		Disability	Turnover
	Males	Females		
20	.03%	.02%	.21%	1.41%
30	.05	.03	.24	1.69
40	.10	.07	.42	.63
50	.19	.15	.76	.00
60	.46	.41	1.16	.00

Salary Progression – Police

Years of Service	Inflation	Productivity	Merit & Longevity	Total Increase
1	3.25%	0.75%	9.0%	13.0%
5	3.25%	0.75%	2.2	6.2
10	3.25%	0.75%	2.0	6.0
15	3.25%	0.75%	1.0	5.0
20	3.25%	0.75%	0.5	4.5
25	3.25%	0.75%	0.0	4.0

Salary Progression – Fire

Years of Service	Inflation	Productivity	Merit & Longevity	Total Increase
1	3.25%	0.75%	5.0%	9.0%
5	3.25%	0.75%	4.5%	8.5%
10	3.25%	0.75%	1.0%	5.0%
15	3.25%	0.75%	1.0%	5.0%
20	3.25%	0.75%	0.0%	4.0%

Service Requirements

Assumed retirement rates are based on the number of years of credited service as follows:

Years of Service	Distribution	Annual Rate
Less than 25	0.0%	0.0%
25	100.0	100.0

If a member was hired after age 37, then it is assumed that member would retire at the later of age 62 or 10 years of service.



APPENDIX C – DEMARCHE CAPITAL MARKET ASSUMPTIONS

Model Inputs - 2012

Assumes 3.1% long-term inflation rate.

Asset Class	Expected Return	Standard Deviation	Geometric Return	Asset Class	Expected Return	Standard Deviation	Geometric Return
Large Cap Stocks	9.0	18.5	7.4	Emerging Mkt Debt	8.0	11.2	7.4
Mid Cap Stocks	9.4	20.5	7.5	TIPS	5.1	6.0	4.9
Small Cap Stocks	10.3	24.0	7.7	Cash Equivalents	4.1	1.5	4.1
International Stocks	9.2	20.0	7.4	Private Real Estate	8.6	7.5	8.3
International Small Cap Stocks	10.5	24.7	7.7	Public REITS	9.5	21.0	7.5
Emerging Markets Stocks	12.0	29.0	8.2	Venture	15.0	30.0	11.0
Long Bonds	6.5	11.3	5.9	Buyouts	13.0	18.0	11.6
Intermediate Bonds	6.6	6.7	6.4	Mezzanine	11.0	11.5	10.4
Short Bonds	5.9	4.0	5.8	Distressed Debt	11.0	13.0	10.2
High Yield Bonds	8.4	11.0	7.8	Hedge Funds Conservative	7.2	6.5	7.0
International Bonds	7.0	11.0	6.4	Hedge Funds Strategic	9.0	9.0	8.6
Bank Loans	6.8	8.0	6.5	Commodities	10.0	20.0	8.2

Asset Class Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1. Large Cap Stocks	1.00																								
2. Mid Cap Stocks	0.92	1.00																							
3. Small Cap Stocks	0.88	0.94	1.00																						
4. International Stocks	0.73	0.69	0.62	1.00																					
5. International Small Cap Stocks	0.66	0.66	0.66	0.90	1.00																				
6. Emerging Markets Stocks	0.69	0.71	0.75	0.69	0.72	1.00																			
7. Long Bonds	0.26	0.15	0.18	0.22	-0.07	-0.15	1.00																		
8. Intermediate Bonds	-0.08	-0.13	-0.19	0.27	0.12	-0.18	0.98	1.00																	
9. Short Bonds	0.09	0.01	0.04	0.07	-0.33	-0.29	0.81	0.91	1.00																
10. High Yield Bonds	0.62	0.62	0.62	0.56	0.56	0.61	0.14	0.15	-0.04	1.00															
11. International Bonds	-0.08	-0.13	-0.19	0.27	0.12	-0.16	0.51	0.54	0.49	0.04	1.00														
12. Bank Loans	0.55	0.56	0.52	0.55	0.59	0.51	-0.27	-0.23	-0.35	0.84	-0.13	1.00													
13. Emerging Mkt Debt	0.52	0.53	0.52	0.44	0.36	0.61	0.13	0.13	-0.02	0.48	-0.08	0.29	1.00												
14. TIPS	-0.27	-0.20	-0.27	-0.20	-0.07	-0.08	0.40	0.54	0.43	0.13	0.27	0.13	0.134	1.00											
15. Cash Equivalents	-0.03	0.01	-0.07	-0.08	-0.18	-0.04	0.01	0.10	0.39	-0.06	0.05	-0.055	0.016	0.01	1.00										
16. Private Real Estate	0.10	0.06	0.05	0.12	0.09	0.00	-0.13	-0.12	0.00	-0.09	-0.06	0.023	-0.005	0.03	0.43	1.00									
17. Public REITS	0.55	0.58	0.66	0.53	0.56	0.43	0.12	0.08	-0.06	0.59	0.07	0.575	0.389	0.08	-0.04	0.19	1.00								
18. Venture	0.48	0.47	0.49	0.32	0.23	0.35	-0.08	-0.10	-0.11	0.16	-0.18	0.168	0.325	-0.14	0.07	0.14	0.12	1.00							
19. Buyouts	0.63	0.54	0.56	0.49	0.49	0.48	-0.20	-0.25	-0.33	0.29	-0.31	0.422	0.438	-0.12	0.00	0.21	0.40	0.40	1.00						
20. Mezzanine	0.33	0.32	0.34	0.28	0.22	0.30	-0.14	-0.17	-0.23	0.23	-0.11	0.177	0.208	0.01	0.08	0.21	0.26	0.50	0.38	1.00					
21. Distressed Debt	0.71	0.73	0.75	0.70	0.74	0.68	-0.22	-0.26	-0.43	0.75	-0.15	0.692	0.513	0.06	-0.05	0.19	0.66	0.35	0.64	0.30	1.00				
22. Hedge Funds Conservative	0.65	0.66	0.62	0.62	0.52	0.60	-0.15	-0.15	-0.27	0.62	-0.19	0.655	0.507	0.14	0.24	0.34	0.46	0.58	0.67	0.51	0.83	1.00			
23. Hedge Funds Strategic	0.56	0.58	0.55	0.46	0.37	0.57	-0.01	-0.01	-0.06	0.41	-0.08	0.442	0.453	-0.03	0.24	0.05	0.31	0.62	0.44	0.34	0.60	0.76	1.00		
24. Commodities	0.15	0.19	0.14	0.32	0.38	0.29	-0.17	-0.15	-0.25	0.33	0.00	0.492	0.195	0.35	-0.01	0.24	0.32	0.16	0.25	0.27	0.46	0.54	0.25	1.00	

Appendix F

November 18, 2015
Retirement Committee
Hearing Transcript

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BREAK

SENATOR DAVIS: So I think we'll reconvene and we'll start first with the Eastern Nebraska Health Agency. I've been a little remiss. This is my first hearing, as I said, as a Chair. So there are blue sheets. Everyone needs to sign those. If you're going to testify, make sure you state your name first then spell it afterwards. Senator Kolowski did come in and, of course, he's been here and has asked a few good questions. If you do not choose to testify, you may also submit your comments in writing and have them read into the official record. We can do that. And if you're...you probably have been sitting here feeling like Senator Davis is using his phone, but I'm trying to turn it off. (Laughter) So make sure you turn your phones down so they don't ring. So

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with that we're going to start with the Eastern Nebraska Health Agency who I believe needed to go first.

BOB BRINKER: Good afternoon, members of the Retirement Committee. My name is Bob Brinker. I'm with Eastern Nebraska Human Services Agency, specifically I held the title of director of N-CORPE, hence using the acronyms, serves a five-county area in eastern Nebraska: Dodge, Washington, Cass, Sarpy, and Douglas County. And we provide a variety of human services. My case, I'm (inaudible) with developmental disabilities. We have Eastern Nebraska Office of Aging, and then Alpha School which is a specialty program for school. And then as a participating agency is Region VI Behavioral Health. We're formed under the Interlocal Cooperation Act and been in existence since 1974, here to present the information on LB759 reporting form. I don't know what particular format you'd like me to follow, but just going through the numbers, our agency is a 76 percent funding ratio as of our most recent actuarial valuation which is January 1, 2014. We do the valuations on a two-year cycle. So the next cycle would be for the period ending January 1, 2016. We've made an improvement of our net assets over the last two valuations of approximately \$7 million. The unfunded actuarial accrued liability has decreased by \$4.5 million. As to what caused their underfunding: a combination of a variety of factors. Equity investments did not meet return assumptions, low fixed rate investments, and then contributions which were insufficient to properly fund. As far as our actuarial methods, recently we updated our mortality table. We do have a 7 percent return assumption that we use for actuarial valuation purposes. Probably most importantly, our efforts related to improving the funding status, approximately five years ago we engaged in a process whereby we were increasing our contributions by .5 percent over a period of time. We did this in conjunction with SilverStone, our actuarial consultant. And our goal was to hit 85 percent funding ratio by 2025. Again, we're working on a slow basis, working money into the budget as we could to improve the funding status as well as trying to meet the needs of all the things that we do within the agency. This past summer, we updated the forecast study and trying to project out where we'd be with our improved contributions. Our original plan called for increasing contributions to 9.5 percent. And so we asked SilverStone to take a look at where we're at at this point in time five years later after increasing contributions and say...and asked them to look at the study from three perspectives. One, if they held at 8 percent contribution rate, where we would be at in 2025? And we'd actually end up at 84 percent. They did another alternative where it

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would go to 8.25 percent and then hold at that and then at 2025 we'd hit that 85 percent. They also did a third alternative and said if you kept on increasing by .5 percent a year and all the way topped out at 9.5 percent, where would you be at 2025? And in that study we'd hit 92 percent funding ratio at that point. So we're on track. I do have a collective bargaining agreement. Increasing the contribution was part of negotiation. Ironically, they're voting on our proposal tomorrow. We tentatively agreed to that. Our most recent actuarial experience study was conducted July 2012. We do it on a four-year cycle. The next experience study will be July 2016. And I have provided copies of our actuarial valuation as well as our GASB 68 statement which is required now, provided by SilverStone and submitted to our auditors. And with that, I would answer any questions you may have.

SENATOR DAVIS: Questions? How many employees do you have under the plan?

BOB BRINKER: Under the pension plan, we have 839. In terms of the entity and everybody, staff we have coming to work on any given day, probably, approximately 900 people.

