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**Nebraska Public Employees
Retirement Systems
2016**

State Equal Retirement Benefit Fund

Actuarial Valuation Results
as of January 1, 2016 for State Fiscal Year
ending June 30, 2017





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April 1, 2016

Public Employees Retirement Board
Nebraska Public Employees Retirement Systems
1526 "K" Street
Suite 400
Lincoln, NE 68509-4816

**RE: Certification of Actuarial Valuation
State Equal Retirement Benefit Fund**

Members of the Board:

At your request we have prepared an actuarial valuation of the State Equal Retirement Benefit Fund as of January 1, 2016 for the purpose of determining the funded status of the Plan and any required contribution for the plan year. Funding required from each participating State agency for current plan members, as approved by the Retirement Board, is equal to an amount necessary to fully fund the benefit obligation, or alternatively, an annual payment which would amortize the unfunded liability over a period of twenty years commencing January 1, 1999. There were no changes to the plan provisions or actuarial methods from the prior valuation. The only change to the actuarial assumptions was the annual update of the annuity conversion interest rate for members retiring from the Defined Contribution Plan.

The actuarial valuation is based on unaudited financial data provided by the System and member data provided by the Ameritas, the record keeper for the Plan. We found this information to be reasonably consistent and comparable with the information used in the prior report. 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. The benefits considered are those delineated in Nebraska State Statutes as of January 1, 2016.

We further certify that all costs, liabilities, rates of interest and other factors for the State Equal Retirement Benefit Fund have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer the best estimate of anticipated experience affecting the System. 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 Public Employees Retirement Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix B.

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April 1, 2016
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Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

The 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.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in the report or to provide explanations or further details as may be appropriate.

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

Respectfully submitted,

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

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

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

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



EXECUTIVE SUMMARY

The State Equal Retirement Benefit Fund provides a benefit for members who had account balances on January 1, 1984 and who elect to annuitize those balances upon retirement. The fund was established to protect members who might have been negatively affected by the change in annuitization factors at that time when sex-distinct factors were replaced with unisex factors. As such, the characteristics of the actuarial liability of the Fund and the funding requirements are somewhat different from the other defined benefit plans overseen by NPERS. This report determines the contribution requirements for the State as well as providing statistical information that may provide insight into the Fund's longer term financial health.

There are several risk factors that are key to the Fund's financial status over time. One of the most significant of these factors is the proportion of retirees that elect to take an annuity rather than a lump sum. An individual member's choice is based on their own personal situation and may consider different factors from other individuals who are also making this choice. The funding assumption is that 25% of retirees, in aggregate, will elect an annuity. While this assumption is reasonable, there are other assumptions that could also be considered to be reasonable. If a greater portion of retirees elect an annuity at retirement, the liability of the Fund would be higher than estimated in this report. The possible liability volatility should be considered and evaluated. To assist with this analysis, we have included an exhibit in the report that shows the impact of a higher annuity election by retiring members (Exhibit 2). Liability results are shown should 50% or 75% of the retirees elect an annuity rather than the 25% assumed in the basic liability calculations. These alternative assumptions may or may not be reasonable in the aggregate, but the alternative results provide some measure of the possible downside risk.

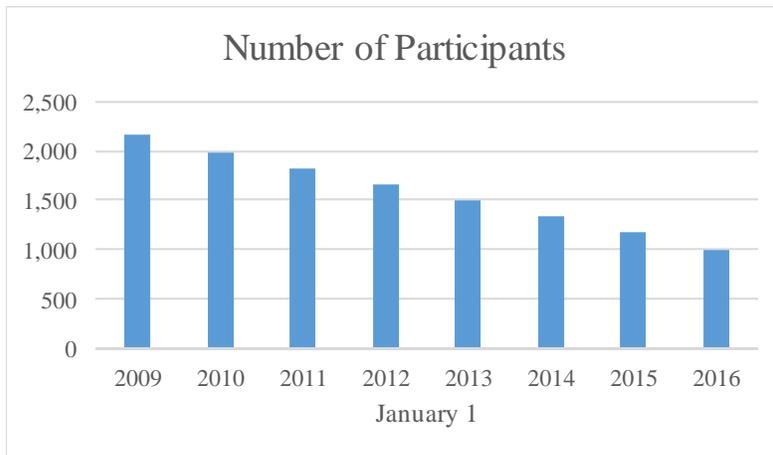
Other factors and assumptions affecting the results include the following:

