NEBRASKA RETIREMENT SYSTEMS COMMITTEE

2017

Report on Political Subdivision Underfunded Defined Benefit Retirement Plans

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Table of Contents

Summary of Underfunded Political Subdivision Defined Benefit Plan Reports

Background

In 2014 LB 759 was enacted to require reporting by political subdivisions with defined benefit plans and provide oversight by the Nebraska Public Employees Retirement Committee of these entities. The bill was codified at Neb. Rev. Stat. 13-2402, and requires any governing entity that offers a defined benefit plan which was open to new employees on January 2004 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.

Under Neb. Rev. Stat. 13-2402, 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.

2017 Underfunded Pension Plans

In 2016, there were seven defined benefit plans funded below the threshold 80% funding level:
- Douglas County Employees
- Eastern Nebraska Health Agency
- Lincoln Police and Fire
- Metro Area Transit Hourly Employees
- Omaha Civilian Employees
- Omaha Police and Fire
- Omaha Public Power District

This year one additional subdivision, Omaha Public Schools, was added to the list of plans funded below 80% that are required to report to the Nebraska Retirement Systems Committee.

POLITICAL SUBDIVISION	2017 FUNDING STATUS	2016 FUNDING STATUS
Douglas County Employees	67.2%	67.3%
Eastern Nebraska Health Agency	N.A. Valuation reports are biennial	71.0%
Lincoln Police and Fire	N.A. Plan year ends August 31	79.9%
Metro Area Transit Hourly Employees	71%	72.0%
Omaha Civilian Employees	55%	56.0%
Omaha Police and Fire	52%	51.0%
Omaha Public Power District	69.2%	72.4%
Omaha Public Schools (OSERS plan)	N.A. Plan year ends December 31	65.0%

Required Reporting Information

The Committee created a Reporting Form which was forwarded to each political subdivision in September 2017. Each entity was asked to submit the information identified on the Form. A public hearing was conducted by the Committee on December 15, 2017 at which time they presented the following information:

1. For the **current and previous plan year:**

   a. Funding status
   b. Assumed rate of return
   c. Actual investment return
   d. Member and employer contribution rates -- <u>percentage</u>
   e. Normal cost – <u>percentage</u>
   f. Actuarially required contribution (ARC) – <u>percentage & dollar amount</u>
   g. Actuarially required contribution (ARC) <u>– actual dollars contributed & percentage of ARC actually contributed</u>

2. Provide a brief narrative of the circumstances that led to the current underfunding of the retirement plan.

3. Identify any changes in the actuarial methods and/or assumptions since the previous actuarial valuation report? If so, please describe.

4. Describe 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. Provide a copy of any actuarial projections based on these changes.

5. Describe any recent or ongoing negotiations with bargaining groups that may impact the funding of the plan.

6. Provide a copy of the most recent Actuarial Experience Study conducted on the plan.

7. Identify the current assumed rate of return. Describe any recent changes to this rate and if there are plans to review the rate in the upcoming year.

8. Provide a copy of the most recent actuarial valuation report. If the valuation report is completed biannually (or less often), include an updated report for the interim year/s, if available.

Reporting materials provided by each governmental entity are included in the Appendices to this Report.

Summaries of Plan Funding and Benefit Changes

Douglas County Employees:

Douglas County conducts an Experience Analysis every other year. In March 2017, an Experience Analysis was completed. The rate of return remained at 7.5%, however updates were made to the mortality table, the rates of early retirement and termination of employment were revised, and the amortization of unfunded liability was reduced from 30 years to 25 years. The net impact of these changes was a 0.1% decrease in funding status.

The 67.2% funding status has remained essentially unchanged from 67.3% in 2016. The investment return was 6.8% and Douglas County paid 97.7% of the ARC. Based on current assumptions (and assuming all assumptions are met), the estimated funding status is projected to increase to 70.7% in 2022; 75.3% by 2027; 81.5% by 2032; and 90.8% in 2037.

Douglas County Employees Plan Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	COUNTY RATES	% OF ARC PAID
2017	67.2%	7.5%	6.8%	10.9%	17.5%	8.5%	8.5%	97.7%
2016	67.3%	7.5%	2.3%	10.7%	15.8%	8.5%	8.5%	107.5%
2015	66.8%	7.5%	5.2%	11.3%	16.5%	8.5%	8.5%	113.9%
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%

Eastern Nebraska Human Services Agency:

The Agency conducts Actuarial Valuations on a biennial basis so there is no new funding status for 2017. The investment return in 2017 was 6.8%. The assumed rate of 7.0% has not changed since the inception of the plan. The Agency paid 106.9% of its ARC in 2016. There is no information yet on the amount of ARC paid in 2017.

In 2015 a Forecast Study was completed and as a result, the Agency has been increasing employer contributions by 0.5% annually. The employer is continuing these half percent contribution increases until 2018 when the contribution rate will be 9.5%. Based on the 2015 Forecast Study which presumes all assumptions are met, with the annual employer contribution increases, the plan should be funded at 80.8% in 2018. However, since 2015 all of the investment returns have been less than the assumed 7.0%.

Eastern Nebraska Human Services Agency Plan Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	AGENCY RATES	% OF ARC PAID
2016*	--	7%	6.8%	--	11.55%	2.75%	9%*	TBD
2015	71%	7%	0.2%	7.0%	11.55%	2.75%	8.5%	97.4%
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%

*Eastern Nebraska Human Services Agency Plan year ends December 31 so the 2017 Valuation Report is not yet available. Actuarial Valuations are conducted every other year.

Lincoln Police and Fire

Since the plan year ends August 31, the 2017 valuation report is not yet available. The investment return for 2016 was 7.34%. Last year the city merged the assets of the 13th Check COLA Pool fund with the assets of the Plan and the actuary recommended lowering the investment return assumption from 6.75% to 6.4% to better reflect the expected impact of the transfers to the 13th Check COLA Pool Fund. As a result, the plan was funded at 79.9%. For this plan year, the investment return assumption has been increased from 6.4% to 7.5%.

The City of Lincoln has taken additional measures to improve the future funding of the Plan and to specifically address the systematic funding of the Unfunded Accrued Liability (UAL). In May 2017, the City adopted Ordinance #20495 which modifies the Plan's funding policy by providing for the amortization of the existing UAL on August 31, 2016, over a 28-year closed period. In subsequent Actuarial Valuations, the annual net experience gains/losses will be amortized over a new, closed 20-year period.

The funding policy in Ordinance #20495 further provides that the Actuarially Determined Employer Contribution Rate shall be the greater of the Employer Normal Cost Rate or the sum of the Employer Normal Cost Rate and the UAL contribution rate. If the actuarial assets exceed the actuarial accrued liability, a negative amortization payment shall only be applied if the plan has been at least 115% funded for the current and prior two years. The most recent Experience Study was completed in 2014 and will be repeated in 2018.

Lincoln Police and Fire Plan Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2016*	79.9%	7.5%	7.34%	16.47%	24.38%	7.06%	17.32%	75%
2015	64%	6.4%	-2.76%	21.11%	27.42%	6.88%	18.98%	96%
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%

*Lincoln Fire & Police Plan year ends August 31 so the 2017 Valuation Report is not yet available.

Metro Area Transit Hourly Employees:

The current funding ratio is 71%, down from 72% in 2016. The investment return was 5.80%. The funding status of the Plan was 65% in 2012 when the assumed rate for the plan was 7.5%. Metro decreased the assumed rate in 2013 to 7.0% and dropped it again in 2016 to 6.75%.

Metro has made a number of changes to improve the funding status and long-term sustainability of the plan. Effective September 1, 2017, Metro made a one-time lump-sum contribution to the Plan equal to 1% of the total of the active Plan participants' compensation making the effective employer contribution rate 7.5% since July 1, 2016.

For employees hired on or after January 1, 2018, the normal retirement age has been changed from 65 to the age when the employee reaches full retirement age for purposes of receiving Social Security benefits. The early retirement option was also eliminated. Employee contribution rates increased from 6% to 7%.

In addition, to reflect the increasing average age of the Plan participants, the asset allocation has been modified to reduce the volatility of returns. To increase net investment returns, the entire portfolio has been indexed, reducing Plan investment management fees from 71 basis points to 9 basis points.

Metro Area Transit Hourly Employees Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	COUNTY RATES	% OF ARC PAID
2017	71%	6.75%	5.80%	7.39%	N.A.	6.0%	6.5%*	N.A.
2016	72%	6.75%	-1.50%	7.35%	N.A.	6.0%	6.5%	78.28%
2015	76%	7.0%	6.10%	7.39%	N.A.	6.0%	6.5%	88.30%
2014	76%	7.0%	14.20%	7.28%	N.A.	6.0%	6.5%	84.28%
2013		7.0%	11.90%	7.02%	N.A.	6.0%	6.5%	85.74%

*The employer made a one-time lump sum contribution to the Plan equal to 1% of the total of the active Plan participants' compensation for the period beginning on July 1, 2016 and ending on August 31, 2017, making the effective employer contribution rate 7.5% since July 1, 2016

Omaha Civilian Employees

The funding status decreased from 55% to 54% even though the investment return was 9.7% and the City contributed 108.36% of the ARC. The most recent projections show the system will reach fully funded status in about 25 years, if all assumptions are met. The current assumed rate is 8%, however, an Experience Study is pending with the results expected in late early 2018. It is likely assumptions may change including the assumed rate.

In 2013 the City entered into collective bargaining which resulted in an agreement for 2013 through 2017. The agreement was intended to improve funding of the Plan by reducing benefits in order to ensure the long-term sustainability of the Plan. Collectively bargained changes included:

> Over the 4 years of the agreement – 2013 through 2017, contributions by the City increased from 11.775% to 18.775% -- a total of 7% increase

> Existing employees will receive a formula multiplier of 1.9% per year for future years of service instead of 2.25%

> Moved from Rule of 80 to Rule of 85 and raised the minimum retirement age with some grandfathering of these provisions

> Retirement age went from 60 to 65 over the course of the agreements

> Final salary moved from highest one year in last 5 years of service to average of last 5 years of service

> Dramatically decreased disability benefit for existing employees

> Implemented Cash Balance Plan for employees hired on or after March 1, 2015. Employees vest after 10 years.

The City has commenced negotiations with the bargaining groups for 2018 and beyond. The City does not anticipate that the labor agreements will address further pension changes/reform.

Omaha Civilian Employees Plan Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2017	55%	**	9.7%	9.72%	27.740%	10.075%	18.775%	108.36%
2016	56%	8%	3.1%	9.843%	27.526%	10.075%	18.775%	84.50%
2015	56%	8%	4.7%	9.881%	33.724%	10.075%	18.775%	71.82%
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%

** The 2017 Experience Study is pending completion.

Omaha Police and Fire:

The funding status increased from 51% to 52%. The investment return was 8.5% and the City contributed 101.81% of the ARC. The current unfunded actuarial liability (UAL) is $612, an increase from last year's UAL of $603. The current assumed rate is 8%, however, an Experience Study is pending and expected to be completed in early 2018. In an effort to improve the funding status, the City increased contributions and modified pension benefits through labor agreements with the police union in 2010 and the fire union in 2012. The changes in contributions and benefits included:

> Increasing 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) to limit enhancement of pension benefit that occurs by working a lot of overtime or selling compensation time in the last year of employment

> Calculating final salary based on highest 3 years of service instead of the highest year

> Basing pension for new hires only on base salary

> For all groups excluding the police union – capping pension for new hires at 65% and requiring 30 years of service

> Increasing City contributions to the system by 13% to 14%

The employees in this plan are represented by four bargaining groups. Three of the groups have collective bargaining agreements in place through 2018. The fourth group, the Omaha Police Officers Association, entered into a collective bargaining agreement for 2015 through 2020; the agreement was effective in March 2017. As part of Police Officers agreement, the City and the employees have agreed to contribute an additional 0.75% of wages into the system for 2018 to 2020. The widow's pension provision was changed to provide that a widow's pension is only payable if the officer and spouse were married as of the date of the officer's retirement. The most recent projection had the system fully funded in approximately 21 to 22 years, assuming all assumptions are met.

Omaha Police and Fire Plan Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INV. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2017	52%	**	8.5%	21.99%	50.212%	15.35%-17.23%	32.97%-33.67%	101.81%
2016	51%	8%	.2%	22.14%	50.097%	15.35%-17.23%	32.97%-33.67%	100.54%
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%

** The 2017 Experience Study is pending completion.

8

Omaha Public Power District:

OPPD Plan year is based on the calendar year so the 2017 Valuation Report is not yet available. In 2016 the funding ratio was 69.2% down from 72.4%. The investment return in 2016 was 6.74%.

OPPD has consistently paid 100% of its ARC in each of the previous five reporting years. An Experience Study was conducted in 2016 and several assumptions were changed including the adoption of an updated mortality table and a reduction in the assumed rate of return from 7.75% to 7.0%.

OPPD has been working to address funding and long-term sustainability of the plan. In 2012 the Board moved to a Cash Balance Plan for employees hired on and after January 1, 2013. In 2013 the District changed early retirement eligibility, which generally prevents employees from receiving early retirement benefits before age 55. In 2017 negotiations with bargaining units were completed and resulted in an increase in employee contributions, which will gradually increase beginning in 2018 to 6.7% through 2022 when the employee contribution rate will be 9.0%.

Omaha Public Power District Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	DISTRICT RATES	% OF ARC PAID
2016*	69.2%	7.0%	6.74%	11.1%	25.2%	6.2%	25.2%	100%
2015	72.4%	7.0%	-1.07%	11.83%	23.73%	6.2%	17.53%	100%
2014	73.9%	7.75%	3.85%	11.59%	27.31%	6.2%	21.11%	100%
2013	71.9%	7.75%	11.94%	11.75%	27.77%	6.2%	21.57%	100%
2012	69.7%	7.75%	13.16%	12.01%	27.82%	6.2%	21.62%	100%

*Omaha Public Power District Plan year ends December 31 so the 2017 Valuation Report is not yet available.

Omaha Public School (OSERS):

Under LB 447 passed in 2016, beginning January 1, 2017 the investment management of the Omaha School Employees Retirement System's (OSERS) assets was transferred to the Nebraska Investment Council (NIC). The 2016 plan year was also extended from September 1, 2015 to December 31, 2016 in order to convert the plan year to a calendar year (all of the NIC pension plan investments are either on a fiscal year or calendar year basis). The investment return for the extended 2016 plan year was -0.70%. Since the 2017 plan year ends on December 31, the 2017 report will not be available until the spring of 2018.

The Experience Study conducted in 2016 reduced the assumed rate of return from 8% to 7.5% and changed the mortality tables to more accurately reflect the lifespans of current OSERS members. The funding level for the plan decreased from 73% to 65% and the UAAL increased from $486 million to $713 million. The actuary noted in the 2016 Valuation Report that the "actuarial valuation reflects a dramatic decline in the System's funded ratio and a corresponding increase in the actuarial contribution rate". The actuary also noted that "changes in actuarial assumptions and methods, coupled with investment returns below the assumed rate and contributions below the actuarial rate significantly reduced the funded ratio over much of this period *(emphasis added)*.

Since 2010, OPS has not paid required ARCs of $1.7 million in 2010, $3.9 million in 2011 and $1.4 million in 2013 for a total of $7 million. OPS also did not pay the ARC due in 2012, however, the bargaining unit members chose to contribute their $4.33 million health insurance premium holiday to the OSERS plan in order to more than cover the $178,547 ARC due that year.

In the most recent Valuation Report, the ARC annotated in the valuation report was $15.5 million. In September, 2017, OPS made an ARC payment of $12.75 million (82.2% of the $15.5 million ARC) The OPS payment of $12.75 million was consistent with the statutory definition of "solvency" contained in 79-9,113 of the Class V School Employees Retirement Act which was added under LB 447. However, "solvency" as currently defined in statute is not consistent with the method used by the actuary to determine the ARC. [See June 20, 2017 letter from Cavanaugh Macdonald *"Alternate Contribution for 2017 Plan Year"*.] The statute will be amended in the 2018 legislative session to avoid future confusion concerning the amount of the ARC that OPS is obligated to pay each year.

In 2017 the legislature passed LB 415, which created a modified Rule of 85 for employees hired after July 1, 2017. Under the modified Rule of 85, employees must work until at least age 60 in order to qualify for full retirement benefits.

Omaha School Employees Retirement System Summary

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INV. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	DISTRICT RATES	**% OF ARC PAID
2017*	N.A.	7.5%	N.A.	N.A.	N.A.	9.78%	9.878%	N.A.
2016	65%	7.5%	-0.70%	13.07%	26.29%	9.78%	9.878%	82.2%
2015	73%	8%	0.89%	11.96%	20.76%	9.78%	9.878%	No ARC
2014	74%	8%	-4.01%	12.02%	20.23%	9.78%	9.878%	No ARC
2013	73%	8%	13.31%	12.05%	20.43%	9.78%	9.878%	95.98%

*The OSERS Plan year prior to 2016 was September 1 through August 31. In 2016 the plan year was extended to December 31. The 2017 Valuation Report will not be available until spring of 2018.

**The percent of ARC paid as noted in the actuarial valuation reports includes contributions by the State of Nebraska of the statutorily required 2% of total compensation, (The State contribution percentage was 1% of compensation through 2013 and increased to 2% beginning in 2014 under LB 553). The following is a list of the contribution amounts contributed by the State of Nebraska:

Year	Amount of State Contribution	% of Compensation Contributed by State
2016	$6,660,783	2%
2015	$6,452,650	2%
2014	$6,285,320	2%
2013	$3,068,998	1%

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Summary Charts of 2013-2017
Actuarial and Investment Information

Douglas County Employees Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	COUNTY RATES	% OF ARC PAID
2017	67.2%	7.5%	6.8%	10.9%	17.5%	8.5%	8.5%	97.7%
2016	67.3%	7.5%	2.3%	10.7%	15.8%	8.5%	8.5%	107.5%
2015	66.8%	7.5%	5.2%	11.3%	16.5%	8.5%	8.5%	113.9%
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%

Eastern Nebraska Health Agency Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	AGENCY RATES	% OF ARC PAID
2016*	--	7%	6.8%	--	11.55%	2.75%	9%	TBD
2015	71%	7%	0.2%	7.0%	11.55%	2.75%	8.5%	97.4%
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%

*Eastern Nebraska Human Services Agency Plan year ends December 31 so the 2017 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 INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2016*	79.9%	7.5%	7.34%	16.47%	24.38%	7.06%	17.32%	75%
2015	64%	6.4%	-2.76%	21.11%	27.42%	6.88%	18.98%	96%
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%

*Lincoln Fire & Police Plan year ends August 31 so the 2017 Valuation Report is not yet available.

Metro Area Transit Hourly Employees

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	COUNTY RATES	% OF ARC PAID
2017	71%	6.75%	5.80%	7.39%	N.A.	6.0%	6.5%*	N.A.
2016	72%	6.75%	-1.50%	7.35%	N.A.	6.0%	6.5%	78.28%
2015	76%	7.0%	6.10%	7.39%	N.A.	6.0%	6.5%	88.30%
2014	76%	7.0%	14.20%	7.28%	N.A.	6.0%	6.5%	84.28%
2013		7.0%	11.90%	7.02%	N.A.	6.0%	6.5%	85.74%

*The employer made a one-time lump sum contribution to the Plan equal to 1% of the total of the active Plan participants' compensation for the period beginning on July 1, 2016 and ending on August 31, 2017, making the effective employer contribution rate 7.5% since July 1, 2016

Omaha Civilian Employees Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2017	55%	**	9.7%	9.72%	27.740%	10.075%	18.775%	108.36%
2016	56%	8%	3.1%	9.843%	27.526%	10.075%	18.775%	84.50%
2015	56%	8%	4.7%	9.881%	33.724%	10.075%	18.775%	71.82%
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%

** The 2017 Experience Study is pending completion.

Omaha Police and Fire Plan

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	CITY RATES	% OF ARC PAID
2017	52%	**	8.5%	21.99%	50.212%	15.35%-17.23%	32.97%-33.67%	101.81%
2016	51%	8%	.2%	22.14%	50.097%	15.35%-17.23%	32.97%-33.67%	100.54%
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%

** The 2017 Experience Study is pending completion.

Omaha Public Power District

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	DISTRICT RATES	% OF ARC PAID
2016*	69.2%	7.0%	6.74%	11.1%	25.2%	6.2%	25.2%	100%
2015	72.4%	7.0%	-1.07%	11.83%	23.73%	6.2%	17.53%	100%
2014	73.9%	7.75%	3.85%	11.59%	27.31%	6.2%	21.11%	100%
2013	71.9%	7.75%	11.94%	11.75%	27.77%	6.2%	21.57%	100%
2012	69.7%	7.75%	13.16%	12.01%	27.82%	6.2%	21.62%	100%

*Omaha Public Power District Plan year ends December 31 so the 2017 Valuation Report is not yet available.

Omaha School Employees Retirement System

YEAR	FUNDED RATIO	ASSUMED INVEST. RATE	ACTUAL INVESTMENT. RETURN	NORMAL COST	TOTAL ARC %	EMPLOYEE RATES	DISTRICT RATES	**% OF ARC PAID
2017*	N.A.	7.5%	N.A.	N.A.	N.A.	9.78%	9.878%	N.A.
2016	65%	7.5%	-0.70%	13.07%	26.29%	9.78%	9.878%	82.2%
2015	73%	8%	0.89%	11.96%	20.76%	9.78%	9.878%	No ARC
2014	74%	8%	-4.01%	12.02%	20.23%	9.78%	9.878%	No ARC
2013	73%	8%	13.31%	12.05%	20.43%	9.78%	9.878%	95.98%

*The OSERS Plan year prior to 2016 was September 1 through August 31. In 2016 the plan year was extended to December 31. The 2017 Valuation Report will not be available until spring of 2018.

**The percent of ARC paid as noted in the actuarial valuation reports includes contributions by the State of Nebraska of the statutorily required 2% of total compensation, (The State contribution percentage was 1% of compensation through 2013 and increased to 2% beginning in 2014 under LB 553). The following is a list of the contribution amounts contributed by the State of Nebraska:

Year	Amount of State Contribution	% of Compensation Contributed by State
2016	$6,660,783	2%
2015	$6,452,650	2%
2014	$6,285,320	2%
2013	$3,068,998	1%

Conclusion

In 2017 Omaha Public School District (OPS) was added to the list of political subdivisions with a plan funded below 80% that are required to report to the Nebraska Retirement Systems Committee. The OSERS plan, sponsored by OPS experienced an 8% decrease in its funding status in the previous year dropping from 73% to 65%.

In addition the funding status decreased between 2016 and 2017 for OPPD, remained essentially the same for Douglas County, Metro Area Transit Hourly Employees, Omaha Civilian and Omaha Police and Fire, and increased to essentially 80% for Lincoln Police and Fire. Experience Studies are pending on Omaha Civilian Employees and Omaha Police and Fire and any change in assumptions may affect the funding status of the plans.

Investment returns for six of the plans were below each plan's assumed rate of return. The investment returns ranged from a low of −0.70% for OSERS to a high of 9.7% for Omaha Civilian Employees. An Experience Study was conducted on the OSERS plan and the actuary recommended reducing the assumed rate from 8% to 7.5%. An Experience Study is pending on two plans (Omaha Civilian and Omaha Police & Fire). Both plans indicate that they expect a reduction in the assumed rates of return.

Three of the plans have made at least 100% of the ARC payment -- Omaha Police & Fire, Omaha Civilian Employees and Omaha Public Power District; one plan, Douglas County, has paid over 97% of its ARC; Lincoln Police and Fire paid 75% of its ARC; and OPS paid 82.2% of its ARC for the OSERS plan.

The majority of plan sponsors are continuing to work with their members and collective bargaining units to take corrective actions to reduce future liabilities and to improve the funding status of the plans.

The Committee will continue to monitor the funding progress of each plan and the political subdivisions' corrective actions to ensure a continued commitment to adequate funding.

APPENDICES

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Appendix A

Douglas County Employees Retirement Plan Information

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2017 Pension Plan Reporting Form

1)

	2017	2016	2015	2014	2013
Funding Status	67.2%	67.3%	66.8%	64.6%	60.6%
Assumed Rate of Return	7.5%	7.5%	7.5%	7.5%	7.5%
Actual Investment Return - Actuarial	6.2%	5.6%	9.0%	13.2%	7.6%
Actual Investment Return - Market	6.8%	2.3%	5.2%	18.9%	10.3%
Member & Employer Contribution Rates	8.5%	8.5%	8.5%	8.5%	8.5%
Normal Cost	10.9%	10.7%	11.3%	11.5%	11.4%
Actuarial Required Contribution (ARC)	$21.5MM (17.5%)	$19.4MM (16.4%)	$18.7MM (16.5%)	$18.8MM (17.0%)	$19.2MM (17.2%)
ARC - Actual dollars contributed	$21.0MM (expected)	$21.5MM	$20.9MM	$19.6MM	$19.1MM
ARC - Percentage of ARC contributed	97.7%	110.8%	111.8%	104.3%	99.5%

2) See attached narrative.

3) In July 2015, the long-term disability benefit provision was removed from the Pension Plan and has been replaced by a separate fully-insured long-term disability plan. On January 1, 2016 the interest crediting rate on member contributions was changed from 5.0% to the 10-year treasury rate in effect on the 1st of November of the preceding plan year. The combined impact of these two changes was a $3.6 million decrease in the actuarial accrued liability and a 0.6% increase to the Plan's funded ratio.

In the January 1, 2017 Actuarial Valuation, the following actuarial assumptions were updated:

a) RP2000 Mortality Table with longer expected lives.
b) Amortization of unfunded liability was reduced from 30 years to 25 years.
c) Early retirement rates and rates of termination of employment were updated.

The net impact of these changes in actuarial assumptions was a 0.1% decrease to the funding status and $1.3 million increase to the Actuarially Required Contribution.

4) See attached narrative.

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

6) The March 2017 Actuarial Experience Analysis is attached.

7) The assumed rate of return of the plan is 7.5%. No changes have been made in the past year and none are contemplated in the near future.

8) The January 1, 2017 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, 2017. The report showed the plan was 67.2% funded, had net assets on an actuarial basis of $287.5 million, and had an unfunded actuarial accrued liability of $140.3 million. The plan had 3,580 participants and an equal member and employer contribution rate of 8.5% of pay. The normal cost was $13.5 million and the actuarial required contribution was $21.5 million. The funded ratio has decreased slightly from 67.3% on January 1, 2016.

To understand why the Douglas County DB Plan is only 67.2% 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 was reduced from 2% of pay per year of service to 1.5% of pay per year of service.
- Maximum retirement income was reduced from 60% of participant's 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 9.4 percentage points from its low point in 2010 to 67.2% as of January 1, 2017. 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, 2017:

Estimated Funded Percentage*

2017	67.2%
2022	70.7%
2027	75.3%
2032	81.5%
2037	90.8%

Forecast based on current plan assumptions.

In July 2015, the Long-Term Disability (LTD) program was removed from the Pension Plan and put into a separate fully-insured benefit plan. On January 1, 2016 the interest crediting rate on member contributions was changed from 5.0% to the 10-year Treasury Rate in effect on November 1st of the preceding plan year. The combined impact of these two changes was a $3.6 million decrease in the actuarial accrued liability and a 0.6% increase to the Plan's funded ratio. On January 1, 2017, actuarial valuation updates were made to the mortality table, the amortization period of the unfunded liability was reduced, and the rates of early retirement and termination of employment were revised. The net impact of these changes was a 0.1% decrease to funding status and a $1.3 million increase to the Actuarially Required Contribution. 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.

SilverStone
GROUP

April 26, 2017

PERSONAL AND CONFIDENTIAL

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

RE: 2017 Interim Actuarial Review

Dear Joe:

Enclosed are 15 copies of the January 1, 2017 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/sg

Enclosures

cc: Ms. Kathy Adair – Douglas County

DOUGLAS COUNTY EMPLOYEES' RETIREMENT PLAN

Interim Actuarial Review

January 1, 2017

Wisdom at Work.

SILVERSTONEGROUP.COM

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Table of Contents

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, 2017
- Current Active and Non-Active Participant Data
- Actuarial Value of Plan Assets
- Actuarial Methods and Assumptions
- 2017 Experience Analysis

Actuarial Assumption Changes

The 2017 experience analysis reviewed the following actuarial assumptions. Based on a comparison of actual to expected experience, the termination, retirement, and mortality rate assumptions were revised (as indicated below) to more closely align the assumption with recent plan experience. All other assumptions are consistent with the January 1, 2016 valuation. See the separate 2017 Experience Analysis for details of this review.

Assumptions Reviewed:

- **Rates of Termination**

  Separate male and female rates were revised to a single rate.

Age	Male	Female	Revised
22	16.7%	16.7%	28.3%
27	15.9%	15.9%	12.7%
32	12.9%	12.9%	10.0%
37	11.0%	11.1%	8.2%
42	9.1%	9.3%	5.9%
47	6.6%	6.7%	4.0%
52	4.2%	4.2%	2.3%
57	1.9%	1.7%	1.9%

- **Rates of Retirement**

- Rule of 75			- Other than Rule of 75		
Age	Prior	Revised	Age	Prior	Revised
50	30%	30%	50	5%	5%
51-54	15%	5%	51-54	2%	2%
55-61	15%	10%	55-61	5%	5%
62	40%	20%	62	20%	10%
63-64	30%	20%	63-64	10%	10%
65-69	30%	30%	65-69	10%	30%
70	100%	100%	70	100%	100%

- **Rates of Salary Increases** - no change.

- **Rates of Mortality**

  The mortality rates were revised from the 2007 table to the 2017 table as prescribed by the IRS for corporate-sponsored pension plans for each respective year, with mortality improvement further projected 7 years for annuitants and 15 years for non-annuitants.

- **Rate of Investment Return**

  No change per discussions between the County and their investment advisor.

Participant Data

	Plan Year Beginning January 1	
	2016	**2017**
Active Participants:		
Under Age 65	2,091	2,112
Age 65 & Over	31	34
Total	2,122	2,146
Non-Active Participants:		
Retired	1,206	1,218
Vested Terminated	119	119
Terminated Non-Vested	46	71
Disabled	25	26
Total Non-Active	1,396	1,434
Total Participants	3,518	3,580
Annual Compensation:		
Total, Under Age 65	$117,996,629	$123,250,290
Average Per Participant	56,431	58,357
Annual Pension Benefit		
Current Retired	22,353,567	23,384,533
Immediate Disability Payments	169,161	126,929
Deferred to Age 65		
Vested Terminated	1,106,570	1,153,422
Disabled	577,205	585,533

Market Value of Plan Assets

Summary of Changes in Value of Plan Assets

Market Value of Plan Assets on January 1, 2016		$269,935,429
Plus Increases		
Employee Contributions	10,772,278	
County Contributions	10,748,244	
Investment Experience	18,246,216	
		39,766,738
Less Decreases		
Pensions Paid to Retirees	22,933,906	
Refunds to Terminated EEs	1,934,167	
Disability Premiums/Administration	0	
Administrative Expenses	932,093	
		25,800,166
Market Value of Plan Assets on January 1, 2017		$283,902,001
Approximate Rate of Return		6.8%

Plan Investments	% of Total	Market Value
US Bank		
Operating Account - Cash and Cash Equivalents	2.4%	$6,927,931
Deposit in Transit	0.0%	5,421
Atlanta Capital	12.8%	36,211,412
State Street - Fixed Income Portfolio	2.9%	8,165,726
JP Morgan	4.6%	13,020,535
Winslow - Capital Management	7.1%	20,083,080
Sanderson International	3.5%	9,975,252
Harding Loevner	5.2%	14,842,016
Herndon International	0.0%	19,494
Wells Cap Emerging	5.2%	14,728,219
Delaware	6.0%	17,229,865
Total		141,208,951
United of Omaha Insurance Company		
Retired Contract #6148 - Annuity Program	24.5%	69,439,998
Retired Contract #12795 - Annuity Program	1.6%	4,527,972
Small Company Fund	3.8%	10,818,468
Institutional Index 500	20.4%	57,906,612
Total		142,693,050
Grand Total	100.0%	$283,902,001

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, 2016		$274,877,630
Plus Increases		
Employee Contributions	10,772,278	
County Contributions	10,748,244	
Expected Interest	20,455,336	
		41,975,858
Less Decreases		
Pensions Paid to Retirees	22,933,906	
Refunds to Terminated EEs	1,934,167	
Disability Premiums/Administration	0	
Administrative Expenses	932,093	
		25,800,166
Adjusted Value on January 1, 2017		291,053,322
Market Value on January 1, 2017		283,902,001
One-Half Excess, Market Value Less Adjusted Value		(3,575,661)
Actuarial Value of Plan Assets on January 1, 2017		$287,477,661
Approximate Rate of Return		6.2%
Actuarial Value as a % of Market Value		101.3%

Unfunded Accrued Liability

| | Plan Year Beginning January 1 | |
	2016	2017
Actuarial Accrued Liability		
1. Active	$185,550,116	$192,189,205
2. Vested Terminated Participants	6,159,172	6,570,956
3. Terminated Non-Vested*	338,263	456,760
4. Disabled Participants	2,580,079	2,813,303
5. Retirees	214,034,248	225,733,224
6. Total (1) + (2) + (3) + (4) + (5)	408,661,878	427,763,448
Actuarial Value of Plan Assets		
7. Actuarial Value of Plan Assets	274,877,630	287,477,661
Unfunded Accrued Liability		
8. Unfunded Accrued Liability (6) - (7)	133,784,248	140,285,787
9. Ratio of Assets to Accrued Benefits (7) / (6)	67.3%	67.2%

*Amount equal to expected refund of member contributions.

Annual Normal Cost

| | Plan Year Beginning January 1 | |
	2016	2017
Annual Normal Cost		
Retirement, Death, Termination and Disability	$11,817,349	$12,634,530
Immediate Disability Benefit	0	0
Annual Administrative Expense	809,806	851,706
Total	12,627,155	13,486,236
Expected Plan Contributions		
From Employees	10,029,713	10,476,275
From County	10,029,713	10,476,275
Total	20,059,426	20,952,550

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. In accordance with applicable State and County statutes, the County contributes an annual amount equal to the Member contributions.

An actuarially determined contribution is the annual calculated contribution amount as determined by application of the plan's actuarial methods and assumptions. This contribution provides a measure of the amount of contributions needed to fund the benefits earned in the current year plus the 25-year amortization of the unfunded accrued liability. It is an illustrative amount useful as a benchmark comparison to the actual contributions into the plan and is also reported in the annual Governmental Accounting Standards Board (GASB) disclosures. The plan is not currently being funded on this basis, but is funded by the fixed contribution rates described above.

| | Plan Year Beginning January 1 | |
	2016	2017
1. Annual Normal Cost	$12,627,155	$13,486,236
2. Amortization of the Unfunded Accrued Liability	6,070,232	7,261,084
3. One-half Year Interest on (1) and (2)	701,152	778,025
4. Actuarially Determined Contribution	19,398,539	21,525,345

Actuarial Methodology

Actuarial Cost Method	Projected Unit Credit	Projected Unit Credit
Amortization Method	Level Percent of Pay	Level Percent of Pay
Amortization Period	30 Years, Open Period	25 Years, Close Period
Actuarial Assumptions	Same, as described in report	Same, as described in report

Amortization of Unfunded Accrued Liability

	Plan Year Beginning January 1	
	2016	2017
Unfunded Accrued Liability (UAL)	$133,784,248	$140,285,787
Annual Normal Cost	12,627,155	13,486,236
Expected Plan Contributions		
From Employees	10,029,713	10,476,275
From County	10,029,713	10,476,275
Total	20,059,426	20,952,550
Amount Available to Reduce UAL	7,432,271	7,466,314
Amortization of the UAL*	6,070,232	7,261,084
Interest Only on the UAL	10,033,819	10,521,434

* The amortization period was 30 years as of January 1, 2016 and reduced to 25 years as of Janaury 1, 2017.

History of Plan Changes

2016   Long Term Disability provision for active members was eliminated from the Plan as of 7/1/2015. LTD is provided by insurance outside of the pension plan. The interest crediting rate on employee contributions was changed from 5% to the 10-Year Treasury rate for November prior to the valuation date as of 1/1/2016.

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
           5.5% member contributions

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

History of Plan Changes

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

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
2017	$287,478	$428,146	$427,763	67.1%	67.2%
2016	274,878	412,283	408,662	66.7%	67.3%
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 actuarial 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 actuarial 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 unfunded actuarial accrued liability is amortized over 25 years on a fixed percentage of pay, closed layered basis. This amortization method was adopted effective January 1, 2017.

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

Investment Return

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

The static, combined healthy lives RP-2000 mortality tables projected to 2017 and further projected 7 years for annuitants and 15 years for non-annuitants. Separate tables are used for annuitants and non-annuitants as well as for male and female.

Disability Rates

None.

Withdrawal Rates

Based on rates as illustrated below:

Age	Rate
22	28.3%
27	12.7%
32	10.0%
37	8.2%
42	5.9%
47	4.0%
52	2.3%
57	1.9%

Accrued Sick Leave

7 days per year.

Retirement Rate

Age	Rule of 75	Other
50	30%	5%
51-54	5%	2%
55-61	10%	5%
62-64	20%	10%
65-69	30%	30%
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.

Interest Rate on Employee Contributions

2.14% per annum.

Administrative Expenses

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

Summary of Plan Provisions

Effective Date	January 1, 1963
Plan Year	January 1 through December 31.
Participation	First day of continuous employment.

Definitions

Member

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.

Benefit Service

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.

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

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.

There is no Rule of 75 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.

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 non-bargaining 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.

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 non-bargaining 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.
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:

Completed Years of Service on Date of Termination	Vesting Factor
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 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. This interest rate credit was changed to the 10-year treasury rate for the month of November, preceding the plan year, as of January 1, 2016.

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, 2017

Active Participants Included in Valuation

Age at Valuation Date	Number		
	Male	Female	Total
Under 20	0	2	2
20-24	20	32	52
25-29	87	86	173
30-34	123	138	261
35-39	128	140	268
40-44	123	144	267
45-49	151	165	316
50-54	113	167	280
55-59	106	143	249
60-64	81	103	184
65 & Over	50	44	94
Total	982	1,164	2,146*

* 647 actives (30.1% of all active participants) are under the reduced plan formula.

Non-Active Participants Included in Valuation

	Number	Annual Benefit
Retired & Beneficiary Participants	1,218	$23,384,533
Vested Terminated Participants	119	1,153,422
Terminated Non-Vested	71	456,760 **
Disabled Participants	26	126,929
Total	1,434	25,121,644

** Amount equal to expected refund of member contributions.

Participant Census Statistics

(continued)

	Active	Non-Active				Total
		Deferred	Disabled	Retired	Beneficiary	
Number on January 1, 2016	2,122	165	25	1,000	206	3,518
Terminated						
Non-Vested	0	0	0	0	0	0
Vested - Lump Sum	-73	-28	-4	0	0	-105
Vested - Deferred	-60	+61	-1	0	0	0
Disabled	-6	0	+6	0	0	0
Deceased						
Vested - Lump Sum	0	0	0	0	0	0
Vested - Beneficiary	-1	0	0	-9	-11	-21
No Additional Benefit	0	0	0	-16	-5	-21
Retired						
Monthly Benefit	-50	-3	0	+55	0	+2
Lump Sum	0	0	0	0	0	0
Certain Period Expired	0	0	0	-1	0	-1
Return to Active	+6	-5	0	-1	0	0
New Entrants or Prior Omissions During Plan Year	+208	0	0	0	0	+208
Number on January 1, 2017	2,146	190	26	1,028	190	3,580

Non-Active Participants	Number	Annual Benefit
Vested Deferred Participants	190	$1,153,422*
Retired & Beneficiary Participants	1,218	23,384,533

* Excludes $456,760 of expected refund of member contributions.

Douglas County
Employees' Retirement Plan

2017 Experience Analysis

March 2017

SilverStone GROUP

Table of Contents

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 five years, the following revisions to the actuarial assumptions are recommended.

Rates of Termination

We recommend increasing rates prior to age 25 and reducing rates after age 24.

Age	Current Male	Current Female	Recommended
22	16.7%	16.7%	28.3%
27	15.9%	15.9%	12.7%
32	12.9%	12.9%	10.0%
37	11.0%	11.1%	8.2%
42	9.1%	9.3%	5.9%
47	6.6%	6.7%	4.0%
52	4.2%	4.2%	2.3%
57	1.9%	1.7%	1.9%

Rates of Retirement

Rule of 75

We recommend changing rates to the following:

Age	Current	Recommended
50	30%	30%
51-54	15%	5%
55-61	15%	10%
62	40%	20%
63-64	30%	20%
65-69	30%	30%
70	100%	100%

Actuarial Assumptions Recommendation

Rates of Retirement (continued)

Other than Rule of 75

We recommend changing rates to the following:

Age	Current	Recommended
50	5%	5%
51-54	2%	2%
55-61	5%	5%
62	20%	10%
63-64	10%	10%
65-69	10%	30%
70	100%	100%

Rates of Salary Increases

No changes recommended

Rates of Mortality

The current mortality table has been used since 2007. Consistent with generally observed longevity increases, we recommend adopting the mortality table prescribed by IRS for corporate-sponsored pension plans for 2017. This recommended mortality table is the static RP 2000 mortality table projected to 2024 for annuitants and 2032 for non-annuitants.

Rates of Investment Return

No changes recommended, based on direction of the County and investment advisor.

Comparison of Actual and Consistent Expected Rates

Terminations - Consistent

Age Group	2016			2015			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
20-24	16	9	175%	17	8	202%	14	7	202%	9	8	119%	7	7	99%
25-29	25	29	87%	25	29	86%	26	28	92%	24	27	89%	26	28	92%
30-34	26	32	81%	24	31	78%	26	30	86%	24	32	74%	22	31	71%
35-39	23	29	79%	21	27	79%	24	26	93%	12	25	48%	23	27	84%
40-44	17	25	67%	17	25	67%	17	27	64%	17	27	62%	9	28	32%
45-49	13	21	63%	14	18	76%	19	19	101%	16	20	81%	14	18	77%
50-54	6	12	50%	7	11	65%	6	10	60%	10	10	98%	6	11	56%
55-59	5	4	112%	7	2	317%	12	2	518%	8	3	311%	8	2	322%
60-62	2	2	88%	2	0	2140%	3	0	3393%	3	0	2835%	4	0	3603%
Total	133	164	81%	134	152	88%	147	149	98%	123	152	81%	119	153	78%

Comparison of Actual and Recommended Expected Rates

Terminations - Recommended

Age Group	2016*			2015*			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
20-24	16	14	112%	17	13	129%	14	7	202%	9	8	119%	7	7	99%
25-29	25	23	109%	25	23	107%	26	28	92%	24	27	89%	26	28	92%
30-34	26	25	104%	24	24	99%	26	30	86%	24	32	74%	22	31	71%
35-39	23	22	107%	21	20	104%	24	26	93%	12	25	48%	23	27	84%
40-44	17	16	105%	17	17	101%	17	27	64%	17	27	62%	9	28	32%
45-49	13	12	105%	14	12	120%	19	19	101%	16	20	81%	14	18	77%
50-54	6	7	88%	7	7	99%	6	10	60%	10	10	98%	6	11	56%
55-59	5	4	114%	7	4	159%	12	2	518%	8	3	311%	8	2	322%
60-62	2	3	76%	2	2	88%	3	0	3393%	3	0	2835%	4	0	3603%
Total	133	126	105%	134	123	109%	147	149	98%	123	152	81%	119	153	78%

* The recommended rates of termination are compared to actual terminations for 2016 and 2015. These rates were lowered to better match recent experience. Years 2012-2014 were not updated with the new expected rates, but illustrate the rates in effect as of January 1, 2016.

Comparison of Actual and Consistent Expected Rates

Rule of 75 Retirements - Consistent

Age	2016 Actual	2016 Exp	2016 Ratio	2015 Actual	2015 Exp	2015 Ratio	2014 Actual	2014 Exp	2014 Ratio	2013 Actual	2013 Exp	2013 Ratio	2012 Actual	2012 Exp	2012 Ratio
50	4	1.80	222%	4	5.40	74%	4	2.70	148%	5	2.40	208%	2	1.80	111%
51	1	2.85	35%	5	1.95	256%	1	3.75	27%	0	1.65	0%	3	1.95	154%
52	0	1.35	0%	1	2.55	39%	1	2.10	48%	4	2.85	140%	1	1.80	56%
53	0	2.70	0%	1	1.95	51%	1	1.50	67%	1	3.00	33%	2	1.80	111%
54	2	3.00	67%	0	1.95	0%	2	2.40	83%	2	1.20	167%	4	2.85	140%
55	1	1.95	51%	1	2.55	39%	1	1.50	67%	0	2.10	0%	4	2.10	190%
56	2	3.45	58%	2	2.40	83%	1	3.00	33%	2	2.55	78%	0	2.10	0%
57	2	1.50	133%	3	3.60	83%	2	2.55	78%	1	2.10	48%	2	2.25	89%
58	2	5.40	37%	1	3.75	27%	3	2.55	118%	4	3.15	127%	2	2.25	89%
59	2	4.35	46%	1	3.45	29%	1	2.25	44%	0	2.10	0%	1	3.00	33%
60	5	3.75	133%	2	3.90	51%	2	2.55	78%	5	3.60	139%	3	5.10	59%
61	2	3.30	61%	3	2.55	118%	4	3.45	116%	7	4.05	173%	3	1.95	154%
62	1	5.10	20%	3	5.60	54%	6	8.90	67%	4	4.90	82%	3	5.80	52%
63	1	3.90	26%	2	6.00	33%	2	2.70	74%	3	3.90	77%	0	5.40	0%
64	6	5.70	105%	4	2.40	167%	2	3.60	56%	0	6.00	0%	3	5.10	59%
65	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
66	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
67	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
68	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
69	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
Total	31	50.10	62%	33	50	66%	33	45.50	73%	38	45.55	83%	33	45.25	73%

Comparison of Actual and Recommended Expected Rates

Rule of 75 Retirements - Recommended

Age	2016*			2015*			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
50	4	1.80	222%	4	5.40	74%	4	2.70	148%	5	2.40	208%	2	1.80	111%
51	1	1.55	65%	5	1.25	400%	1	3.75	27%	0	1.65	0%	3	1.95	154%
52	0	0.85	0%	1	1.25	80%	1	2.10	48%	4	2.85	140%	1	1.80	56%
53	0	1.30	0%	1	0.85	118%	1	1.50	67%	1	3.00	33%	2	1.80	111%
54	2	1.80	111%	0	1.05	0%	2	2.40	83%	2	1.20	167%	4	2.85	140%
55	1	1.40	71%	1	1.90	53%	1	1.50	67%	0	2.10	0%	4	2.10	190%
56	2	2.70	74%	2	2.00	100%	1	3.00	33%	2	2.55	78%	0	2.10	0%
57	2	1.00	200%	3	2.70	111%	2	2.55	78%	1	2.10	48%	2	2.25	89%
58	2	4.50	44%	1	3.10	32%	3	2.55	118%	4	3.15	127%	2	2.25	89%
59	2	3.40	59%	1	2.80	36%	1	2.25	44%	0	2.10	0%	1	3.00	33%
60	5	2.90	172%	2	3.30	61%	2	2.55	78%	5	3.60	139%	3	5.10	59%
61	2	2.50	80%	3	1.90	158%	4	3.45	116%	7	4.05	173%	3	1.95	154%
62	1	2.70	37%	3	2.80	107%	6	8.90	67%	4	4.90	82%	3	5.80	52%
63	1	2.70	37%	2	4.30	47%	2	2.70	74%	3	3.90	77%	0	5.40	0%
64	6	4.00	150%	4	1.70	235%	2	3.60	56%	0	6.00	0%	3	5.10	59%
65	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
66	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
67	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
68	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
69	0	0.00		0	0.00		0	0.00		0	0.00		0	0.00	
Total	31	35.10	88%	33	36.3	91%	33	45.50	73%	38	45.55	83%	33	45.25	73%

* The recommended rates of Rule of 75 retirements are compared to actual Rule of 75 retirements for 2016 and 2015. These rates were lowered to better match recent experience. Years 2012-2014 were not updated with the new expected rates, but illustrate the rates in effect as of January 1, 2016.

Douglas County Employees' Retirement Plan

7

Comparison of Actual and Consistent Expected Rates

Early and Normal Retirements - Consistent

Age	2016			2015			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
<=60	0	1.10	0%	2	0.95	211%	1	0.75	133%	2	0.90	222%	3	0.70	429%
61	0	0.70	0%	1	0.55	182%	2	0.85	235%	2	0.70	286%	1	0.55	182%
62	1	2.00	50%	1	2.60	38%	2	2.40	83%	0	1.20	0%	5	2.40	208%
63	0	1.10	0%	1	0.90	111%	0	0.50	0%	0	0.80	0%	1	0.90	111%
64	0	0.70	0%	2	0.40	500%	0	0.70	0%	1	0.70	143%	0	0.60	0%
65	3	0.70	429%	7	1.70	412%	3	2.70	111%	6	2.00	300%	8	2.40	333%
66	4	1.10	364%	10	2.50	400%	6	1.50	400%	3	1.50	200%	0	1.30	0%
67	4	1.50	267%	2	0.80	250%	3	1.20	250%	1	1.20	83%	1	1.50	67%
68	0	0.60	0%	1	0.90	111%	2	1.10	182%	4	1.40	286%	1	0.50	200%
69	2	0.80	250%	0	0.90	0%	1	1.00	100%	0	0.40	0%	3	0.70	429%
Subtotal	14	10.30	136%	27	12.20	221%	20	12.70	157%	19	10.80	176%	23	11.55	199%
70+	5	29.00	17%	3	22.00	14%	3	16.00	19%	1	14.00	7%	2	14.00	14%
Total	19	39.30	48%	30	34.2	88%	23	28.70	80%	20	24.8	81%	25	25.55	98%

Comparison of Actual and Recommended Expected Rates

Early and Normal Retirements - Recommended

Age	2016*			2015*			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
<=60	0	1.10	0%	2	0.95	211%	1	0.75	133%	2	0.90	222%	3	0.70	429%
61	0	0.70	0%	1	0.55	182%	2	0.85	235%	2	0.70	286%	1	0.55	182%
62	1	1.00	100%	1	1.30	77%	2	2.40	83%	0	1.20	0%	5	2.40	208%
63	0	1.10	0%	1	0.90	111%	0	0.50	0%	0	0.80	0%	1	0.90	111%
64	0	0.70	0%	2	0.40	500%	0	0.70	0%	1	0.70	143%	0	0.60	0%
65	3	2.10	143%	7	5.10	137%	3	2.70	111%	6	2.00	300%	8	2.40	333%
66	4	3.30	121%	10	7.50	133%	6	1.50	400%	3	1.50	200%	0	1.30	0%
67	4	4.50	89%	2	2.40	83%	3	1.20	250%	1	1.20	83%	1	1.50	67%
68	0	1.80	0%	1	2.70	37%	2	1.10	182%	4	1.40	286%	1	0.50	200%
69	2	2.40	83%	0	2.70	0%	1	1.00	100%	0	0.40	0%	3	0.70	429%
Subtotal	14	18.70	75%	27	24.50	110%	20	12.70	157%	19	10.80	176%	23	11.55	199%
70+	5	29.00	17%	3	22.00	14%	3	16.00	19%	1	14.00	7%	2	14.00	14%
Total	19	47.70	40%	30	46.5	65%	23	28.70	80%	20	24.8	81%	25	25.55	98%

* The recommended rates of Early and Normal retirements are compared to actual Early and Normal retirements for 2016 and 2015. These rates were changed to better match recent experience. Years 2012-2014 were not updated with the new expected rates, but illustrate the rates in effect as of January 1, 2016.

Comparison of Actual and Expected Rates

Salary Increases

Age Group	2016			2015			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
20-24	7.44%	5.50%	135%	8.22%	5.50%	149%	7.39%	5.50%	134%	4.74%	5.50%	86%	7.72%	5.50%	140%
25-29	7.65%	5.50%	139%	7.62%	5.50%	139%	7.26%	5.50%	132%	4.83%	5.50%	88%	8.62%	5.50%	157%
30-34	6.65%	5.50%	121%	7.14%	5.50%	130%	5.78%	5.50%	105%	3.82%	5.50%	69%	6.48%	5.50%	118%
35-39	6.15%	5.50%	112%	5.30%	5.50%	96%	5.07%	5.50%	92%	2.84%	5.50%	52%	5.04%	5.50%	92%
40-44	5.17%	5.50%	94%	4.78%	5.50%	87%	4.28%	5.50%	78%	3.60%	5.50%	65%	4.36%	5.50%	79%
45-49	4.95%	5.00%	99%	4.19%	5.00%	84%	4.23%	5.00%	85%	2.75%	5.00%	55%	4.61%	5.00%	92%
50-54	5.24%	5.00%	105%	3.96%	5.00%	79%	3.88%	5.00%	78%	2.36%	5.00%	47%	4.92%	5.00%	98%
55-59	5.19%	4.50%	115%	3.78%	4.50%	84%	3.55%	4.50%	79%	2.38%	4.50%	53%	4.59%	4.50%	102%
60-65	4.85%	4.50%	108%	3.98%	4.50%	88%	3.73%	4.50%	83%	2.18%	4.50%	48%	4.81%	4.50%	107%
65+	4.46%	4.50%	99%	2.72%	4.50%	60%	2.87%	4.50%	64%	1.50%	4.50%	33%	3.98%	4.50%	88%
Totals	5.64%	5.12%	110%	4.96%	5.13%	97%	4.58%	5.12%	89%	3.03%	5.12%	59%	4.62%	5.13%	90%

Comparison of Actual and Consistent Expected Rates

Mortality for Retired and Terminated Vested Participants - Consistent

Age Group	2016			2015			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
<60	0	0.86	0%	1	0.87	115%	2	1.00	201%	2	0.91	220%	3	0.96	314%
60-64	5	1.61	310%	4	1.67	240%	4	1.54	261%	2	1.50	134%	2	1.45	138%
65-69	3	3.50	86%	3	2.88	104%	2	2.47	81%	2	2.49	80%	5	2.39	209%
70-74	2	3.95	51%	4	3.91	102%	4	3.82	105%	2	3.34	60%	3	3.16	95%
75-79	5	4.63	108%	6	4.34	138%	6	4.21	143%	5	4.13	121%	6	4.60	130%
80-84	5	6.67	75%	8	7.56	106%	9	7.67	117%	2	7.21	28%	16	7.81	205%
85-89	12	9.55	126%	8	9.13	88%	7	8.83	79%	7	8.82	79%	15	8.07	186%
90-94	7	8.14	86%	5	8.06	62%	8	7.91	101%	9	7.46	121%	5	6.70	75%
>=95	5	3.59	139%	4	2.31	173%	2	2.20	91%	5	2.77	180%	4	3.23	124%
Total	44	42	104%	43	41	106%	44	40	111%	36	39	93%	59	38	154%

Comparison of Actual and Recommended Expected Rates

Mortality for Retired and Terminated Vested Participants - Recommended

Age Group	2016*			2015*			2014			2013			2012		
	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio	Actual	Exp	Ratio
<60	0	0.75	0%	1	0.76	131%	2	1.00	201%	2	0.91	220%	3	0.96	314%
60-64	5	1.46	342%	4	1.51	264%	4	1.54	261%	2	1.50	134%	2	1.45	138%
65-69	3	3.19	94%	3	2.63	114%	2	2.47	81%	2	2.49	80%	5	2.39	209%
70-74	2	3.58	56%	4	3.55	113%	4	3.82	105%	2	3.34	60%	3	3.16	95%
75-79	5	4.20	119%	6	3.94	152%	6	4.21	143%	5	4.13	121%	6	4.60	130%
80-84	5	6.18	81%	8	7.02	114%	9	7.67	117%	2	7.21	28%	16	7.81	205%
85-89	12	9.09	132%	8	8.70	92%	7	8.83	79%	7	8.82	79%	15	8.07	186%
90-94	7	7.91	88%	5	7.84	64%	8	7.91	101%	9	7.46	121%	5	6.70	75%
>=95	5	3.53	142%	4	2.29	175%	2	2.20	91%	5	2.77	180%	4	3.23	124%
Total	44	40	110%	43	38	112%	44	40	111%	36	39	93%	59	38	154%

* The recommended rates of mortality are compared to actual mortality for 2016 and 2015. These rates were lowered to better align with increasing longevity. Years 2012-2014 were not updated with the new expected rates, but illustrate the rates in effect as of January 1, 2016.

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%
2015	2.3%	5.6%
2016	6.8%	6.2%
Average	8.4% (33 yrs) 5.9% (17 yrs)	6.1% (17 yrs)

Historical Market and Actuarial Value of Assets

Year	Market Value of Assets	Actuarial Value of Assets	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	263,789,654	98.6%
2016	269,935,429	274,877,630	101.8%
2017	283,896,580	287,472,138	101.3%

Consistent 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.

Interest Rate on Employee Contributions

2.14% per annum.

Administrative Expenses

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

Recommended Actuarial Assumptions

Investment Return   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.

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

Mortality Rates   The static RP-2000 mortality tables projected to
                            2024 for annuitants and to 2032 for non-
                            annuitants.

Disability Rates   None.

Withdrawal Rates   Based on rates as illustrated below:

Age	Percentage
22	28.3
27	12.7
32	10.0
37	8.2
42	5.9
47	4.0
52	2.3
57	1.9

Accrued Sick Leave   7 days per year.

Recommended Actuarial Assumptions
(continued)

Retirement Rate	Age	Rule of 75	Other
	50	30%	5%
	51-54	5%	2%
	55-61	10%	5%
	62-64	20%	10%
	65-69	30%	30%
	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.

Interest Rate on Employee Contributions

2.14% per annum.

Administrative Expenses

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

Wisdom at Work.
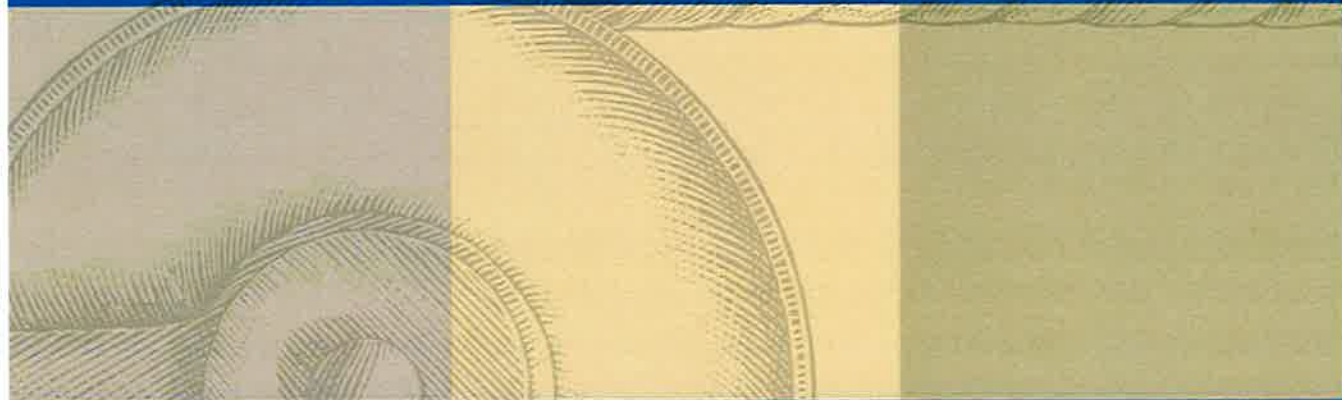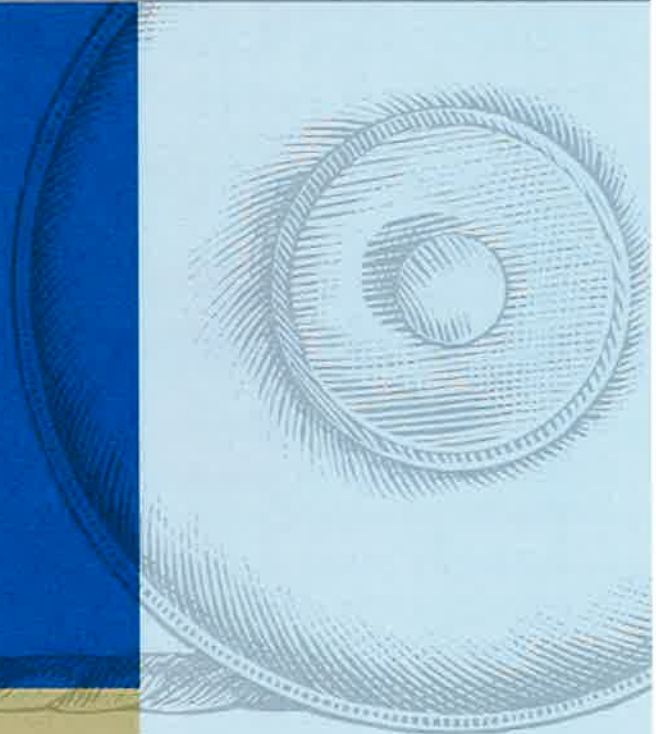
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Actuarial Valuation Overview

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
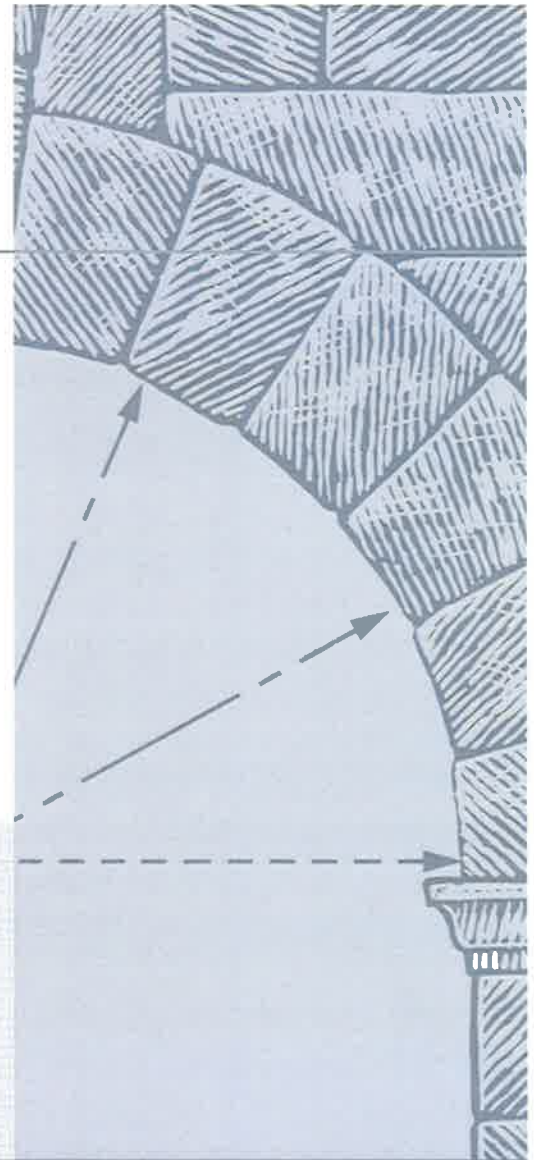
Plan Provisions

- 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	▪ Age 55 with 20 years of service ▪ Age 60 with 5 years of service
Hired After 2012	▪ Age 50 with 10 years of service ▪ Age 60 with 5 years of service
Sheriff Deputies Hired After 2011	▪ Age 53

Other Benefits – may be payable upon death

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%
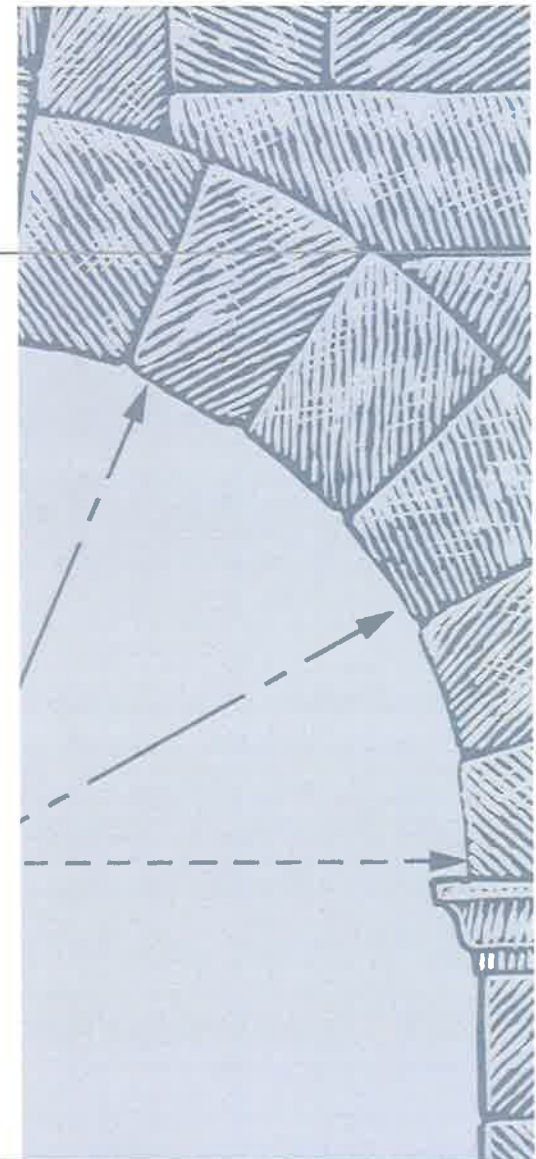
Plan Members

Number of Members	2016	2017
Actives	2,122	2,146
Retirees and Beneficiaries	1,206	1,218
Vested Terminated	119	119
Terminated Non-Vested	46	71
Disabled	25	26
Total	**3,518**	**3,580**
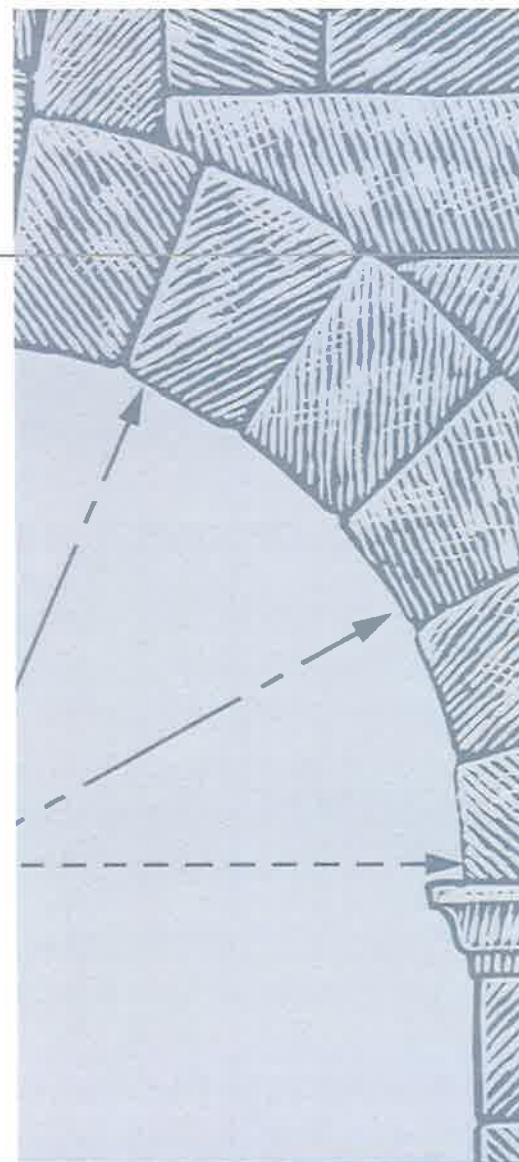
Actuarial Process

Prudent funding of the pension plan depends, in part, on the reasonableness of the actual assumptions.

Every other year an actuarial experience analysis is completed to measure how well the assumptions are predicting the actual experience of the plan.

This analysis resulted in the updating of the following actuarial assumptions as of January 1, 2017:

- Rates of Termination of Employment
- Early Retirement Rates
- Mortality Table
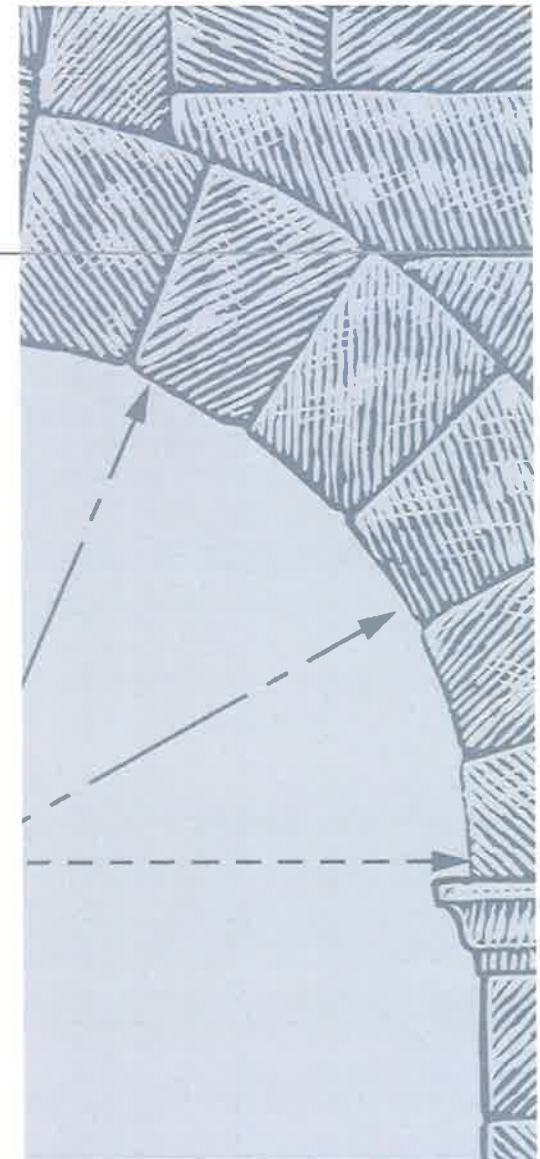
Actuarial Assumptions

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 2024 for Annuitants and 2032 for Non-Annuitants

Withdrawal Rates (Sample)

Age	Rate
22	28.3%
32	10.0%
42	5.9%
52	2.3%

- Member Contributions 8.5% of Pay
- County Contributions Same amount as members

Actuarial Assumptions (continued)

Retirement Rates*

Age	Rule of 75	Other
50	30%	5%
51 – 54	5%	2%
55 – 61	10%	5%
62 – 64	20%	10%
65 – 69	30%	30%
70+	100%	100%

*30% assumed to retire upon eligibility for Rule of 75.
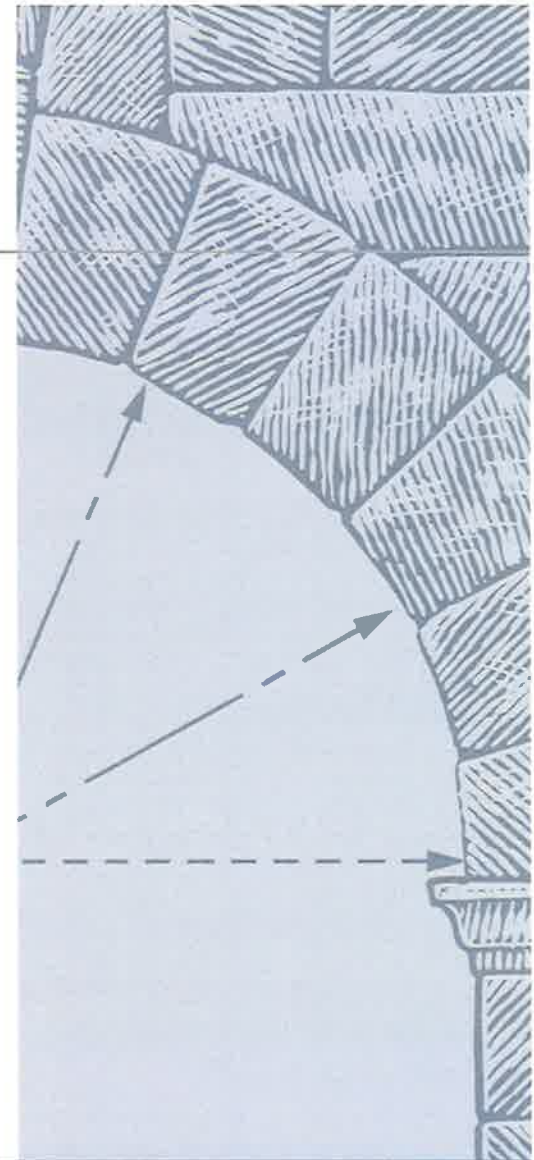
Actuarial Assumptions (continued)

Retirement Rates* – Sheriffs 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
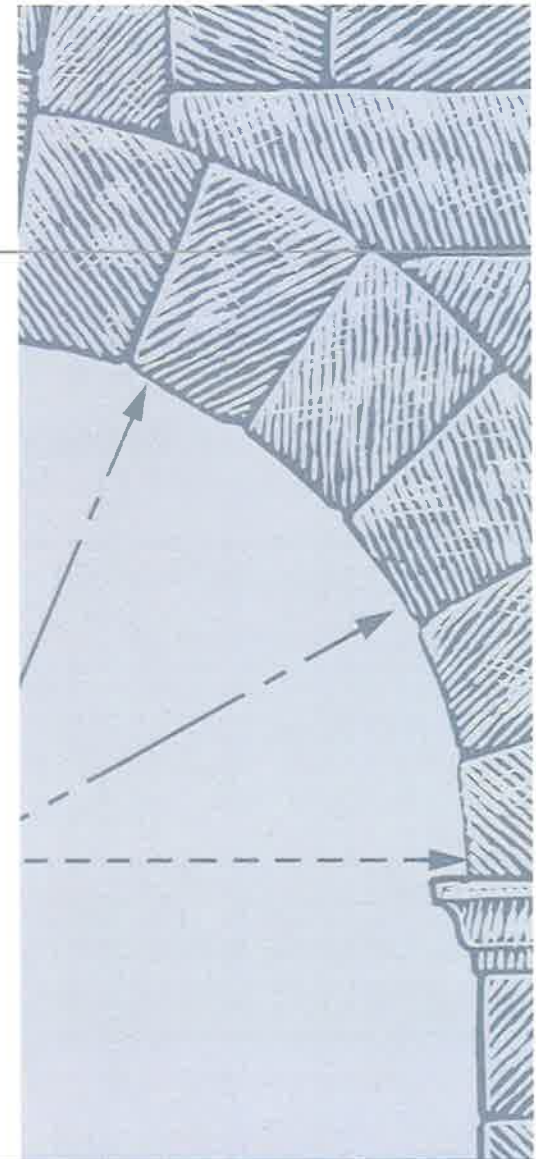
Actuarial Measurements (thousands)

	2016	2017
Actuarial Accrued Liability	$408,662	$427,763
Actuarial Value of Assets	$274,878	$287,478
Funded Percentage	67.3%	67.2%
Unfunded Liability	$133,784	$140,285
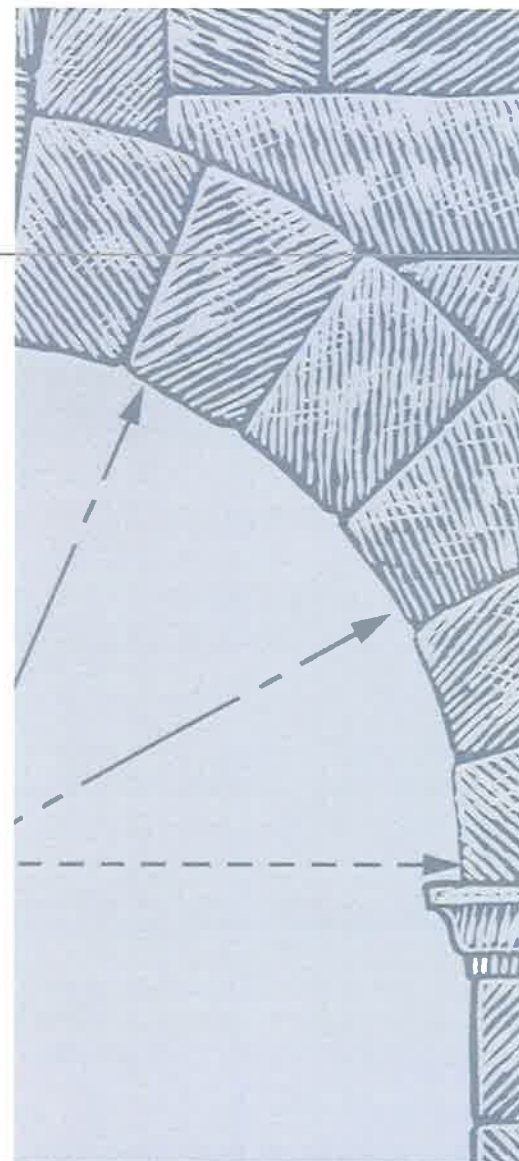
Actuarial Measurements (thousands)

	2016	2017
Expected Member Contributions	$10,030	$10,476
Expected County Contributions	$10,029	$10,476
Total	**$20,059**[1]	**$20,952**
Actuarial Determined Contribution		
▪ Normal Cost (Value Of Benefits Earned In The Year)	$12,627	$13,486
▪ 25-Year Amortization of Unfunded Liability[2]	$6,070	$7,261
▪ Interest	$701	$778
Total	**$19,398**	**$21,525**

[1]Actual total for 2016 was $21,520,522.
[2]Amortization period reduced from 30 years for 2016 to 25 years beginning 2017.

Plan Asset History

Year	Market Value of Assets	Rate of Return Prior Year
2017	$283,902,001	6.8%
2016	$269,935,429	2.3%
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%

14-year geometric average return of 6.9%
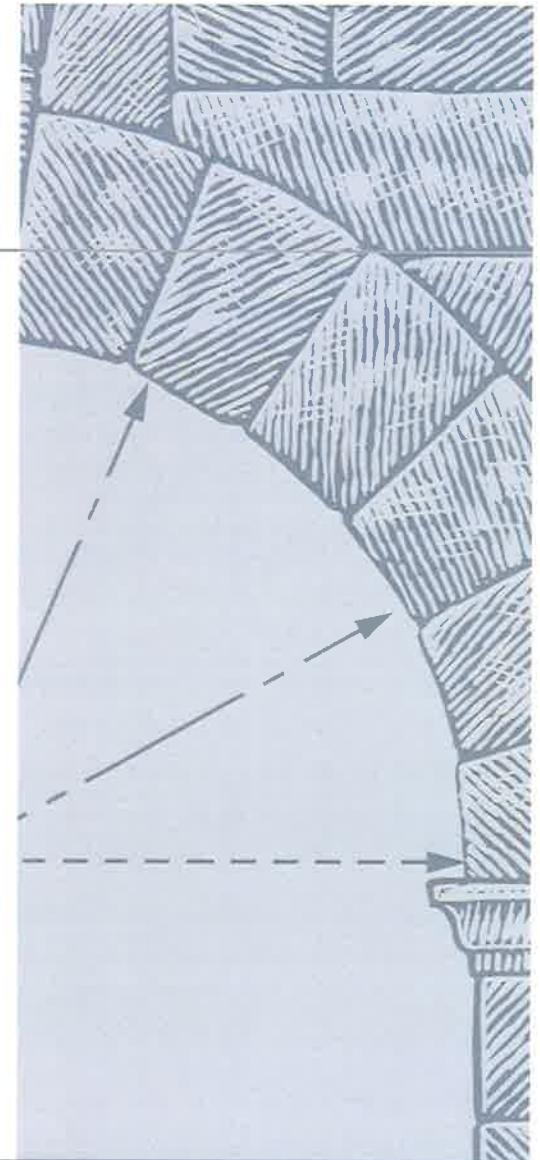
Historical Funded Percentage

Year	Actuarial Value of Assets ($1,000s)	Actuarial Accrued Liability ($1,000s)	Funded Ratio
2017	$287,478	$427,763	67.2%
2016	$274,878	$408,662	67.3%
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%
2005	$142,403	$221,642	64.2%
2000	$117,626	$127,011	92.6%
1996	$81,626	$83,472	97.8%
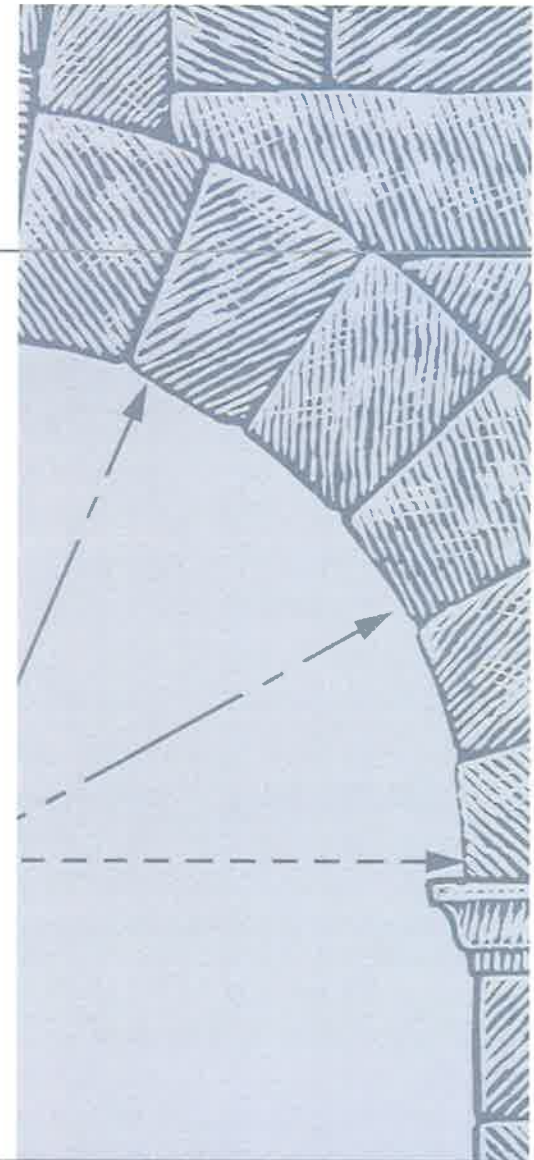
Looking Forward

- Funding Policy
- 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, based on the Contribution Rates below.

Nebraska State statue 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 at 33 years of service

County Contributions   Same Amount as Members
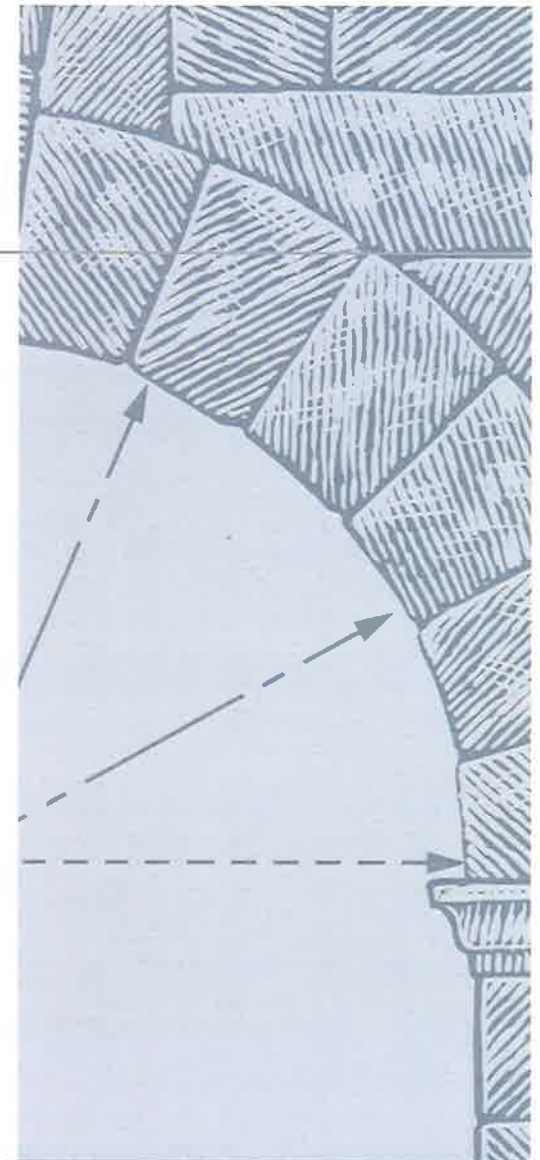
Funding Policy (continued)

A separate actuarially determined contribution is determined annually. This is an illustrative contribution amount to be used as a measure of the adequacy of the contribution rates.

The method to calculate the actuarially determined contribution was changed as of January 1, 2017 to reduce the amortization period of the unfunded liability from an open 30-year period to a closed 25-year period.
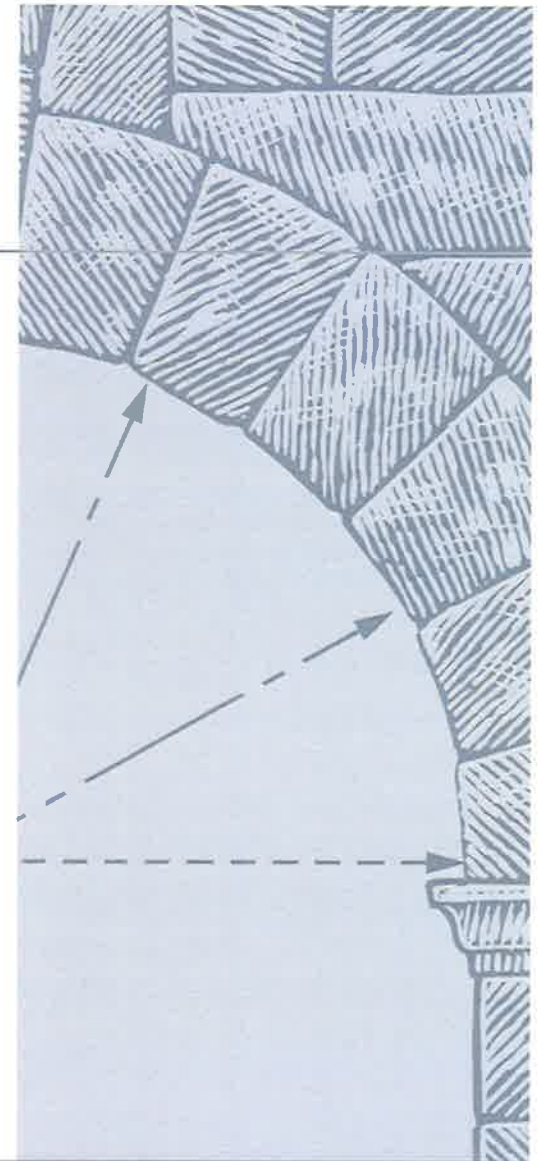
Mortality Table Update

The Society of Actuaries is in the process of developing updated mortality tables specifically for governmental pension plans.

They have gathered a significant amount of data from large governmental plans and expect to issue new mortality tables in 2018.

This process will be monitored and further updates to the assumed mortality table will be considered as they become available.
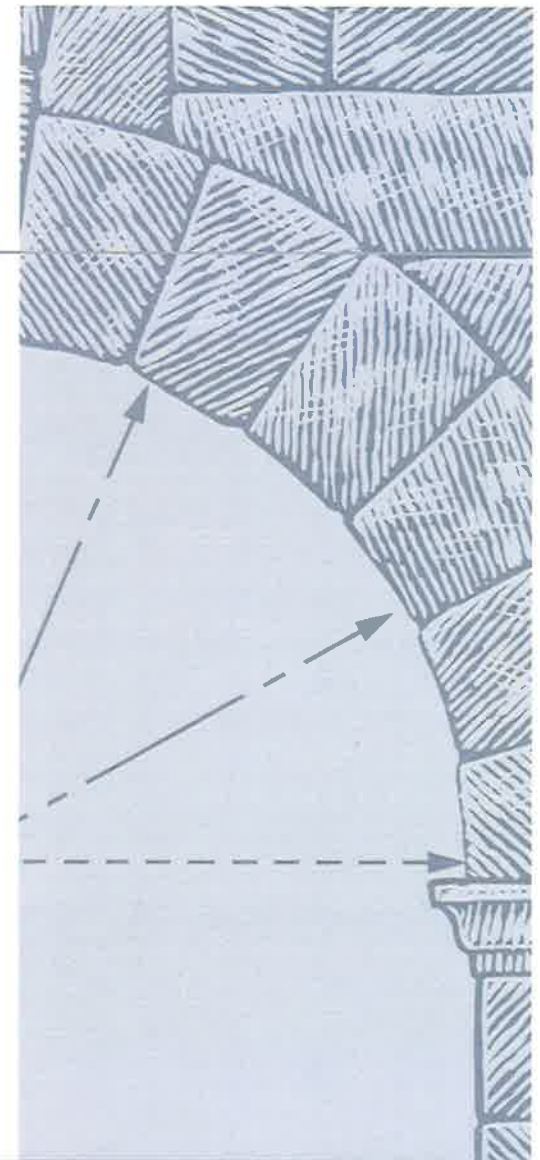
Forecast of Funded Percentage

Forecast Period	Year	Estimated Funded Percentage
Current – Actual	2017	67.2%
5 Years	2022	70.7%
10 Years	2027	75.3%
15 Years	2032	81.5%
20 Years	2037	90.8%

Assumptions

Investment Return	7.5%
Salary Scale	Graded 4.5% – 5.5%
Mortality Table	RP2000 Projected to 2024 for Annuitants and 2032 for Non-Annuitants
Actuarial Cost Method	Projected Unit Credit
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.
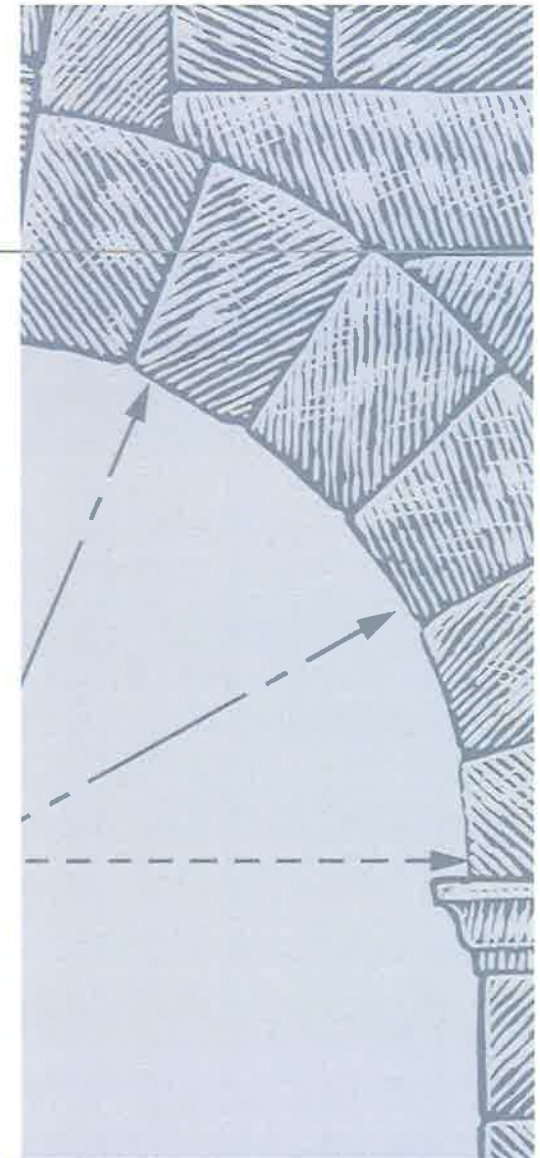
Thank you!