SENATOR DAVIS: And only one tier? There aren't multiple tiers?

BOB BRINKER: No. We have one plan.

SENATOR DAVIS: And did you say your assumed rate was 7 percent?

BOB BRINKER: Assumption rate, investment return is 7 percent, correct.

SENATOR DAVIS: Any other questions? Quick and dirty, thank you.

BOB BRINKER: Thank you, Senators. Appreciate it.

SENATOR DAVIS: So the next group we have on our agenda is the Omaha police and fire.

STEPHEN CURTISS: (Exhibit 2) Good afternoon, Senators. I've Steve Curtiss, C-u-r-t-i-s-s. I am the finance director for the city of Omaha and I'm also the administrator for the city of

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Omaha Police and Fire Pension System. I think you've got our report as we filed. I think the page is now giving you another handout that kind of summarizes the information about our pension. So I'll run through that real quickly and then we can get to your questions. This particular pension was founded in 1961. So it's been in existence for quite a while. Per the plan documents, the membership in the plan is limited to the...limited to and shall include only probationary regular uniformed personnel of the police and fire departments. So obviously it is for the police and fire as the name states. Receipts for 2014, which is the last year that we have closed, were approximately \$90 million. The disbursements were approximately \$70 million. So in the year of 2014, we had about a \$20 million reserve surplus for that year. If you go to the second page of the handout I just gave you, it talks about the actual retirees in the system. We have approximately 1,500 retirees in the system. And the system itself covers around 3,000 total including active and retiree. If you go to the next page, this summarizes some of the things out of our last actuarial report. You may recall that not that long ago this particular pension was funded to the tune of about 39 percent and it created a lot of angst on everybody's part. We are now at about 50 percent, 51 percent. And this is the first year that the pension did fund its ARC. I would caution you, there was some changes in the way that we did things like amortization, the DROP program was for the first time fully loaded in here. Had it not been, we were probably actually slightly worse, or as my actuary has told, just slightly...our liability was slightly higher. She didn't like the word "worse" because she didn't believe that was indicative of the actual position. But we did fund our ARC this year. Our actual unfunded liability at the end of '14 was calculated to be about \$600 million. So the position, from a (inaudible) standpoint is about the same. If you go to the final page of the handout I just gave you, it shows some of the return information because one of our assumptions still is 8 percent and we realize there has been a lot of discussion about the adequacy or the need for 8 percent. I would have you look at our...if you go to the far right about the middle, it shows 9.3 percent is what we've accomplished over the last 30 years. That's our average annual return. Obviously in the last year or two, returns have not been that. We'll continually review that, but it is a long-term, 30-year-plus perpetual endowment. So it's not exactly the same as looking at our retirement funds and trying to decide how we might invest our money. I'd also ask you to remember that only about 60 percent of our funds are in domestic, international, or debt instruments. The other 40 percent approximately is in things like real estate, timber, private equity, commodities, a lot of other things that have a completely potentially uncorrelated return to the market. So with that, I think...I would ask you to remember

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that even though we look fine now, I think the administration currently is still looking at some additional reform. I think one of the main things they're trying to negotiate this time is just to put everybody on parity as far as their contributions. Right now the police put in a little bit less. And I think there's an attempt to get that parity back. We were with the bond raters about a month ago, and they bring this up as one of the significant reasons why our bond rating is one click lower than it has been historically. They point out both pensions as one of the main reasons. There's also OPEB, which I'm sure you're familiar with--other postemployment benefits. But our pension systems and their underfunding continually hits their radar. So with that, I think that's the...most of the detail that I would hope to share with you. And I'll open it up to you for questions.

SENATOR DAVIS: Senator Kolterman.

SENATOR KOLTERMAN: Thank you, Mr. Chair. I just...my question deals with the unfunded aspect of your retirement plan. What are you doing to correct it?

STEPHEN CURTISS: We have negotiated a number of different changes to all the contracts involved. And we're still working on the final one. Our latest projection, which was done about a year ago, said it would be fully funded in 21, 22 years, something like that. Obviously that depended on returns coming in and all the assumptions are embedded in that. But it does show that we've gone from 39 percent to 50 percent, 51 percent. So we seem to be headed in the right direction. But it took a long time to get sort of out of whack. And it will take a while to put it straight again.

SENATOR KOLTERMAN: The only reason I ask that is if you take a look at the state-managed plans, they're all significantly higher and we think that's bad. I think you need to take a really hard, serious look at that.

STEPHEN CURTISS: I think the administration would say that's been on the forefront since the Fahey administration a while back. It's been a focus of...each administration has attempted to turn this around in the right direction.

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SENATOR KOLTERMAN: Thank you.

SENATOR DAVIS: Senator Mello.

SENATOR MELLO: Thank you, Chairman Davis, and thank you, Mr. Curtiss and Mr. in den Bosch, for being here today. I have a couple questions. One, in the report, you indicate, and I'm quoting it, the benefits were increased in the 1990s and even though the cost was calculated, the benefits appear to have exceeded these costs, end quote. Have you determined why these costs exceeded the actuarial contributions?

STEPHEN CURTISS: You know, I don't know that either one of us were actually here during that period. You may have been. I think when the prior administration, because we're now going back a number of administrations, as they bargained and negotiated for what they believed was fair and they came to the conclusion and came to an agreement on contracts, I think whatever they agreed to turned out to be more expensive than what was actuarially calculated at the time.

SENATOR DAVIS: Can you....

BERNARD in den BOSCH: Bernard in den Bosch, deputy city attorney, last name, common spelling for in den Bosch, but it's i-n d-e-n B-o-s-c-h. I think what happened, primarily there's two things that probably led to it. One, when the benefits were negotiated, they were...there were certain...there was an actuarial analysis done just of that benefit. And I'm not sure that the analysis was necessarily done of where it fit in the whole plan. And I think secondly, to be fair to the actuary as well, there were some expected employee conduct. And that that expected employee conduct didn't always result in what was expected. And particularly there was a time when employees were provided some additional comp time with the thought that there was a desire for additional time off. It turns out that the time off wasn't used and people were able to use that comp time to be able to kick up their base pay for purposes of calculating a pension. All those things...that's one example, but there were a series of things like that that occurred. The benefits got better. The economy was not...and of course the benefits got better in the late '90s when the economy was booming, at least for purposes of pension balances. And then things slowed down and then I think some of the actuarial assumptions, I'm not sure the analysis was as

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complete and some of the information provided the actuary was probably not as complete as maybe we would have liked.

SENATOR MELLO: Okay. Thank you. Thank you. Can you give us an update in regards to the current status on the negotiations with the Omaha Police Officers Association.

BERNARD in den BOSCH: Yeah...

STEPHEN CURTISS: Just so...be fair to the other senators, Bernard is also the...he's the attorney for the pension system itself and he's also involved in negotiations, part of why he's here, because that's sort of an instrumental piece of this, in case you were wondering why Bernard is here.

BERNARD in den BOSCH: And I'll say generally I guess I'm a little hesitant to get into the specifics of negotiations, but I can repeat what I think has been reiterated in the press. And that is that there's ongoing negotiations. Obviously at this point in time they've reached an impasse. The parties have a matter pending before the Commission of Industrial Relations. That doesn't preclude the parties from at some point in the future getting back together. I think the...as has been reported in the press, the mayor has made two demands relative to pension. One is that the maximum benefit paid for new hires, those that would be hired prospectively for police officers, would match the same that appear for the other three bargaining groups that are part of the same system. And the second is there was a provision in the last labor agreement where police officers' benefits, their contribution decreased by a percent at the end of the contract. And it's trying to get that percent back to where it was so that it would then be consistent with the others. So I think that part of it is certainly we're always looking at the pension system, but the other part of it is consistency across the different groups.

SENATOR MELLO: Now that would, to some extent, leads to I think what we...most of us know that obviously the CIR in regards to the city and the Omaha Police Officers Association are currently in front of the CIR. Do you have an estimated time line of when you think we could see a potential decision?

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BERNARD in den BOSCH: I'll tell you the best I can tell you. Right now, the trial on what cities will be part of the array--so the CIR contemplates that seven to nine cities will be part of the array--is scheduled to occur on January 20 and 21.

SENATOR MELLO: Okay.

BERNARD in den BOSCH: Obviously there will be some time for the CIR to consider the evidence and then they'll enter an order. You know, whether that takes 30 days or 60 days, I would anticipate that it will take some time. Then after that there will be a subsequent trial scheduled which will be for purposes of looking at...doing the wage comparison as well as potentially doing the hourly rate value comparisons for the pension and health insurance. Neither party is going to incur the expense of hiring an actuary to do the hourly rate value comparison for the pension or the health insurance until the array has been selected. That expense approximates somewhere between \$10,000 to \$15,000 potentially per city that you evaluate. So once the array is determined, let's say it occurs in March, then there's going to be several months of retaining an actuary to do that particular analysis. And then there will be a subsequent trial and then a subsequent decision. So best case scenario, I think mid to late summer is probably the earliest you could see a decision, and that may be optimistic.

SENATOR MELLO: Do you have an expected outcome, I mean, in regards to what the city is looking for from the CIR?

BERNARD in den BOSCH: We certainly have an array of cities that we think are comparable, that meet the criteria established by the Legislature and are similar. We've certainly done an analysis of those particular cities. We are aware of the array of comparable cities that the police union is using. There are three or four that are the same and there's five or six that are different. So you know, I think if you were...if they use the array that we (inaudible) we're pretty comfortable. It's...we're pretty much on course. But what's going to happen is going to be so dependent on the array that's determined by the CIR after they hear the evidence about sizes and comparable cities and similar working conditions.

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SENATOR MELLO: Has the city done any estimates at all in regards to potential liability in regards to costs based off a decision from the CIR?

BERNARD in den BOSCH: I don't...not specifically because I don't think anybody...I mean we're still gathering the data on the cities. We just have received our data. We're still in the process of putting it together. That would be the first thing that we could look at. We don't have...we've learned the police union cities within the last several weeks. So we certainly haven't had an opportunity to go and gather...gathering data you'd like to believe is as simple as making a phone call or going and visiting. Unfortunately, it requires someone to go there. It requires cooperation from the other cities. Sometimes they don't have as much incentive to assist a city coming in from out of state as maybe somebody internally would. And the language in the statute that requires them to comply doesn't carry that much weight outside the state of Nebraska (laugh) unfortunately.

SENATOR MELLO: I understand.