- Account growth – both the cash balance and defined contribution member balances are assumed to grow at 7.75% annually. To the extent investment returns are lower, the benefits assumed to be paid from the Fund are lower and so are the liabilities.
- Annuity factor interest rate – the defined contribution balances are assumed to be annuitized at the current applicable interest rate (3.57% as of January 1, 2016). If interest rates decrease in the future, higher benefit amounts would be payable and the liabilities of the Fund would increase.
- General economic conditions – there are connections between the growth in the members' account balances, the interest rate environment (affecting the annuity factor interest rate), the investment return on the assets of the Fund, and the way in which potential retirees view the financial ramifications of retiring and electing an annuity. The exact interplay of these variables is extremely complex, but the fact that there is a connection means that the possible variability of the Fund's financial situation is potentially greater than it might otherwise appear. Consequently, we urge caution in concluding that the current strong financial health will continue indefinitely.

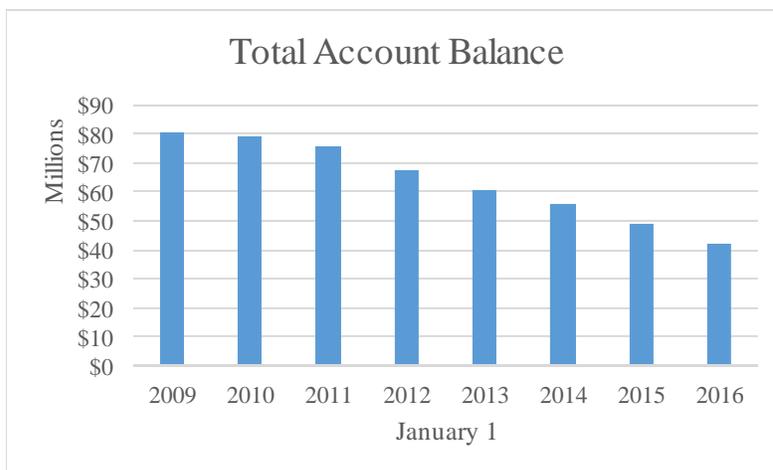


EXECUTIVE SUMMARY

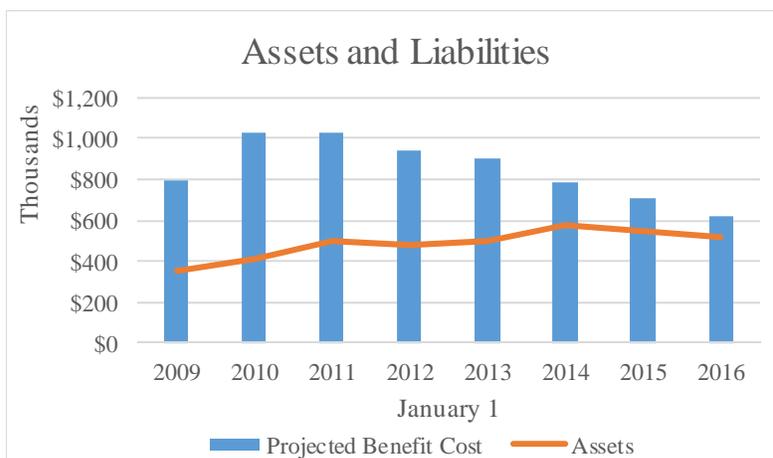
The following graphs show trends in the Fund over recent years:



Because there are no new members in the Fund, the number of participants has declined in past years and is expected to continue to decline in future years.



When comparing the total account balances in the current and past years, the growth in account balances due to investment earnings partially offsets the impact of a declining membership.



While the Fund's assets remain below the liabilities, this graph shows that the gap has been closing since 2010.



EXHIBIT 1 – SUMMARY OF ACTUARIAL RESULTS AND CONTRIBUTION ALTERNATIVES

Below is a comparison of results of the current and prior years’ actuarial valuations.