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Appendix B

Eastern Nebraska Health Agency
Retirement Plan Information

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2017 Report
Eastern Nebraska Human Services Agency Employees Retirement Plan

1. **Information for plan years 2013 through 2017*:**

	2017	2016	2015	2014	2013
Funding Status	N/A	71%	N/A	76%	N/A
Assumed rate of return	7.0%	7.0%	7.0%	7.0%	7.0%
Prior year actual return	6.8%	0.2%	6.4%	15.6%	9.1%
Member contribution rates: % of pay	2.75%	2.75%	2.75%	2.75%	2.75%
Employer contribution rates: % of pay	9.0%	8.5%	8.0%	7.5%	7.0%
Normal cost: % of pay	N/A	7.0%	N/A	7.1%	N/A
ARC: % of pay	11.55%	11.55%	10.77%	10.77%	11.38%
ARC ($)	$2,668,776	$2,603,684	$2,241,905	$2,197,946	$2,528,319
Contribution ($)	TBD	$2,783,724	$2,427,556	$2,246,729	$2,131,677
Contribution: % of ARC	TBD	106.9%	108.3%	102.2%	84.3%

* Actuarial Valuations are conducted every other year.

2. **Circumstances that led to the current underfunding of the retirement plan:** Prior to 2014, actual contributions were significantly less than the ARC. Additionally, investment return on plan assets have been lower on average than the assumed 7.0% rate. For the most recent 2016 valuation, changes in assumptions (described in the next question) also reduced the funding status.

3. **Changes in the actuarial methods and/or assumptions since the previous actuarial valuation report:** For the 2016 actuarial valuation, the mortality table was updated to the Static IRS 2016 annuitant-distinct mortality table. Based on the results of an experience study completed in 2016, the salary scale assumption was increased from 2.0% to 2.5%. There was no change in the actuarial method.

4. **Corrective actions implemented to improve the funding status of the plan:** The agency has been increasing employer contributions by one-half percent annually. The most recent forecast study was completed in June 2015 (see attached). At this time, the agency intends to continue with one-half percent annual increases until attaining 9.5% of pay in 2018 (consistent with Scenario 3 of the Forecast Study which shows steady future annual improvements in the funding status with this contribution schedule).

5. **Negotiations with bargaining groups:** The majority of the agency's employees are covered under a collective bargaining agreement. As of this report, the agency is in negotiations. A proposal to increase employer contributions to 9.5% effective January 1, 2018, has been presented. Historically, these types of increases have been approved.

6. **The most recent Actuarial Experience Study was completed in July 2016 and is attached.**

7. **The current assumed rate of return is 7%.** This assumption has not been changed since inception of the Plan. The rate is reviewed in the Actuarial Experience Study conducted every four years.

8. **The report for the January 1, 2016 actuarial valuation is attached.** No report was completed in 2017. Available information for 2017 is included in the chart above.

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%

SilverStone GROUP

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

	Percent Electing	
Age	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.

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

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,

Renee A. Nolte, ASA, MAAA
Senior Consultant

RN/rb

Enclosure

August 4, 2016

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, 2016.

The Report Highlights section summarizes the valuation results. The actuarial formula to determine the Recommended Employer Contribution is based on 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 method is consistent with the 2014 funding method.

The valuation recognizes the updated participant and plan asset information as of January 1, 2016. The mortality table was updated from the IRS 2014 table to the IRS 2016 table. The salary scale assumption was increased from 2.0% to 2.5%. 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/je

Enclosures

EASTERN NEBRASKA HUMAN SERVICES AGENCY EMPLOYEES RETIREMENT PLAN

Actuarial Valuation Report

January 1, 2016

SilverStone
GROUP

SilverStone
GROUP

August 4, 2016

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, 2016. 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 Stichler Wealth
Management. 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 C. Gahan, FSA, MAAA
Principal

RAN/GCG/je

Enclosures

Table of Contents

Financial Highlights

	2014	2015	2016
Annual Contributions			
Recommended	2,197,946	2,197,946	2,603,684
Actual	2,246,729	2,427,556	N/A
Plan Assets	30,908,402	33,122,810	33,595,512
Prior Year Investment Return	15.6%	6.4%	0.2%
Funding Basis			
Actuarial Accrued Liability	40,889,551		47,305,934
Plan Assets	30,908,402		33,595,512
Unfunded Actuarial Accrued Liability	9,981,149		13,710,422
Accrued Benefit Basis			
Vested Benefit Value	38,311,097		43,521,210
Accrued Benefit Value	39,225,947		44,386,988
Funded Ratios*			
Funding Basis	76%		71%
Accrued Benefit Basis	79%		76%
Normal Cost	1,446,222		1,571,092
As a percent of covered payroll	7.1%		7.0%
Interest Rates			
Funding Basis	7.00%		7.00%
Accrued Benefit Basis	7.00%		7.00%
Annual Covered Payroll	20,402,867		22,545,677
Number of Participants			
Active and Disabled	650		678
Retired and Beneficiary	181		216
Vested Terminations and Transfers	66		77
Total	897		971

* 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, 2016 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, 2014, we note:

- Since the prior valuation, the number of active participants has increased from 650 to 678. Annual covered payroll for participants under Normal Retirement Age increased from $20,402,867 to $22,545,677, a 10.5% increase. The average salary for participants under Normal Retirement Age increased from $33,229 to $35,394, a 6.5% increase.

- For active participants included in the valuation, average age decreased from 45.5 to 45.0 years and average service decreased from 11.0 to 10.4 years.

- The investment return on plan assets since the prior valuation was lower on average than the assumed 7.0% rate. The approximate investment return rate for 2014 was 6.4%, and for 2015 was 0.2%.

- On the same actuarial basis as used in 2014, the Unfunded Accrued Liability (UAL) increased by $3,080,000, from $9,980,000 to $13,060,000. Contributing factors were:

    - Investment return rates less than expected increased the UAL by approximately $2,460,000.

    - Contributions more than the Normal Cost plus interest on the UAL subtracted about $230,000 from the UAL.

    - Net actuarial losses from other sources increased the UAL by approximately $850,000.

Comments on the Valuation

Actuarial Assumptions

The mortality table was updated to the static IRS 2016 annuitant-distinct mortality table. The effect of this change increased the UAL by $129,879. The corresponding increase in the normal cost was $3,571.

The salary scale assumption was changed from 2.0% to 2.5%. The effect of this assumption change increased the UAL by $518,415. The corresponding increase in the normal cost was $43,273.

The net effect of the mortality table and salary scale assumption changes increased the UAL by $648,294. The net increase in the normal cost was $46,844.

All other assumptions are the same as those used in the 2014 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 $2,603,684 for 2016. Plan contributions include amounts contributed by the employees and by the employer. For 2016, the anticipated employee contributions at the current rate of 2.75% are $620,006 and the anticipated employer contribution at the current rate of 8.5% are $1,916,383 for a total of $2,536,389. 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.

| | January 1, 2014 | January 1, 2016 | |
		Before Assumption Changes	After Assumption Changes*
Recommended Contribution			
Normal Cost	$1,446,222	$1,524,248	$1,571,092
Unfunded Accrued Liability Payment	751,724	983,766	1,032,592
Total	2,197,946	2,508,014	2,603,684
Expected Employee Contribution			
Employee Contribution Rate	2.75%	2.75%	2.75%
Covered Payroll	20,402,867	22,545,677	22,545,677
Expected Employee Contribution	561,079	620,006	620,006
Recommended Employer Contribution			
Normal Cost less Employee Contribution	885,143	904,242	951,086
Employer Contribution as a Percent of Pay	4.34%	4.01%	4.22%
Total Contribution less Employee Contribution	1,636,867	1,888,008	1,983,678
Employer Contribution as a Percent of Pay	8.02%	8.37%	8.80%

* The mortality table and the salary scale assumptions were changed as shown in the Actuarial Assumptions section.

Valuation Results

A summary of the results of the actuarial valuations performed as of January 1, 2014 and January 1, 2016 is displayed below:

	January 1, 2014	January 1, 2016	
		Before Assumption Changes	After Assumption Changes*
Unfunded Accrued Liability			
Accrued Liability	$40,889,551	$46,657,640	$47,305,934
Less: Plan Assets	30,908,402	33,595,512	33,595,512
Unfunded Accrued Liability	$9,981,149	$13,062,128	$13,710,422
Ratio of Assets to Accrued Liability	76%	72%	71%
Annual Normal Cost			
Retirement, Death, Termination and Deferred Disability Benefits	$1,423,712	$1,500,039	$1,546,883
Administrative Expense Load	22,510	24,209	24,209
Total	$1,446,222	$1,524,248	$1,571,092

* The mortality table and the salary scale assumptions were 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, 2014	$30,908,402
Contribution Receivable	0
Adjusted Plan Assets on January 1, 2014	$30,908,402
Employer Contributions	1,645,419
Employee Contributions	601,310
Investment Income	1,999,320
Monthly Benefit Payments	(1,635,908)
Lump Sum Distributions	(372,064)
Administrative Charges	(23,669)
Market Value of Assets on January 1, 2015	$33,122,810
Contribution Receivable	0
Adjusted Plan Assets on January 1, 2015	$33,122,810
Employer Contributions	1,795,041
Employee Contributions	632,515
Investment Income	102,263
Monthly Benefit Payments	(1,768,539)
Lump Sum Distributions	(264,369)
Administrative Charges	(24,209)
Market Value of Assets on January 1, 2016	$33,595,512
Contribution Receivable	0
Adjusted Plan Assets on January 1, 2016	$33,595,512

Asset Allocation

Employee Funds - Annuity Contract	$4,101,626
Employee Funds - Equities	5,379,953
Employer Funds - Annuity Contract	8,454,480
Employer Funds - Equities	15,659,453
	$33,595,512

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.

		January 1, 2014	January 1, 2016
1.	Actuarial Present Value of Vested Accrued Benefits		
	Retirees and Beneficiaries of Deceased Participants	$14,849,045	$17,757,931
	Vested Terminated Participants	1,344,111	1,695,034
	Active Participants	22,117,941	24,068,245
	Total	$38,311,097	$43,521,210
2.	Actuarial Present Value of Non-Vested Accrued Benefits for Active Participants	$914,850	$865,778
3.	Actuarial Present Value of Accrued Benefits (1) + (2)	$39,225,947	$44,386,988
4.	Value of Assets	$30,908,402	$33,595,512
5.	Funded Ratio*		
	Vested Accrued Benefits	81%	77%
	Accrued Benefits	79%	76%
	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 Stichler Wealth Management

Actuarial Assumptions

Interest Rate

7.0% compounded annually.

Salary Scale

Salaries were assumed to increase at an annual rate of 2.5% compounded annually following the valuation date.

Mortality Rates

The mortality rates are based on the static IRS 2016 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

	Percent Electing	
Age	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.

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

Service	Any period of time the Employee is in the employ of the Employer as a full-time Employee.
Year of Service	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.
Average Monthly Compensation	Average of monthly compensation during the five consecutive years of the last ten years of service which produces the highest average.
Normal Retirement Date	First day of the month coinciding with or next following the attainment of age 65, or age 62 with 30 years of service.
Early Retirement Date	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.
Late Retirement Date	Anytime following Normal Retirement Date.
Disability Retirement	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

Normal Retirement

Monthly annuity equal to 1.75% of Average Monthly Compensation multiplied by the number of Years of Service.

Early Retirement

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.

Late Retirement

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.

Disability

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.

Preretirement Death Benefit

A benefit is payable at the death of an active participant.

Death Prior to Early Retirement Date - A lump sum equal to the participant's contributions plus accumulated interest is payable to a designated beneficiary.

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.

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.

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:

Years of Service	Vesting %
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%
2016	8.5%

Appendix C

Lincoln Police and Fire
Retirement Plan Information

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Neb. Rev. Stat. 13-2402 Reporting Form
Submitted electronically October 13, 2017
City Lincoln, Nebraska Police and Fire Pension Plan

Due to the Plan's valuation date, August 31, the most recent actuarial valuation report is the August 31, 2016 valuation. As a result, the information reported herein is from that report.

1. Although the Committee requested information from 2013 through 2017, we have included the relevant information, items (a) through (g), for all valuations from 1992 through the most recent actuarial valuation (August 31, 2016) in Table 1. We believe a longer term view provides a more comprehensive perspective of the Plan's funding.

2. As of August 31, 2016 the Lincoln Police and Fire Pension Plan was 79.9% funded (actuarial assets divided by actuarial accrued liability), up significantly from the funded ratio of 63.9% in the 2015 valuation. This dramatic change in funded status is the result of action taken by the Lincoln City Council and Mayor, discussed in items 3 and 4 below.

    Historically, the Lincoln Police and Fire Pension Plan has been very well funded with funded ratios above 90% for all years prior to 2010. The funded ratio in the August 31, 2008 valuation was 100%, but the effect of the financial crisis/Great Recession on the Plan's funding was significant, driving the funded ratio down to 72% by the time the losses were fully recognized in the actuarial value of assets in the August 31, 2013 valuation. The rate of return on Plan assets for fiscal year end 2008 was -6.62% and for fiscal year 2009 the return 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 plan assets declined significantly and, as a result, were about 33% lower than the expected value of assets (calculated as if the actuarial assumption had been met from August 31, 2008 forward). Although there have been some strong returns above the 7.5% assumption since 2009, the asset value is still lower than if the assets had just earned the actuarial assumed rate of return of 7.5% over this period.

3. Since the previous actuarial valuation report, prepared as of August 31, 2015, the investment return assumption has been increased from 6.4% to 7.5%.

    Based on the Plan's asset allocation, the expected return on plan assets has been 7.5% since 1999. However, in October, 1991 the 13th Check COLA Pool Fund was created. It was funded by a portion of any actual investment return that was above the assumed rate of return on the market value of assets. As a result, the Plan assets "lost" a portion of any returns above 7.5%, but retained all of the returns below the expected

return of 7.5%. In order to reflect the impact of the expected transfer of a portion of any favorable investment experience to the 13th Check COLA Pool Fund, the investment return assumption for the regular Pension Fund was lowered to 6.75% in the 2014 valuation and then to 6.40% in the 2015 valuation.

The City of Lincoln commissioned a pension task force in the fall of 2015 with the charge to review the Police and Fire Pension Plan and make recommendations for improvements to the City. One of those recommendations resulted in City of Lincoln Ordinance #20343 [06/27/16]. This change merged the assets of the 13th Check COLA Pool Fund with the assets of the regular Police and Fire Pension Plan and provided that 13th Check benefits be paid directly from the Police and Fire Pension Plan (rather than from the 13th Check COLA Pool Fund), thereby eliminating future transfers of favorable investment experience to the 13th Check Fund. As a result, the regular Pension Plan fund retains the entire return actually earned. As a result, the investment return assumption was increased to reflect the full expected return of 7.5%.

4. In addition, to the corrective action described in item 3 above (merger of the 13th Check COLA Pool Fund with the regular Pension Fund), additional action has been taken by the City of Lincoln to improve the future funding of the Plan and to specifically address the systematic funding of the Unfunded Accrued Liability.

    The City of Lincoln Ordinance #20495 [05/26/2017], modifies the Plan's funding policy by providing for the amortization of the existing UAL at 08/31/2016 over a 28-year closed period. In each Actuarial Valuation subsequent to August 31, 2016, the annual net experience gains/losses (actual versus expected experience) will be amortized over a new, closed 20-year period (referred to as a "layered" amortization approach). Subsequent plan amendments or changes in actuarial assumptions or methods that create a change in the UAAL will be amortized over a demographically appropriate time period, selected by the Plan Administrator at the time that the change is reflected in the annual actuarial valuation.

    The funding policy further provides that the Actuarially Determined Employer Contribution (ADEC) Rate shall be the greater of the Employer Normal Cost Rate or the sum of the Employer Normal Cost Rate and the UAL contribution rate. If actuarial assets exceed the actuarial accrued liability, a negative amortization payment shall only be applied if the plan has been at least 115 percent funded for the current and prior two years. Otherwise, the full employer normal cost rate will be contributed, thereby protecting the Plan's "surplus" assets. The dollar amount of the Actuarial Employer Contribution shall be the ADEC rate multiplied by the valuation payroll projected forward to the fiscal year under consideration, plus the actual administrative expenses for the fiscal year ending on the valuation date, projected forward one year with the inflation assumption used in the valuation.

The funding policy can be found in Lincoln Municipal Code section 2.62 Appendix B. A copy has also been attached to this document for your convenience.

5. There have been no recent or ongoing negotiations with bargaining groups that may impact the funding of the plan.

6. The most recent Experience Study covered the five-year period ending August 31, 2014 and was completed in December, 2014. A copy of the most recent Experience Study is attached.

7. The current assumed rate of return is 7.5%. As explained earlier in items 2 and 3, the assumed return for the portfolio has been 7.5% since 1999, but due to the impact of the transfers to the 13th Check COLA Pool Fund, the assumed rate of return for the regular Pension Plan in the 2015 valuation was 6.4%. The assumed rate of return for the 2016 valuation of the Plan was increased from 6.4% to 7.5%, reflecting the corrective action in City of Lincoln Ordinance #20343 [06/27/16], which merged the assets of the 13th Check COLA Pool Fund with the assets of Police and Fire Pension Fund and provided that 13th Check benefits be paid directly from the Police and Fire Pension. The elimination of future transfers to the 13th Check Fund allows the regular Pension Fund to retain the entire return earned, which is expected to be 7.5% over the long term.

8. Actuarial valuations are prepared annually, as of August 31. The most recent actuarial valuation report, prepared as of August 31, 2016, is attached. The August 31, 2017actuarial valuation report will not be completed until mid- December of 2017.

Table One
Lincoln Police and Fire Pension Plan
LB 759 Reporting - December 1, 2017

	(a)				(b)	(c)	(e)		(f)	(d)	(d), (f)	(f)	(g)	(g)
				Unfunded	Rate of Return		Total Actuarial Contribution Rate			Contribution Rate		Employer Contributions		Percent
Valuation Date	Funded Status	Actuarial Accrued Liability	Actuarial Value of Assets	Actuarial Accrued Liability	Assumed	Market	Normal Cost	UAAL Rate	Total	Member	Employer	Actuarial	Actual	Contributed Actual/Actuarial
8/31/1991	116%	59,149,097	68,390,097	(9,241,000)	7.00%	13.09%	17.33%	-6.35%	10.98%	4.33%	6.65%	1,316,078	593,906	45%
8/31/1992	123%	63,407,312	77,980,254	(14,572,942)	7.00%	14.60%	17.30%	-5.42%	11.88%	4.38%	7.50%	1,031,541	657,148	64%
8/31/1993	128%	67,910,183	86,583,104	(18,672,921)	7.00%	17.10%	17.34%	-9.05%	8.29%	4.69%	3.60%	1,193,626	418,423	35%
8/31/1994	118%	70,517,314	83,307,827	(12,790,513)	7.00%	-6.60%	17.11%	-11.52%	5.59%	5.81%	-0.22%	580,796	388,813	67%
8/31/1995	116%	79,202,449	92,235,349	(13,032,900)	7.00%	18.20%	17.69%	-8.12%	9.57%	5.84%	3.73%	0	400,022	N/A
8/31/1996	116%	81,583,068	94,347,990	(12,764,922)	7.00%	3.20%	18.11%	-8.69%	9.42%	6.58%	2.84%	695,015	419,583	60%
8/31/1997	111%	91,022,617	101,475,648	(10,453,031)	7.00%	13.60%	18.36%	-9.16%	9.20%	6.57%	2.63%	545,702	430,884	79%
8/31/1998	115%	94,847,667	109,213,474	(14,365,807)	7.00%	14.80%	18.86%	-7.81%	11.05%	6.67%	4.38%	530,891	491,945	93%
8/31/1999	109%	104,691,766	113,902,477	(9,210,711)	7.50%	-1.28%	19.33%	-11.87%	7.46%	7.05%	0.41%	961,584	908,234	94%
8/31/2000	105%	115,671,249	121,404,314	(5,733,065)	7.50%	10.07%	18.34%	-8.47%	9.87%	6.65%	3.22%	91,814	941,282	1025%
8/31/2001	104%	122,660,542	128,069,831	(5,409,289)	7.50%	2.84%	18.39%	-4.82%	13.57%	6.64%	6.93%	820,610	1,111,434	135%
8/31/2002	98%	130,875,473	128,319,145	2,556,328	7.50%	3.37%	18.49%	-4.16%	14.33%	6.79%	7.54%	1,877,926	1,541,649	82%
8/31/2003	96%	137,507,824	132,577,506	4,930,318	7.50%	7.42%	18.42%	2.10%	20.52%	7.69%	12.83%	2,233,836	1,780,604	80%
8/31/2004	95%	144,178,758	136,973,679	7,205,079	7.50%	10.33%	18.52%	-2.11%	16.41%	7.77%	8.64%	3,297,577	1,991,672	60%
8/31/2005	96%	151,978,408	145,730,472	6,247,936	7.50%	13.44%	18.55%	2.81%	21.36%	7.79%	13.57%	3,684,264	2,562,850	70%
8/31/2006	98%	161,583,285	157,527,392	4,055,893	7.50%	9.13%	18.61%	2.36%	20.97%	7.89%	13.08%	4,077,037	2,892,711	71%
8/31/2007	101%	169,587,458	171,391,103	(1,676,333)	7.50%	12.33%	18.63%	1.42%	20.05%	7.90%	12.15%	4,056,195	3,494,590	86%
8/31/2008	100%	179,376,149	179,390,472	(14,323)	7.50%	-6.62%	18.63%	-0.62%	18.01%	7.88%	10.13%	4,076,536	3,456,424	85%
8/31/2009	95%	187,292,374	177,526,641	9,765,733	7.50%	-16.68%	18.68%	1.52%	20.20%	6.86%	13.34%	3,316,464	3,521,858	106%
8/31/2010	88%	195,206,353	172,317,463	22,888,890	7.50%	3.99%	18.83%	3.48%	22.31%	6.69%	15.62%	3,752,124	4,014,414	107%
8/31/2011	81%	204,990,324	165,436,361	39,553,963	7.50%	12.48%	18.89%	5.76%	24.65%	6.63%	18.02%	4,651,872	4,333,811	93%
8/31/2012	77%	214,878,992	164,500,414	50,378,578	7.50%	5.60%	19.01%	7.23%	26.24%	6.75%	19.49%	5,574,482	6,052,020	109%
8/31/2013	72%	229,192,937	164,189,914	65,003,023	7.50%	12.03%	19.13%	8.88%	28.01%	6.82%	21.19%	6,718,467	6,446,472	96%
8/31/2014	66%	262,918,401	174,569,411	88,348,990	6.75%	16.49%	18.33%	12.86%	31.19%	6.75%	24.44%	7,377,763	7,865,929	107%
8/31/2015	64%	286,493,673	183,011,274	103,482,399	6.40%	(2.76)	21.11%	13.19%	34.30%	6.88%	27.42%	8,418,199	8,045,293	96%
8/31/2016	80%	271,594,222	217,003,707	54,590,515	7.50%	7.34%	16.47%	7.91%	24.38%	7.06%	17.32%	9,537,497	7,170,104	75%

APPENDIX "B"

I. Introduction

This funding policy pertains to the City of Lincoln, Nebraska ("City") Police and Fire Pension ("Pension") as described in Lincoln Municipal Code § 2.62.010, 2.65.010 and 2.66.010. The Plan Administrator sets the following guiding principles in the development of a comprehensive funding plan to maintain long-term sustainability, if needed:

- Shared responsibility among members and employer;

- Intergenerational equity;

- Preservation of the defined benefit plan.

II. Funding Goals

The objective of funding the Plan is to accumulate sufficient assets during a member's employment with the City to fully finance the benefits the member receives throughout retirement. In meeting this objective, the Pension Plan will strive to meet the following funding goals:

- To maintain a pattern of stable contribution rates as a percentage of member's payroll;
- To maintain an increasing funded ratio absent the impact of any changes to the assumptions or benefit provisions;
- To maintain adequate assets so that benefit payments can be paid to members and their beneficiaries as they become due.

III. Benchmarks

To track progress in achieving the previously outlined funding goals, the following benchmarks will be measured annually as part of the actuarial valuation with recognition that a single year's results may not be indicative of long-term trends.

Funded Ratio: The funded ratio, defined as the actuarial value of assets divided by the actuarial liability, should be increasing over time, before any adjustments for changes in benefits, actuarial methods, or actuarial assumptions.

City's Contribution: An Actuarial Valuation Report shall be prepared annually, as of the City's fiscal year-end date, to calculate the Actuarially Determined Employer Contribution for the fiscal year ending two years after the valuation date. For example, the Actuarially Determined Employer Contribution for the fiscal year September 1, 20XX+1 to August 31, 20XX+2 shall be based on metrics in the August 31, 20XX Actuarial Valuation Report. The Actuarial Valuation Report shall be based on the actuarial assumptions and methods, as approved by the Plan Administrator. The Actuarially Determined Employer Contribution Rate shall be the greater of the Employer Normal Cost Rate or the sum of the Employer Normal Cost rate and the UAL contribution rate. A negative amortization payment shall only be applied if the plan has been at least 115 percent funded for the current and prior two years. The dollar amount of the Employer Contribution shall be the ADEC rate multiplied by the valuation payroll projected forward to the fiscal year under consideration, plus the actual administrative expenses for the fiscal year ending on the valuation date projected forward one year with the valuation's inflation assumption.

IV. Actuarial Methods and Assumptions

Actuarial Cost Method: The actuarial cost method is a mathematical budgeting procedure for allocating how the total present value of future benefits for current active and inactive members is allocated to each year of service, including past years. Due to the goal of stable contribution rates, the Plan Administrator has adopted the Entry Age Normal actuarial cost method.

Asset Smoothing Method: The method of valuing assets is intended to recognize a "smoothed" value of assets that is market related. Asset smoothing methods reduce the effect of short term volatility on contributions while still tracking the overall movement of the market value of assets by recognizing the effects of investment gains and losses over a period of years. The asset valuation method used to develop the actuarial value of assets first calculates the expected earnings on the prior year's market value of assets plus net cash flow (contributions minus benefit payments for the year) and then compares it the actual earnings on the market value of asses. The difference, positive or negative, is recognized equally over a five-year period.

Actuarial Assumptions: The actuarial assumptions used in the actuarial valuation shall be derived and proposed by the Plan's actuary in conformity with the applicable *Actuarial Standards of Practice* issued by the Actuarial Standards Board. The assumptions are intended to represent the best estimate of anticipated experience and are intended to be long-term in nature. In the development of actuarial assumptions, not only past experience but also trends, external economic forces, and future demographic and economic expectations shall be considered. A formal investigation into the actual experience of the Pension Plan shall be conducted by the actuary at least every five years and the results of the investigation used to form the basis of the actuary's recommendations for changes in the assumptions. In addition, the actual experience compared to the actuarial assumptions will be monitored each year in the annual actuarial valuation by including an analysis of the actuarial gain or loss.

Amortization Policy: For the Actuarial Valuation Report prepared as of August 31, 2016, the amortization period of the Unfunded Actuarial Liability (UAL) shall be a 28-year closed term. This will be designated as the initial UAL base for subsequent valuations and will be amortized over the remaining years of the 30-year closed period set on August 31, 2014. For each Actuarial Valuation Report subsequent to August 31, 2016, annual net experience gains/losses will be amortized over a new, closed 20-year period. Subsequent plan amendments or changes in actuarial assumptions or methods that create a change in the UAL will be amortized over a demographically appropriate time period selected by the Plan Administrator at the time that the change is reflected in the annual actuarial valuation.

If the valuation shows a surplus, i.e., funded ratio above 100%, the prior amortization bases will be eliminated and one base equal to the amount of surplus shall be established. The amortization period of a surplus shall be a 20-year open period.

The amortization payment on each UAL base will be calculated as a level percent of valuation payroll using the actuarial assumption for future payroll growth. Such calculation is consistent with the development of the normal cost rate and is intended to serve as a method to provide stability to the actuarial contribution rate.

Risk Control: The Plan Administrator will carefully monitor the key risk measures of funding the system and shall consider steps to mitigate risk, particularly as the funded ratio increases. Risk mitigation may involve such things as a reduction in the assumed rate of investment return, review of asset allocation with a goal of reducing the standard deviation of the portfolio return, establishment of a contribution rate stabilization reserve, and other strategies identified by the Plan Administrator.

V. Funding Policy Review

The Plan Administrator may periodically conduct special studies to provide insight into whether the goals and objectives established in this Policy are being met. These special studies may include asset liability studies, projection modeling studies, and sensitivity analysis of key risk factors. These special studies may be performed at the Plan Administrator's discretion.

It is recognized that this funding policy may need to be amended in the future as the funding of the Plan is a dynamic process which is dependent on a number of variables. Therefore, the funding policy will be reviewed by the Plan Administrator not less frequently than every five years following the actuarial experience study. Proposed amendments to the funding policy shall be forwarded to the City Council for their consideration and approval. (Ord. 20495; May 15, 2017).

City of Lincoln Police and Fire Pension Fund

**Actuarial Valuation Report
as of August 31, 2016**

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TABLE OF CONTENTS

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The experience and dedication you deserve

January 20, 2017

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 actuarial valuation of the City of Lincoln Police and Fire Pension Fund as of August 31, 2016 for determining the actuarial contribution rate for fiscal year 2018. The major findings of the valuation are contained in this report. This report reflects the benefit provisions in effect as of August 31, 2016 which did not change from the prior valuation. However, City Ordinance 20343 which was passed on June 27, 2016 made a significant change in the funding of the Plan benefits. Prior to the passage of this ordinance, retired members received a 13th check each year that was paid from a separate COLA Pool fund. Such fund received deposits when the actual return on pension plan assets for the fiscal year exceeded the actuarial assumed rate of return. City Ordinance 20343 provided for the merger of the COLA Pool fund into the general pension fund. This impacted the valuation in multiple ways: the actuarial accrued liability associated with the payment of the 13th Check benefit in future years is now included in the annual valuation, the assets of the COLA Pool fund are now reflected in the valuation, and the investment return assumption was increased from 6.40% to 7.50% because all of the investment returns will now remain in the plan assets. These changes are discussed in more detail in the Executive Summary section of 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.

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Future actuarial results may differ significantly from the current results 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 the plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not present herein.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Plan. The calculations have been made on a basis consistent with our understanding of the Plan's funding requirements and goals and 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. Actuarial computations for purposes of fulfilling financial accounting requirements for the Plan under Governmental Account Standards No. 67 and No. 68 are provided in a separate report.

This is to certify that the independent consulting actuaries have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Plan.

We, Patrice A. Beckham, FSA and Bryan K. Hoge, FSA, are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in this report or to provide explanations or further details as may be appropriate.

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

Respectfully Submitted,

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

Bryan K. Hoge, FSA, EA, FCA, MAAA
Senior Actuary

OVERVIEW

This report presents the results of the August 31, 2016 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.

One significant event occurred in the last plan year that had a dramatic impact on the results of the August 31, 2016 actuarial valuation. City Ordinance 20343 was passed on June 27, 2016. Prior to the passage of this ordinance, retired members received a "13th Check" each year that was paid from a separate COLA Pool fund. That fund received deposits when the actual investment return on pension assets for the fiscal year exceeded the actuarial investment return assumption. City Ordinance 20343 provided for the merger of the COLA Pool fund into the general pension fund. This impacted the valuation in multiple ways: the actuarial accrued liability associated with the payment of the 13th Check benefit in future years is now included in the annual valuation, the assets of the COLA Pool fund are now reflected in the valuation assets, and the investment return assumption was increased from 6.40% to 7.50% because all of the investment returns will now remain in the plan assets (there will be no more transfers to the COLA Pool fund). The following table summarizes the impact of City Ordinance on the 2016 valuation:

	Before Ord. No. 20343	After Ord. No. 20343	Change
Actuarial Accrued Liability (AAL)	$299.0M	$271.6M	($27.4M)
Actuarial Value of Assets (AVA)	189.5M	217.0M	27.5M
Unfunded AAL (UAAL)	$109.5M	$ 54.6M	($54.9M)
Funded Ratio (AVA)	63%	80%	17%
Normal Cost	21.19%	16.47%	(4.72%)
UAAL Amortization	15.86%	7.91%	(7.95%)
Total Actuarial Contribution Rate	37.05%	24.38%	(12.67%)

The valuation results provide a "snapshot" view of the Plan's financial condition on August 31, 2016. As discussed earlier, the changes enacted by City Ordinance 20343 had a major impact on the results of the 2016 valuation. The UAAL decreased from $103 million last year to $55 million in this year's valuation. The funded ratio (actuarial assets divided by actuarial accrued liability)

improved from 64% in last year's valuation to 80% in the current valuation. In addition, the employer actuarial contribution rate decreased by 10.10% from 27.42% in last year's valuation to 17.32% in this year's valuation.

Despite the improvement in funded status, the valuation results reflect net unfavorable experience for the past plan year as demonstrated by an UAAL that was higher than expected, after taking into account adjustments for the changes resulting from City Ordinance 20343. The unfavorable experience was due to the net impact of an experience loss on the actuarial value of assets and an experience gain on actuarial liabilities. The rate of return on the market value of assets for the prior year was 7.34%, but the asset smoothing method only recognizes some of the shortfall between the assumed and actual returns. Due to the smoothing of experience in FY 2016 and the recognition of some of the unrecognized investment losses from prior years, the return on the actuarial value of assets (smoothed value) was 5.6%. This generated an experience loss of $1.3 million on the actuarial value of assets which was partially offset by an experience gain of $0.5 million on liabilities. The main source of liability gain was salary increases that were lower than expected, based on the actuarial assumptions. A detailed analysis of the change in the unfunded actuarial accrued liability from August 31, 2015 to August 31, 2016 is shown on page 4.

ASSETS

As discussed earlier, City Ordinance 20343 merged the COLA Pool with the general pension fund. In the past, "13th Check" benefits were paid out of a COLA Pool fund, which was separate from the general fund for the Plan. The balance of the COLA Pool fund, $27,513,099, was transferred to the general fund when the ordinance was passed. Merging the COLA Pool with the general fund increased the actuarial value of assets at August 31, 2016 by $27.5 million.

As of the valuation date, the Plan had total assets of $213.9 million, when measured on a market value basis. This represents an increase of $37.1 million from the August 31, 2015 amount of $176.8 million. The market value of assets is not used directly in the actuarial valuation. 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 the actual return on the market value of assets and the assumed return on the actuarial value of assets are phased-in equally over a five-year period.

See Table 4 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, 2015	$176.8	$183.0
• City and Member Contributions	10.0	10.0
• Benefit Payments and Refunds	(13.8)	(13.8)
• Administrative Expenses	(0.5)	(0.5)
• Asset Transfer from COLA Pool	27.5	27.5
• Investment Income, Net of Expenses	13.9	10.8
Assets, August 31, 2016	$213.9	$217.0

The annualized dollar-weighted rate of return, measured on the actuarial value of assets, was 5.6% and, measured on the market value of assets, was 7.3%. The actuarial value of assets as of August 31, 2016 was $217.0 million, which reflects an actuarial loss of $1.3 million resulting from the net impact of phasing-in the investment returns from the current and preceding four years. Due to the asset smoothing method, the actuarial value of assets is now $3.1 million higher than the market value of assets. This means that the $3.1 million of deferred investment losses will flow through the asset smoothing method over the next four years.
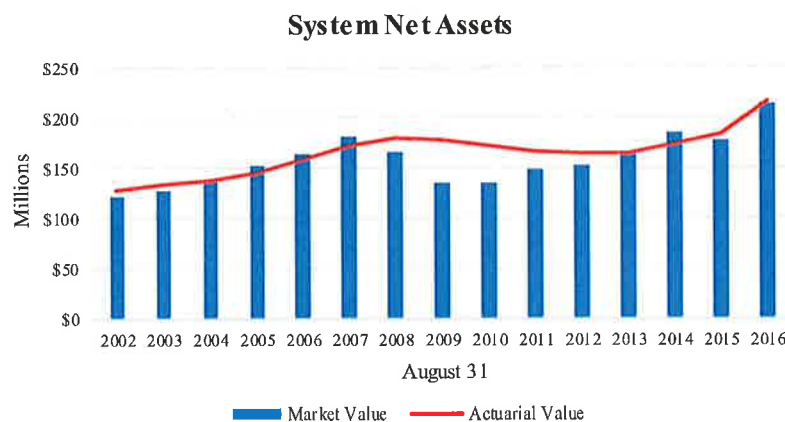
The actuarial value of assets has been both above and below the market value during this period. This is to be expected when using an asset smoothing method.

Note: Results for years before 2015 were prepared by the prior actuary.

Return on Assets

August 31

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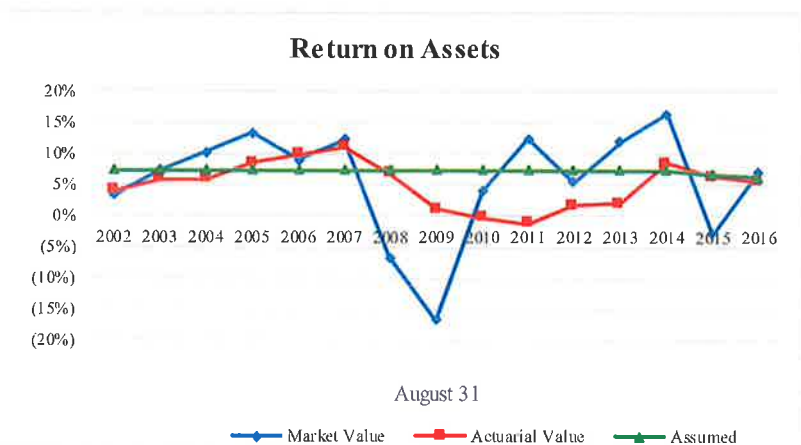
The rate of return on the actuarial value of assets has been less volatile than the market value return, which is the main reason for using an asset smoothing method.

LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the asset value at the same date is referred to as the unfunded actuarial accrued liability, 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, 2016 is:

Actuarial Accrued Liability	$271,594,222
Actuarial Value of Assets	217,003,707
Unfunded Actuarial Accrued Liability	$54,590,515

Between August 31, 2015 and August 31, 2016, the components of the change in the UAAL for the Plan are shown in the following table:

	$ millions
Unfunded Actuarial Accrued Liability, September 1, 2015	$103.5
· Effect of contributions below the actuarial rate	2.6
· Expected increase due to amortization method	0.9
· Investment experience	1.3
· Liability experience*	(0.5)
· Merging the COLA Pool with the general fund	(54.9)
· Other experience	1.7
Unfunded Actuarial Accrued Liability, September 1, 2016	$54.6

* Liability gain is about 0.2% of total actuarial accrued liability.

The overall experience loss for the last plan year of $0.8 million was the result of an actuarial loss of $1.3 million on Plan assets (actuarial value) and a $0.5 million actuarial gain on Plan liabilities. The favorable experience on the Plan liabilities was due primarily due salary increases that were lower than expected.

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 in the following table (in millions). Historical information from the five most recent valuations is shown in the graph following the chart. Note that the funded ratio does not indicate whether or not the Plan has sufficient funds to settle all current obligations, nor is it necessarily indicative of the need for future funding.

	8/31/12	8/31/13	8/31/14	8/31/15	8/31/16
Actuarial Value of Assets ($M)	$164.5	$164.2	$174.6	$183.0	$217.0
Actuarial Accrued Liability ($M)	$214.9	$229.2	$262.9	$286.5	$271.6
Funded Ratio (Actuarial Assets/AAL)	76.6%	71.6%	66.4%	63.9%	79.9%
Market Value of Assets ($M)	$153.5	$164.6	$184.8	$176.8	$213.9
Actuarial Accrued Liability ($M)	$214.9	$229.9	$262.9	$286.5	$271.6
Funded Ratio (MVA/AAL)	71.5%	71.8%	70.3%	61.7%	78.7%

Funded Ratio

110% | 104.4%
100% | 98.0% 96.4% 95.0% 95.9% 97.5% | 101.0% 100.0%
90% | 94.8%
88.3%
80% | 80.7%
76.6% | 79.9%
71.6%
70% | 66.4% 63.9%
60%
50%

2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

August 31
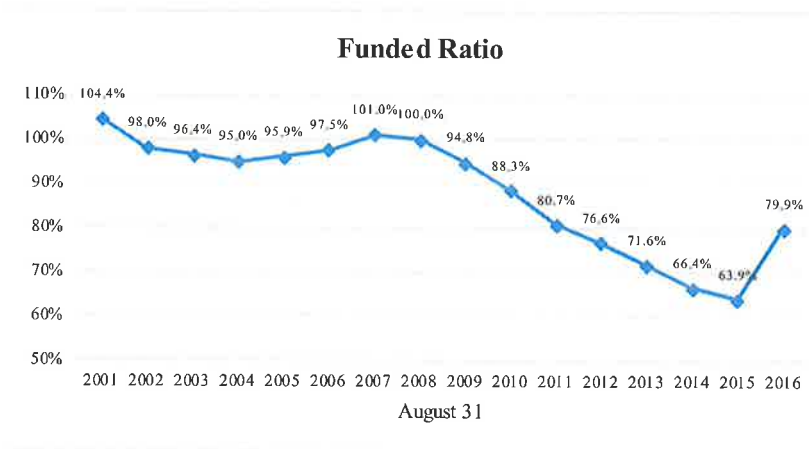
Over the past decade, the funded ratio steadily declined due to changes in assumptions, adverse experience, and contributions less than the full actuarial rate. The large improvement in 2016 was due to the merging of the COLA Pool Fund with the general fund and the resulting increase in the investment return assumption..

Note: Results for years prior to 2015 were prepared by prior actuaries.

As mentioned earlier in this report, due to the asset smoothing method there is about $3 million difference between the actuarial and market value of assets. This deferred investment loss will flow through the asset smoothing method over the next four years. If all actuarial assumptions are met in the future and favorable investment experience does not occur, the funded ratio will decrease slightly as the asset smoothing method recognizes the deferred investment loss. 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 by the actuarial cost method to service of members during the current year; and

- an "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

Contribution rates are computed with the objective of developing costs that are level as a percentage of covered payroll. The contribution rate computed in the August 31, 2016 valuation is used to set the contribution for the fiscal year ending August 31, 2018.

By ordinance, the City is required to contribute no less than the employer normal cost plus administrative expenses. However, sound funding of a retirement system requires consistent funding of the full actuarial contribution rate. Given the Plan's funded status and the unrecognized losses, we recommend the City contribute the full actuarial employer contribution rate of 17.32% of covered payroll. Due to a number of factors including changes that resulted from the passage of City Ordinance 20343, the employer contribution rate decreased by 10.10% from the 2015 to the 2016 valuation, as shown in the following table:

		Actuarial Valuation	
Actuarial Contribution Rate		**8/31/2016**	**8/31/2015**
1)	a. Total Normal Cost	16.47%	21.11%
	b. Member Financed	7.06%	6.88%
	c. Employer Portion (1a) - (1b)	9.41%	14.23%
2)	UAAL Contribution	7.91%	13.19%
3)	Employer Contribution Rate	17.32%	27.42%
4)	Projected Covered Payroll	$44,218,100	$42,381,059
5)	Recommended Employer Contribution*	8,164,782	12,065,465

* Includes administrative expenses. See Table 12 for details.

COMMENTS

As of August 31, 2016, the actuarial accrued liability of the Plan was $271.6 million and the actuarial value of assets was $217.0 million, resulting in a funded ratio of 80%, up significantly from the funded ratio of 64% last year. Using the market value of assets, the funded ratio is 79%. These results were impacted by several items related to the passage of City Ordinance 20343 including: (1) increasing the investment return assumption from 6.40% to 7.50%, (2) valuing the "13th Check" benefit in the actuarial accrued liability, and (3) the transfer of the assets of the COLA Pool fund to the general Plan fund. Overall, these changes decreased the UAAL by $55 million.

Retirement plans use several mechanisms to provide more stability in the contribution levels. These include an asset smoothing method, which smoothes out the volatility in the 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 2016 was 5.57% as compared to 7.34% return on the pure market value of assets. The unfunded actuarial accrued liability, which includes the experience loss in FY 2016, is amortized over a 28-year period, which mitigates the impact of the unfavorable experience on the actuarial contribution rate.

As of August 31, 2016, the deferred investment loss (actuarial value less market value of assets) is $3 million. Absent investment gains in future years, the deferred investment loss of $3 million

will eventually be reflected in the actuarial value of assets in future years. While the use of an asset smoothing method is a common procedure for public retirement systems, it is important to identify the potential impact of the deferred investment experience. This is accomplished by comparing the key valuation results from the August 31, 2016 actuarial valuation using both the actuarial and market value of assets. Because the difference between the actuarial and market value of assets is small on the current valuation date, the differences in the valuation measurements is relatively small.

	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Accrued Liability (AAL)	$271,594,222	$271,594,222
Asset Value	217,003,707	213,857,935
Unfunded Actuarial Accrued Liability (UAAL)	$54,590,515	$57,736,287
Funded Ratio	80%	79%
Normal Cost Rate	16.47%	16.47%
UAAL Contribution Rate	7.91%	8.36%
Total Actuarial Contribution Rate	24.38%	24.83%
Member Contribution Rate	(7.06%)	(7.06%)
Employer Actuarial Contribution Rate	17.32%	17.77%

A summary of key data elements and valuation results as of August 31, 2016 and August 31, 2015 are presented on the following page. More detail on each of these elements can be found in the following sections of this report.

	8/31/2016 Valuation	8/31/2015 Valuation*	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	573	576	(0.5)%
DROP Members	45	42	7.1%
Retirees, Disabled Members and Beneficiaries	501	486	3.1%
Inactive Vested Members	27	28	(3.6)%
Death Benefit Refund Due	1	0	N/A
Total Members	1,147	1,132	1.3%
Projected Valuation Salaries of Active Members	$ 42,930,194	$ 42,381,059	1.3%
Annual Retirement Payments for DROP Members, Disabled Members, Retirees and Beneficiaries	$ 13,787,130	$ 12,890,462	7.0%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Accrued Liability	$271,594,222	$286,493,673	(5.2)%
b. Market Value of Assets	213,857,935	176,828,083	20.9%
c. Actuarial Value of Assets	217,003,707	183,011,274	18.6%
d. Unfunded Actuarial Accrued Liability (a) - (c)	$ 54,590,515	$103,482,399	(47.2)%
e. Funded Ratio - Actuarial Value (c) / (a)	79.90%	63.88%	25.1%
f. Funded Ratio - Market Value (b) / (a)	78.74%	61.72%	27.6%
3. ACTUARIAL CONTRIBUTION RATE			
a. Normal Cost	16.47%	21.11%	(22.0)%
b. UAAL Amortization	7.91%	13.19%	(40.0)%
c. Total Actuarial Contribution Rate (a) + (b)	24.38%	34.30%	(28.9)%
d. Effective Employee Contribution Rate	(7.06%)	(6.88%)	2.6%
e. Employer Actuarial Contribution Rate (c) - (d)	17.32%	27.42%	(36.8)%

* Excludes the COLA Pool Fund/Liabilities.

Note: The 8/31/2016 results reflect an investment return assumption of 7.50%, while the 8/31/2015 results reflect an investment return assumption of 6.40%.

This report presents the results of the actuarial valuation of the City of Lincoln Police and Fire Pension Fund as of August 31, 2016. This valuation was prepared at the request of the City.

Please pay particular attention to our actuarial certification 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. Section 4 and 5 describe how the obligations of the Plan are to be met under the actuarial cost method in use. Section 6 includes some historical funding and other information.

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, 2016.

- 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.

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, 2016. 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, 2016, and August 31, 2015, in total and by investment category. Table 2 summarizes the change in the market value of assets from August 31, 2015 to August 31, 2016.

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of Plan assets, nor the book value 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 the asset smoothing 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 recognized evenly over a five-year period.

Table 4 shows the development of the actuarial value of assets (AVA) as of the valuation date.

Cost-of-Living Adjustments

In September of each year, eligible pensioned members will receive a "13th Check". City Ordinance 20343, passed on June 27, 2016, amended the Lincoln Municipal Code to eliminate the 13th Check accounting pool and pay 13th Check benefits directly from the Police and Fire Pension Fund. The balance in the 13th Check Fund was transferred to the general fund after the ordinance was passed and the account no longer exists.

TABLE 1

STATEMENT OF NET PLAN ASSETS AT MARKET VALUE

| | Market Value | |
	August 31, 2016	August 31, 2015
Cash & Equivalents	$ 2,168,196	$ 4,345,821
Accrued Interest & Dividends	20	26
Fixed Income	40,018,342	43,067,668
Global Equity	119,427,393	111,725,895
Hedge Funds	10,544,903	10,663,198
Private Equity	942,047	765,515
Real Estate	40,757,034	33,427,148
Total Assets	$ 213,857,935	$ 203,995,271
Accounts Payable	0	0
Interim Plan Assets	213,857,935	203,995,271
COLA Pool	N/A	(27,167,188)
Net Assets Available for Benefits	$ 213,857,935	$ 176,828,083

TABLE 2

STATEMENT OF CHANGES IN NET ASSETS
DURING YEAR ENDED AUGUST 31, 2016
(Market value)

1. Market Value of Assets as of August 31, 2015	$	203,995,271
2. Contributions:		
a. Members	$	2,817,102
b. City		7,170,104
c. Total	$	9,987,206
3. Investment Income		
a. Interest and Dividends	$	4,196,654
b. Realized Gains/(Losses)		6,195,752
c. Short and Long Term Capital Gains		1,666,960
d. Unrealized Gains/(Losses)		2,955,454
e. Investment Expenses		(219,075)
f. Net Investment Income	$	14,795,745
4. Expenditures		
a. Refunds of Member Contributions	$	225,180
b. Benefits Paid:		
(1) Base Pension and Compensation Payments	$	11,328,470
(2) DROP Payments		2,292,711
(3) Temporary Total Disability		0
(4) 13th Check COLA Pool Payments		580,066
c. Administrative Expenses		493,860
d. Total	$	14,920,287
5. Changes and Adjustments	$	0
6. Net Change	$	9,862,664
(2c) + (3f) - (4d) + (5)		
7. Market Value of Assets as of August 31, 2016	$	213,857,935
8. Return on Market Value of Assets, Net of Investment Expenses		7.34%

TABLE 3

STATEMENT OF CHANGES IN COLA POOL ASSETS
FOR THE YEAR ENDED AUGUST 31, 2016
(Market Value)

1.	Market Value of COLA Pool as of August 31, 2015	$ 27,167,188
2.	Additions to COLA Pool	$ 0
3.	Investment Income on COLA Pool From September 1, 2015 to June 27, 2016	$ 925,977
4.	COLA Pool Payments	
	a. Retirants and Beneficiaries	$ 540,146
	b. DROP Members	39,920
	c. Total	$ 580,066
5.	Net Change (2) + (3) - (4c)	$ 345,911
6.	Market Value of COLA Pool as of June 27, 2016	$ 27,513,099
7.	Asset Transfer from COLA Pool to General Fund	$ (27,513,099)
8.	Market Value of COLA Pool as of August 31, 2016	$ 0

Cost-of-Living Adjustments

In September of each year, eligible pensioned members will receive a "13th Check". City Ordinance 20343, passed on June 27, 2016, amended the Lincoln Municipal Code to eliminate the 13th Check accounting pool and pay 13th Check benefits directly from the Police and Fire Pension Fund.

TABLE 4

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

	Year End			
	8/31/2013	8/31/2014	8/31/2015	8/31/2016
1. Actuarial Value of Assets, Beginning of Year	$ 164,500,414	$ 164,189,914	$ 174,569,411	$ 183,011,274
2. Contributions During Year				
(a) Member	$ 2,540,604	$ 2,613,971	$ 2,604,101	$ 2,817,102
(b) City	6,446,472	7,865,929	8,045,293	7,170,104
(c) Total	$ 8,987,076	$ 10,479,900	$ 10,649,394	$ 9,987,206
3. Benefit Payments and Expenses	$ 12,670,201	$ 13,837,309	$ 13,599,832	$ 14,340,221
4. Expected Investment Income on (1), (2) and (3)	$ 12,201,911	$ 12,190,617	$ 11,685,484	$ 11,575,585
5. Actual Return on Market Value, Net of Investment Expenses	$ 14,753,906	$ 23,574,412	$ (5,056,241)	$ 13,869,768
6. Return to be Spread, End of Year (5) - (4)	$ 2,551,995	$ 11,383,795	$ (16,741,725)	$ 2,294,183

* COLA Pool payments were included in Benefit Payments and Expenses for years prior to 2015.
Note: Information prior to 2015 was produced by the prior actuary.

TABLE 4
(continued)

7. Return to be Spread

Plan Year Ending	Return to be Spread	Unrecognized Percent	Unrecognized Return
2016	$2,294,183	80%	$1,835,346
2015	(16,741,725)	60%	(10,045,035)
2014	11,383,795	40%	4,553,518
2013	2,551,995	20%	510,399
			($3,145,772)

8. Total Market Value of Assets as of September 1, 2016 $213,857,935

9. Total Actuarial Value of Assets as of September 1, 2016 $217,003,707
   (8) - (7)

10. Asset Ratios
   (a) Actuarial Value to Market Value (9) / (8)   101.47%
   (b) Market Value to Actuarial Value (8) / (9)   98.55%

11. Return on Actuarial Value of Assets, Net of Expenses   5.57%

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, 2016. 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 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, 2016. City Ordinance 20343, passed on June 27, 2016, amended the Lincoln Municipal Code to eliminate the 13th Check accounting pool and pay 13th Check benefits directly from the Police and Fire Pension Fund. Therefore, the liability for all future 13th Check payment has been included in this valuation.

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 cast method is used to develop the actuarial accrued liability.

TABLE 5

PRESENT VALUE OF FUTURE BENEFITS (PVFB)
AS OF AUGUST 31, 2016

1. Active Employees
   a. Retirement Benefits $ 170,188,830
   b. Pre-Retirement Death Benefits   3,160,051
   c. Termination Benefits   8,432,882
   d. Disability Benefits   3,700,430
   e. Total $ 185,482,193

2. Inactive Vested Members $ 3,963,198

3. In Pay Members
   a. Retirees $ 103,595,444
   b. Disabled Members   14,204,366
   c. DROP Members   24,825,400
   d. Beneficiaries   7,561,817
   e. Total $ 150,187,027

4. Total Present Value of Future Benefits $ 339,632,418
   (1e) + (2) + (3e)

TABLE 6

ACTUARIAL ACCRUED LIABILITY
AS OF AUGUST 31, 2016

1. Active Employees
   a. Present Value of Future Benefits $ 185,482,193
   b. Present Value of Future Normal Costs   68,038,196
   c. Actuarial Accrued Liability $ 117,443,997
       (1a) - (1b)

2. Inactive Vested Members $ 3,963,198

3. In Pay Members
   a. Retirees $ 103,595,444
   b. Disabled Members   14,204,366
   c. DROP Members   24,825,400
   d. Beneficiaries   7,561,817
   e. Total $ 150,187,027

4. Total Actuarial Accrued Liability $ 271,594,222
       (1c) + (2) + (3e)

5. Actuarial Value of Assets $ 217,003,707

6. Unfunded Actuarial Accrued Liability $ 54,590,515
       (4) - (5)

TABLE 7

ACTUARIAL BALANCE SHEET
AS OF AUGUST 31, 2016

ASSETS

Actuarial Value of Assets	$ 217,003,707
Present Value of Future Normal Costs	$ 68,038,196
Present Value of Future Payments on the Unfunded Actuarial Accrued Liability	$ 54,590,515
Total Assets	$ 339,632,418

LIABILITIES

Active Employees:		
a. Retirement Benefits	$ 170,188,830	
b. Pre-Retirement Death Benefits	3,160,051	
c. Termination Benefits	8,432,882	
d. Disability Benefits	3,700,430	
e. Total		$ 185,482,193
Inactive Vested Members		$ 3,963,198
In Pay Members		
a. Retirees	$ 103,595,444	
b. Disabled Members	14,204,366	
c. DROP Members	24,825,400	
d. Beneficiaries	7,561,817	
e. Total		$ 150,187,027
Total Liabilities		$ 339,632,418

TABLE 8

ACTUARIAL GAIN/(LOSS)

Liabilities

1. Actuarial Accrued Liability as of September 1, 2015	$	286,493,673
2. Normal Cost for Plan Year Ending August 31, 2016		8,403,489
3. Benefit Payments During Plan Year Ending August 31, 2016		(13,846,361)
4. Interest at 6.40%		18,437,206
5. Liability Change Due to Merging the COLA Pool*		(27,365,075)
6. Expected Actuarial Accrued Liability as of August 31, 2016	$	272,122,932
7. Actuarial Accrued Liability as of August 31, 2016	$	271,594,222

Assets

8. Actuarial Value of Assets as of September 1, 2015	$	183,011,274
9. Contributions During Plan Year Ending August 31, 2016		9,987,206
10. Benefit Payments During Plan Year Ending August 31, 2016		(13,846,361)
11. Interest at 6.40%		11,591,144
12. Asset Change Due to Merging the COLA Pool		27,513,099
13. Expected Actuarial Value of Assets as of August 31, 2016	$	218,256,362
14. Actuarial Value of Assets as of August 31, 2016	$	217,003,707

Gain / (Loss)

15. Expected Unfunded Actuarial Accrued Liability (6) – (13)	$	53,866,570
16. Unfunded Actuarial Accrued Liability (7) – (14)	$	54,590,515
17. Actuarial Gain / (Loss) (15) – (16)	$	(723,945)
18. Actuarial Gain / (Loss) on Actuarial Value of Assets (14) – (13)	$	(1,252,655)
19. Actuarial Gain / (Loss) on Actuarial Accrued Liability (6) – (7)	$	528,710

* Includes the impact of changing the investment return assumption from 6.40% to 7.50%.

TABLE 9

GAIN/(LOSS) BY SOURCE

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 contribution 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 Fund, mortality rates among active and retired members, withdrawal and retirement rates among active members, rates at which salaries increase and the rate at which the cost of living increases.

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

Since the overall results of the valuation will reflect the choice of assumptions made, periodic studies of the various components compromising the plan's experience are conducted in which the experience for each component is analyzed in relation to the assumption used for that component (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 Plan experienced a net actuarial gain on liabilities of $529,000 during the plan year ended August 31, 2016, as well as an actuarial loss on assets of $1,253,000. The net actuarial loss was $724,000. The major components of this net actuarial experience loss are shown below:

Liability Sources	Gain/(Loss)	
Salary Increases	$	2,471,000
Mortality		(303,000)
Terminations		61,000
Retirements		(160,000)
Disability		(1,121,000)
New Entrants/Rehires		(88,000)
Miscellaneous		(331,000)
Total Liability Gain/(Loss)	$	529,000*
Asset Gain/(Loss)	$	(1,253,000)
Net Actuarial Gain/(Loss)	$	(724,000)

* Liability experience was 0.2% of actuarial accrued liability.

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 actuarial deficiencies have occurred when 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 in 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 developed in the August 31, 2016 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 2018. 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, 2016 the actuarial accrued liability was greater than the valuation assets so an unfunded actuarial accrued liability (UAAL) exists. The UAAL is amortized, as a level-percent of payroll, using a layered approach. The August 31, 2016 UAAL serves as the initial base and is amortized over a closed 28-year period (closed 30-year period beginning on August 31, 2014). For each valuation subsequent to August 31, 2016, annual net experience gains/losses will be amortized over a new, closed 20-year period. Subsequent plan amendments or changes in actuarial

assumptions or methods that create a change in the UAAL will be amortized over a demographically appropriate time period selected by the Plan Administrator at the time that the change is reflected in the annual actuarial valuation.

Contribution Rate Summary

In Table 10, the amortization payment related to the unfunded actuarial accrued liability, as of August 31, 2016, is developed. Table 11 develops the actuarial contribution rate for the employer.

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

TABLE 10

DEVELOPMENT OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
CONTRIBUTION RATE

Amortization Bases	Original Amount	Remaining Payments	Base is Paid Off	Outstanding Balance as of August 31, 2016	Annual Contribution*
2016 UAAL Base	$ 54,590,515	28	8/31/2044	$ 54,590,515	$ 3,394,449
Total				$ 54,590,515	$ 3,394,449

* Amounts reflect mid-year timing. Based on level percentage of payroll, assuming payroll increases 3.0% per year.

1. Total UAAL Amortization Payment	$	3,394,449
2. Total Projected Payroll for FY 2016-17	$	42,930,194
3. UAAL Amortization Payment as a Percent of Payroll		7.91%

TABLE 11

EMPLOYER ACTUARIAL CONTRIBUTION RATE

	Valuation Date	
	8/31/2016	**8/31/2015**
Normal Cost		
Retirement benefits	13.61%	17.75%
Pre-retirement death benefits	0.49%	0.61%
Termination benefits	1.77%	2.02%
Disability benefits	0.60%	0.73%
Total Normal Cost	16.47%	21.11%
Total UAAL Amortization Payment	7.91%	13.19%
Total Actuarial Contribution Rate	24.38%	34.30%
Member portion	7.06%	6.88%
City portion	17.32%	27.42%

Note: The 2016 valuation results reflect an investment return assumption of 7.50% and the inclusion of the 13th Check, while the 2015 valuation reflects an assumed rate of return of 6.40% and excludes the cost of the 13th Check.

TABLE 12

FIVE-YEAR BUDGET REQUEST ESTIMATE

The Mandated City Contribution, per City Ordinance 18732, requires the City's normal cost contributions inclusive of administrative expenses be contributed to the Plan.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fiscal Year	Total Payroll*	Employer Normal Cost Rate	Employer Normal Cost Contribution (1) * (2)	Admin. Expenses**	**Mandated City Contribution (3) + (4)**	Recommended UAAL Contribution Rate	Recommended UAAL Contribution (1) * (6)	**Budget Request (5) + (7)**
2017-18	44,218,100	9.41%	4,160,923	506,207	**4,667,130**	7.91%	3,497,652	**8,164,782**
2018-19	45,544,643	9.31%	4,240,206	518,862	4,759,068	7.91%	3,602,581	8,361,649
2019-20	46,910,982	9.18%	4,306,428	531,834	4,838,262	8.07%	3,785,716	8,623,978
2020-21	48,318,311	9.08%	4,387,303	545,130	4,932,433	8.55%	4,131,216	9,063,649
2021-22	49,767,860	8.99%	4,474,131	558,758	5,032,889	8.56%	4,260,129	9,293,018

Note: Assumes all actuarial assumptions are met in future years, including a 7.50% net return on the market value of assets.

* *Total payroll is projected to increase at 3.00% per year for future years.*
** *Administrative expenses are assumed to increase with price inflation of 2.50% per year.*

HISTORICAL FUNDING AND OTHER INFORMATION

In this section, we provide some historical information regarding the funding progress of the Plan. These exhibits retain some of the information that used to be required for accounting purposes and are included because they help explain the Plan's history. An exhibit showing the expected benefit payments for the Plan is also included.

TABLE 13

SCHEDULE OF FUNDING PROGRESS

Two tests of funding progress based on the relationship between valuation assets and actuarial accrued liabilities are shown on the following pages. These tests are based upon the actuarial cost method used in the valuation.

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 recommended 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 salaries 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 liability 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 provide an indication of whether the Plan is becoming financially stronger or weaker.

TABLE 13 (continued)

Actuarial Valuation Date	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL)	(3) Percent Funded (1) / (2)	(4) Unfunded AAL (2) - (1)	(5) Total Payroll*	(6) Unfunded AAL as a Percentage of Payroll (4) / (5)
8/31/1991	$68,390,000	$59,149,000	116.00%	($9,241,000)	$15,157,000	(61.00%)
8/31/1992	77,980,000	63,407,000	123.00%	(14,573,000)	15,365,000	(95.00%)
8/31/1993	86,583,000	67,910,000	127.00%	(18,673,000)	16,722,000	(112.00%)
8/31/1994	83,307,827	70,517,314	118.14%	(12,790,513)	17,698,377	(72.27%)
8/31/1995	92,235,349	79,202,449	116.46%	(13,032,900)	18,561,302	(70.22%)
8/31/1996	94,347,990	81,583,068	115.65%	(12,764,922)	19,224,719	(66.40%)
8/31/1997	101,475,648	91,022,617	111.48%	(10,453,031)	20,908,549	(49.99%)
8/31/1998	109,213,474	94,847,667	115.15%	(14,365,807)	21,860,493	(65.72%)
8/31/1999	113,902,477	104,691,766	108.80%	(9,210,711)	23,611,284	(39.01%)
8/31/2000	121,404,314	115,671,249	104.96%	(5,733,065)	25,808,088	(22.21%)
8/31/2001	128,069,831	122,660,542	104.41%	(5,409,289)	28,215,685	(19.17%)
8/31/2002	128,319,145	130,875,473	98.05%	2,556,328	26,606,881	9.61%
8/31/2003	132,577,506	137,507,824	96.41%	4,930,318	27,415,330	17.98%
8/31/2004	136,973,679	144,178,758	95.00%	7,205,079	28,124,862	25.62%
8/31/2005	145,730,474	151,978,408	95.89%	6,247,934	29,029,309	21.52%
8/31/2006	157,527,392	161,583,285	97.49%	4,055,893	30,724,333	13.20%
8/31/2007	171,263,791	169,587,458	100.99%	(1,676,333)	30,546,235	(5.49%)
8/31/2008	179,390,472	179,376,149	100.01%	(14,323)	32,265,715	(0.04%)
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%
8/31/2015	183,011,274	286,493,673	63.88%	103,482,399	42,381,059	244.17%
8/31/2016	217,003,707	271,594,222	79.90%	54,590,515	42,930,194	127.16%

Note: For valuation dates prior to 2015, information shown is from the prior actuary's report.
* Non-DROP Payroll in 2002 and later.

TABLE 14

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
2016	8/31/2015	11,969,513
2017	8/31/2016	7,658,575

Annual required contribution is equal to the contribution percent times the total payroll projected to the appropriate fiscal year. Administrative expenses are not included. 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 was amortized over 30 years from 8/31/09 to 8/31/13. The UAAL is currently amortized using a layered approach, where the initial base is amortized over a closed 30-year period effective 8/31/14. Bases established after 8/31/16 are amortized over a closed 20-year period.

Note: For valuation dates prior to 2015, information shown is from the prior actuary's report.

TABLE 15

PROJECTED BENEFIT PAYMENTS

The table below shows estimated benefits expected to be paid over the next twenty years, based on the assumptions used in this valuation. The "In-Pay" column shows benefits expected to be paid to members currently receiving benefit payments as of August 31, 2016. The "Not In-Pay" column shows benefits expected to be paid to all other members. This included those who, as of August 31, 2016, are active or have terminated employment and are entitled to a deferred vested benefit. No future members are reflected.

Year Ending August 31	Not In-Pay	In-Pay	Total
2017	$ 679,000	$ 14,622,000	$ 15,301,000
2018	1,560,000	14,510,000	16,070,000
2019	2,335,000	14,356,000	16,691,000
2020	3,146,000	14,226,000	17,372,000
2021	4,091,000	14,024,000	18,115,000
2022	5,117,000	13,858,000	18,975,000
2023	6,293,000	13,691,000	19,984,000
2024	7,452,000	13,513,000	20,965,000
2025	8,663,000	13,260,000	21,923,000
2026	9,899,000	13,021,000	22,920,000
2027	11,319,000	12,724,000	24,043,000
2028	12,729,000	12,451,000	25,180,000
2029	14,173,000	12,172,000	26,345,000
2030	15,636,000	11,834,000	27,470,000
2031	17,153,000	11,482,000	28,635,000
2032	18,652,000	11,115,000	29,767,000
2033	20,113,000	10,739,000	30,852,000
2034	21,612,000	10,351,000	31,963,000
2035	23,272,000	9,949,000	33,221,000
2036	24,902,000	9,537,000	34,439,000

Note: Cash flows are the expected future non-discounted payments to current members. These numbers exclude refund payouts to current nonvested inactives and assume future retirees elect the normal form of payment and future withdrawals elect refunds according to valuation assumptions.

APPENDIX A

SUMMARY OF MEMBERSHIP DATA

MEMBER DATA RECONCILIATION
August 31, 2015 to August 31, 2016

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	Service Retirees	Disabled Retirees	Beneficiaries	Inactive Vested	Refunds Due	Total
Members as of 08/31/15	576	42	384	50	52	28	0	1,132
New Members	30	0	0	0	0	0	0	30
Terminations								
Refunded	(9)	0	0	0	0	0	0	(9)
Deferred Vested	(1)	0	0	0	0	1	0	0
Retirements								
Service	(7)	(9)	18	0	0	(2)	0	0
Disability	(3)	0	0	3	0	0	0	0
DROP	(12)	12	0	0	0	0	0	0
Deaths								
Cashed Out	0	0	0	0	0	0	0	0
Refund Due	(1)	0	0	0	0	0	1	0
With Beneficiary	0	0	(1)	(2)	3	0	0	0
Without Beneficiary	0	0	(5)	(1)	0	0	0	(6)
Data Adjustments	0	0	0	0	0	0	0	0
Members as of 08/31/16	**573**	**45**	**396**	**50**	**55**	**27**	**1**	**1,147**

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
	No.*	Annual Benefits**	Post-Ret. Increases	No.	Annual Benefits**	No.	Annual Benefits**		
Aug. 31, 1991	22#	308,940	42,470	2	7,200	142	1,460,670	30.8%	10,286
Aug. 31, 1992	16	221,944	0	1	3,816	157	1,678,798	14.9%	10,693
Aug. 31, 1993	17	219,974	0	1	10,698	173	1,888,074	12.5%	10,914
Aug. 31, 1994	16	218,777	0	4	17,829	185	2,089,022	10.6%	11,292
Aug. 31, 1995	16	211,219	0	4	37,158	197	2,263,083	8.3%	11,488
Aug. 31, 1996	8	149,099	0	2	16,566	203	2,395,616	5.9%	11,801
Aug. 31, 1997	73##	590,041	0	4	56,890	272	3,042,547	27.0%	11,186
Aug. 31, 1998	10	155,262	0	11	71,670	271	3,126,139	2.7%	11,536
Aug. 31, 1999	23	414,130	0	1	22,889	293	3,517,380	12.5%	12,005
Aug. 31, 2000	17	335,244	0	7	62,014	303	3,790,610	7.8%	12,510
Aug. 31, 2001	14	225,737	0	16	105,022	301	3,911,325	3.2%	12,994
Aug. 31, 2002	18	278,160	0	14	115,340	305	4,074,145	4.2%	13,358
Aug. 31, 2003	15	219,569	0	11	119,499	309	4,174,215	2.5%	13,509
Aug. 31, 2004	12	175,551	0	5	74,835	316	4,274,931	2.4%	13,528
Aug. 31, 2005	30	702,721	0	12	73,072	334	4,904,580	14.7%	14,684
Aug. 31, 2006	10	262,420	0	4	36,362	340	5,130,638	4.6%	15,090
Aug. 31, 2007	38	1,101,713	0	8	55,280	370	6,177,071	20.4%	16,695
Aug. 31, 2008	24	621,708	0	10	128,736	384	6,670,043	8.0%	17,370
Aug. 31, 2009	20	560,105	0	2	28,641	402	7,185,166	7.7%	17,874
Aug. 31, 2010	14	408,351	0	8	66,170	408	7,477,874	4.1%	18,328
Aug. 31, 2011	15	455,866	0	8	84,553	415	7,846,879	4.9%	18,908
Aug. 31, 2012	30	1,083,442	0	7	101,972	438	8,828,349	12.5%	20,156
Aug. 31, 2013	21	700,308	0	11	165,739	448	9,362,919	6.1%	20,899
Aug. 31, 2014	20	771,356	0	3	21,973	465	10,112,391	8.0%	21,747
Aug. 31, 2015	27	1,045,339	0	6	106,230	486	11,051,500	9.3%	22,740
Aug. 31, 2016	24	792,387	0	9	108,466	501	11,735,421	6.2%	23,424

*Includes Retirements from DROP
#Includes one member not previously reported
**Does not include 13th Check amounts
##Includes the addition of "Old Plan" members
Note: For valuation dates prior to 2015, information shown is from the prior actuary's report.

SUMMARY OF ACTIVE MEMBERS

NOT-IN-PAY MEMBERS INCLUDED IN VALUATION

Valuation Date	Active Members	Inactive Vested Members	Total Payroll*	Average			% Increase
				Age	Service	Pay	
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%
Aug. 31, 2015	576	28	42,381,059	39.4	12.3	73,578	7.8%
Aug. 31, 2016	573	27	42,930,194	39.5	12.3	74,922	1.8%

* Reflects Non-DROP projected payroll in 2002 and later

Note: For valuation dates prior to 2015, information shown is from the prior actuary's report.

MEMBERSHIP DATA – AUGUST 31, 2016

Active Members (Not Participating in DROP)

Group	Count	Employee Contribution Rate	Effective Employee Contribution Percentage	Projected Annual Payroll	Average Age	Average Service	Average Salary
Police							
- Old Plan	2	7.60%	7.60%	$ 149,494	47.8	23.6	$ 74,747
- Plan A	272	8.00%	8.00%	19,097,416	36.8	10.9	70,211
- Plan B*	21	7.60%	0.00%	1,834,967	49.1	25.5	87,379
- Plan C*	5	7.00%	0.00%	454,472	63.9	41.1	90,894
Fire							
- Plan A	243	8.00%	8.00%	18,625,771	39.7	10.3	76,649
- Plan B*	30	7.60%	0.00%	2,768,074	51.8	26.9	92,269
Total	573	7.95%	7.06%	$ 42,930,194	39.5	12.3	$ 74,922

Employee contributions stop after 21 years of service for this group.

SUMMARY OF ACTIVE MEMBERS
As of August 31, 2016

Fire

Age	Number			Annual Reported Compensation		
	Male	Female	Total	Male	Female	Total
Under 25	5	0	5	$ 286,833	$ 0	$ 286,833
25 to 29	19	1	20	1,131,355	52,901	1,184,256
30 to 34	47	5	52	2,994,823	340,053	3,334,876
35 to 39	45	4	49	3,175,814	288,600	3,464,414
40 to 44	57	4	61	4,581,943	292,728	4,874,671
45 to 49	34	1	35	2,794,344	77,132	2,871,476
50 to 54	33	2	35	2,837,844	163,979	3,001,823
55 to 59	12	0	12	1,085,927	0	1,085,927
60 & Up	4	0	4	325,498	0	325,498
Total	256	17	273	$ 19,214,381	$ 1,215,393	$ 20,429,774

Average Salary by Age
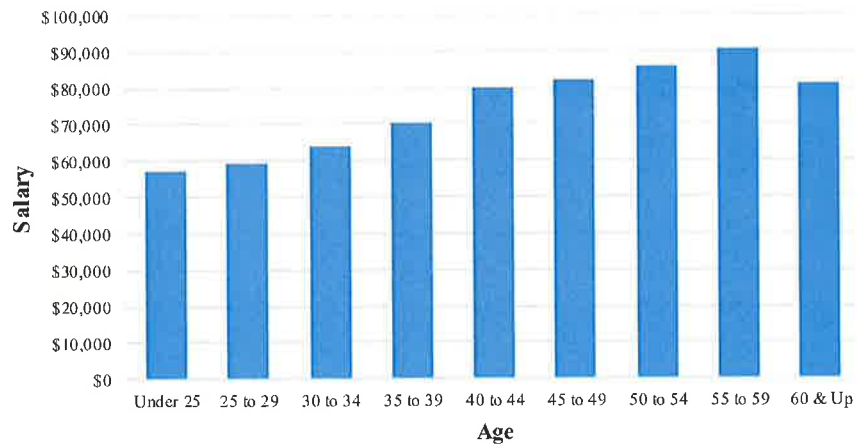
SUMMARY OF ACTIVE MEMBERS
As of August 31, 2016

Police

Age	Number			Annual Reported Compensation		
	Male	Female	Total	Male	Female	Total
Under 25	12	4	16	$ 604,189	$ 202,887	$ 807,076
25 to 29	43	10	53	2,350,272	556,714	2,906,986
30 to 34	49	5	54	3,143,541	320,692	3,464,233
35 to 39	38	8	46	2,608,153	555,309	3,163,462
40 to 44	47	9	56	3,476,951	701,562	4,178,513
45 to 49	48	6	54	3,741,210	433,827	4,175,037
50 to 54	14	0	14	1,202,040	0	1,202,040
55 to 59	0	2	2	0	166,533	166,533
60 & Up	4	1	5	324,448	114,655	439,103
Total	255	45	300	$ 17,450,804	$ 3,052,179	$ 20,502,983

Average Salary by Age
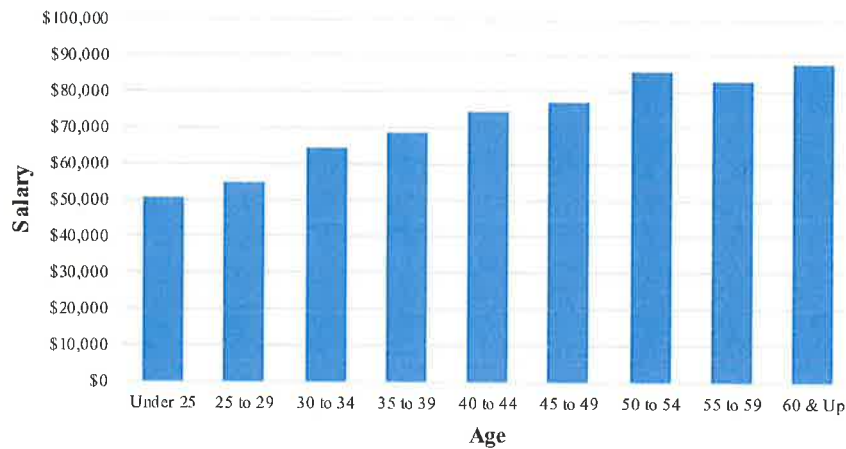
SUMMARY OF ACTIVE MEMBERS
As of August 31, 2016

Total

	Number			Annual Reported Compensation		
Age	Male	Female	Total	Male	Female	Total
Under 25	17	4	21	$ 891,022	$ 202,887	$ 1,093,909
25 to 29	62	11	73	3,481,627	609,615	4,091,242
30 to 34	96	10	106	6,138,364	660,745	6,799,109
35 to 39	83	12	95	5,783,967	843,909	6,627,876
40 to 44	104	13	117	8,058,894	994,290	9,053,184
45 to 49	82	7	89	6,535,554	510,959	7,046,513
50 to 54	47	2	49	4,039,884	163,979	4,203,863
55 to 59	12	2	14	1,085,927	166,533	1,252,460
60 & Up	8	1	9	649,946	114,655	764,601
Total	511	62	573	$ 36,665,185	$ 4,267,572	$ 40,932,757

Average Salary by Age
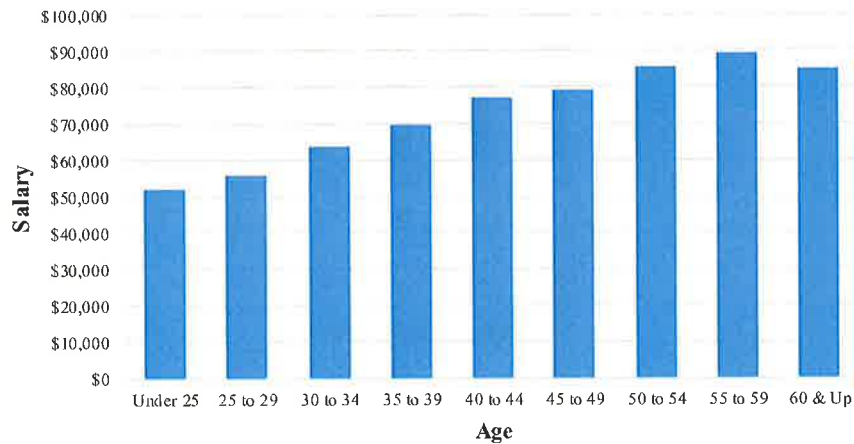
DISTRIBUTION OF ACTIVE MEMBERS
As of August 31, 2016

Fire

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	5	0	0	0	0	0	0	5
25 to 29	18	2	0	0	0	0	0	20
30 to 34	32	17	3	0	0	0	0	52
35 to 39	17	15	12	5	0	0	0	49
40 to 44	3	8	21	25	4	0	0	61
45 to 49	2	3	4	9	13	4	0	35
50 to 54	0	0	1	9	10	14	1	35
55 to 59	0	0	1	5	3	2	1	12
60 & Up	0	1	0	0	1	0	2	4
Total	77	46	42	53	31	20	4	273

Age Distribution
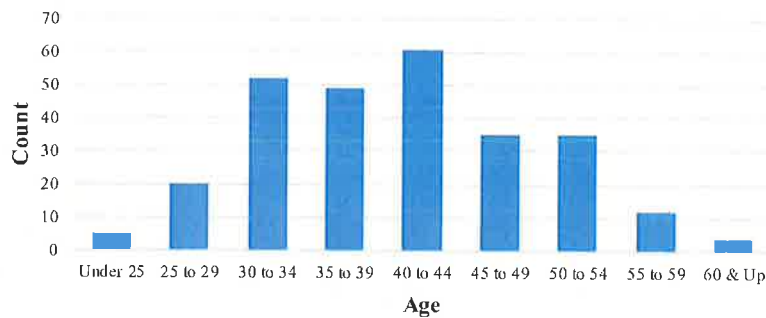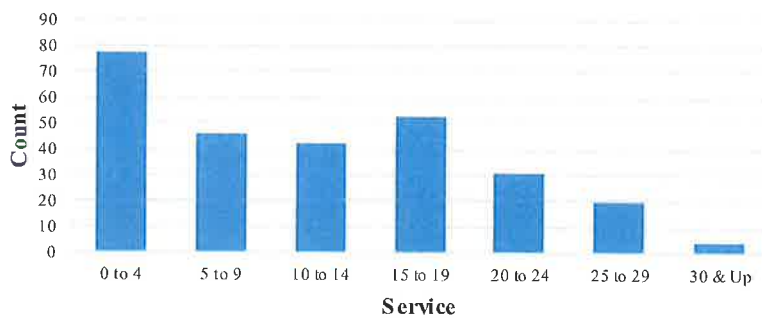
Service Distribution

DISTRIBUTION OF ACTIVE MEMBERS
As of August 31, 2016

Police

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	16	0	0	0	0	0	0	16
25 to 29	42	11	0	0	0	0	0	53
30 to 34	10	40	4	0	0	0	0	54
35 to 39	3	15	19	9	0	0	0	46
40 to 44	0	2	16	36	2	0	0	56
45 to 49	0	1	3	15	28	7	0	54
50 to 54	0	0	1	2	2	9	0	14
55 to 59	0	0	0	0	1	0	1	2
60 & Up	0	0	0	0	0	0	5	5
Total	71	69	43	62	33	16	6	300

Age Distribution
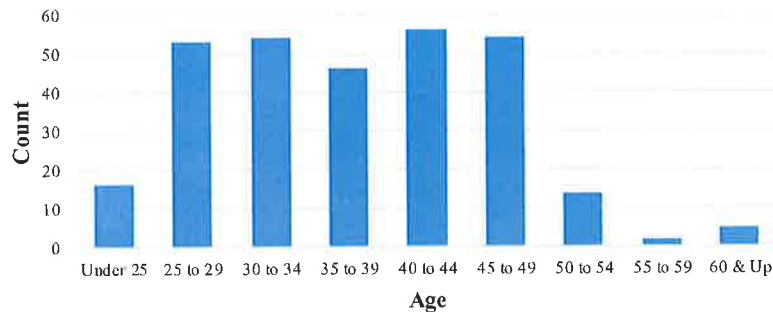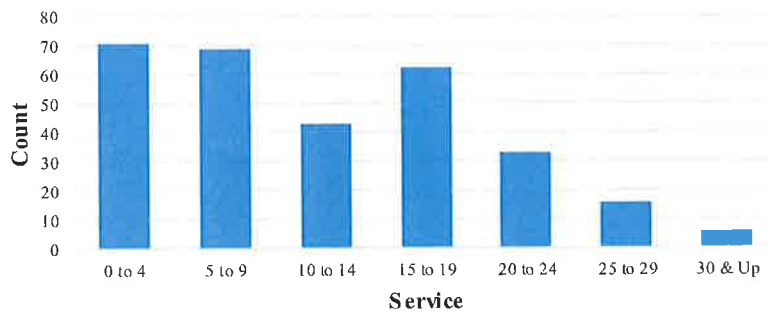
Service Distribution

DISTRIBUTION OF ACTIVE MEMBERS
As of August 31, 2016

Total

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	Total
Under 25	21	0	0	0	0	0	0	21
25 to 29	60	13	0	0	0	0	0	73
30 to 34	42	57	7	0	0	0	0	106
35 to 39	20	30	31	14	0	0	0	95
40 to 44	3	10	37	61	6	0	0	117
45 to 49	2	4	7	24	41	11	0	89
50 to 54	0	0	2	11	12	23	1	49
55 to 59	0	0	1	5	4	2	2	14
60 & Up	0	1	0	0	1	0	7	9
Total	148	115	85	115	64	36	10	573

Age Distribution
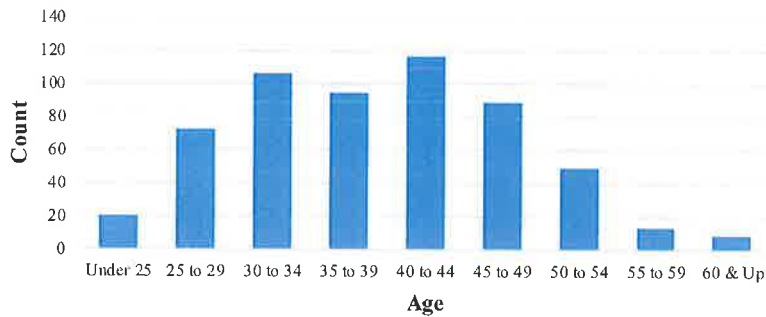
Service Distribution
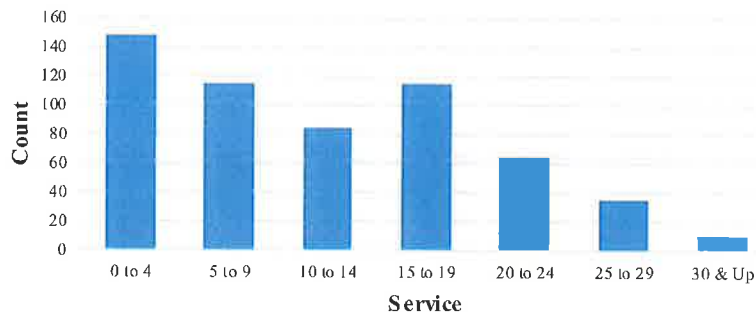
SUMMARY OF INACTIVE VESTED MEMBERS
As of August 31, 2016

Age	Number			Annual Benefit at Retirement		
	Male	Female	Total	Male	Female	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25 to 29	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0
35 to 39	4	0	4	78,947	0	78,947
40 to 44	8	2	10	178,659	34,746	213,405
45 to 49	7	6	13	113,081	93,549	206,630
50 to 54	0	0	0	0	0	0
55 to 59	0	0	0	0	0	0
60 & Up	0	0	0	0	0	0
Total	19	8	27	$ 370,687	$ 128,295	$ 498,982

Age Distribution
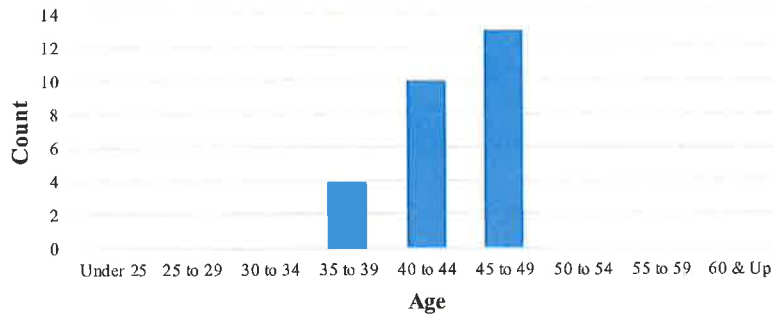
Average Benefit
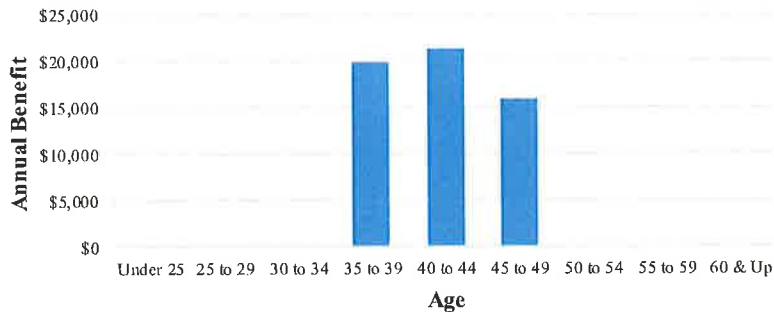
SUMMARY OF RETIRED MEMBERS
As of August 31, 2016

Service Retirees

Age	Number			Annual Benefit					
	Male	Female	Total	Male		Female		Total	
Under 50	0	0	0	$	0	$	0	$	0
50 to 54	13	9	22		339,292		234,612		573,904
55 to 59	46	6	52		1,521,478		215,867		1,737,345
60 to 64	90	3	93		2,783,693		83,062		2,866,755
65 to 69	81	1	82		1,960,262		16,250		1,976,512
70 to 74	61	1	62		1,240,706		18,178		1,258,884
75 to 79	49	2	51		799,105		24,359		823,464
80 to 84	22	0	22		321,154		0		321,154
85 to 89	12	0	12		152,338		0		152,338
90 & Up	0	0	0		0		0		0
Total	374	22	396	$ 9,118,028		$	592,328	$ 9,710,356	

Age Distribution

Average Benefit
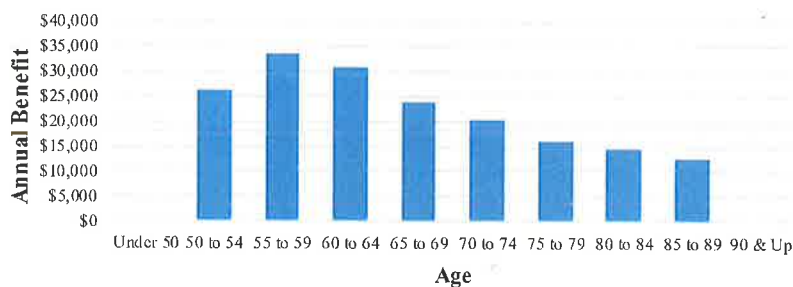
SUMMARY OF RETIRED MEMBERS
As of August 31, 2016

Disabled Retirees

Age	Number			Annual Benefit		
	Male	Female	Total	Male	Female	Total
Under 50	11	5	16	$ 358,070	$ 138,186	$ 496,256
50 to 54	4	0	4	165,444	0	165,444
55 to 59	5	1	6	140,445	18,177	158,622
60 to 64	7	1	8	158,132	9,812	167,944
65 to 69	4	0	4	98,592	0	98,592
70 to 74	6	0	6	63,462	0	63,462
75 to 79	3	0	3	42,625	0	42,625
80 to 84	1	0	1	5,840	0	5,840
85 to 89	2	0	2	26,498	0	26,498
90 & Up	0	0	0	0	0	0
Total	43	7	50	$ 1,059,108	$ 166,175	$ 1,225,283

Age Distribution

Average Benefit
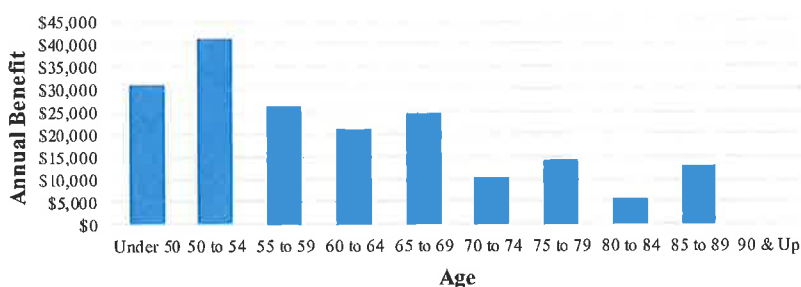
SUMMARY OF RETIRED MEMBERS
As of August 31, 2016

Beneficiaries

Age	Number				Annual Benefit				
	Male	Female	Total		Male		Female		Total
Under 50	1	2	3	$	33,266	$	52,028	$	85,294
50 to 54	0	0	0		0		0		0
55 to 59	0	1	1		0		41,387		41,387
60 to 64	0	3	3		0		45,989		45,989
65 to 69	0	9	9		0		211,913		211,913
70 to 74	2	8	10		13,220		91,158		104,378
75 to 79	1	8	9		12,601		94,438		107,039
80 to 84	1	8	9		14,043		113,428		127,471
85 to 89	0	5	5		0		31,302		31,302
90 & Up	2	4	6		7,974		37,035		45,009
Total	7	48	55	$	81,104	$	718,678	$	799,782

Age Distribution

Average Benefit
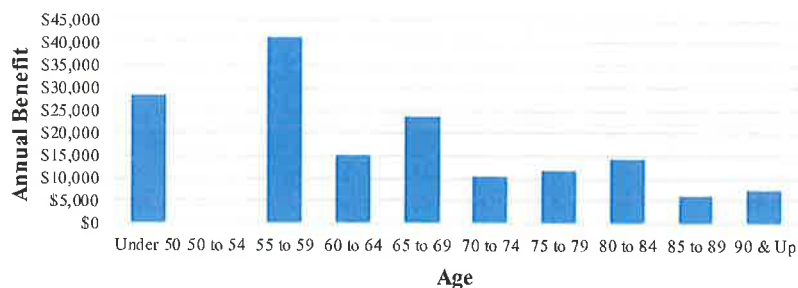
SUMMARY OF RETIRED MEMBERS
As of August 31, 2016

DROP Members

Age	Number			Annual Benefit		
	Male	Female	Total	Male	Female	Total
Under 51	3	0	3	$ 148,095	$ 0	$ 148,095
51	0	1	1	0	45,040	45,040
52	0	0	0	0	0	0
53	6	0	6	302,451	0	302,451
54	5	0	5	225,426	0	225,426
55	4	1	5	159,112	48,471	207,583
56	8	0	8	379,528	0	379,528
57	5	1	6	205,740	48,087	253,827
58	6	1	7	256,507	65,933	322,440
59	2	0	2	77,848	0	77,848
60 & Up	2	0	2	89,471	0	89,471
Total	41	4	45	$ 1,844,178	$ 207,531	$ 2,051,709

Age Distribution
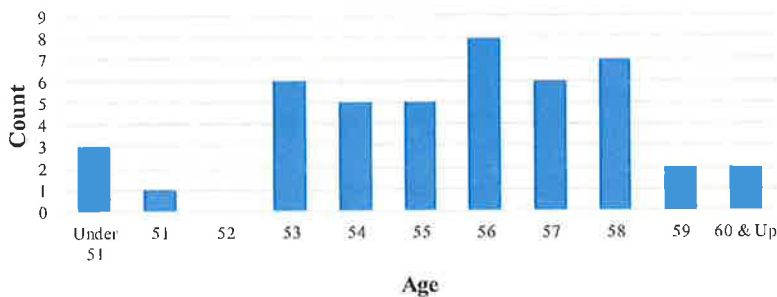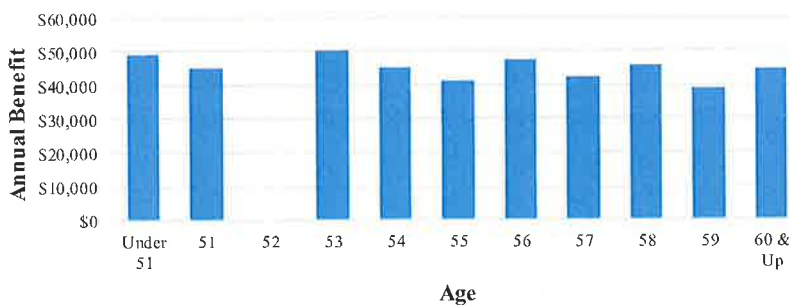
Average Benefit

APPENDIX B

SUMMARY OF BENEFIT PROVISIONS

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%.