STEPHEN CURTISS: Well, and, Senator, remember, too, that we do each year as we budget for our contracts that are open, we put an estimated...we call it wage adjustment. But we do put in our budgeting process money aside to give what we think is...in general it's going to be what the city believes we're going to offer and thinks is reasonable. We can't ever guarantee that it's going to be exact, but there is at least something there that should be in the ballpark.

SENATOR MELLO: I guess my last question is maybe more of a revisiting from last year when you both were in front us in the sense of explaining that essentially the city did I think a very public declaration. The mayor did a press release or a press conference saying that the Omaha Police and Fire System was moving in the right direction. It was going to be funded in 21 years. Your report this year says it's going to be fully funded in 17 years. I guess my question is, is it moving in the right direction? Because it seems like, to some extent, there is mixed messages being sent in regards to all these other reforms and changes need to be made. While you've actually...seems like you've solved the issue in regards to having it fully funded in 17 years, which, as what this committee has gone through the last couple years with our school employees and judges, that's actually in line with kind of the time frame that we've been able to figure out

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our pension reforms at the state level. And so it seems like from your previous two reports things are actually moving where everyone expected it to move with the big reforms. But I guess that's the one question I have...I'm struggling with, which is what would be the outcome of the CIR, so to speak, that would have any real impact, so to speak, on the future funding liabilities of your plan knowing that it's going to be fully funded in 17 years?

STEPHEN CURTISS: And without Bernard commenting on that, I think one of the things that we take a lot or get a lot of questions about is our 8 percent return. That is at the high end of what all pension funds use nationally. We certainly haven't achieved that in the last year, year and a half. And so I think there's some legitimate concern about the assumptions that are used to get to a 17- or 20-, 21-year kind of return. Certainly our bond raters don't believe...they don't believe our story. They have their own models and they come up with a quite different story. And they would encourage us to do a lot more. So I guess it's predicated on assumptions that are not easy to meet. And we don't have a recent history of getting there. We haven't agreed to change those assumptions, but they're fairly aggressive assumptions.

SENATOR MELLO: Okay.

BERNARD in den BOSCH: Can I just add something to that, only because I think you're absolutely right. The pension reports that we see and the changes that were made in 2010 and 2012 have been...have put us on a path to go the right direction I think as I indicated previously. Certainly we're going to have to continue to evaluate the assumptions, whether they...you have to evaluate those assumptions annually and make sure that those are in place. The other thing, and I think from...there's also a fairness aspect. And I think when you get to the discussion with the police union--as I said, I'm trying to avoid getting into the discussion--there's a fairness aspect in looking for consistency across the board. The only mechanism that we have in place in the event that somebody says to the city of Omaha, no, we're not willing to negotiate with you at all, is to use the Commission of Industrial Relations. We all know that the Commission of Industrial Relations is not going to change the pension benefits. We know that. But it does have the ability to consider the richness of the pension benefits when it does its hourly rate values. So the only hammer we have, the only way that we can push the change that we think is needed in order to have consistency and fairness and granted, we hope won't...paint an even rosier picture, is the

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CIR. So I appreciate the position. You say you're not going to get the thing that you're requesting. To some extent, that's true. But to use that then you would get into negotiations...you'd never be able to negotiate a single healthcare or pension change with the union because they'd say, well, if the CIR is not going to change it, why even bother? Well, the CIR does hopefully, with the changes that were made four years ago, give us an ability to make sure that those are evaluated. And it is our only hammer. So I apologize.

SENATOR MELLO: No, and I appreciate it, Mr. in den Bosch. I've got one follow-up question and I think Mr. Curtiss mentioned it. The city for the first time in some of the historical information showed that you paid the 100 percent payment of your ARC, which is I think for those of us who have been involved in this policy issue for a while knows that's the first thing you have to do to fix pension problems is pay your required contribution annually. Is that going to essentially be the city policy moving forward, that that 100 percent ARC will continue to be paid on an annual basis to help start to rectify what would be some of your unfunded liabilities?

STEPHEN CURTISS: No, because as you know...hopefully it will be in a situation where it can continually fund, but it's really predicated on the contracts, employment, and those percentages that are driven based on employment. Certainly over time you would hope that you've constructed all those contracts and negotiated so that you can continually meet that. But I don't know that there's a guarantee yet implicit in this. It was partially a function of...recalculated because of DROP, putting amortization in back to 30. I think that certainly helped. I think we're in the neighborhood. Whether or not we continue to do it I guess will remain to be seen. I think what Bernard was saying was that the one issue that they're still attempting to get I think would...as much as anything was more of a parity issue just with the other union who could say, well, if they don't have to then why should we? As far as that, I think you're probably familiar with the charter provision that says we have to do everything bilaterally, which is not a bad provision because it makes sure both parties come to the table and they all agree how they're going to fix things. But it does preclude us from unilaterally dumping money in. It doesn't mean that we put the exact same percentages in. That's always bargained: All right, if you'll do this on the employment side, then we'll put a little bit more here. But there is kind of a give-and-take, which I don't think is a bad thing. It was probably a provision that was kind of wise they put in years ago.

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SENATOR LINDSTROM: Thank you, Mr. Chairman. Thank you, gentlemen, for being here. Quick question or maybe a couple questions, the potential cities that would be a part of the comparison, what is a typical assumption rate or even a city? Is it Des Moines? What does that look like? And do you know of other assumption rates in a potential city that might be in comparison?

BERNARD in den BOSCH: The CIR establishes a range, cities that are half the metropolitan statistical area to double the metropolitan statistical area. And then it favors proximity over nonproximity. And frankly Des Moines doesn't make it in on the MSA.

SENATOR LINDSTROM: Okay.

BERNARD in den BOSCH: Nor does Lincoln under our current...I mean there are other cities that are potentially in there. You get to some of the Minneapolis-St. Paul; you get to Milwaukee, Madison potentially, Denver, Colorado Springs, Oklahoma City, Wichita, Tulsa, Kansas City potentially; those are the types of cities, Memphis, Nashville, maybe Columbus, Toledo, some of the Ohio cities. So it's almost you draw concentric circles out with those things. And then after you've looked at the metropolitan statistical areas, then you have to do a comparison as to whether the working conditions are substantially similar.

SENATOR LINDSTROM: Are you aware of any of the cities you named that have an 8 percent assumption rate?

BERNARD in den BOSCH: I can't tell you for...I can't tell you one way or the other. My...when we looked at the issue...last time there was much discussion about the issue many years ago, a number of the...8 percent, although maybe aggressive in the private sector, is I think a fairly common assumption in the public sector.

SENATOR LINDSTROM: Okay. I just, clarification, the firefighters pension has three tiers, correct? Is that correct, as far as retirement?

BERNARD in den BOSCH: When you say three tiers...?

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SENATOR LINDSTROM: Benefits, they have a top tier, basically guys who have been in the...part of the service for longer, and then it kind of falls from there.

BERNARD in den BOSCH: The fire and police are similar in how they're done, though the percentages might be slightly different. Their pension is based on you have to have been there 10 years to qualify. And there's a percentage for 10 years, a percentage for 15 years, and then from 20 years on your percentage is going to be based on your years of service and it moves up. So the top after 30 years now is 75 percent. At 29 years, I think it's 74 percent. At 29.5, it's 74.5 percent of the base pay. So it...there is the 10, 15, and then when you get 20 and beyond it is based on your years. I think that's what you're asking.

SENATOR LINDSTROM: Yeah, okay. Yeah, that's exactly what I was going for. And I forget the term you used. You might have used employee misconduct or overtime (inaudible). I mean essentially what you're saying was spiking, right, that's the term?

STEPHEN CURTISS: He made it through his whole thing without using the word "spiking."
(Laughter)

SENATOR LINDSTROM: I just wanted clarification on that.

BERNARD in den BOSCH: The issue that I was referencing specifically had to do with firefighters. Spiking exists in different places and if we get into it, I'm going to define what I think spiking means because there's different people who think it means differently. But there was, in the 2000s, there was, in exchange for a no...0 percent increase in wages, there was a plan put in place where people would also not get paid for their holidays and they would bank their holidays. And their comp bank was allowed to be up to 500-plus hours. The thought was that people wanted the opportunity to use that leave. And if they used that leave, then of course you wouldn't do it. But the way their contract was written, they could sell comp time whenever they wanted. That issue was resolved through negotiations with something called the career overtime average because you put pension in contributions for each of those hours when they're paid. But the problem is if you're working 2,000 hours your whole career and then your pension is based on you earning...working 2,400 hours, there's a shortfall. That's a simplistic version. I'm sure Pat,

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Ms. Beckham would have...say it's much more complicated than that. But I mean that basic presumption, so the idea of the career overtime average is let's average your overtime over your whole career and that attempted to address that problem. But that was certainly one of the problems we're talking about dealing specifically with fire. Police spiking was a little bit different problem.

SENATOR LINDSTROM: Okay. Thank you.

SENATOR DAVIS: So I've got a few questions. When was the last experience study done?

STEPHEN CURTISS: We just finished one. It's been a couple years.

BERNARD in den BOSCH: No, it was...it was submitted September 27, 2013. We do them every five years.

SENATOR DAVIS: Every five years. Have you considered in light of investment modification I guess of expectations of maybe lowering that rate?

BERNARD in den BOSCH: I think the pension board has had that discussion each year with the actuary when the actuary makes the report. At this point based on the return and the historical returns, and Mr. Curtiss will probably add to this, there hasn't been...they've considered it but no action has been taken because at least the...you know, you've got a 30-year history as well as even a 10-year history that seems to support it, though you're always leery as times occur because obviously we've had some significant market issues in the past 10 years that have had effects (inaudible).

STEPHEN CURTISS: Well, and you know, maybe said another way, we attempt to keep a fairly long-term look. So you try really hard not to look at these short-term swings. If we ever became convinced that this was a new norm, we'd have to certainly reconsider. We haven't come to the conclusion yet that we can't get the historical returns that we have. But certainly if trends continue in our...we use DeMarche. I don't know if we talked about that. They help us with a lot of our allocation and then actually selecting managers because we use an active manager

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approach. And they have not yet said, you know, given the way that we've allocated, that 8 percent is not possible. But we'll continually check that. And if we come to the conclusion one day that it can no longer be counted on, we'll change.

BERNARD in den BOSCH: And that's a change that will have to be made by the pension system. They actually are a self-administering plan as opposed to (inaudible).