Results	Actuarial Valuation as of January 1	
	2016	2015
Number of Members		
Cash Balance	604	722
Defined Contribution	<u>402</u>	<u>461</u>
Total	1,006	1,183
Pre-1984 Account Balance with Interest, Beginning of Year		
Cash Balance	\$25,346,264	\$29,116,737
Defined Contribution	<u>17,051,231</u>	<u>20,231,115</u>
Total	\$42,397,495	\$49,347,852
Projected Benefit Cost (Liability)*		
a. Amount	\$ 615,448	\$ 710,514
b. As a percent of the account balance	1.452%	1.440%
c. Annuity Factor Interest Rate – Cash Balance	7.75%	7.75%
d. Annuity Factor Interest Rate – Defined Contribution	3.57%	3.64%
Actuarial Value of Assets (Market Value)		
a. Asset Value as of prior year’s valuation	\$ 547,101	\$ 580,471
b. Deposits during the year	47,266	47,928
c. Withdrawals during the year	79,741	119,936
d. Investment Return or (Loss)	<u>(1,367)</u>	<u>38,638</u>
e. Actuarial Value of Assets as of Valuation Date [a.+ b.- c.+ d.]	\$ 513,259	\$ 547,101
Unfunded Liability/(Surplus)	\$ 102,189	\$ 163,413
Contribution Alternatives		
Full contribution	\$ 102,189	\$ 163,413
20 year amortization payment from January 1, 1999	\$ 38,028	\$ 47,266

*Cost is based on the assumption that 75% of members will elect a lump sum or installment payment instead of an annuity. To the extent that actual experience in the future deviates from this assumption, the costs in future years could vary as well, at times significantly.



EXHIBIT 2 – RISK MEASURES

This exhibit compares the Projected Benefit Cost (liability) assuming 25% of retirees elect an annuity (the funding assumption) with alternative assumptions of 50% and 75%. If the State has assets exceeding the liability of one or both of the alternative assumption scenarios, it indicates it is in a better position to withstand possible adverse experience.

	<u>Percentage of Members Taking an Annuity</u>		
	<u>25% Annuitize</u>	<u>50% Annuitize</u>	<u>75% Annuitize</u>
Projected Benefit Cost	\$615,448	\$1,230,896	\$1,846,344
Actuarial Value of Assets	<u>513,259</u>	<u>513,259</u>	<u>513,259</u>
Unfunded Liability/(Surplus)	\$102,189	\$ 717,637	\$1,333,085



EXHIBIT 3 – SUMMARY OF MEMBER DATA

Summary of Member Data

Age Range	Data	Gender		Total
		Male	Female	
Less Than 40	Count of Members	0	0	0
	Average of Total Balance	\$ 0	\$ 0	\$ 0
	Sum of Total Balance	\$ 0	\$ 0	\$ 0
40-44	Count of Members	0	1	1
	Average of Total Balance	\$ 0	\$ 44,393	\$ 44,393
	Sum of Total Balance	\$ 0	\$ 44,393	\$ 44,393
45-49	Count of Members	0	0	0
	Average of Total Balance	\$ 0	\$ 0	\$ 0
	Sum of Total Balance	\$ 0	\$ 0	\$ 0
50-54	Count of Members	0	2	2
	Average of Total Balance	\$ 0	\$ 3,487	\$ 3,487
	Sum of Total Balance	\$ 0	\$ 6,973	\$ 6,973
55-59	Count of Members	26	36	62
	Average of Total Balance	\$ 2,067	\$ 3,274	\$ 2,768
	Sum of Total Balance	\$ 53,741	\$ 117,869	\$ 171,610
60-64	Count of Members	194	182	376
	Average of Total Balance	\$ 15,042	\$ 11,112	\$ 13,140
	Sum of Total Balance	\$ 2,918,227	\$ 2,022,323	\$ 4,940,550
65-69	Count of Members	263	160	423
	Average of Total Balance	\$ 71,238	\$ 35,593	\$ 57,756
	Sum of Total Balance	\$ 18,735,649	\$ 5,694,932	\$ 24,430,581
70-74	Count of Members	61	31	92
	Average of Total Balance	\$ 118,423	\$ 38,515	\$ 91,498
	Sum of Total Balance	\$ 7,223,803	\$ 1,193,979	\$ 8,417,782
75 and Above	Count of Members	27	23	50
	Average of Total Balance	\$ 124,087	\$ 45,011	\$ 87,712
	Sum of Total Balance	\$ 3,350,362	\$ 1,035,244	\$ 4,385,606
Total Members		571	435	1,006
Total Average Balance		\$ 56,536	\$ 23,255	\$ 42,145
Grand Total Balance		\$ 32,281,782	\$ 10,115,713	\$ 42,397,495



