



**Cavanaugh Macdonald**  
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***NEBRASKA PUBLIC EMPLOYEES  
RETIREMENT SYSTEM***

**SCHOOL RETIREMENT SYSTEM**

**ACTUARIAL VALUATION REPORT  
as of July 1, 2018**

**Sixty-Sixth Actuarial Report for  
System Plan Year Beginning July 1, 2018  
and  
State Fiscal Year Ending June 30, 2020**







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# Cavanaugh Macdonald

CONSULTING, LLC

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November 9, 2018

Public Employees Retirement Board  
Nebraska Public Employees Retirement System  
Post Office Box 94816  
Lincoln, NE 68509

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the School Retirement System as of July 1, 2018 for the purpose of determining the actuarial required contribution rate for the plan year ending June 30, 2019. It is our understanding that any required additional State contribution for this plan year will be made on July 1, 2019 (State fiscal year end 2020). The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on July 1, 2018. The basic benefit provisions are the same as the prior valuation, however, this is the first valuation that includes members affected by LB 415, as passed by the 2017 Nebraska Legislature. For members hired on or after July 1, 2017, the Public Employees Retirement Board (PERB) has the authority to set the actuarial assumptions used to determine the benefit amounts payable under optional forms of payment. In addition, LB 415 changed the minimum age required to qualify for retirement under the Rule of 85 from age 55 to 60 for members hired on or after July 1, 2018. There were no changes to the actuarial assumptions and methods from the prior valuation.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data and financial information. We found this information to be reasonably consistent and comparable with the information received in prior years. 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.

We further certify that all costs, liabilities, rates of interest and other factors for the School Retirement System 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 C.



Public Employees Retirement Board  
November 9, 2018  
Page 2

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 actuarial computations presented in this report are for purposes of determining the funding amounts 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 will be presented in completely separate reports.

The consultants who worked on this assignment are pension actuaries. Cavanaugh Macdonald'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.

Sincerely,

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

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

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

Brent A. Banister Ph.D., FSA, EA, MAAA, FCA  
Chief Actuary



## SECTION 1 – BOARD SUMMARY

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This report presents the results of the July 1, 2018 actuarial valuation of the School Retirement System. The primary purposes of performing this actuarial valuation are to:

- Determine whether the employer, member and State contribution rates defined in the Nebraska state statutes are sufficient to fund the total Formula Annuity for the Nebraska School System, and whether additional State contributions are required along with the calculation of the State contribution for the Omaha Service Annuity for the plan year ending June 30, 2019;
- Disclose asset and liability measurements as well as the current funded status of the System as of the valuation date;
- Compare the actual and expected experience of the System during the plan year ended June 30, 2018; and
- Analyze and report on trends in System contributions, assets and liabilities over the past several years.

The Nebraska statutes require the State to make an additional contribution if the regular, payroll-related contributions by members, employers, and the State are insufficient to meet the actuarial required contribution for the plan year. **Based on the results of the July 1, 2018 actuarial valuation, no additional State contribution is necessary for this plan year.**

The 2017 Legislature passed LB 415, which affects members hired on or after July 1, 2017 (with additional changes for those hired on or after July 1, 2018). For members hired on or after July 1, 2017, the Public Employees Retirement Board (PERB) has the authority to set the actuarial assumptions used to determine the benefit amounts payable under optional forms of payment. Because the nature of the change in benefits is small and very few members in the valuation are affected, this change had a minimal impact on the current valuation. In addition, LB 415 changed the minimum age required to qualify for retirement under the Rule of 85 from age 55 to age 60 for members hired on or after July 1, 2018. Because this change only impacts members hired after the valuation date, there is no impact on the current valuation results. Over time, the changes in LB 415 will result in lower liabilities and costs than would have occurred had the legislation not been passed.

The actuarial valuation results provide a “snapshot” view of the System’s financial condition on July 1, 2018. The System’s unfunded actuarial accrued liability (UAAL) decreased from \$1.656 billion last year to \$1.456 billion this year and the funded ratio increased from 87% to 89%. In addition, the actuarial required contribution rate decreased from 19.31% of pay last year to 18.73% of pay in this year’s valuation, a decrease of 0.58%. The primary factors in the favorable changes were the favorable actuarial experience on both the System’s assets and liabilities.