SENATOR DAVIS: Oh, yeah. I understand that. It's just deferring a difficult decision doesn't make the decision any easier to make. It becomes more difficult to make. And so I think prudent thought should go into looking at that. And you made reference to the fact that other systems have made those changes. So I mean it's just my suggestion, that you think hard about that. You talked about actuarial valuation changes. Can you elaborate on what those were.

STEPHEN CURTISS: The main change, the change in assumptions was that we extended our amortization period back out to 30, which it had shortened over time. So that assumption had changed which affects the balances. But it was also not in the '14. So the two numbers would have kind of moved in concert with each other. But it was just noted as, hey, that's a different number. It's calculated in a slightly different way. We also had a DROP study. We had paid to have that done maybe a year or so ago and decided that we knew now enough about DROP, the DROP program, and that we had enough people in it where it made sense to go ahead and include the effect of DROP since we were pretty sure we knew what it was into the study. So those were the two main changes this year.

SENATOR DAVIS: And so what was the reasoning for going to 30, for lengthening that?

STEPHEN CURTISS: I might end up having to ask...I think 30 is the more normal time period. I do think it contracts over time. I do think most systems use 30 or something in that range.

SENATOR DAVIS: I think that's...oh, go ahead, Senator Lindstrom.

SENATOR LINDSTROM: I just had one question about the active management. And you said DeMarche is the...and they're based out of, do you know where?

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STEPHEN CURTISS: Kansas City.

SENATOR LINDSTROM: Kansas City. Do they have discretion over the account or do they have to make...do they have to call?

STEPHEN CURTISS: They make...they call us. They don't have discretion to make any trades or any calls. It all comes through our investment committee and then we'll consider theirs as advice. And we've pushed back at times, but generally we follow their advice.

SENATOR LINDSTROM: I guess I've been told or heard that it took maybe nine months to a year before any adjustments were made during '08-09. Is that true?

STEPHEN CURTISS: It could be. That was prior to my tenure.

SENATOR LINDSTROM: Okay.

STEPHEN CURTISS: And again, they're taking a very long-term look.

SENATOR LINDSTROM: Sure.

STEPHEN CURTISS: They're trying to look out 30 years and not swing to the...they're trying not to day trade or year trade. They're trying to three-decade trade.

SENATOR LINDSTROM: Sure. Okay.

SENATOR DAVIS: And then I've just got...oh, so go ahead, Senator Kolterman.

SENATOR KOLTERMAN: Thank you, Mr. Chair. I guess I just want to make a point that I...you're going in the right direction. But I think as you're hearing here, our concerns, and I can't speak for everybody, but we as a whole have been looking at lowering our assumed investment rates. Ours are in really good shape. They could always be better. But if you lower that, that's even going to make your funded ratio look a lot worse. I think we'd like to see this as accurate as

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possible so we really know what the true picture is. And by keeping it up there at 8 percent, I mean, we're taking a hard look at that, and we did in 2013 from what I understand. And it just needs to be evaluated because the last thing we want to do is have this come back to the state and say, hey, bail us out.

STEPHEN CURTISS: I guess I can't speak for how that future might work out. But no, I think it's on everybody's radar. I don't think we're yet convinced we can't do 8 percent because, remember, you'll have things like inflation that finally kick back in, unless we come to the conclusion we are on a new normal and we need to rethink things. But you know, if you have events like inflation kicking back in and a return of 4 percent or 5 percent, you're getting close to your 8 percent return at that point. But it's understood that 8 percent is aggressive and we understand that.

SENATOR DAVIS: Senator Mello.

SENATOR MELLO: Thank you, Chairman Davis. Real quick, the experience study, is that a board policy? Is that a city ordinance through the Pension Board that you have to do it every five years? Have you considered speeding that up to maybe do it every three years to be able to identify that expected potential rate of return?

BERNARD in den BOSCH: The city charter requires that we do an actuarial analysis every two years and an experience study every five years. We as a policy matter do an actuarial study every year, and we do the five-year experience study. The last experience study, the board actually held off on doing it until after the police and fire pension changes had occurred so that it would be more accurate. Certainly, there has been some discussion about doing it more frequently. I don't think anybody has made the decision to do that. But that's certainly I think, with as volatile as things have been, something that's probably more on people's mind than it used to...than it was 10 or 15 years ago to try to do those more frequently.

SENATOR MELLO: Okay. Thank you.

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SENATOR DAVIS: You...we've talked about the experience study, but I don't know if I...maybe I missed this. How many years are you in your smoothing process? Is it four or five years?

STEPHEN CURTISS: I think so. We're about...

_____ : (Inaudible.)

STEPHEN CURTISS: Something less than four.

_____ : (Inaudible.)

STEPHEN CURTISS: Something longer than four. (Laughter)

SENATOR DAVIS: Between four and...

STEPHEN CURTISS: We still have some pickup as I recall, meaning that we could do 6 percent I think this year and we would still meet our 8 percent objective. Obviously that runs out over time, particularly with our experience over the last couple of years, the last two anyway.

SENATOR DAVIS: But when is the end of the fiscal year there?

STEPHEN CURTISS: Pardon me?

SENATOR DAVIS: But when is the end of the fiscal year for the plan?

STEPHEN CURTISS: It's the same as the city's year; it's 12-31.

BERNARD in den BOSCH: December 31.

SENATOR DAVIS: Okay. So we're in the middle of that then now.

STEPHEN CURTISS: Correct, yeah.

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SENATOR DAVIS: And what happens between now and the end of the year will be important to you.

BERNARD in den BOSCH: Absolutely.

STEPHEN CURTISS: Yes.

SENATOR DAVIS: And other questions? If not, thank you very much.

STEPHEN CURTISS: Thank you.

SENATOR DAVIS: Next plan is the Omaha Civilians Plan. We've all got our papers so we're all ready.

ALLEN HERINK: (Exhibit 3) I'm trying to bury you in paper here, so bear with me. My name is Al Herink, and it's spelled A-l-l-e-n H-e-r-i-n-k. I'm the city comptroller and I'm also the administrator of the civilian pension plan. The civilian pension plan has been one of the major financial challenges the city has had over the last few years. And we have a number of them. Last year when I came in here I told you folks that the plan was projected to run out of money in 20 years. And we were hoping to get some wage concessions and some settlements and rectify the plan in the next series of negotiations. And I'm happy to report that we were able to do so. We'll kind of walk through this thing and I'll answer your questions along the way and we'll see what...and give you some more information. This first sheet is just a sheet we hand out to the people that are in the system.

SENATOR DAVIS: That's this one, right? That's the handout.

ALLEN HERINK: Yeah, yeah, page one. And it says Civilian Pension System on the front. And this is kind of a five-year analysis and it's kind of interesting to look at it in that respect. From 2000 to 2014, the plan's assets remain the same. Basically in 2010, we had \$232 million worth of assets. In 2014, we have \$238 million worth of assets roughly. So over the last five years, the expenses have equaled the revenues basically. And it just kind of gives the participants an idea of

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what's coming in and out of the plan, where the incomes come from. The next sheet is just a roster of the different types of people that we have on retirement. If you look at the "Total" column, we have a lot of different types of retirement pensions and disability pensions also. We had 1,370 people receiving a pension benefit. And then at the end of 2014, we have 1,400 people. Again, this is just kind of a roster. It lets people know where it's at and how it is. We have what we call a mature pension plan. And that's what we hand out to the employees. The next sheet, you folks talked about this a lot. It has to do with how the fund has returned the last...well, the last...since inception, in the last few years. And if you take a look at this plan, we have a sophisticated asset allocation of investments. Again, we have a number of managers, all of them are active managers. We believe they all provide value to the plan. We have DeMarche that helps us with how much do we put in every asset class and how much we give to each investor. We have DeMarche also help us pick the people that are going to do the investments for us. You have some good investors and you have some...you have some good stock pickers and you have some poor stock pickers. And some come in and out of favor. And DeMarche does a good job, we feel, of helping us pick the right managers. And those managers help give us added boost to the plan you might say. So if you take a look at this, it's got the...if you take a look at the total fund, that's the...and the different columns, that's how much the fund has returned over a period of time. Year to date, we're only up 1.1 percent. Do we all see that? And then after one year we added 2.2 percent. The last three years we did do 8 percent. The last five years we did 8.1 percent. And then in ten years, we kind of had a rough time through 2002, 2008 and that, we only did 5.1 percent. But since inception, we're at 9.2 percent. So the 8 percent, that's a good question. We ask that every year when we look at it. And again, we rely on DeMarche to do that. And they do a risk analysis of our asset allocation. And they factor in a few things like we said earlier, you know, inflation. And once you get a 3 percent inflation and then add growth and profits to these companies, 8 percent is reasonable. The last...and our auditors ask us this every year because they use these percentages, too, to come up with the liabilities. They didn't seem to think that they were too high. And DeMarche said that they felt that we had a 75 percent chance to get 8 percent for the next 30 years going forward. So that's kind of where we're at. But we can look at that as experience goes down in whatever...you know, that's something you have to constantly look at. You can see the different types of funds and types of asset classes we have on this page too. And then when I talked a little earlier, I said that we did a lot of changes at the beginning of '15 to turn the pension plan around and to get it funded within 20 to 25 years. And on this sheet,

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it lists the main changes we did. I'm going to have Bernard talk about those a little bit. And he can tell you just what kind of savings we have with these changes.