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%.

Partial Annuity

Eligibility – all plans: Normal Retirement Age and 10 years of service until eligible 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.

Deferred Annuity (Vested Termination)

Eligibility – all plans: 10 years of service.

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.

August 31, 2016 Actuarial Valuation   City of Lincoln Police and Fire Pension Fund

49

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.

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.

Amount of Pension: Spouse beneficiary paid at Duty Related Disability rate until remarriage or death. Upon spouse's remarriage or death, dependent children paid prorate at the 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:	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 – Remainder Refund

Eligibility – all plans:	Employed on January 1, 1992 or hired between January 1, 1992 and March 31, 2010.
Amount of Benefit:	Upon retirement, the member's balance of contributions plus accrued interest is reduced each month by a level amount equal to the member's balance divided by the expected number of payments. Once both the member and, if applicable, their joint annuitant have died, the remaining balance is paid as a lump sum to a designated beneficiary.

The expected number of monthly payments is established in the Internal Revenue Code in effect April 1, 2010 and depends on the age of the retiree at retirement, or the combined ages of the retiree and joint annuitant.

Non-Vested Termination

Eligibility – all plans:	Termination of employment and no pension is or will become payable.
Amount of Benefit:	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. Members participating in Old Plan B or Old Plan C contribute until reaching 26 years of service.

Deferred Retirement Option Plan (DROP)

Eligibility for the DROP:

Members of Plan 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 Plan 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) until the employee enters the DROP. No contributions are made on the payroll of DROP members.

DROP Period:

Maximum of 5 years.

13th Check

For members who have been receiving a pension for at least 12 months, a lump sum payment will be made on each September 1. The base amount of the lump sum payment is $750 effective 9/1/1994. The base amount is increased each year by the lesser of 3.0% and the annual the percentage increase in the CPI-U. Members who retired with at least 21 years of service and members who were granted a duty disability pension will receive the full payment amount. All other members who have been receiving a pension for at least 12 months (and their beneficiaries) will receive a partial payment. The payment for these members is determined on a pro-rata basis according to their service.

APPENDIX C

ACTUARIAL ASSUMPTIONS AND METHODS

Investment Return: 7.50% compounded annually, net of investment expenses. (effective August 31, 2016)

Inflation Rate: 2.50% compounded annually

Salary Increases: These assumptions are used to project current salaries to those upon which benefits will be based.

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%	3.6%	6.6%
30	3.0%	3.1%	6.1%
35	3.0%	2.8%	5.8%
40	3.0%	1.5%	4.5%
45	3.0%	1.1%	4.1%
50	3.0%	0.5%	3.5%
55	3.0%	0.5%	3.5%

Payroll Growth: 3.0% per year

Mortality:

Actives and Inactive
Vested Members: RP-2000 Employees mortality table with generational mortality improvement using Scale AA.

Healthy Retirees
and Beneficiaries: RP-2000 Healthy Annuitant mortality table with generational mortality improvement using Scale AA.

Disabled Retirees: RP-2000 Disabled Retiree mortality table with generational mortality improvement using Scale AA.

Termination:

		% Separating within Next Year	
Sample Ages	Years of Service	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%

Disability:

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%

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

Retirement and DROP Entry:

		Rates of Retirement and/or DROP Entry			
	Old Plan	Plan A		Plan B & C	
Ages		Police	Fire	Police	Fire
50	35%	15%	10%	5%	6%
51	15%	15%	10%	5%	6%
52	15%	15%	10%	5%	6%
53	15%	25%	20%	25%	24%
54	15%	35%	20%	35%	35%
55	40%	35%	20%	35%	35%
56	15%	25%	20%	25%	18%
57	15%	10%	20%	10%	30%
58	15%	10%	20%	10%	42%
59	15%	10%	15%	10%	15%
60	100%	10%	15%	10%	15%
61	100%	10%	15%	10%	15%
62	100%	35%	35%	35%	35%
63	100%	20%	25%	20%	15%
64	100%	20%	25%	20%	15%
65	100%	100%	100%	100%	100%

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 to 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) until the employee enters the DROP or otherwise exits the Plan.

ACTUARIAL METHODS

Funding Method

Under the Entry Age Normal (EAN) cost method, the actuarial present value of each member's projected benefits is allocated 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 (UAAL) represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is calculated each year and reflects experience gains/losses.

The UAAL is amortized, as a level-percent of payroll, using a layered approach. The August 31, 2016 UAAL serves as the initial base and is amortized over a closed 28-year period (closed 30-year period beginning on August 31, 2014). For each valuation subsequent to August 31, 2016, annual net experience gains/losses will be amortized over a new, closed 20-year period. Subsequent plan amendments or changes in actuarial assumptions or methods that create a change in the UAAL will be amortized over a demographically appropriate time period selected by the Plan Administrator at the time that the change is reflected in the annual actuarial valuation.

Asset Valuation Method

The actuarial value of assets is based on a five-year smoothing method and is determined by spreading the effect of each year's investment return in excess of or below the expected return. The Market Value of assets as of the valuation date is reduced by the sum of the following:

i.   80% of the return to be spread during the first year preceding the valuation date,

ii. 60% of the return to be spread during the second year preceding the valuation date,

iii. 40% of the return to be spread during the third year preceding the valuation date, and

iv. 20% of the return to be spread during the fourth year preceding the valuation date.

The return to be spread is the difference between (1) the actual investment return on Market Value and (2) the expected return on Actuarial Value.

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 a lump sum payment.

Normal Cost

The actuarial present value of retirement Plan benefits allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability

The difference between actuarial accrued liability and the valuation assets. Sometimes referred to as "unfunded actuarial liability" or "unfunded accrued liability".

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.

Appendix D

Metro Area Transit Hourly Employees
Retirement Plan Information

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LB 759 REPORTING FORM (HOURLY PLAN)
Metro Area Transit Hourly Employees' Pension Plan

1.   Plan Information for Years 2013 Through Current Plan Year 2017

		2013	2014	2015	2016	2017
1a.	Funding Status	68%	76%	76%	72%	71%
1b.	Assumed rate of return	7.00%	7.00%	7.00%	6.75%	6.75%
1c.	Actual investment return	11.90%	14.20%	6.10%	-1.50%	5.80%
1d.	Member and Employer contribution rates -- percentage	6.00% for Member, 6.50% Employer	6.00% for Member, 6.50% Employer	6.00% for Member, 6.50% Employer	6.00% for Member, 6.50% Employer	6.00% for Member, 6.50% Employer*
1e.	Normal cost - percentage	7.02%	7.28%	7.39%	7.35%	7.39%
1f.	Actuarially required contribution (ARC) - percentage & dollar amount	85.70% & $847,072	84.30% & $833,212	88.30% & $847,243	78.30% & $901,256	N/A & $958,333
1g.	Actuarially required contribution (ARC) - actual dollars contributed & percentage of ARC actually contributed	$726,238 & 85.74%	$702,245 & 84.28%	$748,129 & 88.30%	$705,467 & 78.28%	N/A

*Employer contribution rate increased to 7.5% effective 9/1/2017 and employer made a onetime lump-sum contribution to the Plan equal to 1% of the total of the active Plan participants' compensation for the period beginning on July 1, 2016 and ending on August 31, 2017, making the effective employer contribution rate 7.5% since July 1, 2016.

2   Circumstances That Led to Under Funding the Plan:

In prior periods, investment returns did not meet the return assumptions. In addition, due to lower capital market expectations, the interest rates used to value liabilities have been decreased several times in the last nine years (see below) and by 25 basis points in the valuation for 2016, which was also the interest rate used for the 2017 valuation.

    2009   reduced from 8% to 7.5%
    2015   reduced from 7.5% to 7.0%
    2016   reduced from 7.0% to 6.75%

3.   Changes in Actuarial Methods/Assumptions:

There were no changes in the actuarial methods or assumptions since the prior valuation.

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

The Hourly Pension Committee members have amended the plan document to

increase the employer and employee contribution rates. The employer contribution rate increased from 6.5 % to 7.5%. The employee contribution rate increased from 6% to 7%. For those employees hired on or after January 1, 2018, the Pension Committee also (i) changed the normal retirement date from age 65 to the age when the employee reaches full retirement for purposes of receiving Social Security benefits, and (ii) eliminated the early retirement option. The benefit factor percentage used in the calculation of the monthly benefit for those employees hired on or after January 1, 2018, was also changed by the Pension Committee to a tiered structure based on years of service in lieu of the current method of using the same benefit factor percentage regardless of years of service. In addition, a one-time lump sum contribution was made to the Plan in an amount equal to 1% of the total of the active Plan participants' compensation for the period beginning on July 1, 2016 and ending on August 31, 2017, making the effective employer contribution rate 7.5% since July 1, 2016.. The Pension Committee believes all these changes will address the funding issue. The Pension Committee is comprised of bargaining unit employees, management representatives and a Metro Transit Board member. The actuarial assumptions are reviewed annually to give committee members a data regarding plan performance. The Committee meets a minimum of once per year to review plan performance, assumptions, asset allocations and potential plan changes. The interest rate (the assumed actuarial rate of return) used on the actuarial report remained the same in 2017 from 2016.

In addition, to reflect the increasing average age of the Plan participants, the asset allocation has been modified to reduce the volatility of returns. To increase net investment returns, the entire portfolio has been indexed, reducing Plan investment management fees from 71 basis points to 9 basis points.

5. **Recent orOngoing Negotiations:**

The collective bargaining agreement between Metro and the Transport Workers Union was renegotiated during 2017. Pension funding, is one of the major components of these negotiations. Past and future negotiations include reopeners in each year in order to address required matters that might arise prior to expiration of the bargaining agreement. As previously mentioned, the primary changes to the Plan resulting from the renegotiations of the collective bargaining agreement were increases in the employer and employee contribution rates, and, for those employees hired on or after January 1, 2018, the (i) changing the normal retirement date from age 65 to the age when the employee reaches full retirement age for purposes of receiving Social Security benefits, and (ii) eliminated the early retirement option.

6. **Most Recent Actuarial Experience:**

There has not been an experience study done in recent years. Due to the very small size of the participant population, it has been felt that preparation of a formal experience study would not add credible insight in our demographic assumptions. Rather, from time to time we have prepared short analysis of prior termination and retirement rates, as well as anecdotal analysis of compensation increase assumptions and mortality table assumptions and have modified actuarial assumptions as was felt appropriate.

7. **Current Assumed Rate of Return:**

The current assumed rate of return is 6.75%. This is the same rate that was used in 2016. There are no current plans to review the rate in the upcoming year.

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

Attached please find the most recent valuation dated January 1, 2017. The valuations are completed every year with the next one due January 1, 2018.

Milliman

Metro Area Transit Hourly Employees' Pension Plan

Actuarial Valuation as of January 1, 2017

Prepared by:

Gregg Rueschhoff, A.S.A.
Principal and Consulting Actuary

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May 16, 2017

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May 16, 2017

Retirement Committee
Metro
2222 Cuming Street
Omaha, NE 68102

Re: **January 1, 2017 Actuarial Valuation Report**

Dear Committee Members:

At your request, we have conducted our actuarial valuation of the Metro Area Transit Hourly Employees' Pension Plan as of January 1, 2017. The major findings of the valuation are contained in this report. Changes in plan provisions, actuarial assumptions, or methods from the prior valuation are noted in the report.

In preparing our report, we relied, without audit, on information (some oral and some written) supplied by Metro. This information includes, but is not limited to, plan provisions, member data and financial information. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

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 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 hereby further certify that all costs, liabilities, rates of interest and other factors for the System have been determined on the basis of actuarial assumptions and methods which are internally consistent, individually reasonable (taking into account the experience of the Plan and reasonable expectations of future experience); and which, in combination, offer our best estimate of anticipated experience under the Plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions. The Retirement Committee has the final decision regarding the appropriateness of the assumptions and has adopted them as disclosed in this report.

Milliman's work is prepared solely for the internal business use of the Plan Sponsor and the Plan's Trustees. 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 Plan Sponsor may provide a copy of Milliman's work, in its entirety, to the Plan Sponsor'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 Plan Sponsor may distribute certain work product that Milliman and the Plan Sponsor mutually agree is appropriate as may be required by the Pension Protection Act of 2006.

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.

I, Gregg Rueschhoff A.S.A., am a member of the American Academy of Actuaries and an Associate of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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

Sincerely,
MILLIMAN, Inc.

Gregg Rueschhoff, A.S.A.
Principal and Consulting Actuary
Member of the American Academy of Actuaries
Enrolled Actuary No. 17-4349

Table of Contents

VALUATION SUMMARY

REPORT SUMMARY

An actuarial valuation has been prepared as of January 1, 2017 to determine the range of annual contributions required to fund benefits of the Plan. The actuarial valuation will also be used to evaluate the funding status of the Plan. The results of the actuarial valuation are summarized in this Report. This Report Summary will focus attention on our principal recommendations and observations.

A. Funding Recommendation

Recommended Annual Contribution

The recommended annual contribution is displayed for the current and prior actuarial valuations:

	January 1, 2016	January 1, 2017
Recommended Annual Employer Contribution	$ 901,256	$ 958,333
Annual Covered Compensation	11,390,621	11,497,480
Recommended Annual Contribution	7.91%	8.34%

B. Plan Funding Status — Present Value of Accumulated Plan Benefits

The value of plan assets, the present value of vested accrued benefits, and the present value of accrued benefits are displayed and compared on the Plan Financial Information page of this report. Plan assets are valued at market value.

Summarizing from the Plan Financial Information display:

	Values as of January 1, 2017	Funded Ratio 2016	Funded Ratio 2017
Market Value of Plan Assets	$21,582,553	--	--
Actuarial Present Value:			
Vested Accrued Benefits	30,033,602	72%	72%
Accrued Benefits	30,281,822	72%	71%

The interest rate used to determine the actuarial present value of vested and accrued benefits is 6.75%.

REPORT SUMMARY (Continued)

C. **Factors Affecting the Actuarial Valuation Results**

Covered Employees

Ages of Active Participants — The average age of active participants in the valuation was 53.3 for the current actuarial valuation and 53.1 for the prior actuarial valuation.

Reported Compensation — Total covered pay for active participants decreased from $11,390,621 in 2016 to $11,497,480 in 2017. The number of active participants was 208, the same as last year.

Average Salary — The average covered salary of active participants included in the valuation increased at an annualized rate of 0.94% per year as compared to an assumed annual salary increase assumption of 4.0%. The average annual covered salary reported for 2016 was $54,763 and $55,276 for 2017.

D. **Changes in Plan Provisions and Methods**

Plan Provisions and Methods used were the same as those used in the 2016 valuation.

E. **Changes in Actuarial Assumptions**

None. Please see page 11 for the full detail of the actuarial assumptions used.

ANNUAL PLAN CONTRIBUTION

The primary objective of preparing an actuarial valuation is to determine the amounts required to fund plan benefits in an orderly and responsible manner. Because the plan is a government plan, minimum annual funding requirements and maximum tax deductible limits established by ERISA are not applicable. The procedures followed to determine the recommended annual contribution is described below.

Recommended Contribution

The recommended contribution includes two components:

- *Annual Normal Cost* — The portion of total plan costs assigned to the current plan year by the Actuarial Cost Method.

- *Amortization of Unfunded Accrued Liability* — Level payment (determined as a level percentage of payroll) required to amortize the initial Unfunded Accrued Liability (UAL) over 30 years beginning January 1, 2012.

| | Plan Year Beginning January 1, | |
	2016	2017
Recommended Contribution:		
1. Annual Normal Cost		
Benefit Normal Cost	$ 837,095	$ 849,749
Administrative Expenses	35,000	35,000
Investment Expenses	18,740	17,266
Total	$890,835	$902,015
2. Annual Payment Required to Amortize Unfunded Accrued Liability	664,434	714,879
3. Annual Contribution (1 + 2)	1,555,269	1,616,894
4. Interest to Plan Year End	52,490	54,570
5. Estimated Employee's Contributions Adjusted with Interest to End of Year	706,503	713,131
6. Annual Recommended Contribution at End of Plan Year (3 + 4 - 5)	901,256	958,333
7. Covered Payroll	11,390,621	11,497,480
8. Contribution as a Percent of Payroll (6) ÷ (7)	7.91%	8.34%

VALUATION DETAIL

ACTUARIAL VALUE OF ASSETS

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book values of assets, representing the cost of investments, may be the best measure of the System's <u>ongoing</u> 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. The specific technique follows:

Step 1: Determine the expected value of plan assets at the current valuation date using the actuarial assumption for investment return and the actual receipts and disbursements of the fund for the previous 12 months.

Step 2: Subtract the expected value determined in Step 1 from the total market value of the Fund at the current valuation date.

Step 3: Multiply the difference between market and expected values determined in Step 2 by 25%.

Step 4: Add the expected value of Step 1 and the product of Step 3 to determine the actuarial value of assets.

1.	Actuarial Value of Assets as of January 1, 2016	$	21,663,121
2.	Actual Receipts/Disbursements		
	a. Total Contributions		1,356,445
	b. Benefit Payments (including expenses)		(1,790,009)
	c. Net Change		(433,564)
3.	Expected Investment Earnings @ 7.0%		1,501,244
4.	Expected Actuarial Value of Assets as of January 1, 2017		22,730,801
5.	Market Value as of January 1, 2017		21,582,553
6.	Difference Between Market and Expected Values		(1,148,248)
7.	Actuarial Value of Assets as of January 1, 2017 (4 + 25% of 6, limited to 120% of 5)	$	22,443,739

VALUATION RESULTS

A summary of the results of the actuarial valuations performed as of January 1, 2016 and January 1, 2017 is displayed below:

	Plan Year Beginning January 1	
	2016	**2017**
Value of Plan Assets		
Cash & Equivalents	$ 479,658	$ 525,756
U. S. Government Securities and Treasury Bills	0	0
Convertible Securities	1,025,491	1,072,506
Corporate Bonds	7,929,555	8,131,480
Common Stock	11,382,466	11,822,794
Payable Transfer to Salaried Plan	0	0
Unsettled Trades	5,212	30,017
Receivable Transfer (contributed to wrong account)	0	0
Contribution Receivable	0	0
Market Value of Plan Assets	20,822,382	21,582,553
Actuarial Value of Plan Assets	21,663,121	22,443,739
Unfunded Accrued Liability		
1. Accrued Liability	$32,548,681	$33,896,866
2. Actuarial Value of Plan Assets	21,663,121	22,443,739
3. Unfunded Accrued Liability	10,885,560	11,453,127
Annual Normal Cost (including expenses)	$890,835	$902,015

ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS

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.

		January 1, 2016	**January 1, 2017**
1.	Actuarial Present Value of Vested Accumulated Plan Benefits		
	Retirees and Beneficiaries of Deceased Participants	$17,494,414	$18,253,118
	Vested Terminated Participants	806,514	919,080
	Active Participants	10,433,357	10,861,404
	Total	28,734,285	30,033,602
2.	Actuarial Present Value of Non-Vested Accumulated Plan Benefits for Active Participants	$ 212,483	$ 248,220
3.	Actuarial Present Value of Accumulated Plan Benefits (1 + 2)	28,946,768	30,281,822
4.	Market Value of Assets	20,822,382	21,582,533
5.	Funded Ratio: Vested Accumulated Benefits	72%	72%
6.	Funded Ratio: Total Accumulated Benefits	72%	71%
7.	Interest Rate	6.75%	6.75%

The actuarial present value of vested and non-vested benefits has been determined based on the actuarial assumptions described on Page 11.

Additional background regarding the Plan Financial Information:

1.   Plan assets are valued at their market value.

2.   A comparison of the actuarial present value of accrued benefits with the value of assets provides a measure under an active plan of the progress being made toward funding the benefits which are accruing, according to measurement methods reasonably consistent for all plans. Other actuarial calculations are made to determine year-to-year contribution levels.

3.   The actuarial values which would apply in the event the plan terminated would differ from those shown, for many reasons including, but not necessarily limited to, the following:

     a.   Certain plan provisions which may apply in the event of partial or complete plan termination are not reflected in the benefits valued nor in the actuarial assumptions employed.

     b.   Vested benefits may be limited with reference to the value of the assets of the fund.

     c.   Actuarial computations under actuarial assumptions other than those specified herein may be required as a basis for determining plan benefits in the event of a partial or complete termination of the plan.

     d.   Benefits deemed already earned may not be the same as those underlying the actuarial values shown.

4.   The benefits reflected above have been determined on the basis of the plan provisions in effect on the respective dates. Benefits payable at retirement, death, disability, and vested termination of employment are included, to the extent that they are deemed to have accrued as of the computation dates.

VALUATION BASIS

ACTUARIAL METHODS

Actuarial Cost Method

The costs in this report were prepared using the Individual Entry Age Normal cost method.

Under this Method, the Normal Cost is computed as the dollar amount which, if paid from the earliest time each participant joined the plan (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the plan. The normal cost for the plan is determined by summing the normal costs of all participants.

The Actuarial Accrued Liability under this method at any point in time is the theoretical amount of the fund that would have been accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date). The Unfunded Actuarial Liability is the excess of the Actuarial Accrued Liability over the plan assets actually on hand on the valuation date.

Under this method, experience gains or losses, i.e., decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions adjust the unfunded actuarial liability.

As experience develops with the plan, so-called actuarial gains and actuarial 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. All gains and losses, including those from the interest assumption, affect the plan's unfunded accrued liability and are amortized over future years.

The annual accrued liability payment is the portion of the unfunded accrued liability that is amortized for the year.

Asset Valuation

The value of plan assets is based on a smoothing technique that will spread out the effect of volatility in the rate of investment return. A detailed description of the asset valuation method is provided on page 4.

ACTUARIAL ASSUMPTIONS

Interest Rate
6.75% compounded annually

Salary Scale
Salaries were assumed to increase at an annual rate of 4.0% compounded annually following the valuation date.

Mortality Rates
RP 2000 with generational improvements.

Withdrawal Rates
Based on a table of annual withdrawal rates illustrated below:

	Rate of Withdrawal	
Age	Year 1 & 2	Years 3+
20	15%	12%
25	15	12
30	12	11
35	10	10
40	8	8
45	8	6
50	8	4
55	8	3

Disability Rates
Based on Table 5, Period 2 of the Society of Actuaries 1952 Disability Study.

Retirement Rates

	Rates of Retirement	
Age	<30 YOS	>30 YOS
58	5%	20%
59	5	20
60	5	20
61	5	20
62	25	25
63-64	25	25
65-66	50	50
67	100	100

Expenses
$35,000 for administrative expenses, plus 0.08% of Market Value of Assets for investment expenses.

SUMMARY OF PLAN PROVISIONS

Original Effective Date
July 1, 1979.

Plan Year
January 1 through December 31.

Participation
First day of the month next following completion of 120 days of service.

Definitions

Year of Service
A Year of Service generally means a twelve consecutive month period beginning with the person's employment date during which he has worked not less than 1,000 hours.

Final Average Annual Compensation
Average Monthly Compensation paid during the five highest paid years out of the last ten years of employment preceding cessation of employment.

Compensation
Regular compensation plus overtime but excluding reimbursed expenses, bonuses, commissions, deferred compensation and other extra or unusual compensation.

Age and Service Requirements for Benefits

Normal Retirement
Age 65.

Early Retirement
Age 58 with 20 or more years of service or any age with 30 or more years of service.

Late Retirement
The first of any month after normal retirement date.

Vesting
Based on the following schedule:

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

Spouse's Benefits
Married and completed ten years of service.

Benefits

Normal Retirement
A monthly retirement income equal to 1.40% of final average monthly compensation multiplied by years of credited service.

Early Retirement
An amount computed as a normal retirement benefit based on credited service and compensation to the early retirement date and first payable at normal retirement date or payable early with reduction of 1/2% for each month that early retirement precedes normal retirement. There is no reduction if the participant has 30 or more years of service at early retirement date.

Late Retirement
Calculated in the same manner as normal retirement benefit.

Spouse's Benefit
The vested accrued benefit the participant would have received if he terminated employment, deferred his benefit to his earliest retirement date, and elected the 100% joint and survivor annuity option.

Vested Benefits
A deferred retirement income, based on years of service and final average compensation at termination date. Reduced benefits may be started early in specified cases. A lump sum settlement can be requested.

Forms of Annuity

Normal
Monthly payments for life with refund at death of the excess, if any, of the participant's contributions over the payments received.

Optional
a.   Ten years certain and life annuity, or

b.   Contingent annuity with either 100%, 66 2/3% or 50% of the annuity being payable to spouse for life after the participant's death (the 100% contingent annuity option is automatic for married participants unless another option is elected.)

Source of Funds

Participant Contributions
6.00% of payroll.

Employer Contributions
6.50% of payroll.

Medium of Financing
The benefits will be funded under a self-administered trust with a corporate trustee.

PARTICIPANT CENSUS DATA

AS OF JANUARY 1, 2017

ACTIVE PARTICIPANTS INCLUDED IN VALUATION

Age at Valuation Date	Male	Female	Total
Under 20	0	0	0
20 - 24	0	0	0
25 - 29	2	0	2
30 - 34	8	1	9
35 - 39	8	3	11
40 - 44	17	1	18
45 - 49	24	7	31
50 - 54	26	4	30
55 - 59	37	6	43
60 - 64	48	7	55
65 & Over	8	1	9
	178	30	208

NON-ACTIVE PARTICIPANTS INCLUDED IN VALUATION

		Number	Annual Benefit
Retired Participants or Beneficiaries		181	$1,878,288
Vested Terminated Participants		43	173,136
	Total	224	$2,051,424

Appendix E

Omaha Civilian Employees Retirement Plan Information

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Finance Department

Omaha/Douglas Civic Center
1819 Farnam Street, Suite 1004
Omaha, Nebraska 68183-1004
(402) 444-5416
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Stephen B. Curtiss
Finance Director

Allen Herink
City Comptroller

City of Omaha
Jean Stothert, Mayor

October 13, 2017

Senator Mark Kolterman, Chairperson
Nebraska Retirement Systems Committee
PO BOX 94604
State Capitol
Lincoln, NE 68509-4604

Dear Senator Kolterman:

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 attached table below compares the actuarial data for plan years 2013 through current plan year 2017.

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 are unchanged from the prior valuation. In an effort to improve the condition 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. Actuarial projections were done in 2014 concerning these changes. We have not provided these projections since they are several years old, but we certainly can if that is the Committee's wish.

The summary of some of the changes made for the 2013 to 2017 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.

The City has commenced negotiations with the civilian bargaining groups for 2018 and beyond. At this time, it is unlikely that new labor agreements will be in effect before the start of 2018. In addition, it is not anticipated that these labor agreements will address further pension changes/reform.

As of January 1, 2016, the system had a market value of $232 million in assets and a funded ratio of 56%. It had a funded ratio of 56% in 2015 and 54% in 2014. The actuarial contribution to the system has improved significantly, resulted in the contribution exceeding the actuarial required contribution by 1.324% after having a shortfall of 4.874% in 2015 and 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 projections show the system will reach fully funded status in about 25 years. The assumed rate of return for the system is 8%. An Actuarial Experience study is being done in 2017 and the rate of return will be reviewed.

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, 2016. The System's actuary is in the process of finalizing the Actuarial Valuation Report effective January 1, 2017. We would anticipate approval by the Board on October 18, 2017 and we will provide that report to you as soon as possible after approval. The Actuarial Experience Study that is being completed likely will not be finished and approved by the Board until December, 2017 or January, 2018.

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

Sincerely,

Allen Herink (by)

Allen R. Herink
City Comptroller

Enclosures

COERS EXHIBIT 1

ITEM	2013	2014	2015	2016	2017
Funding Status	54%	54%	56%	56%	55%
Assumed Rate of Return	8%	8%	8%	8%	8%
Actual Return	16.2%	5.3%	3.5%	10.2%	Pending
Net Assets (actuarial value)	$235,591,941	$240,342,815	$242,248,074	$243,516,453	$246,234,597
Unfunded Actuarial Accrued Liability	$200,678,468	$205,174,423	$188,911,964	$193,616,559	$197,537,024
Normal Cost (%)	$8,080,852 (13.73%)	$7,808,536 (13.231%)	$5,822,238 (9.881%)	$6,149,062 (9.843%)	$6,229,103 (9.721%)
Member Contribution Rate	10.075%	10.075%	10.075%	10.075%	10.075%
Employer Contribution Rate	11.775%	11.775%	18.775%	18.775%	18.775%
Actuarial Required Contribution	$15,783,086	$17,996,034	$15,342,579	$12,042,214	$12,519,770
Actuarial Rate of Contribution (ARC)	34.998%	38.454%	33.724%	27.526%	27.740%
Contribution Margin	-15.711%	-16.604%	-4.874%	1.324%	1.110%
Employer Actual Dollars Contributed	$7,216,050	$7,194,482	$12,326,643	$12,401,231	$12,779,968
% of ARC by Employer Contribution	46.09%	41.33%	71.82%	84.50%	108.36%

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CONSULTING, LLC

The experience and dedication you deserve

The City of Omaha
Employees' Retirement System

Actuarial Valuation as of
January 1, 2017

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CONSULTING, LLC
The experience and dedication you deserve

October 6, 2017

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

RE: January 1, 2016 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, 2017 for the plan year ending December 31, 2018. The major findings of the valuation are contained in this report. The benefit provisions and the actuarial assumptions are unchanged from the prior 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 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 Standards No. 67 and No. 68 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.

Board of Trustees
October 6, 2017
Page 2

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,

Patrice Beckham

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

TABLE OF CONTENTS

This report presents the results of the January 1, 2017 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 benefit provisions are unchanged from the prior valuation. The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2017. The unfunded actuarial liability (UAL) in the current valuation is $198 million, an increase of $4 million from last year's UAL of $194 million. As of January 1, 2017, 212 out of 1,197 active members are covered under the cash balance benefit structure, or about 18% of the active members.

The valuation results reflect net unfavorable experience for the past plan year as demonstrated by an unfunded actuarial liability that is higher than expected, based on the actuarial assumptions used in the January 1, 2016 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in an experience loss of $2.1 million. There was also a small experience loss on liabilities of $0.1 million. Based on the contribution rates in the bargaining agreements, the actual contributions during 2016 were slightly higher than the actuarial contribution rate. This decreased the unfunded actuarial liability by $1.0 million.

The System uses an asset smoothing method in the valuation process. As a result, the System's funded status and the actuarial contribution rate are based on the actuarial (smoothed) value of assets – not the pure market value. The estimated investment return, net of expenses, on the market value of assets during 2016 was 9.7%. Coupled with the deferred investment experience from the 2016 valuation, the rate of return on the actuarial value of assets was 7.1% for 2016. Because that rate is lower than the assumed 8.0% return, it generated an actuarial experience loss of $2.1 million. The actuarial value of assets exceeds the market value by $6.4 million or 2.7% of the market value. Actual market returns over the next few years will determine the rate at which the deferred investment loss is actually recognized. With the current deferred losses, a return of 11% on the market value of assets in 2017 would result in an 8% return on the actuarial value of assets.

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.

MEMBERSHIP

There were 1,197 active members in the 2017 valuation compared to 1,194 in the 2016 valuation, a 0.25% increase. The increase in the number of active members contributed to the increase in covered payroll of 2.7%. The following graph shows the number of active members in the valuation over the last ten years. The current active group is the highest number in the last 10 years. When the number of active members increases, it has a positive influence on the System's funding and contribution rate. While the normal cost rate is unaffected by the size of the membership, the UAL contribution rate is favorably impacted. The UAL is amortized assuming covered payroll will grow at 4.0% per year. If total payroll grows more

than 4.0%, the UAL payment is divided by payroll that is higher than expected, resulting in a lower UAL contribution rate.

Active Membership

ASSETS

As of January 1, 2017, the System had total funds of $239.8 million, when measured on a market value basis. This was an increase of $7.7 million from the prior year's value of $232.2 million, and represents an approximate rate of return, net of expenses, of 9.7%.

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, 2017. The rate of return on the actuarial value of assets was 7.1%, resulting in an actuarial loss of $2.1 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, 2016	$	232.2	$	243.5
City and Member Contributions	+	19.6	+	19.6
Benefit Payments and Refunds	-	33.7	-	33.7
Investment Gain/(Loss)	+	21.7	+	16.8
Net Assets, January 1, 2017		239.8		246.2
Estimated Rate of Return		9.7%		7.1%

The net investment loss that is not recognized as of January 1, 2017 is $6.4 million, compared with $11.3 million of unrecognized loss in last year's valuation. The unrecognized losses of $6.4 million will be reflected in the determination of the actuarial value of assets for funding purposes over time, to the extent they are not offset by future gains. This means that earning the assumed rate of investment return of 8.0%

per year (net of investment expenses) <u>on a market value basis</u> will result in small actuarial losses on the actuarial value of assets in the future.

The unrecognized investment losses represent 2.7% of the market value of assets (compared to deferred losses equal to 4.9% of the market value in the 2016 valuation). If the deferred losses were recognized immediately in the actuarial value assets, the unfunded actuarial liability would increase by $6.4 million to $203.9 million, the funded ratio would decrease to 54.0%, the actuarial contribution rate would increase from 27.740% to 29.428%, and the contribution margin would decrease to 0.578%.

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

	January 1 ($M)						
	2017	2016	2015	2014	2013	2012	2011
Actuarial Value of Assets	$246	$244	$242	$238	$236	$237	$240
Market Value of Assets	$240	$232	$239	$240	$223	$215	$232
Actuarial Value/Market Value	103%	105%	101%	99%	106%	110%	103%
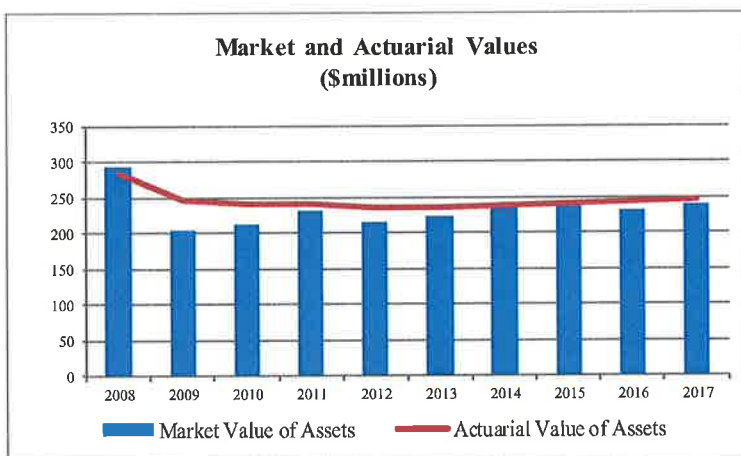
Market and Actuarial Values ($millions)

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 benefits provided by the System can be found in the liabilities portion of the valuation balance sheet (see Exhibit 3).

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, 2017, the actuarial liability for the System was $443.8 million.

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

	As of January 1	
	2017	2016
Actuarial Liability (AL)	$443,771,621	$437,133,012
Assets at Actuarial Value	$246,234,597	$243,516,453
Unfunded Actuarial Liability (AVA)	$197,537,024	$193,616,559
Funded Ratio (Actuarial Value)	55%	56%
Assets at Market Value	$239,825,244	$232,157,235
Unfunded Actuarial Liability (MVA)	$203,946,377	$204,975,777
Funded Ratio (Market Value)	54%	53%

Note that the funded ratio does not indicate whether or not the System assets are sufficient to settle benefits earned to date. The funded ratio by itself also may not be indicative of future funding requirements.

EXPERIENCE FOR THE 2016 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 net experience was unfavorable (a higher unfunded actuarial liability than expected). There was an actuarial loss for 2016 of $2.1 million on the actuarial value of assets and an actuarial loss of $0.1 million on liabilities.

The change in the unfunded actuarial liability between January 1, 2016 and January 1, 2017 is shown below (in millions):

Unfunded Actuarial Liability, January 1, 2016	194
• Expected change in UAL	3
• Contribution above actuarial rate	(1)
• Investment experience	2
• Demographic experience	0
• Other experience	0
Unfunded Actuarial Liability, January 1, 2017	198

CONTRIBUTION LEVELS

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

(1) Normal cost (which is the allocation of costs attributed to the current year's membership service) and,
(2) 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 9.721% of pay, or $6.2 million this year. The normal cost rate represents the long-term cost of the benefit structure for the current active members.

The System's total actuarial contribution rate (payable as a percentage of member payroll) increased by 0.214% of pay, to 27.740% on January 1, 2017, from 27.526% on January 1, 2016. The primary components of the change in the actuarial contribution rate are shown in the following table:

	Rate	
Total Actuarial Contribution Rate, January 1, 2016	27.526	%
• Actuarial (Gain) / Loss - Investment Experience	0.195	
• Actuarial (Gain) / Loss - Demographic Experience	0.006	
• Contributions Less Than Actuarial Rate	(0.093)	
• Change in Normal Cost Rate	(0.122)	
• Payroll Growth Lower than Expected	0.224	
• Other Experience	0.004	
Total Actuarial Contribution Rate, January 1, 2017	27.740	%

As the table above shows, the actuarial contribution rate increased from 27.526% to 27.740%. There was no single factor that had the most significant impact on the actuarial contribution rate. For the current valuation, the total contribution rate for 2017 is 27.740% of pay (9.721% normal cost + 18.019% UAL payment). The scheduled contributions for the year are 28.850%, resulting in a contribution margin of 1.110%.

COMMENTS

As of January 1, 2017, 212 out of 1,197 active members are covered under the cash balance benefit structure, or about 18%. Since cash balance members make up only a small portion of the active membership, the group's impact on this year's valuation results is minimal. It will take many years before the cash balance plan design has a significant impact on the system's liabilities and costs. We expect to continue to see growth in the number of actives covered by the cash balance benefit structure. However, the majority of the system's liabilities will continue to reside with members in the legacy benefit structure (final average pay plan) for many years.

The results of this valuation indicate that the fixed contribution rates in the current bargaining agreements is 1.110% higher than the actuarial contribution rate. Given the volatility inherent in investment returns from year to year and the related impact such volatility will have on the actuarial contribution rate from year to year, the contribution margin this year could easily revert to a contribution shortfall in future

years, depending on actual experience. Given that fact and the current funded status of the System, we strongly recommend that no reduction to the current contribution rates occur.

The return on the market value of assets in 2016 was 9.7%, which decreased the deferred investment losses that existed on January 1, 2016 from $11.3 million to $6.4 million. The funded ratio of the system, on a market value basis, is 54% in the January 1, 2017 actuarial valuation. While the System's financial health is expected to improve in future years due to benefit and contribution changes, the impact on the System's long-term funding cannot be quantified without performing an open group projection of future valuation results. Such analysis was not performed because it is outside the regular scope of services requested by the Board and a special request was not made.

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 $6.4 million. It is valuable to compare the key valuation results from the 2017 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	$443.8	$443.8
Asset Value	246.2	239.8
Unfunded Actuarial Liability	$197.6	$204.0
Funded Ratio	55.5%	54.0%
Normal Cost Rate	9.721%	9.721%
UAL Contribution Rate	18.019%	19.707%
Actuarial Contribution Rate	27.740%	29.428%
Employee Contribution Rate	10.075%	10.075%
City Contribution Rate	18.775%	18.775%
Contribution (Shortfall)/Margin	1.110%	(0.578%)

THE CITY OF OMAHA EMPLOYEES' RETIREMENT SYSTEM

PRINCIPAL VALUATION RESULTS

		January 1, 2017	January 1, 2016	% Chg
MEMBERSHIP				
1.	Active Membership			
	- Number of Members	1,197	1,194	0.3
	- Projected Payroll for Upcoming Fiscal Year	$70,873,306	$69,005,865	2.7
	- Average Projected Payroll	$59,209	$57,794	2.4
	- Average Attained Age	46.2	46.5	(0.6)
	- Average Entry Age	36.7	36.7	0.0
2.	Inactive Membership			
	- Number of Retirees / Beneficiaries	1,321	1,274	3.7
	- Number of Disabled Members	109	112	(2.7)
	- Number of Deferred Vested Members	76	77	(1.3)
	- Average Annual Benefit	$23,323	$22,923	1.7
	- Number of Participants Due a Refund	36	34	5.9
ASSETS AND LIABILITIES				
1.	Net Assets			
	- Market Value	$239,825,244	$232,157,235	3.3
	- Actuarial Value	246,234,597	243,516,453	1.1
2.	Projected Liabilities			
	- Retired Members and Beneficiaries	$299,946,476	$286,934,794	4.5
	- Disabled Members	20,580,283	21,777,439	(5.5)
	- Other Inactive Members	4,867,852	5,120,884	(4.9)
	- Active Members	167,961,895	170,989,512	(1.8)
	- Total Liability	$493,356,506	$484,822,629	1.8
3.	Actuarial Liability	443,771,621	437,133,012	1.5
4.	Unfunded Actuarial Liability	$197,537,024	$193,616,559	2.0
5.	Funded Ratios			
	Actuarial Value Assets / Actuarial Liability	55.49%	55.71%	(0.4)
	Market Value Assets / Actuarial Liability	54.04%	53.11%	1.8
CONTRIBUTIONS				
1.	Normal Cost Rate	9.721%	9.843%	(1.2)
2.	UAL Contribution Rate	18.019%	17.683%	1.9
3.	Total Actuarial Contribution Rate (1) + (2)	27.740%	27.526%	0.8
4.	Employee Contribution Rate	10.075%	10.075%	0.0
5.	City Contribution Rate Per Ordinance	18.775%	18.775%	0.0
6.	Contribution (Shortfall)/Margin (4) + (5) - (3)	1.110%	1.324%	(16.2)

EXHIBIT 1

SUMMARY OF FUND ACTIVITY

(Market Value Basis)

For Year Ended December 31, 2016

Assets at January 1, 2016	$	232,157,235
Receipts:		
City Contributions		12,779,968
Employee Contributions		6,866,102
Investment Earnings, Net of Expenses		21,748,400
Total Receipts		41,394,470
Disbursements:		
Benefit Payments		33,039,383
Refund of Contributions		681,256
Administrative Expenses		5,822
Total Disbursements		33,726,461
Assets as of December 31, 2016	$	239,825,244
Annualized Net Yield		9.7%

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, 2016	$	243,516,453
2.	Actual Receipts / Disbursements		
	a. Total Contributions		19,646,070
	b. Benefit Payments/Other		(33,720,639)
	c. Net Change		(14,074,569)
3.	Expected Actuarial Value of Assets as of January 1, 2017 $[(1) * 1.08] + [(2c) * 1.08^{\frac{1}{2}}]$		248,371,048
4.	Market Value of Assets as of January 1, 2017		239,825,244
5.	Excess of Market Value over Expected Actuarial Value as of January 1, 2017		(8,545,804)
6.	Preliminary Actuarial Value of Assets as of January 1, 2017 [(3) + 25% of (5)]		246,234,597
7.	20% Calculation of Corridor		
	a. 80% of (4)		191,860,195
	b. 120% of (4)		287,790,293
8.	Final Actuarial Value of Assets as of January 1, 2017 (6) but not < (7a) nor > (7b)	$	246,234,597
9.	Rate of Return on Actuarial Value of Assets		7.1%

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%
1/1/2016	232,157,235	243,516,453	104.89%
1/1/2017	239,825,244	246,234,597	102.67%
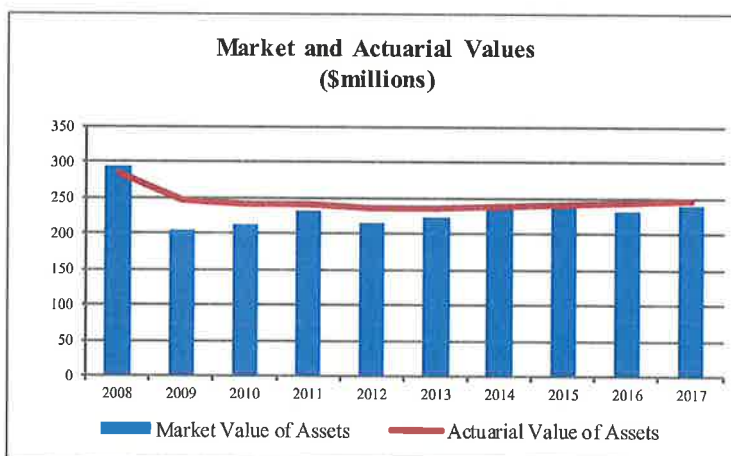
EXHIBIT 3

ACTUARIAL BALANCE SHEET

An actuarial statement of the status of the System in balance sheet form as of January 1, 2017 is as follows:

Assets

Current assets (actuarial value)	$	246,234,597
Present value of future normal costs		49,584,885
Present value of future employer contributions to fund unfunded actuarial liability		197,537,024
Total Assets	$	493,356,506

Liabilities

Present value of future retirement benefits for:

Active employees	$	151,945,606	
Retired employees, contingent annuitants and spouses receiving benefits		299,946,476	
Deferred vested employees		4,667,312	
Inactive employees due refunds		200,540	
Inactive employees – disabled		20,580,283	
Total			$ 477,340,217
Present value of future death benefits payable upon death of active members			2,664,396
Present value of future benefits payable upon termination of active members			13,351,893
Total Liabilities			$ 493,356,506

EXHIBIT 4

UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2017

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	$	493,356,506
2.	Present Value of Future Normal Costs		49,584,885
3.	Actuarial Liability (1) – (2)		443,771,621
4.	Actuarial Value of Assets		246,234,597
5.	Unfunded Actuarial Liability (3) – (4)	$	197,537,024
6.	Funded Ratio (4) / (3)		55.49%

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, 2016 is amortized over a closed amortization period of 25 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	Original Amount	January 1, 2017 Remaining Years	Year of Last Payment	Outstanding Balance as of January 1, 2017	Annual Contribution (mid-year)
2016 Initial UAL Base	$ 193,616,559	24	2041	$ 196,425,103	$ 12,690,171
2017 Experience Base	1,111,921	20	2037	1,111,921	80,766
Total				**$ 197,537,024**	**$ 12,770,937**

EXHIBIT 6

DEVELOPMENT OF
2017 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	$	6,229,103
(b)	Expected Payroll in 2017 for Current Actives	$	64,080,314
(c)	Normal Cost Rate		
	(a) / (b)		9.721%
2.	Unfunded Actuarial Liability at Valuation Date	$	197,537,024
3.	Unfunded Actuarial Liability Payment	$	12,770,937
4.	Total Projected Payroll for 2017	$	70,873,306
5.	Unfunded Actuarial Liability Payment as Percent of Pay (3) / (4)		18.019%
6.	Total Actuarial Contribution Rate (1c) + (5)		27.740%
7.	Employee Contribution Rate		10.075%
8.	City Contribution Rate		18.775%
9.	Contribution (Shortfall)/Margin (7) + (8) - (6)		1.110%

EXHIBIT 7

CALCULATION OF ACTUARIAL GAIN/(LOSS)
For Plan Year Ending December 31, 2016

Liabilities

1.	Actuarial liability as of January 1, 2016	$ 437,133,012
2.	Normal cost for 2016	6,149,062
3.	Interest at 8.00% on (1) and (2) to December 31, 2016	35,462,566
4.	Benefit payments during 2016	(33,720,639)
5.	Interest on benefit payments	(1,322,877)
6.	Expected actuarial liability as of December 31, 2016	$ 443,701,124
7.	Actuarial liability as of December 31, 2016	$ 443,771,621

Assets

8.	Actuarial value of assets as of January 1, 2016	$ 243,516,453
9.	Contributions during 2016	19,646,070
10.	Benefit payments during 2016	(33,720,639)
11.	Interest on items (8), (9) and (10)	18,929,164
12.	Expected actuarial value of assets as of December 31, 2016	$ 248,371,048
13.	Actual actuarial value of assets as of December 31, 2016	$ 246,234,597

Gain / (Loss)

14.	Expected unfunded actuarial liability (6) – (12)	$ 195,330,076
15.	Actual unfunded actuarial liability (7) – (13)	197,537,024
16.	Actuarial Gain / (Loss) (14) – (15)	(2,206,948)
17.	Actuarial Gain / (Loss) on Actuarial Assets (13) – (12)	(2,136,451)
18.	Actuarial Gain / (Loss) on Actuarial Liability (6) – (7)	$ (70,497)

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 loss on liabilities of 70,000 during the plan year ended December 31, 2016, and an actuarial loss on assets of $2,136,000. The total actuarial loss was $2,206,000. The major components of this net actuarial experience loss are shown below:

Liability Sources		Gain/(Loss)
Salary Increases	$	1,092,000
Mortality		(607,000)
Terminations		(584,000)
Retirements		(527,000)
Disability		(195,000)
New Entrants/Rehires		(121,000)
Conversions		613,000
Miscellaneous		259,000
Total Liability Gain/(Loss)	$	(70,000)
Asset Gain/(Loss)	$	(2,136,000)
Total Actuarial Gain/(Loss)	$	(2,206,000)

SECTION II

OTHER INFORMATION

In this section, we provide some historical information regarding the funding progress of the system. These exhibits retain some of the information that used to be required for accounting purposes and are included because they provide relevant information on the System's historical funding.

EXHIBIT 9

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending	Annual Required Contribution* (a)	Total Employer Contribution* (b)	Percentage of ARC Contributed* (b/a)
12/31/2005	$ 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	17,162,883	12,326,643	71.82%
12/31/2015	14,676,786	12,401,231	84.50%
12/31/2016	11,794,456	12,779,968	108.36%

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

EXHIBIT 10

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date[1]	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]
12/31/2006	$292,000,000	$361,700,000	$ 69,700,000	80.7%	$48,200,000	144.6%
12/31/2007	294,700,000	369,000,000	74,300,000	79.9%	54,000,000	137.6%
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%
1/1/2016	244,543,841	437,133,012	192,589,171	55.9%	69,005,865	279.1%
1/1/2017	246,234,597	443,771,621	197,537,024	55.5%	70,873,306	278.7%

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

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 (FAC):
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.

Year	Percent Contributed
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 five 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 five 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 with five 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 with five years of service, but the pension is reduced 8% per year for years prior to age 65.

Members who are hired on or after March 1, 2015 are eligible to retire after age 55 with ten years of service.

Service Retirement Pension:
Section 22 - 32

For members hired before March 1, 2015, 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.

For members hired on or after March 1, 2015, the system shall establish and maintain a "cash balance account" for each employee. The cash balance account shall be equal to the sum of the employee's pay credits, interest credits and dividends, which are explained further in the following paragraphs.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Interest Credits and Dividends: On the last day of each plan year, each cash balance account shall receive an interest credit equal to 4.0% of the balance at the beginning of the plan year. Additionally, each account may be credited with a dividend equal to 75% of the System's investment return, on a market value basis, that is over 7.0% on a rolling five-year return. The dividend is capped at 3.0% until January 1, 2020.

Pay Credits: On the last day of each plan year, each cash balance account shall receive a pay credit equal to the following percentages of the member's pensionable earnings for the plan year:

Years of Service	Percentage
Less Than 8	13.0%
8 – 15	14.0%
16 – 23	15.0%
24 or More	16.0%

Monthly Benefit: At retirement, a member may elect to receive benefit payments as a single life annuity, life annuity with 10 years certain, life annuity with 15 years certain, Joint and 50% Survivor, Joint and 75% Survivor, or Joint and 100% Survivor. The annuity conversion factor shall be based on 5% interest and the RP 2000 Mortality Table Projected to 2034 with a male/female blend of 67%/33%.

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. Members who were hired before March 1, 2015 are eligible for this benefit with five years of service. Members who were hired on or after March 1, 2015 are eligible for this benefit with ten 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

For members hired before March 1, 2015, 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.

For members hired on or after March 1, 2015, a lump sum payment of the member's full cash balance account if the member had ten or more years of service prior to death. If the member had less than ten years of service prior to death, then the surviving spouse is eligible to receive a lump sum payment equal to the member's contributions with 4.0% interest.

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

For members hired before March 1, 2015, if the surviving spouse was legally married to the member for at least one year, then they 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

For members hired before March 1, 2015, upon the death of the 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:

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Number of Dependent Children	Percentage of Accrued Benefit
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.

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

   For members who were hired before March 1, 2015, upon severance of employment with less than five 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.

   For members who were hired on or after March 1, 2015, upon severance of employment with less than ten years of service and prior to obtaining eligibility under Section 22 – 30, a refund of such member's accumulated contributions, including 4.0% interest, will be paid.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Section 22 – 40

For members who were hired before March 1, 2015, upon severance of employment with more than five 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.

For members who were hired on or after March 1, 2015, upon severance of employment with more than ten years of service and prior to obtaining eligibility for retirement, the member may elect, in lieu of receiving a refund of contributions, to leave their contributions in the System and thereby be eligible for a deferred service retirement pursuant to Section 22 – 40.

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.

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 intial base being funded as a level-percent of payroll over a 25-year closed period that began January 1, 2016. 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.
Interest Credited to Cash Balance Accounts:	6.25% per year

Salary Increases:

	Annual Rate of Increase For Sample Years			
Years of Service	**Inflation**	**Productivity**	**Merit & Longevity**	**Total Increase**
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

	Eligible for Unreduced Retirement	
Age	**1st Year Eligible**	**Subsequent Years**
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**

Eligible for Unreduced Retirement

Age	1st Year Eligible	Subsequent Years
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**

Eligible for Unreduced Retirement

Age	1st Year Eligible	Subsequent Years
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.

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Members Hired on or After March 1, 2015

Age	Probability Of Retirement
55-59	5%
60-61	7%
62-64	20%
65	35%
66	25%
67-69	20%
70	100%

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

Decrement Timing Middle of year

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:

Age	Annual Rate
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%

Spouse Age Difference: Husbands assumed to be three years older than wives.

Number of Children per Married Member: 0

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Termination:

SAMPLE RATES	
Years of Service	**Annual Rate**
1	11.00%
5	6.00%
10	4.25%
15	3.00%
17+	2.50%

**Vested Terminations
Electing Refund:**

Age	**Percent**
34 and Below	100%
35-41	70%
42-46	50%
47	40%
48	30%
49	20%
50 and Above	0%

For members hired on or after March 1, 2015, everyone who becomes vested is expected to take a deferred annuity at age 60.

APPENDIX C

HISTORICAL SUMMARY OF MEMBERSHIP

The following table displays selected historical data as available.

Valuation Date 1-Jan	Total Count	Active Members							Number		
		Number	Age	Entry Age	Average Service	Annual Pay ($)*	Pay Increase	Disabled	Deferred Vested	Retired
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
2016	2,657	1,194	46.5	36.7	9.8	52,439	3.28%	112	77	1,274
2017	2,703	1,197	46.2	36.7	9.5	54,347	7.04%	109	76	1,321

* 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, 2017. 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	1,197
(b) Deferred vested employees	76
(c) Terminated members due a refund	36
(d) Disabled employees	109
(e) Retired employees, spouses and children receiving benefits	1,321
(f) Total employees in valuation	2,739

Average age of employees in valuation:

(a) Active employees	
Attained Age	46.2
Hire Age	36.7
(b) Deferred vested employees	47.9
(c) Disabled employees	63.6
(d) Retired employees	69.7
(e) Spouses and children receiving benefits	72.4

Active employees eligible for vested benefits as of January 1, 2016:

(a) Employees under age 55 with 5 or more years of service – eligible for deferred vested benefits	471
(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	446
(d) Total	1,197

MEMBERSHIP DATA RECONCILIATION

January 1, 2016 to January 1, 2017

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.

	Active Members	Termination Refund Due	Deferred Vested	Disabled	Retirees	Beneficiaries	Total
Members as of 1/1/2016	1,194	34	77	112	1,023	251	2,691
New Members	106	0	0	0	0	0	106
Terminations							
Rehired	0	(1)	(1)	0	0	0	(2)
Refunded: Paid	(27)	(11)	(4)	0	0	0	(42)
Refunded: Due	(9)	9	0	0	0	0	0
Deferred Vested	(11)	0	11	0	0	0	0
LTD	0	0	0	0	0	0	0
Retirements	(55)	0	(7)	0	62	0	0
Benefits Expired	0	0	0	0	0	(2)	(2)
Data Corrections	0	5	0	0	0	0	5
Deaths							
With Beneficiary	0	0	0	(2)	(19)	22	1
Without Beneficiary	(1)	0	0	(1)	(7)	(9)	(18)
Total Members 1/1/2017	1,197	36	76	109	1,059	262	2,739

SCHEDULE I

ACTIVE MEMBERS AS OF JANUARY 1, 2017
(Total)

Age	Count of Members			Valuation Salaries of Members		
	Males	Females	Total	Males	Females	Total
Under 25	13	5	18	$ 368,132	$ 136,989	$ 505,121
25-29	72	29	101	2,819,921	1,099,353	3,919,274
30-34	74	60	134	3,508,107	2,809,286	6,317,393
35-39	93	44	137	4,865,919	2,471,180	7,337,099
40-44	81	38	119	4,744,194	1,949,687	6,693,881
45-49	133	33	166	8,068,432	1,656,348	9,724,780
50-54	142	48	190	8,129,332	2,726,661	10,855,993
55-59	107	55	162	6,337,762	2,983,004	9,320,766
60-64	75	51	126	4,512,360	3,091,584	7,603,944
Over 64	31	13	44	2,149,650	625,274	2,774,924
Total	821	376	1,197	$45,503,809	$19,549,366	$65,053,175

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017
(Total)

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	18	0	0	0	0	0	0	0	0	18
25-29	89	12	0	0	0	0	0	0	0	101
30-34	86	40	8	0	0	0	0	0	0	134
35-39	64	47	24	2	0	0	0	0	0	137
40-44	43	39	20	12	5	0	0	0	0	119
45-49	52	37	29	30	14	4	0	0	0	166
50-54	42	30	32	42	23	20	1	0	0	190
55-59	34	38	30	19	22	14	4	1	0	162
60-64	14	27	23	27	24	6	5	0	0	126
Over 64	4	13	8	6	6	3	3	1	0	44
Total	446	283	174	138	94	47	13	2	0	1,197
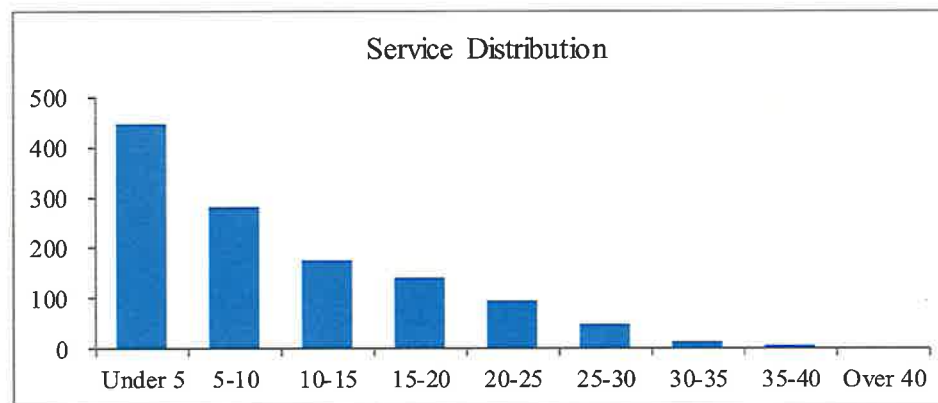
Service Distribution

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017
(Hired before March 1, 2015)

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	3	1	4	$ 128,260	$ 49,819	$ 178,079
25-29	39	14	53	1,799,543	654,371	2,453,914
30-34	52	40	92	2,738,013	2,133,165	4,871,178
35-39	70	37	107	4,148,045	2,252,250	6,400,295
40-44	73	30	103	4,407,704	1,677,075	6,084,779
45-49	115	25	140	7,274,273	1,274,437	8,548,710
50-54	128	43	171	7,612,741	2,549,179	10,161,920
55-59	100	50	150	6,090,225	2,825,031	8,915,256
60-64	75	48	123	4,512,360	3,008,970	7,521,330
Over 64	30	12	42	2,126,167	578,465	2,704,632
Total	685	300	985	$40,837,331	$17,002,762	$57,840,093
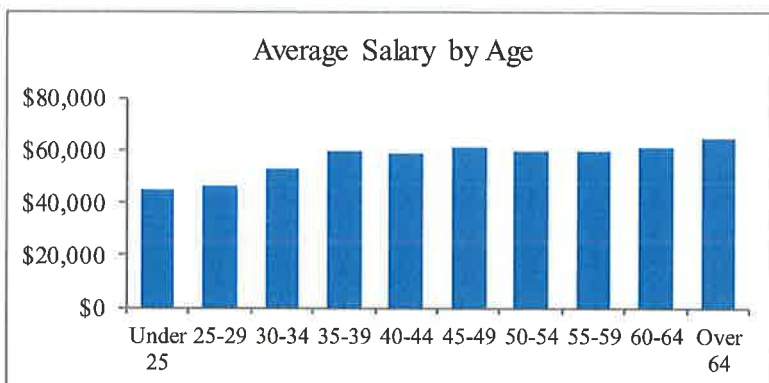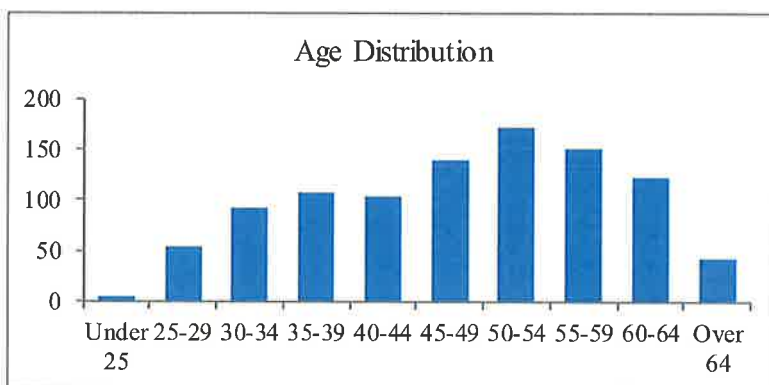
Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017
(Hired before March 1, 2015)

Age	Service Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	4	0	0	0	0	0	0	0	0	4
25-29	41	12	0	0	0	0	0	0	0	53
30-34	44	40	8	0	0	0	0	0	0	92
35-39	34	47	24	2	0	0	0	0	0	107
40-44	27	39	20	12	5	0	0	0	0	103
45-49	26	37	29	30	14	4	0	0	0	140
50-54	23	30	32	42	23	20	1	0	0	171
55-59	22	38	30	19	22	14	4	1	0	150
60-64	11	27	23	27	24	6	5	0	0	123
Over 64	2	13	8	6	6	3	3	1	0	42
Total	234	283	174	138	94	47	13	2	0	985
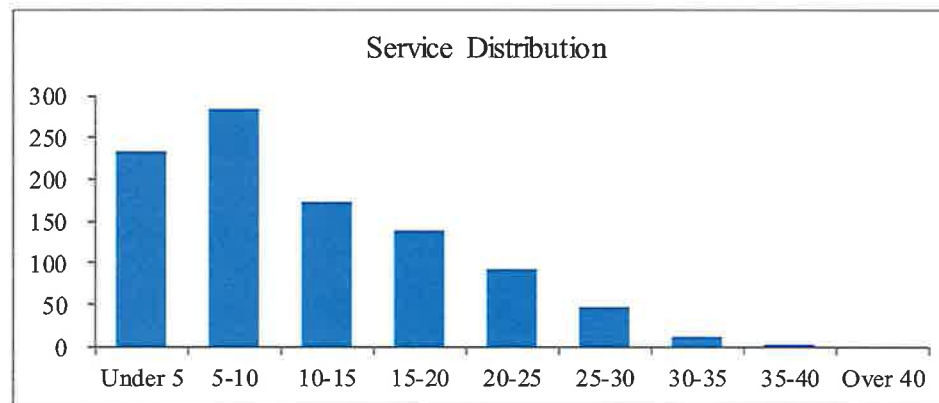
Service Distribution

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017
(Hired on or after March 1, 2015)

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	10	4	14	$ 239,872	$ 87,170	$ 327,042
25-29	33	15	48	1,020,378	444,982	1,465,360
30-34	22	20	42	770,094	676,121	1,446,215
35-39	23	7	30	717,874	218,930	936,804
40-44	8	8	16	336,490	272,612	609,102
45-49	18	8	26	794,159	381,911	1,176,070
50-54	14	5	19	516,591	177,482	694,073
55-59	7	5	12	247,537	157,973	405,510
60-64	0	3	3	0	82,614	82,614
Over 64	1	1	2	23,483	46,809	70,292
Total	136	76	212	$4,666,478	$2,546,604	$7,213,082

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017
(Hired on or after March 1, 2015)

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	14	0	0	0	0	0	0	0	0	14
25-29	48	0	0	0	0	0	0	0	0	48
30-34	42	0	0	0	0	0	0	0	0	42
35-39	30	0	0	0	0	0	0	0	0	30
40-44	16	0	0	0	0	0	0	0	0	16
45-49	26	0	0	0	0	0	0	0	0	26
50-54	19	0	0	0	0	0	0	0	0	19
55-59	12	0	0	0	0	0	0	0	0	12
60-64	3	0	0	0	0	0	0	0	0	3
Over 64	2	0	0	0	0	0	0	0	0	2
Total	212	0	0	0	0	0	0	0	0	212

Service Distribution
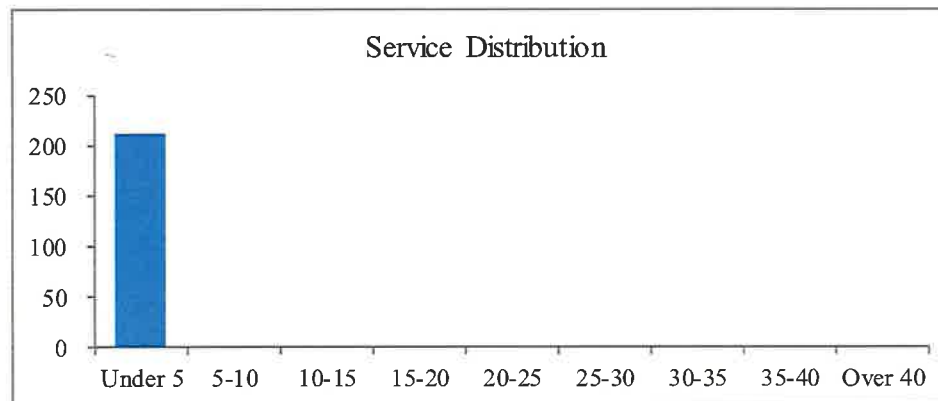
SCHEDULE II

RETIRED MEMBERS AS OF JANUARY 1, 2017

	Count of Retirees				Current Monthly Benefits		
Age	Males	Females	Total		Males	Females	Total
Under 60	44	33	77	$ 145,196	$94,451	$ 239,647
60-64	138	79	217	387,427	174,058	561,485
65-69	211	99	310	499,529	207,384	706,913
70-74	135	61	196	310,896	114,095	424,991
75-79	85	38	123	162,729	51,700	214,429
80-84	48	19	67	81,653	31,591	113,244
85-89	32	13	45	58,052	11,571	69,623
Over 89	15	9	24	25,189	8,171	33,360
Total	708	351	1,059	$1,670,671	$693,021	$2,363,692

Age Distribution

Average Benefit by Age
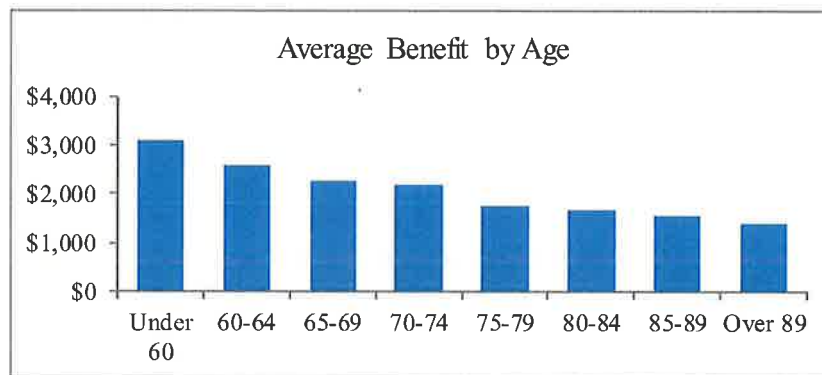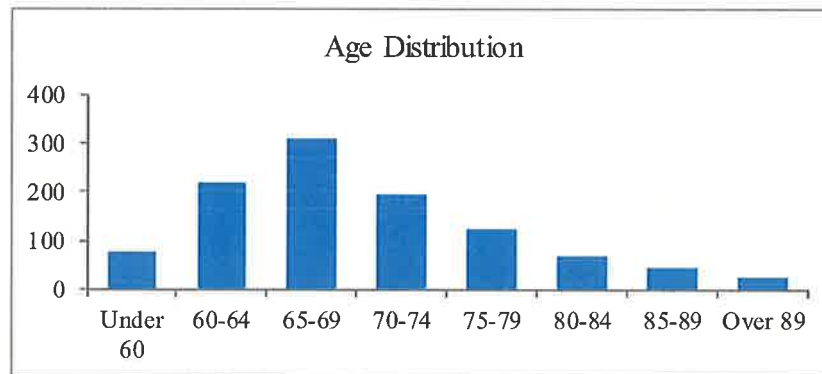
SCHEDULE III

BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2017

	Count of Beneficiaries			Current Monthly Benefits		
Age	Males	Females	Total	Males	Females	Total
Under 60	4	26	30	$ 1,431	$ 19,731	$ 21,162
60-64	4	22	26	4,376	27,248	31,624
65-69	6	35	41	4,950	50,304	55,254
70-74	2	34	36	1,802	50,237	52,039
75-79	1	39	40	1,920	53,735	55,655
80-84	2	38	40	2,757	50,504	53,261
85-89	2	28	30	2,395	26,862	29,257
Over 89	2	17	19	2,089	12,535	14,624
Total	23	239	262	$21,720	$291,156	$312,876
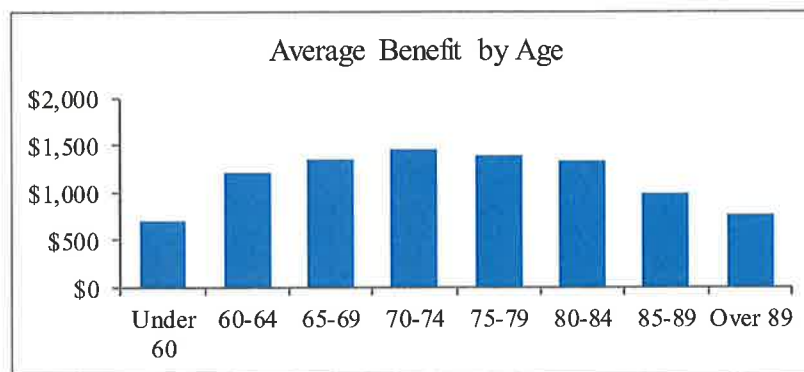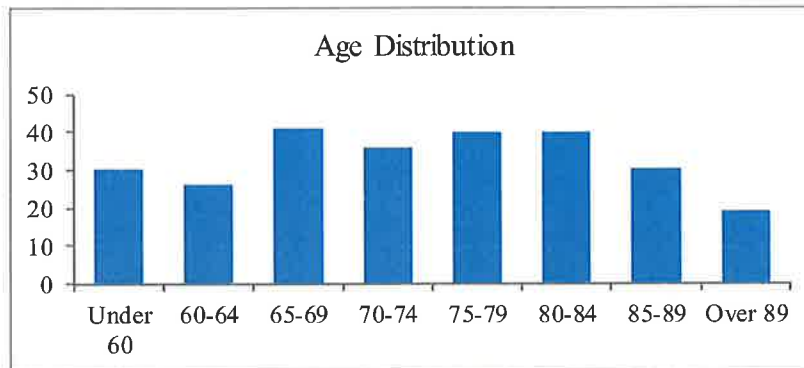
SCHEDULE IV

DEFERRED VESTED MEMBERS AS OF JANUARY 1, 2017

	Count of Members			Expected Monthly Benefit		
Age	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25-29	0	0	0	0	0	0
30-34	2	4	6	1,275	2,118	3,393
35-39	4	3	7	3,012	2,001	5,013
40-44	6	6	12	8,725	5,826	14,551
45-49	10	6	16	9,489	6,042	15,531
50-54	9	8	17	10,251	8,204	18,455
55-59	9	8	17	8,529	9,161	17,690
Over 59	1	0	1	1,681	0	1,681
Total	41	35	76	$42,962	$33,352	$76,314

SCHEDULE V

DISABLED MEMBERS RECEIVING BENEFITS AS OF JANUARY 1, 2017

	Count of Members			Current Monthly Benefit		
Age	Males	Females	Total	Males	Females	Total
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	1	4	5,639	2,052	7,691
45-49	3	0	3	5,080	0	5,080
50-54	13	1	14	24,816	1,319	26,135
55-59	18	3	21	33,437	5,485	38,922
Over 59	53	14	67	77,177	19,182	96,359
Total	90	19	109	$146,149	$28,038	$174,187

Appendix F

Omaha Police and Fire
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) 444-5416
Telefax (402) 546-1150

Stephen B. Curtiss
Finance Director

Allen Herink
City Comptroller

October 13, 2017

Senator Mark Kolterman, Chairperson
Nebraska Retirement Systems Committee
PO BOX 94604
State Capitol
Lincoln, NE 68509-4604

Dear Senator Kolterman:

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 attached table compares the actuarial data for plan years 2013 through current plan year 2017.

There were no changes in valuation methodology or actuarial assumptions for 2017. 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 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 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. During the economic downturn of early 2000s, there were some additional benefits (compensatory time paid at end of career) 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%
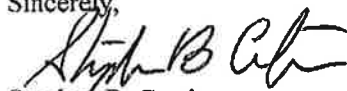
The employees who are part of the COPFRS are from four (4) bargaining groups. Three of those bargaining groups have had collective bargaining agreements in place through the end of 2018 for several years. The fourth group, the Omaha Police Officers Association entered into a collective bargaining agreement for 2015 through 2020 which agreement was effective in March, 2017. As part of that collective bargaining agreement, the City and the employees have agreed to contribute an additional 0.75% of wages into the system for 2018 to 2020. There was also a change to the widow's pension provision to provide that a widow's pension is only payable if the officer and spouse were married as of the date of the officer's retirement.

The Trustees of the System and the City believe some of the changes described above are starting to see a positive effect. As of January 1, 2016, the system had market assets of approximately $620 million and a funded ratio of 51%. Though the funded ration decreased in 2015 due to poor investment results, the actuarial value of assets increased $30 million. It had a funded ratio of 49% in 2014 and 44% in 2013. The actuarial contribution rate needed for the system on 1/1/2016 was 50.097% and the total amount being contributed was 50.543% demonstrating that the amount being put is sufficient for the second consecutive year. The most recent projection had the system fully funded in approximately 21 to 22 years. The assumed rate of return for the system is 8%. An Actuarial Experience study is being done in 2017 and the rate of return will be reviewed.

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, 2016. The System's actuary is in the process of finalizing the Actuarial Valuation Report effective January 1, 2017. We would anticipate approval by the Board on November 16, 2017 and we will provide that report to you as soon as possible after approval. The Actuarial Experience Study that is being completed likely will not be finished and approved by the Board until December, 2017 or January, 2018.

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

Sincerely,

Stephen B. Curtiss
Finance Director

COPFRS EXHIBIT 1

ITEM	2013	2014	2015	2016	2017
Funding Status	45%	47%	50%	51%	52%
Assumed Rate of Return	8%	8%	8%	8%	8%
Actual Return	18.5%	4.9%	0.7%	9.1%	Pending
Net Assets (actuarial value)	$495,847,234	$548,360,223	$590,191,585	$621,403,975	$656,171,797
Unfunded Actuarial Accrued Liability	$613,027,544	$622,607,530	$598,810,636	$602,562,135	$611,737,378
Normal Cost (%)	$26,403,410 (23.525%)	$27,285,957 (23.103%)	$26,946,719 (22.191%)	$27,426,921 (22.146%)	$27,892,194 (21.991%)
Member Contribution Rate	15.35%-17.15%	15.35%-17.23%	15.35%-17.23%	15.35%-17.23%	15.35%-17.23%
Employer Contribution Rate	32.97%-33.67%	32.97%-33.67%	32.97%-33.67%	32.97%-33.67%	32.97%-33.67%
Actuarial Required Contribution	$52,895,180	$41,732,843	$42,918,856	$43,971,737	$45,297,654
Blended Combined Contribution Rate	63.416%	53.208%	50.581%	50.543%	50.509%
Actuarial Rate of Contribution (ARC)	62.272%	52.138%	50.013%	50.097%	50.212%
Contribution Margin	-11.067%	-53.138%	0.550%	0.446%	0.297%
Employer Actual Dollars Contributed	$35,302,037	$43,838,750	$41,851,986	$42,138,403	$43,235,242
% of ARC by Employer Contribution	65.00%	82.88%	96.16%	100.54%	101.81%

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The City of Omaha
Police & Fire Retirement System

**Actuarial Valuation as of
January 1, 2017**

October 27, 2017

Board of Trustees
City of Omaha Police and Fire Retirement System
1819 Farnam Street
Omaha, NE 68183

RE: January 1, 2017 Actuarial Valuation

Dear Members of the Board:

In accordance with your request, we have completed an actuarial valuation of the City of Omaha Police and Fire Retirement System as of January 1, 2017 for the plan year ending December 31, 2017. The major findings of the valuation are contained in this report. There have been no changes to the plan provisions, actuarial assumptions, or other actuarial methods since the prior report.

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 based on the Board's funding policy. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. For example, actuarial computations for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standards No. 67 and No. 68 are provided in separate reports.

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 reasonable based on the actual experience of the System and future expectations. However, the Board of Trustees has the final decision regarding the selection 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,

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

Bryan Hoge, FSA, EA, FCA, MAAA
Senior Actuary

TABLE OF CONTENTS

This report presents the results of the January 1, 2017 actuarial valuation of the City of Omaha Police and Fire 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 plan experience and experience anticipated by the actuarial assumptions;
- to analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

There have been no changes to the plan provisions, actuarial assumptions, or actuarial methods since the prior valuation.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2017. The unfunded actuarial liability (UAL) in the current valuation is $612 million, an increase of $9 million from last year's UAL of $603 million. The valuation results reflect net favorable experience for the past plan year as is demonstrated by an unfunded actuarial liability that was lower than expected, based on the actuarial assumptions used in the January 1, 2016 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in an actuarial loss of $7 million, and favorable demographic experience produced an actuarial gain on liabilities of $8 million. The favorable demographic experience was primarily due to salary increases that were smaller than expected, based on the actuarial assumptions. Based on the amortization methodology and period, the UAL was expected to increase by $11 million.

A summary of the key results from the January 1, 2017 valuation is shown in the following table. Additional detail on the changes and experience affecting the valuation results can be found in the following sections of this Board Summary.

	January 1, 2017	January 1, 2016
Unfunded Actuarial Liability ($M)	$611.7	$602.6
Funded Ratio (Actuarial Assets)	51.75%	50.77%
Normal Cost Rate	21.991%	22.146%
UAL Amortization Rate	28.221%	27.951%
Total Contribution Rate	50.212%	50.097%
Employee Contribution Rate	16.165%	16.177%
Total City Contribution Rate	34.344%	33.342%
Contribution Shortfall/(Margin)	(0.297%)	(0.446%)

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 on the market value of assets during 2016, net of expenses, was 8.5%, slightly higher than the assumed rate of return of 8.0%. However, due to unfavorable deferred investment experience from prior years, the rate of return on the actuarial value of assets for the 2016 plan year was 6.9%. The System's deferred investment experience went from a $27 million deferred loss in last year's

valuation to a $20 million deferred loss in the current valuation (actuarial value of assets greater than market value). Actual returns over the next few years will determine the rate at which the deferred investment loss of $20 million is recognized. With the current deferred losses, a return of 11% on the market value of assets in 2017 would result in an 8% return on the actuarial value of assets.

ASSETS

As of January 1, 2017, the System had total funds of $636.4 million, when measured on a market value basis. This was an increase of $42.2 million from the prior year and represents an approximate rate of return, net of expenses, of 8.5%.

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, 2017. The rate of return on the actuarial value of assets was 6.9% which is less than the assumed return of 8.0%.

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, 2016	$ 594.2	$ 621.4
• City and Member Contributions	+ 63.5	+ 63.5
• Benefit Payments and Refunds	− 71.5	− 71.5
• Investment Gain/(Loss)	+ 50.2	+ 42.8
Net Assets, January 1, 2017	$ 636.4	$ 656.2
Estimated Net Rate of Return	8.5%	6.9%

The total investment loss that is not recognized as of January 1, 2017 is $19.8 million, a $7.4 million decrease from the deferred loss of $27.2 million in last year's valuation. The unrecognized losses will be reflected in the determination of the actuarial value of assets for funding purposes over time, to the extent there are not future gains to offset the deferred losses. This means that earning the assumed rate of investment return of 8.0% per year on a market value basis will result in an actuarial loss on the actuarial value of assets in the future.

The unrecognized investment loss is 3.1% of the market value of assets at January 1, 2017. If the deferred losses were recognized immediately in the actuarial value of assets, the unfunded actuarial liability would increase by $19.8 million to $631.5 million, the funded percentage would decrease from 52% to 50%, the actuarially determined contribution rate would increase from 50.212% to 51.108%, and the contribution margin of 0.297% would turn into a contribution shortfall of 0.599%.

A comparison of asset values on both a market and actuarial basis for the last six years is shown below:

	January 1 ($M)					
	2017	2016	2015	2014	2013	2012
Actuarial Value of Assets	$656	$621	$590	$548	$496	$467
Market Value of Assets	$636	$594	$600	$579	$490	$440
Actuarial Value/Market Value	103%	105%	98%	95%	101%	106%
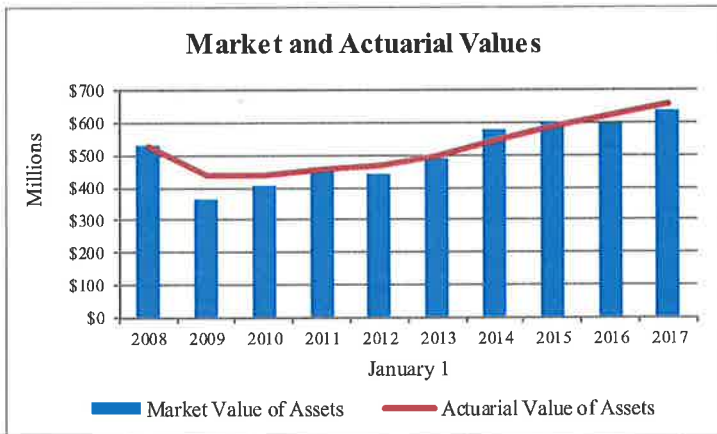
An asset smoothing method is used to mitigate the volatility in the market value of assets. By using a smoothing method, the actuarial (or smoothed) value is expected to be both above and below the pure market value at different points in time. The significant investment losses in 2008 resulted in the actuarial value of assets exceeding the market value from 2009 through 2013. Since 2014, the actuarial and market values have been relatively close.
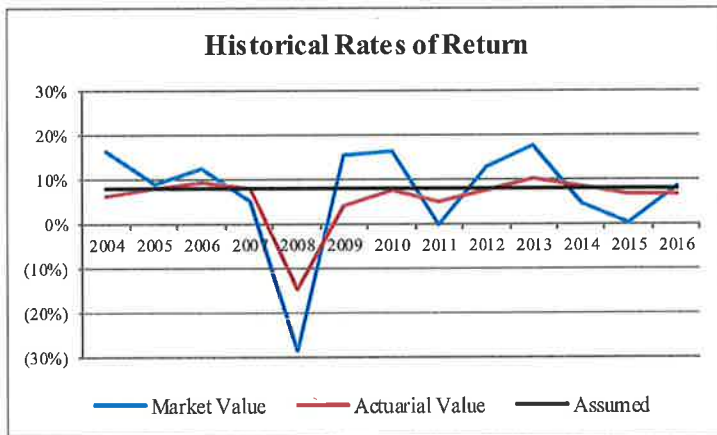
The rate of return on the actuarial value of assets has been less volatile than the rate of return on the market value of assets, which is the reason for using a smoothing method. However, during this time period, the rate of return on the actuarial value of assets has been at or below the assumed rate of return for most of the period.

LIABILITIES

The first step in determining the contribution level 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 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 benefit payments commence. The various components of the PVFB can be found in the liabilities portion of the valuation balance sheet (see Exhibit 3).

The other critical measurement of System liabilities in the valuation process is the actuarial liability. 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 past service).

The following chart compares the actuarial liability and assets for the current and prior valuation.