The valuation results reflect net favorable experience for the past plan year as demonstrated by an UAAL that was lower than expected. The UAAL on July 1, 2018 is \$1.456 billion compared to an expected UAAL of \$1.603 billion. The favorable experience was due to the combined impact of an experience gain on both the System liabilities and the actuarial value of assets. The rate of return on the market value of assets for FY 2018 was 8.6%, as reported by the Nebraska Investment Council. However, the asset smoothing method only recognizes 20% of the excess/shortfall between the assumed rate of return and the actual return. The partial recognition of FY 2018 experience, coupled with the scheduled recognition of the deferred experience from the prior four years, resulted in a rate of return on the actuarial (smoothed) value of assets of 8.4%. Because this return is higher than the assumed rate (7.5%), it generated an experience gain of \$94



## SECTION 1 – BOARD SUMMARY

million on the actuarial value of assets. There was also an actuarial gain of \$53 million on System liabilities, largely as the result of smaller salary increases than expected for active members.

Legislation passed in the 2013 session made changes to the benefit structure for members hired on or after July 1, 2013 (Tier Two), including changing final average salary to the highest 60 months rather than the highest 36 months of service and changing the maximum cost of living adjustment from 2.5% to 1.0%. Additional legislation was passed in the 2017 session which granted the PERB the authority to set the actuarial assumptions used to determine the benefit amounts payable under optional forms of payment for members hired on or after July 1, 2017 (Tier Three). There were 14,103 members in Tiers Two and Three as of July 1, 2018, about 33% of the active membership, compared to 28% in the prior valuation. The small impact of the changes for these members is even more evident when considering that Tiers Two and Three represent only 23% of total covered payroll. As part of LB 415, passed by the 2017 Legislature, a new tier will be effective for members hired on or after July 1, 2018 (Tier Four). It will be a number of years before the benefit changes in the newer tiers have a meaningful impact on the valuation results.

A summary of the key results from the July 1, 2018 actuarial valuation, excluding the Omaha State Service annuity, is shown in the following table. As the table indicates, the statutory contribution rates are sufficient to meet the actuarial required contribution rate and no additional State appropriation is required for the current year. Further detail on the valuation results can be found in the following sections of this Board Summary.

	July 1, 2018 Valuation Results	July 1, 2017 Valuation Results
Unfunded Actuarial Accrued Liability (\$M)	\$1,456	\$1,656
Funded Ratio (Actuarial Assets)	88.80%	86.72%
Normal Cost Rate	13.28%	13.32%
UAAL Amortization Rate	5.45%	5.99%
Total Actuarial Required Contribution	18.73%	19.31%
Member Contribution Rate	(9.78%)	(9.78%)
Employer Contribution Rate	(9.88%)	(9.88%)
State Contribution Rate	(2.00%)	(2.00%)
Total Contribution Rate	(21.66%)	(21.66%)
Shortfall/(Margin)	(2.93%)	(2.35%)
Additional Required State Contribution	\$0	\$0

### ***EXPERIENCE FOR THE LAST PLAN YEAR***

Numerous factors contributed to the change in the System’s assets, liabilities, and actuarial required contribution rate between July 1, 2017 and July 1, 2018. The components are examined in the following discussion.