BERNARD in den BOSCH: Bernard in den Bosch, deputy city attorney; first name Bernard, B-e-r-n-a-r-d, last name, in den Bosch, i-n d-e-n B-o-s-c-h. You have here a summary of the negotiated changes. The city civilian system are represented by three bargaining groups as well as one small group of folks that doesn't have any bargaining power. The changes that were negotiated were negotiated with all three bargaining groups and went into effect for all three bargaining groups at the same time. And some of the changes were backdated. Some of the things were prospective. And I'll try to address that as I kind of go through it. And then these same...the changes were also imposed on the group that does not have bargaining power. So when it comes to the civilian work force, they're consistent as far as what the pension benefits that they're entitled to. And there were changes that were made for current employees, and then there were changes that were made prospective for future employees. So as we kind of go through the document that Mr. Herink provided you, for years of service, the civilian pension is a product of years and you received a pension factor for years of service. For years moving forward from March 1, 2015, employees received 1.9 percent per year as opposed to the 2.25 percent that they received for years prior to March 1, 2015. There was a change. It used to be we had to have the Rule of 80, minimum age 50 and then you could retire at 60 with five years of service because you were vested with five. Now it's the Rule of 85, age 65, five years of service. There were a couple provisions that grandfathered in employees who were within 5 years of retiring and those who were within 10 years of retiring just to ease the change and allow them to change their...frankly their retirement planning. Significantly, there was also a change in how we...the pension is obviously a factor of your percentage plus your average monthly, final monthly compensation. It used to be the highest 26 pay periods in the last 130 years (sic) of your employ. So for most employees, that would either be the last 26 pay periods if you were somebody who was salaried. Or if you were an employee who earned overtime, it might be 26 pay periods where you hit the most overtime in the last 130. That has now been...for employees within 5 years of retirement, it's the highest 78 in a consecutive 130. And for all other employees, anybody who is not eligible to retire in five years, it's the average final monthly compensation over the last five years of your employment. So that is significantly smoothed and frankly limits those things where you might have a couple weeks where you have a bad

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snowstorm where somebody earns a lot of overtime or somebody who has one of those kind of quirky things. There was also significant changes in nonservice and service-related retirement pensions. That was perceived as an issue by the city and the union, that there were employees that were taking advantage of that system. It used to be you'd get 60 percent of your average final compensation no matter how long you work. Now it's more a factor. It's 1.75 or 1.5 percent times the years of service you've worked. So that significantly diminished the benefits and diminished the attractiveness of the option. We've attempted to look at some other options to try to make it more palatable as far as...we currently don't have any long-term disability policies. And we're kind of looking at phasing those in maybe to help those that are truly...truly receive the work-related disability. Before I get to five, which was probably the most significant change, this, much like we did with the police and fire unions, we negotiated with the unions. We, the city, negotiated to increase contributions in exchange for a reduction in benefits for active employees. So the city increased benefit, increased its contributions going back to the beginning of 2014. And we made payments, retroactive payments to that effect for 6 percent for the employer and then an additional 1 percent in 2015. So now the city's contributions are about 18.775 percent of the employee's compensation. And the employee's is roughly 10.75 percent of theirs. So roughly between the two you're now close to 30 percent as far as contributions. The most significant change though was the creation of a cash balance plan for new hires. Anybody that was hired after March 1, 2015, is in the cash balance plan. You probably...as you have city...you have state entities that have a cash balance plan so you're probably more experts on a cash balance plan than I am. I know the woman that's sitting behind me is much more of an expert than I am as well. That particular cash balance plan was set up based on advice that we received from Cavanaugh Macdonald, particularly through Ms. Beckham. And obviously in calculating the interest credit, the service credits, we took into account, there's a graduated service credit. So at eight years, it's 13 percent for the first eight years, then 14 percent for the next eight years after that, and 15 percent for the eight years after that. The interest credit is a fixed interest credit of 4 percent with a potential dividend if the system earns more than 7 percent over this rolling five-year average. There's a potential to increase that 4 percent interest credit. But basically the biggest change in the cash balance plan, other than it helps fund some of the shortfall that we have in the system, the biggest change is the risk for variations in the market shifts from the employer to the employee. We now share the risk for those corrections in the market or if the market should have bad conditions. We also share the benefit in the event that the market goes

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through a prolonged period of growth. So that's the most significant change in the system. So those are the changes that were negotiated. It was done collaboratively much to the credit of the employee unions as well. I think as the city, getting employee unions to take seriously the willingness to make significant concessions for their employees is always difficult. But that did occur. I think there was a recognition there's a problem. You see some...I think as you look at the report that we filed, the problem...you see some benefits already from what has happened. And hopefully as we come back next year and the year after that and the year after that, we'll start to really see those changes, particularly as the new hires go into the cash balance plan and their...the liability to the system is significantly less when Ms. Beckham determines the actuarial liability, so.

ALLEN HERINK: As you can see...

SENATOR DAVIS: Thank you.

ALLEN HERINK: Go ahead.

SENATOR DAVIS: No, go ahead.

ALLEN HERINK: As you can see, the city stepped up with adding more cash and employees decreased benefits and that was a 50-50 idea that we both had to work on the problem. And going forward, we hope that works. On the cash balance plan, the way I look at it, our liabilities are not going to increase as much...are going to increase at a slower rate. And our...eventually our contributions will catch up to what's needed to fund the liabilities.

SENATOR LINDSTROM: Thank you, Mr. Chairman. This is maybe more of a comment maybe more for the committee.

ALLEN HERINK: Sure.

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SENATOR LINDSTROM: If at the form on page 3 that they handed out, and this is nothing against you, I just want to point out something. And maybe somebody can give me clarification on this.

ALLEN HERINK: Sure.

SENATOR LINDSTROM: When you talked about the "Since Inception" date at 9.2 percent, do you see that, kind of under the bold, on the bold strip there?

ALLEN HERINK: Sure.

SENATOR LINDSTROM: What that tells me as you look at the different funds on the left-hand side, domestic, international, some have a ten-year number. None of them have a number from the 1980s. So they...what that tells me is they probably didn't exist at that time. Certainly the global hedge fund didn't exist three years ago, five years ago. So I'd be curious where they got that 9.2 percent number because in the '80s if you just put 100 percent fixed income, interest rates were so high you could easily hit an 8 percent. So I just would like some clarification.

ALLEN HERINK: Yeah, I don't know what the breakdown was in those years.

SENATOR LINDSTROM: Okay. Or maybe somebody from DeMarche could answer that for me because that's a skewed number.

ALLEN HERINK: We'll have to see how that...

SENATOR LINDSTROM: Thank you, thank you.

ALLEN HERINK: Sure.

SENATOR DAVIS: Senator Mello.

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SENATOR MELLO: Thank you, Chairman Davis, and thank you, Mr. Herink, Mr. in den Bosch, again. I have a quick question that I could have asked probably when Mr. Curtiss was up. It is in regards to your management fees with DeMarche. It sounds like it's a fairly active management investment firm. Can you give us some background on what you're paying in management fees?

ALLEN HERINK: Okay. DeMarche, we have, I believe, it's a fixed-fee contract. And it's based...it's not based on the...it's based on how many managers they do. We pay our managers I believe between probably, I want to say 50 basis points and maybe 75 or 80 basis points depending on the type of investment.

SENATOR MELLO: Each manager is 75 to 80 basis points?

ALLEN HERINK: Yes. Real estate may be a little higher, maybe 1 basis...would be 1 percent. And I'm just using round numbers. Our fixed income is not nearly that. And what we do when we do this is a lot of times the police and the fire will have the same manager and if that's...we try to get them to group it together because the more you have invested with these companies, the less the management fees are. A small investor is going to pay a higher investment fee than a large investor.

SENATOR MELLO: So it's safe to say then that probably similar basis points would be attributable to...police and fire would be paying about same amount then because you guys pool your investment accounts essentially.

ALLEN HERINK: Right. Yeah, sure, when we can, yeah.

SENATOR MELLO: Okay. The second question I've got is, can you break down a little bit in regards to I know the civilian plan...the civilian plan is funded not just with general fund dollars, correct? It's funded with fees, other sources of revenue besides income...sales tax and property taxes where police and fire is funded mostly with general fund dollars. Can you walk us through how that is a little different?

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ALLEN HERINK: Well, yeah. We have about five or six proprietary funds for the city. One would be the sewer fund. One would be the golf fund, the parking fund, the marina fund. And if those employees are paid out of those funds, those types of fees go also to pay the...and city match on their...on the contribution for those employees. So the sewer fund is paying, the golf revenues are paying, and whatever other types of proprietary funds that they're in. Does that answer your question?

SENATOR MELLO: And then in comparison to, and maybe Bernard can answer it, in comparison to the police and fire fund which is...?

ALLEN HERINK: Oh, it's 100 percent general fund.

SENATOR MELLO: One hundred percent general fund.

ALLEN HERINK: That's right.

SENATOR MELLO: So...I just, in the sense of looking at your overall reforms that you made for the civilian plan, it's considerably different when you're able to raise fees on those segregated fee-funded areas in comparison to a purely 100 percent general funded plan.

ALLEN HERINK: Yeah.

SENATOR MELLO: It's just they're different in that nature.

BERNARD in den BOSCH: With one historical exception, and that is in the past we've been able to hire police and firefighters through federal grants. And at least that period of time that they were under federal grant, any contributions would have come from that grant.

SENATOR MELLO: Federal funds also then in the civilian plan also?

BERNARD in den BOSCH: There are employees that are paid out of Community Development Block Grant funds.

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ALLEN HERINK: Right. We have a few people like that that are grant-funded and pay into the system. So it's a variety of fees whereas police and fire I would say are mainly general fund.

SENATOR MELLO: So civilian plan general funds, which is property and sales tax, federal funds and fees from city service...segregated city service funds.

ALLEN HERINK: Right.

SENATOR MELLO: Police and fire, 100 percent general funds.

ALLEN HERINK: Well, I would say 99.9 percent or...

SENATOR MELLO: 99.9 percent.

ALLEN HERINK: 99.5 percent or whatever, yeah.

SENATOR MELLO: Okay. All right.

ALLEN HERINK: It's...on the proprietary funds, it's not as easy to raise fees as much as you might think because, well, our golf fund is just based on competition. And just because fees for...expenses go up there, we just can't automatically raise the fees. But you're right, we have a wider basket of revenues to pay the civilian contributions.

SENATOR MELLO: Okay. Thank you.

SENATOR DAVIS: Senator Kolterman.

SENATOR KOLTERMAN: Thank you, Mr. Chair. My question really just deals with both plans.

ALLEN HERINK: Sure.

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SENATOR KOLTERMAN: Obviously you've made some major changes to the civilian employee plan implementing a cash balance account...cash balance plan for new hires is what I understand.

ALLEN HERINK: Correct.

SENATOR KOLTERMAN: Have you given any thought to doing the same type of a program for the police and fire?

BERNARD in den BOSCH: I think it's fair to say that during the...when negotiations first started, years ago they considered all sorts of alternatives. Keep in mind that because the benefits have to be negotiated, they can't be imposed unilaterally. I know there was some discussion. I don't believe that we introduced the cash balance plan specifically when we started negotiations five or six years ago. The thought was to do a combination of reducing benefits and increasing contributions. In the most recent round of negotiations, the focus wasn't necessarily on pension reform. It was focused on health insurance and some other things. So that's certainly, I think, in the mayor's consciousness and frankly something that I would not be surprised if either the current mayor or some future mayor tried to make that proposal during negotiations with the police and fire union.

SENATOR KOLTERMAN: Okay. Thank you.

SENATOR DAVIS: I've got just a few questions.

ALLEN HERINK: Sure.