APPENDIX A – SUMMARY OF BENEFIT PROVISIONS

Member	Any person employed by a State agency participating in either the Defined Contribution or Cash Balance Benefit under the State Employees Retirement System who has an accumulated account balance based on contributions which were made prior to January 1, 1984.
Contributions	Each participating State agency shall make contributions to the fund on an actuarial basis as approved by the Retirement Board.
Eligibility for Benefits	Any member who retires or terminates service and elects to convert to an annuity using their accumulated account balance, with interest, commencing on or after age 55, is eligible to receive a benefit from the fund.
Benefit Amount	<p>The fund shall provide the Actuarially Equivalent amount required to purchase the additional monthly annuity, if any, which is equal to:</p> <ul style="list-style-type: none">a. the income provided by the Member's accumulated contributions made prior to January 1, 1984 with interest, based on male annuity conversion factors in effect on the annuity starting date,<li style="text-align: center;">lessb. the income provided by the Member's accumulated contributions made prior to January 1, 1984 with interest, which are based on 50% male / 50% female annuity conversion factors in effect on the annuity starting date.
Cash Balance Conversion	Any member who elected to transfer his or her account balance to the Nebraska State Cash Balance Plan as of January 1, 2003 or as of January 2, 2013 will have his or her Benefit Amount determined using the annuity conversion interest rate applicable to the State Employees Retirement System (Cash Balance Benefit), which for 2016 is 7.75%. Any other member will have his or her Benefit Amount determined using the annuity conversion interest rate applicable to the State Employees Retirement System (Defined Contribution Benefit), which for 2016 is 3.57%.

Changes in Benefit Provisions since the Prior Year

There were no changes in the benefit provisions since the last valuation.



APPENDIX B – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Economic Assumptions

- | | |
|--|--|
| 1. Investment Return | 7.75% per annum, compounded annually, net of expenses. |
| 2. Consumer Price Inflation | 3.25% per annum, compounded annually. |
| 3. Interest on accumulated contribution balances (contributions made before January 1, 1984) | 7.75% per annum, compounded annually. |
| 4. COLA (optional purchase applicable to annuities) | 2.50% per annum, compounded annually. |
| 5. Annuity Conversion Interest Rates | 7.75% for annuities from the Cash Balance Plan
3.57% for annuities from the Defined Contribution Plan |

Demographic Assumptions

- | | |
|--------------------|--|
| 1. Mortality | |
| a. Pre-retirement | None. |
| b. Post-retirement | 1994 Group Annuity Mortality (based on Actuarial Equivalence definition in Statute). |



APPENDIX B – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

2. Retirement

Rates vary by age as follows:

Age	State Annual Rates
55	5%
56	5
57	5
58	5
59	5
60	5
61	8
62	15
63	10
64	15
65	25
66	25
67	25
68	25
69-79	20
80	100

3. Withdrawal

None.

4. Disability

None.

Other Assumptions

1. Payment election

75% of retiring members were assumed to elect a lump sum distribution or installment payment, and 25% of retiring members were assumed to elect an annuity form of distribution.

2. Form of Annuity Payment

Of members electing an annuity, 80% of those members were assumed to elect a 5-year certain and life annuity without COLA, and 20% of those members were assumed to elect a 5-year certain and life annuity with a 2.5% annual COLA.



APPENDIX B – SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Methods

1. Funding Method

The present value of future benefits or Projected Benefit Cost, less the Actuarial Value of Assets, equals the Unfunded Liability or Surplus. The minimum recommended contribution is equal to an annual amount necessary to amortize the Unfunded Liability over twenty years from January 1, 1999.

2. Asset Valuation Method

Fair market value.

Changes in Assumptions Since the Prior Valuation

The assumed interest rate used for Defined Contribution annuity calculations is the annuitization rate in effect as of the valuation date. The rate has changed from 3.64% to 3.57%.