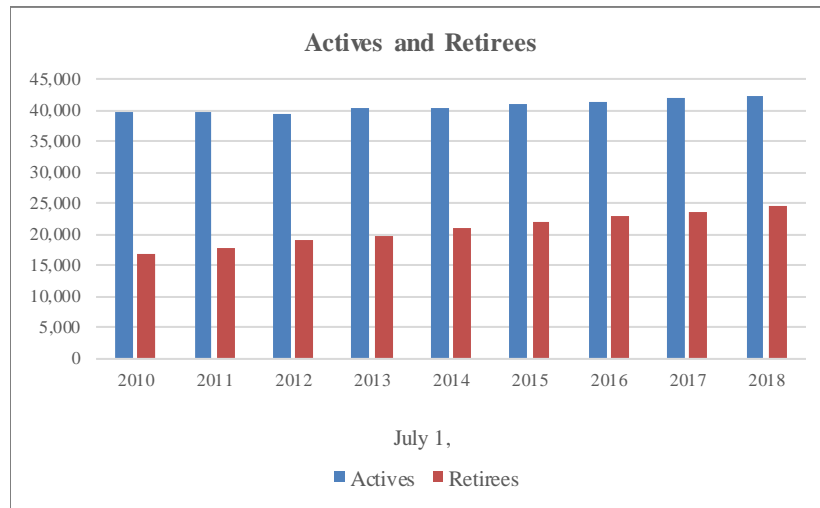


## SECTION 1 – BOARD SUMMARY

### MEMBERSHIP

There are 42,349 active members in the 2018 valuation compared to 41,943 in the 2017 valuation, a 1.0% increase. When the number of active members increases, it has a positive influence on the System's funding as a higher amount of contributions is received. In addition, the UAAL contribution rate is favorably impacted by a larger group of active members and the resulting higher payroll. The UAAL is amortized assuming future covered payroll will increase 3.50% per year. If total payroll grows more than 3.50%, the UAAL payment is divided by payroll that is larger than expected, which results in a lower UAAL amortization rate. Conversely, a decrease in active members or payroll increases less than 3.50% will tend to result in a higher UAAL amortization rate.

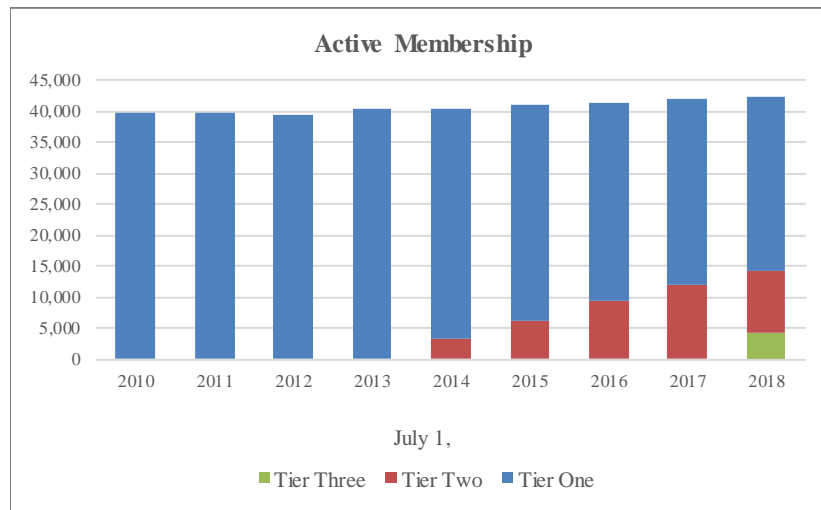
The following graph shows the number of active and retired members in the last nine valuations. While the number of active members has fluctuated at times over this period, the number of members receiving a benefit has steadily increased and is currently 24,486.



The graph on the following page shows the portion of the total active members covered under the Tier One, Tier Two and Tier Three benefit provisions. In the 2018 valuation, there are 28,246 Tier One active members, 9,961 Tier Two active members and 4,142 Tier Three active members. About 33% of the total active membership are affected by the benefit changes passed by the 2013 legislative session.



**SECTION 1 – BOARD SUMMARY**



**ASSETS**

As of June 30, 2018, the System had net assets of \$11.636 billion, when measured on a market value basis, an increase of \$0.759 billion from the prior year value.