SENATOR DAVIS: With your cash balance plan, so what happens with a rehire? Do they come in on the old plan or with the cash balance plan?

BERNARD in den BOSCH: We have...if you're vested in the old plan, you're going to come in under the old plan. If you're not vested, you're coming in under the cash balance plan and we're actually trying to figure out the processes to do it. But we do allow people who are rehired to...to

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provide the money back to the city and...it contemplates that you would get some credit for it. You're going to get credit as far as the years of service, but you're not going to get interest credits or pension credits for past years. That will now...that will start off as the balance as you move forward in your cash balance plan.

SENATOR DAVIS: Okay. And then I'm just looking at your figures and maybe I'm not getting it, but it looks like you've got about a 30 percent employee contribution. I mean by the time the city puts its portion in and the...

BERNARD in den BOSCH: About 30 percent.

SENATOR DAVIS: So are they not...do they not receive Social Security?

ALLEN HERINK: No, we also pay a matching Social Security for the civilians.

SENATOR DAVIS: So they're....

ALLEN HERINK: That's different than the police.

SENATOR DAVIS: So they're paying in Social Security then plus this almost 30 percent.

BERNARD in den BOSCH: Plus almost 11...

ALLEN HERINK: Well,(inaudible.)

BERNARD in den BOSCH: Well, they pay about 11 percent; the civilian (inaudible).

SENATOR DAVIS: The city pays 18 percent?

BERNARD in den BOSCH: The city pays 18 percent.

ALLEN HERINK: Eighteen percent, and it comes up to the thirty-three percent total.

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SENATOR DAVIS: Is that common among most cities?

ALLEN HERINK: That's what it costs to fund this plan.

BERNARD in den BOSCH: I don't think there's an alternative not to...those employees have to contribute to Social Security. So, correct, the employees...

SENATOR DAVIS: Well, I thought they did. But you know, when I added those up, I'm like, well, that's pretty significant.

BERNARD in den BOSCH: The numbers here do not...

SENATOR DAVIS: But that's basically 42.5 percent or 43 percent. On page 1 of the handout, just running through this if you would walk me through this a little bit, security lending income, tell me what that is, under receipts.

ALLEN HERINK: Pardon me? What...?

SENATOR DAVIS: Under receipts, the bottom column, right here.

ALLEN HERINK: Sure. I'll tell you what that is. For a number of years, we were in what they call a security lendings program. And I'm trying to explain it the best I can. We have securities with our trustee. And there were sometimes...sometimes there were people that would come in and out of the market and need to borrow our securities overnight. And we would lend it to them overnight or for a period of time, say they bought short or bought long. And this went on for probably 20, 30 years we did this. And 2008 the system didn't work anymore. We didn't have enough in it. These things were backed with AAA bonds from other agencies and things like that. And it didn't fall through and we were...had to cash out of the plan in 2014 and discontinued it. There's other pension plans that were in the same thing. We did get a class action suit against the bank that we did this with. And if you look at it, we broke about even through all the years on what happened. But it was a...it festered since 2008 when we had the financial crash and some of the stuff that was AAA wasn't AAA anymore. The collateral was no good.

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SENATOR DAVIS: So is this an ongoing expense then?

ALLEN HERINK: No. This...like I said, 2014 we cashed out of the plan.

SENATOR DAVIS: This is a one-time loss.

ALLEN HERINK: And that was it. And ours was so small compared to some of the bigger plans that were in it. We have a lot of stocks and bonds that we can do this overnight with. But there's plans with a lot more that they didn't even want to mess with our small assets anymore. Police and fire were in the same thing. But ours were in a little different plan.

SENATOR DAVIS: And then so I circled this before I got your explanation.

ALLEN HERINK: Well, I'm glad you brought it up.

SENATOR DAVIS: Under the last five years of financial information, employer contributions are up about \$5 million but that's because of the new arrangements, is that correct?

ALLEN HERINK: Yeah. If you take a look at 2014, we put in \$12 million compared to \$7 million. And that was a retroactive payment for '13 that was in the contracts and it also then included a catchup for '14. So you can see that we stepped up to the plate to put more money into these plans. And then that will be continuous then even though it may be a little overstated in '14 because we have a retro payment for '13. These were three-year contracts. And they're extended out to '17 now. And at that time, we'll take a look at everything and see where these plans are and...the city of Omaha and the employees want to have funded pension plans. And you know, we go with the...work together and get this thing done. And we have no reason to believe this...these things won't be funded.

SENATOR DAVIS: I think that answers all my questions.

ALLEN HERINK: Okay.

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SENATOR DAVIS: Anybody else? Senator Mello.

SENATOR MELLO: Thank you, Chairman Davis. I have a follow-up question I think from last year as well, which was I think it was an Omaha World-Herald story that was done in regards to the city of Omaha over, I think, it was close to a decade had prioritized hiring part-time city employees in comparison to full-time city employees, thus you had a drop in regards to the number of people who were actually contributing to the civilian pension plan. Has that been an issue? I know it was something we talked about last year, but has that been something that we've also seen changes at all in regards to city, the overall city management, city structures within agencies of moving away from, quote unquote, part-time employees who are not paying into any of the system, particularly with the new defined...the new cash balance plan?

BERNARD in den BOSCH: I think it's probably fair to say over the past several years, whether it's been the previous administration or the current administration, there's been a cognizant effort to move away from...and typically what you're talking about is people who retire and come back and work part time. They don't put any money in the pension system nor do they accumulate any additional pension credit, but there's a benefit in their experience. The number of employees that have done that citywide, and I appreciate it, it ran in the newspaper so I understand that it's true, I think it's fair to say that the newspaper probably overstates the problem. The number of employees has gone down. I think it's close to 100. Most of those are actually retired police officers that come back and work either the front desk or they work as a school resource officer part time. The number of civilian employees is under 50.

SENATOR MELLO: Okay.

BERNARD in den BOSCH: And then I think that continues to decrease as we move forward.

SENATOR MELLO: Okay. Thank you.

BERNARD in den BOSCH: And we've done some things to make it not as appealing. In not this recent negotiations but the negotiations before, the part-time employees' pay was capped at the

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first step of the pay plan as whereas before they frequently would be paid at the high end. So it's not as compelling as maybe it once was.

SENATOR MELLO: Thank you. Great to hear.

SENATOR DAVIS: And I've got one more after we got here. This also is based on 8 percent.

ALLEN HERINK: No, this right here is just a cash flow plan.

SENATOR DAVIS: Okay.

ALLEN HERINK: So there's no assumptions in this. This is actually what happened.

BERNARD in den BOSCH: But the civilian system does have an 8 percent assumption.

SENATOR DAVIS: Does have an 8 percent.

ALLEN HERINK: Yeah. Oh, that's what your question was.

SENATOR DAVIS: Yeah. And is there...I asked the same question to the...well, to you last time. Any talk or the thought about maybe lowering that?

ALLEN HERINK: You know, we look at that every year. And I'm sure we'll ask DeMarche to take a look at it again. You know, it just depends on historical data that we come in and what they see going forward. Again, the last study we did, which was just a year or two ago, they have a 75 percent confidence level that we could get 8 percent in this plan for...based on our asset mixed, for the next 30 years, you know, long-term returns. And if you think about it, the pension board really has, you know, no reason not to believe them or has no stake in whether it's 7.5 percent or 8 percent. It's the liabilities between the city and the unions, not the pension board.

SENATOR DAVIS: Right, but it's still liability.

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ALLEN HERINK: Yeah.

SENATOR DAVIS: Thank you.

ALLEN HERINK: I just wanted to kind of...I was reading. Just the other day one of the pension funds went from 9 percent to 8.5 percent. I don't know if anybody saw that. But there's still some out there with 9 percent or 8.5 percent. So you know, I'm sure we're at the top end and we'll keep looking at it.

SENATOR DAVIS: Thank you.

BERNARD in den BOSCH: Thank you, Senator Davis. Thank you.

ALLEN HERINK: Thank you.

SENATOR DAVIS: Douglas County.

JOE LORENZ: Good afternoon. I'm Joe Lorenz. I'm Douglas County finance director and I'm also chair of the Douglas County Pension Committee. So I'm here today to give you an update on our defined benefit pension plan. The most recent actuarial valuation, which we have done by SilverStone, as of January 1, 2015, showed the plan was 66.8 percent funded which was up 2.2 points from the previous year. We had net assets on an actuarial basis of \$263.8 million which was up \$18 million over the previous year. And the pension fund liability was \$131.1 million, which was down \$3.8 million from the previous year. The plan has 3,472 participants. And of that, about 2,100 are active with the remainder being retirees. So we have a good active-to-retiree percentage. The plan has an equal contributory rate between the members and the employer of 8.5 percent of pay. Our normal cost was \$12.8 million, and the actuarial required contribution was \$18.7 million for 2014. And I think the story about the Douglas County Pension Plan, the shortfall, why it's only at 66.8 percent funded is a fairly straightforward story of how we got there and the actions that we've taken to remedy that and why we feel that we've turned it around and are headed in the right direction. In 1996, the plan was 97.8 percent funded. In 1997, the plan made the following two significant changes where the plan introduced an unreduced

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reduced benefit Rule of 75. And the benefit...secondly, the benefit formula increased from 1.5 percent of pay per year of service to 2 percent per year of service. And then in 1998, there was a 3 percent COLA; in 2000, a 4 percent COLA; in 2002, a 3 percent COLA. Amazingly--not really--by 2004, the funding ratio had fallen to 64.8 percent. So the county started to take actions. The first one was to increase the contributory rate. As the county and member contributions each increased from 5.5 percent of pay in 2005 to the present level of 8.5 percent of pay by 2008. Poor stock market performance also negatively impacted plan performance, so the plan bottomed out at a funding ratio at a low point of 57.8 percent in the year 2010. So at that point, the members of the pension committee and the county board recognized that significant changes had to be made to the plan to ensure the financial viability for its current participants. Accordingly, effective for all employees hired after December 31, 2011, the following provisions were made...and changes were made to the plan. We eliminated the Rule of 75 for all future new hires. The benefit formula was reduced from 2 percent of pay back to its previous level of 1.5 percent of pay per year of service. And the maximum retirement benefit was reduced from 60 percent of the participant's final average compensation to 45 percent. There were slight modifications of that for the sheriff's deputies given that they're in law enforcement and so there's some early retirement provisions for them. But these plan changes along with no COLA increases being given in the plan since the year 2002 have increased the plan's funding ratio by 9 percentage points. And I would say that when you're changing a defined benefit plan it's like turning around an aircraft carrier: It takes time, but when you do it and you have it pointed in the right direction, you can tell how it's trending. So these plan changes materially impacted the plan's forecast of funded percentage so that the SilverStone projection now forecasts the plan achieving acceptable funding levels of 90 percent in the future as shown in the...by the year...in 20 years from now, by the year 2035. And that's all assuming our return of 7.5 percent that we use. And in addition this year, the plan was originally set up in 1964 with Mutual of Omaha where they had a long-term disability component that was right into the pension plan. And so we've eliminated that year, put that out as a separate, fully insured employee benefit. And by pulling the long-term disability program out of the pension plan, the actuaries have estimated that it will immediately increase the funded ratio by half a percentage point, which will increase to approximately 2 percentage points over the longer 20-year period. You know, Douglas County does have 16 collective bargaining units, but no recent or ongoing negotiations with any of these labor groups are expected to impact the funding of the pension plan. And as we've gone through

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our labor negotiations, we've done a big part...an educational program with the employees to show them that's the shape of the pension plan and why we had to make these changes. And they really understood the issues we were facing and went along with it. So we really feel that the pension committee, the board of the commissioners, and the administrative staff, that our actions have significantly improved the financial condition of the employee defined benefit plan. And we're confident that they've ensured the financial viability and payment of the benefits to the participants going forward. And we've been able to maintain and save going forward, that our employees will continue to have a well-funded defined benefit pension. Thank you.