	As of January 1	
	2017	2016
Actuarial Liability	$ 1,267,909,175	$ 1,223,966,110
Assets at Actuarial Value	(656,171,797)	(621,403,975)
Unfunded Actuarial Liability (Actuarial Value)	$ 611,737,378	$ 602,562,135
Funded Ratio (Actuarial Value)	52%	51%
Actuarial Liability	$ 1,267,909,175	$ 1,223,966,110
Assets at Market Value	(636,381,482)	(594,178,499)
Unfunded Actuarial Liability (Market Value)	$ 631,527,693	$ 629,787,611
Funded Ratio (Market Value)	50%	49%

Note that the funded ratio does not indicate whether or not the System assets are sufficient to settle benefits earned to date. The funded ratio by itself also may not be indicative of future funding requirements.

EXPERIENCE FOR THE 2016 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 for 2016, in total, was favorable. There was an actuarial loss of $7 million on the actuarial value of assets and an actuarial gain of $8 million on liabilities.

The change in the unfunded actuarial liability between January 1, 2016 and January 1, 2017 is shown below (in millions):

Unfunded Actuarial Liability, January 1, 2016	$603
• Expected change in UAL	11
• Contribution surplus in 2016	(1)
• Investment experience	7
• Demographic experience	(8)
• Other experience	0
Unfunded Actuarial Liability, January 1, 2017	$612

CONTRIBUTION LEVELS

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

(1) The normal cost (which is the allocation of costs attributed to the current year of 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 UAL payment is intended to fund the UAL over the amortization period set in the funding policy, a closed 30-year period that began on January 1, 2014, of which 27 years remain as of the current valuation.

		January 1, 2017	January 1, 2016	% Chg
1.	Normal Cost Rate	21.991%	22.146%	(0.7)
2.	UAL Contribution Rate	28.221%	27.951%	1.0
3.	Total Contribution Rate (1) + (2)	50.212%	50.097%	0.2
4.	Less Employee Contribution Rate	(16.165%)	(16.177%)	(0.1)
5.	Less City Contribution Per Ordinance	(33.346%)	(33.342%)	0.0
6.	Less City Prior Service Payment	(0.998%)	(1.024%)	(2.5)
7.	Contribution Shortfall/(Margin)	(0.297%)	(0.446%)	(33.4)

The total normal cost for the System is 21.991% of pay. When offset by the expected employee contributions for 2017, the employer portion of the normal cost is 5.826% of pay. The normal cost represents the long-term cost of the benefit structure in the System, given the current actuarial assumptions and plan membership. As new members who are covered by a different benefit structure with a lower cost enter the System in future years, the normal cost rate is expected to decline.

The System's total actuarial contribution rate (payable as a percent of member payroll) increased slightly by 0.115% of pay, from 50.097% in the January 1, 2016 valuation to 50.212% in the January 1, 2017 valuation. As a result, there is a contribution margin of 0.297% in the current valuation. The primary components of the change in the total actuarial contribution rate are shown in the following table:

	Rate	
Total Actuarial Contribution Rate, January 1, 2016	50.097	%
• Actuarial (Gain) / Loss - Investment Experience	0.287	
• Actuarial (Gain) / Loss - Demographic Experience	(0.345)	
• Other Experience	(0.008)	
• Contributions Above The Actuarial Rate	(0.035)	
• Change in Normal Cost Rate	(0.155)	
• Payroll Growth Lower than Expected	0.371	
Total Actuarial Contribution Rate, January 1, 2017	50.212	%

As the table above shows, the most significant factor in the increase in the actuarial contribution rate was the lower payroll growth than expected from January 1, 2016 to January 1, 2017, based on actuarial assumptions. The UAL is amortized as a level percent of payroll, assuming future payroll increases 4% per year. When covered payroll does not increase as assumed, the UAL contribution rate is higher because the dollar amount of the UAL payment does not change, but it is divided by a smaller payroll amount. The UAL payment is 28.221% of pay so lower payroll than expected has a significant impact on the total actuarial contribution rate. Due to the slight increase in the actuarial contribution rate, the contribution margin has decreased from 0.446% of pay in the 2016 valuation to 0.297% of pay in the 2017 valuation.

COMMENTS

On January 1, 2017, the actuarial value of assets was $656 million and the market value of assets was $636 million. Due to the return on the market value of assets of 8.5%, the deferred investment loss of $27 million that existed in the prior valuation has decreased to $20 million in the current valuation. The return on the actuarial value of assets was below the assumed rate of return of 8.0% which resulted in a $7 million actuarial loss. There was a liability gain of $8 million during 2016, primarily due to salary increases that were smaller than expected, based on the actuarial assumptions. The funded ratio of the System remains low, but held steady (51% as of January 1, 2016 to 52% as of January 1, 2017), based on the actuarial value of assets.

The current contribution rates for the members and the City slightly exceed the actuarial contribution rate, producing a contribution margin of 0.297% of payroll. The contribution rate for the Police union members is scheduled to increase by 1.50% in 2018, split equally between the members and City. This change will strengthen the funding of the System and increase the contribution margin, all other things being equal. However, given the volatility inherent in investment returns from year to year and the impact such experience has on the actuarial contribution rate, the contribution margin this year could easily revert to a contribution shortfall in future years even with the higher scheduled contributions in 2018.

The contribution margin of 0.297% is based on the actuarial valuation performed on January 1, 2017 which is a snapshot measurement on that date and which assumes no future change in either the normal cost rate or the UAL contribution rate. While the System's financial health is expected to improve in future years due to a decrease in the normal cost over time, the impact on the System's long-term funding cannot be quantified without performing an open group projection of future valuation results. Such analysis was not performed because it is outside the regular scope of services requested by the Board and a special request

was not made. We do believe that such modeling would be helpful to the Board in evaluating the long-term funding of the System and the associated risks.

As mentioned earlier in this report, the System uses an asset smoothing method in the actuarial valuation. While this is a very common practice for public retirement systems, it is important to be aware of the potential impact of the unrecognized investment experience. The key valuation results from the 2017 valuation, using both the actuarial and market value of assets, are shown in the following table to provide full disclosure of the impact of asset smoothing on the funding of the System. Because the actuarial and market value of assets are only slightly different, the results are not significantly different.

	$ Millions	
	Using Actuarial Value of Assets	**Using Market Value of Assets**
Actuarial Liability	$1,267.9	$1,267.9
Asset Value	656.2	636.4
Unfunded Actuarial Liability	611.7	631.5
Funded Ratio	51.8%	50.2%
Normal Cost Rate	21.991%	21.991%
UAL Contribution Rate	28.221%	29.117%
Actuarial Contribution Rate	50.212%	51.108%
Employee Contribution Rate	(16.165%)	(16.165%)
City Contribution Rate	(34.344%)	(34.344%)
Contribution Shortfall/(Margin)	(0.297%)	0.599%

January 1, 2017 Actuarial Valuation   **City of Omaha Police and Fire Retirement System**

7

THE CITY OF OMAHA POLICE AND FIRE RETIREMENT SYSTEM

PRINCIPAL VALUATION RESULTS

	January 1, 2017	January 1, 2016	% Chg
MEMBERSHIP			
1. Active Membership			
- Police Active Members			
- Tier 1	590	623	(5.3)
- Tier 2	208	159	30.8
- Total	798	782	2.0
- Fire Active Members			
- Tier 1	558	572	(2.4)
- Tier 2	68	44	54.5
- Total	626	616	1.6
- Total Active Members	1,424	1,398	1.9
- Number of DROP Participants	57	47	21.3
- Total Employees	1,481	1,445	2.5
- Projected Payroll for Upcoming Fiscal Year	$133,044,481	$129,633,658	2.6
- Average Projected Payroll	$89,834	$89,712	0.1
2. Inactive Membership			
- Number of Retirees / Beneficiaries	1,263	1,249	1.1
- Number of Disabled Members	225	224	0.4
- Number of Inactive Vesteds	13	11	18.2
- Average Annual Benefit	$46,642	$45,569	2.4
- Number of Participants Due a Refund	7	8	(12.5)
ASSETS AND LIABILITIES			
1. Net Assets			
- Market Value	$636,381,482	$594,178,499	7.1
- Actuarial Value	$656,171,797	$621,403,975	5.6
2. Actuarial Liability	$1,267,909,175	$1,223,966,110	3.6
3. Unfunded Actuarial Liability	$611,737,378	$602,562,135	1.5
4. Funded Ratios			
Actuarial Value Assets / Actuarial Liability	51.75%	50.77%	1.9
Market Value Assets / Actuarial Liability	50.19%	48.55%	3.4
CONTRIBUTIONS			
1. Normal Cost Rate	21.991%	22.146%	(0.7)
2. UAL Rate	28.221%	27.951%	1.0
3. Total Contribution Rate (1) + (2)	50.212%	50.097%	0.2
4. Less Employee Contribution Rate	(16.165%)	(16.177%)	(0.1)
5. Less City Contribution Per Ordinance	(33.346%)	(33.342%)	0.0
6. Less City Prior Service Payment	(0.998%)	(1.024%)	(2.5)
7. Contribution Shortfall/(Margin)	(0.297%)	(0.446%)	(33.4)

EXHIBIT 1
SUMMARY OF FUND ACTIVITY

(Market Value Basis)

For Year Ended December 31, 2016

Assets at January 1, 2016	$	594,178,499
Receipts:		
City Contributions		43,235,242
Employee Contributions		20,214,875
Investment Earnings, Net of Expenses		50,246,610
Total Receipts		113,696,727
Disbursements:		
Benefits Payments		69,248,217
Refund of Contributions		2,234,501
Administrative Expenses		11,026
Total Disbursements		71,493,744
Assets as of December 31, 2016	$	636,381,482
Annualized Net Yield		8.5%

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, 2016	$	621,403,975
2.	Actual Receipts / Disbursements		
	a. Total Contributions		63,450,117
	b. Benefit Payments/Other		(71,482,718)
	c. Net Change		(8,032,601)
3.	Expected Actuarial Value of Assets as of January 1, 2017		662,768,569
	[(1) * 1.08] + [(2c) * 1.08 $^{1/2}$]		
4.	Market Value of Assets as of January 1, 2017		636,381,482
5.	Excess of Market Value over Expected Actuarial Value as of January 1, 2017		(26,387,087)
6.	Preliminary Actuarial Value of Assets as of January 1, 2017 [(3) + 25% of (5)]		656,171,797
7.	Calculation of 20% Corridor		
	a. 80% of (4)		509,105,186
	b. 120% of (4)		763,657,778
8.	Final Actuarial Value of Assets as of January 1, 2017 (6), but not < (7a), nor > (7b)	$	656,171,797
9.	Rate of Return on Actuarial Value of Assets		6.9%

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	$529,923,390	$530,493,413	100.1%
1/1/2009	365,923,877	439,108,652	120.0%
1/1/2010	405,390,038	440,478,409	108.7%
1/1/2011	452,640,303	456,158,774	100.8%
1/1/2012	440,429,392	467,375,458	106.1%
1/1/2013	489,800,140	495,847,234	101.2%
1/1/2014	579,494,652	548,360,223	94.6%
1/1/2015	599,927,168	590,191,585	98.4%
1/1/2016	594,178,499	621,403,975	104.6%
1/1/2017	636,381,482	656,171,797	103.1%
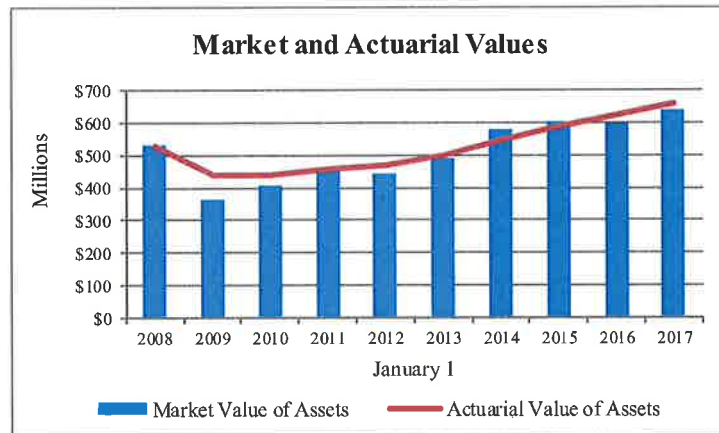
Market and Actuarial Values

EXHIBIT 3

ACTUARIAL BALANCE SHEET

An actuarial statement of the status of the plan in balance sheet form as of January 1, 2017 is as follows:

Assets

Current assets (actuarial value)	$	656,171,797
Present value of future normal costs		286,061,847
Present value of future contributions to fund unfunded actuarial liability		611,737,378
Total Assets	$	1,553,971,022

Liabilities

Present value of future retirement benefits for:

Active employees	$	696,618,185		
DROP participants - account balances		10,802,697		
DROP participants - annuities		54,694,799		
Retired employees, contingent annuitants and spouses receiving benefits		688,908,955		
Disabled members		85,203,784		
Inactive vested employees		2,367,256		
Inactive employees due refunds		108,773		
Total			$	1,538,704,449
Present value of future death benefits payable upon death of active members				10,601,716
Present value of future benefits payable upon termination of active members				4,664,857
Total Liabilities			$	1,553,971,022

EXHIBIT 4

UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2017

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.

The City makes scheduled payments of $1,327,600 annually through the year 2028 in addition to the payroll related contributions. The present value of these contributions was applied to the Unfunded Actuarial Liability (UAL) to determine the amount of the UAL to be funded as a percent of payroll (contribution rates).

1.	Present Value of Future Benefits	$	1,553,971,022
2.	Present Value of Future Normal Costs		286,061,847
3.	Actuarial Liability $(1) - (2)$		1,267,909,175
4.	Actuarial Value of Assets		656,171,797
5.	Unfunded Actuarial Liability $(3) - (4)$		611,737,378
6.	Present Value of Prior Service Payments		10,397,394
7.	Adjusted Unfunded Actuarial Liability (Payable from Payroll Related Contributions) $(5) - (6)$	$	601,339,984

EXHIBIT 5

CALCULATION OF ACTUARIAL GAIN / (LOSS)
For Plan Year Ending December 31, 2016

Liabilities

1.	Actuarial liability less prior service payments as of January 1, 2016	$	1,213,061,410
2.	Normal cost for 2016		27,426,921
3.	Interest at 8.00% on (1) and (2) to December 31, 2016		99,239,066
4.	Benefit payments during 2016		(71,482,718)
5.	Interest on benefit payments		(2,804,302)
6.	Expected actuarial liability as of December 31, 2016	$	1,265,440,377
7.	Actuarial liability less prior service payments as of December 31, 2016	$	1,257,511,781

Assets

8.	Actuarial value of assets as of January 1, 2016	$	621,403,975
9.	Contributions during 2016		63,450,117
10.	Benefit payments during 2016		(71,482,718)
11.	Interest on items (8), (9) and (10)		49,397,195
12.	Expected actuarial value of assets as of December 31, 2016	$	662,768,569
13.	Actual actuarial value of assets as of December 31, 2016	$	656,171,797

Gain / (Loss)

14.	Expected unfunded actuarial liability (6) – (12)	$	602,671,808
15.	Actual unfunded actuarial liability (7) – (13)	$	601,339,984
16.	Actuarial Gain / (Loss) (14) – (15)	$	1,331,824
17.	Actuarial Gain / (Loss) on Actuarial Assets (13) – (12)	$	(6,596,772)
18.	Actuarial Gain / (Loss) on Actuarial Liability (6) – (7)	$	7,928,596

EXHIBIT 6

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 contribution 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 Fund, mortality rates among active and retired members, withdrawal and retirement rates among active members, rates at which salaries increase and the rate at which the cost of living increases.

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 of 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 $7.9 million during the plan year ended December 31, 2016, and an actuarial loss on assets of $6.6 million. The net actuarial gain was $1.3 million. The major components of this net actuarial experience loss are shown below:

Liability Sources	Gain/(Loss)	
Salary Increases	$	13,975,000
Mortality		(2,025,000)
Terminations		804,000
Retirements/DROP		(2,886,000)
Disability		(1,079,000)
New Entrants/Rehires		(346,000)
Miscellaneous		(514,000)
Total Liability Gain/(Loss)	$	7,929,000
Asset Gain/(Loss)	$	(6,597,000)
Net Actuarial Gain/(Loss)	$	1,332,000

EXHIBIT 7

**DEVELOPMENT OF
2017 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	Normal Cost Rate	21.991%
2.	Unfunded Actuarial Liability Payable from Payroll Related Contributions	$ 601,339,984
3.	Amortization Factor Level Percent of Payroll over 27 Years*	17.25409
4.	Unfunded Actuarial Liability (UAL) Payment [(2) / (3)] x 1.08½	$ 36,219,287
5.	Prior Service Payment	1,327,600
6.	Total Projected Payroll for the Year, Including DROP Members	$ 133,044,481
7.	UAL and Prior Service Payments as Percent of Pay [(4) + (5)] / (6)	28.221%
8.	Total Contribution Rate (1) + (7)	50.212%
9.	Employee Contribution Rate	16.165%
10.	City Ordinance Contribution Rate	33.346%
11.	City Prior Service Contribution Rate	0.998%
12.	Contribution Shortfall/(Margin) (8) – (9) – (10) – (11)	(0.297%)

* Assumes all actuarial assumptions are met in the future, including a 4% annual increase in covered payroll.

SECTION II

OTHER INFORMATION

In this section, we provide some historical information regarding the funding progress of the System. These exhibits retain some of the information that used to be required for accounting purposes and are included because they provide relevant information on the System's historical funding.

EXHIBIT 8

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending	Annual Required Contribution* (a)	Total Employer Contribution* (b)	Percentage of ARC Contributed (b) / (a)
12/31/2005	$ 26,255,804	$ 17,762,209	67.65%
12/31/2006	31,102,053	20,171,610	64.86%
12/31/2007	34,842,280	20,699,211	59.41%
12/31/2008	38,073,021	21,700,806	57.00%
12/31/2009	50,507,561	22,701,608	44.95%
12/31/2010	55,488,062	24,183,493	43.58%
12/31/2011	49,945,979	30,775,568	61.62%
12/31/2012	54,310,693	35,302,037	65.00%
12/31/2013	52,895,180	43,838,750	82.88%
12/31/2014	43,524,890	41,851,986	96.16%
12/31/2015	41,910,737	42,138,403	100.54%
12/31/2016	42,468,180	43,235,242	101.81%

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

EXHIBIT 9

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date[1]	Actuarial Value of Assets (a)	Actuarial Liability (AL) (b)	Unfunded AL (UAL)[2] (b-a)	Funded Ratio (a / b)	Covered Payroll (P / R)[3] (c)	UAL as a Percentage of Covered P / R [(b-a) / c]
12/31/2005	$453,300,000	$ 703,800,000	$250,500,000	64.4%	$ 86,800,000	288.6%
12/31/2006	507,600,000	801,100,000	293,500,000	63.4%	91,700,000	320.1%
12/31/2007	530,800,000	882,700,000	351,900,000	60.1%	99,600,000	353.3%
12/31/2008	365,900,000	947,600,000	581,700,000	38.6%	99,500,000	584.6%
12/31/2009	405,400,000	1,026,200,000	620,800,000	39.5%	103,900,000	597.5%
12/31/2010	452,600,000	1,093,300,000	640,700,000	41.4%	111,200,000	576.2%
1/1/2011	456,158,774	1,028,866,353	572,707,579	44.3%	105,025,610	545.3%
1/1/2012	467,375,458	1,077,607,299	610,231,841	43.4%	110,027,537	554.6%
1/1/2013	495,847,234	1,108,874,778	613,027,544	44.7%	116,056,740	528.2%
1/1/2014	548,360,223	1,170,967,753	622,607,530	46.8%	124,051,668	501.9%
1/1/2015	590,191,585	1,189,002,221	598,810,636	49.6%	126,843,763	472.1%
1/1/2016	621,403,975	1,223,966,110	602,562,135	50.8%	129,633,658	464.8%
1/1/2017	656,171,797	1,267,909,175	611,737,378	51.8%	133,044,481	459.8%

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. 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.
2. As of 1/1/2011, the Unfunded AL is not reduced by the Present Value of Prior Service Payments. For the calculation of the Unfunded AL used for funding purposes, please refer to Exhibit 4 of this report.
3. As of 1/1/2014, covered payroll includes DROP participants' pay.

APPENDIX A

SUMMARY OF PLAN PROVISIONS

Average Final Monthly Compensation:
Section 22 - 63

Police: Pensionable pay excludes certain overtime pay. For those hired before January 1, 2010, an adjustment is made to include a career average of overtime pay. For those who were age 45 and had at least twenty years of service as of January 1, 2010, highest average monthly compensation is calculated using the highest consecutive twenty-six (26) pay periods out of the last five years of service as a member of the system for which service credit had been earned. All others use the highest seventy-eight (78) pay periods with the final 130 pay periods of service.

Fire: For 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 January 1, 2013, highest average monthly compensation during any consecutive twenty-six (26) pay periods out of the last five years of service as a member of the system for which service credit had been earned. All others use the highest seventy-eight (78) pay periods with the final 130 pay periods of service.

Career Overtime Average (COTA):

All Members: Each hour an employee earns for overtime is computed back to their date of hire or 1991 (whichever is later) and divided by the number of years the employee worked after December 31, 1990. This amount shall be included in the member's pension calculation. COTA is excluded for all Police members hired on or after January 1, 2010 and Fire members hired on or after January 1, 2013.

Member Contributions:
Section 22 – 73(a)
Section 22 - 68

Rates effective January 1, 2014
Police: 15.35% of total monthly salary for police.
Fire: 17.15% of total monthly salary for fire.

City of Omaha Contributions:
Section 22 – 73(b)

Rates effective January 1, 2013
Police: 33.67% of each member's pensionable earnings
Fire: 32.965% of each member's pensionable earnings

In addition, the City shall make contributions of $1,327,600 annually through the year 2028.

Service Retirement Eligibility
Section 22 - 75

Police: After age 55 and 10 years of service or age 45 and 20 years of service. Members hired after January 1, 2010 must be 50 rather than 45. If retiring with less than 30 years of service a 7% reduction is applied for each year prior to age 55.

Fire: Age 55 and 10 years of service or age 50 and 20 years of service. Members hired before 1/1/2013 can also retire at age 45 if they have at least 25 years of service.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Service Retirement Pension
Section 22 - 76

For Police with at least 20 years of service as of latest contract effective date **and Fire members with at least 15 years of service** as of latest contract effective date, the following schedule applies.

Years of Service	Minimum Age	Percentage of Average Final Monthly Compensation
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	45**	55%*
25 years	45	75%

*55% at 20 years of service, plus 2% for each additional six months of service after 20 years and before 25 years.

** The minimum retirement age with less than 25 years is 50 for Fire.

For Police who did not have 20 years of service and Fire who did not have 15 years of service as of the latest contract effective date, the following schedule applies:

Years of Service	Minimum Age	Percentage of Average Final Monthly Compensation
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	45***	50%*
25 but less than 30	45	70%**
30 years	45	75%

*50% at 20 years of service, plus 2% for each additional six months of service after 20 years and before 25 years.

**70% at 25 years of service, plus 1% for each additional six months of service after 25 years and before 27 years, with an additional 0.5% 29 and 30 years, for a maximum of 75%.

*** The minimum retirement age with less than 25 years is 50 for Fire.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

For police hired after January 1, 2010, the following schedule applies:

Years of Service	Minimum Age	Percentage of Average Final Monthly Compensation
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	50	50%*
25 but less than 30	50	65%**
30 years	50	75%

*50% at 20 years of service, plus 1.5% for each additional six months of service after 20 years and before 25 years. Early retirement reduction applies if less than 30 years of service.

**65% at 25 years of service, plus 1% for each additional six months of service after 25 years and before 30 years. Early retirement reduction applies if less than 30 years of service.

For Fire hired after January 1, 2013, the following schedule applies:

Years of Service	Minimum Age	Percentage of Average Final Monthly Compensation
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	50	45%
25 but less than 30	50	55%*
30 years	50	65%

*55% at 25 years of service, plus 2% for each additional year of service after 25 years and before 30 years. Early retirement reduction applies if under age 55, unless the member has 30 years of service.

Cost of Living Adjustment (COLA): The monthly pension shall be increased by the lesser of 3% or $50 ($65 for Fire retirements after June 30, 2007). The increase will be made annually, beginning in the 13th month of retirement.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Deferred Retirement Option Program (DROP):

Police: A DROP program was instituted with the last contract. After three years, this will be reviewed to determine if it is cost neutral before continuing it. Members may participate in the DROP for three to five years once they reach retirement eligibility with a minimum of 25 years of service (certain current members have a service threshold of 22.5 years). Members continue to make contributions to the system during the DROP period. During the DROP period, the member is credited with the benefits that would have been paid if the member had retired at the start of the DROP period, along with interest at the end of the year. At the end of the DROP period, the member ends employment, receives the DROP account balance, and begins to receive payments as though retirement had occurred at the beginning of the DROP period.

Fire: A DROP program was instituted with the last contract. After three years, this will be reviewed to determine if it is cost neutral before continuing it. Members may participate in the DROP for three to five years once they reach retirement eligibility. Current members who, as of January 1, 2013, are age 50 or older with at least 20 years of service or age 45 with at least 25 years of service are eligible to participate in DROP. All other members will be required to have 25 years of service for eligibility. Members continue to make contributions to the system during the DROP period. During the DROP period, the member is credited with the benefits that would have been paid if the member had retired at the start of the DROP period, along with interest at the end of the year. At the end of the DROP period, the member ends employment, receives the DROP account balance, and begins to receive payments as though retirement had occurred at the beginning of the DROP period.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Disability Retirement

1. **In Line of Duty**
   Section 22 - 78

A member shall become entitled to the following benefits while permanently disabled.

Years of Service	Percentage of Average Final Monthly Compensation
Less than 20	50%*
20 or more	Same as Service Retirement Pension, without any reduction for early commencement

* 55% 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 latest contract effective date.

2. **Not in Line of Duty**
   Section 22 - 79

A member shall become entitled to the following benefits while permanently disabled.

Years of Service	Percentage of Average Final Monthly Compensation
Up to 10 years	10%
10 but less than 15	20%
15 but less than 20	30%
20 or more	Greater of 45% or the Service Retirement Pension without any reduction for early commencement

Note: Not payable while full salary continues

Spouse's pension:

1. **Death of Active member in Line of Duty:**

A monthly pension equal to 49% (52% 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) of the member's average final monthly compensation is paid to the surviving spouse if death occurs while the active member has less than 25 years of service. A monthly pension equal to 69% (72% 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) of the member's average final monthly compensation is paid to the surviving spouse if death occurs after the active member has 25 years or more of service.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

2. **Death of Active member Not in Line of Duty:**

The following monthly pension is paid to the surviving spouse.

Years of Service at Death	Percentage of Average Final Monthly Compensation*
0-3	0.0%
3-10	35.0%
11	36.4%
12	37.8%
13	39.2%
14	40.6%
15	42.0%
16	43.4%
17	44.8%
18	46.2%
19	47.6%
20-25	49.0%
25+	69.0%

* add 3% to each number 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

Note: Benefit terminates upon remarriage of spouse.

3. **Death of Member Eligible for Retirement or Death of Retired Member:**
    Section 22 - 82

Police: 75% of the pension the member was receiving or was eligible to receive at the time of death. 50% of the pension the member was receiving or was eligible to receive for Police members hired after January 1, 2010. Upon spouse's remarriage, all benefits cease.

Fire: 75% of the pension the member was receiving at the time of death for Fire members who began receiving benefits before July 1, 2007. 90% of the pension the member was receiving or was eligible to receive at the time of death for Fire members who were hired before January 1, 2013 and were not receiving benefits before July 1, 2007. 50% of the pension the member was receiving or was eligible to receive for Fire members hired after January 1, 2013. Upon spouse's remarriage, all benefits cease.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Children's Pension
Section 22 - 82

Upon the death of an active or retired member, the following benefit will be paid to the surviving children until age 18.

Number of Dependent Children	Percentage of Average Final Monthly Compensation
1	15%
2	30%
3	45%
4 or more	50%

Lump Sum Death Benefits

1. **Active Member without Eligible Dependents:**
   Section 22 – 84(a)

   Accumulated member's contributions, or $500 if greater.

2. **Retired Member without Eligible Dependents:**
   Section 22 – 84(b)

   Accumulated member's contributions, less previous pension payments made, or $500 if greater.

3. **Active Member with Eligible Dependents:**
   Section 22 – 84(c)

   An amount payable immediately, equal to one year's salary computed on the basis of the maximum monthly rate for patrolmen and firefighters, plus the decreased member's accumulated contributions less pension payments to his dependents, payable to the dependent who last ceases to receive pension benefits.

4. **Retired Member with Eligible Dependents:**
   Section 22 – 84(c)

   $1,000 ($5,000 for Fire retirements after June 30, 2005) payable immediately, plus the excess over $1,000 ($5,000 for Fire retirements after June 30, 2005) if any, of the deceased member's accumulated contributions less pension payments to the member and his dependents, payable to the dependent who last ceases to receive pension benefits.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Vesting:

Section 22 - 86

Upon severance of employment by a member with less than 10 years of service and prior to obtaining eligibility under Section 22 – 75, a refund of such member's accumulated contributions.

Section 22 - 86

Upon severance of employment by a member before age 45 with more than 10 years of service and prior to obtaining eligibility under Section 22 – 75, the member may elect, in lieu of receiving a refund of contributions, to receive a monthly pension, according to the table below, commencing at age 55. Such deferred pension shall be based on service credited to the date of severance.

Years of Service	Minimum Age	Percentage of Average Final Monthly Compensation
10 but less than 15	55	20%
15 but less than 20	55	30%
20 but less than 25	50	55%
25 or more	45	75%

For Police members and Fire members with less than 15 years of service as of the latest effective contract date, the schedules shown under service retirement apply as appropriate.

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Cost Method

Valuations of the plan use 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 or the end of the Deferred Retirement Option Plan (DROP).

1. The expected pension benefit payable at the end of the employee's period in covered employment (later of normal retirement or the end of the DROP, is applicable) 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 the end of his covered employment. This normal cost is determined so that its accumulated value at the end of covered employment 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 plan 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 the end of covered employment.

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 plan, actuarial gains and actuarial 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 is amortized, as a level percentage of payroll, over a closed 30-year period that began on January 1, 2014.

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Interest:	8.00% per year, (net of 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%
Spouse Age Difference:	Husbands assumed to be 3 years older than wives
Turnover:	Graduated rates by age. See table on next page
COTA Adjustment:	Members are assumed to retire with their current COTA
Increase in Total Annual Payroll:	4.00%
Assumed Annual Rate of Inflation:	3.25%
Decrement Timing:	Middle of year

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

SAMPLE RATES

Age on 1/1/2010	Annual Mortality Rates		Current Age	Annual Disability Rates	Annual Turnover Rates
	Males	Females			
20	.03%	.02%	20	.21%	1.41%
30	.05	.03	30	.24	1.69
40	.10	.07	40	.42	.63
50	.19	.15	50	.76	.00
60	.46	.41	60	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

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Retirement Rates

Assumed retirement rates for Police members hired before January 1, 2010 and Fire members hired before January 1, 2013 are 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.

Assumed retirement rates for Police members hired after January 1, 2010 and Fire members hired after January 1, 2013 are as follows:

Years of Service	Distribution	Annual Rate
Less than 30	0.0%	0.0%
30	100.0	100.0

If a member was hired after age 30, then it is assumed that member would retire at the later of age 60 or 10 years of service.

DROP Participation Rate: 70% of retirement-eligible members are assumed to enter DROP

DROP Period: 5 years, but not beyond age 60

Interest Credited to DROP Accounts: 4% annually

MEMBERSHIP DATA FOR VALUATION

The summary of member characteristics presented below covers the member group as of January 1, 2017. The schedules at the end of the report show the distribution of the various member groups by present age along with other pertinent data.

Total number of members in valuation:

(a) Active members	1,424
(b) DROP members	57
(c) Inactive vested members	13
(d) Terminated members due a refund	7
(e) Disabled members	225
(f) Retirees, spouses and children receiving benefits	1,263
(g) Total	2,989

Average age of members in valuation:

(a) Active members	
Attained Age	41.0
Hire Age	28.6
(b) DROP members	53.6
(c) Inactive vested members	46.7
(d) Disabled members	67.5
(e) Retired members	65.7
(f) Spouses and children receiving benefits	69.1

Active members as of January 1, 2017:

(a) Eligible for vested benefits	728
(b) Eligible for early or normal retirement benefits	203
(c) Eligible for refund of contributions only (not vested)	493
(d) Total	1,424

MEMBERSHIP DATA RECONCILIATION

January 1, 2016 to January 1, 2017

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

	Active Members	Termination Refund Due	Inactive Vested	Disabled Members	DROP Members	Retirees	Beneficiaries	Total
Members as of 1/1/2016	1,398	8	11	224	47	970	279	2,937
New Members	80	0	0	0	0	0	0	80
Terminations								
Rehired	1	(1)	0	0	0	0	0	0
Refunded: Paid	(7)	(3)	(1)	0	0	0	0	(11)
Refunded: Due	(5)	5	0	0	0	0	0	0
Inactive Vested	(4)	0	4	0	0	0	0	0
Disabled	(3)	0	0	3	0	0	0	0
Retirements	(21)	0	0	0	(5)	26	0	0
Participating in DROP	(15)	0	0	0	15	0	0	0
Benefit Payments Ended	0	0	0	0	0	0	(1)	(1)
Data Adjustments	0	(2)	(1)	5	0	(2)	0	0
Deaths								
With Beneficiary	0	0	0	(5)	0	(7)	12	0
Without Beneficiary	0	0	0	(2)	0	(3)	(11)	(16)
Total Members 1/1/2017	1,424	7	13	225	57	984	279	2,989

SCHEDULE I

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Total

Age	Count of Members			Valuation Salaries of Members		
	Males	Females	Total	Males	Females	Total
Under 25	14	2	16	$ 748,189	$ 82,969	$ 831,158
25-29	97	14	111	5,858,248	799,432	6,657,680
30-34	180	23	203	14,370,189	1,697,666	16,067,855
35-39	235	31	266	20,304,379	2,712,742	23,017,121
40-44	251	39	290	23,659,710	3,459,129	27,118,839
45-49	282	44	326	28,328,335	4,448,922	32,777,257
50-54	144	14	158	14,644,845	1,439,318	16,084,163
55-59	46	4	50	4,440,145	449,326	4,889,471
60-64	4	0	4	373,345	0	373,345
Over 64	0	0	0	0	0	0
Total	1,253	171	1,424	$112,727,385	$15,089,504	$127,816,889

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Total

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	16	0	0	0	0	0	0	0	0	16
25-29	105	6	0	0	0	0	0	0	0	111
30-34	72	98	33	0	0	0	0	0	0	203
35-39	45	74	131	16	0	0	0	0	0	266
40-44	17	43	112	107	11	0	0	0	0	290
45-49	5	11	75	127	101	7	0	0	0	326
50-54	0	1	29	53	65	10	0	0	0	158
55-59	0	0	8	25	13	3	1	0	0	50
60-64	0	0	1	0	2	1	0	0	0	4
Over 64	0	0	0	0	0	0	0	0	0	0
Total	260	233	389	328	192	21	1	0	0	1,424

Service Distribution

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

All Police Members

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	8	2	10	$ 384,388	$ 82,969	$ 467,357
25-29	64	11	75	3,467,903	608,494	4,076,397
30-34	120	19	139	9,224,049	1,391,195	10,615,244
35-39	131	25	156	11,130,046	2,149,951	13,279,997
40-44	105	31	136	9,790,406	2,736,076	12,526,482
45-49	143	36	179	14,291,812	3,595,082	17,886,894
50-54	65	12	77	6,490,690	1,228,311	7,719,001
55-59	19	3	22	1,788,001	340,063	2,128,064
60-64	4	0	4	373,345	0	373,345
Over 64	0	0	0	0	0	0
Total	659	139	798	$56,940,640	$12,132,141	$69,072,781

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

All Police Members

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	10	0	0	0	0	0	0	0	0	10
25-29	71	4	0	0	0	0	0	0	0	75
30-34	47	70	22	0	0	0	0	0	0	139
35-39	23	45	77	11	0	0	0	0	0	156
40-44	9	28	36	58	5	0	0	0	0	136
45-49	2	6	32	67	67	5	0	0	0	179
50-54	0	1	10	24	33	9	0	0	0	77
55-59	0	0	4	8	6	3	1	0	0	22
60-64	0	0	1	0	2	1	0	0	0	4
Over 64	0	0	0	0	0	0	0	0	0	0
Total	162	154	182	168	113	18	1	0	0	798

Service Distribution

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Police Members Hired Before January 1, 2010

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25-29	0	0	0	0	0	0
30-34	68	9	77	5,946,490	751,182	6,697,672
35-39	95	21	116	8,844,303	1,864,316	10,708,619
40-44	92	27	119	8,892,843	2,436,863	11,329,706
45-49	140	36	176	14,087,067	3,595,082	17,682,149
50-54	64	12	76	6,417,095	1,228,311	7,645,406
55-59	19	3	22	1,788,001	340,063	2,128,064
60-64	4	0	4	373,345	0	373,345
Over 64	0	0	0	0	0	0
Total	482	108	590	$46,349,144	$10,215,817	$56,564,961

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Police Members Hired Before January 1, 2010

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0
30-34	0	55	22	0	0	0	0	0	0	77
35-39	0	28	77	11	0	0	0	0	0	116
40-44	0	20	36	58	5	0	0	0	0	119
45-49	0	5	32	67	67	5	0	0	0	176
50-54	0	0	10	24	33	9	0	0	0	76
55-59	0	0	4	8	6	3	1	0	0	22
60-64	0	0	1	0	2	1	0	0	0	4
Over 64	0	0	0	0	0	0	0	0	0	0
Total	0	108	182	168	113	18	1	0	0	590

Service Distribution

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Police Members Hired On or After January 1, 2010

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	8	2	10	$ 384,388	$ 82,969	$ 467,357
25-29	64	11	75	3,467,903	608,494	4,076,397
30-34	52	10	62	3,277,559	640,013	3,917,572
35-39	36	4	40	2,285,743	285,635	2,571,378
40-44	13	4	17	897,563	299,213	1,196,776
45-49	3	0	3	204,745	0	204,745
50-54	1	0	1	73,595	0	73,595
55-59	0	0	0	0	0	0
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	177	31	208	$10,591,496	$1,916,324	$12,507,820

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Police Members Hired On or After January 1, 2010

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	10	0	0	0	0	0	0	0	0	10
25-29	71	4	0	0	0	0	0	0	0	75
30-34	47	15	0	0	0	0	0	0	0	62
35-39	23	17	0	0	0	0	0	0	0	40
40-44	9	8	0	0	0	0	0	0	0	17
45-49	2	1	0	0	0	0	0	0	0	3
50-54	0	1	0	0	0	0	0	0	0	1
55-59	0	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	162	46	0	0	0	0	0	0	0	208

Service Distribution
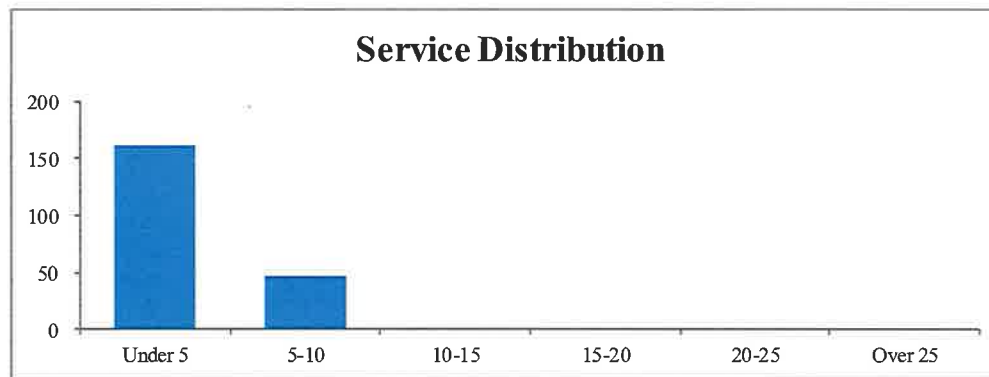
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

All Fire Members

Age	Count of Members			Valuation Salaries of Members		
	Males	Females	Total	Males	Females	Total
Under 25	6	0	6	$ 363,801	$ 0	$ 363,801
25-29	33	3	36	2,390,345	190,938	2,581,283
30-34	60	4	64	5,146,140	306,471	5,452,611
35-39	104	6	110	9,174,333	562,791	9,737,124
40-44	146	8	154	13,869,304	723,053	14,592,357
45-49	139	8	147	14,036,523	853,840	14,890,363
50-54	79	2	81	8,154,155	211,007	8,365,162
55-59	27	1	28	2,652,144	109,263	2,761,407
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	594	32	626	$55,786,745	$2,957,363	$58,744,108

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

All Fire Members

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	6	0	0	0	0	0	0	0	0	6
25-29	34	2	0	0	0	0	0	0	0	36
30-34	25	28	11	0	0	0	0	0	0	64
35-39	22	29	54	5	0	0	0	0	0	110
40-44	8	15	76	49	6	0	0	0	0	154
45-49	3	5	43	60	34	2	0	0	0	147
50-54	0	0	19	29	32	1	0	0	0	81
55-59	0	0	4	17	7	0	0	0	0	28
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	98	79	207	160	79	3	0	0	0	626

Service Distribution

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Fire Members Hired Before January 1, 2013

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25-29	9	1	10	742,890	74,468	817,358
30-34	49	2	51	4,387,578	178,675	4,566,253
35-39	89	5	94	8,161,833	486,966	8,648,799
40-44	141	8	149	13,520,134	723,053	14,243,187
45-49	137	8	145	13,903,005	853,840	14,756,845
50-54	79	2	81	8,154,155	211,007	8,365,162
55-59	27	1	28	2,652,144	109,263	2,761,407
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	531	27	558	$51,521,739	$2,637,272	$54,159,011

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Fire Members Hired Before January 1, 2013

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	0	0	0	0	0	0	0	0	0	0
25-29	8	2	0	0	0	0	0	0	0	10
30-34	12	28	11	0	0	0	0	0	0	51
35-39	6	29	54	5	0	0	0	0	0	94
40-44	3	15	76	49	6	0	0	0	0	149
45-49	1	5	43	60	34	2	0	0	0	145
50-54	0	0	19	29	32	1	0	0	0	81
55-59	0	0	4	17	7	0	0	0	0	28
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	30	79	207	160	79	3	0	0	0	558

Service Distribution

A bar chart titled "Service Distribution" with the following approximate values: Under 5 ≈ 30, 5-10 ≈ 79, 10-15 ≈ 207, 15-20 ≈ 160, 20-25 ≈ 79, Over 25 ≈ 3.

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Fire Members Hired On or After January 1, 2013

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	6	0	6	$ 363,801	$ 0	$ 363,801
25-29	24	2	26	1,647,455	116,470	1,763,925
30-34	11	2	13	758,562	127,796	886,358
35-39	15	1	16	1,012,500	75,825	1,088,325
40-44	5	0	5	349,170	0	349,170
45-49	2	0	2	133,518	0	133,518
50-54	0	0	0	0	0	0
55-59	0	0	0	0	0	0
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	63	5	68	$4,265,006	$320,091	$4,585,097

Age Distribution

Average Salary by Age

SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2017

Fire Members Hired On or After January 1, 2013

Age	Under 5	5-10	10-15	15-20	Service 20-25	25-30	30-35	35-40	Over 40	Total
Under 25	6	0	0	0	0	0	0	0	0	6
25-29	26	0	0	0	0	0	0	0	0	26
30-34	13	0	0	0	0	0	0	0	0	13
35-39	16	0	0	0	0	0	0	0	0	16
40-44	5	0	0	0	0	0	0	0	0	5
45-49	2	0	0	0	0	0	0	0	0	2
50-54	0	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	68	0	0	0	0	0	0	0	0	68

Service Distribution
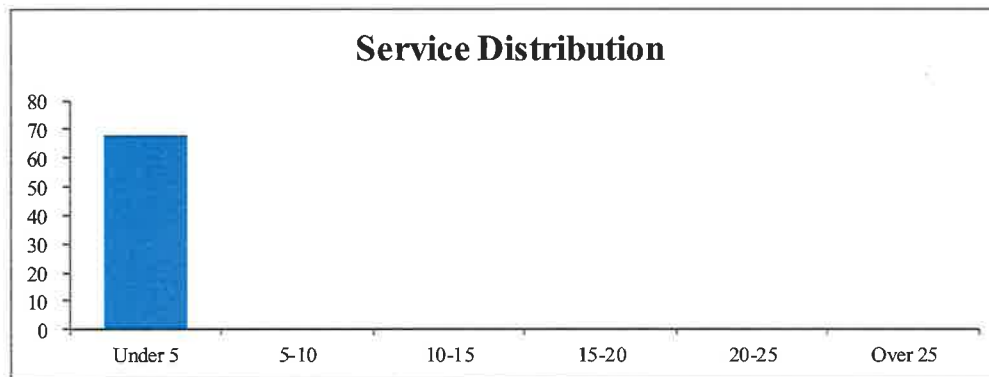
SCHEDULE II

DROP MEMBERS AS OF JANUARY 1, 2017

Age	Count of Members			Valuation Salaries of Members		
	Males	Females	Total	Males	Females	Total
Under 45	0	0	0	$ 0	$ 0	$ 0
45-47	1	0	1	88,297	0	88,297
48-50	8	1	9	861,365	97,528	958,893
51-53	19	3	22	1,712,273	328,014	2,040,287
54-56	11	1	12	866,910	77,593	944,503
57-59	10	1	11	916,653	78,073	994,726
Over 59	2	0	2	200,886	0	200,886
Total	51	6	57	$4,646,384	$581,208	$5,227,592

Age Distribution

Average Salary by Age
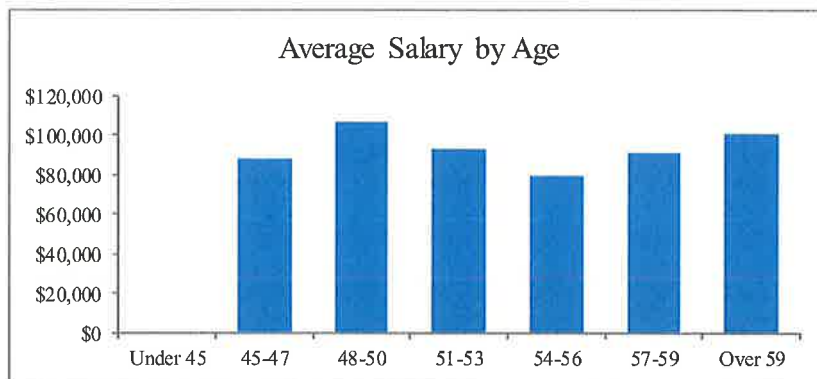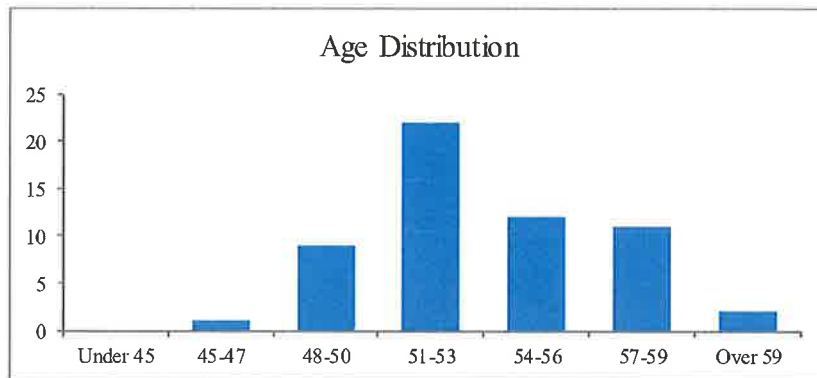
SCHEDULE III

RETIRED MEMBERS AS OF JANUARY 1, 2017

	Count of Retirees				Current Monthly Benefits		
Age	Males	Females	Total		Males	Females	Total
Under 60	261	38	299		$1,599,749	$188,701	$1,788,450
60-64	148	17	165		811,419	89,947	901,366
65-69	167	5	172		795,117	23,613	818,730
70-74	171	4	175		660,895	16,103	676,998
75-79	94	0	94		306,991	0	306,991
80-84	47	0	47		138,806	0	138,806
85-89	26	0	26		49,867	0	49,867
Over 89	6	0	6		7,739	0	7,739
Total	920	64	984		$4,370,583	$318,364	$4,688,947
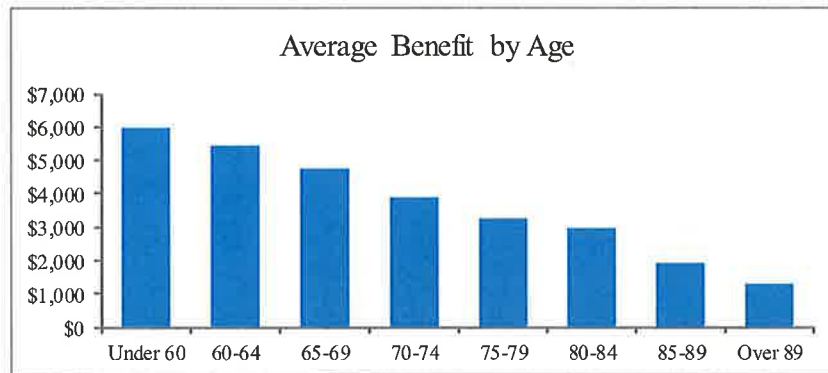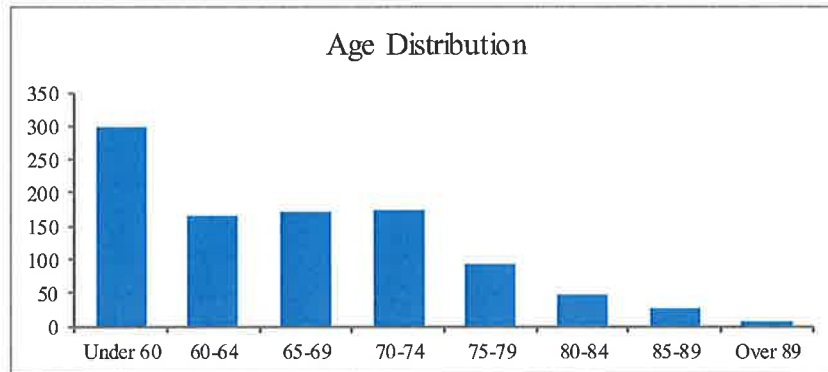
SCHEDULE IV

BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2017

Age	Count of Beneficiaries			Current Monthly Benefits		
	Males	Females	Total	Males	Females	Total
Under 60	12	47	59	$18,272	$ 102,183	$120,455
60-64	0	12	12	0	36,408	36,408
65-69	0	26	26	0	56,156	56,156
70-74	0	49	49	0	91,844	91,844
75-79	0	30	30	0	54,643	54,643
80-84	0	54	54	0	65,764	65,764
85-89	0	32	32	0	35,533	35,533
Over 89	0	17	17	0	12,953	12,953
Total	12	267	279	$18,272	$455,484	$473,756

Age Distribution

Average Benefit by Age
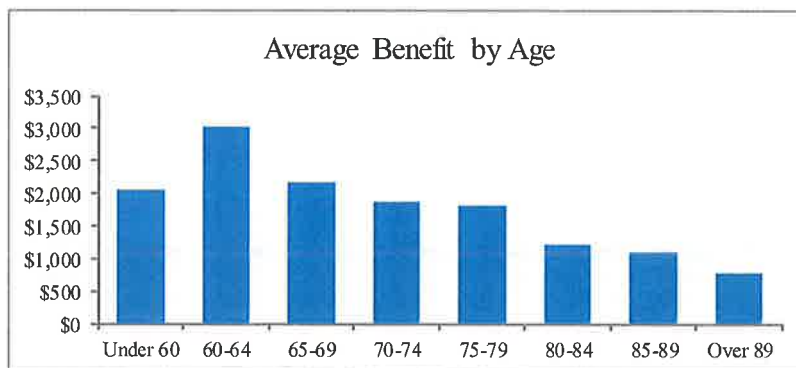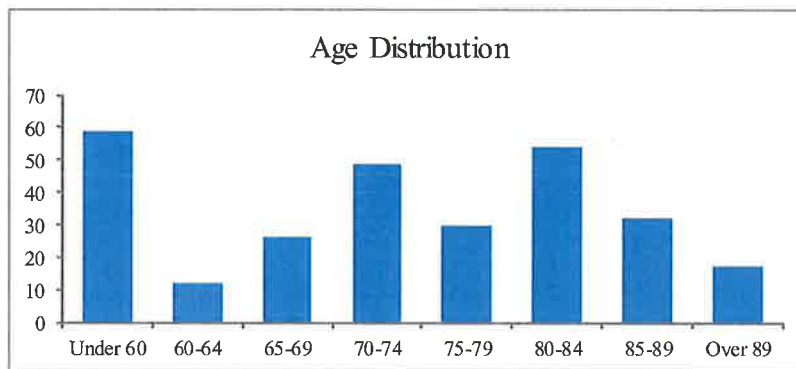
SCHEDULE V

INACTIVE VESTED MEMBERS AS OF JANUARY 1, 2017

Age	Count of Members			Expected Monthly Benefit		
	Males	Females	Total	Males	Females	Total
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	1	1	2	2,091	1,349	3,440
40-44	3	1	4	4,737	2,094	6,831
45-49	2	0	2	4,077	0	4,077
50-54	4	0	4	7,585	0	7,585
55-59	1	0	1	1,061	0	1,061
Over 59	0	0	0	0	0	0
Total	11	2	13	$19,551	$3,443	$22,994

SCHEDULE VI

DISABLED MEMBERS AS OF JANUARY 1, 2017

Age	Count of Members			Current Monthly Benefits		
	Males	Females	Total	Males	Females	Total
Under 30	0	0	0	$ 0	$ 0	$ 0
30-34	1	0	1	3,090	0	3,090
35-39	2	0	2	5,805	0	5,805
40-44	6	2	8	21,389	5,755	27,144
45-49	9	1	10	31,146	3,011	34,157
50-54	16	8	24	59,530	26,837	86,367
55-59	10	6	16	32,216	17,883	50,099
60-64	13	2	15	46,452	3,370	49,822
65-69	24	0	24	80,945	0	80,945
70-74	57	0	57	160,595	0	160,595
75-79	35	0	35	87,843	0	87,843
80-84	17	0	17	39,884	0	39,884
85-89	13	0	13	17,840	0	17,840
Over 89	3	0	3	4,872	0	4,872
Total	206	19	225	$591,607	$56,856	$648,463

Appendix G

Omaha Public Power District
Retirement Plan Information

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Omaha Public Power District

Timothy J. Burke
President & CEO

October 13, 2017

Senator Mark Kolterman, Chairperson
Nebraska Retirement Systems Committee
Nebraska Legislature
State Capitol
P. O. Box 94604
Lincoln, NE 68509-4604

      RE: Neb. Rev. Stat. § 13-2402 - Reporting Requirements - Defined Benefit Plans

Dear Senator Kolterman:

      I am responding on behalf of the Omaha Public Power District ("OPPD") to your letter of September 18, 2017 regarding reporting requirements pursuant to Section 13-2402 of the Nebraska Revised Statutes. This letter provides the information requested in your September 18th letter.

      OPPD has provided and will continue to disclose information describing the organization's defined benefit Retirement Plan to the Board of Directors, in annual reports, in bond offering documents, and in annual newsletters provided to plan participants. We are pleased to provide similar information to the Nebraska Retirement Systems Committee.

      As requested, OPPD's Chief Financial Officer, L. Javier Fernandez, will appear before the Committee on December 1st to present the information requested by the Committee and answer questions about OPPD's defined benefit plan status.

      If you have any further questions, or need additional information, please do not hesitate to contact me.

      Thank you for the opportunity to present this information to the Committee.

Sincerely,

Timothy J. Burke
President and Chief Executive Officer
Omaha Public Power District

2017 Reporting Form for Underfunded

Political Subdivision Pension Plans

Omaha Public Power District

1. Please list the following information for the <u>current and previous plan year:</u>

   NOTE: The January 1, 2017 actuarial valuation report will be completed in late 2017 and will be provided at that time. As a result, the 2017 information is not yet available for some items below.

   a. <u>Funding Status</u> – There are currently multiple ways to identify and value funded status. For your consideration, the district is aware of two and they are as follows:

      i. **Present Value of Accrued Plan Benefits**: present value of benefits based on compensation and service to the date of the actuarial valuation.

Funded Ratio	2013	2014	2015	2016	2017
PVAPB (%)	83.0	85.2	82.7	76.4	Not Yet Available

      ii. **Actuarial Accrued Liability**: present value of retirement benefits adjusted for assumptions for future increases in compensation and service attributable to past accounting periods.

Funded Ratio	2013	2014	2015	2016	2017
AAL (%)	71.9	73.9	72.4	69.2	Not Yet Available

   b. <u>Assumed rate of return</u> – The discount rate of return is itemized in the table below:

	2013	2014	2015	2016	2017
Discount Return %	7.75	7.75	7.75	7.0	7.0

c. <u>Actual investment return</u> – The actual return is itemized in the table below:

	2013	2014	2015	2016	2017
Actual Return %	11.94	3.85	-1.07	6.74	Not Yet Available

d. <u>Member and employer contributions rates</u> - percentage

	2013	2014	2015	2016	2017
Employee Contributions (%)	6.2	6.2	6.2	6.2	6.2

The OPPD percentage rate is calculated by dividing the Annual Required Contribution into the Valuation Compensation as follows:

	2013	2014	2015	2016	2017
Employer Contributions (%)	27.8	27.3	23.7	25.2	Not Yet Available

e. <u>Normal cost</u> – percentage

	2013	2014	2015	2016	2017
Covered Compensation (%)	11.8	11.6	11.8	11.1	Not Yet Available

f. <u>Actuarial required contribution</u> – percentage & dollar amount

Assumed percentage of covered compensation

	2013	2014	2015	2016	2017
ARC (%)	27.8	27.3	23.7	25.2	Not Yet Available

Dollar amount in millions

	2013	2014	2015	2016	2017
ARC ($)	52.4	53.0	46.6	50.7	Not Yet Available

g. <u>Actuarially required contribution -</u> actual dollars contributed and percentage of actuarial required contribution actually contributed

	2013	2014	2015	2016	2017
ARC ($) actually made	52.4	53.0	46.6	50.7	Not Yet Available
ARC Made (%)	100	100	100	100	Not Yet Available

2. Please provide a brief narrative of the circumstances that led to the current underfunding of the retirement plan.

> The primary reasons for the pension's present funding level are lower investment performance from 2000-2008, increase in mortality tables due to longer life expectancy, and reduction of the plan's projected earnings rate (discount rate). All of these items have impacted the funding status for the universe of defined benefit plans.

3. Have there been any changes in the actuarial methods and/or assumptions since the previous actuarial valuation report? If so, please describe.

> The District adopted an updated mortality table in 2017.

4. Please provide 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.

   a. In 2012, the OPPD Board of Directors approved a change in the retirement benefit for employees hired after December 31, 2012. Employees hired on January 1, 2013 and later are no longer eligible for the monthly annuity benefit and are only eligible for a cash balance payment at retirement. In addition to providing more convenience to future employees, there was a decrease in actuarially projected plan costs which is expected to reduce future pension costs.
   b. In 2013, the District changed early retirement eligibility which generally prevents employees from receiving early retirement benefits before the age of 55.
   c. In 2017, negotiations with bargaining units were completed and resulted in an increase in employee contributions to the retirement plan, as discussed in #5 below.

5. Please describe any recent or ongoing negotiations with bargaining groups that may impact the funding of the plan.

> Negotiations occur on an ongoing basis. The current negotiations with the District's unions were completed in 2017. As a result of the negotiations, employee contributions to the retirement plan will gradually increase beginning in 2018 at 6.7% through 2022 at 9.0%.

6. When was the most recent Actuarial Experience Study conducted on the plan? Please attach a copy of the most recent Actuarial Experience Study.

   The most recent Actuarial Experience Study was completed in 2016 and was provided with the submittal on October 14, 2016.

7. What is the current assumed rate of return? If the rate has been changed in the past year, or if there are plans to review the rate for the upcoming year, please describe.

   The discount rate is currently 7.0% and was changed to this rate for the 2016 actuarial valuation.

8. Please attach the most recent actuarial valuation report. If the valuation report is completed biannually (or less often) please include an updated report for the interim year/s, if available.

   The January 1, 2017 actuarial valuation report will be completed in late 2017 and will be provided at that time.

Actuarial Report

Omaha Public Power District

Retirement Plan

As of January 1, 2016

Empower Results®

Contents

Introduction

This report documents the results of the January 1, 2016 actuarial valuation of the Omaha Public Power District (OPPD) Retirement Plan for the plan sponsor and for Omaha Public Power District. The information provided in this report is intended strictly for documenting information relating to contribution and funding requirements for the 2016 plan year.

Determinations for purposes other than the funding valuation may be significantly different from the results in this report. Thus, the use of this report for purposes other than those expressed here may not be appropriate.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. This plan is a governmental plan as defined in IRC section 414(d), and as such the plan is not subject to the ERISA minimum funding requirements.

Future actuarial measurements may differ significantly from the current measurements presented in this report due (but not limited to) to such factors as the following:

- Plan experience differing from that anticipated by the economic or demographic assumptions;
- Changes in actuarial methods or 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); 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 such future measurements.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by Omaha Public Power District as of the valuation date. While we cannot verify the accuracy of all the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

The actuarial assumptions and methods used in this valuation are described in the Actuarial Assumptions and Methods section of this report. Omaha Public Power District selected the economic and demographic assumptions. Aon Hewitt provided guidance with respect to these assumptions, and it is our belief that the assumptions represent reasonable expectations of anticipated plan experience.

The undersigned are familiar with the near-term and long-term aspects of pension valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. The information provided in this report is dependent upon various factors as documented throughout this report, which may be subject to change. Each section of this report is considered to be an integral part of the actuarial opinions.

To our knowledge, no colleague of Aon Hewitt providing services to Omaha Public Power District has any material direct or indirect financial interest in Omaha Public Power District. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this actuarial report for Omaha Public Power District.

Ronald J. Kalvoda, FSA, EA
Aon Hewitt

Scott E. Syverson, EA, MAAA
Aon Hewitt

December 2016

Summary

The following page summarizes the results of the January 1, 2016 actuarial valuation. For comparison purposes, the results of the January 1, 2015 and January 1, 2014 actuarial valuations are also shown.

This plan is a governmental plan as defined in IRC section 414(d), and as such the Plan is not subject to the ERISA minimum funding requirements.

Plan Changes

The January 1, 2016 valuation results reflect the following plan changes:

- Rule of 70 grandfathering for exempt employees was extended from December 1, 2012 to December 1, 2013.

Assumption Changes

The January 1, 2016 valuation results reflect the following assumption changes:

- The mortality table for healthy participants was updated from the RP-2014 Aggregate table with generational projection using Scale MP-2014 to the RP-2014 Aggregate table projected back to 2006 using Scale MP-2014 and projected forward using Scale MP-2015 with generational projection.
- The mortality table for disabled participants was updated from the RP-2014 Disabled Retiree table with generational projection using Scale MP-2014 to the RP-2014 Disabled Retiree table projected back to 2006 using Scale MP-2014 and projected forward using Scale MP-2015 with generational projection.
- Interest rate was lowered from 7.75% to 7.00%.
- An assumption study was performed in 2016 and resulted in a change to the following assumptions:
    - Salary scale was updated to reflect recent experience.
    - Retirement rates for active employees were updated to reflect recent experience.
    - Withdrawal rates for active employees were updated to reflect recent experience.
    - Retirement age for terminated-vested employees was updated from age 62 to age 63.
    - Spouse age differential was updated from males three years older than females to males two years older than females.
- Separate retirement and withdrawal assumptions have been developed for Fort Calhoun participants due to the shutdown.

Method Changes

There have been no method changes since the prior valuation.

Summary

	January 1, 2014	January 1, 2015	January 1, 2016
Interest Rate	7.75%	7.75%	7.00%
Present Value of Future Benefits ("PVB")	$ 1,450,415,147	$ 1,543,602,431	$ 1,588,967,348
Accrued Liability (EAN)	$ 1,224,899,093	$ 1,310,736,895	$ 1,406,958,596
Actuarial Value of Assets	905,699,590	949,166,647	973,844,079
Unfunded Accrued Liability	$ 319,199,503	$ 361,570,248	$ 433,114,517
Gross Normal Cost	$ 22,491,463	$ 23,223,863	$ 22,251,621
As Percentage of Covered Compensation	11.59%	11.83%	11.08%
Annual Required Contribution ("ARC")[1]	$ 53,008,063	$ 46,568,073	$ 50,711,451
As Percentage of Covered Compensation	27.31%	23.72%	25.24%
Number of Participants			
Retired and Beneficiaries	1,874	1,915	1,992
Terminated and Vested	456	378	352
Disabled	23	28	30
Active	2,269	2,237	2,200
Total	4,622	4,558	4,574
Valuation Compensation[2]	$ 194,100,275	$ 196,343,670	$ 200,905,242

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[1] Adjusted to reflect timing of contributions.
[2] Expected compensation during the plan year for active participants under the 100% assumed retirement age.

Funding Requirements

The Funding Requirements section presents the results of the ongoing plan valuation, which determines the contribution levels.

Included in the Funding Requirements are the following sections:

- *Assets and Liabilities*—This section develops the basic quantities upon which the actual contributions are based;
- *Contributions*—This section shows the development of the contribution amount for the year; and
- *Experience*—This section develops and analyzes the actuarial gain or loss during the past year.

This plan is a governmental plan as defined in IRC section 414(d), and as such the plan is not subject to the ERISA minimum funding requirements.

Assets and Liabilities

The Asset and Liabilities section includes the following:

- *Unfunded Accrued Liability and Normal Cost*—The actuarial valuation determines the unfunded accrued liability and the normal cost of the plan for the current year. The contribution then consists of the normal cost plus a payment on the unfunded accrued liability, if any.

- For employees already retired or terminated with a vested pension, the benefits to be paid have been determined. For other employees, future benefit payments based on service and projected pay must be estimated. As of the current valuation date, these liabilities have been valued as shown on the following pages.

- *Development of the Actuarial Value of Assets*—The actuarial valuation determines an actuarial value of assets, which has been adjusted to smooth out any significant annual changes in the market value of assets.

Valuation Results

The following table shows the basic valuation results as of January 1, 2016, both before and after changes.

	Before Changes	After Changes
Accrued Liability, 1/1/2016		
Retirees and Beneficiaries	$ 793,509,054	$ 834,299,147
Terminated Vested	21,617,291	22,171,125
Active and Disabled Employees	540,271,203	550,488,324
Total	$ 1,355,397,548	$ 1,406,958,596
Actuarial Value of Assets, 1/1/2016	973,844,079	973,844,079
Unfunded Accrued Liability, 1/1/2016	$ 381,553,469	$ 433,114,517
Funded Ratio	71.8%	69.2%
Gross Normal Cost	$ 23,405,603	$ 22,251,621
Number of Participants		
Retired and Beneficiaries		1,992
Terminated Vested		352
Disabled		30
Active		2,200
Total		4,574
Valuation Compensation[1]		$ 200,905,242

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[1] Expected compensation during the plan year for active participants under the 100% assumed retirement age.

Market Value of Assets

Market Value, 12/31/2015	$	869,489,088
Receivable for 2015 Plan Year		0
Market Value of Assets, 1/1/2016	$	869,489,088

Actuarial Value of Assets

The actuarial value of assets is determined assuming the prior year's value grew at the valuation interest rate and then adjusted 20% toward the market value of assets on the valuation date.

Actuarial Value, 1/1/2015	$	949,166,647
OPPD Contributions for 2015		46,568,073
Employee Contributions for 2015		12,375,160
Benefit Payments in 2015		(81,441,485)
Interest on Above at 7.75% to 12/31/2015		73,264,432
Expected Value of Assets, 1/1/2016	$	999,932,827
Adjustment 20% Toward Market Value		(26,088,748)
Actuarial Value of Assets, 1/1/2016	$	973,844,079

Actuarial rate of return in 2015 = 5.03%

A loss of $26,088,748 was realized from the plan's asset experience. The return on the market value of assets during the 2015 Plan Year was approximately (-1.30%). The return on the actuarial value (which smoothes prior years' gains and losses) was 5.03%, compared to the 7.75% assumed in 2015.

Contributions

This section includes the calculation of the Annual Required Contribution ("ARC") applicable to the 2016 plan year. The ARC is determined based on OPPD's funding policy. The funding policy is based on the following:

- Entry age normal cost method
- 20-year fresh start of the unfunded accrued liability as of January 1, 2015.
- One-year amortization of the increase in accrued liability due to certain plan amendments, including single-year ad hoc retiree cost-of-living adjustments.
- 20-year amortization of other plan or assumption changes and actual gains or losses.
- Amortizations are closed group amortizations based on level amounts.

Annual Required Contribution for 2016

Gross Normal Cost, 1/1/2016	$	22,251,621
Expected Employee Contributions during 2016		(12,456,125)
Net Amortization Charges, 1/1/2016		38,987,958
Interest at 7.00% to 12/31/2016		3,850,806
Total Charges at 12/31/2016	$	52,634,260
Discount for Monthly Contributions		(1,922,809)
Annual Required Contribution for 2016 Plan Year—Adjusted for Assumed Monthly Contributions	$	50,711,451

Schedule of Amortization Payments to be Recognized in the Annual Required Contribution

OPPD has elected to amortize all future gains/losses and plan amendments over a period of 20 years.

Source	Date Established	Original Amount	Remaining Years	Present Value 1/1/2016	Payment Due 1/1/2016
2015 Fresh Start	1/1/2015	$ 361,570,248	19	$ 353,447,669	$ 31,959,932
2016 Plan Amendment	1/1/2016	$ 1,268,369	20	$ 1,268,369	$ 111,893
2016 Assumption Changes	1/1/2016	$ 50,292,679	20	$ 50,292,679	$ 4,436,704
2016 (Gain)/Loss	1/1/2016	$ 28,105,800	20	$ 28,105,800	$ 2,479,429
Total				$ 433,114,517	$ 38,987,958

Experience

This section presents the development and analysis of the actuarial gain/loss during the past year. Gains or losses result when actual plan experience over the prior year differs from the Actuarial Assumptions.

Development of Actuarial Gain or Loss for 2015

Unfunded Accrued Liability (Surplus), 1/1/2015		$	361,570,248
Plus:	Interest to 12/31/2015 at 7.75%		28,021,694
Plus:	2015 Total Normal Cost		23,223,863
Plus:	Interest to 12/31/2015 at 7.75%		1,799,849
Less:	2015 OPPD Contributions		46,568,073
Less:	2015 Employee Contributions		12,375,160
Less:	Interest to 12/31/2015 at 7.75%		2,859,874
Equals: Expected Unfunded Accrued Liability (Surplus), 1/1/2016		$	352,812,547
Less:	Actual Unfunded Accrued Liability (Surplus) Before Changes, 1/1/2016		381,553,469
Equals: Actuarial Gain (Loss) for 2016 Plan Year		$	(28,740,922)

Reconciliation of Unfunded Accrued Liability (Surplus)

Unfunded Accrued Liability (Surplus) Before Changes, 1/1/2016	$	381,553,469
Change in Unfunded Due to Plan Amendment		1,268,369
Change in Unfunded Due to Assumption Change		50,292,679
Actual Unfunded Accrued Liability (Surplus), 1/1/2016	$	433,144,517

Accrued Benefit Values

This section presents the results of a separate valuation of the plan's obligations, based only on benefits accrued as of the valuation date of January 1, 2016. The focus of this valuation differs from the calculation of ongoing funding requirements, which anticipates benefits to be earned by future service and salary increases. This accrued benefit valuation assumes an ongoing plan and, therefore, differs from a calculation of termination liabilities which would be based on the benefits and assumptions appropriate for a terminating plan.

The American Academy of Actuaries, in Actuarial Standards of Practice Number 4, has provided recommended procedures for the calculation of the Present Value of Vested Accrued Benefits and the Present Value of Accrued Benefits. The results under both illustrations include the sum of the present value of:

- All benefits expected to be paid to former participants and their beneficiaries; and
- Benefits expected to be paid at a future date to present active participants, based on only service and pay prior to the date of calculation.

The *Present Value of Vested Accrued Benefits* recognizes only the benefits in which an active participant retains a right, independent of continuation of employment, beyond the calculation date. It does not include any additional benefits which might arise because of future death or disability that would not become payable if the participant had terminated employment before the occurrence of the death or disability.

The *Present Value of All Accrued Benefits* recognizes All Accrued Benefits expected to become payable at future dates, including the accrued portion of disability and preretirement death benefits. Thus, the accrued benefit of a non-vested participant is included in this calculation to the extent it will become payable (i.e., vest) upon the occurrence of a future event such as termination, death, disability, or retirement.

The accrued benefit used in these calculations is based on the personnel data supplied by OPPD.

The interest rate used in these calculations is the same as the funding interest rate.

Accrued Benefit Values

Vested Accrued Benefits, 1/1/2016

Retired and Beneficiaries	$	834,299,147
Terminated Vested		22,171,125
Active and Disabled Employees		367,397,879
Total Vested	$	1,223,868,151
Non-vested Benefits, 1/1/2016		51,049,644
Total Accrued Benefits, 1/1/2016	$	1,274,917,795
Interest Rate Used for These Calculations		7.00%

Historical Accrued Benefit Values and Funded Ratios

Valuation Date	Interest Rate		Accrued Benefit Value		Actuarial Assets	Funded Ratio		Market Assets	Funded Ratio
1/1/2016	7.00%	$	1,274,917,795	$	973,844,079	76.4%	$	869,489,088	68.2%
1/1/2015	7.75%	$	1,147,857,404	$	949,166,647	82.7%	$	903,563,000	78.7%
1/1/2014	7.75%	$	1,063,458,429	$	905,699,590	85.2%	$	886,689,000	83.4%
1/1/2013	7.75%	$	1,027,634,931	$	852,552,291	83.0%	$	800,941,000	77.9%
1/1/2012	7.75%	$	985,638,320	$	805,762,548	81.8%	$	711,973,000	72.2%
1/1/2011	7.75%	$	929,439,034	$	771,588,331	83.0%	$	707,943,000	76.2%
1/1/2010	8.00%	$	854,121,013	$	733,227,289	85.8%	$	636,262,350	74.5%
1/1/2009	8.00%	$	782,059,197	$	698,111,470	89.3%	$	505,449,000	64.6%
1/1/2008	8.20%	$	702,387,775	$	695,741,868	99.1%	$	659,737,600	93.9%
1/1/2007	8.20%	$	653,802,476	$	656,473,880	100.4%	$	635,020,300	97.1%
1/1/2006	8.20%	$	609,284,807	$	611,924,676	100.4%	$	574,286,900	94.3%
1/1/2005	8.40%	$	553,591,549	$	577,885,164	104.4%	$	549,264,200	99.2%
1/1/2004	8.40%	$	515,350,617	$	545,565,278	105.9%	$	508,132,200	98.6%
1/1/2003	8.50%	$	476,951,308	$	519,723,240	109.0%	$	433,102,700	90.8%
1/1/2002	8.75%	$	425,266,689	$	544,184,070	128.0%	$	494,471,300	116.3%

Historical Actuarial Accrued Liabilities and Funded Ratios

Valuation Date	Interest Rate		Actuarial Accrued Liability		Actuarial Assets	Funded Ratio		Market Assets	Funded Ratio
1/1/2016	7.00%	$	1,406,958,596	$	973,844,079	69.2%	$	869,489,088	61.8%
1/1/2015	7.75%	$	1,310,736,895	$	949,166,647	72.4%	$	903,563,000	68.9%
1/1/2014	7.75%	$	1,224,899,093	$	905,699,590	73.9%	$	886,689,000	72.4%
1/1/2013	7.75%	$	1,184,996,831	$	852,552,291	71.9%	$	800,941,000	67.6%
1/1/2012	7.75%	$	1,155,410,379	$	805,762,548	69.7%	$	711,973,000	61.6%
1/1/2011	7.75%	$	1,094,908,920	$	771,588,331	70.5%	$	707,943,000	64.7%
1/1/2010	8.00%	$	1,018,913,896	$	733,227,289	72.0%	$	636,262,350	62.4%
1/1/2009	8.00%	$	963,324,892	$	698,111,470	72.5%	$	505,449,000	52.5%
1/1/2008	8.20%	$	868,897,940	$	695,741,868	80.1%	$	659,737,600	75.9%
1/1/2007	8.20%	$	819,314,262	$	656,473,880	80.1%	$	635,020,300	77.5%
1/1/2006	8.20%	$	771,906,685	$	611,924,676	79.3%	$	574,286,900	74.4%
1/1/2005	8.40%	$	702,300,052	$	577,885,164	82.3%	$	549,264,200	78.2%
1/1/2004	8.40%	$	658,260,260	$	545,565,278	82.9%	$	508,132,200	77.2%
1/1/2003	8.50%	$	614,382,408	$	519,723,240	84.6%	$	433,102,700	70.5%
1/1/2002	8.75%	$	548,292,461	$	544,184,070	99.3%	$	494,471,300	90.2%

Personnel Information

The actuarial valuation was based on personnel data supplied by OPPD. The first of the following tables contains a summary of the total participant group as of January 1, 2016. For comparison purposes, the January 1, 2015 figures are also shown.

Age and service have been determined for each participant in years and completed months as of the valuation date.

Number of Participants

	January 1, 2015	January 1, 2016
Retired and Beneficiaries	1,915	1,992
Terminated Vested	378	352
Disabled	28	30
Active	2,237	2,200
Total	4,558	4,574

Personnel Characteristics of Active Participants as of January 1, 2016

	Number	Average Age	Average Years of Service	Average Entry Age	Average Pay
Male	1,779	44.7	13.6	31.1	—
Female	421	46.7	14.2	32.5	—
Total	2,200	45.1	13.7	31.4	$ 86,436

Characteristics for Inactive Participants

	Number	Average Age	Average Annual Benefit[1]
Retired and Beneficiaries	1,992	69.7	$ 40,248
Terminated Vested	352	51.2	$ 20,142

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[1] Does not include terminated vested participants under the cash balance formula.

Distribution of Personnel

The following pages provide graphical and statistical summaries of the personnel data. Included are the following:

- A grid which presents the distribution of active participants by age and service.
- A bar chart which presents the distribution of active participants by five-year age groupings.
- A bar chart which presents the distribution of active participants currently age 55 or older by five-year groupings of expected service at age 65.

These charts and graphs are useful tools for analyzing many different characteristics of the current participants of the plan. When compared to prior years' valuations, trends in the active participant population can also be observed.

**DISTRIBUTION OF PERSONNEL
BY AGE AND YEARS OF SERVICE**

Omaha Public Power District

Active Employee

- This distribution shows personnel by age last birthday and completed years of service as of 01/01/2016. For instance, the cell at age 25 and 1 year of service contains 1 employee.

- Individual careers progress along a diagonal (stair-step) line; e.g., all employees commencing service at age 25 appear on the diagonal which starts at age 25 with 0 service and runs through 26 and 1, 27 and 2, etc.

- The average age and service of this group is 45.1, 13.7.

Distribution of Personnel by Age and Years of Service — Omaha Public Power District, Active Employee.

Distribution of Personnel by Age

Omaha Public Power District
Active Employee
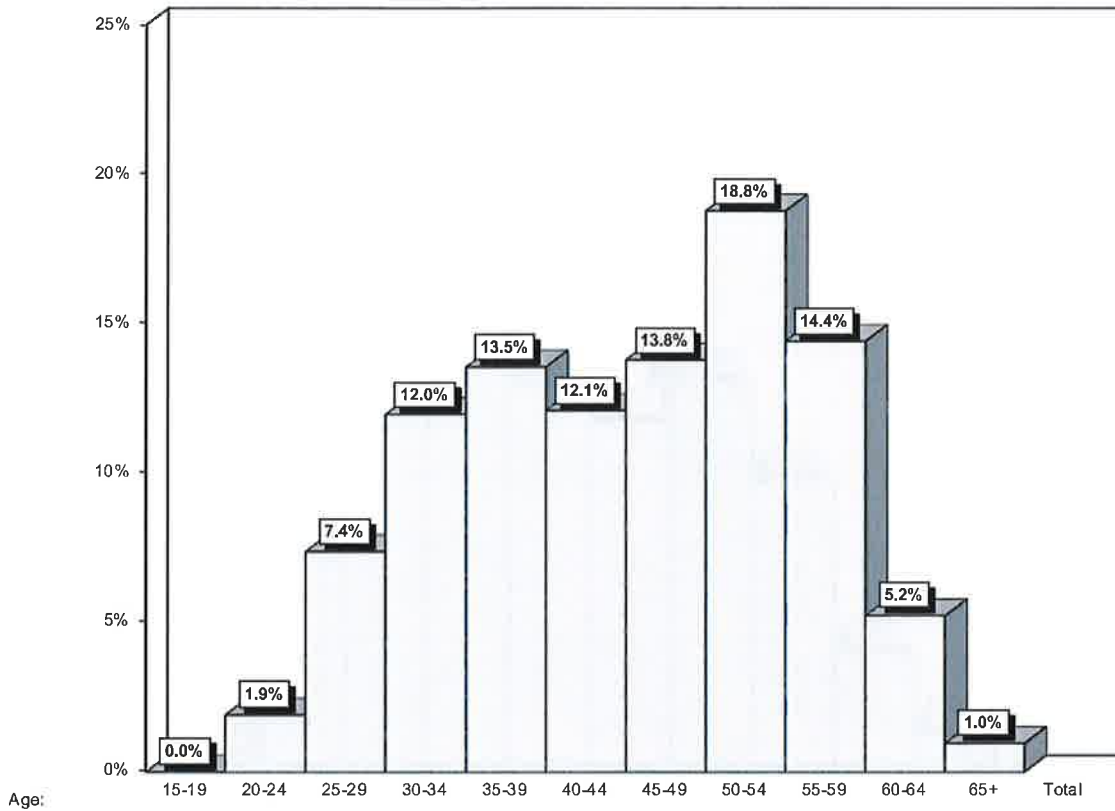
Age:	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
Number	0	42	162	263	298	266	303	413	317	115	21	2,200
Average Service	0.0	1.9	4.0	6.3	8.9	11.7	14.3	19.2	21.8	20.8	22.3	13.7

Detail of Employees 55 & Over

Age	55	56	57	58	59	60	61	62	63	64	65	66+
Number	80	72	62	57	46	39	29	23	13	11	9	12
Average Service	23.6	20.5	23.1	19.8	21.3	23.2	19.5	22.2	16.8	17.9	18.9	24.8

Distribution of Personnel
By Expected Service At Age 65
(Based Upon Personnel Age 55 And Over)

Omaha Public Power District
Active Employee
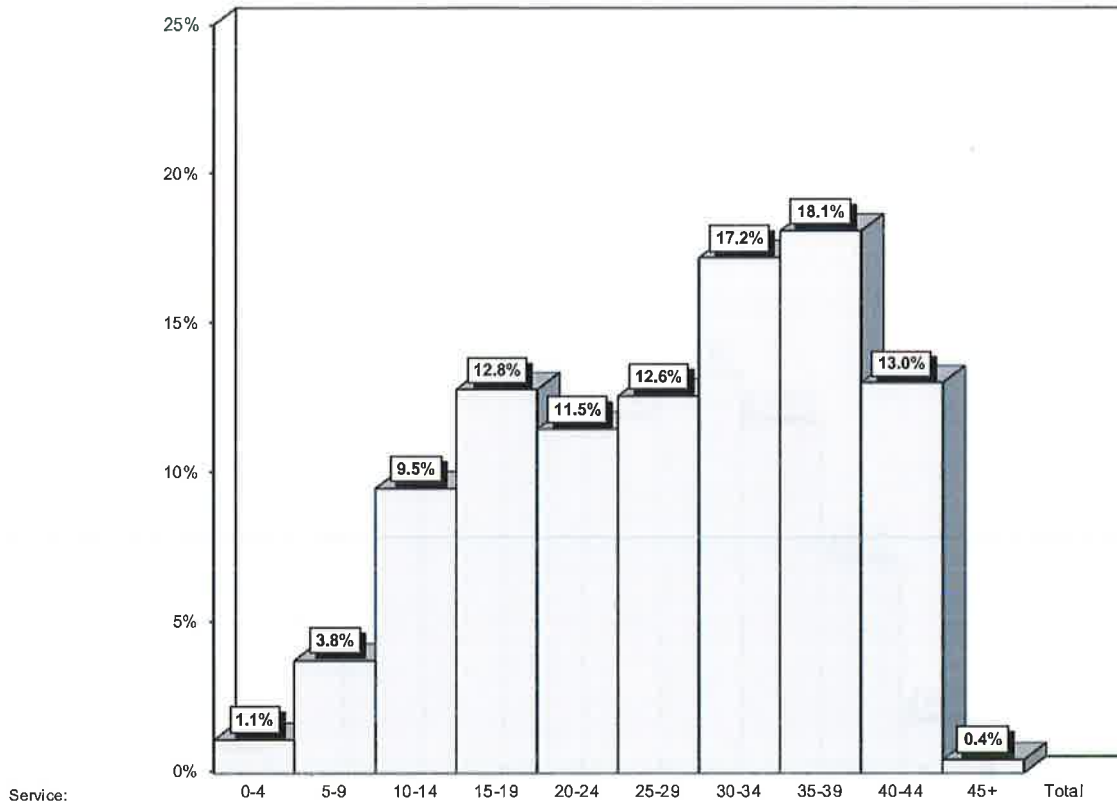
Service:	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	Total
Number	5	17	43	58	52	57	78	82	59	2	453
Average Service At Age 65*	3.6	8.3	12.7	17.4	22.4	27.5	32.5	37.1	42.0	45.0	27.8

* Or Current
Age if Older

Plan Provisions

Plan Name	Omaha Public Power District Retirement Plan.
Effective Date	The original Plan became effective December 31, 1945. The plan was restated effective January 1, 1997, and last amended during 2015.
Plan Year	Calendar year.
Eligibility	Full-time employees become eligible upon date of employment.
Participation	Each eligible employee shall immediately become a participant. A part-time employee may elect not to become a member. As of January 1, 2013 for non-union 763 employees and May 31, 2013 for union 763 employees, all new hires receive cash balance benefits.

Final Average Pay Formula Provisions

Normal Retirement

Eligibility	Age 65.
Benefit	A normal retiree shall receive a monthly benefit equal to 2.25% of the participant's average monthly compensation per year of credited service. Participants who were participants in certain other prior pension plans will have their benefits reduced by prior plan benefits. Certain participant's may have additional accrual rates apply by special provisions. A minimum benefit of the actuarial equivalent of a participant's contributions accumulated with interest at 5.5% to date of retirement exists for all participants.

Unreduced Early Retirement

Eligibility	Ninety age/service points.
Benefit	An early retiree shall receive a monthly benefit computed in the same manner as a normal retirement benefit but based on the participant's average monthly compensation and credited service at the time of termination. This benefit is unreduced for early commencement.

Early Retirement

Eligibility
Some grandfathered at age 50 with 10 years of service and 70 age/service points. Else, Union 763 is age 50 with 25 years of service, and all others are age 55 with 20 years of service, or age 62 with 10 years of service.

Benefit
An early retiree shall receive a monthly benefit computed in the same manner as a normal retirement benefit but based on the participant's average monthly compensation and credited service at the time of termination. Further, this benefit will be reduced by the lesser of 3% per year from age 62, or 3% per point from 90 age/service points.

Deferred With Vesting

Eligibility
Five years of continuous service.

Benefit
A vested participant who terminates shall be entitled to receive an accrued benefit computed in the same manner as a normal retirement benefit, but based on the participant's average monthly compensation and credited service at the time of termination. Benefits may commence for early retirement. This benefit will be reduced 6% for each year the commencement date precedes age 65.

Preretirement Surviving Spouse Benefit

Eligibility
Five years of continuous service.

Benefit
A spouse who survives a vested participant who has not yet retired shall receive one-half of the benefit to which the participant would have been entitled had the participant retired on the day immediately preceding death. The benefit is reduced by 2% for each year that the surviving spouse is more than five years younger than the participant. The benefit continues during the lifetime of the spouse and begins upon the participant's death.

Preretirement Dependent Survivor Benefit

Eligibility
Actively employed full-time district employees.

Benefit
The percent of base pay at time of death paid as a survivor benefit will be 20% for one dependent, 40% for two dependents, and 50% for three or more dependents. The survivor benefit is offset by amounts payable from the preretirement surviving spouse benefit, workers' compensation survivor payments, and payments from other district-sponsored sources.

Return of Contributions

Eligibility
Plan participants not eligible for vested, death, early or normal retirement benefits. Terminated vested participants have the option to receive this benefit in lieu of their accrued benefit.

Benefit
Participant contributions accumulated with 5.5% interest will be returned.

Normal Form of Benefits
An unmarried participant shall receive a Life Annuity. Married participants will receive an unreduced 50% Joint and Survivor Annuity.

Definitions

Continuous Service	Years of employment with the district during which an employee is compensated for 1,000 or more hours.
Credited Service	One-twelfth of a year of credited service for each calendar month of Service to the district as a full-time employee or as a member by a part-time employee. For union 763 employees attaining 90 points after May 31, 2013, credited service is frozen upon attaining 90 points.
Compensation	Regular wages for services rendered to the District, including base pay, shift differentials and pay for service as an acting crew leader, but excluding any bonuses, pay for overtime and special pay.
Average Monthly Compensation	Average of compensation for the highest 18 consecutive months.
Employee Contributions	6.20%. Rate may be adjusted based on the plan's funded status. For union 763 employees attaining 90 points after May 31, 2013, contributions are stopped upon attaining 90 points.

Cash Balance Formula Provisions

Accrued Benefit

Pay Credits

A participant shall receive annual pay credits equal to a percentage of salary based on points (age plus service) as shown in the table below:

Points	Percentage	Points	Percentage
<30	7.00%	60–69	11.00%
30–39	8.00%	70–79	13.00%
40–49	9.00%	80+	16.00%
50–59	10.00%		

Interest Credits

A participant's account will increase annually at an interest crediting rate of 6.00%.

Normal Retirement

Eligibility

Age 65.

Benefit

Lump sum or an actuarial equivalent monthly benefit of their cash balance account.

Early Retirement

Eligibility

Some grandfathered at age 50 with 10 years of service and 70 age/service points. Else, Union 763 is age 50 with 25 years of service, and all others are age 55 with 20 years of service, or age 62 with 10 years of service.