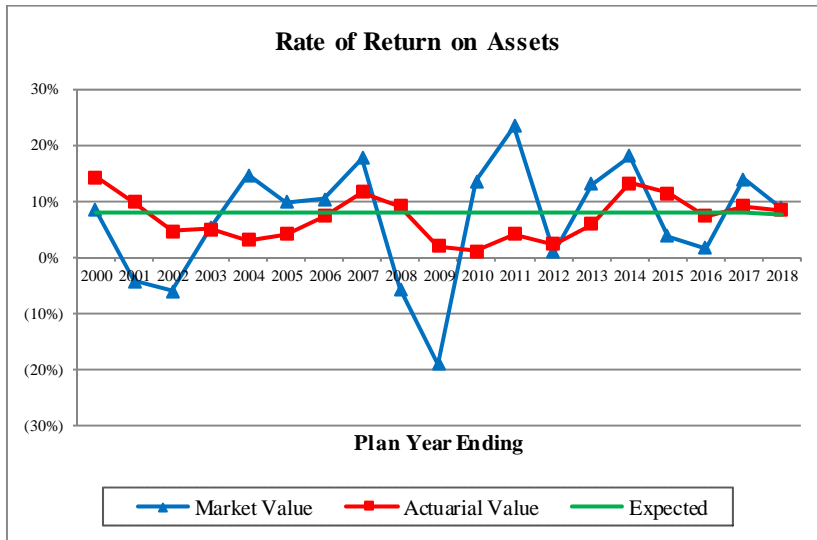
The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability and the actuarial required contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is used to determine the value of assets used in the valuation. The resulting amount is called the actuarial value of assets. In this year’s valuation, the actuarial value of assets is \$11.546 billion, an increase of \$0.735 billion from the prior year. The components of change in the asset values are shown in the following table:

	Market Value (\$M)	Actuarial Value (\$M)
<b>Net Assets, June 30, 2017</b>	\$ 10,876.86	\$ 10,810.54
- Employer and Member Contributions	+ 422.72	+ 422.72
- Benefit Payments	- 587.98	- 587.98
- Net Investment Income	+ 924.70	+ 900.38
<b>Net Assets, June 30, 2018</b>	\$ 11,636.30	\$ 11,545.66
Rate of Return, Net of Expenses	8.6%	8.4%

The rate of return on the actuarial value of assets was 8.4%, which was higher than the 7.5% investment return assumption resulting in an experience gain of \$94 million. The investment return on the market value of assets for FY 2018 of 8.6% resulted in an increase to the deferred investment experience from a net deferred investment gain of \$66 million in last year’s valuation to a net deferred investment gain of \$91 million in the current valuation. Please see Section 3 of this report for more detailed information on the market and actuarial value of assets.



**SECTION 1 – BOARD SUMMARY**



*The rate of return of the actuarial value of assets has been less volatile than the market value return, illustrating the benefit of 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 normal costs. The difference between this liability and the actuarial value of assets as of the valuation date is called the unfunded actuarial accrued liability (UAAL). The dollar amount of unfunded actuarial accrued liability is reduced if the contributions to the System exceed the normal cost for the year plus interest on the prior year’s UAAL.

The unfunded actuarial accrued liability is shown as of July 1, 2018 in the following table:

	Actuarial Value of Assets	Market Value of Assets
Actuarial Accrued Liability	\$13,001,288,461	\$13,001,288,461
Value of Assets	<u>11,545,658,962</u>	<u>11,636,298,903</u>
Unfunded Actuarial Accrued Liability	\$1,455,629,499	\$1,364,989,558
Funded Ratio	88.80%	89.50%

See Section 4 of the report for the detailed development of the unfunded actuarial accrued liability.

The net change in the UAAL from July 1, 2017 to July 1, 2018 was a decrease of \$200 million. As the following table illustrates, the asset experience was the key reason for the decrease in the UAAL. The components of this net change are shown in the following table:

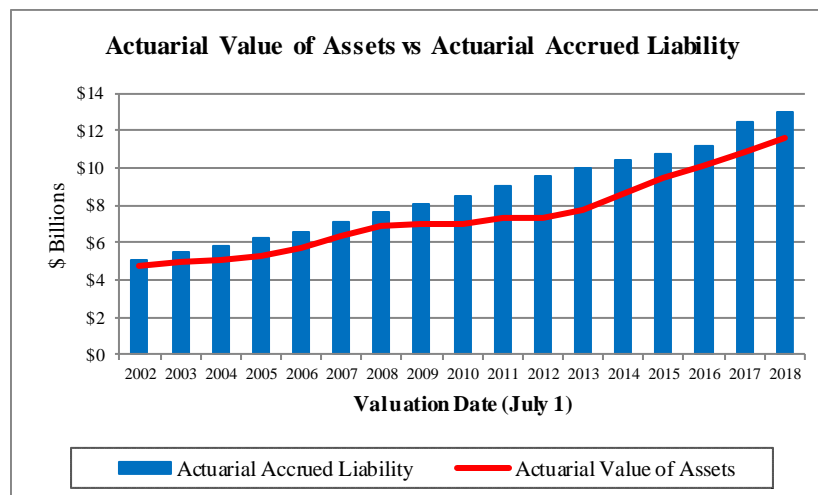


**SECTION 1 – BOARD SUMMARY**

	(\$ Millions)
<b>Unfunded Actuarial Accrued Liability, July 1, 2017</b>	\$1,655.6
- Expected increase from amortization method	1.7
- Contributions above the Actuarial Required Contribution	(47.9)
- Investment experience	(93.8)
- Liability experience	(53.1)
- Other experience	(6.9)
<b>Unfunded Actuarial Accrued Liability, July 1, 2018</b>	\$1,455.6

As shown above, various components impacted the UAAL. Actuarial gains (losses), which result from actual experience that is more (less) favorable than anticipated based on the actuarial assumptions, are reflected in the UAAL and are measured as the difference between the expected UAAL and the actual UAAL, taking into account any changes due to actuarial assumptions and methods, or benefit provision changes. Overall, the System experienced a net actuarial gain of \$147 million. The actuarial gain may be explained by considering the separate experience of assets and liabilities. As noted earlier, there was an experience gain of \$94 million on the actuarial value of assets. Favorable experience on System liabilities resulted in an actuarial gain of \$53 million. The liability gain was the net result of various components of actuarial gains and losses, the largest of which was a gain from salary increases that were lower than expected. A breakdown of the components of experience gains and losses can be found in Table 8 of this report.

As the following graph of historical actuarial assets and accrued liabilities shows, the System’s liabilities grew at a faster pace than the System’s assets for the five-year period beginning after the FY 2009 market downturn. As a result, the funded ratio declined over that period. Recently, the System’s assets have been growing at a faster rate than the System’s liabilities and the funded ratio has been improving. However, changes to actuarial assumptions in the July 1, 2017 valuation significantly increased the System’s liabilities and lowered the funded ratio.





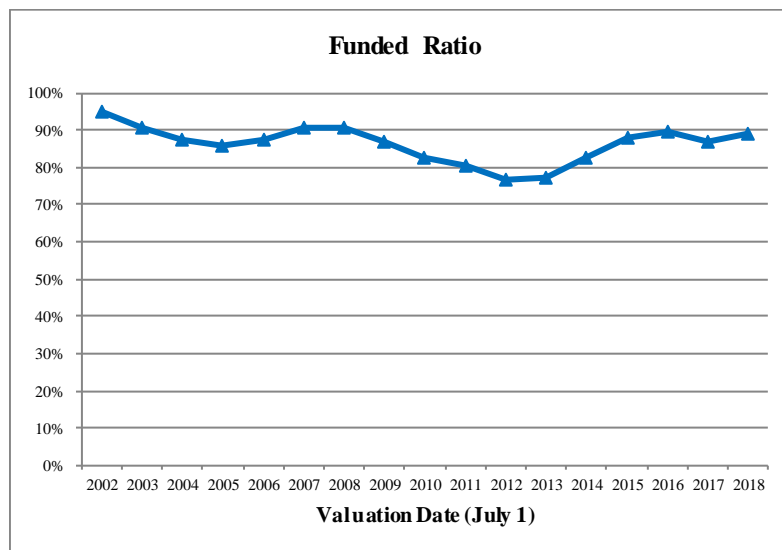
## SECTION 1 – BOARD SUMMARY

An evaluation of the UAAL on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both very large numbers) is reflected. Another way to evaluate the UAAL and the progress made in its funding is to track the funded ratio, the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status information, using the actuarial value of assets, is shown below (in millions).

	7/1/2014	7/1/2015	7/1/2016	7/1/2017	7/1/2018
Funded Ratio	82.7%	88.0%	89.6%	86.7%	88.8%
UAAL	\$1,804.1	\$1,292.7	\$1,161.4	\$1,655.6	\$1,455.6

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. In addition, if the funded ratios were shown using the market value of assets, the results would differ.