SENATOR DAVIS: Questions? So you had an ARC this year. Was it made?

JOE LORENZ: Yes. Our ARC, I think we were at about 102 percent. You know, it's a contributory plan where it...8.5 percent and 8.5 percent, about 17 percent. And if you look at the past five years, I think I sent you some data, that it's varied between 16.8 percent and 17.2 percent. So the ARC funding looks very appropriate for the level of our plan.

SENATOR DAVIS: So can you give us a little more information on the disability part of it, why it was taken out and why it's going to make this difference.

JOE LORENZ: Well, you know, Senators, I'll tell you, I've been in government for five years but before that I had worked in finance in the private sector and I'd worked on the pension plans for the Quaker Oats Company in Chicago and for Ag Processing in Omaha, which were the pension plans for all the agricultural co-ops in Nebraska and Iowa. And if you got out into the private sector, you never see a disability plan as part of the pension plan. And you know, it's something that might have been done in the 1960s, but certainly in the 21st century it's very rare. And so I looked at that and I said, well, this doesn't really belong here. This is something that should be a fully insured employee benefit. And by pulling it out, it also has the benefit of increasing the funding for the pension plan.

SENATOR DAVIS: Senator Mello.

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SENATOR MELLO: Thank you, Chairman Davis. Your sheriff deputies, your law enforcement for Douglas County, do they pay Social Security?

JOE LORENZ: Yes.

SENATOR MELLO: So unlike the Omaha police and fire who do not pay into Social Security...

JOE LORENZ: Right.

SENATOR MELLO: ...your county sheriffs and deputies are all a part of Social Security.

JOE LORENZ: Yes, they do. Everybody in the county pays Social Security, yes.

SENATOR MELLO: Okay. And this is a question I'll probably ask the committee counsel to follow up with the city of Omaha in regards to the investment...your investment firm that you utilize. Has there ever been any conversation in regards to looking to pool investments with the city of Omaha? Or I mean in the sense of having three major defined benefit plans within one county is unique in the sense that all three have, in theory, different investment strategies. You know, they use at least DeMarche so they're both using the same firm. Is that something that there's ever been a conversation in regards to...I know the...oh, city/county mergers on some things work, some things they don't. But is this one that...?

JOE LORENZ: You know, everybody in...a member of the pension plan has to work as a fiduciary responsibility being on the plan. And to be just perfectly honest with you, I don't think merging our plan or looking at doing things with the city of Omaha would be to our employees' benefit.

SENATOR MELLO: What about merging it with the State Investment Council in regards to having them take over your investment management?

JOE LORENZ: Well, you know, we've talked to them. We had a separate meeting with the State Investment Council a couple weeks ago actually to merge the excess cash for the Douglas

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County Treasurer's Office. So we were aware of them. And they explained how they do in their pension. But actually what we do on our pension is we have a consultant, asset consultant group out of St. Louis. We pay them a fixed fee. It's around \$30,000, \$35,000. You know, we didn't get into that Wall Street game where we pay them a percentage of assets. So we pay them a flat rate. And then they pick out and bring in the different investment managers who we interview and we pick from. And over the past 12 years, our plan has had an average rate of return of 7.3 percent, which is pretty close to a 7.5 percent. And I think we just feel that we have a good handle on our plan and, you know, it's in the right direction. And we're comfortable the way it's being run right now.

SENATOR MELLO: How many basis points are you guys paying them per investment manager?

JOE LORENZ: Oh, per...you know, it...

SENATOR MELLO: I mean, we heard the city of Omaha is about 75 to 80 basis points per investment manager.

JOE LORENZ: Well, you know, Senator, it varies. For a S&P 500 fund that's not actively managed, you might pay 10 or 15 basis points, where if you have an emerging market fund or a small cap fund you might be paying, you know, close to 100 basis points. So I think on average we're probably down in the 40-50 percent rate...basis points.

SENATOR MELLO: Basis points.

JOE LORENZ: Yeah.

SENATOR MELLO: Okay. Thank you.

SENATOR DAVIS: Any other questions? If not, thank you. Appreciate your time.

JOE LORENZ: Thank you.

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SENATOR DAVIS: Lincoln police and fire.

PAT BECKHAM: Patrice Beckham, P-a-t-r-i-c-e, Beckham, B-e-c-k-h-a-m, back to visit with you about the City of Lincoln Police and Fire Retirement Plan. I believe that you all have some written materials from the city that you received.

SENATOR MELLO: Who don't you represent? (Laughter)

PAT BECKHAM: Just one or two. We're working on it. (Laugh) And since you mention that, this is a new relationship for us. So I will be presenting information on the August 31, 2014, actuarial valuation, but in fact, Cavanaugh Macdonald did not prepare that report. We're working on the August 31, 2015, report that's not quite ready. It will be about another month before that's issued. So I am sort of the new kid on the block when it comes to this plan and I'm not really used to that. So all the hard questions I will likely ask Mr. Lutomski to come up and answer if I'm not familiar with it because I don't have that longevity with this particular pension fund. I think the LB759 reporting form had asked for historical information. We may have overdone that but we thought it would be helpful for you have a very long historical view on how the system is funded. So one of the attachments you have should be...and I apologize. In hindsight, we could have labeled these much easier. But it's a table that runs from August 31, 1991, through 2014 and has kind of the key actuarial metrics on there for each of those years. And there's some good information that I will likely refer to from that slide and some graphs to show you because I always think those are a little bit easier to follow than tons of numbers, although as an actuary, I love numbers. As of August 31, 2014, the Lincoln Police and Fire Retirement System was 66 percent funded. That's a little misleading because historically the system has been very well funded. And I think you hopefully have this graph of the funded ratio that shows you historically it's been really exceptionally well funded since 1991. And if you look at that graph, you can see for the first ten years it's above 100 percent funded and it drops just slightly below, goes back up to about 100 percent funded before the financial crisis and the bottom fell out for 2008 and '09. And you can see that decrease in the funded ratio for the last five or six years. That's, again, the smoothing mechanism and recognizing what happened in '08 and '09 over that time period pulling down that funded ratio. The 8-31-14 66 percent funded ratio is not directly comparable to the year before because there was an experience study performed that made some significant

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changes to the assumptions. Had those changes not been made, it would have maintained the funded ratio of about 72 percent. But with those changes, it dropped the funded ratio to 66 percent. In my mind, the real story is really the rate of return. For fiscal year 2008, it was minus 6.6 percent; and for fiscal year '09, minus 16.7 percent. So it's not just that it's a minus 6 percent or a minus 17 percent, it's that the expectation was plus 7 percent. So the fund really, really dropped from where it was projected to be. And just to try to illustrate that point, we went back and just said, if the system could have just earned the 7.5 percent assumed rate of return from 2008 through 2014, what would the funded ratio look like? And it indeed would have been about 97 percent funded, even including the increase in the liabilities from the change in the assumptions. So maybe if I could talk for just a moment about those changes, and I believe you did get a copy of the experience study as well. Let's hit the highlights there. So there were a number of changes, probably the most significant was a decrease in the investment return assumption from 7.5 percent to 6.75 percent. The salary increase assumption was reduced rather significantly. The mortality tables were updated to, at that time, the most recent table that was published by the Society of Actuaries. And it also incorporates an expectation that mortality will continue to improve in the future. And that's what we call generational mortality. And then the assumed rates of return were adjusted. And with the lower salary increase, the expectation for how covered payroll will grow in the future was also decreased. So the combined impact of all five of those changes was an increase in the actuarial liability of \$23 million. And again, the...we don't have in the experience study the individual impact, but more than likely decreasing the investment return assumption from 7.5 percent to 6.75 percent was probably the biggest factor right there. The corrective action taken to date to try to address the funding of the plan has really been to increase contributions. And if you look at that schedule, that table, on the far right-hand column shows you the employer contributions. And you can kind of see, over the last three to four years, there's been a significant step up in the contributions. If we went back and looked for the five-year period from September 1, '04, to August 31 of '09, the city's contributions have gone up \$15.9 million. If we look through September 1 of '09 through August of '14, they were \$28.7 million. So that's a significant increase in the contributions by the city. Very, very recently the mayor and city council appointed a citizens task force to take a look at the long-term funding, the sustainability of the Police and Fire Retirement System. They've had one meeting and I believe their second meeting is scheduled for tomorrow night to start that process. And we'll be involved in trying to assist them in any way possible. Their charge is really to study the

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retirement system and make recommendations regarding the funding and sustainability of that system. There have not been any recent or ongoing negotiations with the bargaining groups that might impact the funding of the plan. What comes out in citizens task force may indeed lead to some of those discussions. And then again, the most recent experience study covered the five-year period ending August 31, 2014, was issued in December of '14, so just about a year ago. And we talked about the impact of that. Most recent actuarial valuation I believe you have a copy of, again, is the August 31, 2014. And we will soon be issuing the August 31, 2015, valuation report. And I'd be happy to answer any questions you might have.

SENATOR DAVIS: Senator Mello.