Benefit

Lump sum or an actuarial equivalent monthly benefit of their cash balance account.

Deferred With Vesting
Eligibility   Five years of continuous service.

Benefit   Lump sum or an actuarial equivalent monthly benefit of their cash
                               balance account.

Preretirement Surviving Spouse Benefit
Eligibility   Five years of continuous service.

Benefit   Lump sum or an actuarial equivalent monthly benefit of their cash
                               balance account.

Preretirement Dependent Survivor Benefit
Eligibility   Actively employed full-time district employees.

Benefit   The percent of base pay at time of death paid as a survivor benefit will
                               be 20% for one dependent, 40% for two dependents, and 50% for
                               three or more dependents. The survivor benefit is offset by amounts
                               payable from the preretirement surviving spouse benefit, workers'
                               compensation survivor payments, and payments from other
                               district-sponsored sources.

Return of Contributions
Eligibility   Plan participants not eligible for vested, death, early, or normal
                               retirement benefits.

Benefit   Participant contributions accumulated with 5.5% interest will
                               be returned.

Definitions
Continuous Service   Years of employment with the district during which an employee is
                               compensated for 1,000 or more hours.

Credited Service   One-twelfth of a year of credited service for each calendar month of
                               Service to the district as a full-time employee or as a member by a
                               part-time employee.

Compensation   Regular wages for services rendered to the District, including base pay,
                               shift differentials and pay for service as an acting crew leader, but
                               excluding any bonuses, pay for overtime and special pay.

Employee Contributions   6.20%. Rate may be adjusted based on the plan's funded status.

Actuarial Assumptions and Methods

The actuarial assumptions and methods used in the January 1, 2016 valuation are stated below.

Interest Rate	7.00% per year compounded annually (net of 0.1% reduction for anticipated administration expenses paid from the trust).
Salary Scale	Rates based on age.

Age	Annual Rate of Salary Increase
25	13.00%
30	9.50%
35	7.00%
40	5.30%
45	4.80%
50	4.35%
55	4.10%
60	3.00%
64	3.00%

Retirement Rates	
Actives	See Table A.
Terminated Vesteds	Age 63.
Healthy Mortality	RP-2014 Aggregate table projected back to 2006 using Scale MP-2014 and projected forward using Scale MP-2015 with generational projection.
Disabled Mortality	RP-2014 Disabled Retiree table projected back to 2006 using Scale MP-2014 and projected forward using Scale MP-2015 with generational projection.
Withdrawal Rates	Select and ultimate table (see Table B).
Disability Rates	See Table C.
Spousal Benefits	80% of males and 80% of females are assumed to be married. Males are assumed to be two years older than their spouses; females two years younger.
Form of Payment	
Final Average Pay Formula	50% Joint and Survivor if married, else Single Life Annuity. 60% of terminated vested participants are assumed to elect the lump sum return of their contributions with interest.
Cash Balance Formula	100% lump sum.
Asset Valuation Method	The prior year asset value is assumed to have earnings equal to the valuation interest rate. The resulting assets are then adjusted by 20% of the difference between this value and the market value. Assets were restated to market value January 1, 1996.
Expenses	Included in net investment return assumption.
Actuarial Method	Entry Age Normal (Level Percent of Pay) Cost Method.
Section 415 Limits	All applicable IRC section 415 limits have been taken into account. The annual benefit payable at Social Security normal retirement age has been limited to $210,000, based on the provisions of IRC section 415(b).

Table A

Retirement Rates[1]

Age	Service 19	20	21	22	23	24	25	26	27
50	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
51	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
52	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
53	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
54	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
55	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500
56	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500
57	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
58	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000	0.10000
59	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500
60	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500	0.12500
61	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000
62	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000
63	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000	0.25000	0.50000
64	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.15000	0.50000	0.50000
65	0.40000	0.40000	0.40000	0.40000	0.40000	0.40000	0.50000	0.50000	0.50000
66	0.20000	0.20000	0.20000	0.20000	0.20000	0.50000	0.50000	0.50000	0.50000
67	0.40000	0.40000	0.40000	0.40000	0.50000	0.50000	0.50000	0.50000	0.50000
68	0.40000	0.40000	0.40000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000
69	0.40000	0.40000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000

Age	Service 28	29	30	31	32	33	34	35
50	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
51	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
52	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
53	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
54	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000	0.05000
55	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.50000
56	0.07500	0.07500	0.07500	0.07500	0.07500	0.07500	0.50000	0.50000
57	0.10000	0.10000	0.10000	0.10000	0.10000	0.50000	0.50000	0.30000
58	0.10000	0.10000	0.10000	0.10000	0.50000	0.50000	0.30000	0.30000
59	0.12500	0.12500	0.12500	0.50000	0.50000	0.30000	0.30000	0.30000
60	0.12500	0.12500	0.50000	0.50000	0.30000	0.30000	0.30000	0.30000
61	0.15000	0.50000	0.50000	0.35000	0.35000	0.35000	0.35000	0.35000
62	0.50000	0.50000	0.35000	0.35000	0.35000	0.35000	0.35000	0.35000
63	0.50000	0.35000	0.35000	0.35000	0.35000	0.35000	0.35000	0.35000
64	0.35000	0.35000	0.35000	0.35000	0.35000	0.35000	0.35000	0.35000
65	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000
66	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000
67	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000
68	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000
69	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000

[1] Rates assume early retirement eligibility requirement is met.

Table B

Withdrawal Rates (prior to Eligibility for Early Retirement)

Age	Total	Age	Total
20	.043500	45	.026500
21	.043000	46	.025750
22	.042500	47	.025000
23	.042000	48	.025000
24	.041500	49	.025000
25	.041000	50	.025000
26	.040500	51	.025000
27	.040000	52	.025000
28	.039250	53	.025000
29	.038500	54	.025000
			.025000
30	.037750	55	.025000
31	.037000	56	.025000
32	.036250	57	.025000
33	.035500	58	.025000
34	.034750	59	.025000
			.025000
35	.034000	60	.025000
36	.033250	61	.025000
37	.032500	62	.025000
38	.031750	63	.025000
39	.031000	64	.025000
40	.030250		
41	.029500		
42	.028750		
43	.028000		
44	.027250		

Select turnover rates shown below are used for the first three years of employment.

	Service		
	1	2	3
All	.0750	.0750	.0750

Table C

Disability Rates

Age	Male	Female		Age	Male	Female
20	.00030	.00030		45	.00160	.00240
21	.00030	.00030		46	.00180	.00270
22	.00030	.00030		47	.00210	.00300
23	.00030	.00030		48	.00250	.00330
24	.00030	.00030		49	.00280	.00360
25	.00030	.00030		50	.00330	.00400
26	.00030	.00030		51	.00390	.00440
27	.00030	.00040		52	.00460	.00490
28	.00030	.00040		53	.00530	.00540
29	.00030	.00040		54	.00610	.00590
30	.00030	.00040		55	.00690	.00640
31	.00030	.00050		56	.00770	.00690
32	.00030	.00050		57	.00860	.00740
33	.00030	.00060		58	.00950	.00800
34	.00030	.00060		59	.01050	.00850
35	.00040	.00070		60	.01150	.00900
36	.00040	.00080		61	.01260	.00960
37	.00050	.00090		62	.01380	.01010
38	.00060	.00100		63	.01510	.01050
39	.00070	.00120		64	.01640	.01090
40	.00080	.00130				
41	.00090	.00150				
42	.00100	.00170				
43	.00120	.00190				
44	.00140	.00220				

Appendix H

Omaha Public School District for
Omaha School Employees Retirement (OSERS)
Retirement Plan Information

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Senator Mark Kolterman
District 24
State Capitol
PO Box 94604
Lincoln, NE 68509-4604

October 11, 2017

Senator Kolterman;

Per your request;

1. **Please list the following is information for OSERS plan years 2013 through current plan year 2017.**

   a) The **funded status** information for OSERS is shown below (in millions):

	9/1/2011	9/1/2012	9/1/2013	9/1/2014	9/1/2015	1/1/2017
Using Actuarial Value of Assets:						
Funded Ratio (AVA/AAL)	73%	73%	73%	74%	73%	65%
Unfunded ALL (ALL-AVA)	$404	$435	$454	$446	$486	$713
Using Market Value of Assets:						
Funded Ratio (MVA/AAL)	68%	69%	70%	75%	67%	56%
Unfunded AAL (AAL - MVA)	$483	$497	$490	$429	$588	$902

   b) **Assumed rate of return** for 2017 is 7.5%. The assumed rate of return prior to 2017 was 8%.

   c) **Actual Investment Return:**

   The money-weighted return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

	Money-Weighted Rate of Return
2014	13.31%
2015	(4.01%)
2016	0.89%
*December 31, 2016	(1.17%)

   * These results are for the short plan period from September 1, 2016 through December 31, 2016.

27039

d) **Member and employer contribution rates-percentage:**

From 2013 forward, member and employer contribution rates are 9.78% and 9.878% respectively.

e) The **normal cost-percentage rate** from September 1, 2013 through August 31, 2016 is as follows:

	Normal Cost Rate
2013	12.05%
2014	12.02%
2015	11.96%
2016	13.07%

f) **Actuarially required contribution (ARC)-percentage & dollar amount:**
g) **Actuarially required contribution (ARC)-actual dollars contributed & percentage of ARC actually contributed**

SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER & OTHER CONTRIBUTING ENTITIES
HISTORICAL FUNDING INFORMATION

Year Ending	Annual Required Contribution	Total Employer Contribution	Percentage of ARC Contribution	Actual Contributions as a Percentage of Covered Payroll
8/31/2013	35,032,074	33,623,000	95.98%	10.71%
8/31/2014	34,225,147	38,198,000	111.61%	11.82%
8/31/2015	34,614,093	39,562,000	114.29%	11.87%
8/31/2016	37,665,061	40,564,000	107.70%	11.75%
12/31/2016	12,836,281	13,861,000	107.98%	11.82%

2. **Please provide a brief narrative of the circumstances that led to the current underfunding of the retirement plan.**

As of January 1, 2017, the System had total assets of $1.149 billion measured on a market value basis. This was a decrease of $62 million from the prior valuation and represents an annualized rate of return of -0.7% net of expenses. There is currently $189 million of deferred (unrecognized) investment loss, about 16% of the market value of assets. Absent favorable investment experience in future years to offset the recognition of this significant deferred loss, it will decrease the System's funded ratio and increase the actuarial contribution rate as it is reflected through the asset smoothing method. If this occurs, the System's funded status is expected to decrease and the contribution shortfall is expected to increase.

3. **Have there been any changes in the actuarial methods and/or assumptions since the previous actuarial valuation report? If so, please describe.**

As part of moving the responsibility for the investment of plan assets to the Nebraska Investment Council, the valuation date was changed to January 1. The last actuarial valuation, prepared with a September 1 date, was as of September 1, 2015. There were several changes to the System's actuarial assumptions and methods as a result of a comprehensive Experience Study. The most significant changes are outlined below:

- The investment return assumption was lowered from 8% to 7.5%.
- The inflation assumption was lowered from 3% to 2.75%.
- The assumed interest rate credited on employee contributions was lowered from 3% to 2.75%.
- The general wage increase assumption was lowered from 4% to 3.25%.
- The mortality assumption changed to the RE-2014 Mortality Table, with a one-year set forward for males and a one-year age setback for females. Generational mortality improvements were modeled using the MP-2016 scale.
- Retirement rates were modified for both Certificated and Classified employees.
- The probability of electing a refund at termination was modified for Classified employees.
- Termination rates for Certificated employees are now the same regardless of gender, and are purely service-based for both Certificated and Classified employees.
- The salary increase assumption was changed to a service-based assumption for both Certificated and Classified employees.
- The amortization of the UAAL (Unfunded Actuarial Accrued Liability) was changed to a "layered" approach with new pieces of UAAL amortized over a 25-year period beginning on the valuation date.

  The assumption change with the greatest impact on costs and liabilities was lowering the investment return to 7.5%.

4. **Please provide 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. Please include any actuarial projections based on these changes and attach a copy of the actuarial projections.**

   On September 20, 2017 OPS transferred $12.75 million to OSERS to fund the 2017 actuarial required contribution amortized over a 30-year period.

   A five-year actuarial required contribution projection from 2017 using the 30-year amortization period is as follows:

2018	$15.9 million
2019	$18.5 million
2020	$20.7 million
2021	$22.5 million
2022	$24.2 million

The above projections are in addition to the statutorily required contributions attributable to the employee/employer (currently 9.78% employee and 101% of employee contribution for the employer). The projected numbers are meant to provide a trend and may not be relied upon as an absolute projection of the actuarially required contributions for future years.

OSERS actuarial valuations are calculated on a four year smoothing. Future investment gains may not be strong enough to mitigate the past investment losses continuing to flow through the valuation calculation. If the future investment returns do not meet or exceed the current discount rate (7.5%), the calculated actuarial required contributions could be greater than the projections.

5. **Please describe any recent or ongoing negotiations with bargaining groups that may impact the funding of the plan.**

Employees of the District are affiliated with several unions. The bargaining unit representing the District's educators is the Omaha Education Association (OEA). The OEA approved a three-year agreement for the 2015-16 through 2017-18 school years. The OEA and the District will begin negotiations for 2018-19 this fall.

Other employees of the District are affiliated with Service Employees Union Local 226 which consists of six individual bargaining divisions: Operations, Maintenance and Crafts, Educational Paraprofessionals, Transportation, Nutrition Services and Office Personnel.

The Operations unit operates under a two-year agreement with a 2% total package increase for 2017-18.

The Educational Paraprofessionals unit operates under a two-year agreement with a 3.59% total package increase from 2016-17 to 2018-19.

The Nutrition Services unit operates under the terms of a one-year agreement with a 3.46% total package increase for the 2017-18 school year.

The Office Personnel unit operates under the terms of a one-year agreement with a 3.22% total package increase for the 2017-18 school year.

The Transportation and Security Personnel units are currently negotiating their contracts.

The District's School Psychologists operate under a two-year agreement with a 3.42% total package increase from 2016-17 to 2017-18 school year.

6. **When was the most recent Actuarial Experience Study conducted on the plan? Please attach a copy of the most recent Actuarial Experience Study.**

The most recent Five Year Experience Study was for the period of September 1, 2012 to August 31, 2016, submitted April 5, 2017 (attached).
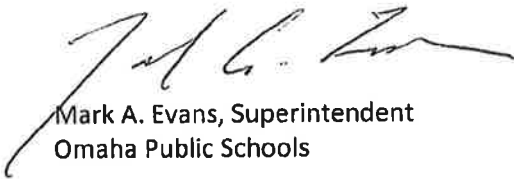
7. **What is the current assumed rate of return? If the rate has been changed in the past year, or if there are plans to review the rate in the upcoming year, please describe.**

The long term asset allocation for the OSERS portfolio is the same as that of the Nebraska School Retirement System. Last fall, the investment return assumption for the Nebraska School Retirement System was changed from 8% to 7.5% (inflation of 2.75% plus real return of 4.75%). Based on this analysis, the actuary recommended and the Board of Trustees approved the investment return assumption for OSERS be lowered from 8% to 7.5%.

8. **Please attach the most recent actuarial valuation report. If the valuation report is completed biannually (or less often) please include an updated report for the interim year/s, if available.**

The most recent actuarial valuation report as of January 1, 2017 is attached.

Sincerely,

Mark A. Evans, Superintendent
Omaha Public Schools

OMAH Public Schools

SUPERINTENDENT'S OFFICE

Mark A. Evans
Superintendent

P 531-299-9822
F 531-299-0415

3215 Cuming Street
Omaha, NE 68131

district.ops.org

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Please provide the following additional information to the Nebraska Retirement Systems Committee <u>by Friday, November 17, 2017</u>. The questions relate to the "2017 Reporting Form for Underfunded Political Subdivisions". All answers should include OSERS plan years 2013 through the current plan year.

The Committee would like a representative or representatives of OPS available at the December 1, 2017 who can answer questions related to policy and budget questions and OPS board actions.

1. What are the actual dollars contributed **by OPS** in addition to the statutorily required 101% of compensation? [Question 1(g) on the Reporting Form]

    Dollars Contributed by OPS in addition to 101% of Compensation

8/31/2013	$0
8/31/2014	$3,972,853
8/31/2015	$4,947,407
8/31/2016	$2,898,939
8/31/2017	$12,750,000

2. What percent of the ARC was contributed by OPS. [Question 1(g) on the Reporting Form]

    % of ARC Contributed

8/31/2013	95.98%
8/31/2014	111.61%
8/31/2015	114.29%
8/31/2016	107.7%
8/31/2017	100%

3. Provide a description of historical changes that led to OSERS funding status dropping below 80%. [Question 2 on the Reporting Form]

    <u>On 8/31/2008 OSERS was 85.3% funded.</u>

    Net assets in the plan decreased by $166 million. This nearly 16% decrease in net assets was due to a significant world-wide economic decline which caused a decline in the market value of the investments held in the Retirement System. The combined employee/employer contributions to the plan were overcome by the $138 million decline in the market value of the investment portfolio which then produced a net decline of $87.6 million. Total retirement benefits paid were higher than the previous year due to increased numbers of retirees receiving greater retirement benefits. The professional fees associated with administering the retirement system declined along with the market and netted to result in deductions from the plan of $78 million.

On 8/31/2009 OSERS was 75.3% funded.

Net assets in the plan increased by $67 million during the fiscal year to $951 million. This 7% increase in net assets was due to employee and employer contributions and a recovery in the market value of the investments held by OSERS. The plan experienced total additions of over $149 million due to an increase in the employee contribution rate from 7.3% to 8.3% of compensation and the accompanying increase in the Board of Education's contributions from 7.373% to 8.383%. The professional fees associated with administering the retirement system increased resulting in deductions from the plan of $82.3 million.

On 8/31/2010 OSERS was 73.5% funded.

Net assets in the plan increased by $82 million during the fiscal year to $1.033 million. This 8% increase was due to employee and employer contributions and a continued recovery in the market value of investments held by the Retirement System. The plan experienced total additions over $168 million due to an increase in the investment income and appreciation as a result of the economic recovery during that year. Total retirement benefits paid were higher due to increased numbers of retirees receiving greater retirement benefits. The professional fees associated with administering the retirement system increased resulting in deductions to the plan of $86.8 million.

The member contribution rate was increased by the 2011 legislature from 8.3% to 9.3% effective September 1, 2011.

On 8/31/2011 OSERS was 73.2% funded.

Net assets in the plan increased by $62 million during the fiscal year to $1,096 million. This 6% increase was due to employee and employer contributions and a continued recovery in the market value of the investments held by OSERS. The plan experienced total additions of over $154 million. Employer contributions were increased by a one-time payment of $4 million due to a health insurance premium holiday for the month of December 2011. A change in policy on the method used for vacation accrual caused a one-year decrease in personnel costs. Employees contribute 9.3% of their annual salary to OSERS and the District contributes 9.393% of member salaries.

On 8/31/2012 OSERS was 72.6% funded.

Net position in the plan increased by $75 million during the fiscal year to $1,170 million. The plan experienced total additions of over $170 million.

Each employee who has completed five or more years of credible service is eligible to elect a deferred vested service annuity in lieu of a refund of accumulated contributions. For members hired prior to July 31, 2013, the benefits under OSERS are based on an average of the highest three years of salary earned by employees during their employment with the District up to their normal retirement dates. For members hired on or after July 1, 2013, the benefits under OSERS are based on an average of the highest five years of salary earned by employees during their employment with the District up to their normal retirement dates. Employees who terminate employment with fewer than five years of creditable service can elect to receive a refund or rollover of the employee's contributions, plus accrued interest. For members hired prior to July 1, 2013, retirement benefits are increased by an annual automatic cost of living adjustment of 1.5% or the increase in the consumer price index (CPI), whichever is lower. For members hired on or after July 1, 2013, retirement benefits are increased by an annual, automatic cost of living adjustment of 1% or the increase in the CPI, whichever is lower. Following ten full years of retirement, a medical cost of living supplement is paid. This supplement equals $10 per month for each year retired and increases by $10 each year to a maximum of $250 per month. For retirees with less than twenty years of service, the benefit is reduced proportionately.

<u>In 2013, a number of significant changes were made to the plan and the accounting assumptions. As a result, there is no funding percentage as of 8/31/13</u>

Changes of benefit terms:

Member contribution rates increased from 9.3% of pay to 9.78% of pay. The Districts contribution rate increased from 9.393% of pay to 9.878% of pay. The State contribution rate also increased permanently from 1% to 2% of payroll.

Changes in actuarial assumptions: 9/1/2013 valuation

- The one-year age set forward in mortality rates for active mal employees was eliminated
- Classified members' retirement rates were adjusted.
- Vested Certificated members' assumption to elect a refund of contributions was adjusted at certain ages.
- The assumed interest rate credited on member contribution accounts was lowered from 7% to 3%.

Net position of the plan increased by $124 million during the fiscal year to $1,295 million. This 10.6% increase in net position was due to employer and employee contributions and growth in the market value of investments. The plan experienced total additions of over $226 million, a 32.6% increase. The employee contribution rate was increased from 9.3% to 9.78%, the employer contribution rate was increased from 9.393% to 9.878%; and the State of Nebraska contribution was increased from 1% to 2%. Total retirement benefits paid were higher than the previous year due to increased numbers of retirees receiving greater retirement benefits.

Change in Accounting Principle:

During 2014, OSERS adopted the provisions of GASB Statement No. 67, *Financial Reporting for Pension Plans*. GASB Statement No. 67 establishes standards of financial reporting for separately issued financial reports of pension plans and specifies the required approach to measuring the net pension liability about which information is required to be presented.

<u>On 8/31/2014 OSERS Ratio of fiduciary net position to total pension liability was 75.08%</u>

The total pension liability was determined based on an actuarial valuation as of September 1, 2013, rolled forward to August 31, 2014, using standard actuarial formulas and the following actuarial assumptions:

Inflation	3%
Salary increases	4 – 5.6%, including inflation
Investment rate of return	8% compounded annually, net of investment expense, and including inflation
Mortality	Pre-retirement mortality rates were based on the RP 2000 Combined Mortality Table, female rates set back 1 year and male rates with no set back, projected on a generational basis using Scale AA. Post-retirement mortality rates were based on the same rates as the pre-retirement tables. Post-disability mortality rates were based on the same tables as the postretirement tables, with ages set forward 10 years.

<u>On August 31, 2015 OSERS Ratio of fiduciary net position to total pension liability was 67.58%</u>

Actuarial assumptions. The total pension liability was determined based on an actuarial valuation as of September 1, 2014, rolled forward to August 31, 2015, using standard actuarial formulas and the following actuarial assumptions, applied to all periods included in the measurement:

Price inflation 3%
Salary increases 4 – 5.60%, including inflation
Municipal bond index rate:
Prior measurement date 4.23%
Measurement date 3.74%
Investment rate of return 8% compounded annually, net of investment expense, and including inflation
Cost-of-living adjustments
1.50% if hired before July 1, 2013
1.00% if hired on or after July 1, 2013
Medical COLA of $10 per month for each year retired with

Net position of the plan decreased by $83.6 million during the fiscal year to $1,211 million. This 6.46% decrease in net position was due to a reduction in the market value of the investments held by the Retirement System. The plan experienced total additions of over $23 million. The primary cause of the reduced amount of additions was the continuing volatility and weakness in the global economy, which resulted in a decrease in the value of the investment portfolio. Total retirement benefits paid were higher than last year due to a continued large increase in the numbers of retirees, who are receiving greater retirement benefits. We continued to experience a larger number of employees who departed mid-career, continuing the increase in the refunds to members. Administrative expenses returned to a
more normal level in 2015.

Subsequent Events
Subsequent to August 31, 2015 OSERS initiated the process to terminate the agreements with two investment fund managers and liquidate the investments held within these funds. The total amount invested in these funds equals approximately 17% of the current OSERS investment portfolio. Due to the inherent uncertainty of valuation and the absence of readily determinable values, material gains or losses may be recognized when these funds are withdrawn from their current investment positions.

On August 31, 2016 OSERS Ratio of fiduciary net position to total pension liability is 63.68%

Net position of the plan decreased by $22.6 million during the fiscal year to $1.2 billion. The 1.87% decrease in net position was due to an increase in the number of retirees (and beneficiaries) currently receiving monthly retirement benefit payments from OSERS. The plan experienced total additions of over $91.7 million. The total retirement benefits paid in fiscal year 2016 increased by approximately $7 million from the previous year. This was due to the continued increase in the numbers of retirees who are receiving retirement benefits at a rate greater than retirees retiring in past decades.

Change in Benefits Provided:

The 2016 session of the Nebraska Legislature enacted LB 447 changed the retirement provisions for members hired on or after July 1, 2016 to match the School Employees Retirement System of the State of Nebraska. Retirement eligibility for members hired on or after July 1, 2016 is set at 35 years of services, age 55 with 85 points (age plus service) or age 60 with five years of service. Benefits are unreduced with 35 years of service or at age 55 with 85 points. Early retirement eligibility is age 60 with five years of service. No state service annuity or medical COLA is provided for members hired on or after July 1, 2016.

Changes to the actuarial assumptions and methods for the January 1, 2017 actuarial valuation had an impact of an additional $137.7 million in unfunded actuarial accrued liability.

4. In addition to the actuary's 5-year projections of ARCs, please include a narrative that details the district's actions that have been taken, actions the district is taking now, and actions the district is committed to taking in the future to improve the funding status. [Question 4 on the Reporting Form]

OPS has reduced expenditures for transportation of regular education students by $5 million through the implementation of the Student Assignment Plan. We have not filled vacancies for retired or terminated employees. We have reduced discretionary funding at the building level. We have postponed planned obsolescence and textbook adoption. We have extended the replacement cycle of buses. We are negotiating with bargaining units for salary and benefits. In January we will begin meeting with members of the community, board members, bargaining unit representatives, principals, executive council to prioritize expenditures for the District in anticipation of further spending reductions.

On September 20, 2017 OPS transferred $12.75 million to OSERS to fund the 2017 actuarial required contribution amortized over a 30-year period. In addition, the five-year actuarial required contribution projection from 2017 using the 30-year amortization period is as follows:

2018 $15.9 million
2019 $18.5 million
2020 $20.7 million
2021 $22.5 million
2022 $24.2 million

While the current statutory framework has resulted in significant volatility and uncertainty with respect to OPS' funding obligations, its budgeting and its provision of services to students, it will ultimately result in full funding for the retirement system.

If you have any additional questions, please feel free to contact me directly.

Sincerely,

Mark Evans, Superintendent
Omaha Public Schools

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

Ms. Cecelia Carter
Executive Director
Omaha School Employees Retirement System
3215 Cuming Street
Omaha, NE 68131

Re: Five Year Projections of Valuation Results

Dear Ms. Carter:

At your request, we have prepared a five-year projection of the actuarial funding of the Omaha School Employees Retirement System including the funded ratio, unfunded actuarial liability, actuarial contribution rate and additional District contribution.

Results

For purposes of this study, we used the projection model created in conjunction with the January 1, 2017 actuarial valuation. The model makes future projections of assets, liabilities and contributions based on a number of assumptions. Unless otherwise noted, all actuarial assumptions, including the 7.5% assumed investment return on the market value of assets, are met each year in the future. We further assumed that as current OSERS members leave covered employment, they are replaced by new members who have similar demographic characteristics as those observed in recent new hires.

The actual rate of return for calendar year 2017 is unknown at this time. In order to provide some insight into the potential range of results, which are dependent on the rate of return for 2017, we have modeled several scenarios which assume all assumptions are met in all future years with the exception of the rate of return on the market value of assets:

     (1) Baseline: 7.5% return in 2017 through 2021
     (2) Alternate 1: 0.0% return in 2017, 7.5% return in 2018 through 2021
     (3) Alternate 2: 15.0% return in 2017, 7.5% return in 2018 through 2021

A summary of our findings is shown in the tables below:

Baseline - 7.5% return in 2017 through 2021

Year (12/31)	Funded Ratio	Unfunded Act. Liab.	Add'l District Rate	Add'l District Contributions
2017	65.2%	712,598,000	4.63%	15,546,493
2018	63.8%	768,489,000	5.49%	19,038,394
2019	62.9%	814,355,000	6.12%	21,968,105
2020	62.5%	851,342,000	6.59%	24,479,830
2021	62.5%	880,761,000	6.93%	26,641,236
				107,674,058

0.0% return in 2017; 7.5% return in 2018 through 2021

Year (12/31)	Funded Ratio	Unfunded Act. Liab.	Add'l District Rate	Add'l District Contributions
2017	65.2%	712,598,000	4.63%	15,546,493
2018	62.8%	789,715,000	5.89%	20,425,526
2019	61.2%	852,848,000	6.82%	24,480,797
2020	60.2%	903,914,000	7.53%	27,971,642
2021	59.8%	944,780,000	8.05%	30,946,891
				119,371,349

15.0% return in 2017; 7.5% return in 2018 through 2021

Year (12/31)	Funded Ratio	Unfunded Act. Liab.	Add'l District Rate	Add'l District Contributions
2017	65.2%	712,598,000	4.63%	15,546,493
2018	64.8%	747,253,000	5.10%	17,685,940
2019	64.7%	775,808,000	5.42%	19,455,413
2020	64.8%	798,705,000	5.65%	20,988,018
2021	65.2%	816,667,000	5.80%	22,297,139
				95,973,003

Disclaimers, Caveats, and Limitations

The numerical results in this letter are based primarily on the January 1, 2017 valuation, including the actuarial methods and assumptions used in that 2017 valuation (unless otherwise noted), and a projection model prepared by the System's actuary, Cavanaugh Macdonald Consulting, LLC. Significant items are noted below:

- The investment return assumed in all future years was assumed to be 7.5% on a market value basis unless otherwise noted.
- The assumptions are those used in the January 1, 2017 valuation, unless otherwise noted, and are assumed to be met in all future years.
- The number of active members in the System in the future is assumed to remain level (neither grow nor decline). As current active members leave covered employment they are assumed to be replaced with new employees who have a similar demographic profile as recent new entrants to the Plan.
- Benefits are reflected as provided under current law.
- We relied on the membership data provided for the 2017 actuarial valuation. If there are material inaccuracies in the data, the results presented herein may be different and the projections may need to be revised.

Models are designed to identify anticipated trends and to compare various scenarios rather than predicting some future state of events. The projections are based on the System's estimated financial status on January 1, 2017 and the assumptions used in the actuarial valuation. The projections model future events using one set of assumptions out of a range of many alternate assumption sets that are also reasonable. A different set of assumptions would provide different results, which could vary significantly from those in this study.

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 the projections 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, results could be significantly better or significantly worse than indicated in this study.

I, Patrice A. Beckham, FSA am a consulting actuary with Cavanaugh Macdonald Consulting, LLC. I am a member of the American Academy of Actuaries, Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Please let me know if there are additional questions that arise related to the information presented in this letter. I would be happy to provide additional analysis if needed.

Sincerely,

Patrice Beckham

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

Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

Ms. Cecelia Carter
Executive Director
Omaha School Employees Retirement System
3215 Cuming Street
Omaha, NE 68131

Re: Alternate Contribution for 2017 Plan Year

Dear Ms. Carter:

Neb. Rev. Stat.79-9,113(1)(c) provides that contributions by the school district in any fiscal year shall be the greater of (i) one hundred percent of the contributions made by employees or (ii) such amount as may be necessary to maintain the solvency of the system, as determined annually by the board of education upon recommendation of the actuary. For purposes of this section, the definition of "solvency" is the rate of contributions equal to or greater than the actuarially required contribution rate using a closed thirty-year amortization period beginning on the current valuation date for any unfunded actuarial accrued liability (UAAL).

Based on this statutory language, you asked that we determine the actuarially required contribution rate, and the corresponding amount of any additional school district contribution, had the UAAL in the January 1, 2017 valuation been amortized over a 30-year period. All other actuarial measurements from the 2017 valuation are unchanged.

A summary of the results under the alternate funding basis (30 year amortization of the UAAL) and the formal valuation results is shown on the following page. In addition, an exhibit showing the details of both calculations, in a format similar to Exhibit 6 in the valuation report, is attached to this letter.

	January 1, 2017 Valuation Formal Results	January 1, 2017 Valuation Alternate Funding Option
UAAL Amortization Period	27 Years	30 Years
Actuarial Liability	$2,050,581,000	$2,050,581,000
Actuarial Assets	1,337,983,000	1,337,983,000
Unfunded Actuarial Liability	$ 712,598,000	$ 712,598,000
Normal Cost Rate	13.07%	13.07%
UAL Payment*	13.22%	12.39%
Actuarial Contribution Rate	26.29%	25.46%
Statutory Fixed Contribution Rate	(21.66%)	(21.66%)
Contribution Shortfall	4.63%	3.80%
Estimated Covered Payroll	$335,777,378	$335,777,378
Additional District Contribution	$ 15,546,493	$ 12,759,540

Disclaimers, Caveats, and Limitations

The numerical results in this letter are based on the January 1, 2017 valuation, prepared by Cavanaugh Macdonald Consulting, LLC, including the actuarial methods and assumptions (unless otherwise noted). Please see that report for additional details and disclosure.

I, Patrice A. Beckham, FSA am a consulting actuary with Cavanaugh Macdonald Consulting, LLC. I am a member of the American Academy of Actuaries, Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Please let me know if there are additional questions that arise related to the information presented in this letter. I would be happy to provide additional analysis if needed.

Sincerely,

Patrice Beckham

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

Connie,

Per our discussion yesterday, attached is a letter from the OSERS actuary (Cavanaugh Macdonald) outlining the alternate actuarial required contribution for the school district to contribute to OSERS for the January 1, 2017 Valuation Report using a 30-year amortization.

Additionally, you and I discussed providing the school district with a five year projection from 2017 using this alternate 30-year projection method. The Ms. Beckham indicated it is important to remember, projecting forward should only be used for viewing a trend line and cannot be held as or relied upon as an absolute number for future employer actuarial required contributions. Therefore, she provided the following trend to me verbally:

2018 // $15.9 million
2019 // $18.5 million
2020 // $20.7 million
2021 // $22.5 million
2022 // $24.2 million

Reminder: *the above projections are in addition to the statutorily required contributions attributable to the employee/employer (currently 9.78% employee & 101% of employee contribution for the employer).*

Remember, OSERS actuarial valuations are calculated on a four year smoothing. Therefore, future investment gains may not be strong enough to mitigate the past investment losses continuing to flow through the valuation calculation. Additionally, if the future investment returns do not meet or exceed the current discount rate (7.5%), the calculated actuarial required contributions could be greater than the projections.

Again, the above set of projected numbers for future actuarial required contributions are meant to provide a trend and should not and may not be relied upon as an absolute projection of employer (school district) actuarial required contributions for future years.

Regards,

Cecelia M. Carter
Executive Director
Omaha School Employees' Retirement System
3215 Cuming Street
Omaha, NE 68131
Tele: 531.299.9423
Email: cecelia.carter@ops.org

Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

Sixty-Fifth
Annual Actuarial Report

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM

as of January 1, 2017

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

May 10, 2017

Board of Trustees
Omaha School Employees' Retirement System
3215 Cuming Street
Omaha, Nebraska 68131

Re: Sixty-Fifth Annual Actuarial Report

Members of the Board:

At your request, we have performed the annual actuarial valuation of the Omaha School Employees' Retirement System (OSERS) as of January 1, 2017. The major findings of the valuation are contained in this report, including the actuarial contribution rate and any additional School District contribution for the year ending December 31, 2017. Since the prior valuation, changes have been made to the System's actuarial assumptions and methods, the benefit provisions and the valuation date. The changes to the actuarial assumptions and methods were adopted by the Board as a result of a five-year experience study submitted to the Board at their meeting on April 5, 2017. The valuation date was changed from September 1 to January 1 in conjunction with the movement of the investment of plan assets to the Nebraska Investment Council. As a result, there is a 16-month period from the prior valuation date of September 1, 2015, to the current valuation date of January 1, 2017. All of the changes to the valuation process that have occurred since the prior valuation are discussed in more detail in the executive summary of this report.

In preparing this report, we relied, without audit, on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data and financial information. While we found this information to be reasonably consistent and comparable with information used for other purposes, we did not audit the data. 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.

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 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. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C.

Board of Trustees
May 10, 2017
Page 2

The actuarial computations presented in this report are for purposes of determining the actuarial contribution amount for the System as set out in the Nebraska State Statutes. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. For example, actuarial computations for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standards No. 67 and No. 68 are presented in separate reports.

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

This is to certify that the independent consulting actuaries have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. We, Patrice A. Beckham, FSA and Bryan K. Hoge, FSA, are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in this report or to provide explanations or further details as may be appropriate.

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

Respectfully Submitted,

Cavanaugh Macdonald Consulting, LLC

Patrice Beckham

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

Bryan K. Hoge, FSA, EA, FCA, MAAA
Senior Actuary

The primary purposes of performing the valuation are as follows:

- to certify that School District contributions for the Plan Year, which are equal to 101% of members' contributions, in addition to contributions paid by the members and the State, will be sufficient to fund the benefits expected to be paid to members, or to determine the actuarial contribution rate necessary to maintain the solvency of the System, as set in the Board's Funding Policy;
- to evaluate the funded status of the System and disclose various asset and liability measures as of the valuation date;
- to determine the experience of the System since the last valuation; and
- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.

This report presents the results of the January 1, 2017 actuarial valuation of the Omaha School Employees' Retirement System (OSERS). Historically, actuarial valuations have been performed on September 1 of each year. As part of moving the responsibility for the investment of plan assets to the Nebraska Investment Council, the valuation date was changed to January 1. The last actuarial valuation, prepared with a September 1 date, was as of September 1, 2015. Therefore, the January 1, 2017 actuarial valuation reflects the change in the assets and liabilities over a 16-month period rather than a 12-month period and the results should be viewed in that context.

In addition to the new valuation date, other changes occurred since the prior valuation. There were several changes to the System's actuarial assumptions and methods as a result of a comprehensive Experience Study performed for the System and presented to the Board of Trustees at their April 5, 2017 meeting. The most significant changes are outlined below:

- The investment return assumption was lowered from 8.00% to 7.50%.
- The inflation assumption was lowered from 3.00% to 2.75%.
- The assumed interest rate credited on employee contributions was lowered from 3.00% to 2.75%.
- The general wage increase assumption was lowered from 4.00% to 3.25%.
- The mortality assumption has been changed to the RP-2014 Mortality Table, with a one-year age set forward for males and a one-year age setback for females. Generational mortality improvements are modeled using the MP-2016 scale.
- Retirement rates were modified for both Certificated and Classified employees.
- The probability of electing a refund at termination was modified for Classified employees.
- Termination rates for Certificated employees are now the same regardless of gender, and are purely service-based for both Certificated and Classified employees.
- The salary increase assumption was changed to a service-based assumption for both Certificated and Classified employees.
- The amortization of the UAAL was changed to a "layered" approach with new pieces of UAAL amortized over a 25-year period beginning on the valuation date. The legacy UAAL continues to be amortized on its current schedule.

The assumption change with the greatest impact on costs and liabilities was lowering the investment return to 7.5%.

The impact of these changes on the January 1, 2017 valuation results is summarized in the following table (in millions):

	Old Assumptions and Methods	New Assumptions and Methods	Difference
Actuarial Accrued Liability (AAL)	$1,912.9	$2,050.6	$137.7
Actuarial Value of Assets (AVA)	1,338.0	1,338.0	0.0
Unfunded AAL (UAAL)	$ 574.9	$ 712.6	$137.7
Normal Cost Rate	11.44%	13.07%	1.63%
UAAL Rate	10.31%	13.22%	2.91%
Recommended Contribution Rate	21.75%	26.29%	4.54%

There was also a change to the benefit provisions since the September 1, 2015 valuation. LB 447 was passed during the 2016 session of the Nebraska Legislature, which, among other things, created a new benefit structure for members hired on or after July 1, 2016. The new benefit structure mirrors that of the Nebraska School Retirement System. The key changes are outlined below:

- The State service annuity benefit and the OSERS supplemental medical COLA benefit are eliminated.
- Members are eligible to retire upon meeting one of the following criteria:
  - 35 years of service
  - Age 55 and 85 points
  - Age 60 and 10 years of service
- The early retirement factor reduces the benefit for each month the member's retirement date precedes age 65 for members who have not reached 85 points and attained age 55.

Since these changes only affect members hired on or after July 1, 2016, it had a small impact on the current valuation results. As time passes and members covered under the prior benefit structures terminate employment and are replaced by members covered under the new benefit structure, the System's cost is expected to decline.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2017 based on the System's membership, benefit structure, and assets on that date. The valuation results reflect net unfavorable experience for the past 16 months as demonstrated by an unfunded actuarial accrued liability that was higher than expected, based on the results of the prior valuation. The largest source of unfavorable experience was the result of an actuarial loss on assets ($63.1 million).

Membership

The table on the following page summarizes the System's membership, by group, in the current and prior valuation. Over the 16-month period, there was a 3.5% increase in the System's total membership. The active member count increased from 7,393 to 7,462 (0.9%) and the retiree/beneficiary count increased from 4,351 to 4,542 (4.4%). Total covered payroll increased 3.1% from $325.7 million in the September 1, 2015 valuation to $335.8 million in the current valuation.

The 2016 session of the Nebraska Legislature created a new benefit structure for members hired on or after July 1, 2016 (called Tier 3). Tier 1 covers all members hired before July 1, 2013 and Tier 2 covers members hired after June 30, 2013 and before July 1, 2016. Over time, as current Tier 1 and Tier 2 members leave

covered employment and are replaced by Tier 3 members, the proportion of active members in Tier 3 will increase and reduce the System's cost.

As of January 1, 2017, there are 483 Tier 3 members in the valuation (about 6% of the active population).

SYSTEM MEMBERSHIP	Jan. 1, 2017	Sept. 1, 2015	% Chg
1. Active Members			
a. Certificated			
(1) Tier 1	3,469	3,721	(6.8)
(2) Tier 2	1,023	1,035	(1.2)
(3) Tier 3	316	0	N/A
(4) Total	**4,808**	**4,756**	**1.1**
b. Classified			
(1) Tier 1	1,751	2,041	(14.2)
(2) Tier 2	736	596	23.5
(3) Tier 3	167	0	N/A
(4) Total	**2,654**	**2,637**	**0.6**
c. Total			
(1) Tier 1	5,220	5,762	(9.4)
(2) Tier 2	1,759	1,631	7.8
(3) Tier 3	483	0	N/A
(4) Total	**7,462**	**7,393**	**0.9**
2. Retirees and Disabled Members	4,295	4,111	4.5
3. Beneficiaries	247	240	2.9
4. Inactive Vested Members	1,035	984	5.2
5. Nonvested Terminations	347	210	65.2
6. Total	13,386	12,938	3.5

Assets

As of January 1, 2017, the System had total assets of $1.149 billion measured on a market value basis. This was a decrease of $62 million from the prior valuation and represents an annualized rate of return of -0.7%, net of expenses. The components of this change are shown in the following table:

	Market Value ($M)
Net Assets, September 1, 2015	$ 1,211
• District, State and Member Contributions	+ 102
• Benefit Payments and Refunds	– 153
• Administrative Expenses	– 2
• Investment Return	– 9
Net Assets, January 1, 2017	$ 1,149

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability (UAAL) and 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. This amount, called the "actuarial value of assets", is equal to the expected asset value, based on the actuarial value in the prior valuation and the assumed interest rate in the prior valuation of 8.0%, plus 25% of the difference between the actual market value and the expected asset value. The resulting value must be no less than 80% of market value and no more than 120% of market value (referred to as a corridor). The corridor did not apply this year as the actuarial value of assets was 116% of market value. The actuarial value of assets as of January 1, 2017 was $1.338 billion, an increase of $25 million from the prior year. The components of change in the actuarial value of assets from September 1, 2015 to January 1, 2017 are shown in the following table.

	Actuarial Value ($M)
Actuarial Assets, September 1, 2015	$ 1,313
• District, State and Member Contributions	+ 102
• Benefit Payments and Refunds	– 153
• Expected Investment Income (based on 8.0% assumption)	+ 139
• Actuarial Investment Gain/(Loss)	– 63
Preliminary Actuarial Assets, January 1, 2017	$ 1,338
• Application of Corridor	N/A
Final Actuarial Assets, January 1, 2017	$ 1,338

The dollar-weighted annualized rate of return, net of investment and administrative expenses, measured on the actuarial value of assets was approximately 4.4%. A comparison of asset values on both the market and actuarial basis is shown below:

	9/1/2011	9/1/2012	9/1/2013	9/1/2014	9/1/2015	1/1/2017
Market Value of Assets	$ 1,033	$ 1,096	$ 1,170	$ 1,295	$ 1,211	$ 1,149
Actuarial Value of Assets	1,110	1,155	1,205	1,278	1,313	1,338
Actuarial Value/Market Value	107%	105%	103%	99%	108%	116%

There is currently $189 million of deferred (unrecognized) investment loss, about 16% of the market value of assets. Absent favorable investment experience in future years to offset the recognition of this significant deferred loss, it will decrease the System's funded ratio and increase the actuarial contribution rate as it is reflected through the asset smoothing method.

System Net Assets
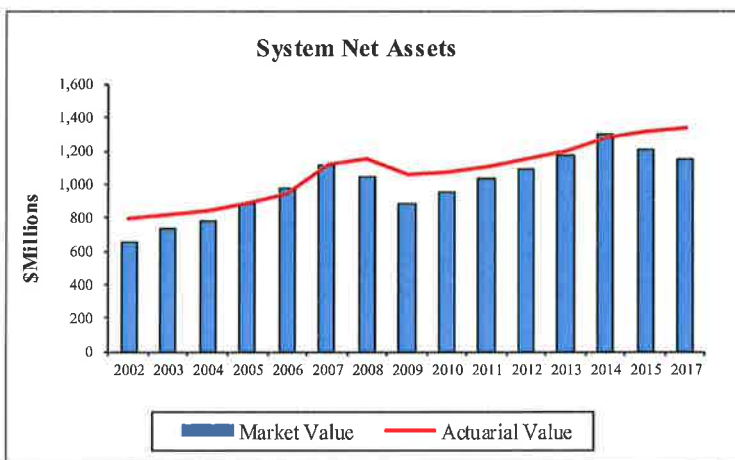
For most of this period, the actuarial value of assets has exceeded the market value of assets. With the use of an asset smoothing method, the actuarial value is expected to be both above and below the market value of assets over a long period of time.
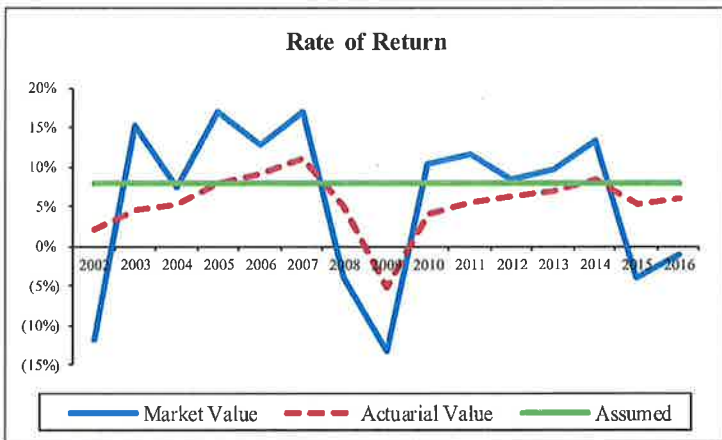
Rate of Return

The estimated rate of return on both the actuarial and market value of assets for the last decade is shown here. The asset smoothing method mitigates the volatility of market value returns as shown in the rates of return on the actuarial versus 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 asset values at the same date is referred to as the unfunded actuarial accrued liability (UAAL). The unfunded actuarial accrued liability will be reduced if the employer's contributions exceed the employer's normal cost for the year, after allowing for interest earned on the previous balance of the unfunded actuarial accrued liability. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and methods will also impact the total actuarial accrued liability (AAL) and the unfunded portion thereof.

The unfunded actuarial accrued liability as of January 1, 2017 is shown below:

Actuarial Accrued Liability	$	2,050,581,000
Actuarial Value of Assets		1,337,983,000
Unfunded Actuarial Accrued Liability	$	712,598,000

Numerous factors contributed to the change in the System's UAAL over the 16-month period from September 1, 2015 to January 1, 2017. The components are examined in the following discussion. Changes to the

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actuarial assumptions and methods were the most significant contributing factor to the change in the System's UAAL since the September 1, 2015 valuation. The net result of all the assumption changes was an increase in the UAAL of $137.7 million.

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 UAAL and are measured as the difference between the expected unfunded actuarial accrued liability and the actual unfunded actuarial accrued liability, taking into account any changes due to assumption, method or benefit provision changes. Overall, the System experienced an actuarial loss of $87.5 million due to a $63.1 million loss on the actuarial value of assets and a $24.4 million loss on the actuarial accrued liability.

The change in the unfunded actuarial accrued liability between September 1, 2015 and January 1, 2017 is shown in the following table (in millions):

| Unfunded Actuarial Accrued Liability, September 1, 2015		$	486
• Expected change in UAAL			
− Amortization method		+	12
− Contributions in excess of actuarial required contribution		−	4
• Investment experience		+	63
• Liability experience		+	24
• Assumption changes		+	138
• Other experience		−	6
Unfunded Actuarial Accrued Liability, January 1, 2017		$	713

Both the assumption changes and the unfavorable actuarial experience had a significant impact on the unfunded actuarial accrued liability.

An evaluation of the unfunded actuarial accrued liability on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. 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. Note that the funded ratio does not necessarily indicate whether or not additional funding is needed, nor does it indicate whether or not the plan has sufficient funds to settle all current obligations.

The funded status information for OSERS is shown below (in millions):

	9/1/11	9/1/12	9/1/13	9/1/14	9/1/15	1/1/17
Using Actuarial Value of Assets:						
Funded Ratio (AVA/AAL)	73%	73%	73%	74%	73%	65%
Unfunded AAL (AAL - AVA)	$404	$435	$454	$446	$486	$713
Using Market Value of Assets:						
Funded Ratio (MVA/AAL)	68%	69%	70%	75%	67%	56%
Unfunded AAL (AAL - MVA)	$483	$497	$490	$429	$588	$902
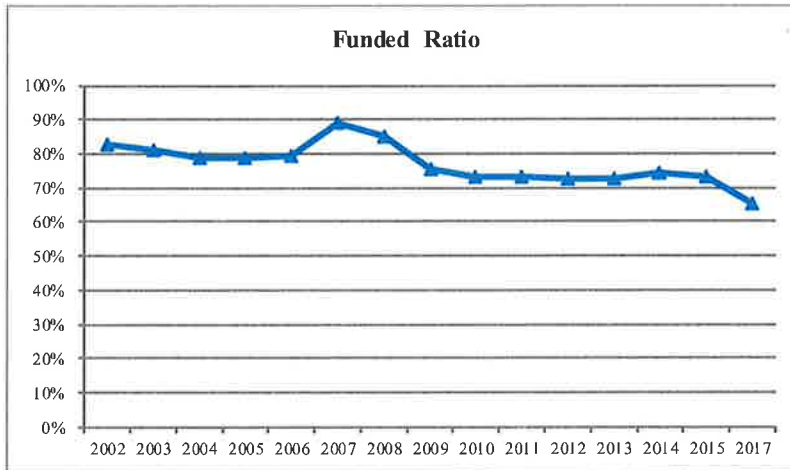
Changes in actuarial assumptions and methods, coupled with investment returns below the assumed rate and contributions below the actuarial rate significantly reduced the funded ratio over much of this period. However, with the adoption of the Board's current funding policy, the funded ratio is expected to increase steadily in the future assuming assumptions are met and scheduled contributions are made.

Contributions

The actuarial contribution rate for the System consists of:

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

As recommended in the 2017 Experience Study, the System is moving to a "layered" approach for the amortization of the UAAL. Under this methodology, the dollar amount of the UAAL, as of January 1, 2017, is split into two pieces: (1) the UAAL at January 1, 2017 determined prior to the assumption changes and (2) the amount of the January 1, 2017 UAAL that is attributable to the adoption of the new assumptions. The first piece will continue to be amortized, as a level-percent of pay, over a closed 30-year period beginning with the September 1, 2013 valuation (27 years remain for the January 1, 2017 valuation). The second piece of the UAAL is amortized, as a level-percent of pay, over a closed 25-year period beginning on January 1, 2017. All ensuing UAAL bases that result from future actuarial experience (actual versus expected experience) will be amortized, as a level-percent of pay, over a new 25-year period commencing on the respective valuation date.

The actuarial contribution rate is computed based on the funding policy developed by the Board of Trustees and adopted at the May, 2013 Board of Trustees meeting. On that basis, the actuarial contribution rate (item 3 below) is equal to the normal cost rate plus the amortization payment on the UAAL (described earlier). The actuarial contribution rate for the plan year ending December 31, 2017 is computed based on the January 1, 2017 actuarial valuation. The actual contributions to the System are set by state statute and are shown below in item 4, "Statutory Contribution Rate", which includes the member, State, and School District contribution rates.

As a result, there is now a contribution shortfall of 4.63%, as shown in the table below:

Contribution Rate	Actuarial Valuation	
	1/1/2017	9/1/2015
1. Normal Cost	13.07%	11.96%
2. UAAL Contribution	13.22%	8.80%
3. Total Actuarial Contribution Rate	26.29%	20.76%
4. Statutory Contribution Rate	21.66%	21.66%
5. Contribution Shortfall/(Margin) (3) – (4)	4.63%	(0.90%)
6. Additional District Contribution ($M)	$15.5	$0.0

Changes to the actuarial assumptions were the most significant contributing factor to the change in the System's actuarial contribution rate since the prior valuation (September 1, 2015). The net result of the assumption changes was an increase in the actuarial contribution rate of 4.54% of covered payroll. Overall, there was an increase of 5.53% in the actuarial contribution rate from the September 1, 2015 to the January 1, 2017 valuation.

The difference in the actuarial contribution rate and the statutory contribution rate results in a contribution shortfall for 2017 of 4.63% of covered payroll, or $15.5 million. Also, with the unfavorable investment experience for the 16-month period ending December 31, 2016, there is now $189 million of deferred investment loss. Absent favorable investment experience in future years to offset the recognition of the deferred loss, the actuarial contribution rate is expected to increase as the loss is reflected through the asset smoothing method. If this occurs, the System's funded status is expected to decrease and the contribution shortfall is expected to increase, possibly significantly (see the table on page 9).

Comments

The January 1, 2017 actuarial valuation reflects a dramatic decline in the System's funded ratio and a corresponding increase in the actuarial contribution rate. The System's unfunded actuarial accrued liability increased from $486 million in the September 1, 2015 valuation to $713 million in the current valuation. The funded ratio decreased from 73% in the prior valuation to 65% in the January 1, 2017 valuation. The dramatic change is the result of changes in the actuarial assumptions, the most significant of which is a decrease in the investment return assumption from 8.0% to 7.5%. In addition, unfavorable experience in the 16-month period between valuation dates occurred on both the System's assets and liabilities. The assumption changes increased the actuarial contribution rate by 4.54% of covered payroll. When the unfavorable experience is also recognized, the actuarial contribution rate increased by 5.53% compared to the September 1, 2015 valuation.

The Nebraska statutes provide that the School District shall contribute the greater of (a) one hundred and one percent of the contributions made by the employees or (b) such amount as may be necessary to maintain the solvency of the System, as determined annually by the Board upon recommendation of the Actuary and the Trustees. The Trustees have adopted a Funding Policy that sets the criteria for determining the contribution amount necessary to maintain the solvency of the System. On this basis, the Actuarial Contribution Rate for plan year ending December 31, 2017 is 26.29% of payroll. The total of contributions made by members, the State, and the School District for plan year ending December 31, 2017 is 21.66% of payroll so the actuarial contribution rate exceeds the statutory contribution rate by 4.63%. This contribution shortfall represents an additional required contribution by the School District of $15.5 million for the current plan year.

The deferred investment loss (actuarial value less market value of assets) is $189 million as of January 1, 2017. Absent favorable investment experience in future years, the deferred investment loss of $189 million will eventually be reflected in the actuarial value of assets in future years. While the use of an asset smoothing method is a common procedure for public retirement systems, it is important to identify the potential impact of the deferred investment experience. This is accomplished by comparing the key valuation results from the January 1, 2017 actuarial valuation using both the actuarial and market value of assets (see table below).

	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Accrued Liability	$2,050,581,000	$2,050,581,000
Asset Value	1,337,983,000	1,148,582,000
Unfunded Actuarial Accrued Liability	$ 712,598,000	$ 901,999,000
Funded Ratio	65.25%	56.01%
Normal Cost Rate	13.07%	13.07%
UAAL Contribution Rate	13.22%	16.71%
Actuarial Contribution Rate	26.29%	29.78%
Total Statutory Contribution Rate	(21.66%)	(21.66%)
Contribution Shortfall	4.63%	8.12%

We conclude this executive summary by presenting comparative statistics and actuarial information from both the September 1, 2015 and January 1, 2017 valuations.

	Jan. 1, 2017*	Sept. 1, 2015	% Chg
SYSTEM MEMBERSHIP			
1. Active Membership			
- Number of Members	7,462	7,393	0.9
- Projected Payroll for Upcoming Fiscal Year	$ 335.8M	$ 325.7M	3.1
- Average Salary	44,998	44,050	2.2
2. Inactive Membership			
- Number Not in Pay Status	1,382	1,194	15.7
- Number of Retirees/Beneficiaries	4,542	4,351	4.4
- Total Annual Benefits in Pay	$ 116.0M	$ 109.5M	5.9
ASSETS AND LIABILITIES			
1. Net Assets			
- Market Value	$ 1,149M	$ 1,211M	(5.1)
- Actuarial Value	1,338M	1,313M	1.9
2. Projected Liabilities			
- Retired Members	$ 1,231M	$ 1,099M	12.0
- Inactive Members	36M	30M	20.0
- Active Members	1,168M	995M	17.4
- Total Liability	2,434M	2,124M	14.6
3. Actuarial Accrued Liability (AAL)	$2,051M	$1,799M	14.0
4. Unfunded Actuarial Accrued Liability	$ 713M	$ 486M	46.7
5. Funded Ratio			
a. Actuarial Value Assets/AAL	65.25%	72.99%	(10.6)
b. Market Value Assets/AAL	56.01%	67.33%	(16.8)
SYSTEM CONTRIBUTIONS			
1. Total Actuarial Contribution Rate	26.29%	20.76%	26.6
2. Statutory Contribution Rate			
a. Member Contribution Rate	9.78%	9.78%	0.0
b. Employer Contribution Rate	9.88%	9.88%	0.0
c. State Contribution Rate	2.00%	2.00%	0.0
d. Total	21.66%	21.66%	0.0
3. Contribution Shortfall/(Margin) (1.) - (2.d.)	4.63%	(0.90%)	(614.4)
4. Additional District Contribution	$15,546,493	$0	N/A

M = ($)Millions
Note: Numbers may not add due to rounding
* Jan. 1, 2017 results reflect new assumptions.

HISTORICAL CHANGES IN THE OSERS UNFUNDED ACTUARIAL ACCRUED LIABILITY

(dollars in millions)

	9/1/03	9/1/04	9/1/05	9/1/06	9/1/07	9/1/08	9/1/09	9/1/10	9/1/11	9/1/12	9/1/13	9/1/14	9/1/15	1/1/17	Total
Prior Valuation UAAL	163	191	223	240	246	138	198	349	390	406	437	455	446	486	
Amortization Method	4	5	6	7	5	3	4	6	2	8	9	10	9	12	90
Actual Contributions															
Less than ARC	0	0	2	0	3	0	0	2	4	0	2	0	0	0	13
More than ARC	0	0	0	(2)	0	(7)	(2)	0	0	(4)	0	(4)	(5)	(4)	(28)
Actual vs Expected Experience															
Investment	27	23	1	(10)	(29)	33	151	42	26	20	12	(6)	34	63	387
Salary	(5)	(6)	(1)	4	1	1	0	(13)	(15)	(12)	(6)	(8)	(3)	*	(63)
Retirement	3	0	3	2	2	3	(2)	(4)	(1)	4	4	6	9	*	29
Mortality	2	5	4	3	3	1	(2)	0	(2)	2	(2)	(1)	2	*	15
Termination of Employment	(4)	(1)	2	3	1	7	2	3	2	0	1	(1)	(2)	*	13
Other	1	3	0	(1)	(3)	(1)	0	0	0	13	(8)	(5)	(4)	(6)	(11)
Benefit Changes	0	0	0	0	(3)[2]	0	0	0	0	0	(4)	0	0	0	(7)
Assumption Changes	0	0	0	0	0	20	0	0	0	0	10	0	0	138	168
Change to Actuarial Methods	0	3[1]	0	0	(88)[3]	0	0	5	0	0	0	0	0	0	(80)
Total Change for Year End	28	32	17	6	(108)	60	151	41	16	31	18	(9)	40	227*	550*
UAAL on Valuation Date	191	223	240	246	138	198	349	390	406	437	455	446	486	713	

[1]Included part-time members who are vested
[2]Increase in member contribution rate
[3]Actuarial asset value reset to market value
* Not calculated. Total liability experience was a $24 million loss, which is included in the total change at year end.

EXHIBIT 1 – SUMMARY OF FUND ACTIVITY (MARKET VALUE OF ASSETS)

SUMMARY OF FUND ACTIVITY
(Market Value Basis)

For Period Ended December 31, 2016

NET ASSETS ON SEPTEMBER 1, 2015	$	**1,211,107,000**

ADDITIONS

Salary deductions	$	45,237,000
School District contributions		45,494,000
Purchases of service		277,000
State service annuity receipts		1,887,000
Sec. 79-916 deposits		8,931,000
Income from investments, including realized and unrealized gains		(9,764,000)
Total additions	$	**92,062,000**

DEDUCTIONS

Retirement benefits	$	(146,804,000)
Refunds to employees		(6,004,000)
Professional fees		(1,124,000)
Other		(107,000)
Personnel costs		(548,000)
Total deductions	$	**(154,587,000)**

NET ASSETS ON JANUARY 1, 2017	$	**1,148,582,000**

EXHIBIT 2 – ACTUARIAL VALUE OF NET ASSETS

ACTUARIAL VALUE OF NET ASSETS

As of January 1, 2017

1.	Actuarial Value of Assets as of September 1, 2015	$ 1,312,905,000
2.	Actual Contributions/Disbursements	
	a. Contributions	101,826,000
	b. Benefit payments	(152,808,000)
	c. Net change	(50,982,000)
3.	Expected Value of Assets as of January 1, 2017 $[(1) \times 1.08^{4/3}] + [(2c) \times (1.08)^{2/3}]$	1,401,117,000
4.	Market Value of Assets as of January 1, 2017	1,148,582,000
5.	Difference between Market and Expected Values (4) – (3)	(252,535,000)
6.	Initial Actuarial Value of Assets as of January 1, 2017 (3) + [(5) x 25%]	1,337,983,000
7.	Corridor as of January 1, 2017	
	a. 120% of Market Value of Assets as of January 1, 2017	1,378,298,000
	b. 80% of Market Value of Assets as of January 1, 2017	918,866,000
8.	Final Actuarial Value of Assets as of January 1, 2017* (6), but not greater than (7a), nor less than (7b)	1,337,983,000
9.	Actuarial value divided by market value (8) / (4)	116.5%
10.	Market value less actuarial value	$ (189,401,000)

The estimated annualized rate of return on the actuarial value of assets for the period ended December 31, 2016 is about 4.4%

EXHIBIT 3 – ACTUARIAL BALANCE SHEET

ACTUARIAL BALANCE SHEET

As of January 1, 2017

ASSETS

Actuarial Value of Assets	$	1,337,983,000
Present Value of Contributions for Unfunded Actuarial Accrued Liability		712,598,000
Present Value of Future Normal Costs		383,795,000
Total Assets	$	**2,434,376,000**

LIABILITIES

Present Value of Future Benefits			
Retirees, Beneficiaries, and Disableds		$	1,230,588,000
Inactive Vesteds			34,139,000
Nonvested Terminations			1,830,000
Active Members			
Retirement benefits	$ 1,102,056,000		
Termination benefits	56,137,000		
Death benefits	9,626,000		
			1,167,819,000
Total Liabilities		$	**2,434,376,000**

EXHIBIT 4 – UNFUNDED ACTUARIAL ACCRUED LIABILITY

UNFUNDED ACTUARIAL ACCRUED LIABILITY

As of January 1, 2017

1.	Present Value of Future Benefits	$ 2,434,376,000
2.	Present Value of Future Normal Costs	383,795,000
3.	Actuarial Accrued Liability (1) – (2)	2,050,581,000
4.	Actuarial Value of Assets	$ 1,337,983,000
5.	Unfunded Actuarial Accrued Liability (3) – (4)	712,598,000

AMORTIZATION OF THE
UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)

Amortization Bases	Original Amount	1/1/2017 Remaining Payments	Date of Last Payment	Outstanding Balance as of Jan. 1, 2017	Annual Contribution*
2017 UAAL Base	$ 574,871,000	27	1/1/2043	$ 574,871,000	$ 35,515,940
2017 Assumption Changes	137,727,000	25	1/1/2041	137,727,000	8,887,605
Total				**$ 712,598,000**	**$ 44,403,545**

* Contribution amount reflects mid-year timing.

1. Total UAAL Amortization Payments	$	44,403,545
2. Projected Payroll for plan year ending December 31, 2017	$	335,777,378
3. UAAL Amortization Payment Rate		13.22%

EXHIBIT 6 – ANALYSIS OF CONTRIBUTION RATE

ANALYSIS OF CONTRIBUTION RATE

The System is financed by contributions from the members, the School District and the State. Effective September 1, 2013, the members contribute 9.78% of pay. The District is obligated to pay the greater of (a) one hundred and one percent of the member contributions or (b) such amount as may be necessary to maintain the solvency of the System. Under the funding policy adopted by the Board in May 2013, the Actuarial Recommended Contribution rate (ARC) is the normal cost rate plus the contribution necessary to amortize the UAAL. The State contributes 2.0% of pay, effective July 1, 2014.

1. Normal Cost	$ 40,204,518
2. a. Expected Payroll for Current Actives for Year End December 31, 2017	307,636,339
b. Total Expected Payroll for Year End December 31, 2017	335,777,378
3. Normal Cost Rate (1)/(2a)	13.07%
4. Unfunded Actuarial Accrued Liability at Valuation Date	712,598,000
5. UAAL Contribution at Mid-Year	44,403,545
6. UAAL Contribution Rate (5)/(2b)	13.22%
7. Actuarial Recommended Contribution Rate (3) + (6)	26.29%
8. Statutory Contribution Rate:	
(a) Member	9.78%
(b) District	9.88%
(c) State	2.00%
(d) Total	21.66%
9. Contribution Shortfall (7) - (8d)	4.63%
10. Additional District Contribution (9) * (2b)	$ 15,546,493

EXHIBIT 7 – CALCULATION OF ACTUARIAL GAIN/(LOSS)

CALCULATION OF ACTUARIAL GAIN/(LOSS)

The overall actuarial gain/(loss) is comprised of both a liability gain/(loss) and an actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of January 1, 2017.

1.	Expected Actuarial Accrued Liability		
	a. Actuarial Accrued Liability as of September 1, 2015	$	1,798,706,000
	b. Normal cost for 16-month period ending December 31, 2016		48,705,000
	c. Benefit payments for 16-month period ending December 31, 2016		(152,808,000)
	d. Additional liability for state service annuities and service purchases		2,164,000
	e. Interest on a., b., c., and d. to end of year		191,709,000
	f. Increase due to assumption changes		137,727,000
	g. Expected Actuarial Accrued Liability	$	2,026,203,000
2.	Actuarial Accrued Liability as of January 1, 2017	$	2,050,581,000
3.	Liability Gain/(Loss) (1.g.) – (2)	$	(24,378,000)
4.	Liability Gain/(Loss) as a Percent of Actuarial Accrued Liability		(1.19%)
5.	Expected Actuarial Value of Assets		
	a. Actuarial value of assets as of September 1, 2015	$	1,312,905,000
	b. Contributions for 16-month period ending December 31, 2016 (including state service annuities and service purchases)		101,826,000
	c. Benefit payments for 16-month period ending December 31, 2016		(152,808,000)
	d. Interest on a., b., and c. to end of year		139,194,000
	e. Expected actuarial value of assets	$	1,401,117,000
6.	Actuarial Value of Assets as of January 1, 2017	$	1,337,983,000
7.	Asset Gain/(Loss) (6) – (5.e.)	$	(63,134,000)
8.	Asset Gain/(Loss) as a Percent of Actuarial Value of Assets		(4.72%)
9.	Overall Actuarial Gain/(Loss) (3) + (7)	$	(87,512,000)

EXHIBIT 7 – CALCULATION OF ACTUARIAL GAIN/(LOSS)

Gain/(Loss) By Source

Due to the change in the valuation date, the sources of actuarial gains and losses cannot be accurately determined. This section will again be included in the January 1, 2018 valuation report.

Comments

The purpose of conducting an actuarial valuation of a retirement system is to determine the costs and liabilities for the benefits under the system, to determine the annual level of contribution required to support these benefits and, finally, to analyze the system's overall experience as it compares with the actuarial assumptions used in the valuation. The costs and liabilities of a retirement system reported in the valuation depend not only upon the level of benefits provided, but also upon factors such as investment return on invested funds, mortality rates for active and retired members, withdrawal rates among active members, rates at which salaries increase, and rates of retirement for ages at which members retire. The actuarial assumptions employed as to these and other contingencies in the current valuation are set forth in Appendix C of this report.

EXHIBIT 8 – SCHEDULE OF CONTRIBUTIONS

SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER AND OTHER CONTRIBUTING ENTITIES

HISTORICAL FUNDING INFORMATION

Year Ending	Annual Required Contribution (a)	Total Employer Contribution* (b)	Percentage of ARC Contribution (b/a)
8/31/2005	$22,459,221	$20,210,403	89.99%
8/31/2006	24,311,628	26,766,000	110.10%
8/31/2007	28,143,388	24,981,000	88.76%
8/31/2008	19,491,557	26,162,000	134.22%
8/31/2009	24,103,114	25,918,000	107.53%
8/31/2010	30,900,224	29,182,000	94.44%
8/31/2011	34,180,566	30,255,000	88.52%
8/31/2012	32,957,547	37,109,000	112.60%
8/31/2013	35,032,074	33,623,000	95.98%
8/31/2014	34,225,147	38,198,000	111.61%
8/31/2015	34,614,093	39,562,000	114.29%
8/31/2016	37,665,061	40,564,000	107.70%
12/31/2016**	12,836,281	13,861,000	107.98%

* Includes State and School District contributions.

** For the short Plan Year from September 1, 2016 through December 31, 2016.

Note: The Total Employer Contribution for fiscal year ending 8/31/2014 was changed because during our work on the GASB reports, we discovered the Service Annuity contribution was different from what was initially reported to us. This figure now matches the number found in the GASB reports.

EXHIBIT 9 – SCHEDULE OF FUNDING PROGRESS

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b - a)/c]
9/1/2005	$ 887,165,000	$ 1,126,967,000	$ 239,802,000	78.72%	$ 231,708,783	103.49%
9/1/2006	948,938,000	1,195,354,000	246,416,000	79.39%	248,759,070	99.06%
9/1/2007	1,117,628,000 *	1,255,527,000	137,899,000	89.02%	272,844,149	50.54%
9/1/2008	1,149,289,000	1,346,999,000	197,710,000	85.32%	272,720,007	72.50%
9/1/2009	1,061,326,000	1,410,318,000	348,992,000	75.25%	287,770,291	121.27%
9/1/2010	1,078,269,000	1,467,850,000	389,581,000	73.46%	302,229,282	128.90%
9/1/2011	1,110,033,000	1,516,284,000	406,251,000	73.21%	310,228,916	130.95%
9/1/2012	1,155,495,000	1,592,738,000	437,243,000	72.55%	307,258,065	142.30%
9/1/2013	1,205,265,000	1,660,287,000	455,022,000	72.59%	313,946,237	144.94%
9/1/2014	1,277,546,000	1,723,970,000	446,424,000	74.10%	323,077,710	138.18%
9/1/2015	1,312,905,000	1,798,706,000	485,801,000	72.99%	333,166,135	145.81%
1/1/2017	1,337,983,000	2,050,581,000	712,598,000	65.25%	351,940,122 **	202.48%

* The actuarial value of assets was reset to market value as of 9/1/2007.
** Covered Payroll was annualized for the short Plan Year in 2016.

EXHIBIT 10 – SOLVENCY TEST

SOLVENCY TEST

A short-term solvency test, which is one means of determining a system's progress under its funding program, compares the plan's present assets with: 1) the liability for active member contributions on deposit; 2) the liability for future benefits to present retirees; and (3) the liability for service already rendered by active members. In a system that has been following the level-percent of payroll financing discipline, the obligation for active member contributions on deposit (Item 1) and the liabilities for future benefits to present retired lives (Item 2) will be fully covered by present assets with the exception of rare circumstances. The obligation for service already rendered by active members (Item 3) will be partially covered by the remainder of present assets. Absent any significant benefit changes, if the system has been using level cost financing, the funded portion of Item 3 usually will increase over a period of time.

Actuarial Valuation*	Active Member Contributions (1)	Retirees, Beneficiaries, and Inactives (2)	Active Members Employer Financed Portion (3)	Actuarial Value of Assets	Portion of Liabilities Covered by Assets		
					(1)	(2)	(3)
2012	$249,903,000	$955,399,000	$387,436,000	$1,155,495,000	100%	95%	0%
2013	272,347,000	1,001,953,000	385,987,000	1,205,265,000	100%	93%	0%
2014	281,672,000	1,058,156,000	384,142,000	1,277,546,000	100%	94%	0%
2015	292,731,000	1,129,399,000	376,576,000	1,312,905,000	100%	90%	0%
2017	306,276,000	1,266,557,000	477,748,000	1,337,983,000	100%	81%	0%

* The actuarial valuation date for years prior to 2017 was September 1.

EXHIBIT 11 – ESTIMATED BENEFIT PAYMENTS

ESTIMATED BENEFIT PAYMENTS*

Year End	Currently In-Pay	Currently Not-In-Pay	Total
2017	$113,229,000	$ 6,948,000	$120,177,000
2018	113,128,000	11,457,000	124,585,000
2019	112,918,000	16,032,000	128,950,000
2020	112,524,000	20,657,000	133,181,000
2021	111,953,000	25,586,000	137,539,000
2022	111,222,000	30,714,000	141,936,000
2023	110,412,000	36,031,000	146,443,000
2024	109,616,000	41,611,000	151,227,000
2025	108,818,000	47,512,000	156,330,000
2026	107,614,000	53,995,000	161,609,000
2027	106,045,000	60,916,000	166,961,000
2028	104,338,000	68,031,000	172,369,000
2029	102,309,000	75,620,000	177,929,000
2030	100,067,000	83,707,000	183,774,000
2031	97,638,000	91,948,000	189,586,000

*Amounts shown are the cash flows for current members only, based on the current benefit structure and assuming that all actuarial assumptions are met in each future year. To the extent that actual experience deviates from that expected, results will vary. Amounts are shown in future nominal dollars and have not been discounted to the valuation date.

APPENDIX A

HISTORICAL BACKGROUND

Historical Background

Since 1909, the Omaha School District has maintained a retirement system for its teachers. Since then, systems covering other employees were added. In 1951, the Nebraska Legislature consolidated the existing systems into one new System. Amendments of significance in the Nebraska statutes and federal Social Security Act have occurred from time to time. These changes in order of their occurrence are outlined briefly below:

1951 - New System

Prior to 1951, three separate retirement systems existed. In 1951 the Nebraska Legislature repealed these three separate systems and created the present single System covering all employees. This act provided, however, that a member of a pre-existing system might elect to retain his benefit and contribution rights under one of the former systems in lieu of the new System benefits and contributions. The members who so elected then became known by the following titles for retirement purposes:

(1)   Employees covered by the former Omaha Teachers Retirement System were known as "Teachers,"

(2)   Employees covered by the former Non-Teaching Employee Retirement System were known as "Non-Teachers,"

(3)   Employees covered by the former Cafeteria Employee Retirement System were known as "Cafeteria."

All other employees became members of the new System and received credit for membership service starting September 1, 1951. Benefits as well as contributions under the new System became directly related to a member's compensation by formula. The maximum covered annual compensation under the new System became $5,000, but the maximum for Teachers, Non-Teachers and Cafeteria remained $3,000.

1955 Amendments

On September 24, 1955, Omaha School employees voted to become participants in the federal Social Security program. All Social Security benefits are payable in addition to the System benefits. As a result of Social Security coverage, changes were made in the benefit and contribution formulas of the System effective August 31, 1955. In general, the changes reduced contributions and benefits to 60% of the rates formerly in effect. In addition, the maximum covered compensation was increased from $5,000 to $6,000 except for Teachers, Non-Teachers and Cafeteria which remained at $3,000.

The amount contributed by the School District was also reduced to 60% of the rates in effect prior to the change and the School District's contributions, matching the refunds paid upon the withdrawal or death of employees, were retained in the retirement fund rather than being returned to the School District.

1963 Amendments

Effective September 1, 1963, several changes were made in the new System. The limit on covered compensation for contributions and benefits of members was removed.

The service retirement annuity credit was increased in order to integrate with the modifications in federal Social Security between 1955 and 1963. The disability annuity for members was increased to 100% of the service retirement annuity accrued to date of disability and the restriction as to the number of years for which it was payable was removed. The offset in the benefit formula for the Nebraska State Service Annuity credit was placed on a year-to-year basis for all members, increasing the annuity credit for service after September 1, 1951 for active and retired alike.

The employees who were participating as Teachers, Non-Teachers and Cafeteria began to make contributions and receive benefit credits at the same rates as other members of the System. It should be noted that any employee who retained rights under a pre-existing system still receives credit in accordance with the provisions of the former system if this is more than the credit, after the State service annuity offset, would be under the 1963 amendments.

The contribution rate for employees was changed to integrate with the modifications in Social Security and was no longer subject to revision depending upon the degree of actuarial soundness of the System as had been provided in 1962. The School District became solely responsible for maintaining the solvency of the System on the basis of annual actuarial valuations. The School District again became entitled to refunds equal to the refunds paid upon withdrawal or death of employees.

The restriction prohibiting the crediting of interest on refunds to employees who withdraw from employment during the first ten years of service was removed. Thus, all employees who withdraw after one year or more of service receive interest on their contributions made since September 1, 1951.

1965 Amendments

Effective September 1, 1965, a pre-retirement survivor's annuity was added to the System for long-service employees. This change gave an employee with 25 or more years of service protection at death approximately equivalent in value to the vesting which already existed at termination of employment for an employee with the same period of service.

Effective January 1, 1966, the Social Security tax base was increased from $4,800 to $6,600 per year. This change became effective in the System's contribution and benefit formulas as of September 1, 1966.

1967 Amendments

The 77th Session of the Nebraska Legislature enacted LB 494 which amended the Nebraska School Retirement System, effective October 23, 1967. A major change was the increase in the State service annuity credit from $1.50 to $3.00 per month for each year of credited service after July 1, 1968 and the removal of the 35 year limitation on credited State service. For the purpose of determining the new State service annuity offset in calculating the net Omaha annuity, the additional $1.50 per month for each year of service after July 1, 1968 is not applicable, but removal of the 35 year limitation does apply. This means that the State service annuity offset is still determined on the basis of $1.50 per month for each year of service. The increase in the State service annuity offset by virtue of eliminating the 35 year limitation represents a lower cost to the Omaha System for those members having more than 35 years of State service by age 65.

Another change with regard to the State service annuity was the manner in which the funds are transferred from the State to the Omaha System to pay these annuities. For retirements occurring after the effective date of the amendments (October 23, 1967), the State transfers the commuted value (equivalent single sum) of the individual State service annuity to the Omaha System and then the payment of the monthly annuity to the retired member is the School District's responsibility.

In 1967 the eligibility provisions for the pre-retirement survivors' annuity and the vested retirement rights were changed, reducing the service required from 25 years to 20 years and thereby granting these options to a larger number of employees.

Effective January 1, 1968, the federal Social Security taxable wage base was increased from $6,600 to $7,800 per year. This change became effective in the System's contribution and benefit formulas as of September 1, 1968.

1969 Amendments

The 80th Session of the Nebraska Legislature enacted LB 530 which amended the System effective August 11, 1969. The provisions of this bill improved the benefit structure of the System in two ways. The membership annuity credits (credits after 9/1/51) were increased approximately 10% and the Social Security wage base was "frozen" at the $7,800 level for purposes of calculating benefit credits and employee contributions.

By freezing the Social Security base, benefit credits and employee contributions for service after September 1, 1969 will not be reduced by virtue of future increases in the Social Security wage base. The System benefits will remain integrated with the Social Security program at the level provided by the $7,800 base.

1972 Amendments

During 1972, the Nebraska Legislature enacted LB 1116 which amended the System. These amendments were to become effective for retirements occurring on or after September 1, 1972. The provisions of this bill improved the benefit structure of the System and liberalized the eligibility condition for qualification upon termination for the deferred vested retirement benefit.

The benefits of the System were improved by increasing the membership annuity credits (credits after 9/1/51) by approximately 20% over those in existence on September 1, 1971.

In order to be eligible upon resignation to elect a deferred vested service annuity, the years of creditable service was reduced from 20 years to 15 years.

1973 Amendments

The 1973 Session of the Nebraska Legislature enacted LB 445 which created increases in the State service annuity of the Nebraska School Retirement System. LB 445 provides for (a) a State service annuity credit of $3.00 per month for each year of creditable service for all emeritus members and for all full time school employees who retire on or after July 1, 1973 and (b) for increases in the State service annuity for members who retired prior to July 1, 1973 based upon the difference between the Consumers Price Index on the date of retirement and July 1, 1973.

1976 Amendments

The 1976 Session of the Nebraska Legislature enacted LB 994 which increased the membership annuity credits (credits after 9/1/51) by 20%.
The members' contributions were increased to 2.90% of compensation up to $7,800 per year plus 5.25% of salary in excess of that amount.

1979 Amendments

The 1979 Session of the Nebraska Legislature changed the mandatory retirement date from age 65 to age 70. Late retirement benefits are actuarially increased from what would have been payable at the normal retirement date.

1982 Amendments

The 1982 Session of the Nebraska Legislature enacted LB 131 which made considerable changes to the System. LB 131 was approved by the Governor on February 19, 1982.

The most major revision in the System was to change the previous primary benefit formula from the step rate formula based on each year of salary to a final average compensation formula. The primary benefit formula became 1.5% of final average compensation for each year of creditable service not in excess of 30. Final average compensation was then defined to be 1/36 of the total compensation received during the three fiscal years of highest compensation. Also, the creditable service not in excess of 30 years was allowed to continue to accrue after the fiscal year in which the employee attains age 65. In addition, the State service annuity offset of $1.50 per year of creditable service was removed with respect to the final average compensation formula. The prior provisions of the System were retained as a minimum benefit, recognizing creditable service for those provisions through the earlier of the date of retirement or August 31, 1983.

Another major revision in the System was to change the step rate formula for employee contributions to a level 4.90% of compensation. In addition, the provision entitling the School District to receive refunds of its own contributions equal to the contributions refunded to employees was removed.

The early retirement date was liberalized. Previously an employee needed to have either 35 years of creditable service or to have attained age 60 with 25 years of creditable service. Now an employee can retire early if he has at least 10 years of creditable service and has attained age 55.

The actuarial equivalent of the annuity payable at the end of the fiscal year in which the employee attains age 65 was changed in the following two ways:

1. For employees retiring before age 62, the monthly formula retirement annuity is a reduced amount based on the actuarial equivalent of the annuity deferred to the employee's 62nd birthday. If retirement is at age 62 or later, there is no actuarial reduction. Previously there was an actuarial reduction, based on the benefit deferred to age 65, for any retirement before age 65.

2. For employees retiring on or after age 65, the monthly formula retirement annuity is to be based on total years of creditable service (not in excess of 30) and the employee's entire compensation history at date of retirement. Consequently, for retirements after the fiscal year in which the employee attains age 65 there is no longer an actuarial increase from the benefit available at the normal retirement date.

The eligibility provision to elect a deferred vested service annuity upon resignation was changed from 15 years of creditable service to 10 years.

1983 Amendments

The 1983 Session of the Nebraska Legislature enacted LB 488 which created benefit increases effective September 1, 1983 for members having retired before February 21, 1982. The amount of benefit increase was limited to the smaller of:

1.   The percentage increase in the Consumer Price Index for all Urban consumers from the effective date of retirement to June 30, 1983 applied to benefits being paid and

2.   The sum of $1.50 per month for each year of creditable service and $1.00 per month for each completed year of retirement from the effective date of retirement to June 30, 1983, actuarially adjusted for joint and survivor elections.

1985 Amendments

The 1985 Session of the Nebraska Legislature enacted LB 215 which removed the 30 year limit on years of service used in the benefit formula, provided for vesting after five years of service rather than ten years, and reduced the eligibility period for disability from ten years of service to five years of service.

LP215 also provided for the employer "pick up" of employee contribution under IRC 414(h), thereby allowing employee contributions to be made on a pre-tax basis.

Unisex factors are now being used for determining early retirement reductions and actuarial equivalents for joint and survivor optional benefits.

1986 Amendments

The 1985 Session of the Nebraska Legislature enacted LB 1048 which granted increases in benefits for most retirees to reflect cost-of-living increases over the last several years. The increases ranged up to a maximum of 10.5%.

1987 Amendments

A "window of opportunity" was created for the buy-in or buy-back of service credits for participants qualifying for that right.

1989 Amendments

LB 237 was enacted by the 1989 Session of the Nebraska Legislature and provided: annual benefit accruals of 1.65% of final average compensation (up from 1.50%), unreduced benefits if a member retires with 35 or more years of service, a five year certain and life thereafter annuity as the normal form of benefit (instead of just a life annuity), employee contributions of 5.8% of pay (up from 4.9%), and increased benefits to retirees (the increases ranged up to 9.0%). There were some other changes as a result of this bill, but none that had a direct actuarial cost impact.

1992 Amendments

The 1992 Session of the Nebraska Legislature enacted LB 1001 which increased annual benefit accruals from 1.65% of final average compensation to 1.70%, and increased benefits to retirees (3% increase per year of retirement, not exceeding 9% total increase), a change in the preretirement joint and survivor option to allow it to become effective automatically after 20 years of service, and allowed employees to "buy-in" their time with other public school systems by means of a tax-deferred rollover of their refund from that System.

1995 Amendments

The 1995 Session of the Nebraska Legislature enacted LB 505 which increased annual benefit accruals from 1.70% to 1.80% of final average compensation. It also provided for unreduced retirement benefits when the sum of age and service equals or exceeds 85 (still maintaining the age 55 minimum), and reduced early retirement reductions to .25% per month prior to age 62. Early retirement at 84, 83, or 82 points is also allowed with a maximum reduction of 3%, 6% and 9% respectively. Employee contributions were increased to 6.3% of pay. The bill also provided for a one time increase to current retirees of 3% per year since retirement (not to exceed 9%), or if larger, 90% restoration of the purchasing power of their original pension. There are other changes resulting from this bill, which are not included since they did not have a direct actuarial impact. One change with no actuarial impact but worth noting is the provision for employer "pick up" of employee contributions to the System used to buy in outside service, pursuant to Section 414(h) of the Internal Revenue Code.

1998 Amendments

The 1998 Session of the Nebraska Legislature enacted LB 497 which increased annual benefit accruals from 1.80% to 1.85% of final average compensation. The bill also provided for a one time increase to current retirees of 3% per year since retirement (not to exceed 9%) and provides an annual automatic cost of living adjustment, not greater than 1.5%, beginning January 1, 2000.

2000 Amendments and Cost of Living Adjustment

The 2000 session of the Nebraska Legislature enacted LB 155 which increased accruals from 1.85% to 2.00% of final average compensation.

Pursuant to LB 497, the OSERS Board and the Omaha School District Board authorized a 1.5% discretionary COLA beginning January 1, 2000 in addition to the automatic COLA.

2001 Amendments and Cost of Living Adjustment

The 2001 session of the Nebraska Legislature enacted LB 711 which provided that certain members who previously left employment due to pregnancy could purchase their "lost" service. It also provided a post-retirement supplemental benefit to assist with medical costs. The supplement commences 10 years after retirement, beginning at $10 per month for each year retired and increasing by $10 each year to a maximum of $250 per month. For retirees with less than twenty years of service, the benefit is reduced proportionately.

Additionally, the OSERS Board and the Omaha School Board authorized a discretionary COLA to restore full purchasing power, beginning January 1, 2001, in addition to the automatic COLA.

2002 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2002.

2003 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2003.

2004 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2004.

2005 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2005.

2006 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2006.

2007 Amendment and Cost of Living Adjustment

The 2007 session of the Nebraska Legislature enacted Section 79-9, 113 which changed the employee contribution rate from 6.30% of compensation to 7.30% and provided for an employer contribution equal to 101% of the employee contribution rate.

The automatic 1.5% COLA was granted beginning January 1, 2007.

2008 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2008.

2009 Amendment and Cost of Living Adjustment

The 2009 session of the Nebraska Legislature enacted Legislative Bill 187 (LB 187), which increased the State's contribution from 0.7% to 1.0% of covered pay from July 1, 2009 to July 1, 2014. On July 1, 2014 the State's contribution returns to 0.7%. LB 187 also increased the employee contribution rate from 7.30% of compensation to 8.30%. The School District's contribution is equal to 101% of the employee contribution rate so the District's contribution rate increased from 7.373% of compensation to 8.383% as a result of the increase in the member contribution rate.

The automatic 1.5% COLA was granted beginning January 1, 2009.

2010 Amendment and Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2010.

2011 Amendment and Cost of Living Adjustment

The 2011 session of the Nebraska Legislature enacted Legislative Bill 382 (LB 382), which increased the Member's contribution from 8.30% of compensation to 9.30%. The School District's contribution is equal to 101% of the employee contribution rate so the District's contribution rate increased from 8.383% of compensation to 9.393% as a result of the increase in the member contribution rate. LB 382 also extended the 1% of payroll contribution by the State from July 1, 2014 to July 1, 2017.

The automatic 1.5% COLA was granted beginning January 1, 2011.

2012 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2012.

2013 Amendments and Cost of Living Adjustment

The 2013 session of the Nebraska Legislature enacted Legislative Bill 553 (LB 553), which increased the Member contribution rate from 9.30% of pay to 9.78% of pay. The School District's contribution is equal to 101% of the employee contribution rate so the District's contribution rate increased from 9.393% of pay to 9.878% of pay as a result of the increase in the member contribution rate. LB 553 also ended the scheduled decrease in the State contribution rate and instead increased the State contribution from 1.0% of pay to 2.0% of pay, effective July 1, 2014. LB 553 also created a new benefit structure for members hired on or after July 1, 2013. For these members, annual cost of living adjustments will be the lesser of 1.0% or CPI, and the final average compensation is defined as 1/60 of the total compensation received during the five fiscal years of highest compensation.