The funded ratio over a longer period is shown in the following graph:



### ACTUARIAL REQUIRED CONTRIBUTION RATE

The System is funded by statutory contribution rates for members (9.78% of pay), employers (101% of the member rate) and the State (2.00% of pay). State statutes require the State to make an additional contribution if the regular, payroll-related contributions by employees, employers and the State are insufficient to meet the actuarial required contribution for the plan year. The additional State contributions for the plan year are made on the July 1 following the plan year end. Based on the results of the July 1, 2018 actuarial valuation, no additional State contribution is necessary for the current plan year.

Under the Entry Age Normal cost method, the actuarial contribution rate consists of two components:

- 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.



**SECTION 1 – BOARD SUMMARY**

- 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.

The UAAL contribution rate is determined by calculating the amortization payments as a level-percent of payroll. This methodology results in payments that are lower in the initial years of the amortization period, but increase each year in the future with the assumed payroll growth assumption of 3.50%. Because the UAAL contribution rate is determined as a level-percent of payroll, the dollar amount of the UAAL contribution is scheduled to increase 3.50% each year in the future even if all actuarial assumptions are met. Therefore, if the increase in covered payroll is less than 3.50% per year, the UAAL contribution rate will increase.

See Section 5 of the report for the detailed development of the contribution rates, which are summarized in the following table:

Contribution Rates	July 1, 2018	July 1, 2017
1. Normal Cost Rate	13.28%	13.32%
2. UAAL Contribution Rate	5.45%	5.99%
3. Total Actuarial Required Contribution Rate	18.73%	19.31%
4. Member Contribution Rate	(9.78%)	(9.78%)
5. Employer Contribution Rate	(9.88%)	(9.88%)
6. State Contribution Rate	(2.00%)	(2.00%)
7. Total Contribution Rate	(21.66%)	(21.66%)
8. Shortfall/(Margin) [3 + 7]	(2.93%)	(2.35%)
9. Estimated Payroll	\$ 2,027,180,460	\$ 1,966,968,901
10. Additional State Required Contribution [8 * 9, but not less than \$0]	\$ 0	\$ 0

Note: Contribution rates exclude State funding of Omaha Service Annuity.

The actuarial required contribution rate for the current plan year is 18.73%. The member contribution rate of 9.78%, School District contribution rate of 9.88% (101% of 9.78%), and State contribution rate of 2.00% of pay result in total statutory contributions of 21.66% of pay. As a result, there is a contribution margin of 2.93%, which indicates that the System will reach fully funded status sooner than targeted by the amortization schedule, if all actuarial assumptions are met in future years. The actuarial required contribution, determined this year based on the snapshot of the System taken on the valuation date of July 1, 2018, will change each year as the deferred investment experience is recognized and other experience (both investment and demographic) impacts the System.



**SECTION 1 – BOARD SUMMARY**

A history of actuarial required contribution rates and any resulting additional required State contributions, whether or not actually contributed, is shown in the following table:

<b>History of Required Contribution Rates and Additional State Funding</b>		
<b>Fiscal Year</b>	<b>Required Contribution Rate</b>	<b>Additional State Contributions*</b>
2019/2020	18.73%	\$ 0
2018/2019	19.31%	0
2017/2018	16.59%	0
2016/2017	17.03%	0
2015/2016	18.39%	0
2014/2015	19.94%	0
2013/2014	23.27%	48,092,426
2012/2013	20.45%	23,465,817
2011/2012	19.21%	18,871,705
2010/2011	17.24%	0
2009/2010	15.46%	0
2008/2009	15.64%	0
2007/2008	16.58%	0
2006/2007	17.95%	12,847,537
2005/2006	16.97%	15,415,949
2004/2005	15.26%	0
2003/2004	13.45%	0

\* Excludes funding of Omaha Service Annuity.

Note: Information before Fiscal Year 2014/2015 was produced by prior actuary.

While there is a contribution margin for the current plan year, this should not be viewed an unnecessary or excess contribution. In order for the financing of the System on a fixed contribution rate basis to succeed, contributions above the actuarial required contribution rate must be made to offset years where the fixed contribution rate will be below the actuarial required contribution rate.