SENATOR MELLO: Thank you, Chairman Davis, and thank you, Pat, for a good afternoon of briefings. The only question I have is just maybe from your professional perspective in regards to experience studies. We heard from...city of Omaha does it every five years. Sounds like the city of Lincoln does it every five years. What would be the problem if we required them to do it every three years in regards to being able to try to get ahead of, so to speak, some of the volatility that we know kind of exists in the investment world right now?

PAT BECKHAM: That's a good question. There's actually I think a little bit of theory behind why those may be using five. And I'm really old, so I will say if we go way back to when I first started 30 years ago, almost everybody did five years. The bigger systems have tended to do shorter periods--three, four, or five--but the bigger systems have a lot more data. So remember, an experience study is not just looking at the economic assumptions, we're looking at the demographic assumptions. So when you have smaller systems, you need more data. So you need more years of data to have credibility. And that's...when we look at what actually happened and evaluate, you know, how much weight do we assign to what we're observing, it helps to have more years. So if they're doing it every three years what's going to happen is we'll have to go back and aggregate the prior three on the demographic experience to take a look at it. You know, just because they have an experience study done every five years certainly does not preclude the board from asking to review economic assumptions more frequently. I have one client that does it just about every year because they feel more comfortable, you know, looking at it. Now having said that, I wouldn't encourage that to be done because we're trying to set a long-term

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assumption. And for actuaries, long term is 30, 40, 50 years. We don't want to be changing the assumed rate of return every two or three years because it will have a lot of movement in the contribution rate and the funded status. So it's a little bit of a balancing act. Three to five years is pretty much industry standard. But I think for the smaller systems, it's because we need kind of more data on the demographic assumptions to really help us evaluate the experience.

SENATOR MELLO: Okay.

SENATOR DAVIS: Senator Kolterman.

SENATOR KOLTERMAN: Thank you, Mr. Chair. What would one of those studies cost just for like a smaller system like Omaha or Lincoln?

PAT BECKHAM: For a smaller system, an experience study is probably \$15,000 to \$18,000.

SENATOR KOLTERMAN: Okay.

PAT BECKHAM: So not inconsequential. Their valuation fees are probably about that. So in the year they have an experience study it doubles their actuarial fees.

SENATOR KOLTERMAN: Yeah.

PAT BECKHAM: It does help put kids through college, but.

SENATOR KOLTERMAN: Yeah.

PAT BECKHAM: I'm kidding. (Laughter)

SENATOR KOLTERMAN: Yeah, but it doesn't sound like...you're right, it's not inconsequential. But also if they have more accurate data, they can stay on top of it a little better and adjust.

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PAT BECKHAM: Yeah, I think five years is...it may seem like a long time, but remember, we're looking at a continuum that doesn't ever end. So if you make a change a year or two earlier, does it really have a huge impact on a 50-year projection? Probably not. On the other hand, you don't want to wait too long. For example, with plan changes, the longer you wait, the more dramatic they tend to have to be. So it's a little bit of a balancing act and little hard to...a rule that one fits all, one rule fits everybody because everyone is a little bit different. And again, the board is certainly...I mean these discussions about assumed rate of return are going on everywhere I can assure you. This is...I'll have four of them this week. So everyone is aware of that and having those discussions whether they're having an experience study or not. So I think the boards are aware of the issue, they're cognizant of it. A lot of the evaluation does fall to the investment consultants. They're the experts. We as actuaries are taking their assumptions and their estimates and kind of running it through our calculations, but we're relying on their expertise.

SENATOR KOLTERMAN: Yeah, thank you again. Well, and the only reason I ask that is, you know, most of these plans are being funded with property taxes. I mean there's a few that are using some fees. But that's a concern because property taxes are...keep going up. We're looking at how we fund different things like schools. In your work, obviously you've worked with a lot of people that have been here today. Are there ongoing discussions about moving towards a cash balance type of a plan or anything like that? Is that something that you talk about normally when you start looking at plans that are funded 50 percent, 60 percent?

PAT BECKHAM: There are a couple of maybe basics on plan design, and I'll go back to my reference to the old plan as a legacy, legacy plan. There's, in my mind, a legacy cost associated with the plan that's in place for the current members which is why you can't change the funded status of these plans quickly unless you're going to cut benefits that people have already earned, which generally nobody thinks is a good idea. So your unfunded liability really is what it is and it's there regardless of what you change for the future, especially for new hires. So for public safety, we rarely see a defined contribution or a cash balance. A cash balance really kind of walks and talks like a defined contribution plan. We don't see that for public safety because there are a number of issues. They need to retire at an earlier age. You know, if your house is on fire you generally don't want a 65-year-old firefighter trying to save you. So they have to retire earlier. They have significantly different needs for preretirement death and disability benefits.

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Defined contributions plans or cash balance plans don't provide those very effectively. So we don't see a lot of interest in those plans for public safety. We are seeing a fair amount of interest kind of nationally in cash balance plans for state and municipal workers. Phyllis spoke to the Kansas legislature a couple of years ago and they were very interested in the Nebraska cash balance plans and they ended up implementing a cash balance plan in Kansas for state, school, and local employees effective January 1 of this year. You heard from the city of Omaha. And I believe it's New Hampshire. New Hampshire is interested in Nebraska's cash balance plan and has been conversing with Ms. Chambers about that. So there is some interest out there. It tends to be again more in the non-public safety or law enforcement groups. And I think the appeal is not necessarily the cost is less, but there's more sharing of risk which helps control the cost. And that's generally where the interest is. But if the 8 percent long-term assumed rate of return or 7.5 percent or whatever your assumption is, if that doesn't play out, the cash balance plan can be designed to essentially lower the benefits so there's...you know, you fund the benefits with contributions and investment income. In a traditional DB plan, defined benefit plan, the "B," the benefit side of the equation doesn't change which means if "I" doesn't work out, guess what? Contributions have to go up. So the cash balance plan, if "I" doesn't work out, at least "B" comes down part of the way and makes it a little bit more of a shared sacrifice, so to speak.

SENATOR KOLTERMAN: Yeah.

PAT BECKHAM: Does that help?

SENATOR KOLTERMAN: Yeah, and I'm not advocating for that. I just wanted you to explain that and find out what you're hearing in your discussions with the various organizations.

PAT BECKHAM: There is interest, I think, in public plans with cash balance plans, also with hybrid plans that are a more moderate traditional defined benefit plan coupled with a defined contribution, kind of a side-by-side arrangement.

SENATOR KOLTERMAN: Dual options, yeah.

PAT BECKHAM: Yeah. You know, sort of the best of both worlds.

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SENATOR KOLTERMAN: Right.

PAT BECKHAM: And a lot of that depends on if the employees are covered by Social Security or not. For example, I work with the state of Colorado and most of the employees there are not covered by Social Security. So there's a different need for a guaranteed benefit there than there is for folks that are covered by Social Security. So there's...you know, that's the interesting and challenging part of public retirement systems is there's a lot of variance as you look across the United States.

SENATOR KOLTERMAN: The other question I would have is are you seeing...do you see many disability plans built into the plans, defined benefit plans anymore, disability benefits?

PAT BECKHAM: Is is not that uncommon for there to be a disability benefit in a...I mean in public safety, absolutely always, duty and nonduty--almost always for law enforcement that I work with. But even in general plans, there's usually a disability benefit. How rich it is, you know, may vary. And again, if it's a cash balance plan it's more, you get paid the account balance which is if you get disabled early in your career it's going to be very small. So that would likely not be adequate. But there are different ways to provide the benefit. You know, you can insure it outside of the plan or try to fund it within the plan. But if you're providing a benefit, there's a...

SENATOR KOLTERMAN: Now we're talking about educating my kids. (Laughter)

SENATOR DAVIS: I've just got a couple of questions. And maybe you don't know the answer, Ms. Beckham, but when they reduced from 7.5 percent to 6.75 percent, what was the rationale?

PAT BECKHAM: That is an excellent question. And I'm basing my conversation with you on what is in the written experience study report. And if you later want to look at it, it's on page 6. And I will try to explain the COLA pool; and if I don't do a good job, Paul, please come forward. So the Lincoln Police and Fire Plan has sort of an interesting COLA in that it is not guaranteed. So it's not part of the regular benefit structure. So there's a separate fund and it's a 13th check. So it's payable, you know, once a year as an extra check. And everyone gets the same dollar amount assuming they had a full career. So it's a little bit different type of a COLA. But those payments

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are actually financed by earnings on the pension fund that are above the assumed rate of return. And as I understand it anyway, if the return on market value is above the assumed rate, that earnings differential is calculated and then it's multiplied by a ratio of basically your in-pay liability to your total liability. So if your in-pay liability is half of your total, then half of that additional or excess earnings gets transferred to the COLA pool. And again, that COLA pool is separate and then that's what the benefit payments come out of. But if you think about how investment returns unfold--you've seen them--so if you're chopping off part of the top but you've still got all the bottom, you're lowering your effective rate of return. The move, as I understand it, from 7.5 percent to 6.75 percent was reflecting the impact of the transfers to the COLA pool. So a very astute question.

SENATOR DAVIS: So not as much a reaction to pessimism, but more in line with trying to refund what needed to be done.

PAT BECKHAM: I believe that's correct, because the 75 basis point adjustment, which was what historically impacted the returns, dropped the 7.5 percent to 6.75 percent.

SENATOR DAVIS: And so in that 6.75 percent, is there any inflationary aspect of that or is that out?

PAT BECKHAM: There is. Let me find that. Yes, the assumed inflation rate is 2.5 percent. And the expected real return on the portfolio was 5.23 percent. And then the administrative expenses that are paid from the trust are about 22 basis points. So if you make that adjustment, you're really close to 7.5 percent before the 75 basis points for the COLA pool.

SENATOR DAVIS: Great. Any other questions? Senator Kolowski.

SENATOR KOLOWSKI: Mr. Chairman, really appreciate all the presentations today and the excellent job everyone has done. But I'm slightly depressed because I have to cross being a firefighter off my bucket list. (Laughter) It kind of set me off today, but that's okay. Thank you.

PAT BECKHAM: You don't look old enough. I think you could still make it.

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SENATOR DAVIS: If there are no other questions, thanks to everyone for coming and, Ms. Beckham, for your patience and intelligent, good answers...

PAT BECKHAM: Sure. My pleasure.

SENATOR DAVIS: ...to everything you do.

PAT BECKHAM: All right, thank you.

SENATOR DAVIS: And if the committee would stick around for a few minutes.