The automatic 1.5% COLA was granted beginning January 1, 2013.

2014 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2014.

2015 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2015.

2016 Amendments and Cost of Living Adjustment

The 2016 session of the Nebraska Legislature enacted Legislative Bill 447 (LB 447), which created a new benefit structure for members hired on or after July 1, 2016. The changes result in the same benefit structure for new OSERS members as for new members of the Nebraska School Retirement System. These members will not receive the supplemental medical COLA offered to employees hired before July 1, 2016. Other changes for these employees include a revised early retirement benefit reduction schedule and different retirement eligibility requirements.

The automatic 1.5% COLA was granted beginning January 1, 2016.

2017 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2017.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Contributions

Employee Contributions: Employees contribute 9.78% of compensation, effective September 1, 2013. Such contributions are payable each year while employed. Contributions accumulated with interest are refundable at resignation unless the vested retirement benefit has been elected and at death unless the pre-retirement survivor's benefit has been elected.

State Contribution: The State contributes annually an amount equal to 2.0% of the members' compensation, effective July 1, 2014.

School District Contribution: The School District contributes the greater of (a) one hundred and one percent of the contributions by the employees or (b) such amount as may be necessary to maintain the solvency of the system, as determined annually by the board upon recommendation of the actuary and the trustees.

Interest Credited on Refunds: Contributions made prior to September 1, 1951 and refunded at withdrawal or death are not credited with interest. Contributions after September 1, 1951 are credited with interest at the rate declared annually by the Board of Education upon the recommendation of the Board of Trustees.

Benefits

General: The System provides annuities upon retirement from service or disability and upon death to designated survivors.

The service retirement formula is 2.0% per year of creditable service times the final average compensation.

Final average compensation is defined as 1/36 of the total compensation received during the three fiscal years of highest compensation for members hired before July 1, 2013. For members hired on or after July 1, 2013, final average compensation is defined as 1/60 of the total compensation received during the five fiscal years of highest compensation.

Annuities are paid for life, with 5 years guaranteed. Optional forms of payment are available.

The disability annuity, the pre-retirement survivor annuity and the vested retirement right are summarized in the following sections.

Benefits in pay status are subject to an annual cost of living adjustment equal to the lesser of 1.5% or CPI for members hired before July 1, 2013. There is an additional COLA if surplus assets exist beginning January 1, 2000. Effective October 3, 2001, a medical cost of living adjustment is payable to retired members. Such amount will commence 10 years after retirement and shall be an amount equal to $10 per month for each year retired (subject to a maximum of $250 per month), prorated for years of service less than 20. For members hired on or after July 1, 2013, the annual cost of living adjustment is capped at 1.0%.

Members hired on or after July 1, 2016 are not eligible to receive the medical COLA benefit.

Retirement Annuities: An employee hired before July 1, 2016 may begin receiving a retirement benefit once the employee has left the employment of the School district, selected a retirement date and

    (a)   remained employed until his or her 65th birthday and completed at least five years of creditable Omaha service,

     or

    (b)   has 10 years of creditable service (with at least five of those years being creditable Omaha service) and attained age 55.

If an employee who was hired before July 1, 2016 begins receiving an annuity after age 62, or when age and service equals or exceeds 85, there is no adjustment for the retirement annuity. If, however, such employee begins receiving an annuity before age 62, the annuity shall be reduced by .25% for each month prior to age 62, but if 84 points have been achieved then the reduction is limited to 3%, if 83 points, 6%, and 82 points, 9%.

An employee hired on or after July 1, 2016 may begin receiving a retirement benefit once the employee has left the employment of the School district, selected a retirement date and

    (a)   has completed 35 years of creditable service,

     or

    (b)   has attained age 55 and the sum of the member's attained age and creditable service totals 85,

     or

    (b)   has 10 years of creditable service (with at least five of those years being creditable Omaha service) and attained age 60.

For employees who were hired on or after July 1, 2016, if an employee begins receiving an annuity before age 65, such annuity shall be reduced by .25% for each month prior to age 65. If, however, the employee has achieved 85 points, then there is no reduction to the annuity.

Disability Retirement Annuities: Each employee who becomes totally disabled and who has completed five or more years of creditable Omaha service is entitled to a disability retirement annuity equal to the amount of service annuity earned to date of disability. Alternatively, the employee may defer the disability retirement and accrue service and compensation increases in the interim. The disability retirement annuity is payable each month until disability ceases, if before unreduced retirement, or death.

Pre-Retirement Survivor Annuities: Upon the death of a member who has completed 20 or more years of creditable service and who has not retired, a pre-retirement survivor annuity shall be paid to the member's primary beneficiary. The survivor must be a spouse or one other person whose attained age in the calendar year of the member's death is no more than 10 years less than the attained age of the member in such calendar year. The survivor annuity is the actuarial equivalent of the member's annuity accrued to the date of death, determined on the basis of the member's and beneficiary's attained ages on said date. The survivor annuity is payable in lieu of a refund of the member's accumulated contributions. However, a member may elect out of the survivor annuity and specify that such a refund be paid in lieu of the annuity. An election out of the pre-retirement survivor annuity is entirely independent of the election of a joint and survivor option at retirement. Within 60 days after the member's death, the beneficiary may request a refund of the member's accumulated contributions instead of the annuity; provided, however, that the member may direct the System to pay only an annuity.

If the member (not retired) has less than 20 years of creditable service, or the beneficiary does not meet the requirements stated above, a refund of the member's accumulated contributions shall be paid.

Vested Retirement Right: Each employee who has completed five or more years of creditable Omaha service is eligible upon resignation to elect a deferred vested benefit, first payable as an unreduced amount at age 65, in lieu of a refund of his accumulated contributions. With ten or more years of total creditable service (including at least five years of creditable Omaha service), the deferred vested benefit could commence, unreduced, at age 62 for employees who were hired before July 1, 2016. If benefits start before age 62 (but not earlier than attained age 55), the benefit shall then be reduced as described above.

For employees who were hired on or after July 1, 2016, the deferred vested benefit could commence, unreduced, at age 65. If benefits start before age 65 (but not earlier than attained age 55), the benefit shall then be reduced as described above.

APPENDIX C

ACTUARIAL ASSUMPTIONS AND METHODS

The valuation assumptions and methods used in conducting the current actuarial valuation are as follows:

Actuarial Assumptions

Investment Return Assumption:	7.50% per annum, compounded annually, net of expenses.
Mortality Rates:	RP-2014 Mortality Table for males, set forward one year. RP-2014 Mortality Table for females, set back one year.

Future mortality rates are projected on a generational basis using Scale MP-2016, which reflects the expectation that mortality rates will decline over time.

Disabled retirees use the RP-2014 Disabled Retiree Mortality Table, without generational improvement.

Disability:	None assumed.
Termination of Employment: (prior to retirement eligibility)	Illustrative rates of termination are as follows:

Certificated:

Percent Terminating	
Duration	Rate
1	11.25%
5	8.00
10	4.50
15	2.25
20	1.00
25	1.00

Classified:

Percent Terminating		
Duration	Male	Female
1	11.00%	15.00%
5	6.00	9.00
10	2.40	4.00
15	1.00	1.75
20	1.00	1.00
25	1.00	1.00

Retirement Rates:

Early retirement rates are assumed to occur according to the schedule illustrated below:

Certificated:		Classified:	
Age	Early	Age	Early
55	10%	55	3%
56	6	56	3
57	6	57	3
58	6	58	3
59	8	59	3
60	12	60	5
61	12	61	10

Unreduced retirement rates are assumed to occur according to the schedule illustrated below:

Certificated:

Age	1st Year Eligible	Ultimate
55	60%	
56	50	35%
57	45	35
58	45	35
59	45	25
60	35	25
61	25	25
62	25	25
63	25	25
64	30	30
65	35	35
66	35	35
67	35	35
68	35	35
69	100	35
70	100	100

Classified:

Age	1st Year Eligible	Ultimate
55	20%	
56	10	12%
57	10	12
58	10	12
59	15	12
60	15	12
61	15	20
62	20	20
63	20	20
64	20	20
65	25	35
66	20	23
67	20	23
68	20	23
69	20	23
70	100	100

Deferred vested members are assumed to retire at first unreduced retirement age.

Salary Scale:

Salaries are assumed to increase according to the schedule illustrated below:

	Annual Salary Increase	
Duration	Certificated	Classified
0	5.75%	6.25%
1	5.75	5.75
2	5.75	5.25
3	5.75	5.00
4-6	5.75	4.75
7-11	5.75	4.25
12-14	5.75	3.75
15-21	5.25	3.75
22+	4.25	3.75

Note: Salaries are assumed to increase by 3.0% for members who have not yet finalized their contract negotiations as of the valuation date.

Pre-Retirement Survivor Annuity:

It is assumed that females are three years younger than males, and that all members are married.

Probability of Electing a Refund:	The proportion of terminating vested members electing a refund of member contributions: 20% for Certificated members 40% for Classified members
Assumed Interest Rate Credited on Employee Contributions:	2.75% compounded annually.
Inflation (CPI):	2.75% compounded annually.
Total Payroll Growth:	3.25% compounded annually.
Decrement Timing:	Middle of year
Cost of Living Adjustments:	1.5% for members hired before 7/1/2013 1.0% for members hired on or after 7/1/2013

Actuarial Cost Method

The actuarial cost method is a procedure for allocating the actuarial present value of pension plan benefits and expenses to time periods. The method used for the valuation is known as the individual entry-age actuarial cost method, and has the following characteristics.

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

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

The entry-age actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's pensionable 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 portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the actuarial accrued liability. Deducting accrued assets from the actuarial accrued liability determines the unfunded actuarial accrued liability (UAAL).

Asset Valuation Method

Assets are valued at expected value at the valuation date plus 25% of the difference between the market value and expected value. As a starting point for implementation of this asset valuation method, the actuarial value of assets as of September 1, 1996 was set equal to the market value. As of September 1, 2007, the actuarial value was again reset to market value. The smoothing method was again implemented in the 2008 valuation. Effective September 1, 2008, the actuarial value must fall within a corridor of 80% to 120% of market value.

UAAL Amortization Method

Effective with the January 1, 2017 valuation, OSERS will amortize the UAAL using a "layered" approach. Under the current method, the UAAL as of January 1, 2017 is split into two pieces: (1) the UAAL that would have existed if no assumption changes had been adopted for the January 1, 2017 valuation and (2) the amount of the January 1, 2017 UAAL that is attributable to the adoption of the new assumptions. The first piece is amortized, as a level-percent of pay, over a closed 30-year period beginning with the September 1, 2013 valuation (so 27 years remain for the January 1, 2017 valuation). The second piece is amortized, as a level-percent of pay, over a closed 25-year period beginning on January 1, 2017. All ensuing UAAL bases that result from future actuarial experience will be amortized, as a level-percent of pay, over a new 25-year period commencing on the valuation date.

APPENDIX D

MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

	Active	Inactive Vesteds	Nonvested Terminations	Retirees	Beneficiaries	Disabled Retirees	Total
Members on 9/1/2015	7,393	984	210	4,097	240	14	12,938
Terminated – vested	(173)	173	0	0	0	0	0
Terminated – refund due	(200)	0	200	0	0	0	0
Terminated – refunded	(165)	(40)	(141)	0	0	0	(346)
Retired	(256)	(56)	0	312	0	0	0
Disability retirement	0	0	0	0	0	0	0
Death	(16)	(7)	0	(137)	(12)	0	(172)
Payments ended	0	0	0	0	(8)	0	(8)
New beneficiaries	0	0	0	0	27	0	27
New Alternate Payees	0	0	0	6	0	0	6
New members	843	0	98	0	0	0	941
Rehires	36	(16)	(20)	0	0	0	0
Corrections/adjustments	0	(3)	0	0	0	3	0
Members on 1/1/2017	7,462	1,035	347	4,278	247	17	13,386

Approximately 2,000 active members are part of bargaining groups that did not have a settled contract as of the date the data was received. These groups included operations employees, paraprofessionals, school psychologists, security employees, and transportation employees. At the direction of OSERS staff, we assumed that these groups will receive a 3.0% increase effective January 1, 2017.

HISTORICAL SUMMARY OF MEMBERS

The following table displays selected historical data that was used in the actuarial valuation for the System.

| Valuation | | Active Members | | | | | | Number | | | Act/Ret |
| | | | Average | | | | | | | | |
Date January 1*	Total Count	Number	Age	Entry Age	Service	Annual Pay ($)	Pay Increase	Inactive Vested	Inactive Nonvested	Retired	Ratio
1998	8,204	5,680	44.2	33.7	10.5	28,912		330		2,194	2.59
1999	8,564	5,864	43.9	34.0	9.9	29,493	2.01%	386		2,314	2.53
2000	8,885	6,057	43.8	34.1	9.7	30,544	3.56%	380		2,448	2.47
2001	9,156	6,259	44.0	34.4	9.6	32,091	5.06%	368		2,529	2.47
2002	9,409	6,383	43.9	34.5	9.4	33,406	4.10%	384		2,642	2.42
2003	9,425	6,279	44.0	34.5	9.5	33,877	1.41%	385		2,761	2.27
2004	9,711	6,399	44.2	34.6	9.6	34,698	2.42%	473		2,839	2.25
2005	10,124	6,623	44.1	34.8	9.3	35,234	1.54%	485		3,016	2.20
2006	10,522	6,972	44.1	34.9	9.2	35,732	1.41%	442		3,108	2.24
2007	10,769	7,041	44.2	35.1	9.1	36,720	2.77%	483		3,245	2.17
2008	11,228	7,313	44.2	35.2	9.0	37,725	2.74%	515		3,400	2.15
2009	11,480	7,438	44.5	35.5	9.0	38,686	2.55%	553		3,489	2.13
2010	11,644	7,491	44.7	35.4	9.3	39,152	1.20%	566		3,587	2.09
2011	11,602	7,215	45.1	35.2	9.9	40,394	3.17%	680		3,707	1.95
2012	11,881	7,315	44.9	35.0	9.9	40,793	0.99%	723		3,843	1.90
2013	12,152	7,372	44.9	34.9	10.0	41,731	2.30%	813		3,967	1.86
2014	12,477	7,415	44.7	34.8	9.9	42,427	1.67%	937		4,125	1.80
2015	12,938	7,393	44.5	34.7	9.8	44,050	3.83%	984	210	4,351	1.70
2017	13,386	7,462	44.5	34.1	10.4	44,998	2.15%	1,035	347	4,542	1.64

* Years prior to 2017 have a valuation date of September 1.

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Total

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	246	1	0	0	0	0	0	0	247
25 to 29	766	88	0	0	0	0	0	0	854
30 to 34	411	386	97	0	0	0	0	0	894
35 to 39	282	221	378	69	1	0	0	0	951
40 to 44	206	150	174	276	27	0	0	0	833
45 to 49	207	143	177	182	156	23	1	0	889
50 to 54	153	123	160	139	103	125	27	1	831
55 to 59	201	142	152	174	115	81	31	8	904
60 to 64	135	108	125	140	93	53	20	16	690
65 & Up	59	75	85	56	31	35	13	15	369
Total	2,666	1,437	1,348	1,036	526	317	92	40	7,462
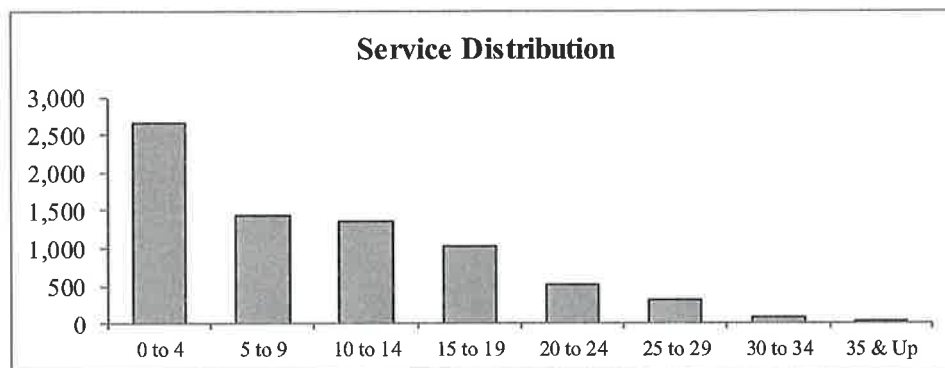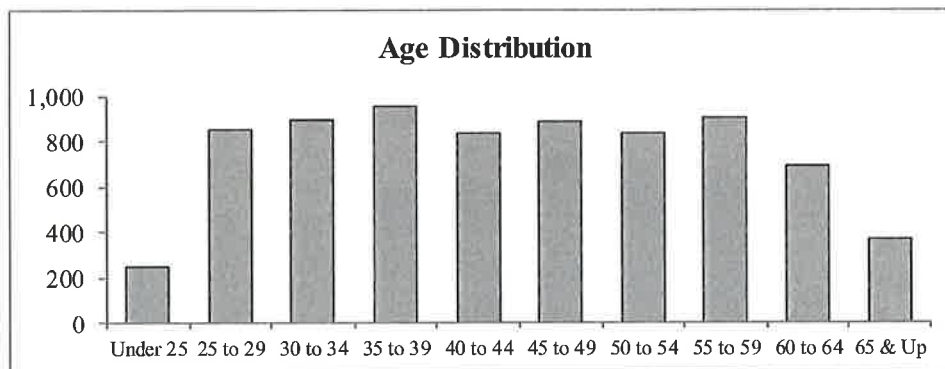
(Service across columns)

Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Certificated - Total

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	150	0	0	0	0	0	0	0	150
25 to 29	581	64	0	0	0	0	0	0	645
30 to 34	287	322	87	0	0	0	0	0	696
35 to 39	182	171	350	58	1	0	0	0	762
40 to 44	117	112	145	246	22	0	0	0	642
45 to 49	105	90	107	150	143	20	1	0	616
50 to 54	55	50	90	86	79	111	20	1	492
55 to 59	66	42	69	79	64	65	21	4	410
60 to 64	47	34	52	62	43	27	12	8	285
65 & Up	11	18	20	22	9	13	7	10	110
Total	1,601	903	920	703	361	236	61	23	4,808
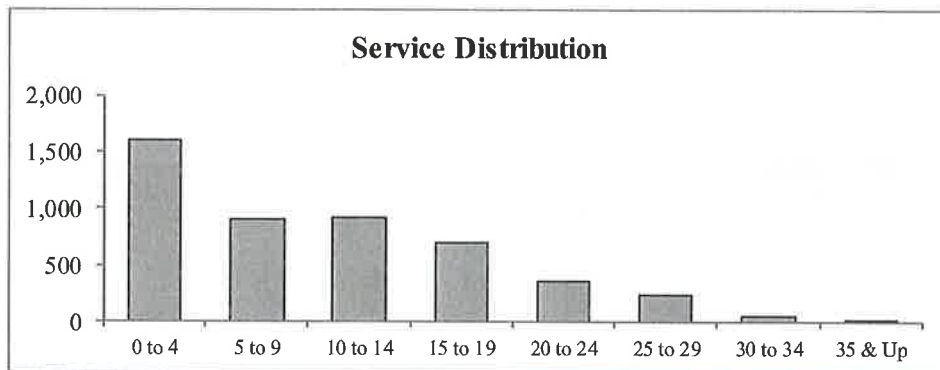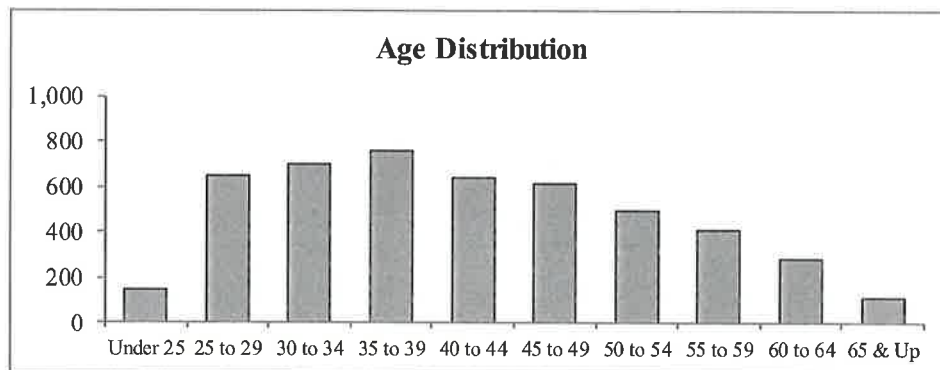
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Certificated - Tier 1

Age	Service 0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	0	0	0	0	0	0	0	0	0
25 to 29	84	64	0	0	0	0	0	0	148
30 to 34	73	320	87	0	0	0	0	0	480
35 to 39	30	171	349	58	1	0	0	0	609
40 to 44	24	112	145	246	22	0	0	0	549
45 to 49	19	89	107	150	143	20	1	0	529
50 to 54	11	50	90	86	79	111	20	1	448
55 to 59	9	42	69	79	64	65	21	4	353
60 to 64	13	34	52	62	43	27	12	8	251
65 & Up	3	18	20	22	9	13	7	10	102
Total	266	900	919	703	361	236	61	23	3,469
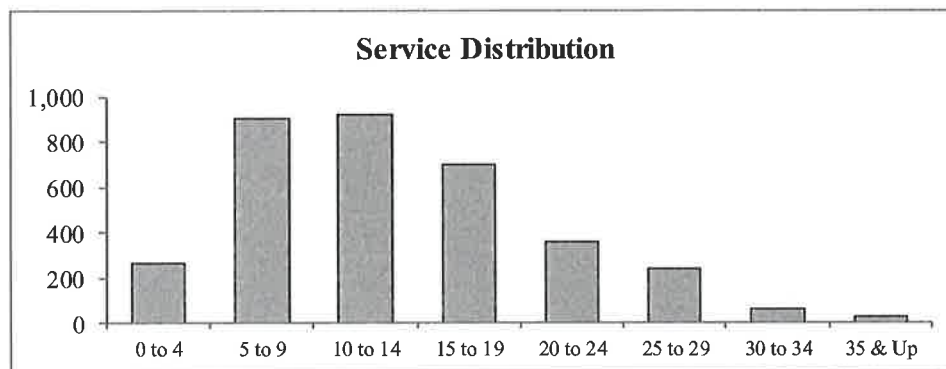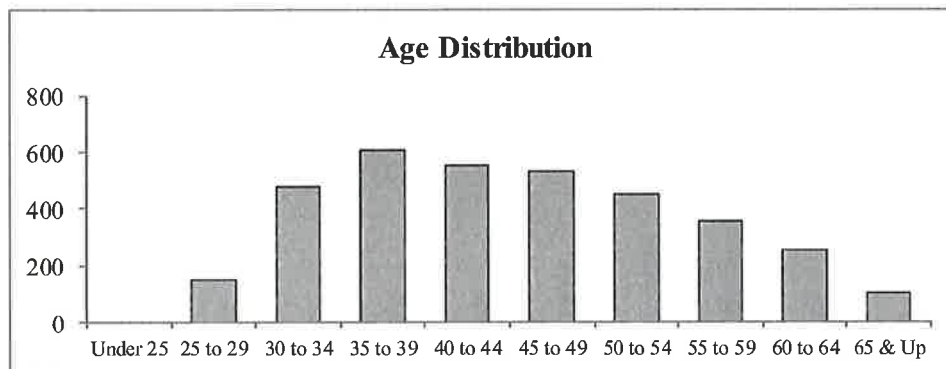
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Certificated - Tier 2

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	61	0	0	0	0	0	0	0	61
25 to 29	400	0	0	0	0	0	0	0	400
30 to 34	176	2	0	0	0	0	0	0	178
35 to 39	123	0	1	0	0	0	0	0	124
40 to 44	75	0	0	0	0	0	0	0	75
45 to 49	69	1	0	0	0	0	0	0	70
50 to 54	38	0	0	0	0	0	0	0	38
55 to 59	43	0	0	0	0	0	0	0	43
60 to 64	27	0	0	0	0	0	0	0	27
65 & Up	7	0	0	0	0	0	0	0	7
Total	1,019	3	1	0	0	0	0	0	1,023
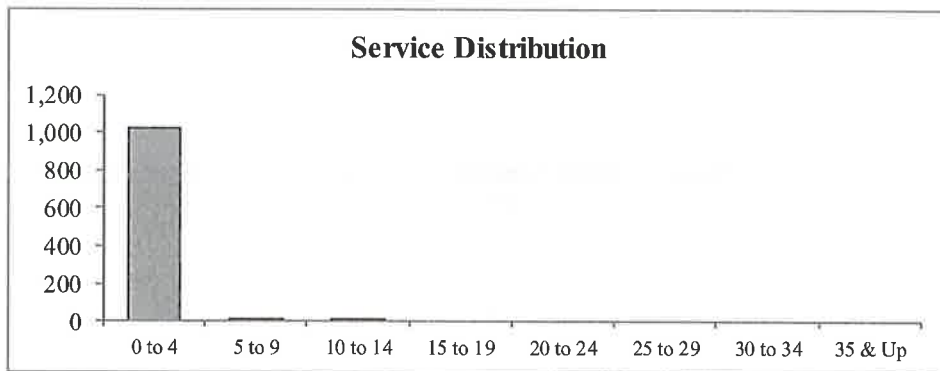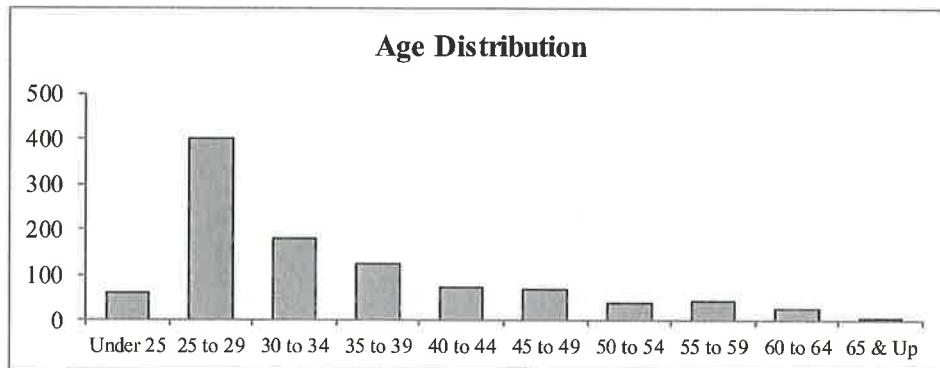
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Certificated - Tier 3

Age	Service 0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	89	0	0	0	0	0	0	0	89
25 to 29	97	0	0	0	0	0	0	0	97
30 to 34	38	0	0	0	0	0	0	0	38
35 to 39	29	0	0	0	0	0	0	0	29
40 to 44	18	0	0	0	0	0	0	0	18
45 to 49	17	0	0	0	0	0	0	0	17
50 to 54	6	0	0	0	0	0	0	0	6
55 to 59	14	0	0	0	0	0	0	0	14
60 to 64	7	0	0	0	0	0	0	0	7
65 & Up	1	0	0	0	0	0	0	0	1
Total	316	0	0	0	0	0	0	0	316
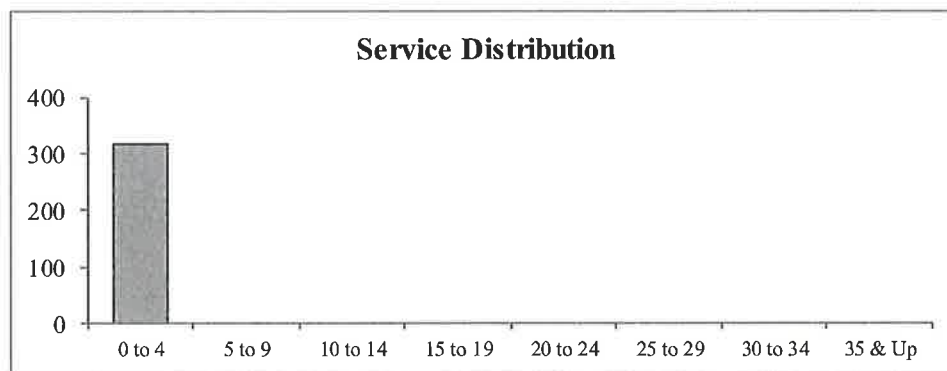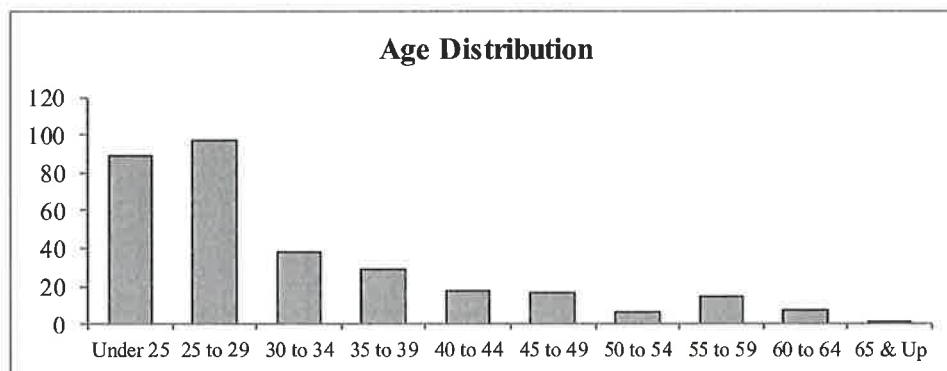
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Classified - Total

Age	0 to 4	5 to 9	10 to 14	15 to 19	Service 20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	96	1	0	0	0	0	0	0	97
25 to 29	185	24	0	0	0	0	0	0	209
30 to 34	124	64	10	0	0	0	0	0	198
35 to 39	100	50	28	11	0	0	0	0	189
40 to 44	89	38	29	30	5	0	0	0	191
45 to 49	102	53	70	32	13	3	0	0	273
50 to 54	98	73	70	53	24	14	7	0	339
55 to 59	135	100	83	95	51	16	10	4	494
60 to 64	88	74	73	78	50	26	8	8	405
65 & Up	48	57	65	34	22	22	6	5	259
Total	1,065	534	428	333	165	81	31	17	2,654
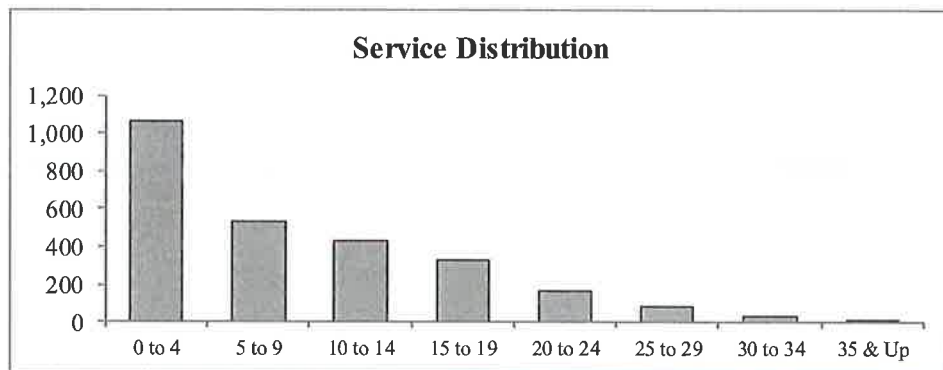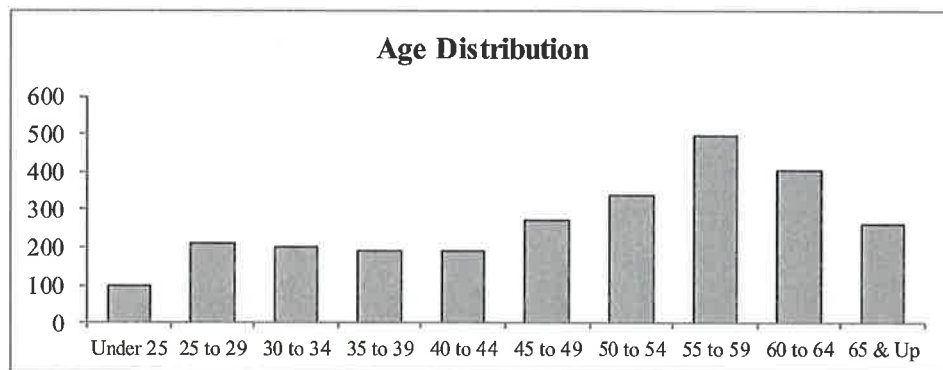
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Classified - Tier 1

Age	Service 0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	1	1	0	0	0	0	0	0	2
25 to 29	20	24	0	0	0	0	0	0	44
30 to 34	21	64	10	0	0	0	0	0	95
35 to 39	9	50	28	11	0	0	0	0	98
40 to 44	10	38	29	30	5	0	0	0	112
45 to 49	26	53	70	32	13	3	0	0	197
50 to 54	25	72	70	53	24	14	7	0	265
55 to 59	24	99	83	95	51	16	10	4	382
60 to 64	19	74	73	78	50	26	8	8	336
65 & Up	9	57	65	34	22	22	6	5	220
Total	164	532	428	333	165	81	31	17	1,751
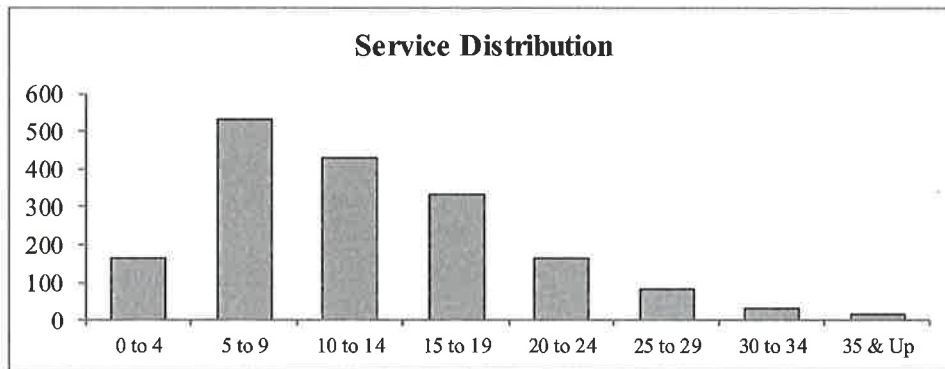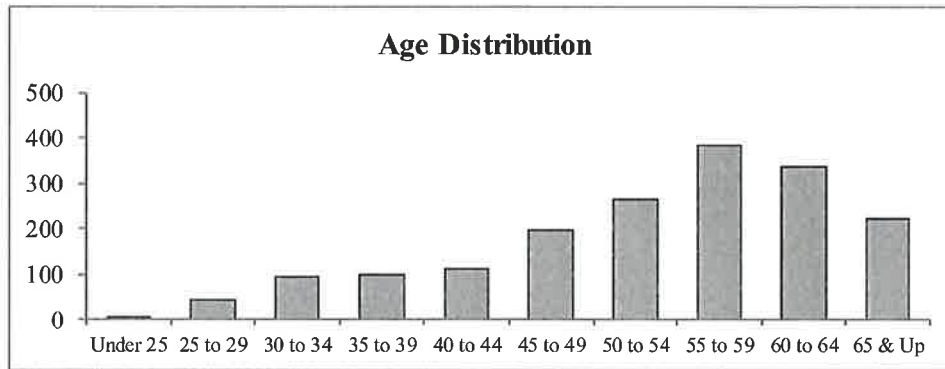
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Classified - Tier 2

| Age | Service | | | | | | | | Total |
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	69	0	0	0	0	0	0	0	69
25 to 29	123	0	0	0	0	0	0	0	123
30 to 34	82	0	0	0	0	0	0	0	82
35 to 39	70	0	0	0	0	0	0	0	70
40 to 44	66	0	0	0	0	0	0	0	66
45 to 49	65	0	0	0	0	0	0	0	65
50 to 54	65	1	0	0	0	0	0	0	66
55 to 59	96	1	0	0	0	0	0	0	97
60 to 64	61	0	0	0	0	0	0	0	61
65 & Up	37	0	0	0	0	0	0	0	37
Total	734	2	0	0	0	0	0	0	736
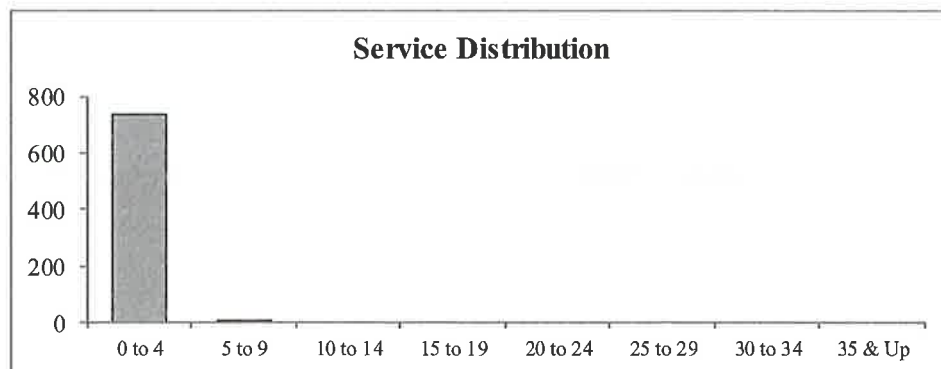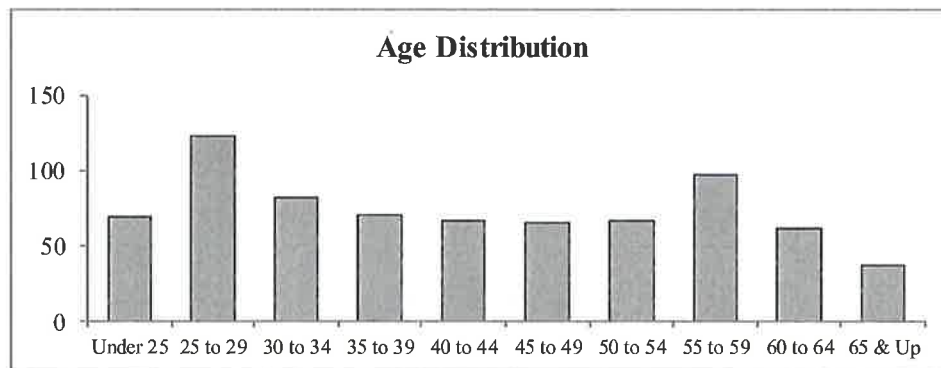
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2017

Classified - Tier 3

| Age | Service | | | | | | | | Total |
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	26	0	0	0	0	0	0	0	26
25 to 29	42	0	0	0	0	0	0	0	42
30 to 34	21	0	0	0	0	0	0	0	21
35 to 39	21	0	0	0	0	0	0	0	21
40 to 44	13	0	0	0	0	0	0	0	13
45 to 49	11	0	0	0	0	0	0	0	11
50 to 54	8	0	0	0	0	0	0	0	8
55 to 59	15	0	0	0	0	0	0	0	15
60 to 64	8	0	0	0	0	0	0	0	8
65 & Up	2	0	0	0	0	0	0	0	2
Total	167	0	0	0	0	0	0	0	167
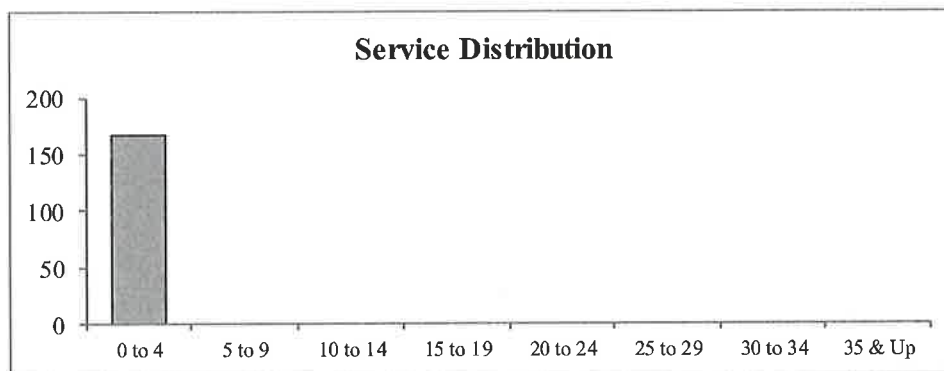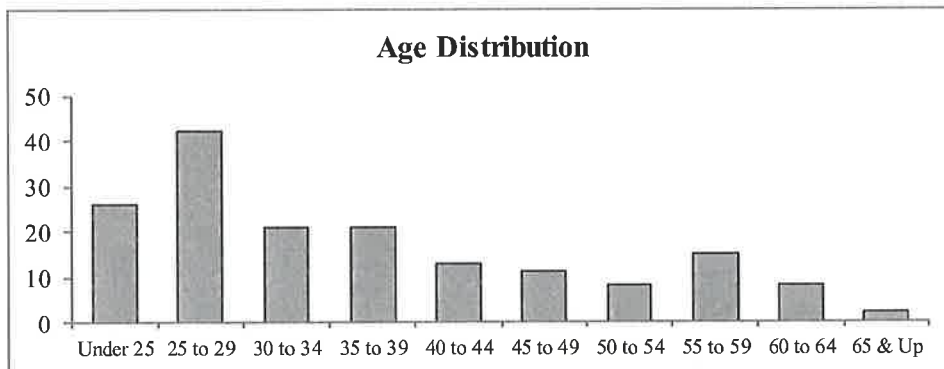
Age Distribution

Service Distribution

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SUMMARY OF ACTIVE MEMBERS

as of January 1, 2017

Total

Age	Number			Salaries		
	Males	Females	Total	Males	Females	Total
Under 25	48	199	247	$ 1,780,312	$ 6,339,546	$ 8,119,858
25 to 29	181	673	854	6,964,180	25,374,017	32,338,197
30 to 34	214	680	894	9,326,048	29,112,601	38,438,649
35 to 39	249	702	951	12,542,354	33,166,029	45,708,383
40 to 44	225	608	833	12,317,512	29,292,011	41,609,523
45 to 49	209	680	889	12,016,756	32,946,581	44,963,337
50 to 54	220	611	831	11,438,075	29,154,800	40,592,875
55 to 59	235	669	904	11,897,331	28,775,099	40,672,430
60 to 64	198	492	690	9,087,416	19,754,594	28,842,010
65 & Up	131	238	369	5,491,868	9,000,248	14,492,116
Total	1,910	5,552	7,462	$ 92,861,852	$ 242,915,526	$ 335,777,378
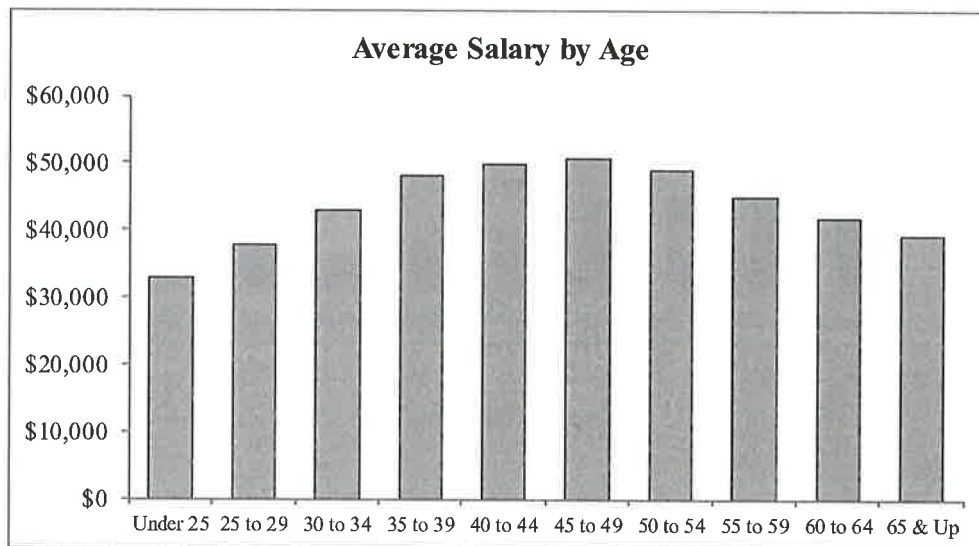
Average Salary by Age

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SUMMARY OF ACTIVE MEMBERS

as of January 1, 2017

Certificated

Age	Number			Salaries		
	Males	Females	Total	Males	Females	Total
Under 25	30	120	150	$ 1,212,399	$ 4,873,281	$ 6,085,680
25 to 29	126	519	645	5,429,937	22,342,686	27,772,623
30 to 34	147	549	696	7,230,445	26,321,385	33,551,830
35 to 39	201	561	762	10,836,039	30,009,579	40,845,618
40 to 44	172	470	642	10,402,920	26,191,634	36,594,554
45 to 49	142	474	616	9,294,731	28,090,186	37,384,917
50 to 54	99	393	492	6,293,248	23,968,800	30,262,048
55 to 59	86	324	410	5,434,478	20,416,744	25,851,222
60 to 64	70	215	285	4,201,644	13,052,290	17,253,934
65 & Up	35	75	110	2,646,995	4,995,518	7,642,513
Total	1,108	3,700	4,808	$ 62,982,836	$ 200,262,103	$ 263,244,939
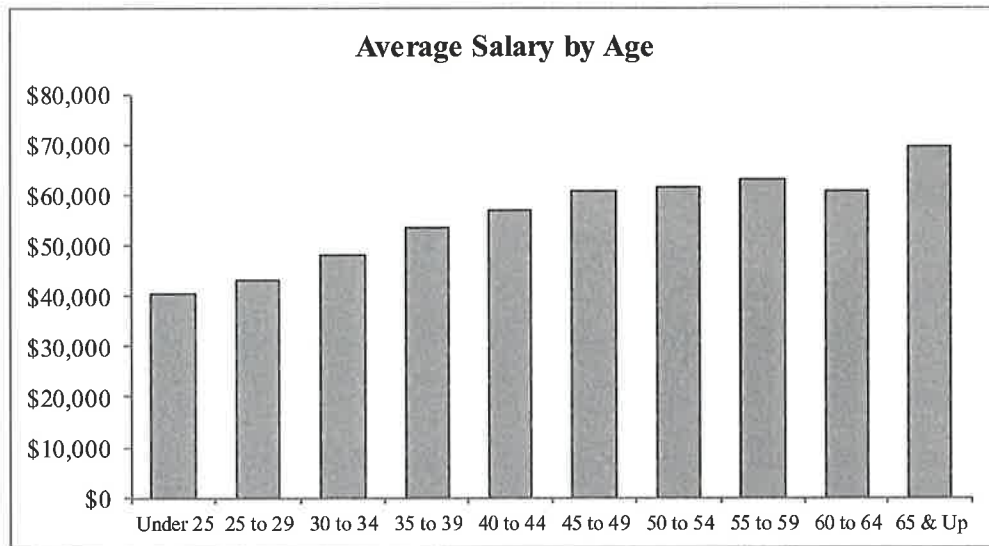
Average Salary by Age

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SUMMARY OF ACTIVE MEMBERS

as of January 1, 2017

Classified

Age	Number			Salaries		
	Males	Females	Total	Males	Females	Total
Under 25	18	79	97	$ 567,913	$ 1,466,265	$ 2,034,178
25 to 29	55	154	209	1,534,243	3,031,331	4,565,574
30 to 34	67	131	198	2,095,603	2,791,216	4,886,819
35 to 39	48	141	189	1,706,315	3,156,450	4,862,765
40 to 44	53	138	191	1,914,592	3,100,377	5,014,969
45 to 49	67	206	273	2,722,025	4,856,395	7,578,420
50 to 54	121	218	339	5,144,827	5,186,000	10,330,827
55 to 59	149	345	494	6,462,853	8,358,355	14,821,208
60 to 64	128	277	405	4,885,772	6,702,304	11,588,076
65 & Up	96	163	259	2,844,873	4,004,730	6,849,603
Total	802	1,852	2,654	$ 29,879,016	$ 42,653,423	$ 72,532,439

Average Salary by Age
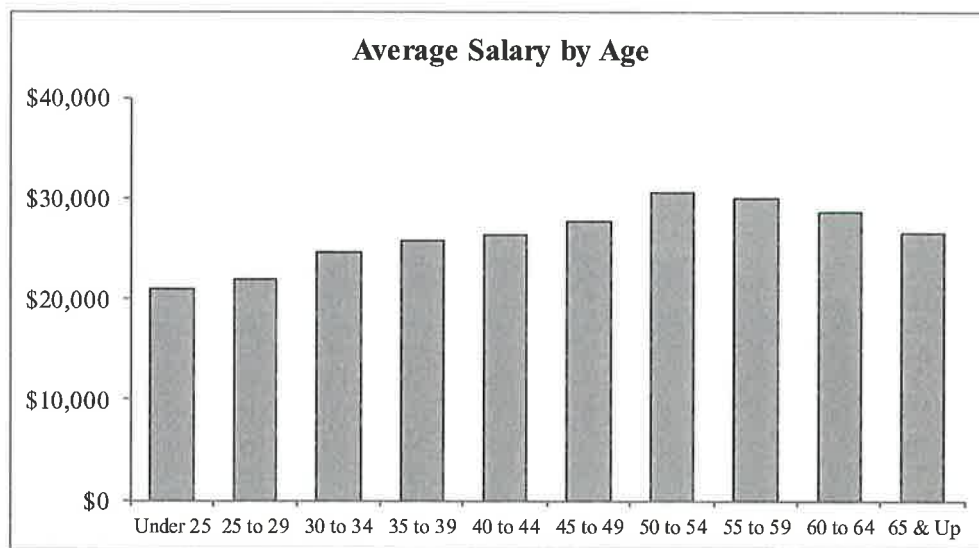
OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SUMMARY OF DEFERRED VESTED MEMBERS

as of January 1, 2017

Age	Number			Monthly Benefit at Unreduced Retirement		
	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25 to 29	0	6	6	0	1,826	1,826
30 to 34	26	104	130	10,918	46,605	57,523
35 to 39	42	168	210	25,061	93,951	119,012
40 to 44	35	119	154	28,265	82,545	110,810
45 to 49	34	125	159	28,048	68,725	96,773
50 to 54	35	116	151	39,321	79,002	118,323
55 to 59	18	101	119	15,017	61,303	76,320
60 to 64	12	72	84	5,665	29,774	35,439
65 & Up	1	21	22	883	7,008	7,891
Total	203	832	1,035	$ 153,178	$ 470,739	$ 623,917

Age Distribution
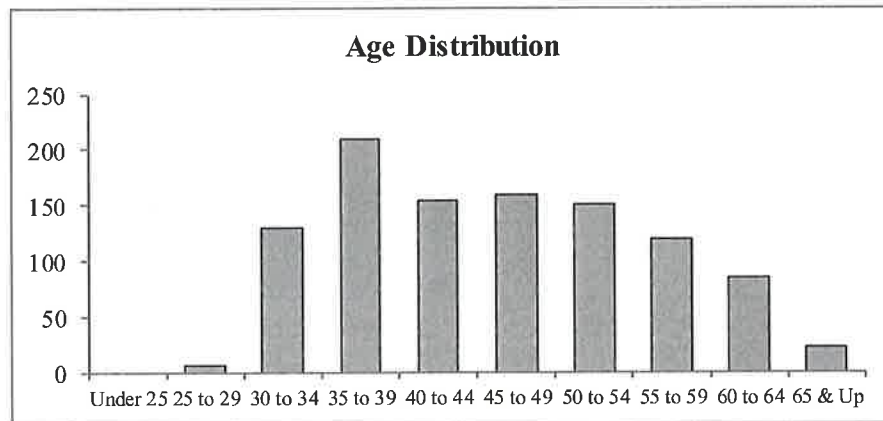
OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SUMMARY OF RETIRED MEMBERS AND BENEFICIARIES

as of January 1, 2017

Age	Number			Total Monthly Benefit		
	Males	Females	Total	Males	Females	Total
Under 55	5	14	19	$ 1,742	$ 19,391	$ 21,133
55 to 59	46	166	212	106,794	435,652	542,446
60 to 64	158	421	579	415,836	1,085,888	1,501,724
65 to 69	309	870	1,179	790,070	1,909,794	2,699,864
70 to 74	332	684	1,016	780,319	1,406,728	2,187,047
75 to 79	200	474	674	440,737	795,845	1,236,582
80 to 84	135	331	466	302,988	530,726	833,714
85 to 89	52	186	238	109,860	277,688	387,548
90 to 94	28	97	125	60,428	139,998	200,426
95 & Up	4	30	34	11,065	42,897	53,962
Total	1,269	3,273	4,542	$ 3,019,839	$ 6,644,607	$ 9,664,446

Age Distribution

Average Benefit
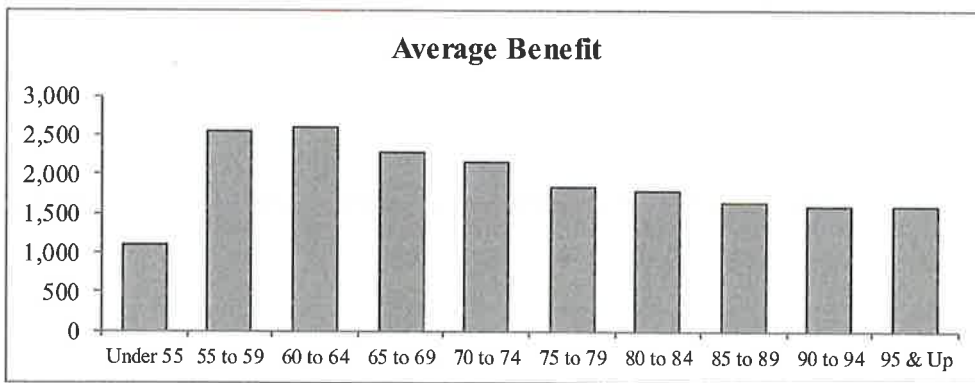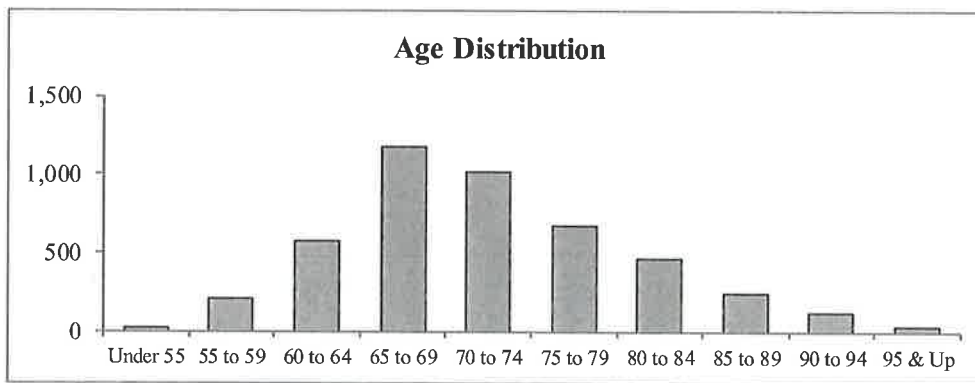
Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

OMAHA SCHOOL EMPLOYEES RETIREMENT SYSTEM

Five Year Experience Study
September 1, 2012 to August 31, 2016

Submitted: April 5, 2017

TABLE OF CONTENTS

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

April 5, 2017

Board of Trustees
Omaha School Employees Retirement System
3215 Cummings Street
Omaha, NE 68131

Dear Trustees:

It is a pleasure to submit this report of our investigation of the experience of the Omaha School Employees Retirement System (OSERS) for the period of September 1, 2012 through August 31, 2016.

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 January 1, 2017 actuarial valuation. This report includes our recommended changes from the prior assumptions that are intended 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 System 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.*

Board of Trustees
April 5, 2017
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.

Respectfully submitted,

Patrice Beckham

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting 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 Omaha School Employees Retirement System (OSERS 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.

1

At the request of the Board of Trustees, Cavanaugh Macdonald Consulting, LLC performed a study of the experience of the Omaha School Employees Retirement System for the period September 1, 2012 through August 31, 2016. This report presents the results and recommendations of our study which, if approved, will be implemented in the January 1, 2017 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, 2017 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   TERMINATION OF EMPLOYMENT (WITHDRAWAL)
SECTION 9   SALARY INCREASES
SECTIOM 10   MISCELLANEOUS ASSUMPTIONS

Actuarial Methods

The actuarial methods outlined in the Funding Policy include:
- Entry age normal cost method
- Expected + 25% asset smoothing method
- Amortization of UAAL, as a level percent of payroll, over a closed 30 year period.

As a result of our review of these methodologies, we are recommending that changes in the UAAL be amortized over separate 25-year closed periods beginning on the date the change is measured. We recommend the other actuarial methods be retained.

Economic Assumptions

The following set of economic assumptions is recommended:

	Current	Proposed
Investment Return:	8.00%	7.50%
Inflation Assumption:	3.00%	2.75%
General Wage Increase:	4.00%	3.25%

Given the actual historical data, market expectations, and the assumptions used by the Social Security Administration in their 75-year projections, we are recommending the inflation assumption be lowered from 3.00% to 2.75%.

Effective January 1, 2017, the Nebraska Investment Council is responsible for investing OSERS' trust funds. The long term asset allocation for the OSERS portfolio is the same as that of the Nebraska School Retirement System. Last fall, the investment return assumption for the Nebraska School Retirement System was changed from 8.0% to 7.50% (inflation of 2.75% plus real return of 4.75%). Based on that analysis, we believe it is reasonable to use the same investment return assumption for OSERS. Therefore, we recommend the investment return assumption for OSERS be lowered from 8.0% to 7.5%.

The general wage increase assumption is composed of inflation and a productivity assumption. The current general wage increase is 4.00% which reflects an inflation assumption of 3.00% and a productivity assumption of 1.00%. Based on our analysis, we are recommending a decrease in this assumption from 4.00% to 3.25%, composed of inflation of 2.75% and productivity of 0.50%.

Demographic Assumptions

Based on the observed data and associated analysis, the recommended changes to the current demographic assumptions are:

- Change the mortality assumption to the most recent table published by the Society of Actuaries, RP-2014 Mortality Table, with a one-year age set forward for males and a one-year age setback for females. Generational mortality improvements will be modeled using the MP-2016 scale.

- Modify the retirement rates for both certificated and classified members

- Modify the election of refund at termination by Classified members

3

- Change the termination of employment assumption to be the same regardless of gender for the certificated group and move to a pure service-based assumption for both the certificated and classified group.

- Change the individual salary increase assumption to a service-based assumption for both certificated and classified employees.

Financial Impact

The financial impact of the proposed assumption changes is based on the results of the most recent actuarial valuation, performed as of September 1, 2015. While the actual results for the January 1, 2017 valuation will vary, we expect the change, as a percentage of liabilities and normal cost, to be comparable. The results are shown on the following page.

Estimate of Financial Impact of Assumption Changes
Based on September 1, 2015 Valuation

Dollars In Thousands

	Baseline (Current Assumptions)	Demographic Changes	All Assumption Changes
1. Present Value of Future Benefits	$2,124,400	$2,163,208	$2,307,586
2. Present Value Future Normal Costs	325,694	327,656	383,058
3. Actuarial Accrued Liability (1) – (2)	$1,798,706	$1,835,552	$1,924,528
4. Actuarial Value of Assets	1,312,905	1,312,905	1,312,905
5. Unfunded Actuarial Accrued Liability (UAAL) (3) – (4)	$ 485,801	$ 522,647	$ 611,623
6. Funded Ratio (4) / (3)	72.99%	71.53%	68.22%
7. Normal Cost Rate	11.96%	11.78%	13.51%
8. UAAL Payment	8.80%	9.51%	11.53%
9. Actuarial Contribution Rate (7) + (8)	20.76%	21.29%	25.04%
10. Statutory Contribution Rate	21.66%	21.66%	21.66%
11. Contribution Shortfall/(Surplus) (9) – (10)	(0.90%)	(0.37%)	3.38%

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This section describes the actuarial methods that are used to determine the actuarial required contribution rate of the System. These methods are part of the Funding Policy adopted by the Board in 2013 and currently in use.

Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	Expected + 25% Method
Amortization Method	Level percent of payroll
Amortization Period	30 years, closed, effective with the 2013 valuation

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 refers to the portion attributable to the past as 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 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. OSERS' Funding Policy uses the Entry Age Normal (EAN) actuarial cost method. The rationale of the 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.

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 actuarial contribution rate.

OSERS currently uses the Entry Age Normal cost method, which is very common with governmental plans because it develops a normal cost rate that tends to be stable and less volatile. In addition, the governmental accounting standards, GASB Statements Number 67 and 68, require the use of the Entry Age Normal cost method. **We recommend the Entry Age Normal actuarial cost method be retained.**

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. A smoothing method is used 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.

OSERS 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 OSERS 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.

OSERS' funded status is often compared to the Nebraska School Retirement System (NPERS School). The NPERS School system uses a different asset valuation method which recognizes the dollar amount of the difference between the actual investment return and the assumed investment return on the market value of assets equally over a five-year period. This is a very common methodology used by public plans and it also meets actuarial standards under ASOP 44.

An asset valuation method is used to "smooth out" the volatility that occurs in the measurement of assets using pure market value. We believe the current method has provided the desired smoothing of asset experience and complies with actuarial standards of practice. It also converges back to market value of assets more quickly when there are returns both below and above the assumed return. **Our recommendation is to retain the current asset valuation method unless the Board wishes to use the NPERS School methodology to provide consistency of results. Either method will provide the desired smoothing of actual investment experience and is acceptable under actuarial standards of practice.**

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) actual 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.

Amortization Period: 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 by one in each future valuation. 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 (UAAL) every year.

Amortization Payment: The <u>level dollar</u> amortization method 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 the amortization period 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, inflationary salary increases will usually be sufficient to increase the aggregate covered payroll).

The rationale behind the <u>level percentage of payroll</u> amortization method is that since normal costs are calculated to be a constant percentage of pay, the unfunded actuarial accrued liability should be paid off in the same manner. When this method of amortizing the unfunded actuarial accrued 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 each year so that ultimately the annual payment far exceeds the level dollar payment. The expectation is that total payroll will increase at the same rate 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 accrued liability meaning that even if there are no experience losses, the dollar amount of the unfunded actuarial accrued liability will grow (called negative amortization). This is particularly true if the plan sponsor is paying off the unfunded actuarial accrued liability over a long period, such as 20 or more years.

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.

Amortization Bases: The UAAL can either be amortized as one single amount or as components, or "layers", each with a separate amortization base, payment and period. If the UAAL is amortized as one amount, the UAAL is recalculated each year in the valuation and experience gains/losses or other changes in the UAAL are folded into the single UAAL amortization base. The amortization payment is then the total UAAL divided by an amortization factor for the applicable amortization period.

OSERS' current Funding Policy develops the UAL contribution rate using a single amortization based with a closed 30-year period beginning with the September 1, 2013 valuation (so 27 years for the January 1, 2017 valuation). To provide more stability to the actuarial contribution rate and mitigate the volatility of gains and losses on the additional contribution required by the School District in future years, it makes sense to use the layered amortization approach with separate bases established each year to reflect the unexpected changes in the UAL. These bases would be amortized over a new 25-year period commencing on the valuation date. This amortization policy will still move the System to a fully funded status. **We recommend the amortization policy be changed to reflect a layered amortization approach with new bases amortized over a new, closed 25-year period beginning on the valuation date.**

ECONOMIC ASSUMPTIONS

The economic assumptions for OSERS include price inflation, cost of living adjustment, long-term investment return, interest crediting rate for member accounts, wage growth (the across-the-board portion of salary increases) and the covered payroll increase assumption. Unlike demographic assumptions, economic assumptions do not lend themselves to analysis largely on the basis of internal historical patterns because economic assumptions are impacted by external forces in the economy. The investment return and general wage increase assumptions are typically selected on the basis of expectations in an inflation-free environment and then increased by the long-term expectation for inflation, called the "building block" approach.

Sources of data considered in the analysis and selection of the economic assumptions included:
- The 2016 Social Security Trustees Report
- Future expectations of IPERS investment consultant, Wilshire Consulting
- Future expectations of other investment consultants (2016 Horizon Survey)
- U.S. Department of the Treasury bond rates
- Assumptions used by other large public retirement systems, based on the Public Fund Survey, published by the National Association of State Retirement Administrators (NASRA)
- Historical observations of price and wage growth statistics and investment returns

Actuarial Standard of Practice Number 27

Guidance regarding the selection of economic assumptions for measuring pension obligations is provided by Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*. 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.

ASOP 27 requires the actuary to select a "reasonable" assumption. For this purpose, an assumption is reasonable if it has the following characteristics:

    a. it is appropriate for the purpose of the measurement;

    b. it reflects the actuary's professional judgment;

    c. it takes into account historical and current economic data that is relevant as of the measurement date;

    d. it reflects the actuary's estimate of future experience, the actuary's observation of the estimates inherent in market data, or a combination thereof; and

    e. it has no significant bias (i.e., it is neither significantly optimistic nor pessimistic) except when provisions for adverse deviation or plan provisions that are difficult to measure are included.

With respect to relevant data, the standard recommends the actuary review appropriate recent and long-term historical economic data, but advises the actuary not to give undue weight to recent experience. Furthermore, it advises the actuary to consider that some historical economic data may not be appropriate for use in developing assumptions for future periods due to changes in the underlying environment. In addition, with respect to any particular valuation, each economic assumption should be consistent with all other economic assumptions over the measurement period.

ASOP 27 recognizes that economic data and analyses are available from a variety of sources, including representatives of the plan sponsor, investment advisors, economists, and other professionals. The actuary is permitted to incorporate the views of experts, but the selection or advice must reflect the actuary's professional judgment.

The standard also discusses a "range of reasonable assumptions" which in part states "the actuary should also recognize that different actuaries will apply professional judgment and may choose different reasonable assumptions." As a result, a range of reasonable assumptions may develop both for an individual actuary and across actuarial practice.

The remainder of this section will discuss the relevant types of economic assumptions used in the actuarial valuation to determine the obligations of OSERS. In our opinion, the economic assumptions recommended in this report have been developed in accordance with ASOP No. 27. The current and recommended set of economic assumptions are summarized in the following table:

	Current Assumptions	Recommended Assumptions
Price Inflation	3.00%	2.75%
Real Rate of Return	5.00%	4.75%
Investment Return	8.00%	7.50%
Price Inflation	3.00%	2.75%
Productivity	1.00%	0.50%
General Wage Growth	4.00%	3.25%
Payroll Growth	4.00%	3.25%
Interest on Contributions	3.00%	2.75%
Cost of Living	1.50%*	1.50%*

*Assumption is 1.00% for members hired on or after July 1, 2013.

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, general wage growth (which then impacts individual salary increases), and payroll growth.

Price inflation also has a direct impact on the valuation results. OSERS' plan provisions provide for an annual cost of living adjustment of the lesser of 1.5% or CPI-U for members hired prior to July 1, 2013. For members hired on or after July 1, 2013, the annual cost of living adjustment is capped at 1.0% rather than 1.5%.

The current assumption for price inflation is 3.00% per year which was recommended and adopted in the last experience study.

Past Experience: Although economic activities, in general, and inflation in particular, do not lend themselves to prediction solely 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 following table provides historical annualized rates and annual standard deviations of the CPI-U over periods ending December 31st.

Period	Number of Years	Annualized Rate of Inflation	Annual Standard Deviation
1926 – 2016	90	2.94%	3.83%
1956 – 2016	60	3.70	2.75
1966 – 2016	50	4.09	2.82
1976 – 2016	40	3.66	2.77
1986 – 2016	30	2.65	1.22
1996 – 2016	20	2.15	1.04
2006 - 2016	10	1.76	1.29

The following graph illustrates the historical annual change in price inflation, measured as of December 31 for each of the last 70 years, as well as the thirty-year rolling average.

13
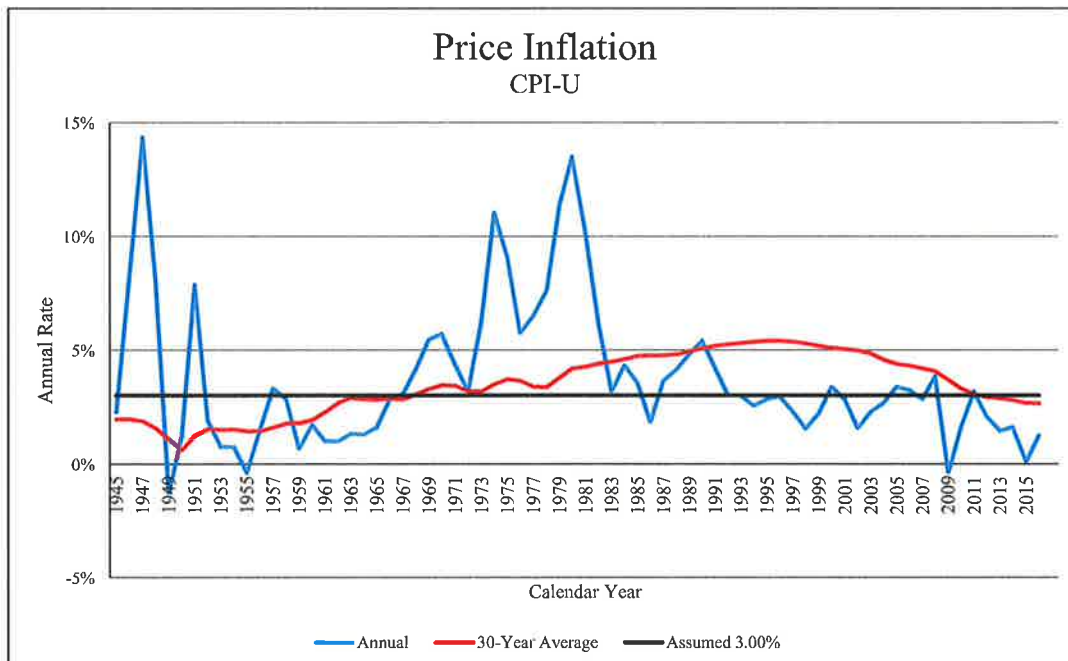
Over more recent periods, measured from December 31, 2016, the average annual rate of increase in the CPI-U has been below the current assumption of 3.00%. The period of high inflation from 1973 to 1982 has a significant impact on the averages over periods which include these rates. It is difficult to ignore the steady decline in inflation shown in the data above.

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. Current market prices as of December 2016 suggest that investors expect inflation to be around 2.1% over the next 30 years. The bond market expectations may be heavily influenced by the low interest rate environment created by the Federal Reserve Bank's manipulation of the bond market. Whether inflation will return to the higher rates observed historically remains to be seen.

The NIC's investment consultant, Aon, also has an inflation forecast in their capital market assumptions. Both their short-term (10 year) and long-term (30 year) inflation assumption is 2.10%.

Social Security Projections

Although many economists forecast lower inflation than the assumptions used by retirement systems, they are generally looking at a shorter time horizon (10 years) 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 most recent report (May 2016), the projected average annual increase in the CPI over the next 75 years was estimated to be 2.6%, under the intermediate (best estimate) cost assumption. The range of price inflation used in the Social Security 75-year modeling, which includes a low and high cost scenario, in addition to the intermediate cost projection, was 2.0% to 3.2%.

Peer System Comparison

While we do not recommend the selection of any assumption based on what other systems use, it does provide another set of relevant information to consider. According to the Public Plan Database (a survey of over 150 state and local retirement systems maintained by a collaboration between the Center for Retirement Research at Boston College, the Center for State and Local Government Excellence, and the National Association of State Retirement Administrators) the average inflation assumption for statewide systems has been steadily declining. As of the most recent study, the most common assumption is 3.00%, which is consistent with OSERS' current assumption. However, the survey is based on valuations that are almost entirely from 2013 or 2014. Based on our experience, we believe that further declines have occurred for many systems in the last two years.

Conclusion: The current inflation assumption is 3.0%. While actuarial standards caution against assigning too much weight to recent experience, multiple factors lead us to believe the current inflation assumption should be reduced. Actual inflation for the last 30 years has been below 3.0%, the bond markets reflect an expectation of inflation well below 3.0%, the inflation assumption used by the Chief Actuary of the Social Security Administration in their 75-year projections is 2.6%, Aon's long-term inflation assumption is 2.10%, and the median long-term inflation assumption in the Horizon Actuarial Survey is 2.31%. While

the median inflation assumption in the Public Plans Database is 3.0%, this is based on assumptions used in 2014 valuations (likely trending lower since then).

Based on this information, **we recommend a reduction in the inflation assumption from 3.00% to 2.75%.**

Consumer Price Inflation	
Current Assumption	3.00%
Recommended Assumption	2.75%

COST OF LIVING ADJUSTMENTS

OSERS' plan design includes an annual COLA based on actual inflation up to 1.5% (members hired prior to July 1, 2013) or 1.0% (members hired on or after July 1, 2013). Based on the proposed inflation assumption of 2.75% and the expected variability, the assumption for members hired before July 1, 2013 is 1.5% and the assumption for those hired after July 1, 2013 is 1.0%.

INVESTMENT RETURN

Use in the Valuation: The investment return assumption reflects the anticipated returns on the current and future assets. It is one of the primary determinants in the calculation 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. This assumption has a direct impact on the calculation of liabilities, normal costs, and contribution rates. Generally, the investment return assumption should be set with consideration of the asset allocation policy, expected long term real rates of return on the specific asset classes, the underlying inflation rate, and any investment expenses, but is also impacted by the dynamics of the system along with the risk tolerance and preferences of the Board.

The current investment return assumption is 8.00% per year, net of all investment-related and administrative expenses. The 8.00% rate of return is referred to as the nominal rate of return and consists 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 5.00% (8.00% nominal return less 3.00% inflation).

ASOP 27 provides guidance to actuaries on the selection of economic assumptions used for measuring pension obligations. Our findings and analysis, following that ASOP, are discussed below.

Long Term Perspective

Because the economy is constantly changing, assumptions about what may occur in the near term are volatile. Asset managers and investment consultants usually focus on this near-term horizon so as to make prudent choices regarding how to invest the trust funds, i.e., asset allocation. For actuarial calculations, we typically consider very long periods of time as some current employees will still be receiving benefit payments more than 80 years from now. For example, a newly-hired teacher who is 25 years old may work

for 35 years, to age 60, and live another 30 years, to age 90. The retirement system would receive contributions for the first 35 years and then pay out benefits for the next 30 years. During the entire 65-year period, the system is investing assets on behalf of the member. For such a typical career employee, more than one-half of the investment income earned on assets accumulated to pay benefits is received <u>after</u> the employee retires. In addition, in an open plan like OSERS, the stream of benefit payments is continually increasing as new hires replace current members who leave covered employment due to death, termination of employment, and retirement. This difference in time horizon is frequently a source of debate and confusion when setting economic assumptions.

The long term asset allocation for the OSERS portfolio is the same as the Nebraska School Employees Retirement System and the investment responsibility for both plans rests with the NIC. Therefore, we believe it is appropriate to rely on the analysis that was performed in the fall of 2016 for the Nebraska Public Employees' Retirement System (NPERS) and set the investment return assumption for OSERS equal to that used for NPERS, 7.50%.

For completeness in this report, the analysis from the NPERS 2016 Experience Study report is included below.

Excerpt from NPERS 2016 Experience Study Report

Forward Looking Analysis: *ASOP 27 provides that the actuary may rely on outside experts in setting economic assumptions. As mentioned earlier, NPERS' assets are held and invested by the Nebraska Investment Council (NIC) who relies on a variety of internal experts and external consultants to assist with investing the funds. As part of their duties, the NIC has its investment consultant, Aon, periodically perform asset-liability studies, along with comprehensive reviews of the expected return of the various asset classes in which the NPERS portfolio is invested. We believe it is appropriate to consider the results of Aon's work as one factor in assessing expected future returns.*

We also recognize that there can be differences of opinion among investment professionals regarding future return expectations. Horizon Actuarial Services prepares an annual study in which they survey various investment advisors (29 were included in the 2015 study) and provide ranges of results as well as averages. This information provides an additional perspective on what a broad group of investment experts anticipate for future investment returns.

We do note that Aon recently completed a comprehensive Asset/Liability Study for the NIC. While the study did not recommend any changes to the current asset allocation, it did suggest that the NIC begin to consider some additional illiquid investment classes. If this leads to any significant change in the asset allocation of the portfolio, it may require us to revisit the recommendation for the investment return assumption.

Our forward looking analysis used the real rates of return in Aon's capital market assumptions from the first quarter of 2016 and NPERS' target asset allocation. Using projection results produces an expected range of real rates of return over a 50 year time horizon. Looking at one year's results produces an expected real return of 4.56%, but also has a high standard deviation or measurement of volatility. By expanding the time horizon, the average return does not change much, but the volatility declines significantly. The table below provides a summary of results.

Aon's Capital Market Assumptions							
Time Span In Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5th	25th	50th	75th	95th
1	5.28%	12.37%	-13.76%	-3.38%	4.56%	13.15%	26.77%
5	4.70	5.49	-4.07	0.93	4.56	8.32	13.97
10	4.63	3.88	-1.62	1.98	4.56	7.20	11.13
20	4.60	2.74	0.15	2.73	4.56	6.42	9.16
30	4.58	2.24	0.95	3.06	4.56	6.08	8.30
50	4.57	1.73	1.75	3.40	4.56	5.73	7.45

The percentile results are the percentage of random returns over the time span shown that are expected to be less than the amount indicated. Thus for the 10-year time span, 5% of the real rates of return are expected to be below negative 1.62% and 95% are expected to be above that. As the time span increases, the results begin to converge. Over a 50-year time span, the results indicate a 25% probability that real returns will be below 3.40% and a 25% probability they will be above 5.73%. There is a 50% probability that the real return will be 4.56% or above and a 50% probability that the real return will be below 4.56%.

For a broader view of expected returns, we used the average capital market assumptions of the 29 investment consultants included in the 2015 Horizon Actuarial Survey which yielded the following results:

2015 Horizon Actuarial Survey of Capital Market Assumptions							
Time Span In Years	Mean Real Return	Standard Deviation	Real Returns by Percentile				
			5th	25th	50th	75th	95th
1	5.80%	12.05%	-12.81%	-2.62%	5.13%	13.49%	26.67%
5	5.27	5.35	-3.30	1.59	5.13	8.79	14.28
10	5.20	3.78	-0.90	2.62	5.13	7.71	11.52
20	5.17	2.67	0.83	3.35	5.13	6.95	9.61
30	5.16	2.18	1.61	3.67	5.13	6.61	8.78
50	5.15	1.69	2.39	4.00	5.13	6.28	7.95

While we often assign greater weight to the capital market assumptions of a system's own investment advisor, we recognize that there are some aspects of the current investment environment that may be significantly different from the past. One approach in setting assumptions (which we believe to be used by Aon) is to base many of the fundamental market assumptions on the current Treasury yield curve. To this, adjustments are made for credit quality, liquidity, risk, etc. These models draw on historical spreads to help provide an estimate of current expectations. However, because of actions by governments and central banks around the world to influence interest rates, it is possible that the current pricing of Treasuries and other fixed income products may be artificially influenced. If this is the case, then the linkage from Treasuries on up in these capital market models may be different from the historical norms and the resulting assumptions may be distorted. However, because there is no way to prove or disprove this assertion at the

present time, we find some degree of confidence in looking at the pooled result of 29 investment firms, including most major investment consultants. Consequently, we believe there is value in considering both sets of capital market assumptions in our analysis.

Frequently investment consultants develop their expected return assumptions based on a timeframe of 5 to 10 years. Therefore, those assumptions may not necessarily be appropriate for the longer timeframe used by actuaries (30 to 50 years). Since both Aon and the Horizon Survey have developed 20-year market return assumptions, the expected returns from their assumptions are reasonably in line with the timeframe used by actuaries. We also note that Aon updates their capital market assumption quarterly. Since we expect to perform an experience study only every four years, we are also hesitant to base our assumption solely on the most recent quarterly estimate from the investment consultants.

If the investment return assumption was set equal to the expected return based on the capital market assumptions each year or even in every experience study, it could create significant fluctuations in the system's funded ratio and the corresponding actuarial contribution rate. Our goal is to choose an assumption that will be reasonable over the long term (30 to 50 years) with adjustments only when there are compelling changes to investment policy, changes in the underlying inflation assumption, or evidence of a change in the long-term trends in the capital markets. We do not believe that we should <u>automatically</u> recommend changing the actuarial assumption up or down whenever Aon's capital market assumptions produce an expected return higher or lower than the current assumption. Additional analysis and discussion are needed before a change is implemented.

Peer System Comparison: *While we do not recommend the selection of an investment return assumption be based on the assumptions used by other systems, it does provide another set of relevant information to consider as long as we recognize that asset allocation varies from system to system. The following graph shows the change in the distribution of the investment return assumption from fiscal year 2001 through 2015 (and some 2016 information) for the 120+ large public retirement systems included in the National Association of State Retirement Administrators (NASRA) Public Fund Survey. The assumed rate of return is heavily influenced by the asset allocation of the system, so comparisons must be made cautiously.*

As the graph below indicates, the investment return assumptions used by public plans have decreased over the last decade, likely impacted by a corresponding decrease in the underlying inflation assumption from 4.0% to 3.0% over the same period. It is worth noting that the median investment return assumption in fiscal year 2012 dropped from 8.00% to 7.75% and has remained there for the last few years. However, as the graph indicates the number of systems using an assumption above 8.0% is very small. In addition, although 8.0% is still a commonly used assumption the number of systems using 8.0% has continued to decline since 2012. We believe we will continue to see more of the systems who are using an 8.0% or higher assumption move to a lower expected return as future experience studies are completed.

Change in distribution of investment return assumptions, FY 01 to present
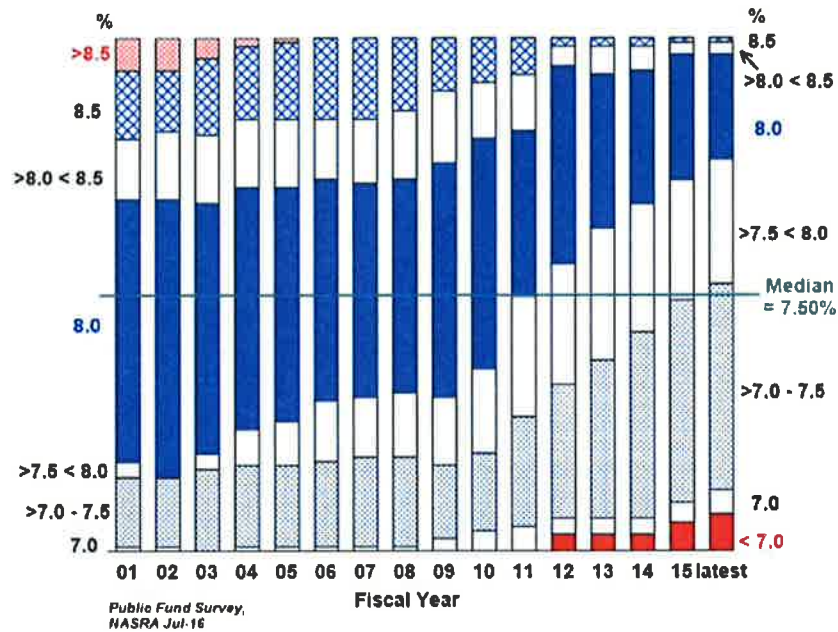
Recommendation: *By actuarial standards we are required to maintain a long-term perspective in setting all assumptions, including the investment return assumption. Therefore, we believe we must be careful not to let recent experience or the short-term expectations impact our judgment regarding the appropriateness of the current assumption over the long term.*

This is a particularly challenging time to develop a recommendation for the investment return assumption. We need to recognize that there is no right answer to the question as no one knows what the future holds. After reviewing all of the available information, **we recommend an investment return assumption of 7.50%,** *based on the 2.75% inflation assumption and the 4.75% real rate of return (midway between the real returns obtained by using Aon's capital market assumption and the 2015 Horizon survey).*

End of Excerpt from NPERS Experience Study Report

GENERAL WAGE GROWTH

Background: General wage growth, thought of as the "across the board" rate of salary increases, is composed of the price inflation assumption and an assumption for the real rate of wage increases/real wage growth. The excess of wage growth over price inflation represents the increase in the standard of living, also called productivity growth.

In constructing the salary increase assumption that is used to project future salary increases for individual members, the wage growth assumption is combined with an assumption for service-based salary increases (called a merit scale). The service-based salary increase assumption is addressed in the demographic assumptions section. Given the current price inflation assumption of 3.0%, the current wage growth assumption of 4.0% implies an assumed real rate of wage increase or real wage growth assumption of 1.0%.

19

Historical Perspective: Wage statistics from the Social Security System on the National Average Wage (1955 to present) are used because that is the most comprehensive database available. Because the National Average Wage is based on all wage earners in the country who are covered by Social Security, it can be influenced by the mix of jobs (full-time vs. part-time, manufacturing vs. service, etc.) as well as by changes in some segments of the workforce that are not seen in all segments (e.g. regional changes or growth in computer technology). Furthermore, if compensation is shifted between wages and benefits, the wage index would not accurately reflect increases in total compensation. OSERS membership is composed exclusively of school employees working in the Omaha metro area, whose wages and benefits are linked as a result of state and local tax revenues, funding allocations, and governing policies. Because the competition for workers can, in the long term, extend across industries and geography, the broad national earnings growth will have some impact on OSERS members. In the shorter term, however, the wage growth of OSERS and the nation may be less directly correlated.

The excess of wage growth over price inflation represents the real wage growth rate. The following table shows the compounded wage growth over various periods, along with the comparable price inflation rate for the same period. The differences represent the real wage growth rate. The data for each year is documented in Exhibit 3.

Years	Period	General Wage Inflation	CPI Increase	Real Wage Inflation
2006-2015	10	2.7%	1.8%	0.9%
1996-2015	20	3.4%	2.2%	1.2%
1986-2015	30	3.6%	2.7%	0.9%
1976-2015	40	4.4%	3.7%	0.7%
1966-2015	50	4.8%	4.1%	0.7%
1956-2015	60	4.6%	3.7%	0.9%

Similar information over rolling thirty year periods is shown in the following graph:

Wage Inflation vs. CPI-U
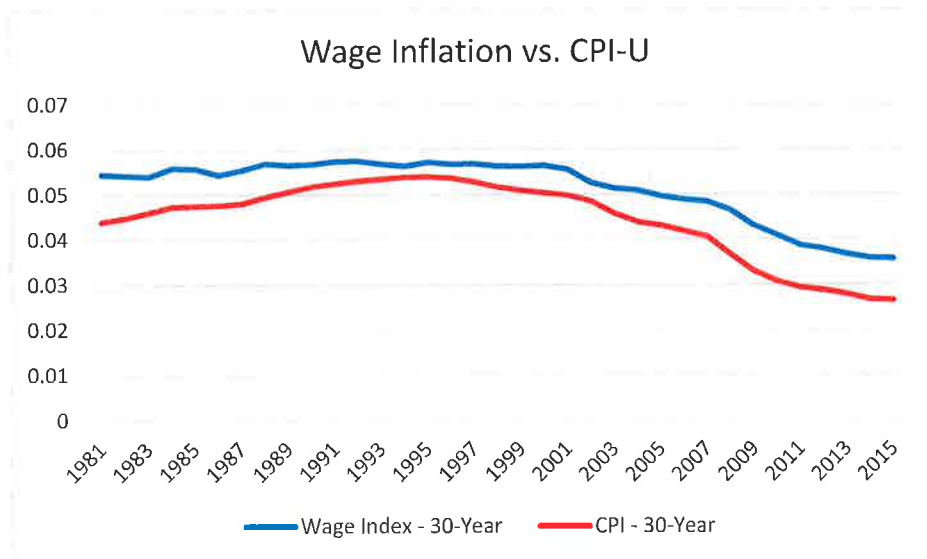
Over the last 30 years, the real wage increase, as measured by the increase in the National Average Wage Index, has been 0.87% per year on average. A somewhat similar, but slight different set of data is available from the Bureau of Labor Statistics, which reports the median weekly wage for full-time employees. Over the last 30 years, this amount (adjusted for inflation) has had an average increase of 0.17% per year. Part of the difference in these results arises from the difference between using an average and a median. There are also technical differences arising from who is included in each measure.

Forecasts of Future Wages: The wage index used for the historical analysis is projected forward by the Office of the Chief Actuary of the Social Security Administration in their 75-year projections. In the June, 2016 Trustees Report, the annual increase in the National Average Wage Index under the intermediate cost assumption (best estimate) was 3.8%, 1.2% higher than the Social Security Administration's intermediate inflation assumption of 2.6% per year. The range of the assumed real wage growth in the 2016 Trustees report was 0.5% to 1.8% per year.

Analysis and Conclusion: Over the last 30 years, the actual experience on a national basis has been close to the current assumption. However, this is based on SSA data which uses the average wages of all US workers. As mentioned earlier, the median real wage increase has been significantly lower. We believe that wages will continue to grow at a greater rate than prices over the long term, although not at the level projected by Social Security. We also expect wage growth for governmental employees, including OSERS employees, to be lower than the national average, at least in the short term, due to budget challenges still being experienced by both state and local governmental employers.

Based on the available data and our professional judgment, **we recommend that the long-term assumed real wage growth be lowered from 1.00% to 0.50% per year. When coupled with the reduction in the price inflation assumption to 2.75%, the resulting general wage growth assumption decreases from 4.00% to 3.25%.**

GROWTH IN MEMBERSHIP

We propose continuing the assumption that no future growth in membership will occur. This assumption affects the amortization payment rate, which is the portion of the total contributions used to pay off the unfunded actuarial liability. With no assumed growth in membership, future salary growth due only to general wage increases is anticipated. If increases should occur not only because of wage increases, but also because of additional members, there will be a larger pool of salaries over which to spread the unfunded actuarial liability, which would result in lower UAL payments as a percent of payroll. The uncertainties in light of current conditions in public employment and the national economy argue against anticipating any increase in membership for funding purposes.

PAYROLL GROWTH ASSUMPTION

Amortization payments on the unfunded actuarial liability are currently determined as a level percent of payroll. Therefore, the valuation requires an assumption regarding future annual increases in covered payroll. The wage growth assumption is typically used for this purpose. The current payroll growth assumption for OSERS is 4.00%, the same as the current wage growth assumption.

Based on the recommended wage growth assumption of 3.25%, we recommend the payroll growth assumption also be set at 3.25%. The use of a lower payroll growth assumption, like 3.00%, would provide some conservatism in the funding of the UAL by effectively increasing the dollar amounts of contributions in the earlier years of the amortization period. If the Board is interested in considering this option, we would be happy to discuss it with them.

SUMMARY

The following table summarizes the current set of economic assumptions along with the recommended set of economic assumptions:

	Current Assumptions	Recommended Assumptions
Price Inflation	3.00%	2.75%
Investment Return	8.00%	7.50%
Cost of Living Adjustment	1.50%*	1.50%*
Interest on Member Accounts	3.00%	2.75%
General Wage Growth	4.00%	3.25%
Payroll Growth	4.00%	3.25%

*Assumption is 1.00% for members hired on or after July 1, 2013.

DEMOGRAPHIC ASSUMPTIONS

Actuarial Standard of Practice No. 35 (ASOP 35) provides guidance to actuaries regarding the selection of demographic and other non-economic assumptions for measuring pension obligations. 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.

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 actuarial gains or losses.

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 addition, ASOP 35 requires the actuary to include a specific assumption with respect to expected mortality improvements after the 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 (September 1, 2012 through August 31, 2016) with what was expected to happen based on the actuarial assumptions. Four years is a relatively short observation period for experience given the assumptions are being set with a long-term time horizon in mind. Therefore, we have considered the results of the prior Experience Study when practical to do so.

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. Furthermore, a single study period is a relatively short observation period, particularly given the size of OSERS' membership. Therefore, the System's size limits the credibility of the findings, particularly when the total group is split into subsets such as certificated/classified and/or male/female. Our recommendations were made, 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 as appropriate (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 (credibility) to assign to the most recent experience.

In our analysis, we use a methodology to analyze the experience that we call a liability-weighted approach. The relative liability of the member is approximated by using the member's compensation and years of service to estimate the benefit level. The exposure and actual occurrences are then multiplied by the benefit level to provide the liability-weighted experience. (For retiree mortality, the weight is simply the benefit amount.) This approach is particularly insightful when analyzing experience in a non-homogenous group. While we reviewed experience on both a count and liability-weighted basis, we have generally found the liability-weighted experience to be a better basis for setting assumptions. Therefore, in most situations we assign more credibility to the liability-weighted results in evaluating experience and developing new assumptions, if necessary.

Revised rates of decrement are tested by recalculating the expected number of decrements during the study period, with results shown as revised A/E Ratios.

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.

| | Recommended Revisions | |
	Certificated	Classified
Mortality	Yes	Yes
Retirement	Yes	Yes
Termination of Employment	Yes	Yes
Probability of Refund	No	Yes
Merit Salary Scale	Yes	Yes

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MORTALITY

One of the most important demographic assumptions in the valuation is mortality because it projects the length of time benefits are expected to be paid to current and future retirees and beneficiaries. If members live longer than expected, the true cost of future benefit obligations will be understated.

Over the last few generations, rates of mortality have been declining, meaning people are generally living longer. Furthermore, the experience of large, public retirement systems that include school employees indicates that school groups, and teachers in particular, continue to exhibit better mortality than the average working population.

There are distinct differences in the mortality rates of males and females, healthy retired members, disabled retired members and non-retired members. Because of those differences in mortality, these groups are generally studied separately.

Actuaries use various adjustments to standard mortality tables in order to match the observed mortality rates of a specific retirement system:
   (1) Age adjustments
   (2) Collar adjustment
   (3) Scaling of rates

The first of these adjustments is an age adjustment that can be either a "setback" or a "set forward". A one-year age setback treats all members as if they were one year younger than they truly are when applying the rates in the mortality table. So, a one year set back would treat a 61 year old retiree as if he will exhibit the mortality of a 60 year old in the standard mortality table.

The second adjustment is called a collar adjustment. There are both "white collar" and "blue collar" variants of some of the newer mortality tables. These variants, which are not necessarily limited to populations that have only white or blue collar employees, provide options which may result in a better fit of the assumed mortality to actual experience.

The third adjustment that may be used, depending on the size of the group, is to "scale" a mortality table by multiplying the probabilities of death by factors less than one (to reflect better mortality) or factors greater than one (to reflect poorer mortality). Scaling factors can be applied to an entire table or a portion of the table. Of course, if needed, actuaries may use two or even all three of these methods to develop an appropriate table to model the mortality of the specific plan population.

The issue of future mortality improvement is one that the actuarial profession has become increasingly focused on studying with the intent to remain on the leading edge of the issue. This has resulted in changes to the relevant Actuarial Standard of Practice, ASOP 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. This ASOP requires the pension actuary to make and disclose a specific recommendation with respect to future improvements in mortality after the valuation date, although it does not require that an actuary assume there will be future improvements. There have been significant improvements in longevity in the past, although there are different opinions about future expectations. We believe it is prudent to anticipate that the trend will continue to some degree in the future. Therefore, we believe it is appropriate to reflect some future mortality improvement as part of the mortality assumption.

There are two widely-used ways to reflect future improvements in mortality:
  (1) Static table with "margin"
  (2) Generational mortality

The first approach to reflecting mortality improvements is through the use of a static mortality table with "margin." Under this approach, the A/E ratio is intentionally targeted to be over 100% so that mortality can improve without creating actuarial losses. This approach is mandated by the Internal Revenue Service for determining minimum funding amounts for corporate pension plans as mortality improvements are projected seven years for retirees and 15 years for actives. While there is no formal guideline for the amount of margin required (how far above 100% is appropriate for the A/E ratio), we typically prefer to have a margin of around 10% at the core retirement ages. The goal is still for the general shape of the curve to be a reasonable fit to the observed experience. Depending on the magnitude and duration of mortality improvement, the margin would decrease and eventually may become insufficient. When that occurs, the assumption would need to be updated.

Another approach, referred to as generational mortality, directly anticipates future improvements in mortality by using a different set of mortality rates for each year of birth, with the rates for later years of birth assuming lower mortality than the rates for earlier years of birth. The varying mortality rates by year of birth create a series of tables that contain "built-in" mortality improvements, e.g., a member who turns age 65 in 2035 has a longer life expectancy than a member who turns age 65 in 2020. When using generational mortality, the A/E ratios for the observed experience are set near 100% as future mortality improvements will be taken into account directly in the actuarial valuation process.

The table below is an example using a standard table, showing the life expectancy at age 65, an indication of how long a new retiree would expect to receive monthly payments, at various points in time.

Year	Life Expectancy	
	Male	Female
2016	22.7	24.6
2026	23.0	25.0
2036	23.4	25.3
2046	23.7	25.6

Life expectancy at age 65 in years

We would note that there is a wide range of opinions with respect to future expectations of mortality and the underlying assumptions regarding mortality improvement reflect some subjectivity. However, most public plan actuaries are in agreement that some improvement is likely to occur. The real question is how much it will improve and how rapidly.

The valuation currently uses generational mortality with separate mortality assumptions for male and female members. The RP-2000 Combined Mortality Table for Males and Females, and no age adjustment for males and a one-year age setback for females (e.g. a female member age 65 is assumed to exhibit the mortality of a 64 year old) is used to predict the probability of death in each future year. Projection Scale AA is used to anticipate mortality improvements in future years.

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 (generally an actuarial gain) and with an A/E Ratio less than 100% the assumptions have predicted more deaths than have actually occurred (generally an actuarial loss). Since generational mortality is being used, 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.

Healthy Retiree Mortality – Males: The following table shows the exposures, actual deaths, and expected deaths for the key retirement ages of 60 to 85, along with the actual to expected ratio under the current assumption for each year in the experience study on both a count and benefit-weighted basis. The variation from year to year is evident; however, this is not unexpected given the size of the group.

| | | | | A/E Ratio | |
	Exposure	Actual	Expected	Count	Weighted
Year 1	931	21	23	91%	95%
Year 2	981	37	25	148%	140%
Year 3	999	27	25	108%	94%
Year 4	1,032	25	27	93%	80%
Total	**3,943**	**110**	**100**	**110%**	**101%**

In the prior experience study, the A/E ratio for males using the current assumption was 94%. The current experience study indicates that the current assumption for male retirees is predicting too few deaths on a count basis, i.e., the A/E ratio is more than 100%. However, of more relevance, is the fact that the A/E ratio is near 100% when experience is weighted based on benefit amounts. This indicates that the amount of liability actually being released as a result of retiree deaths over the study period was close to that anticipated.

Healthy Retiree Mortality – Females: The following chart shows the exposures, actual deaths, and expected deaths for ages 60 to 85, along with the actual to expected ratio under the current assumption for each year in the experience study on both a count and benefit-weighted basis. As was observed for males, the experience varies significantly from year to year. Again, this is to be expected given the size of the group.

| | | | | A/E Ratio | |
	Exposure	Actual	Expected	Count	Weighted
Year 1	2,148	46	39	118%	146%
Year 2	2,226	34	40	85%	73%
Year 3	2,365	30	43	70%	60%
Year 4	2,541	50	47	106%	99%
Total	**9,280**	**160**	**170**	**94%**	**93%**

The experience for females indicates that the current assumption anticipated more deaths than actually occurred for female retirees on both a count and benefit-weighted basis. Since both of the A/E ratios are well below 100%, it indicates that the mortality assumption for females needs to be strengthened.

Although the mortality assumption for males was a relatively good fit for the actual experience in this study period, we prefer to keep both males and females on a consistent set of mortality tables. Therefore, we are recommending that the mortality assumption for both males and females be changed. In trying to find a new mortality assumption, we first tried the new mortality assumption for the Nebraska School Employees Retirement System (NSERS), adopted by the PERB at their October, 2016 meeting. Our analysis indicated that the NSERS assumption was not appropriate for the OSERS population.

We next attempted to find a standard mortality table with age or collar adjustments that would be a good fit for the observed experience at all ages, with a focus on the key retirement ages of 60 to 85. A relatively new mortality table, denoted as the RP-2014 Mortality Table, was published by the Society of Actuaries (SOA) in October of 2014. It was created to replace the RP-2000 Mortality Table as the mortality table required for use in the valuation of corporate pension plans. The RP-2014 Mortality Table with a one-year age set forward for males and a one-year age setback for females was a reasonably good fit to the actual experience as shown below:

	A/E Ratio	
	Count Basis	Benefit-Weighted
Males	105%	97%
Females	102%	100%

With generational mortality, once the base mortality rates are set by selecting a mortality table that fits the actual experience during the study period, future mortality improvements must be addressed by selecting a mortality improvement scale. A mortality improvement projection scale, MP-2014, was published with the RP-2014 Mortality Table for use in projecting future mortality improvements. Using additional years of data, the projection scale was updated in both 2015 and 2016 and published as the MP-2015 scale and MP-2016 scale. The MP-2016 scale, which was published with the RP-2014 Mortality Table is a two dimensional projection scale and varies not only by age, but also by year of birth, increasing the sophistication of the projections to more accurately model the broad mortality improvements observed in the United States.

We recommend the RP-2014 Mortality Table be used with a one-year age set forward for male retirees and a one-year age setback for females retirees with generational mortality improvements anticipated by the MP-2016 projection scale. We do not recommend that the projection scale be modified each year as new versions are published, but that the MP-2016 Scale be used until the next experience study is completed.

Beneficiaries: The mortality of beneficiaries applies to the survivors of members who receive a joint and survivor option. There are fewer members receiving benefits under the joint and survivor options which can produce more volatility in the observed mortality rates. Based on the limited data, **we recommend standard convention be followed and the same mortality assumption be used for beneficiaries as is used for retired members.**

Post-retirement Mortality for 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. In addition, future life expectancies for disabled members are not expected to increase as significantly as the future life expectancies for healthy retirees.

Because of the limited number of exposures and deaths for disabled members, it makes sense to use the standard disabled table that is the companion to the retiree mortality table. **We recommend the RP-2014 Disabled Retiree Mortality Table be used without generational improvement.**

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 by using a consistent basis 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 OSERS. 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-2014 Mortality Table for males (with a one-year set forward) and females (with a one-year set back) and applying the MP-2016 Scale for future mortality improvements.**

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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 who were eligible to retire during the study period could retire with reduced benefits at age 55 with ten years of service. Special early retirement factors of 3% per year are applied if the member meets the Rule of 82, 83 or 84 (age plus service equals or exceeds 82, 83 or 84). Unreduced benefits are available if a member meets one of the following:
   (1) the Rule of 85,
   (2) age 62 with ten years of service, or
   (3) age 65 with five years of service.

The following table is a summary of the actual service retirements in each category for Certificated members for the period September 1, 2012 through August 31, 2016:

Certificated Retirement Experience

Retirements				
Observations				
	Actual	Expected	A/E Ratio Count	A/E Ratio Weighted
Rule of 82	8	17	47%	48%
Rule of 83	4	16	25%	24%
Rule of 84	6	15	40%	40%
Early (Reduced)	70	89	79%	87%
Select (First Eligible)	123	147	84%	95%
Ultimate	247	269	92%	92%

Due to the economic conditions during the prior experience study, there were no changes to the retirement assumptions. However, based on our review of that data and the findings of the current study, we are recommending several changes to the retirement assumptions for Certificated members.

- The number of actual retirements under the Rule of 82, 83 and 84 has been very small in both the current and prior experience study. Therefore, we recommend the separate assumption for retirement under those eligibility requirements be eliminated.
- Early retirement usage is fairly low, but some small adjustments are recommended to better fit the actual experience.
- Adjustments to the rates at first retirement (select) are recommended with an increase at age 55 and decreases at certain later ages.
- The retirement rates for the ultimate retirement assumption are adjusted with both increases and decreases at various ages.

The following table summarizes the resulting A/E ratios using the recommended assumptions:

Certificated Experience

	A/E Ratio			
	Current		**Proposed**	
Assumption	Count	Weighted	Count	Weighted
Early	79%*	87%*	86%	97%
Select	84%	95%	96%	102%
Ultimate	92%	92%	91%	92%

* Excludes members eligible for Rule of 82, 83 or 84.

The following table is a summary of the actual service retirements in each category for Classified members for the period September 1, 2012 through August 31, 2016:

Classified Retirement Experience

	Retirements			
	Observations			
	Actual	Expected	A/E Ratio Count	A/E Ratio Weighted
Early (Reduced)	48	55	87%	84%
Select	51	81	62%	72%
Ultimate	240	313	77%	92%

Based on these results, we believe some adjustment to the retirement assumptions is appropriate. Therefore, we are recommending the following changes:

- Early retirement: reduce the rate at age 61
- Select (first eligible): lower rates from ages 60 through 65
- Ultimate assumption: adjust rates to better reflect experience resulting in both increases and decreases at various ages

Classified Experience

	A/E Ratio			
	Current		**Proposed**	
Assumption	Count	Weighted	Count	Weighted
Early	87%	84%	98%	94%
Select	63%	72%	81%	90%
Ultimate	77%	92%	81%	100%

Inactive Vested Members: The current assumption is that inactive vested members will retire at the first retirement date at which they are eligible for unreduced benefits. Due to the limited number of exposure, actual analysis was not performed. This is a reasonable expectation and **we recommend the current assumption be retained.**

TERMINATION OF EMPLOYMENT

Not all active members on the valuation date are expected to continue working until retirement. Therefore, a termination of employment assumption is used to anticipate the probability that a member will leave covered employment at any given age. In analyzing the actual results, the number of terminations includes all members reported to have terminated employment. Some of these members subsequently receive refunds of their contributions, some return to active membership and some leave their contributions with the System until retirement and receive a monthly benefit. Explicit assumptions are made regarding the elections made by such terminated vested members. Non-vested members are assumed to elect a refund of their employee contribution account balance.

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 assumption reflects a five year select and ultimate approach, i.e. one set of rates apply to the first five years of employment (service) and a different set of rates apply once a member has five or more years of service. Both the select and ultimate rates are currently age-based assumptions.

The following table shows the actual and expected number of terminations for causes other than death, retirement, or disability, and the corresponding A/E ratios.

	Certificated - Males			
	Actual	Expected	Count	Weighted
Years of Service				
Less than 5	134	109	123%	118%
5 or more	94	61	154%	149%
Total	228	170	134%	143%
	Certificated – Females			
	Actual	Expected	Count	Weighted
Years of Service				
Less than 5	352	380	93%	87%
5 or more	326	212	154%	98%
Total	678	592	115%	96%
	Classified – Males			
	Actual	Expected	Count	Weighted
Years of Service				
Less than 5	87	64	136%	86%
5 or more	38	20	190%	134%
Total	125	84	149%	122%
	Classified – Females			
	Actual	Expected	Count	Weighted
Years of Service				
Less than 5	282	264	107%	88%
5 or more	164	52	315%	123%
Total	446	316	141%	112%

Our review of the current assumptions indicated they were not a particularly good fit for the actual experience observed during the study period. Therefore, some adjustment to the current assumptions is necessary and appropriate. In general, there tends to be a stronger correlation between termination rates and years of service rather than age. Therefore, we analyzed the actual OSERS experience on a pure service-based analysis. While reviewing the results, we noted that there was not a major difference between the pattern for males and females in the certificated group so we considered the experience of both groups together. The typical pattern observed in other systems was evident in this data as well, i.e., highest termination rates in the lowest years of service, declining significantly over a 10-15 year period followed by very low rates. For the classified group, separate assumptions were developed by gender as there were distinct differences by gender in the actual experience.

Based on the data we observed, we believe that a set of termination rates based solely on years of service is likely to better model the termination patterns of active members than the current select and ultimate age-based assumptions. Therefore, we developed a new assumption for each group, certificated and classified, based on the actual experience during this period. The revised A/E ratios using the recommended assumptions are summarized below:

	A/E Ratio	
	Count	Weighted
Certificated	99%	87%
Classified - Males	127%	86%
Classified – Females	111%	91%

Since the recommended assumption is based solely on the experience of a single study period, it will likely need to be refined in future experience studies as additional data becomes available.

VESTED MEMBER ELECTION OF REFUND/DEFERRED BENEFIT

Some members who terminate active employment elect to receive a distribution of their member account balance. Currently, we assume that all non-vested members receive a refund of their account balance at the time of termination. In addition, we assume that a certain portion of terminating vested members also elect a distribution of their member account, thus forfeiting the right to receive a monthly benefit in the future.

Currently, separate assumptions are used for each group. For the Certificated group, 20% of terminating members are assumed to take a refund and 80% are assumed to leave their employee account balance in the System and draw a monthly benefit when eligible. For the Classified group, 50% are assumed to elect a refund of their employee account balance and forfeit any monthly income and 50% are assumed to leave their funds with the System. The following table shows the number of vested members who terminated and elected to leave their funds with the System along with the expected count during the study period.

	Election of Deferred Benefit		
	Actual	Expected	A/E Ratio
Certificated	354	316	112%
Classified	111	87	128%
Total	465	403	115%

There were more terminated vested members who elected to leave their contributions in the System and receive a monthly benefit at retirement eligibility than was anticipated by the current assumption for both groups. This election can be heavily influenced by the economic conditions during the study period. The current assumption for Certificated members was adopted in the last experience study and produced an A/E ratio of 103%. The results in the current study are still in a reasonable range, given the size of the group.

There was no change in this assumption for Classified members in the last study although the A/E ratio was 108%. Given the experience in this study, we are recommending the assumption be modified to assume that 60% of all terminating members will elect to leave their money in the System and later receive a monthly benefit. Based on the recommended rates, the revised A/E ratio for Classified members is 107%.

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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 lowered to 3.25% (2.75% price inflation and 0.50% 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. There continues to be considerable pressure on the school district's budget which may have had an impact on the salary increases observed in the study period. In our study, we compared individual salary increases for any member active in any two consecutive periods (e.g. 2012 and 2013, 2013 and 2014, etc.). The average actual increase during this period was 4.30% for Certificated members while the expected increase was 5.06%. The actual increase for Classified members was 4.45% while the expected increase was 4.40%.

The following table shows the salary experience by year:

	2012 – 2016 SALARY EXPERIENCE					
	Certificated			Classified		
Year End	**Actual**	**Expected**	**A/E Ratio**	**Actual**	**Expected**	**A/E Ratio**
2013	3.96%	5.05%	78%	4.68%	4.40%	106%
2014	3.87%	5.05%	77%	3.14%	4.41%	71%
2015	5.91%	5.07%	117%	4.25%	4.40%	97%
2016	3.48%	5.08%	69%	5.69%	4.40%	129%
Total	4.30%	5.06%	85%	4.45%	4.40%	101%

We would note that actual inflation was around 1.25% compared to the assumption of 3.0% during this period. Likewise, the general wage growth for the entire country was around 3.0% compared to the current assumption of 4.0%. Therefore, we expected to observe actual salary increases that were lower than expected, based on the current assumption. While this was true for the certificated group, it was not the case for the classified group.

As we dug deeper into the data and reviewed the salary increases by year, some unusual patterns were observed. For example, the salary increases for certificated employees for the 2014-2015 year displayed significant increases in the earlier durations (years 1 to 15) while the data for the 2015-2016 year showed much higher increases than expected at the higher durations (over 20 years of service). With only four years of data in the study, we decided that additional analysis and information was needed. A review of the current contract with the Omaha Education Association (OEA) revealed a significant change in the Long Service Increment (LSI) pay in 2015-2016 which explained the pattern observed in the data. Given the dramatic change in the LSI component of the merit salary scale we are not comfortable using the data

from the study period to develop an assumption. It is more common for the salary increase assumption to be duration based given the strong correlation of service and pay. Our recommendation is to move to a service-based assumption for the certificated group which was developed based on the salary schedules and LSI in the current OEA contract. Additional refinements to the assumption will be needed in future years as more data becomes available.

Our review of the salary data for the classified group identified one year with very high salary increases (2015-16). Because it appeared to be an outlier, that year was excluded from the data in developing the service-based assumption. As with the salary increase assumption for certificated employees, additional refinements to the assumption will be needed in future years as additional analysis on a service-basis is performed.

MISCELLANEOUS ASSUMPTIONS

There are several minor assumptions used in the valuation process that do not have a material impact on the valuation results. These include:
- (1) Interest on employee contributions
- (2) Percent of members married at retirement
- (3) Age difference between spouses

Prior to September 1, 2016, the Board had full discretion to set the interest rate credited on employee contributions each year. However, the current state statutes provide that the interest rate credited on employee contributions is the rate equal to the daily treasury yield curve for one-year treasury securities on September 1 of each year. This rate is expected to be correlated to price inflation so **we recommend the current assumption of 3% be lowered to 2.75%, the price inflation assumption.**

The valuation assumes that all members are married at retirement and female spouses are three years younger than male spouses. These assumptions are used to value ancillary benefits and do not have a large impact on the valuation results. While we did not specifically review these assumptions in detail, **we believe they 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.

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Interest Rate:	8.0% per annum, compounded annually, net of expenses.
Mortality Rates:	RP-2000 Combined Mortality Table for males. RP-2000 Combined Mortality Table for females, set back one year.
	Future mortality rates are projected on a generational basis using Scale AA, which reflects the expectation that mortality rates will decline over time.
	Disabled retirees use the same assumptions as healthy retirees with ages set forward ten years.
Disability:	None assumed.
Termination of Employment: (prior to retirement eligibility)	Illustrative rates of termination are as follows:

Certificated:

Percent Terminating (First 5 Years)		
Age	Male	Female
20	10.0%	13.0%
25	10.0	13.0
30	10.0	13.0
35	9.8	10.5
40	9.0	9.0
45	9.0	6.0
50	9.0	5.0

Percent Terminating (Over 5 Years)		
Age	Male	Female
25	8.0%	9.0%
30	7.0	9.0
35	3.5	6.0
40	2.3	2.5
45	1.0	2.5
50	1.0	1.0

Classified:

Percent Terminating
(First 5 Years)

Age	Male	Female
20	25.0%	30.0%
25	20.0	27.0
30	14.0	20.0
35	5.0	15.0
40	5.0	10.0
45	5.0	9.0
50	4.0	9.0

Percent Terminating
(Over 5 Years)

Age	Male	Female
25	8.0%	18.0%
30	8.0	13.0
35	4.4	6.0
40	2.2	3.8
45	1.4	3.8
50	1.0	3.0

Retirement Rates: Early retirement rates are assumed to occur according to the schedule illustrated below:

Certificated:

Age	Early	84 Points	83 Points	82 Points
55	10%	55%	40%	30%
56	5	55	40	30
57	5	40	40	30
58	5	40	20	10
59	10	40	20	10
60	10	40	40	30
61	20	20	10	30

Classified:

Age	Early
55	3%
56	3
57	3
58	3
59	3
60	3
61	20

Unreduced (age 62 or 85 points) retirement rates are assumed to occur according to the schedule illustrated below:

Certificated:

Age	1st Year Eligible	Ultimate
55	50%	
56	50	30%
57	50	30
58	45	30
59	45	30
60	45	20
61	45	30
62	30	30
63	60	30
64	35	35
65	35	35
66	35	25
67	35	20
68	35	20
69	100	40
70	100	100

Classified:

Age	1st Year Eligible	Ultimate
55	20%	
56	10	15%
57	10	15
58	10	15
59	15	15
60	35	15
61	20	20
62	20	30
63	50	20
64	30	20
65	30	35
66	20	30
67	20	20
68	20	20
69	20	20
70	100	100

Deferred vested members are assumed to retire at first unreduced retirement age.

Salary Scale:	Salaries are assumed to increase according to the schedule illustrated below:

	Annual Salary Increase	
Age	Certificated	Classified
20	5.6%	4.7%
25	5.6	4.7
30	5.6	4.7
35	5.6	4.7
40	5.6	4.7
45	5.0	4.7
50	4.6	4.5
55	4.3	4.3
60	4.1	4.1
65	4.0	4.0
70	4.0	4.0

Pre-Retirement Survivor Annuity: It is assumed that females are three years younger than males, and that all members are married.

Probability of Electing a Refund: The proportion of terminating vested members electing a refund of member contributions.

20% for Certificated members
50% for Classified members

Assumed Interest Rate Credited on Employee Contributions: 3.00% compounded annually.

Inflation (CPI): 3.00% compounded annually.

Total Payroll Growth: 4.00% compounded annually.

**Decrement Timing:** Middle of year

Cost of Living Adjustments: 1.5% for members hired before 7/1/2013
1.0% for members hired on or after 7/1/2013

Interest Rate:	7.50% per annum, compounded annually, net of expenses.
Mortality Rates:	RP-2014 Mortality Table for males, set forward one year. RP-2014 Mortality Table for females, set back one year.
	Future mortality rates are projected on a generational basis using Scale MP-2016, which reflects the expectation that mortality rates will decline over time.
	Disabled retirees use the RP-2014 Disabled Retiree Mortality Table, without generational improvement.
Disability:	None assumed.
Termination of Employment: (prior to retirement eligibility)	Illustrative rates of termination are as follows:

Certificated:

Percent Terminating	
Duration	Rate
1	11.25%
5	8.00
10	4.50
15	2.25
20	1.00
25	1.00

Classified:

Percent Terminating		
Duration	Male	Female
1	11.00%	15.00%
5	6.00	9.00
10	2.40	4.00
15	1.00	1.75
20	1.00	1.00
25	1.00	1.00

Retirement Rates:

Early retirement rates are assumed to occur according to the schedule illustrated below:

Certificated:

Age	Early
55	10%
56	6
57	6
58	6
59	8
60	12
61	12

Classified:

Age	Early
55	3%
56	3
57	3
58	3
59	3
60	5
61	10

Unreduced (age 62 or 85 points) retirement rates are assumed to occur according to the schedule illustrated below:

Certificated:

Age	1st Year Eligible	Ultimate
55	60%	
56	50	35%
57	45	35
58	45	35
59	45	25
60	35	25
61	25	25
62	25	25
63	25	25
64	30	30
65	35	35
66	35	35
67	35	35
68	35	35
69	100	35
70	100	100

Classified:

Age	1st Year Eligible	Ultimate
55	20%	
56	10	12%
57	10	12
58	10	12
59	15	12
60	15	12
61	15	20
62	20	20
63	20	20
64	20	20
65	25	35
66	20	23
67	20	23
68	20	23
69	20	23
70	100	100

Deferred vested members are assumed to retire at first unreduced retirement age.

Salary Scale:

Salaries are assumed to increase according to the schedule illustrated below:

| | Annual Salary Increase | |
Duration	Certificated	Classified
0	5.75%	6.25%
1	5.75	5.75
2	5.75	5.25
3	5.75	5.00
4-6	5.75	4.75
7-11	5.75	4.25
12-14	5.75	3.75
15-21	5.25	3.75
22+	4.25	3.75

Pre-Retirement
Survivor Annuity:

It is assumed that females are three years younger than males, and that all members are married.

Probability of Electing a Refund:

The proportion of terminating vested members electing a refund of member contributions:

20% for Certificated members
40% for Classified members

Assumed Interest Rate Credited
on Employee Contributions:

2.75% compounded annually.

Inflation (CPI):

2.75% compounded annually.

Total Payroll Growth:

3.25% compounded annually.

Decrement Timing:

Middle of year

Cost of Living Adjustments:

1.5% for members hired before 7/1/2013
1.0% for members hired on or after 7/1/2013

Omaha Schools

Experience Study 2012 - 2016
Exhibit C-1
Probability of Death - Healthy Retirees
Males
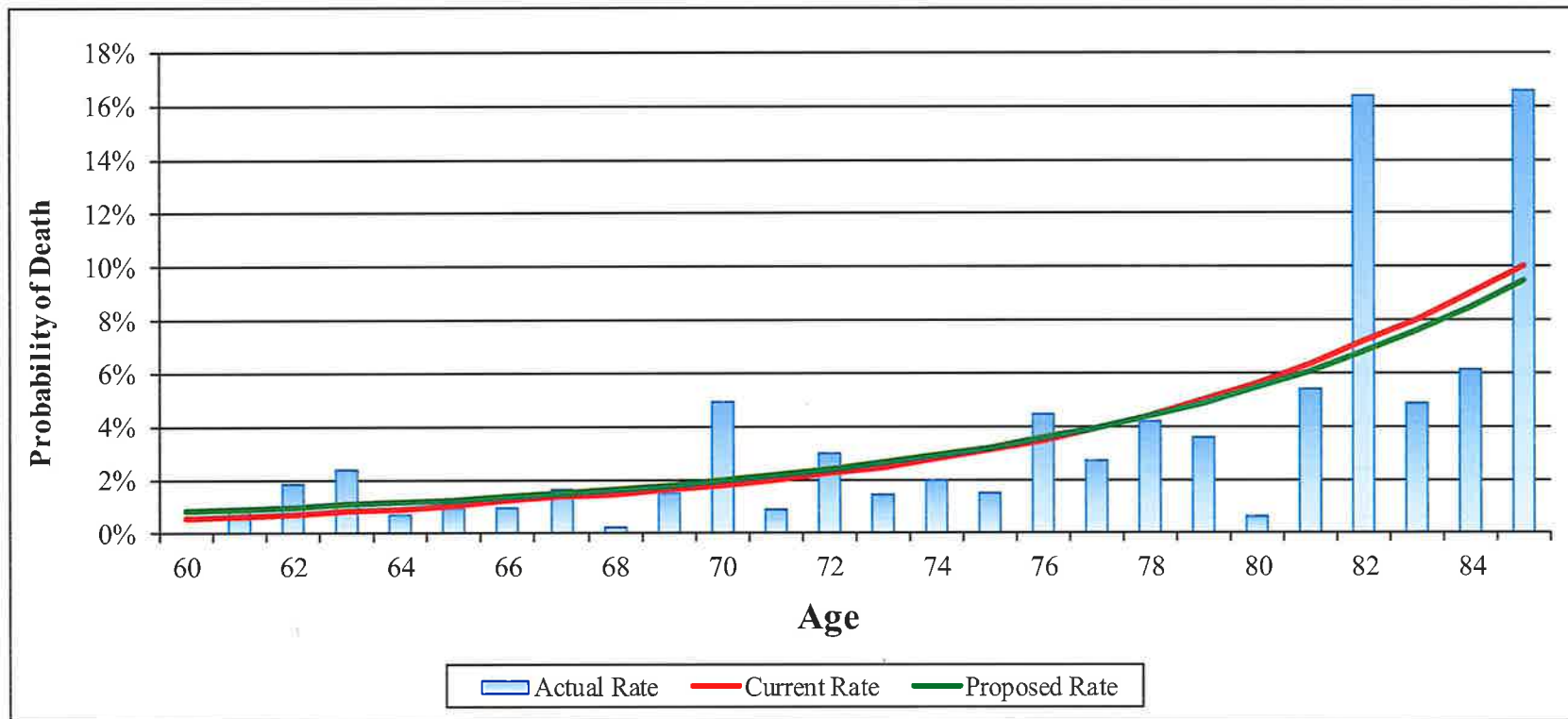
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	225,076	222,144	232,936
Actual/Expected		101%	97%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-2
Probability of Death - Healthy Retirees
Females
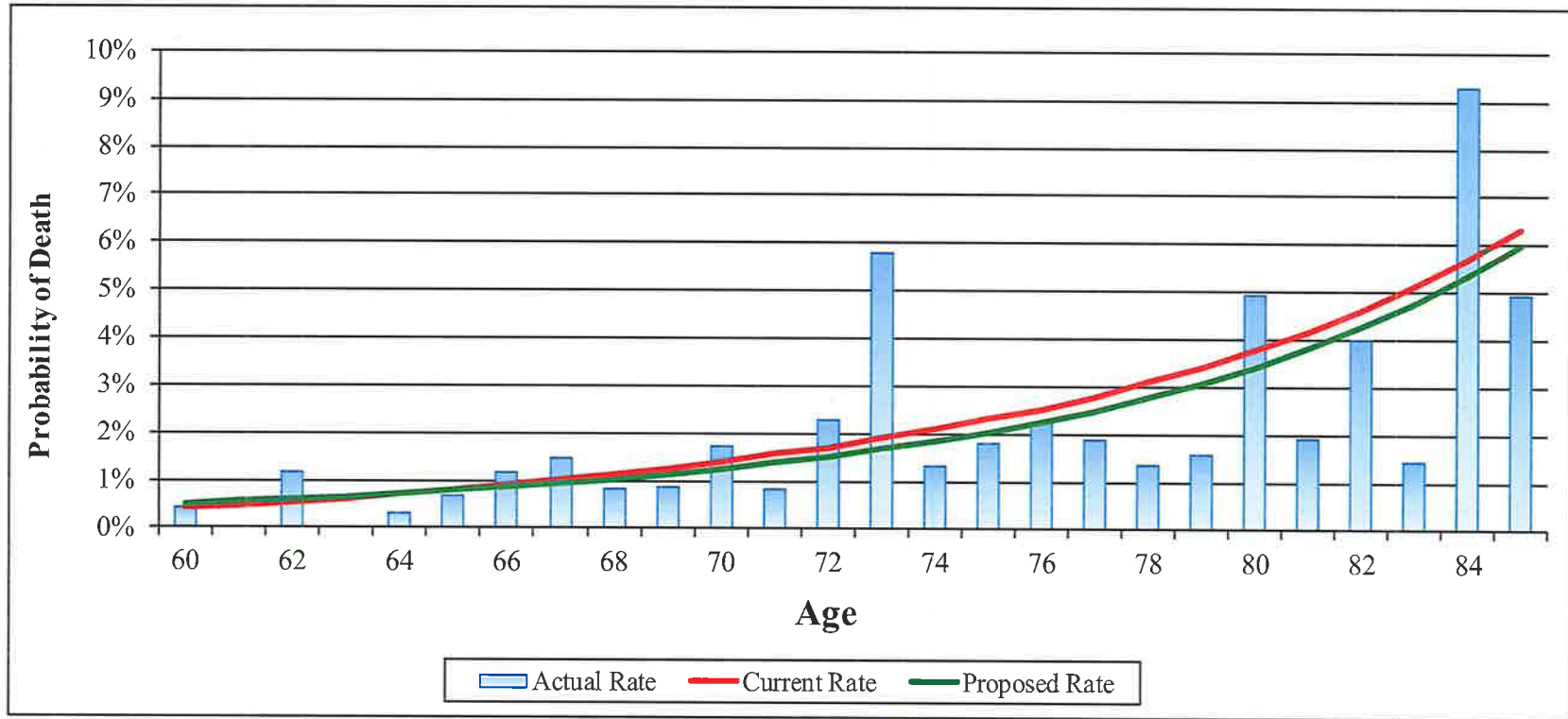
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	270,725	290,694	269,734
Actual/Expected		93%	100%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-3
Retirement Rates
Certificated - Early
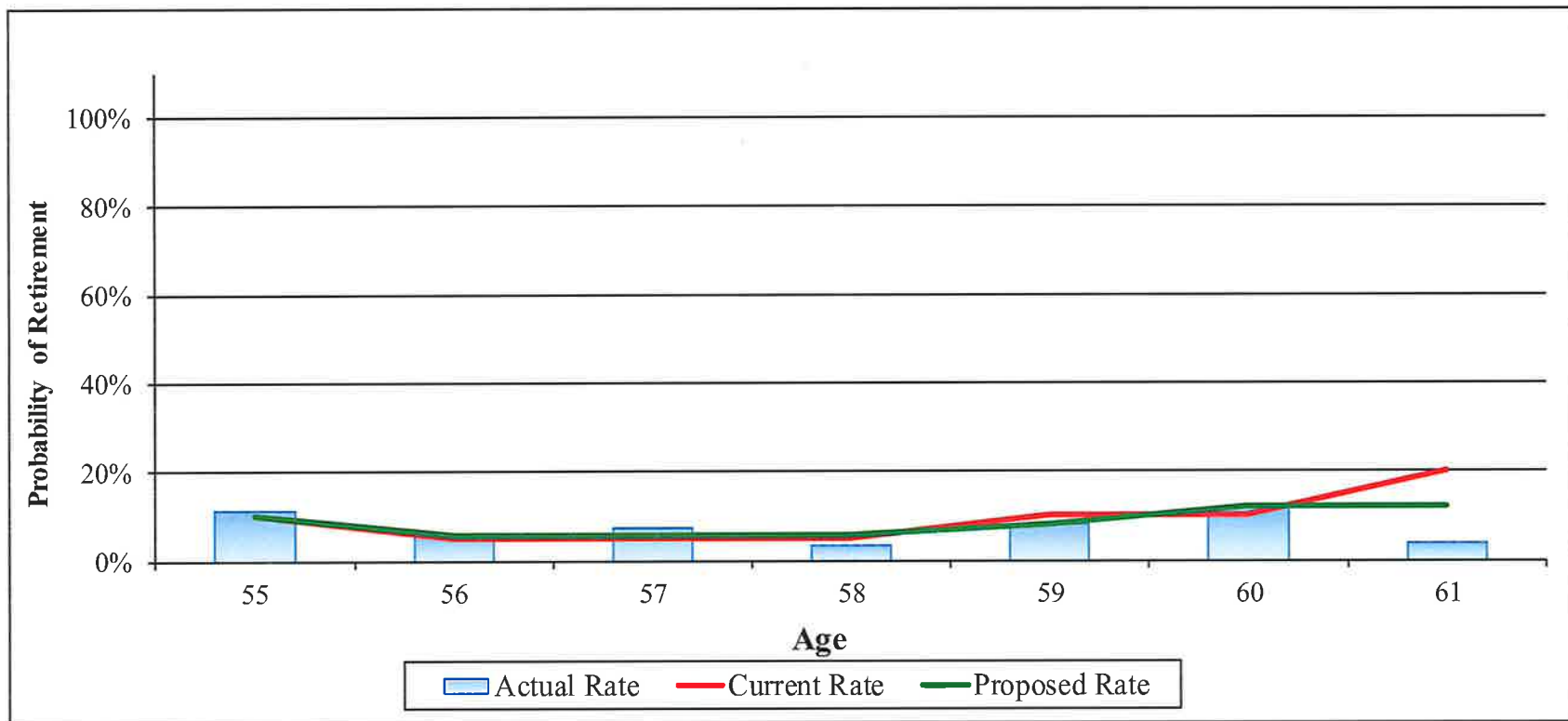
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	96	97	98
Actual/Expected		98%	97%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-4
Retirement Rates
Certificated - Select

	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	190	201	187
Actual/Expected		95%	102%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-5
Retirement Rates
Certificated - Ultimate
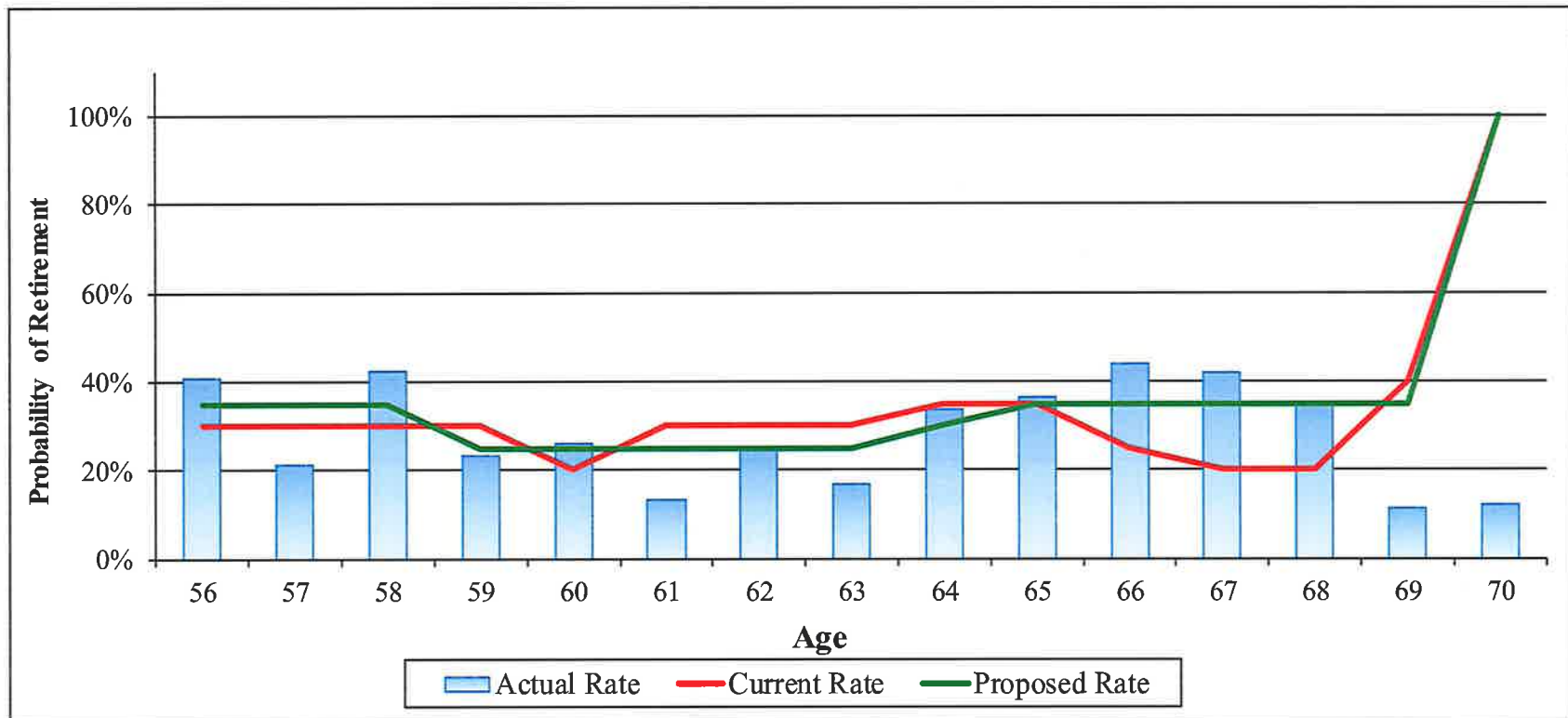
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	438	473	475
Actual/Expected		92%	92%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-6
Retirement Rates
Classified - Early
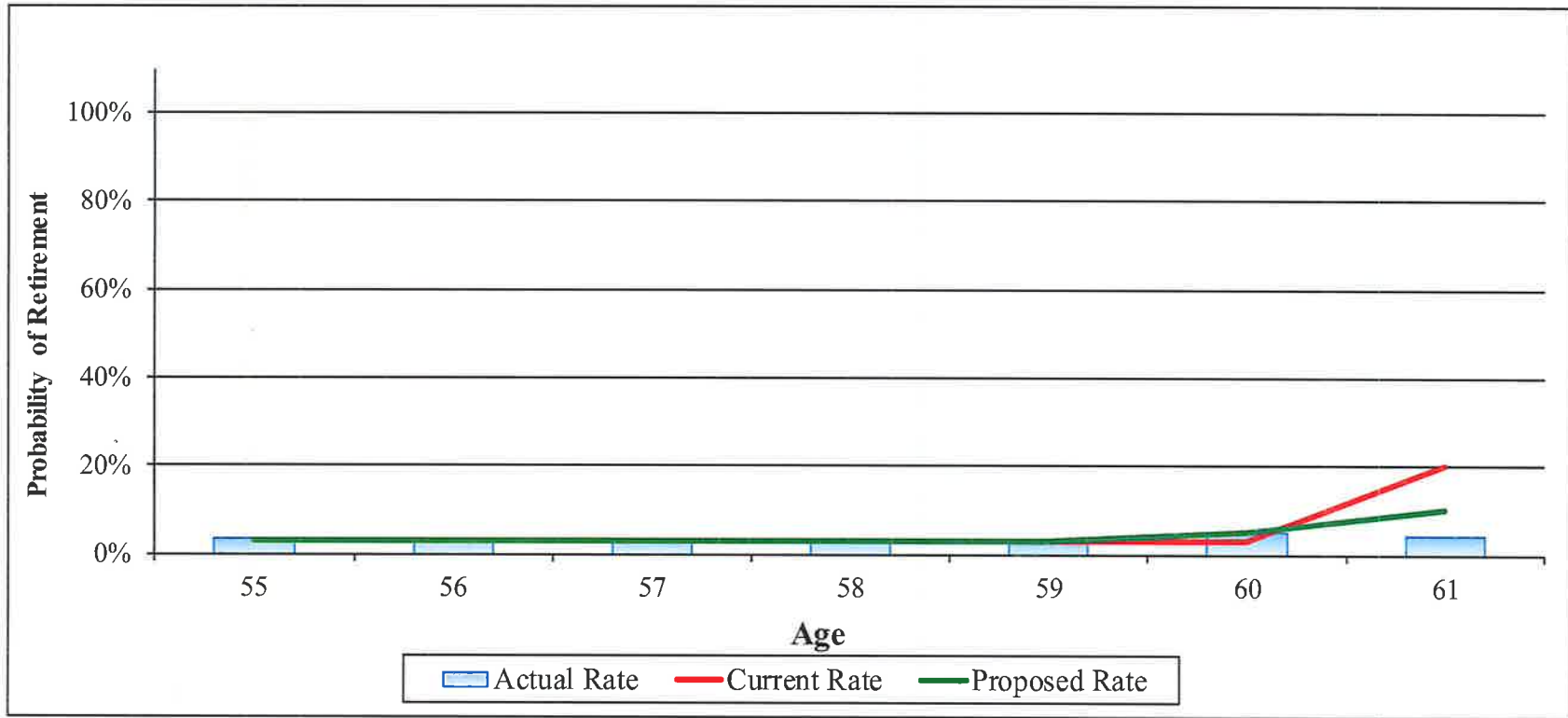
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	21	24	22
Actual/Expected		84%	94%

Omaha Schools

Experience Study 2012 - 2016
Exhibit C-7
Retirement Rates
Classified - Select
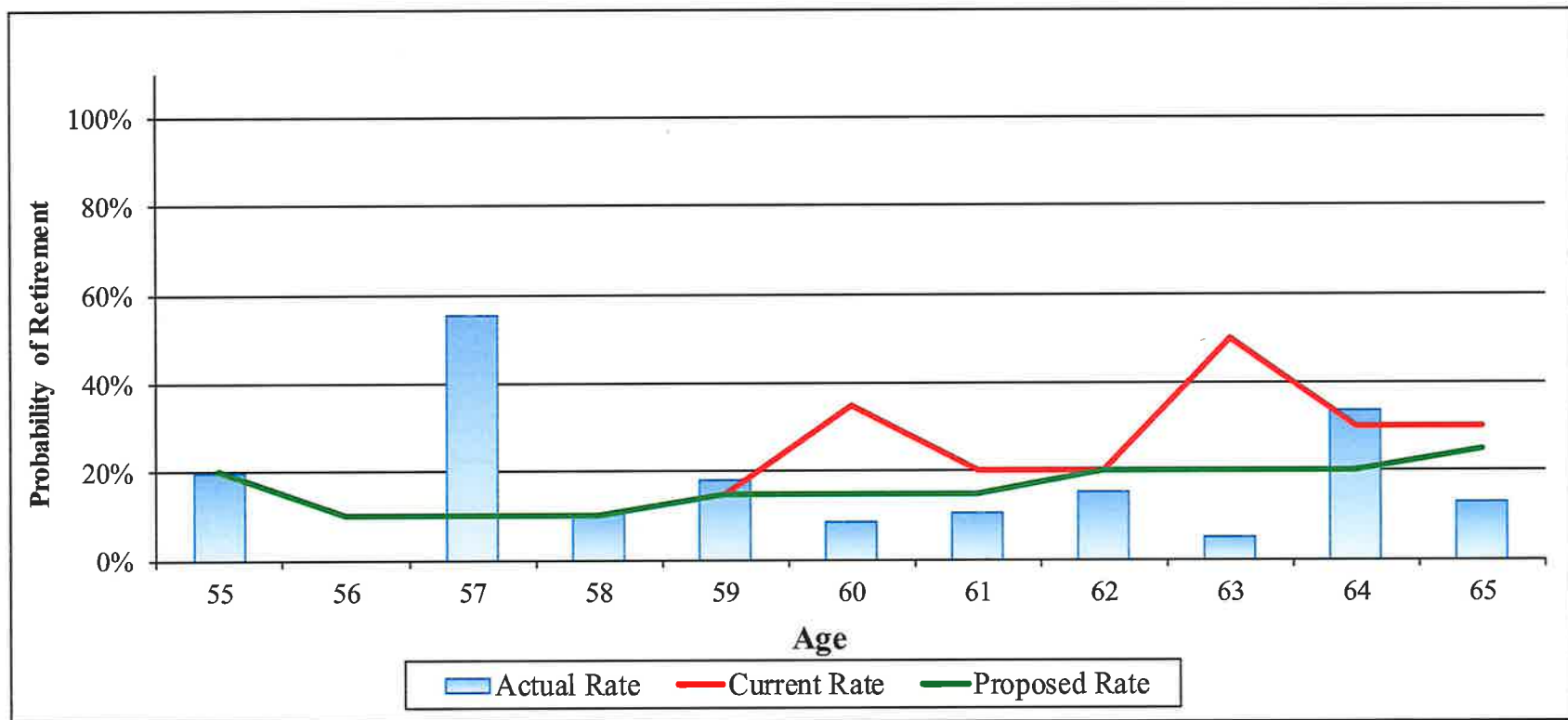
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	23	32	26
Actual/Expected		72%	90%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-8
Retirement Rates
Classified - Ultimate
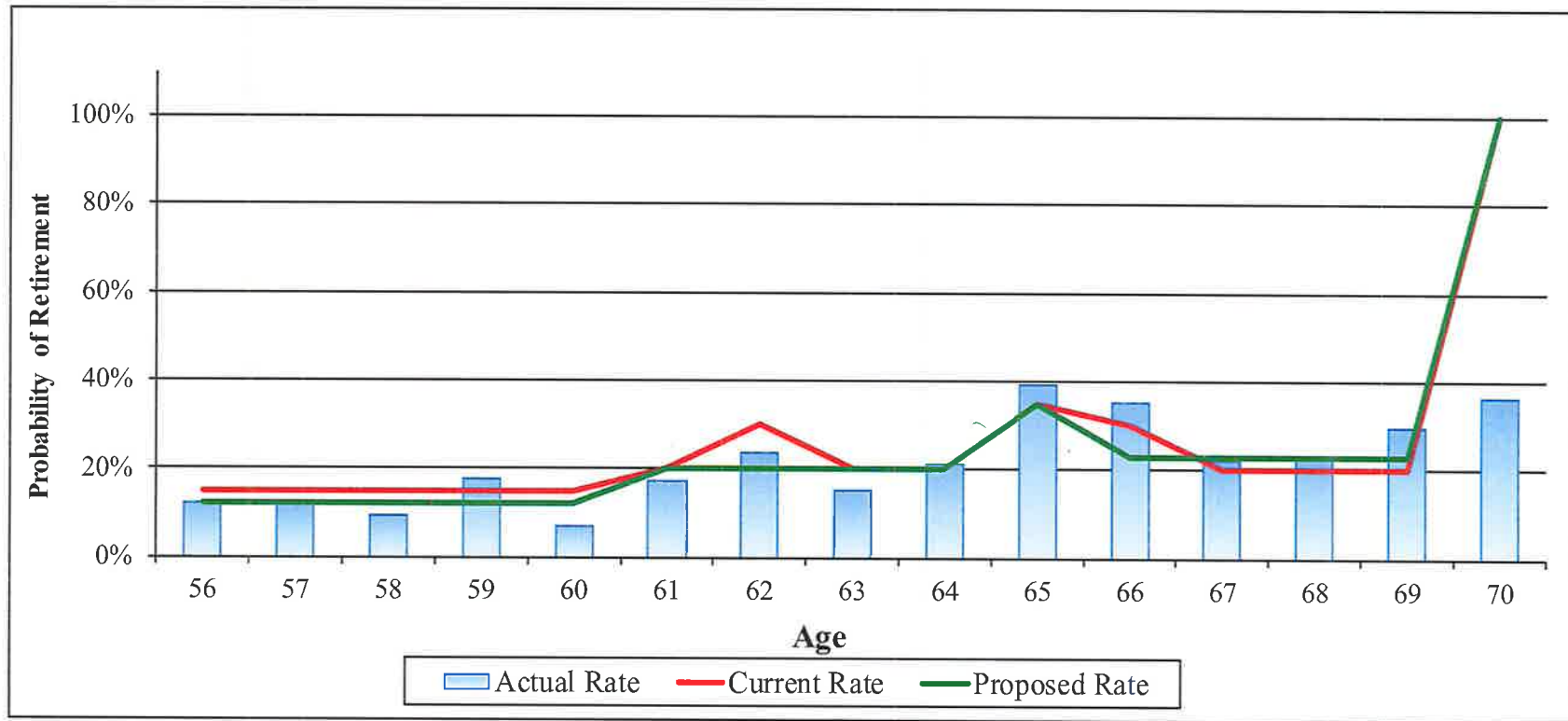
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Weighted Count	161	175	161
Actual/Expected		92%	100%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-9
Rate of Termination of Employment
Certificated
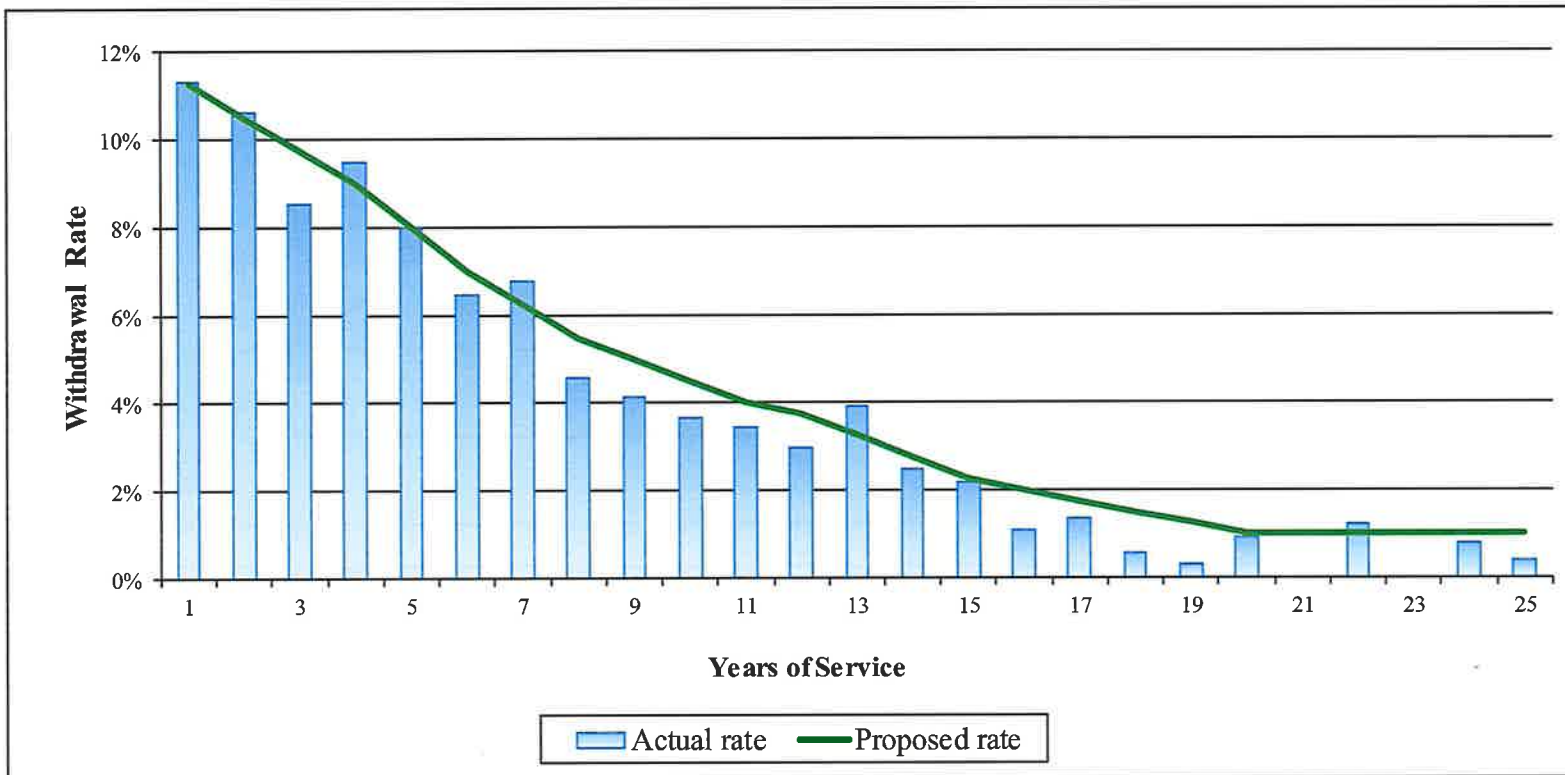
	Actual	Expected - Proposed Assumptions
Weighted Count	2,383	2,743
Actual/Expected		87%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-10
Rate of Termination of Employment
Classified - Males
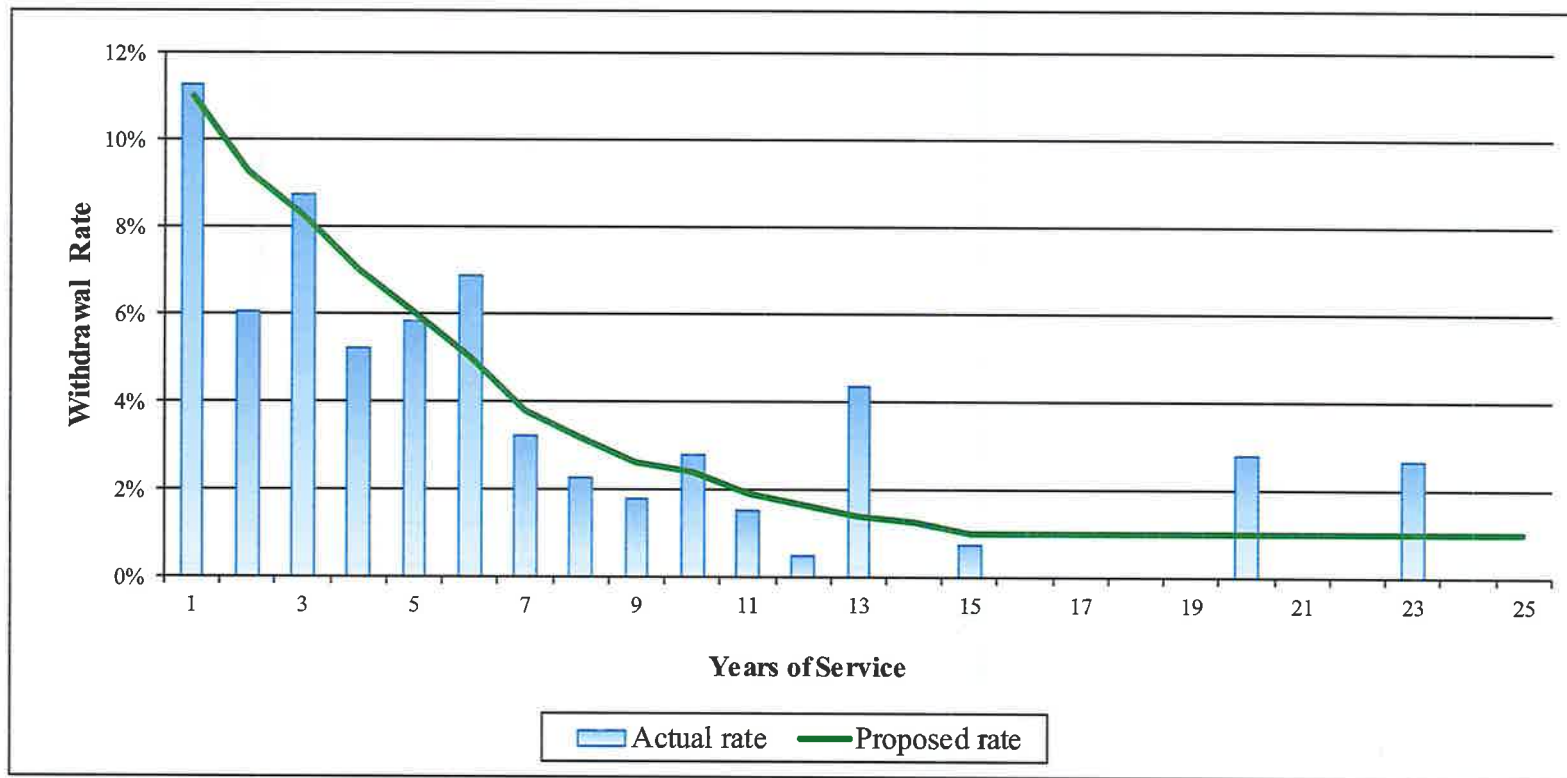
	Actual	Expected - Proposed Assumptions
Weighted Count	160	186
Actual/Expected		86%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-11
Rate of Termination of Employment
Classified - Females
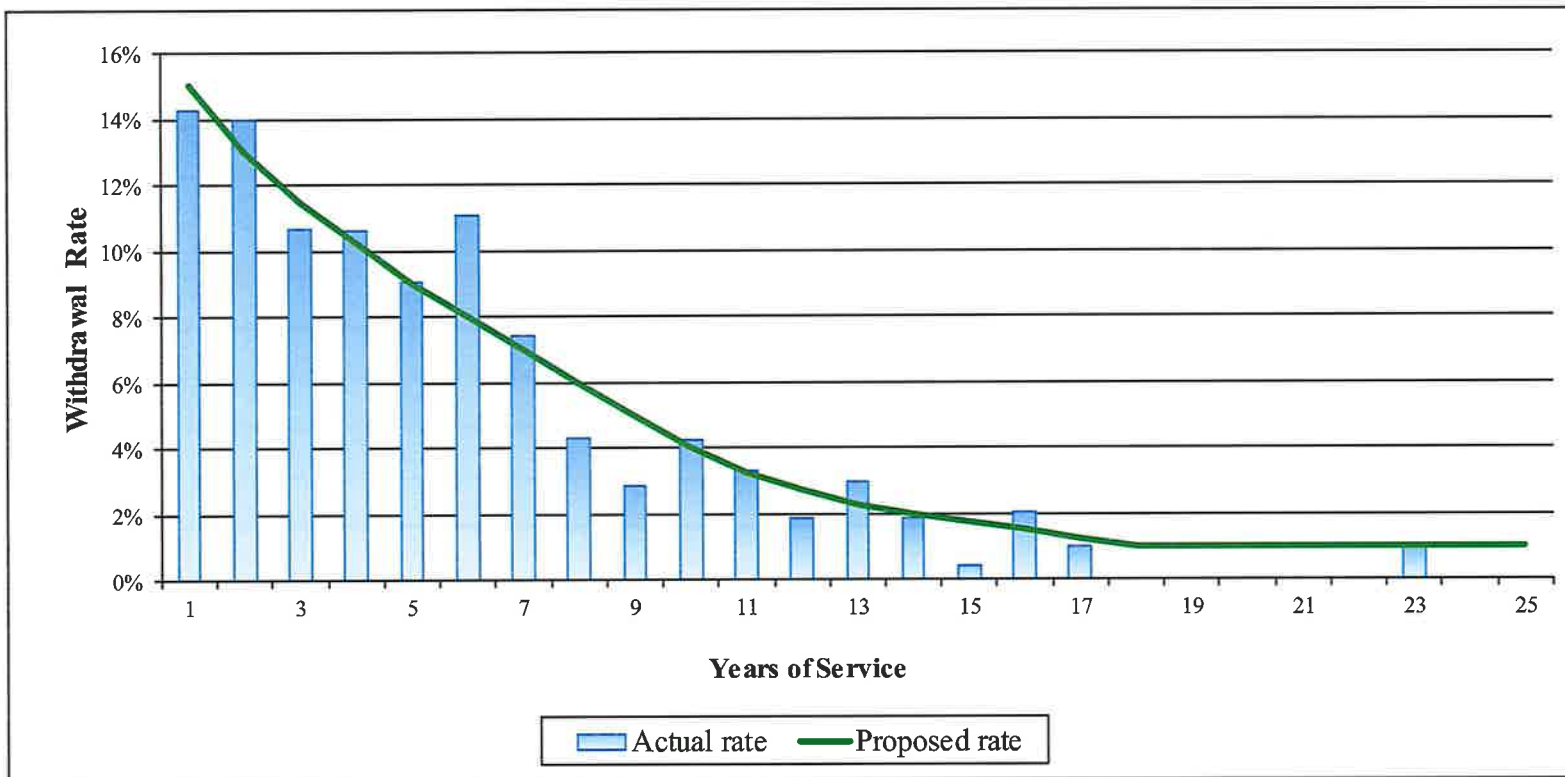
	Actual	Expected - Proposed Assumptions
Weighted Count	422	464
Actual/Expected		91%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-12
Probability of Contributions Remaining with the System
Classified
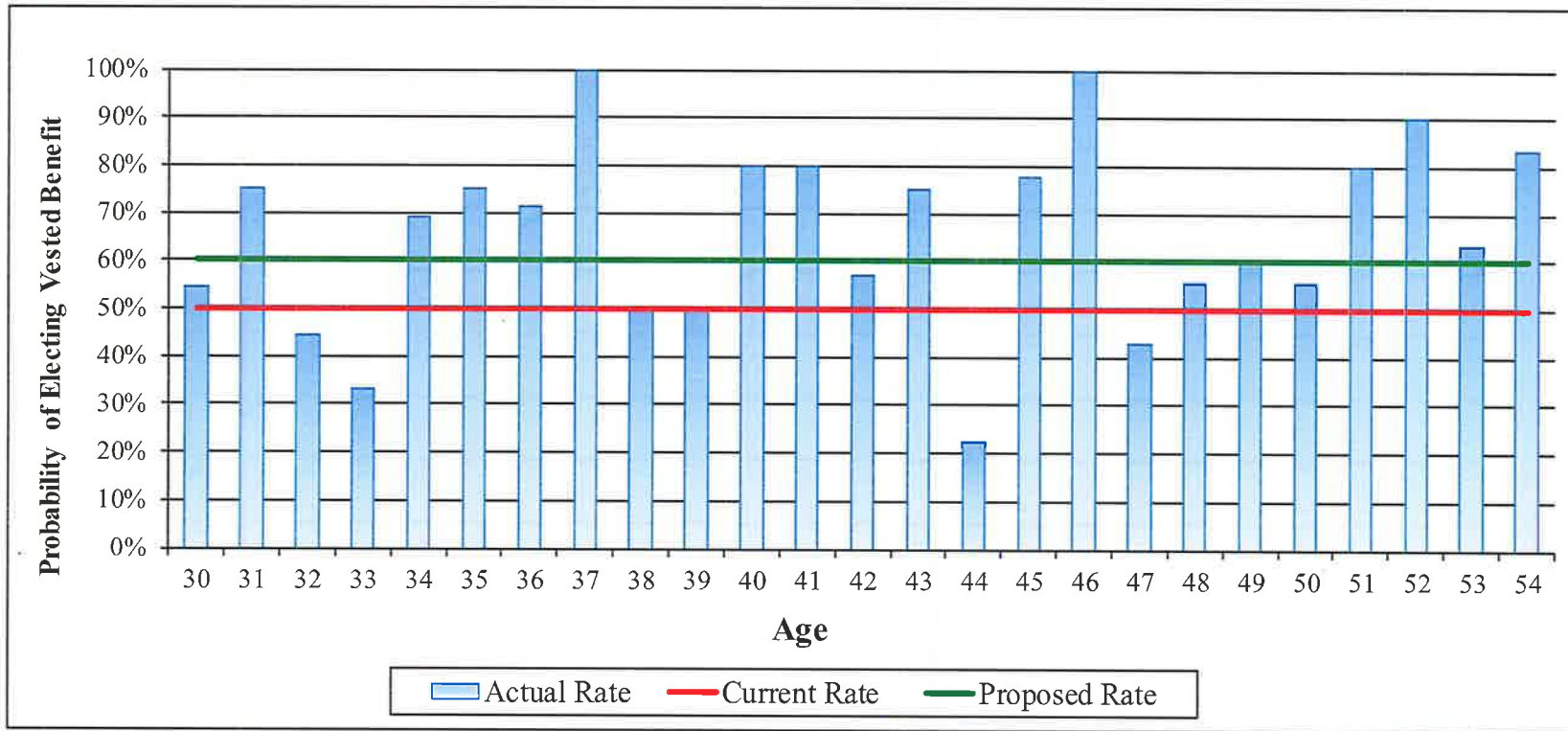
	Actual	Expected - Current Assumptions	Expected - Proposed Assumptions
Total Count	111	87	104
Actual/Expected		128%	107%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-13
Total Salary Scale
Certificated
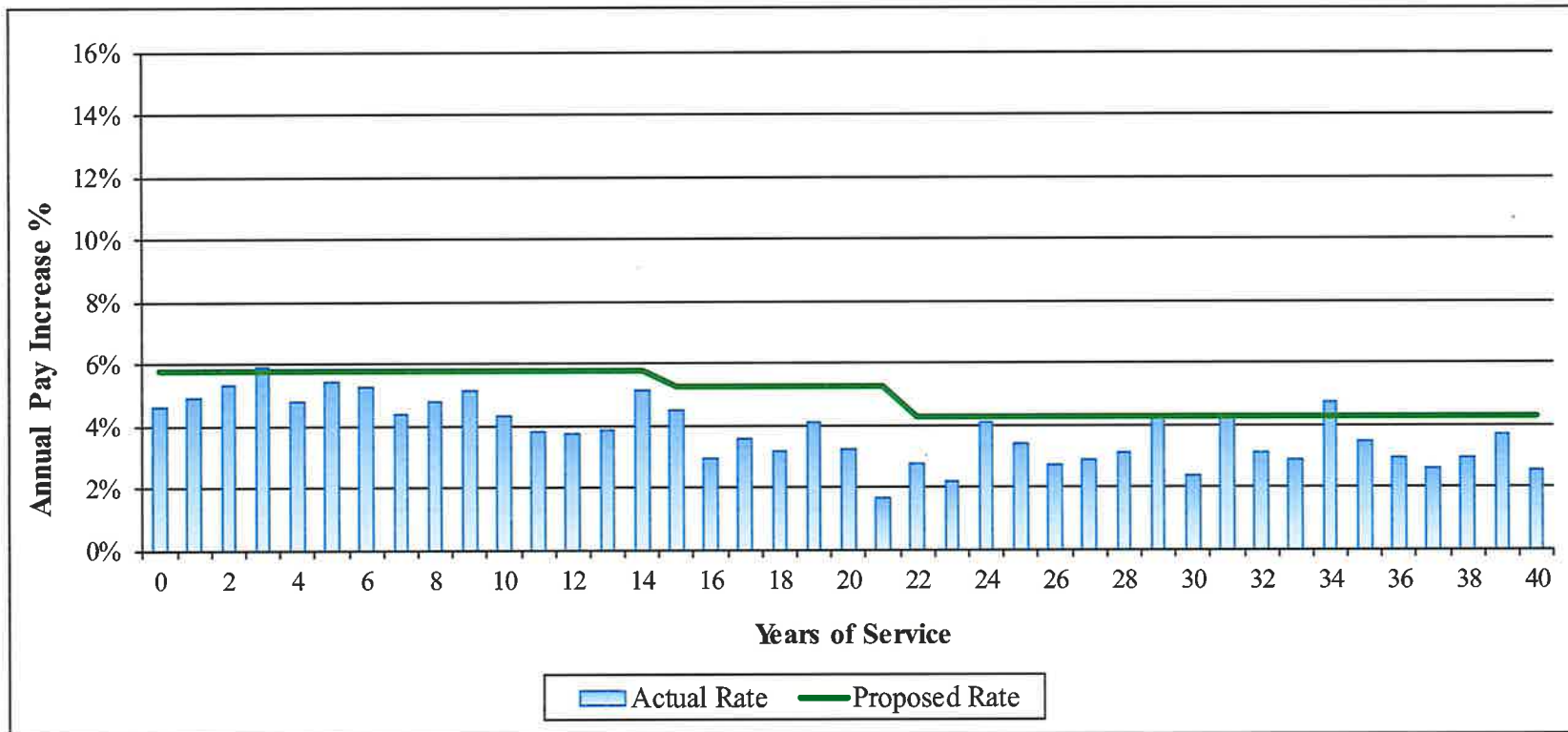
	Actual	Expected - Proposed Assumptions
Average Increase	4.29%	5.45%
Actual/Expected		79%

Omaha Schools
Experience Study 2012 - 2016
Exhibit C-14
Total Salary Scale
Classified
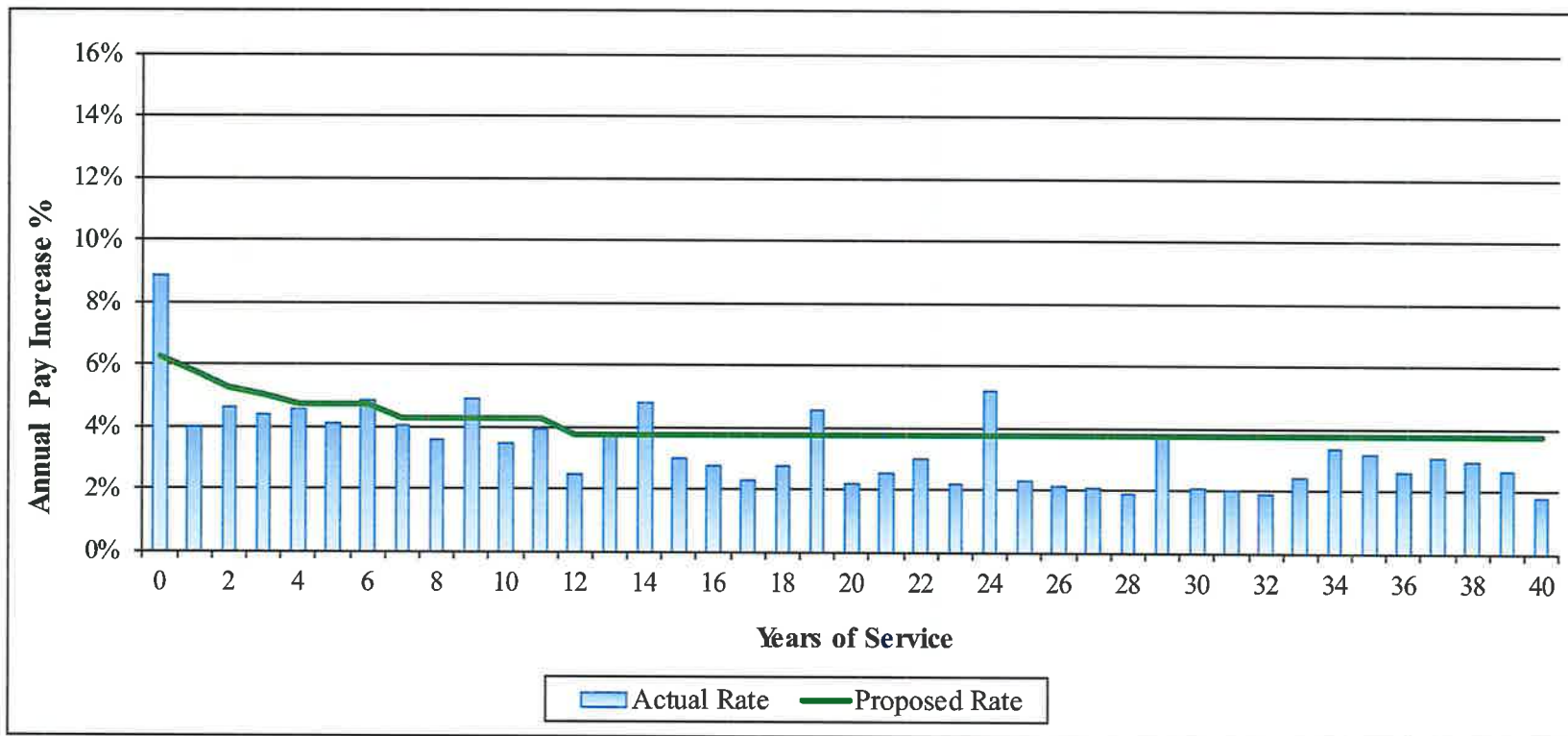
	Actual	Expected - Proposed Assumptions
Average Increase	4.00%	4.43%
Actual/Expected		90%

Data Summary D-1
Probability of Death - Healthy Retirees
Males

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
60	277,546	-	0.000%	1,494	0.538%	2,381	0.858%
61	279,018	2,539	0.910%	1,733	0.621%	2,569	0.921%
62	369,356	6,850	1.855%	2,618	0.709%	3,660	0.991%
63	407,757	9,797	2.403%	3,351	0.822%	4,363	1.070%
64	456,271	3,260	0.714%	4,225	0.926%	5,284	1.158%
65	583,829	5,781	0.990%	6,104	1.046%	7,339	1.257%
66	598,242	5,817	0.972%	7,177	1.200%	8,177	1.367%
67	572,077	9,468	1.655%	7,657	1.338%	8,525	1.490%
68	591,089	1,349	0.228%	8,671	1.467%	9,631	1.629%
69	545,894	8,282	1.517%	8,873	1.625%	9,746	1.785%
70	565,748	27,928	4.937%	10,167	1.797%	11,084	1.959%
71	520,556	4,757	0.914%	10,351	1.988%	11,219	2.155%
72	456,075	13,610	2.984%	10,069	2.208%	10,828	2.374%
73	395,706	5,655	1.429%	9,731	2.459%	10,366	2.620%
74	354,854	6,934	1.954%	9,735	2.744%	10,271	2.894%
75	335,151	4,987	1.488%	10,409	3.106%	10,735	3.203%
76	320,402	14,305	4.465%	11,091	3.462%	11,372	3.549%
77	287,769	7,801	2.711%	11,239	3.905%	11,340	3.941%
78	272,282	11,403	4.188%	11,985	4.402%	11,923	4.379%
79	247,413	8,937	3.612%	12,276	4.962%	12,064	4.876%
80	204,794	1,291	0.630%	11,452	5.592%	11,131	5.435%
81	175,364	9,425	5.374%	11,131	6.348%	10,638	6.066%
82	149,912	24,591	16.404%	10,783	7.193%	10,161	6.778%
83	112,308	5,448	4.851%	9,004	8.018%	8,516	7.583%
84	108,186	6,610	6.110%	9,784	9.043%	9,178	8.484%
85	109,909	18,252	16.607%	11,033	10.038%	10,434	9.493%
	9,297,508	225,076	2.421%	222,144	2.389%	232,936	2.505%

Data Summary D-2
Probability of Death - Healthy Retirees
Females

Age	Exposure	Actual Deaths	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
60	631,528	2,652	0.420%	2,615	0.414%	3,233	0.512%
61	768,132	-	0.000%	3,620	0.471%	4,274	0.556%
62	935,998	10,775	1.151%	5,073	0.542%	5,675	0.606%
63	1,016,337	-	0.000%	6,307	0.621%	6,722	0.661%
64	1,172,600	3,782	0.322%	8,360	0.713%	8,466	0.722%
65	1,206,556	8,053	0.667%	9,695	0.803%	9,525	0.789%
66	1,237,729	14,573	1.177%	11,199	0.905%	10,689	0.864%
67	1,205,432	17,865	1.482%	12,309	1.021%	11,403	0.946%
68	1,075,690	9,052	0.841%	12,197	1.134%	11,164	1.038%
69	982,817	8,385	0.853%	12,318	1.253%	11,200	1.140%
70	867,197	14,951	1.724%	12,013	1.385%	10,863	1.253%
71	786,898	6,439	0.818%	12,281	1.561%	10,846	1.378%
72	719,638	16,580	2.304%	12,290	1.708%	10,926	1.518%
73	630,895	36,412	5.771%	11,984	1.900%	10,556	1.673%
74	540,010	7,197	1.333%	11,242	2.082%	9,966	1.846%
75	534,615	9,567	1.789%	12,335	2.307%	10,893	2.038%
76	524,627	11,758	2.241%	13,177	2.512%	11,810	2.251%
77	503,413	9,465	1.880%	13,931	2.767%	12,538	2.491%
78	452,438	6,213	1.373%	13,985	3.091%	12,485	2.760%
79	410,652	6,518	1.587%	13,992	3.407%	12,582	3.064%
80	343,330	16,961	4.940%	12,916	3.762%	11,703	3.409%
81	346,616	6,681	1.928%	14,413	4.158%	13,169	3.799%
82	306,231	12,284	4.012%	14,094	4.602%	13,002	4.246%
83	259,814	3,763	1.448%	13,256	5.102%	12,342	4.750%
84	229,948	21,360	9.289%	13,027	5.665%	12,251	5.328%
85	191,474	9,438	4.929%	12,064	6.301%	11,453	5.981%
	17,880,614	270,725	1.514%	290,694	1.626%	269,734	1.509%

Data Summary D-3
Retirement Rates
Certificated - Early
(Liability Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	266	30	11.369%	26.6	10.000%	26.6	10.000%
56	231	14	5.884%	11.5	5.000%	13.8	6.000%
57	193	14	7.401%	9.6	5.000%	11.6	6.000%
58	163	6	3.545%	8.1	5.000%	9.8	6.000%
59	159	13	8.286%	15.9	10.000%	12.7	8.000%
60	139	16	11.790%	13.9	10.000%	16.7	12.000%
61	59	2	3.978%	11.8	20.000%	7.1	12.000%
	1,209	96	7.920%	97.5	8.066%	98.2	8.127%

Data Summary D-4
Retirement Rates
Certificated - Select
(Liability Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	115	83	71.986%	57.4	50.000%	68.9	60.000%
56	45	23	50.764%	22.3	50.000%	22.3	50.000%
57	32	8	23.387%	16.1	50.000%	14.5	45.000%
58	34	15	44.183%	15.3	45.000%	15.3	45.000%
59	28	11	39.489%	12.8	45.000%	12.8	45.000%
60	24	8	35.374%	10.7	45.000%	8.3	35.000%
61	81	20	24.759%	36.6	45.000%	20.3	25.000%
62	73	17	23.006%	21.8	30.000%	18.2	25.000%
63	3	0	18.230%	1.6	60.000%	0.7	25.000%
64	10	3	28.132%	3.4	35.000%	2.9	30.000%
65	7	2	36.269%	2.4	35.000%	2.4	35.000%
	451	190	42.135%	200.5	44.421%	186.7	41.362%

Data Summary D-5
Retirement Rates
Certificated - Ultimate
(Liability Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
56	56	23	40.859%	16.9	30.000%	19.8	35.000%
57	78	16	21.151%	23.3	30.000%	27.2	35.000%
58	105	45	42.294%	31.6	30.000%	36.9	35.000%
59	90	21	23.277%	27.1	30.000%	22.6	25.000%
60	87	23	25.974%	17.4	20.000%	21.8	25.000%
61	108	15	13.488%	32.5	30.000%	27.1	25.000%
62	183	45	24.710%	54.9	30.000%	45.7	25.000%
63	220	37	16.884%	66.1	30.000%	55.1	25.000%
64	208	70	33.494%	72.7	35.000%	62.3	30.000%
65	133	48	36.310%	46.7	35.000%	46.7	35.000%
66	104	46	44.019%	25.9	25.000%	36.3	35.000%
67	62	26	41.984%	12.4	20.000%	21.7	35.000%
68	48	17	35.215%	9.6	20.000%	16.9	35.000%
69	30	3	11.278%	12.1	40.000%	10.6	35.000%
70	24	3	12.094%	24.2	100.000%	24.2	100.000%
	1,538	438	28.458%	473.5	30.788%	474.7	30.867%

69

Data Summary D-6
Retirement Rates
Classified - Early
(Liability Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	101	3	3.374%	3.0	3.000%	3.0	3.000%
56	92	3	3.393%	2.8	3.000%	2.8	3.000%
57	91	3	2.971%	2.7	3.000%	2.7	3.000%
58	87	3	3.465%	2.6	3.000%	2.6	3.000%
59	88	2	2.711%	2.6	3.000%	2.6	3.000%
60	79	4	5.212%	2.4	3.000%	3.9	5.000%
61	41	2	4.397%	8.2	20.000%	4.1	10.000%
	579	21	3.549%	24.3	4.203%	21.8	3.768%

Data Summary D-7
Retirement Rates
Classified - Select
(Liability Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
55	12	2	19.655%	2.4	20.000%	2.4	20.000%
56	3	-	0.000%	0.3	10.000%	0.3	10.000%
57	5	3	55.650%	0.5	10.000%	0.5	10.000%
58	12	1	10.676%	1.2	10.000%	1.2	10.000%
59	6	1	18.290%	0.9	15.000%	0.9	15.000%
60	11	1	8.739%	3.9	35.000%	1.7	15.000%
61	46	5	10.715%	9.2	20.000%	6.9	15.000%
62	44	7	15.409%	8.8	20.000%	8.8	20.000%
63	3	0	5.123%	1.7	50.000%	0.7	20.000%
64	8	3	33.689%	2.3	30.000%	1.5	20.000%
65	4	1	13.121%	1.3	30.000%	1.1	25.000%
	154	23	15.215%	32.5	21.076%	25.9	16.819%

Data Summary D-8
Retirement Rates
Classified - Ultimate
(Liability Weighted)

Age	Exposure	Actual Retirements	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
56	14	2	12.344%	2.1	15.000%	1.7	12.000%
57	14	2	11.915%	2.1	15.000%	1.7	12.000%
58	29	3	9.261%	4.4	15.000%	3.5	12.000%
59	41	7	17.785%	6.2	15.000%	4.9	12.000%
60	45	3	6.956%	6.8	15.000%	5.4	12.000%
61	53	9	17.409%	10.7	20.000%	10.7	20.000%
62	84	20	23.774%	25.3	30.000%	16.8	20.000%
63	104	16	15.215%	20.8	20.000%	20.8	20.000%
64	99	21	21.416%	19.9	20.000%	19.9	20.000%
65	84	33	39.231%	29.3	35.000%	29.3	35.000%
66	60	21	35.160%	18.1	30.000%	13.9	23.000%
67	32	7	22.250%	6.4	20.000%	7.3	23.000%
68	25	6	22.815%	5.0	20.000%	5.8	23.000%
69	21	6	29.792%	4.3	20.000%	4.9	23.000%
70	14	5	36.388%	14.1	100.000%	14.1	100.000%
	721	161	22.375%	175.3	24.318%	160.7	22.293%

Data Summary D-9
Rate of Termination of Employment
Certificated
(Liability Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	525	59	11.291%	59	11.250%
2	872	93	10.608%	92	10.500%
3	1,158	99	8.548%	113	9.750%
4	1,548	147	9.486%	139	9.000%
5	2,134	171	8.025%	171	8.000%
6	2,763	180	6.507%	193	7.000%
7	3,394	231	6.804%	212	6.250%
8	3,717	170	4.577%	204	5.500%
9	3,790	158	4.158%	189	5.000%
10	3,946	144	3.659%	178	4.500%
11	3,929	135	3.439%	157	4.000%
12	4,266	126	2.942%	160	3.750%
13	4,726	185	3.914%	154	3.250%
14	4,909	123	2.505%	135	2.750%
15	4,999	109	2.185%	112	2.250%
16	4,758	53	1.114%	95	2.000%
17	3,829	51	1.343%	67	1.750%
18	3,514	21	0.592%	53	1.500%
19	3,580	11	0.303%	45	1.250%
20	3,354	32	0.940%	34	1.000%
21	3,427	-	0.000%	34	1.000%
22	3,538	43	1.203%	35	1.000%
23	3,704	-	0.000%	37	1.000%
24	3,637	29	0.785%	36	1.000%
25	3,764	15	0.386%	38	1.000%
	83,782	2,383	2.844%	2,743	3.274%

Data Summary D-10
Rate of Termination of Employment
Classified - Males
(Liability Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	79	9	11.279%	9	11.000%
2	123	7	6.070%	11	9.250%
3	167	15	8.764%	14	8.250%
4	183	10	5.219%	13	7.000%
5	211	12	5.837%	13	6.000%
6	271	19	6.897%	14	5.000%
7	340	11	3.216%	13	3.800%
8	407	9	2.246%	13	3.200%
9	427	8	1.768%	11	2.600%
10	422	12	2.784%	10	2.400%
11	352	5	1.546%	7	1.900%
12	370	2	0.481%	6	1.650%
13	438	19	4.372%	6	1.400%
14	480	-	0.000%	6	1.250%
15	529	4	0.741%	5	1.000%
16	478	-	0.000%	5	1.000%
17	473	-	0.000%	5	1.000%
18	400	-	0.000%	4	1.000%
19	348	-	0.000%	3	1.000%
20	338	9	2.789%	3	1.000%
21	373	-	0.000%	4	1.000%
22	327	-	0.000%	3	1.000%
23	359	10	2.648%	4	1.000%
24	283	-	0.000%	3	1.000%
25	204	-	0.000%	2	1.000%
	8,383	160	1.912%	186	2.221%

Data Summary D-11
Rate of Termination of Employment
Classified - Females
(Liability Weighted)

Duration	Exposure	Actual Terminations	Actual Rate	Proposed Expected	Proposed Rate
1	113	16	14.260%	17	15.000%
2	190	26	13.969%	25	13.000%
3	255	27	10.652%	29	11.500%
4	375	40	10.603%	38	10.250%
5	492	45	9.055%	44	9.000%
6	580	64	11.103%	46	8.000%
7	631	47	7.405%	44	7.000%
8	611	26	4.283%	37	6.000%
9	534	15	2.827%	27	5.000%
10	572	24	4.242%	23	4.000%
11	576	19	3.334%	19	3.250%
12	661	12	1.862%	18	2.750%
13	702	21	2.964%	16	2.250%
14	668	13	1.884%	13	2.000%
15	718	3	0.422%	13	1.750%
16	622	13	2.011%	9	1.500%
17	596	6	0.992%	7	1.250%
18	602	-	0.000%	6	1.000%
19	567	-	0.000%	6	1.000%
20	474	-	0.000%	5	1.000%
21	443	-	0.000%	4	1.000%
22	478	-	0.000%	5	1.000%
23	479	4	0.932%	5	1.000%
24	459	-	0.000%	5	1.000%
25	285	-	0.000%	3	1.000%
	12,686	422	3.325%	464	3.657%

Data Summary D-12
Probability of Contributions Remaining with the System
Classified

Age	Terminations	Actual Remaining	Actual Rate	Current Expected	Current Rate	Proposed Expected	Proposed Rate
30	11	6	54.5%	5.5	50.0%	6.6	60.0%
31	4	3	75.0%	2.0	50.0%	2.4	60.0%
32	9	4	44.4%	4.5	50.0%	5.4	60.0%
33	6	2	33.3%	3.0	50.0%	3.6	60.0%
34	13	9	69.2%	6.5	50.0%	7.8	60.0%
35	4	3	75.0%	2.0	50.0%	2.4	60.0%
36	7	5	71.4%	3.5	50.0%	4.2	60.0%
37	2	2	100.0%	1.0	50.0%	1.2	60.0%
38	2	1	50.0%	1.0	50.0%	1.2	60.0%
39	4	2	50.0%	2.0	50.0%	2.4	60.0%
40	5	4	80.0%	2.5	50.0%	3.0	60.0%
41	5	4	80.0%	2.5	50.0%	3.0	60.0%
42	7	4	57.1%	3.5	50.0%	4.2	60.0%
43	4	3	75.0%	2.0	50.0%	2.4	60.0%
44	9	2	22.2%	4.5	50.0%	5.4	60.0%
45	9	7	77.8%	4.5	50.0%	5.4	60.0%
46	6	6	100.0%	3.0	50.0%	3.6	60.0%
47	7	3	42.9%	3.5	50.0%	4.2	60.0%
48	9	5	55.6%	4.5	50.0%	5.4	60.0%
49	10	6	60.0%	5.0	50.0%	6.0	60.0%
50	9	5	55.6%	4.5	50.0%	5.4	60.0%
51	5	4	80.0%	2.5	50.0%	3.0	60.0%
52	10	9	90.0%	5.0	50.0%	6.0	60.0%
53	11	7	63.6%	5.5	50.0%	6.6	60.0%
54	6	5	83.3%	3.0	50.0%	3.6	60.0%
	174	111	63.8%	87.0	50.0%	104.4	60.0%

Data Summary D-13
Total Salary Scale
Certificated

Duration	Initial Salary (Millions)	Subsequent Salary (Millions)	Actual Rate	Proposed Expected (Millions)	Proposed Rate
1	46.5	48.8	4.89%	49.2	5.75%
2	38.9	41.0	5.33%	41.2	5.75%
3	35.3	37.4	5.91%	37.3	5.75%
4	34.9	36.6	4.78%	36.9	5.75%
5	39.1	41.2	5.45%	41.3	5.75%
6	42.9	45.1	5.26%	45.4	5.75%
7	45.2	47.2	4.36%	47.8	5.75%
8	43.7	45.8	4.77%	46.2	5.75%
9	41.3	43.5	5.15%	43.7	5.75%
10	38.5	40.1	4.33%	40.7	5.75%
11	35.9	37.3	3.79%	38.0	5.75%
12	36.0	37.4	3.75%	38.1	5.75%
13	36.8	38.3	3.87%	38.9	5.75%
14	35.4	37.2	5.14%	37.4	5.75%
15	33.4	34.9	4.50%	35.1	5.25%
16	30.0	30.9	2.94%	31.6	5.25%
17	22.6	23.4	3.55%	23.7	5.25%
18	19.4	20.0	3.15%	20.5	5.25%
19	19.3	20.1	4.08%	20.3	5.25%
20	16.9	17.4	3.20%	17.8	5.25%
21	16.6	16.9	1.65%	17.5	5.25%
22	16.9	17.4	2.75%	17.7	4.25%
23	16.6	16.9	2.19%	17.3	4.25%
24	15.3	15.9	4.10%	15.9	4.25%
25	14.7	15.2	3.37%	15.3	4.25%
26	11.8	12.1	2.67%	12.3	4.25%
27	10.8	11.1	2.89%	11.2	4.25%
28	7.9	8.2	3.08%	8.3	4.25%
29	6.4	6.7	4.34%	6.7	4.25%
30	4.6	4.7	2.32%	4.8	4.25%
31	3.3	3.4	4.23%	3.4	4.25%
32	2.7	2.8	3.09%	2.8	4.25%
33	2.4	2.4	2.86%	2.5	4.25%
34	1.9	1.9	4.72%	1.9	4.25%
35	1.0	1.0	3.47%	1.0	4.25%
36	1.0	1.1	2.92%	1.1	4.25%
37	0.9	1.0	2.57%	1.0	4.25%
38	1.0	1.0	2.93%	1.1	4.25%
39	1.1	1.1	3.67%	1.1	4.25%
40	1.2	1.2	2.52%	1.2	4.25%
	830.1	865.5	4.27%	875.2	5.44%

Data Summary D-14
Total Salary Scale
Classified

Duration	Initial Salary (Millions)	Subsequent Salary (Millions)	Actual Rate	Proposed Expected (Millions)	Proposed Rate
1	11.9	12.4	3.99%	12.6	5.75%
2	9.6	10.1	4.61%	10.1	5.25%
3	9.5	9.9	4.37%	10.0	5.00%
4	10.2	10.7	4.56%	10.7	4.75%
5	10.5	10.9	4.10%	11.0	4.75%
6	10.0	10.5	4.83%	10.5	4.75%
7	10.0	10.4	4.00%	10.4	4.25%
8	9.1	9.5	3.56%	9.5	4.25%
9	8.2	8.6	4.91%	8.5	4.25%
10	6.9	7.1	3.42%	7.2	4.25%
11	6.4	6.6	3.89%	6.6	4.25%
12	7.6	7.8	2.48%	7.9	3.75%
13	6.9	7.2	3.75%	7.2	3.75%
14	7.0	7.4	4.81%	7.3	3.75%
15	5.7	5.9	3.01%	5.9	3.75%
16	5.7	5.9	2.76%	5.9	3.75%
17	4.8	4.9	2.30%	5.0	3.75%
18	4.5	4.6	2.73%	4.6	3.75%
19	3.6	3.8	4.53%	3.8	3.75%
20	3.3	3.4	2.19%	3.4	3.75%
21	3.4	3.5	2.52%	3.5	3.75%
22	3.2	3.3	3.00%	3.3	3.75%
23	3.0	3.1	2.17%	3.1	3.75%
24	1.6	1.7	5.20%	1.7	3.75%
25	1.6	1.6	2.30%	1.6	3.75%
26	1.7	1.7	2.09%	1.7	3.75%
27	1.7	1.7	2.06%	1.7	3.75%
28	1.4	1.4	1.90%	1.4	3.75%
29	0.7	0.7	3.77%	0.7	3.75%
30	0.6	0.6	2.04%	0.6	3.75%
31	0.7	0.8	1.99%	0.8	3.75%
32	0.6	0.6	1.89%	0.6	3.75%
33	0.7	0.7	2.40%	0.7	3.75%
34	0.5	0.5	3.35%	0.5	3.75%
35	0.4	0.4	3.14%	0.4	3.75%
36	0.4	0.4	2.57%	0.4	3.75%
37	0.4	0.4	3.03%	0.4	3.75%
38	0.6	0.6	2.91%	0.6	3.75%
39	0.5	0.5	2.64%	0.5	3.75%
40	0.3	0.3	1.75%	0.3	3.75%
	175.5	182.0	3.73%	183.0	4.33%

Appendix I

December 15, 2017
Retirement Committee
Hearing Transcript

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[LR92]

SENATOR KOLTERMAN: I'll close the first hearing and I'll open the next hearing on political subdivisions' underfunded pension plans. We have these meetings every year. We ask you to report based on the fact that, by statute, if they're not funded at, at least an 80 percent level, we'd like to get a report so that we can keep a handle on what's going on across our state with our defined benefit plans. So with that, we'll start out with Lincoln Fire and Police. Paul, welcome. [LR92]

PAUL LUTOMSKI: Thank you very much. My name is Paul Lutomski. I'm the pension officer for the city of Lincoln Police and Fire Pension Plan. Pat is going to take the brunt of the presentation for us. She'll be explaining all the actuarial factors. If there's any nonactuarial questions, I'm here to help answer those. [LR92]

PAT BECKHAM: All right, thank you, Paul. All right, Committee. And I believe I know that the Lincoln Police and Fire Pension Plan submitted information to you and that's really what we intended to cover today, but clearly any questions you have we'd be happy to address. I've already told Paul all the hard ones he's answering. Just a reminder that the valuation date for this plan is August 31 which is a little bit unusual. Typically it's June 30 or December 31. So it may not be comparable valuation datewise to any other plans that you hear from today. But as a result of that valuation date, the most recent actuarial valuation report is actually the 2016 report. So in some ways, this information is a little bit dated but it's the most recent. So that's what we intend to discuss today. And the committee had reflected...or requested information from 2013 to 2017. We kind of like the look at this in a very long-term view. And for this plan that's very appropriate because it's been very well funded, you know, from 1991 all the way to about 2009. And I think you have an attachment entitled Table One that will kill you with numbers but it's got...funded status is Column A. That's the easy one to look at. And you can scan and see that it's been near or above 100, again, from 1991 through 2008, and then 2008 and '09 were rather painful. And again, as those...as that investment experience is recognized over five years and we saw the decline in the funded ratio. There was also a little bit more going on in those years besides just the investment earnings. And we'll talk about that in a minute. In the 2016 valuation, the plan was 79.9 percent funded (laugh), so it technically was under 80 percent and that's why we're here. But it was really, really close. That was a significant change from the funded ratio in the 2015 valuation which was about 64 percent. And that change we'll discuss with you today. We actually visited with the committee about it last year at this hearing because we knew the change had been made and would be reflected in the 2016 valuation. All right, so in the 2015 valuation, if you look at Column B, the investment return assumption that we were using at that

time was 6.4 percent. That changed to 7.5 percent in the 2016 valuation. And this gets a little complex but hang with me. So the expected return on assets has been 7.5 (percent) since what, Paul, 1999. But prior to 2016 there was this feature in the plan design. There was a 13th check COLA pool fund. And the money going into that pool, asset pool, to pay the COLA came from investment returns that were above the 7.5 (percent) assumed rate. So if you think about...remember the graph you saw for your system with the ups and downs, if you're chopping off part of the up but you keep all of the down, it doesn't average 7.5 (percent). And that's why we were using 6.4 percent in the '15 valuation. The city council passed an ordinance in June of 2016 that merged the assets of the COLA pool fund with the assets of the regular fund and provided then that the COLA payments came from the regular trust fund. That eliminated that-- the word "skimming" is kind of an ugly word--but we were losing a portion of those favorable returns. By merging it in, all the returns stay in the fund and it's 7.5 (percent) is again the appropriate assumption of a long-term investment return. So that explains why we made that change. Again, in actuality the return on the fund has been 7.5 (percent) for many, many years. It's just we were reflecting the impact of that 13th check for the COLA pool and how that was financed. Another corrective action that the city has taken is it passed an ordinance in May of this year to modify the funding policy of the plan. And that change essentially provides that the existing or the legacy unfunded liability in 2016 would be amortized over a closed period, so ensuring that over time it will be paid off and that new experience gains or losses, variations of actual versus expected experience, will be amortized over a new closed period 20 years. So a shorter period is matching sort of the demographic profile of members a little bit more closely. And again, that will happen whether it's a gain or a loss. That is referred to as layered amortization. And Nebraska was again ahead of its time because you've had layered amortization for many years in statutes for the school, Patrol, and judges plans. So that change is intended to strengthen the funding of the plan. The employer contributes the actuarially determined employer contribution rate, which is essentially the employer normal cost and that payment on the unfunded liability as calculated with the layered amortization. And if and when we get to a situation where the assets might be larger than the liabilities, we basically won't spend any of that until it's at least 115 percent funded, so again trying to look ahead. The time to make these decisions is not when you're there but ahead of time and to be a little bit more conservative and not spending what might be a temporary gain. [LR92]

PAUL LUTOMSKI: And actually 115 percent for three consecutive years. [LR92]

PAT BECKHAM: Right, right. So even more conservatism built in. The most recent experience study for this plan covered the five-year period that ended August 31, 2014. We're still a couple of years away from doing another experience study. And I believe that was provided to the

committee as well. Again, the assumed rate of return is 7.5 (percent). And the investment professionals for the fund, based again on the asset allocation portfolio, believe that's a reasonable long-term rate of return. And again, you were provided the August 31, 2016, valuation. The 2017 valuation has not been officially published. So I assume when it is that could be provided to the committee. [LR92]

PAUL LUTOMSKI: Absolutely. As soon as the city council is informed of the 8/31/17 valuation, we'll pass it along to the members. [LR92]

PAT BECKHAM: Questions? [LR92]

SENATOR KOLTERMAN: Any questions? Senator Stinner. [LR92]

SENATOR STINNER: I'm trying to understand your layered approach and 20-year amortization.
In looking at the schedule it looks like the unfunded accrued liability as of August 31, 2016, was $54 million. Is that the amount that you took and put into the 20-year amortization? [LR92]

PAT BECKHAM: No, that's the legacy. [LR92]

SENATOR STINNER: That's the legacy. [LR92]

PAT BECKHAM: Yes. [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: Let me see, I've got to find the right page, Senator. Are you on the 2016 valuation? [LR92]

SENATOR STINNER: I'm on a Table One. I'm sorry, I'm probably on a... [LR92]

PAT BECKHAM: Oh, you're on Table One. [LR92]

SENATOR STINNER: I'm probably on the wrong... [LR92]

PAT BECKHAM: No, that's okay. That will work too. Yeah, the column that's... [LR92]

SENATOR STINNER: I'm just trying to nail down exact numbers and then do the 20-year "amo." [LR92]

PAT BECKHAM: Right. So that's the legacy unfunded liability. That's sort of when we changed the policy, that's how much the unfunded liability was. [LR92]

SENATOR STINNER: Right. [LR92]

PAT BECKHAM: So that's on a payment schedule over 28 years. [LR92]

SENATOR STINNER: Twenty-eight years. [LR92]

PAT BECKHAM: Twenty-eight years. [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: So when we do the '17 valuation it will be 27 years. And then to the extent that there are pieces of unfunded liability that increase or decrease, those will be funded over 20 years... [LR92]

SENATOR STINNER: Okay, so as we move out... [LR92]

PAT BECKHAM: ...from that valuation... [LR92]

SENATOR STINNER: ...further,... [LR92]

PAT BECKHAM: Right. [LR92]

SENATOR STINNER: ...unfunded liabilities will show up potentially. [LR92]

PAT BECKHAM: Right, pieces, pieces of. [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: And that's where the layers come in. So the first layer is the legacy. [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: And then when we do the '17 valuation we have a gain or loss. When we do the '18 valuation we'll have another gain or loss. You have all these pieces of UAL with their own payment schedule. But that legacy piece will draw down one each year so eight years from 2016, so 2024, everything is 20 or less. [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: And again, that's a trend we're seeing in the industry. [LR92]

SENATOR STINNER: And the attempt is to get away from the ARCs that sometimes pop up that are too big for the city to budget. Is that what they're trying to do? [LR92]

PAT BECKHAM: I don't believe so. And again, this is happening in a number of places. The first thing is to try to get away from what's called an open amortization period where you basically just refinance it every year. [LR92]

SENATOR STINNER: Right. [LR92]

PAT BECKHAM: So you want to close it so it's on schedule to be... [LR92]

SENATOR STINNER: I understand you're adding a little bit of discipline to this that we can budget for... [LR92]

PAT BECKHAM: Right. [LR92]

SENATOR STINNER: ...over a long period of time. [LR92]

PAT BECKHAM: Right. And then it's, to be honest, it's just too expensive to go from like 28 to 20 in one fell swoop. [LR92]

SENATOR STINNER: Yeah. [LR92]

PAT BECKHAM: So we're doing it systematically, drawing it down one each year. But new pieces we're going to keep at 20, knowing that eventually everything will be over a shorter period. With 20 we will have fewer years where the dollar amount of the unfunded goes up by design because we're not paying interest on it. If we start at 30, you know, you have a lot of years where the dollar goes up because your payments are increasing in terms of dollars. So in early years you're not putting in the interest on the unfunded. That's called negative amortization and it's getting very out of vogue. So we're trying to get away from that. [LR92]

SENATOR STINNER: Right. What happens if your investment returns are terrific and you have an excess? Would then... [LR92]

PAT BECKHAM: Twenty years. [LR92]

SENATOR STINNER: ...it would reduce that? [LR92]

PAT BECKHAM: It won't reduce. Again, the legacy piece is set. [LR92]

SENATOR STINNER: The legacy piece is set aside. I'm talking about the layers. [LR92]

PAT BECKHAM: So good experience will be a gain... [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: ...and that would lower the unfunded liability payment... [LR92]

SENATOR STINNER: Okay. [LR92]

PAT BECKHAM: ...because we'll...and that will be over 20 years. [LR92]

SENATOR STINNER: I got you. [LR92]

PAT BECKHAM: But what will tend to happen, Senator, is you'll have gains and losses. [LR92]

SENATOR STINNER: Understand. [LR92]

PAT BECKHAM: It will tend to offset each other over the longer term. [LR92]

SENATOR STINNER: We hope. [LR92]

PAT BECKHAM: Although all gains would be okay. [LR92]

SENATOR KOLTERMAN: Other questions? That answer your question, Senator? [LR92]

SENATOR STINNER: Yeah, I was just trying to go through it numerically, so. [LR92]
SENATOR KOLTERMAN: Well, hearing none, I guess I'd like to thank you for your hard work on this as the city of Lincoln. You made significant strides. I know that there were some concessions made by the bargaining units, but you agreed to them and moved your plan from 64 (percent) to 80 percent funded. And probably won't get to see you next year, which won't hurt our feelings. (Laughter) Keep going in that direction. Let's get it to 90 percent, huh? [LR92]

PAUL LUTOMSKI: That would be great. [LR92]

SENATOR KOLTERMAN: All right, thank you, Paul and Pat. [LR92]

PAT BECKHAM: Yeah. [LR92]

SENATOR KOLTERMAN: Are you sticking around for the next one too, Pat? [LR92]

PAT BECKHAM: Omaha? Yes. [LR92]

SENATOR KOLTERMAN: Okay. So the next one will be the Omaha Civilian Employees. Bernard and Al Herink. Is Al with you today? [LR92]

BERNARD IN DEN BOSCH: Yeah. Right over there. [LR92]

SENATOR KOLTERMAN: There he is. [LR92]

BERNARD IN DEN BOSCH: Good afternoon. My name is Bernard in den Bosch, deputy city attorney with the city of Omaha. I represent the city of Omaha employee retirement system. And obviously you've met Pat Beckham and Al Herink who's the city comptroller, who by virtue of his position sits as a trustee on the system, is also here. We've obviously provided the required reports. You've received both the '16 and then the '17 actuarial report because the report came in after the initial deadline so we supplemented our request. The experience study that you have obviously is one that was dated in January of '13. Ms. Beckham, the fund's actuary, is preparing an experience study. We expect it to be finished and approved hopefully in January of 2018. Obviously when it's done I will provide it to the counsel, the committee counsel, for distribution to the committee. And obviously as part of that we'll obviously be evaluating the assumptions and it's anticipated we'll also do some additional projection modeling since it's been a few years since we've done any. The background information, and Mr. Herink's letter to you, frankly, was similar to the one that was submitted last year. I'll just hit a couple highlights and then we'll let Ms. Beckham talk a little bit about where the system is. All civilian employees hired by the city of Omaha after March 1 of 2015 are now in a cash balance plan. A few of the terms of that cash balance plan are described (inaudible) pay credit that grows when at the time in the system and then an interest credit that has a certain amount that's fixed and then a certain amount that's based on return in the system. That is part of the same...the benefit of a cash balance plan. Since it is a defined benefit plan, the assets can be mixed with the traditional defined benefit plan. As far as existing employees at that time, as part of the same contract negotiation, there were some reduction in benefits for those particular employees. And again, those are kind of outlined briefly and I could answer additional questions if you have them about that. And as of...significantly as of January 1 of 2017, so a year and three-quarters after the change, 18 percent of our work force is in the cash balance plan. So roughly almost a fifth of the work force, (inaudible) work force turned over in a year and three-quarters time period. Obviously we provided a summary table and then we provided an additional summary table once we got the new actuarial report. That's obviously the most useful tool. I wish I could say some of the same

things that Lincoln said about being 79.8 percent funded. Clearly that's not the case here. That table shows the funding ratio is relatively flat. (Inaudible) the most positive thing in the table is, with the pension changes that were made, the increased contributions, and the change in benefits, is the system met its actuarially required contribution for the second year in a row, which it had been a number of years before that had happened. So Ms. Beckham will make a presentation relative to the January 17 actuarial report. Mr. Herink is here and he's happy to discuss investment allocation. He's on the investment committee. And then obviously we'll be happy to answer any questions. [LR92]

PAT BECKHAM: Thanks, Bernard. And maybe just to put things in context, Cavanaugh Macdonald started working with the city I think in 2011 and we were heavily involved in the modeling analysis of the changes to address the long-term funding. But this is how significant it was: I mean when we were doing projections in the 2012 and '13 valuations, the system was projected to run out of money in about 20 years if all assumptions were met. Okay. For an actuary, 20 years is a really short time and it can be very hard to turn that around. And that's why we're going to see that funded ratio hold pretty steady for a while before it starts to increase, despite the fact that you can look, far right-hand column, about the middle, the members are contributing just over 10 percent of pay and the city is putting in just under 19. So we have almost 29 percent of pay going into this plan and then we have kind of a lower benefit structure going forward which will help again over time. But it's just going to take time to heal. So it's not going to go from 55 (percent) to 80 percent in one year. I mean the situation in Lincoln was very unique to Lincoln. But as Bernard said, the actual dollars coming in are slightly in excess of the actuarial target, and that's a positive. That says over the long run we're on track to get where we want to be. So there were significant changes in addition to contributions, an increase by the city. If you look again in this table, in 2014 to 2015 these changes are manifested. So you can see the employer contribution in 2014 was 11.775 and in '15 and beyond it's 18.775--significant increase. And if you just go up two rows from that to the normal cost rate, so that's reflective of the value of the benefit structure, okay, given the members that are in it and the assumptions that are used. And there was no change in assumptions from '14 to '15. So the concessions or the employees' contribution to improving the funding of the system was reducing benefits, and Bernard referred to that. And the easy one to understand is a multiplier: you know, your benefits based on X percent times years of service times final average salary. So for future benefit accruals, they had been at 2.25 (percent). That went down to 1.9 percent--15 percent reduction. Retirement got pushed and reduced retirement went from 60 to 65. The rule of 80 went to rule of 85. And salary used to be calculated on kind of a high one-year average and that moved to a high five-year average. That all lowers benefits that are expected to be paid. And this was for current members. And you can see that again manifested because the normal cost rate in 2014 was 13.23 percent and a year later it was 9.88 percent. That's a significant change. And again, this is a

situation where it's not the actuarial contribution going in. The fixed dollar...fixed contribution rate is coming in. So when ongoing benefits are cheaper, it means there's more money to finance the unfunded liability. That's the positive here. But again, it takes a long time to really have those additional contributions impact a funded ratio when you're looking at liabilities that are this large. So I wanted to point that out, that really the changes, even though you look at a funded ratio of 55 percent, we don't want to overlook the dramatic changes that were made by both the members and the city. And Bernard will correct me if I'm wrong, but I mean the ordinance is substantially equal contributions. So they're in it together, so to speak. Both the members and the city have to share that cost and that did... [LR92]

BERNARD IN DEN BOSCH: It's actually in the city charter. [LR92]

SENATOR KOLTERMAN: I have a question about that because your city charter actually requires substantially equal contributions, as I understand it. [LR92]

BERNARD IN DEN BOSCH: Correct. [LR92]

SENATOR KOLTERMAN: So that there's a significant difference between what the city is putting in versus what the employees are putting in. [LR92]

BERNARD IN DEN BOSCH: That's absolutely true if you take a snapshot today. But I think what that doesn't take into account is when you took a snapshot back five years ago when those numbers were a lot closer and the difference was based on a lawsuit (inaudible), you have two ways that employees can contribute to the system. You can put in a (inaudible) of your income or you can reduce your benefits. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

BERNARD IN DEN BOSCH: So at least what happened back in 2012, 2013 with the negotiations was the city put in cash. The city can't take any effect as far as reduction of benefits. The employees contributed their amount by a reduction in benefits. And those things were actuarially determined to make sure that those things were substantially equal. I know that makes it very difficult as you take a snapshot today because there's obviously a huge disparity. I can appreciate that. [LR92]

SENATOR KOLTERMAN: And that was all in your negotiated agreement... [LR92]

BERNARD IN DEN BOSCH: Correct. [LR92]

SENATOR KOLTERMAN: ...as I understand. Is that correct? [LR92]

BERNARD IN DEN BOSCH: It is. It is. And in a number of reports from Ms. Beckham that layout and percentages for each of those benefits to try to make sure that they were...the city and the employees, the bargaining groups were matching in their efforts to find a solution to obviously what is...still is a problem. [LR92]

SENATOR KOLTERMAN: I think I just...I think it's very important for people to understand that, because if the general public is looking at this and they know the charter says "substantially equal," to see that major difference they're going to start asking questions. [LR92]

BERNARD IN DEN BOSCH: Absolutely. [LR92]

SENATOR KOLTERMAN: And so that's why we're here. Senator Groene. [LR92]

SENATOR GROENE: You have two different retirement plans, right, one defined benefit for the older employees and the new employees have a cash balance. [LR92]

BERNARD IN DEN BOSCH: They're actually one retirement plan because the cash balance plan is a type of defined benefit plan. So the pool of resources are actually together. We couldn't...if we had tried to separate them... [LR92]

SENATOR GROENE: But... [LR92]

BERNARD IN DEN BOSCH: But... [LR92]

SENATOR GROENE: But there's two different sets of benefits. [LR92]

BERNARD IN DEN BOSCH: There's two different sets of benefits. [LR92]

PAT BECKHAM: Tiers, yeah. [LR92]

SENATOR GROENE: So the new employee is paying as much of his paycheck and the city is paying just as much, the 18 percent. [LR92]

BERNARD IN DEN BOSCH: Yep. Absolutely. [LR92]

SENATOR GROENE: But that new employee isn't going to get the same benefits. [LR92]

BERNARD IN DEN BOSCH: The new employee is getting a cash balance benefit that may not be as good, absolutely. [LR92]

SENATOR GROENE: So his cash balance, if he puts in 10 percent of his pay does that go into his individual account? Because on a defined benefit, it just goes in the (inaudible). [LR92]

BERNARD IN DEN BOSCH: No, it does not go into his account. All the things are pooled, but there is a notational account that's calculated each year that has a pay credit which is based on a percentage of (inaudible). [LR92]

SENATOR GROENE: So the new employee can go in and look at what he paid over the last 20 years if he's there 20 years from now? [LR92]

BERNARD IN DEN BOSCH: They receive a statement every year that would lay out what their pay credits are, what they contributed and what their pay credits are, and what the interest credit is. [LR92]

SENATOR GROENE: Does it also show in there the city's part of the funding, or does that just go into the pool? [LR92]

BERNARD IN DEN BOSCH: The city's part just goes into the pool. I don't think...I'm not sure that the statement that we send to the employee each year lays out exactly what the city contributes. It lays out what the employee contributed. And when it comes to those that are in the cash balance plan, it lays out their... [LR92]

SENATOR GROENE: So the new employee is helping bail out the old system but not...in the future isn't going to get the same benefits. [LR92]

BERNARD IN DEN BOSCH: They...they're certainly...the cash balance plan is certainly cheaper for the system. They're likely...maybe not likely to get the same benefits, but that's somewhat dependent on some of the factors of the cash...my point is if investment earnings are traditionally good, the disparity between those is less. [LR92]

SENATOR GROENE: So you've got a hybrid system where the money is still pooled but the benefits are different. [LR92]

BERNARD IN DEN BOSCH: Yes. [LR92]

SENATOR KOLTERMAN: And bear in mind that it was part of the negotiated agreement (inaudible). [LR92]

SENATOR GROENE: I understand. I just never understood it. [LR92]

SENATOR KOLTERMAN: Yeah. Senator Stinner. [LR92]

SENATOR STINNER: I'm going to...I've got a couple questions. First of all, we haven't changed the rate from 8 percent to 7.5 (percent). We're still using 8 (percent)? [LR92]

PAT BECKHAM: Still 8 (percent), yes. [LR92]

BERNARD IN DEN BOSCH: Correct. [LR92]

SENATOR STINNER: Okay. We made all of these adjustments in what the employer is contributing, employees at 10 percent, made those adjustments. Interestingly, 2013 we're at 54 percent; today we're at 55 percent. Hardly moved it anywhere because I'd look at what the ARCs are. And what percentage of the ARC that you paid was 68 percent, 71 percent, 84 percent. Finally we hit a 9 percent rate of return on our investment. Do we have the right mix, I guess is what I'm asking, and how long do we wait before we get to 80 percent? [LR92]

PAT BECKHAM: Yeah, how long before 80 percent? We don't do projections every year for these systems. We do them periodically and I think the last ones were in 2014. And I think we'll be doing some when we get to 2018. Do we have that projection? When did we hit 80 (percent)? It takes a while I know. [LR92]

BERNARD IN DEN BOSCH: Twenty thirty-five was the last projection that was done as far as when it would be 80 percent. [LR92]

SENATOR STINNER: Are you comfortable you have the right assumptions that you could get there, because so far historically you haven't hardly moved it at all. [LR92]

PAT BECKHAM: I understand what you're saying, Senator. But remember when you're looking at kind of a five-year snapshot, the only thing that moves the funded ratio very significantly is investment... [LR92]

SENATOR STINNER: Investment returns. [LR92]

PAT BECKHAM: ...return. Because, you know, the liabilities are so big compared to contributions, the contributions have to come in over 20 years to really affect a difference, you know, make a big difference. And you know, 2013 we probably were still feeling some of the pain in smoothing from the recession. [LR92]

SENATOR STINNER: Actually we made 11 percent, 16 percent the next year, 4.71 (percent), 3.1 (percent), and 9.7 (percent), so not terrible. [LR92]

PAT BECKHAM: Right, but that return is on market. And then like your unfunded liability, your funded ratio is on actuarial value or smooth value. [LR92]

SENATOR STINNER: I absolutely get that. [LR92]

PAT BECKHAM: So we've got a little bit of disjointed...we should really be showing both, probably, returns there. But I wanted to mention--I think Bernard mentioned this earlier--we are in the process of doing an experience study for the system, just like we did for NPERS last year. And we look at all the assumptions, not just investment return but all the assumptions that are

used in this valuation again to determine that they're still the best estimates. And so we don't know the answer until we do the work. But we will have that report most likely in January that will either substantiate that 8 (percent) is still reasonable or make a recommendation for a change. So we'll know that when... [LR92]

SENATOR KOLTERMAN: That's a question I have. Do you really believe that with all the other plans moving 7.5 (percent), 7 (percent), even some, as you indicated earlier, in the high 6's, you can afford to stay at 8 percent? And then also are you looking at making mortality changes? And how will that all affect the experience study? [LR92]

PAT BECKHAM: Again, we have to do our analysis... [LR92]

SENATOR KOLTERMAN: Right. [LR92]

PAT BECKHAM: ...before we know the answers to those questions. I would say that the asset allocation for both of these plans is a little bit unique for maybe a standard asset allocation. And I think...I don't know if you or Al want to speak to that. I thought you had some data... [LR92]

BERNARD IN DEN BOSCH: Al is going to speak to that. [LR92]

PAT BECKHAM: Okay. Yeah, I think Al has some...do you want to take my spot from me? [LR92]

AL HERINK: (Exhibit 1) Sure. I've got a handout here if you'd like to look at it. We do asset allocations every year and have (inaudible). We do the asset allocations. The last one was done in 2015. Again, my name is Al Herink. I'm the city comptroller. And I kind of wanted to (inaudible) a little bit to kind of give you an idea of where we're at. And I just want to make one note, too, is we're going to do this experience study you were asking about and we're going to review this one more time in the next three or four months and determine whether this is the right one we should use. We're going to talk to our consultant. We have DeMarche put this together right now. But

I'm going to walk you through this. I'll show you just how well we looked at, what we came up with on the last asset allocation that we did in 2015. If you take a look at the first column, that's the different type of investments that we have. And I'm not going to go through each one but

there's three main categories. We have equities and we have fixed income and we have alternative investments. And we take a look at our current allocation, is listed in the second column, and our consultant gave us three different examples that we could use to fill in what we wanted to do going forward. And if you take a look at the bottom four lines there...or rows, the strategic is the three to five expected returns based on the allocations listed above there. And the strategic is three to five years. And they say our current allocation, the way we have it, is 6.72 percent. We decided when we did this, when we made the selection, we took selection number three. And right now our allocation is based that we think we can get 7.12 percent in the next three to five years. Now we look at these pension funds as 30- to 40-year funds. And when we take a look and set our assumptions, that's what we look at. So we took...we also look at the secular returns. And if you take a look at the same, our old asset allocation, we expected to get going forward 8.45 percent and the allocation we selected was 8.55 (percent). And it's a combination of these different investment types. So that's kind of where we have. So we have sophisticated investment policy here. It isn't just half bonds and half stocks and that's what we decided on. So we spend a lot of time on this analysis and we think that it's...we think it's defendable and our consultant says that. And it might be at the top end but I don't think other pension plans goes through this type of...will go through this type of sophistication putting together investments like this. If you take a look at the next sheet, we talk about that just a little bit. This is what we've done currently. Again, this is the actual investment of how the city has done the last few years on this. If you go through the double line, if go through the double line, if you'd take a look at the first row there, that's the last quarter. We did 3 percent. If you take away the year to date so far, and that's over nine months, we did 9.7. The last year we did 12.2. And we got a three-year there. It's 8.5. Five year is 9.3. And the ten years is 5.3, and the last one, since inception, is 9.3. So that's kind of the history that we've done long term. Again, we're going to take a look at the 8 percent. It's not cut in stone. The city doesn't have a dog in the hunt. We're going to take what we think we honestly can believe. We understand that inflation is down a little bit. We understand that long-term bonds aren't paying what they did five or ten years ago. But again, it's what's going to happen in five years. It might be right up to where we were at. So we're going to take a look at it, listen to the experts and make decisions at that time. Any questions? [LR92]

SENATOR KOLTERMAN: Senator Stinner. [LR92]

SENATOR STINNER: I've seen some of these allocations and analysis done before. [LR92]

AL HERINK: Sure. [LR92]

SENATOR STINNER: And it's the level of confidence that they have or...and I think that's represented in the standard deviation. [LR92]

AL HERINK: Yeah. [LR92]

SENATOR STINNER: And that's what's really kind of broadening now because of what you're saying. [LR92]

AL HERINK: Uh-huh. [LR92]

SENATOR STINNER: The economy is changing, the fed is unloading a heavy balance sheet, how the credit markets are going to respond to that, a whole bunch of stuff out there. [LR92]

AL HERINK: Sure. And that's why we're going to look at it. When this was put together... [LR92]

SENATOR STINNER: But that's why people are going to 7 (percent). They're being more conservative because of the uncertainties out there. [LR92]

AL HERINK: Right. Yeah. When we put this study together, the people said we had an 85 percent confidence level on that. And I'm sure it will change going forward. [LR92]

SENATOR STINNER: Okay. [LR92]

AL HERINK: That's a good point. [LR92]

SENATOR STINNER: Can I ask another question? [LR92]

SENATOR KOLTERMAN: Go ahead. [LR92]

SENATOR STINNER: What's the bond rating for the city of Omaha? [LR92]

AL HERINK: We get the second highest bond rating from Standard and Poor's and the third highest bond rating from Moody's, very high. [LR92]

SENATOR STINNER: Is it stable? I mean is it a stable...? [LR92]

AL HERINK: Our outlook is stable. We just sold bonds this year. We have a very good credit rating. Our bonds sell good and I'm sure most cities are envious of our bond rating. [LR92]

BERNARD IN DEN BOSCH: I think it was downgraded five, six years ago. [LR92]

AL HERINK: Right. [LR92]

BERNARD IN DEN BOSCH: But it's stayed steady since then. [LR92]

AL HERINK: Yeah, we have a stable outlook. [LR92]

SENATOR STINNER: Okay. [LR92]

AL HERINK: Omaha has a diversified economy. We have low unemployment. The city of Omaha has a diversified revenue stream. We're rock solid here in Nebraska and the Midwest. We're one of the best economies in the Midwest. [LR92]

SENATOR STINNER: There's been no discussion maybe to look at financing some of this pension liability? [LR92]

AL HERINK: You know, we've... [LR92]

SENATOR STINNER: Would it make sense? Would it not? [LR92]

AL HERINK: You know, we've talked about it. The problem I personally have and what other people have is when you actually go to finance pension debt, and that's basically borrowing money and then putting it in the stock market, there's some risk right there to do that. But also

when you borrow that debt, you can't borrow tax-exempt debt. You've got to sell it as taxable debt and that increases the yields on those bonds, too, and it costs you more money for that money. [LR92]

SENATOR STINNER: But it lowers the...it could lower the city's contribution rate, that would more than offset what the difference is. [LR92]

AL HERINK: Well, only if the stock market goes up higher than the interest on those bonds does. [LR92]

SENATOR STINNER: Well, you are using 8 percent, so. [LR92]

AL HERINK: Yeah. Okay. I understand what you're saying. [LR92]

SENATOR KOLTERMAN: Senator Groene. [LR92]

SENATOR GROENE: Thank you. Dumb question maybe, but unfunded actuarially accrued liability, that's the amount that is unfunded, right? [LR92]

PAT BECKHAM: Right. [LR92]

SENATOR GROENE: So when did your new plan go into effect? [LR92]

PAT BECKHAM: It was in '15, March... [LR92]

BERNARD IN DEN BOSCH: March 1. [LR92]

PAT BECKHAM: ...March 1 of '15. [LR92]

SENATOR GROENE: So in '15 you were $188 million short. In '16, after it was in place, you're $193 million. I would expect those numbers to be going down. In '17 you're $197 million underfunded. Am I reading this wrong? Wouldn't you be expecting, if you're fixing the plan, that those unfunded numbers go down, not up? [LR92]

PAT BECKHAM: You've got the investment experience from that year and the four prior years impacting these. The unfunded liability is the actuarial liability minus the actuarial assets. So whatever happens on the assets... [LR92]

SENATOR GROENE: But this individual here was just saying how great the returns have been the last three or four years on some of your funds. [LR92]

AL HERINK: Well, the unfunded liability is a combination of other things than the return on investment. You know, it could be death and other assumptions (inaudible). [LR92]

SENATOR GROENE: Yes, but the part that says it's funded, wouldn't that be what your investment is worth? [LR92]

AL HERINK: Well, the funded portion is...the unfunded portion is the liability minus your assets. [LR92]

SENATOR GROENE: But if your assets are going up because you're getting good returns, your unfunded should be going down, should it not? [LR92]

AL HERINK: Well, again, we use some of the assets to pay... [LR92]

SENATOR GROENE: I understand. [LR92]

AL HERINK: ...to pay benefits. [LR92]

SENATOR GROENE: But I just don't see the trajectory here going in the right direction. [LR92]

AL HERINK: Yeah. You know, I'm not sure but I think... [LR92]

SENATOR GROENE: Well, maybe I don't understand the numbers as I thought I did. [LR92]

PAT BECKHAM: Maybe...could I just... [LR92]

AL HERINK: Go ahead. You jump in. [LR92]

BERNARD IN DEN BOSCH: Let's let Pat Beckham address this. It's really an actuarial question, not a (inaudible) question. [LR92]

AL HERINK: Okay. [LR92]

PAT BECKHAM: Right. So if you look at the unfunded actuarial liability in 2014 and then again in 2015, you do see that it went down there. That is from the changes the current active members made to take lower benefits in the future. Okay? So that piece we can understand and we see there that the asset value did go up. And remember, there is more going out in terms of benefit payments than is coming in, in contributions. So we have that negative cash flow. But a lot of different things impact the unfunded liability and investment return is a huge one. And just because the fund earned 13 percent in that one year, it may not...it may have had deferred or unrecognized losses from prior years that get offset in there. So it's not a one-to-one correlation because we're not using market value for this purpose. The new tier is going to take a lot of time before it has any kind of a meaningful impact on the valuation results. And even the projections, I mean we're going to hold steady for a long time. [LR92]

SENATOR GROENE: So what timetable are you looking at when the unfunded mandate numbers start receding? I mean is that the long-range plan? [LR92]

PAT BECKHAM: Eventually it will get there. I think what....again this projection is a little dated because it's from 2014 and that assumed that all the assumptions were met. But full funding wouldn't happen until 2038. And the funded ratio, you know, hangs pretty steady below 60 percent until you get to 2025. So you're a little bit treading water for a while until...we're trying to slow the growth in the liabilities and throw a bunch of money in and eventually the assets are going to catch up, because the liabilities are going to grow slower but the assets are going to grow more rapidly and then we're going to get to that point. But it's a long time. It's 2034 before we're 80 percent funded. And then four years later we're 100 percent funded. So as these dollars grow from payroll, we're throwing a lot of money in at the end of that period. [LR92]

SENATOR GROENE: And this might be morbid, but as the defined benefit beneficiaries pass away. [LR92]

PAT BECKHAM: Well, it's really the active people leaving and being replaced by people in the cash balance tier. [LR92]

SENATOR GROENE: But the payments are still out there. I'm taking too much time. [LR92]

PAT BECKHAM: Yeah. I mean we pay them until they die, but we figured that in. [LR92]

SENATOR KOLTERMAN: But we've capped it. Yeah. [LR92]

PAT BECKHAM: Yeah, we figured that in. And we are using generation mortality here, anticipating improvements. [LR92]

SENATOR KOLTERMAN: So a question, Pat, when you do the experience study, obviously you're going to take a look at the assumed rate, you're going to take a look at the mortality tables. Are you going to have a 30-year projection in that experience study? [LR92]

PAT BECKHAM: That's not typically a part of an experience study. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

PAT BECKHAM: We have made a recommendation to the board... [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

PAT BECKHAM: ...that we do a projection study. I believe the civilians accepted that recommendation. So I think we'll be doing a projection and will actually be doing some additional analysis. [LR92]

BERNARD IN DEN BOSCH: There was a discussion but after the actuarial experience study was completed we would be asking for a projection model. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

BERNARD IN DEN BOSCH: (Inaudible) projection modeling to be done. [LR92]

SENATOR KOLTERMAN: And then I guess another question I have is has there...and this would be more for the employers, the city of Omaha. Has there been any talk about changing your charter so that more money could be put in other than equal contributions or substantially equal because to me, I'm just like the rest of the people up here. It looks to me like it's going to be a long time before you ever catch up. [LR92]

BERNARD IN DEN BOSCH: And that's one of the potential problems with the solution of the city investing a whole bunch of money because it theoretically would be potentially violative of that section. I'm not aware that there's been any discussion. I didn't represent this at the last charter convention in 2013. That issue certainly wasn't discussed there. But we have those, at minimum, every ten years and it's certainly something that could be considered. But I'm not aware that's it's been discussed. [LR92]

SENATOR KOLTERMAN: And if you do...if you do have those meetings about the charter, can that be handled by the council or does that take a vote of the people? [LR92]

BERNARD IN DEN BOSCH: Amending the charter would require a vote of the people. [LR92]
SENATOR KOLTERMAN: Okay. So it's not...it's easier said than done. [LR92]

BERNARD IN DEN BOSCH: I think the council (inaudible), the council has to adopt an ordinance putting it on the...up for the election and then the people would obviously have to speak. [LR92]

SENATOR KOLTERMAN: Support it. All right, any other questions? [LR92]

SENATOR KOLOWSKI: Just for clarification if you could, could you talk just a second about the whole aspect of continued annexation which has gone on for 30-some years, all the way back to the time I was in Millard in the first years in 1970 when it was first...some pieces were annexed in the city and what's going on there? And then the continuation of the county board on one hand and the city council on the other, you've got overlapping questions within a lot of that going on. And could you just give us a little background on that on what that is, or does it play any part at all? [LR92]

BERNARD IN DEN BOSCH: It really doesn't play any part at all. Obviously, the city then, then depending on the mayor, may have a different annexation policy or be more aggressive or less aggressive about annexations. The only potential that it might play in, I think, in the pension context is whether those annexation require more employees to provide services... [LR92]

SENATOR KOLOWSKI: Absolutely. [LR92]

BERNARD IN DEN BOSCH: ...and whether or not we would then be meeting. I mean quite frankly that's one of these things that will be studied in the experience study is the number of employees, whether it's increasing, because income of the employees is obviously a part of that and that's a product of what people make and the raises they get. But it's also a product of whether there's an increase in the number of employees. So what I can't tell you, and the numbers are in the report, I think, if you look at the number of employees the city has had for the last ten years, it's generally been decreasing. In the beginning of 2017 we actually do have...I think it increased three or four or five people from January 1 of 2016 to January 1 of 2017, which has been relatively rare over that period of time. We've generally seen a decline in the number of employees, which is one of the issues that Ms. Cavanaugh would obviously have to take into account in her experience study. But really that's probably the one area that might tie into the annexation. [LR92]

SENATOR KOLOWSKI: Okay. Does the charter status have an impact on all this, having the Omaha charter as far as options for the future and the things that need to be looked at? Does it need to be relooked and rewritten in some way? [LR92]

BERNARD IN DEN BOSCH: Well, I mean...and that's of course...part of the difficulty we have here is the pension system was in a very deep hole. [LR92]

SENATOR KOLOWSKI: Yes. [LR92]

BERNARD IN DEN BOSCH: There is no question about it, when you're talking about not even having cash. So you have the employees in the city, another (inaudible) mayor's leadership, got together. They negotiated a contract that was unprecedented in some ways in that there was a reduction in benefits. Obviously, we also, you know, you have...new employees have a reduced benefit. [LR92]

SENATOR KOLOWSKI: Sure. [LR92]

BERNARD IN DEN BOSCH: Hence a huge increase in the amount of money that the city was putting into the system. Even with all those changes, as Ms. Beckham has said, none of that was going to happen quickly. And of course as I appreciate, there's two issues that...I mean you're looking at the rate of return on some of these assumptions saying, hey, are those fair? Are those the right assumptions? That's (inaudible) question. And the second part is you're looking at the period of time and saying even with those relatively dramatic changes, you're still talking about something that's going to take 20 years. And you're not going to see big movement for ten years. And then...and I...as outsiders looking in, I understand why that's concerning. It...from the perspective of the city, we rely on the experts. Now there may be some times in the past where we relied on those things because they were obviously...there have been benefit changes in the past and they were always costed out. But the cost didn't...we're not sure that the cost always equaled what they actually cost. The hope is now and even though I know the funding status is staying relatively even, you are starting to see some things that are indicating things are moving in the right direction. But it's not super fast. I mean I can't tell you, I'd be misleading you or saying something that you'd know I wasn't telling you the truth if I told you that. It's obviously slow. And all we can ask for and part of what the experience study and the projection modeling is going to tell us is are we going in the right direction? Do we have to do some further things on the plan? And if the experience study recommends making changes, we all know what a reduction in the interest rate in the investment rate assumption is going to do. That's going to increase and that's going to say now again the parties need to go back to the table and try to see what other things can be done to address the problem. So the only thing I can ask for is patience and I know that's difficult because you see something that looks really bad in comparison to where you'd like it to be. But that's the only way that...I mean, absent a huge infusion of cash, that's the only way we're going to be able to fix this type of a problem. [LR92]

AL HERINK: And when we did fix it back in '15, we knew it was going to be a long time. We knew it would be eight to ten years before we would get over 60 percent funded and it's going to be a long-term solution. [LR92]

SENATOR KOLOWSKI: Thank you for your discussion. [LR92]

SENATOR LINDSTROM: Any other questions from the committee? Seeing none, thank you very much. Just in time. [LR92]

SENATOR KOLTERMAN: Don't have to move very far, Bernard. [LR92]

BERNARD IN DEN BOSCH: No, I'm going to...I'll let Mr. Curtiss have (inaudible). [LR92]

SENATOR KOLTERMAN: Okay, now we have the Omaha Police and Fire Plan. Would you introduce yourself. [LR92]

STEVE CURTISS: I'm Steve Curtiss. I'm the finance director of the city of Omaha. [LR92]
SENATOR KOLTERMAN: Other than that it stays the same, for the record. [LR92]

BERNARD IN DEN BOSCH: And just for introductory remarks I'll kind of do the same thing I did the last time. My name is Bernard in den Bosch, deputy city attorney. I'm also the attorney for the city of Omaha, Police and Fire Retirement System. Mr. Curtiss, by virtue of being the city's finance director, serves as a trustee on the system as well. We provided you, much like we did with the last system, both the 2016 actuarial report because that was the most recent actuarial report at the time that our report was due, the 2017 actuarial report was approved at the November meeting and we supplemented our response by proving that to you and an updated table as well. Again, similar to the civilian system, Ms. Beckham is preparing an experience study. The hope is that will be finished in January and maybe February. That one is a little bit behind the civilian one as far as where it is. That again is going to evaluate the assumptions and will more than likely lead to some recommendations as far as whether the assumptions need to be changed. And then there may be...there will be some discussion at that point in time, though there hasn't been a decision made for sure whether there will be additional projection modeling. Their last projection modeling that was done in the police and fire case was done in 2015. So it's more recent than the civilian. Obviously, the letter of summary provides some of the information. I just want to hit on a few of the things. Much like the civilian, there were some pension changes back for the police and fire system. They occurred. There are four bargaining groups that have employees on the police and fire system: Omaha Police Officers Association, which represents your sworn police officers from the rank of officer through the rank of captain; the Police Managers Association, which represents the deputy chief and chief of police; Local 385 Omaha Fire Fighters Association, which represents firefighters from the rank of firefighter up through the rank of battalion chief; and then the Fire Management Association, which represents the assistant fire chiefs and the fire chief himself. Those management groups are relatively small, four to six people; the others are quite large. The police union adopted...there was a contract adopted between the city and the police union in September of 2010, went into effect in October of 2010 which made revisions, increased the city's contribution, but also

resulted in some pension changes for existing employees, staggered in a little bit those who are closer to retirement with less changes, and then also made some substantial changes for new hires. The fire union entered into a contract with similar changes in late 2012 that went into effect in early 2013. So the plan to fix it where you had everybody who was part of the system being subject to the new terms didn't occur until early 2015. So unfortunately, they weren't necessarily at the same time. And that's...as you look at the summary in part of the discussion you might see some of those changes. This particular system you'll see...notice a change from 45 percent funded to 52 percent funded. Obviously, that's an increase but, obviously, well below what anybody would like to see. I mean there's nothing more than that. The encouraging thing is the system is still meeting its ARC and has been for the last several years. So in any event, that being said, we also had a new contract with the police union that went into...was approved by the city council early in 2017 which contemplates an increase in pension contributions for the police and the city that start on January 1 of 2018 and run for the remainder of the life of that contract. So that is an additional pension change that has been made since then. The police contract now is in effect through the end of 2020. The fire bargaining group, Local 385, has a contract through the end of 2018, so we wouldn't be able to...we'll obviously be in the negotiating table with the fire union starting in 2018. So that being said, I'll ask Ms. Beckham to talk a little bit about the January 1, 2017, actuarial report. [LR92]

PAT BECKHAM: All right. Thank you, Bernard. And again, just reiterate what's been said. When we first were working with the plan in 2010 again it was projected to run out of money in 20 years. So although everyone may not be thrilled with the funded ratio of 52 percent, (A) it's better than 45 percent and it's...the trajectory is much improved because it's projected to reach 100 percent in actually...I think the most recent projections performed it was projected to be 80 percent funded in 2029. So again, it takes time to heal these plans, a lot of money being contributed but the liabilities are very, very large. So the 2017 valuation, we had a rate of return on market value that was 8.5 percent. Again, with smoothing the return on the actuarial value, which is what really drives the numbers, was closer to 7 (percent). So that actually was a loss for calendar year '16. The normal cost rate, if you look at Exhibit 1 you can see that it's sort of creeping down gently each year and that will continue as more and more active members are covered under the new tier compared to the old tier. The new tier has a lower cost for both police and fire. So again, the contributions coming in are fixed. So if it takes less to pay for the benefits for the active members, there are more contributions to pay off the unfunded. And that's why we get acceleration in the funded ratio: When we go further out, we have more and more payroll in the lower cost tier. The contribution margin is down this year. We were at about .5 percent last year and we're .3 percent this year. And that's largely due to the fact that the unfunded liability is up a little bit and payroll is not up as expected. Remember, we develop these dollar amounts of

unfunded liability payment assuming payroll is going to increase. The current assumption right now is 4 percent. Well, the dollar amount of the payment is going up 4 percent. If the payroll doesn't keep pace then the rate ends up higher and that's what we're seeing manifested here. Again, over the last couple of years the percent of the ARC contributed has been near or over 100 percent. Part of that is that we did make a change in the amortization period to reflect the fact that this was a long-term solution. So it wouldn't make sense to use a 15-year amortization when we know it's a 20- to 30-year plan to get us there. So that change was made I think in 2014. I will I guess just defer to the committee if you have specific areas you'd like any of us to visit about. I know you're probably on actuarial overload at this point. (Laughter) [LR92]

BERNARD IN DEN BOSCH: And Mr. Curtiss does have some material about investment allocation. [LR92]

STEVE CURTISS: (Exhibit 2) I'll go ahead and I'll pass these out. They're just the same thing as some of the other ones. [LR92]

BERNARD IN DEN BOSCH: Same type of analysis, different allocation. [LR92]

SENATOR KOLTERMAN: In this particular plan though we're not dealing with a hybrid. We're dealing specifically with a defined benefit plan. [LR92]

BERNARD IN DEN BOSCH: It's a traditional defined benefit plan, correct. [LR92]

SENATOR KOLTERMAN: And so we don't have two different sets of data to compare to and two sets of benefits. [LR92]

PAT BECKHAM: There's multiple tiers. [LR92]

BERNARD IN DEN BOSCH: There's multiple tiers because, for example,... [LR92]

SENATOR KOLTERMAN: I know there's different... [LR92]

BERNARD IN DEN BOSCH: ...the new employees have a less... [LR92]

SENATOR KOLTERMAN: But one is not a cash balance and the other one... [LR92]

BERNARD IN DEN BOSCH: Correct, you're absolutely correct. [LR92]

SENATOR KOLTERMAN: So the money going in is going to be...if I understand it correctly, the money going in won't have as big an impact on increasing the funding because you don't have those that are putting more in to offset the liability. [LR92]

PAT BECKHAM: You know, actually... [LR92]

SENATOR KOLTERMAN: Would that be accurate? [LR92]

PAT BECKHAM: Well, actually, Senator, it's similar in that the cost for new hires is lower. [LR92]

SENATOR KOLTERMAN: Right. [LR92]

PAT BECKHAM: And that's true in the civilian plan as well. [LR92]

SENATOR KOLTERMAN: But it isn't as significant, is it? [LR92]

PAT BECKHAM: It isn't...it's more significant in the police and fire plan actually. [LR92]

SENATOR KOLTERMAN: It is. [LR92]

PAT BECKHAM: Uh-huh. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

STEVE CURTISS: And the other counterintuitive thing I'd add to that is that we're still hiring and growing our payroll. And in fact I think we just got police up to 865. [LR92]

BERNARD IN DEN BOSCH: And just hired a class of 55 police officers. [LR92]

STEVE CURTISS: And we have a class of firefighters starting in January. So it is counterintuitive that you add more people and it somehow gets better. But in this case it actually works and we are... [LR92]

SENATOR KOLTERMAN: When you have over...you have somewhere between 48-51 percent of payroll going into this plan. That's a significant amount of dollars. Is that sustainable? [LR92]

BERNARD IN DEN BOSCH: Well, I presume. Obviously, that was in the contract that was negotiated within their union, but presumably it's been something that's...they've been able to budget and been able to handle it. I appreciate...I'm sure Mr. Curtiss, as the finance director, would tell you he'd rather not have to pay it. Of course, he'd rather not have to pay any bill like anyone else. (Laughter) I think...and I appreciate. I know there's some concern and discussion about the restaurants' tax and some of the other things. I think some of those changes that have been made have made it so the city could make those changes. I will tell you I don't think the...and the mayor would tell you the same thing I would tell you. She wishes she didn't have to do it but (inaudible) problem (inaudible) huge problem and this is a solution that will hopefully...and again, same problem we had the last time. It's going to take a while. We're seeing some positive steps but it's going to take a while to make sure that it bears fruit. So I really don't know that I answered. I tried to answer your question. Hopefully I did. [LR92]

SENATOR KOLTERMAN: Well, obviously, we're not going to solve the problem today. We're going to get your new study in January for this as well I assume. [LR92]

BERNARD IN DEN BOSCH: You are. [LR92]

SENATOR KOLTERMAN: And I would hope that we could maybe see some experience studies projections because I would think you would want that because this...I got news for you. This is your problem, not the state's. We don't have any money on the state's level, so. [LR92]

BERNARD IN DEN BOSCH: I will tell you that me personally I like...I won't have...I like having a projection modeling (inaudible) because I think this is three years later. It gives you an opportunity to see if in fact things that you're hoping to see as far as improvements or things are

on the path that they're supposed to go. So I think ultimately that's the direction we will go. It's just no one is committed to that at this point. [LR92]

SENATOR KOLTERMAN: All right. Any questions? Senator Groene. [LR92]

SENATOR GROENE: This 41 percent...thank you, Chairman. This 41 percent that's paid, that's the local, that's the agreement with the present administration of the city. So if another politician comes along and makes promises like a couple prior to the present mayor, this could all change and you...because you're not bound to do anything to fully fund this. There's no statute that says you have to ARC to maintain a public union retirement plan at 60 percent or no less than 70 percent funded. [LR92]

BERNARD IN DEN BOSCH: You're absolutely right. The only thing is because of collective bargaining, the city nor the union can unilaterally change what they contribute to the plan. So absent an agreement between the city and the union, the amount that's being contributed... [LR92]

SENATOR GROENE: There's no date on this specific... [LR92]

BERNARD IN DEN BOSCH: Because it stays in effect until there's (inaudible) agreement negotiated between the parties. [LR92]

SENATOR GROENE: It isn't a three-year agreement or a five-year agreement union agreement? [LR92]

BERNARD IN DEN BOSCH: No. No. The only thing that's the three years, I talked about the .75 percent increase for police contributions, that was limited specifically in the collective bargaining agreement to the 2018-2020 period. That was just a little thing that we did recently. But the rest of them would have to be negotiated. [LR92]

SENATOR GROENE: Another question: They're at 41 percent now. If for some reason this body tried to pass or somebody said the new hires are going to be a cash balance, all right, like you did in the public...the other employees, in that one when you went to cash balance your contributions jumped. And you're at 41 percent. If they went to a like system as the Omaha civil

employees are, would it cause a huge jump in the employer contribution for a few years? [LR92]

BERNARD IN DEN BOSCH: I don't know that we can tell you one way or the other. I doubt it would because what it really comes down to... [LR92]

SENATOR GROENE: Well, it did in the civil one. [LR92]

BERNARD IN DEN BOSCH: Well, you can come down to two different solutions. With the police and fire, the solution was we're going to try to reduce the benefits for active and for new people. The city is going to put more in. That was the solution. The solution for civilians was reduce the benefits but was also go to a cash balance plan. The city put in more contributions in both cases but they're different solutions. I don't think now that you get to this point because of where we are with the ARC and the contribution. I don't know that you can assume that just because we go to a cash balance plan the city is going to have to put in more. I'd submit to you that we'd probably would end up putting in similar or a little bit less. But I don't know that Ms. Beckham has ever looked at that and that makes it a little bit difficult to tell you (inaudible). [LR92]

SENATOR GROENE: Too many different variables to compare the two. [LR92]

BERNARD IN DEN BOSCH: Yeah. [LR92]

PAT BECKHAM: It would totally depend on the design of the cash balance plan that would drive the cost. But I would just point out to you that the normal cost rate right now for the police and fire plan is about 22 percent of pay. And the members...this is a blended rate, both police and fire. But the members are putting in just a little over 16 percent. So the employer costs for the ongoing actives is about 6 percent of pay. It's...might be hard to...for a public safety plan, might be hard to find a plan design that's cheaper than that. [LR92]

BERNARD IN DEN BOSCH: And basically that means the remaining 26 percent is going to pay the... [LR92]

PAT BECKHAM: Exactly. [LR92]

BERNARD IN DEN BOSCH: ...any unfunded, which is a testament to how bad of shape we're in. [LR92]

SENATOR GROENE: It's the way the city is making their ARC. Instead of a lump sum, they're doing it this way. [LR92]

PAT BECKHAM: Over time. [LR92]

SENATOR GROENE: Yeah. [LR92]

PAT BECKHAM: Uh-huh. [LR92]

SENATOR KOLTERMAN: Pat, did you...before you were talking, you were talking about the police and fire plan compared to the cost of new hires in the civilian plan. Will you talk a little bit about the difference there again, would you? [LR92]

PAT BECKHAM: Actually I was talking about the cost of the police and fire plan for active members. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

PAT BECKHAM: Which was 22 percent of pay. [LR92]

SENATOR KOLTERMAN: Right. [LR92]

PAT BECKHAM: And just a reminder, these folks aren't covered by Social Security. [LR92]

SENATOR KOLTERMAN: Right. [LR92]

PAT BECKHAM: So the members are contributing about 16 percent of pay for the benefit. So the city pays the difference, 6 percent. And then as Bernard pointed out, the other 27, whatever, 28 percent is all going to pay the unfunded liability. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

PAT BECKHAM: And that's why over time this thing heals, because eventually...and again, the costs, we're going to see the normal cost continue to come down a little bit as more and more go in the new tier. And so that normal cost is going to go down. The member contributions will actually, in 2018 the police union members are putting in another .75 (percent), right? [LR92]

BERNARD IN DEN BOSCH: Yep. [LR92]

PAT BECKHAM: So we'll see that go up a little bit. [LR92]

SENATOR KOLTERMAN: It'll heal if the projections are met. [LR92]

PAT BECKHAM: Right. Yeah, that's the big "if" always. [LR92]

SENATOR KOLTERMAN: I mean there's a lot of "ifs" involved with that. [LR92]

PAT BECKHAM: Right. And the challenge for plans that have a low-funded ratio is there's a lot of risk or exposure for a long time before you get to a higher funded ratio. And that's always a concern with plans that are funded in the 50-60 percent range, which is why we made a recommendation that we do a projection study and do some further analysis on the risk side. [LR92]

SENATOR KOLTERMAN: All right. Any additional questions? Okay, thank you very much. [LR92]

BERNARD IN DEN BOSCH: Thank you, Senators. [LR92]

STEVE CURTISS: Thanks. [LR92]

SENATOR KOLTERMAN: I think we're going to take a five-minute, seven-minute break. We're going to start at 3:30 and we'll come back with Omaha Public Schools at about 3:30 to 3:35. [LR92]

BREAK

SENATOR KOLTERMAN: Call this meeting back to order. This hearing will now come back to order, please. We're going to start. Again, there's going to be a couple senators coming in. At this time we're going to hear from Omaha Public Schools. Lou Ann Goding will make the presentation. Welcome. [LR92]

LOU ANN GODING: Thank you. [LR92]

SENATOR KOLTERMAN: And then we're going to make one slight adjustment to the agenda. We're going to ask that Omaha Public Power District goes next, so everybody else will move down one. So, Lou Ann, go ahead. The floor is yours. [LR92]

LOU ANN GODING: All right. Good afternoon. My name is Lou Ann Goding and I'm a member of the Omaha Public Schools Board of Education. I want to start my testimony off today by saying that the Omaha Public Schools understands that OSERS is underfunded. Since 1909, OPS has maintained a retirement system for its teachers and, over time, combined retirement plans for other employee groups into OSERS. Prior to 2007, OSERS was historically funded at a higher level than the state plans. Unfortunately in 2007-2008, OSERS's unfunded liability began to increase, primarily as a result of two different factors: first, the significant worldwide economic decline; and second, a series of poor investment decisions by OSERS and the then OPS Board. The new OPS Board has taken action to try to correct these problems. I say new OPS Board because since 2013 with the passage of LB125, the OPS Board has experienced 100 percent turnover. The new OPS Board quickly recognized that the OSERS trustees of the OPS Board were not equipped to make the types of complex investment decisions necessary to guide OSERS going forward. My colleagues and I began working with you to further align the OSERS plan with the state plan. More importantly, OPS sought to move all investment authority from the OSERS trustees and the OPS Board to the state. These changes, which came about as the result of the passage of LB447 in 2016, will have a significant long-term positive effect on the unfunded liability of OSERS. In fact, management fees have already decreased dramatically and the investment returns have increased under the guidance of the State Investment Officer. Unfortunately, these changes, while a step in the right direction, have not been enough. The unfunded liability was dramatically affected by changes to the actuarial assumptions made late last year, which resulted in an immediate increase in the unfunded liability of OSERS of $137.7 million. Taken together all these factors have resulted in a current funding level of 65.25 percent for OSERS as of January 1, 2017. And that's an actuarial valuation. This leads us to, how do we

fix the problem? To further the discussion in the Legislature about how OPS should move forward to address OSERS's unfunded liability, just last spring, as you all likely remember, I was here testifying on LB548 which was a bill introduced by Senator Lindstrom. Unlike any other school district in Nebraska, OPS makes actuarially required contributions, or ARC, to OSERS as recommended by the actuary and the OSERS trustees. From 2013 to 2016, OPS contributed $11.4 million over the statutory mandated 101 percent employer contribution. Moreover, in September of this year OPS made an ARC payment of $12,750,000. Next year's ARC is projected to be $15.9 million, rising to $24.2 million in five years. We remain committed to making ARC payments. We want to be very clear that as the ARC continues to rise significantly over time, which they are projected to do, these payments will significantly affect students, classrooms, and teachers. We have made significant budget decisions to pay the ARC in the past and we will continue to make those difficult decisions as the ARC increases every year. OPS is in the education business. We do not believe that we should be in the retirement business. We are currently exploring options to find a more stable solution that will meet the need of fully funding the unfunded liability while providing the least amount of negative impact to the 52,000 students OPS serves. To that end, for the past year our board and administration have been working with

Senator Lindstrom and Senator Kolterman to find a solution to this issue. OSERS is the Omaha Public School Board's top priority in the next legislative session. We are committed to paying the unfunded liability and hope this committee will continue to work with us as we move toward a long-term solution. I would be happy to answer any questions that you might have for me. [LR92]

SENATOR KOLTERMAN: Senator Stinner. [LR92]

SENATOR STINNER: One of discussions that we had in kind of an informal meeting was not just to focus totally on what this pension liability was about but let's take a look at what is OPS's financial position in light of the $400 million bond issue that you have. And I actually got this out of a prospectus for it and it goes...and so when you add up the $500 million that we have in obligations, both refunded bonds, qualified school construction bonds, general obligations, I'll add the $400 million that you're requesting, throw in $700 million of pension liabilities, our total liabilities for OPS is $1.6 billion. Now an interesting last line is the state funding for K-12 education is expected to continue to be a topic before the Nebraska Legislature in January 2018. Laws impacting the state and formula will impact future funding for the district. You're highly dependent upon the state to continue to fund under a current formula, right? [LR92]

LOU ANN GODING: Under the TEEOSA formula. [LR92]

SENATOR STINNER: Yes. [LR92]

LOU ANN GODING: Yes. [LR92]

SENATOR STINNER: And how much of your total funding is made up by TEEOSA? [LR92]

LOU ANN GODING: I think it's 56 percent. [LR92]

SENATOR STINNER: I think that's right. [LR92]

LOU ANN GODING: Fifty-six percent. [LR92]

SENATOR STINNER: Yeah. And so we did change the Learning Community the last time. [LR92]

LOU ANN GODING: Correct. [LR92]

SENATOR STINNER: I think we threw a little bit of temporary money at it. You know the discussion and Senator Groene is here from the Education Committee. [LR92]

LOU ANN GODING: Right. [LR92]

SENATOR STINNER: We're headed down the road with a lot of debt packed on to OPS. And I just want to ask you what your thoughts are. This is pretty sobering when you start to look at it. [LR92]

LOU ANN GODING: Right. Right. So we're doing several things. Number one, we will be starting, and will announce it on Monday and our board meeting, we'll be starting a committee of community members and staff members which will start in January. It will be a long-term visionary committee of cutting, cost cutting. And so individuals from the community and our staff and some of our board members will sit on that committee and we will start working in

January for significant cuts because we know we need to cut for sure $15.9 million. The other thing that we're doing is we are in the process right now of negotiating to hire our own actuary who would report directly to and work directly with our chief financial officer so that we can start to run scenarios and try to find...gather the data so that we make data-driven decisions as we go through the process of budget cuts with the hope of reducing future unfunded liabilities in the way that we make decisions through whether it be operations, negotiations. Eighty-five percent of our budget is people and so we've got some really tough decisions to make. We recognize that. And we want to make sure that the decisions we make are data driven and that we're thoughtful in the approach that we take. So that's one of the things we're doing, along with, I would say, in budget committee, in legislative committee and anytime that we're discussing negotiations, our board is fully informed and we're making really tough decisions. We'll continue to make those. You'll see those on our agenda as we move forward to try to control costs. [LR92]

SENATOR STINNER: I looked at your two proposals. And of course I'm not blaming you for anything. I mean you're trying to fix it and I get it and I appreciate your efforts. But both proposals really don't get in front of the unfunded liability in either scenario. Is that... [LR92]

LOU ANN GODING: So we recognize that the unfunded liability has been growing and we need to...we recognize as a board that part of our responsibility is to figure out how to bring that down and how to work with our current budget in controlling costs. So there's only...I mean we can only do...we can only really write checks and manage our process. The investments, which we are so grateful, so grateful to the Legislature for moving that Nebraska Investment Council, we've seen better returns this year than we've seen in quite a while. We've seen lower fees that we're paying to fund manager. So we're very, very thankful for that. We don't really control the investments. The benefits are part of state statute, so we don't really control benefits. And the administrative portion of the system is managed by OSERS. And so our main job is to control the costs and to figure out how we can work to bring down that unfunded liability. [LR92]

SENATOR KOLTERMAN: Additional questions? If not, I just have a couple. First of all, I would like to compliment you and the board and your lobby for visiting with us on a repeated basis... [LR92]

LOU ANN GODING: Thank you. [LR92]

SENATOR KOLTERMAN: ...and working to try and improve this. As you said earlier, you inherited this problem. And I do have a couple of questions though that pertain to steps that the board...I just am curious if they've looked at things like, you know, Millard had an override and I think Westside had an override, levy override. Has that been talked about at all to cover some of these costs? [LR92]

LOU ANN GODING: So we haven't talked about a levy override. We're currently having discussions about construction bonding for $399 million that could potentially be on the ballot in May and that's a priority for us to take care of our buildings. The levy overrides that they had were for operations and not for funding a pension system that was underfunded because we're really the only ones that have that situation. So the board of education has been working through the process of whether it be negotiations, our budget, any items that come before us really trying to determine whether it's a necessity or whether it's just something fun to have. And we're cutting everything that we possibly can. [LR92]

SENATOR KOLTERMAN: And so the other question, you alluded to the fact that you're committed to the ARCs. [LR92]

LOU ANN GODING: Correct. [LR92]

SENATOR KOLTERMAN: So that, and based on what we've seen, projections, we're looking at anywhere from $16 million next year to $24 million through 2022. [LR92]

LOU ANN GODING: Correct. [LR92]

SENATOR KOLTERMAN: That's in addition to. [LR92]

LOU ANN GODING: Correct. And so that's why we're putting this committee together of the public and staff, so that they're fully aware of why we have to make the decisions we do and why the cuts will be happening that will be happening. Prior to that we were trying to manage things. I mean we cut nearly $7 million in busing this current year that we're in. So we're now moving that to the public so they're very aware of the situation that we're in and helping us to decide what pain to go through because everybody is going to have to be on board with the pain. [LR92]

SENATOR KOLTERMAN: Okay. Senator Groene. [LR92]

SENATOR GROENE: Thank you. So when you're sitting in union negotiations on pay, is this part of it? If you take 2.25 percent instead of 2.50 percent, we will guarantee this much goes for an ARC, because it's for them. Is that part of your...I mean just common sense but I'm not in that... [LR92]

LOU ANN GODING: Right. So in Omaha Public Schools we don't actually sit as board members in the negotiation process. We have a chief negotiator that does that. But in all of our discussions everywhere where there's an opportunity to save, whether it's through reduced...not giving as much of a raise or any other item, those are...I think right now we know our focus is all on the ARC. You're correct that in the process... [LR92]

SENATOR GROENE: For their best interest, the union... [LR92]

LOU ANN GODING: It's in everybody's best interest. [LR92]

SENATOR GROENE: ...that's their retirement. [LR92]

LOU ANN GODING: That's right. That's right. [LR92]

SENATOR GROENE: So I would assume it's in your negotiations and your pay. [LR92]

LOU ANN GODING: It's part of our overall conversation with staff that we have a problem because we have an unfunded liability that's been...that has continued to grow and we need to make the payments to cover it for their best interest. It's the prudent thing to do. [LR92]

SENATOR KOLTERMAN: Any additional questions? Thank you. [LR92]

LOU ANN GODING: Thank you very much. [LR92]

SENATOR KOLTERMAN: Thank you for coming. OPPD. [LR92]

JAVIER FERNANDEZ: Well, good afternoon, Senator Kolterman and members of the committee. My name is Javier Fernandez. I'm the chief financial officer for the Omaha Public Power District and I am here to answer any questions, discussing topics that you would like me to discuss related to the letter and report that we filed on October 13, 2017, related to our requirements of the defined benefit plan. [LR92]

SENATOR KOLTERMAN: Do we have any questions? I've got a couple. I've got to find my notes. I guess I don't. No questions. Thank you. [LR92]

JAVIER FERNANDEZ: You're welcome. [LR92]

SENATOR KOLTERMAN: Thank you for the report. Douglas County. [LR92]

JOSEPH LORENZ: Good afternoon, Senators. My name is Joe Lorenz and I'm the Douglas County finance director. And what I thought I'd do with this afternoon with you is just run through the three-page pension plan reporting form that's in your notebooks and just hit a couple of the highlights and go through it and show what sort of progress we're making at Douglas County on our defined benefit plan. So if you look at the first page, the table, the first point that I think is important, as you can see from the year 2013 to the year 2017, we've increased our funding level 6.6 points. And actually since we bottomed out at 57.8 percent in 2010, we're up by actually 9.5 points in funding. So I think the actions that the pension committee of Douglas County and the county board have taken are showing a result in that we are trending the right way. A couple other points just to show you--our assumed rate of return is 7.5 percent and it's been consistent at 7.5 percent for quite a considerable amount of time. It hasn't changed at all in the past few years. Our plan is 50 percent funded by the county and 50 percent funded by the employees, and both sides contribute a 8.5 percent of payroll for a total of 17 percent. And if you look at the at the ARC you can see how that's been trending, and then compared to the actual dollars contributed it looks like this 17 percent total payroll contribution is getting us better than we have to do on the ARC. And for the year 2017 when we first did this week the actuarial projection was about $21 million. Now that we are just finishing up the payments here for the rest of the year it's going to be a little over $22 million compared to the ARC of $21.5 (million). So this will be the fourth year in a row that we fund it in excess of the ARC payment which is contributing to lowering...or increasing our funding status, excuse me. So those were the highlights on the table. Next I think I'll switch to page 2 and kindly bring you through a little narrative of the plan, unless you have any questions. [LR92]

SENATOR BOLZ: I'm sorry, I'm just not following you. I follow your numbers, that you're saying that you're going to get more than expected. Why does it say 97.7 percent of your...? [LR92]

JOSEPH LORENZ: Because that's the $21 million which...because that was the expected number when the actuaries did the study. [LR92]

SENATOR BOLZ: Expected versus actual. [LR92]

JOSEPH LORENZ: But the actual, now that we're in mid-December, is going to be a little over $22 million, so that's why it will be over 100. [LR92]

SENATOR BOLZ: I see. Okay. Thank you. [LR92]

JOSEPH LORENZ: Okay? Great. So let me take you through the summary of the plan. Our actuary is the SilverStone Group and we have them do an annual analysis. And as of January 1, 2017, the plan was 67.2 percent funded, had net assets of $287.5 million, and an unfunded actuarial liability of $140.3 million. The plan has about 3,600 participants. As I said before, both the county and the employees pay 8.5 percent, normal cost of about $13.5 million, and the actual...the ARC of $21.5 million. Last year the funded ratio decreased from 67.3 percent to 67.2 percent and that was due to some changes in assumptions that I'll go through in more detail but they're similar to what we talked about or you heard from other plans earlier in changing a more conservative mortality table and also changing the amortization period. So they're kind of technical things that are more conservative. But in trying to keep the plan with up-to-date assumptions we did make those changes last year. But I think the key point is to understand why the plan is only 67.2 percent funded you have to look at some of the history from the plan starting in 1996 when it was 97.8 percent funded. That year for the sheriff and law enforcement and the following year 1997 for all other plan participants the following changes were made to the Douglas County defined benefit plan. It went to an unreduced benefit of rule of 75 and the benefit formula increased from 1.5 percent of pay for a year to 2 percent. Also during that time period the plan was still giving out COLAs. A 3 percent COLA was given in 1998, a 4 percent COLA in 2000, and a 3 percent COLA in 2002. Then given the issues with the stock market, these changes to the plan and the COLAs, the plan by 2004 had fallen to a funding ratio of 64.8 percent so that you can see in a matter of eight years the funding went down over 30 percent. So obviously, I wasn't there at the time, but bells and whistles went off. The poor stock market performance also added to the poor performance. And as I said, the plan bottomed out at 57.8

percent funded in the year 2010. I came on board as county finance director in February 2011. And one of the mandates that I was given is to really look at this plan and turn around this trend in what's going on. And I think I've given you all this analogy before. When you have a severely underfunded defined benefit plan, a mature plan, turning it around is similar to turning around an aircraft carrier. It takes time and effort. And that's kind of what we've been doing. So what we did do right away in 2011 is made some significant changes that for all new employees we eliminated the rule of 75, we changed the benefit formula back down from 2 percent to 1.5 percent of pay per of year of service. And we reduced the maximum retirement income from 60 percent of a participant's final average to 45 percent. So, you know, those were the changes we put in six years ago now and you're kind of seeing the numbers turn around, but it's still going to take a significant amount of time for this pension plan to get up over 80 and eventually up into the mid-90s where we all want it to be. But with these plans in place for the new employees, if you look at the actuarial assumptions and what's going on, that is on the path we really believe we're headed. And we really feel good about that we were able to do this while still retaining a defined benefit plan and not having to do anything near as radical as the city had to do on their civilian plan when they went to the cash balance part, because for any participant it's much better to have a defined balance plan than a cash balance plan. And we think that by making these changes we increased the sustainability of our plan to gain financial health and still leave our employees with a solid defined benefit plan. So like I said, the other thing we've done we haven't given a COLA increase since the year 2002. The funding ratio has increased by 9.4 percentage points from its low point. And if you go to the next page you'll see that these changes and this projection that SilverStone takes out has significantly increased the forecast so the plan would be...achieve acceptable funding levels in the future, as you can see in that table, where it goes from 67.2 percent and hitting...it takes a long time, as I said, by 2032, 81.5 percent. But actually I think is a conservative table. In a year like this where with two weeks to go we're going to have a double-digit return on our pension plan, when you do that and you have a 7.5 (percent) return that's projected, when you get a 12-13 percent return, that's going to increase this funding percentage by years. It's going to...so a year like this really helps and so when you see this table next year it will look even better, which is a positive. So in the last two years we've tweaked the plan a little bit. We've...in 2015 we moved the long-term disability program from the pension plan where it sat there since the plan was organized in 1964 and we made that a separate employee benefit that's fully insured and outside the plan. And we also changed the interest rate ceiling on member contributions that if they leave before the plan is fully vested that the money they earn on it we changed that from 5 percent to the ten-year Treasury rate in effect at November 1 of every year. So those two changes in 2015 decreased the liability by $3.6 million and increased the funding level by 0.6 percent. This past year in 2017 we had a couple other changes again, kind of tweaking mostly to the assumptions. The actuarial valuation was changed. We changed the mortality table to talk about the mortality issues that you've heard

from the other plans, that people are living longer. So we went to the more updated plan which is a negative to the funding level. And then we also changed the amortization period from 30 years to 25 years, again being consistent with more best practices as required by the actuaries. And those were partially offset by the rates of early retirement and termination as fewer people in our plan are taking early retirement than the actuaries had originally projected. So the net impact of this was basically a wash where it was a 0.1 percent decrease in the funding status and a $1.3 million percent (sic) increase to the actuarially required contribution. Where, you know, we have 16 collective bargaining units within the county but the commissioners are all committed that we're not going to do anything, institute any program that would have a negative impact on our pension funding. So none of that's contemplated. And with that, that's basically our update and I'd be glad to answer any questions you might have about our plan. [LR92]

SENATOR KOLTERMAN: Any questions from the committee? Thank you. [LR92]

JOSEPH LORENZ: Okay, thank you. [LR92]

SENATOR KOLTERMAN: Okay, Eastern Nebraska Health Agency. Ms. Nolte. [LR92]

RENEE NOLTE: Good afternoon. My name is Renee Nolte. I'm with the SilverStone Group. I am the actuary for the Eastern Nebraska Human Services Agency and the retirement plan and representing them today. We only do a valuation every other year. This is an off year, so much of the material you received this year is the same as last year. I updated what I could on your eightquestion form report. The rate of return as of 12-31-2016 was 6.8 percent which is close to our assumed 7 percent. They're also paying 9 percent. The employer contribution rate is 9 percent for 2017. That's 50 basis points higher than 2016. And they are awaiting union contract signature to increase for 2018 to 9.5 percent. So it's in the budget. It's been approved by the governing board, just need the union's signature. Additionally, the contributions for 2016 were higher than we were projecting last year at this time. So they ended up being almost 107 percent of the ARC. So they're whittling away at that unfunded amount. So I think all those indicate they're going in the right direction. Do you have any questions? [LR92]

SENATOR KOLTERMAN: Senator Groene. [LR92]

SENATOR GROENE: Thank you, Chairman. Maybe I didn't look far enough back, but what's the total value of your retirement? How many...? [LR92]

RENEE NOLTE: The assets... [LR92]

SENATOR GROENE: Your assets, there you go. [LR92]

RENEE NOLTE: ...are, as of the last valuation... [LR92]

SENATOR GROENE: I just wanted to see what size of retirement... [LR92]

RENEE NOLTE: Right. [LR92]

SENATOR GROENE: ...in relationship to what your ARC is. [LR92]

RENEE NOLTE: Plan assets are $33.5 million. [LR92]

SENATOR GROENE: And you're making an ARC of two-point-some million. [LR92]

RENEE NOLTE: Right. Two-point-six is the ARC, two-point-seven. [LR92]

SENATOR GROENE: Six, seven percent of the value. [LR92]

RENEE NOLTE: Eleven-point-five-five percent of pay in total. They've kept the employees' contribution is 2.75 percent. They wanted to keep that steady and increase only the employer portion each year. [LR92]

SENATOR GROENE: Where does your budget money come from? Is that funded from...? [LR92]

RENEE NOLTE: As the actuary, I'm not sure. [LR92]

SENATOR GROENE: The money that runs the organization that you represent, he's from Nebraska. [LR92]

RENEE NOLTE: Tax. [LR92]

SENATOR GROENE: I mean is that a tax funded from the state or...? [LR92]

RENEE NOLTE: I am not privy to that. I just calculate the ARC. [LR92]

SENATOR GROENE: Do you know? [LR92]

SENATOR KOLTERMAN: I can't answer. Senator Bolz. [LR92]

SENATOR BOLZ: I know that ENCOR has a number of human services program. For example, one is ENCOR is partnered with the developmental disabilities service providers in eastern Nebraska which is mostly state funded. So at least some of the revenue sources are from state and federal dollars. [LR92]

RENEE NOLTE: There's Region VI Behavioral Health, Alpha School, and the Office on Aging make up ENHSA. [LR92]

SENATOR KOLTERMAN: As you look at your returns, I notice the last couple of years, 2016, 2017, your returns weren't all that...they didn't meet even the assumed rate. Actually since 2015 you haven't hit the assumed rate. Do you sense that...do you know why that is and do you see a change or will you upgrade your assumptions based on the fact? Do you do the smoothing like everybody else? [LR92]

RENEE NOLTE: We don't...they don't smooth the assets. It's just based on market value. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

RENEE NOLTE: They are one-third in fixed, two-thirds in equity roughly. So they rarely see negative returns. But for 2015 it was 0.2 percent, so pretty low. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

RENEE NOLTE: We do an experience study every four years. I've scheduled for that in 2020. And a forecast, I'm going to encourage a forecast study next year because the last forecast showed that 9.5 percent to remain level and that it could continue to improve on the unfunded liability. So we want to make sure that that holds true. [LR92]

SENATOR KOLTERMAN: So have you talked about increasing that funding at all? [LR92]

RENEE NOLTE: As a percent? [LR92]

SENATOR KOLTERMAN: Just as a percentage. [LR92]

RENEE NOLTE: Right, they have been increasing 50 basis points for quite a few years now, the contribution rate on the employer side. [LR92]

SENATOR KOLTERMAN: On the employer side, okay. [LR92]

RENEE NOLTE: And they will increase it again for 2018. But the last forecast study that we did showed that 9.5 percent to remain level in 2019 and beyond but it's still... [LR92]

SENATOR KOLTERMAN: So you're going to do...you're going to put...you're going to increase another 50 basis points again? [LR92]

RENEE NOLTE: If necessary,... [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

RENEE NOLTE: ...based on hopefully a new forecast study. [LR92]

SENATOR KOLTERMAN: Senator Lindstrom. [LR92]

SENATOR LINDSTROM: Thank you, Chairman. I didn't see anywhere as far as the underlying investments. Who manages those assets? [LR92]

RENEE NOLTE: The fixed account is with United of Omaha. And the other two-thirds, the equity is with Stichler Investments and American Funds. [LR92]

SENATOR LINDSTROM: Okay. Is there an entity board who's making those investment decisions? [LR92]

RENEE NOLTE: They have a pension board. [LR92]

SENATOR LINDSTROM: A pension board, okay. And is that made up...how many folks are involved with that? [LR92]

RENEE NOLTE: Oh, typically six of them. [LR92]

SENATOR LINDSTROM: Okay. They meet on an annual basis, quarterly basis, semi-annual? [LR92]

RENEE NOLTE: At least twice a year. [LR92]

SENATOR LINDSTROM: Okay. Okay. Thank you. [LR92]

RENEE NOLTE: Yeah. [LR92]

SENATOR KOLTERMAN: Any additional questions? All right. Thank you. [LR92]

RENEE NOLTE: Thank you. [LR92]

SENATOR KOLTERMAN: Metro Area hourly employees, last but certainly not least. [LR92]

CURT SIMON: So you want me to be brief, is that the...? Well, good afternoon. I'm Curt Simon. I'm the executive director at Metro Transit in Omaha. This is Gregg Rueschoff. He's our actuary for the plan with Milliman. I just want to speak to the report that we sent in. I want to point out one mistake that's in that report of our plan. As of the last actuarial, which was 1/1/17, is funded at 71 percent. That's on an anticipated return of 6.755 percent on our return assumptions. Some

of the things that we did recently to address some of the shortfall was we had a rather lengthy labor contract negotiation that consummated in August of this year. As a result of that, the employer increased its contribution by 1 percent retroactive to July 1 of 2016 which went directly into the plan. And the employees then increased their contribution to the plan by another 1 percent. So the actual contribution to the plan now, as of 1/1/17 retroactively, is going to be 14.5 percent, 7.5 percent from the employer and 7 percent from the employee. We also made some changes to the benefit formula going forward. In section number four of the report we eliminated an early retirement benefit that was there for 30 and out. We also stairstepped the benefit going forward for persons hired after July 1. The error that appears in the report is on item...it's in the chart itself in item 1-F with the ARC calculations. That should show for '17 in 1F 14.34 and it will be 14.5 at the end of '17 with those additional contributions. I'd answer any questions. [LR92]

SENATOR KOLTERMAN: You've been fairly aggressive in moving your assumed rate down to, you know, like 2016 you moved it to...I mean that played into not...have you done anything with the mortality tables? [LR92]

CURT SIMON: We looked at the mortality tables. I think somebody spoke to that earlier about some of the discrepancies that pertains to public plans. So we have not adopted that most recent mortality table. We're still using the 2000 mortality table. As that gets better refined we'll look at adopting that in the future. [LR92]

SENATOR KOLTERMAN: Okay. [LR92]

CURT SIMON: But we like to keep it real. [LR92]

SENATOR KOLTERMAN: All right. Any questions? Senator Bolz. [LR92]

SENATOR BOLZ: I'm just curious. I'm still learning. Your assumed rate of return you have at 6.75 (percent) and almost everybody else who's testified has been higher than that. What's different about your plan? [LR92]

CURT SIMON: We want to be realistic with our employees' benefits when they retire. [LR92]

SENATOR BOLZ: Uh-huh. [LR92]

CURT SIMON: I would...if I was at 8 percent I wouldn't be sitting in front of this committee right now. [LR92]

SENATOR BOLZ: (Laugh) So is it based on experience or you just have a different analysis, a different makeup of your investments? [LR92]

CURT SIMON: Well, it seems clear from our experience obviously and probably from the others that have testified before us that nobody is getting much better than that. [LR92]

SENATOR BOLZ: Okay. Okay. Thank you. [LR92]

SENATOR KOLTERMAN: Any other questions? [LR92]

CURT SIMON: Could you ask Gregg a question? I made him sit here all day. (Laughter) [LR92]

SENATOR KOLTERMAN: Well, you're paying him. (Laughter) [LR92]

CURT SIMON: Thank you. [LR92]

SENATOR KOLOWSKI: Thank you. [LR92]

SENATOR KOLTERMAN: Wow. That concludes our hearing for the day, I believe. Thank you, everybody, for coming. [LR92]