**SECTION 1 – BOARD SUMMARY****SUMMARY OF PRINCIPAL RESULTS**

	7/1/2018 Valuation	7/1/2017 Valuation	% Change
<b>1. PARTICIPANT DATA</b>			
Number of:			
Active Members			
- Tier One	28,246	30,125	(6.24%)
- Tier Two	9,961	11,818	(15.71%)
- Tier Three	4,142	0	NA
- Total	42,349	41,943	0.97%
Retired Members and Beneficiaries	24,169	23,325	3.62%
Disabled Members	317	329	(3.65%)
Inactive Members	23,109	22,301	3.62%
Total Members	89,944	87,898	2.33%
Projected Annual Salaries of Active Members	\$ 2,027,180,460	\$ 1,966,968,901	3.06%
Annual Retirement Payments for Retired Members, Disabled Members and Beneficiaries	\$ 588,189,542	\$ 549,070,389	7.12%
<b>2. ASSETS AND LIABILITIES</b>			
a. Market Value of Assets	\$ 11,636,298,903	\$ 10,876,861,507	6.98%
b. Actuarial Value of Assets	11,545,658,962	10,810,539,558	6.80%
c. Total Actuarial Accrued Liability	13,001,288,461	12,466,139,649	4.29%
d. Unfunded Actuarial Accrued Liability [c - b]	\$ 1,455,629,499	\$ 1,655,600,091	(12.08%)
e. Funded Ratio (Actuarial Value of Assets) [b / c]	88.80%	86.72%	2.40%
f. Funded Ratio (Market Value of Assets) [a / c]	89.50%	87.25%	2.58%
<b>3. CONTRIBUTION RATES AS A PERCENT OF PAYROLL (excluding Omaha Service Annuity)</b>			
Normal Cost	13.28%	13.32%	(0.30%)
Amortization of Unfunded Actuarial Accrued Liability	5.45%	5.99%	(9.02%)
Actuarial Required Contribution Rate	18.73%	19.31%	(3.00%)
Member Contribution Rate	(9.78%)	(9.78%)	0.00%
Employer Required Contribution Rate*	(9.88%)	(9.88%)	0.00%
State Contribution Rate	(2.00%)	(2.00%)	0.00%
Shortfall/(Margin)	(2.93%)	(2.35%)	24.68%
Additional Required State Contribution Amount	\$ 0	\$ 0	0.00%

\* 101% of employee contribution rate





## **SECTION 2 – SCOPE OF THE REPORT**

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This report presents the actuarial valuation results of the School Retirement System as of July 1, 2018. This valuation was prepared at the request of the Public Employees Retirement Board of the Nebraska Public Employees Retirement System.

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 System. Sections 4 and 5 describe how the obligations of the System are to be met under the actuarial cost method in use. Section 6 includes some historical funding information that was required by the Governmental Accounting Standards Board (GASB) in the past.

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 July 1, 2018.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



## SECTION 3 – ASSETS

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In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2018. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, 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 System's assets and liabilities.

### **Market Value of Assets**

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance from time to time. Table 1 is a comparison, at market values, of System assets as of July 1, 2018 and July 1, 2017, in total and by investment category. Table 2 summarizes the change in the market value of assets from July 1, 2017 to July 1, 2018.

### **Actuarial Value of Assets**

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book values of assets, representing the cost of investments, may be the best measure of the System's ongoing ability to meet its obligations.

To arrive at a suitable value of assets 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 and assumed investment return on the market value of assets is recognized evenly over a five-year period.

Table 3 shows the development of the actuarial value of assets (AVA) as of the valuation date.



**TABLE 1**  
**SCHOOL RETIREMENT SYSTEM**  
**MARKET VALUE OF ASSETS**  
**by Investment Category**

	<u>June 30, 2018</u>	<u>June 30, 2017</u>
1. Cash and Equivalents	\$ 8,320,931	\$ 7,057,700
2. Investments	11,918,124,448	11,078,355,469
3. Capital Assets	3,750	5,432
4. Receivables and Prepaids	1,126,032,799	872,562,724
5. Accounts Payable	<u>(1,416,183,025)</u>	<u>(1,081,119,818)</u>
6. Net Assets Available for Pension Benefits	\$ 11,636,298,903	\$ 10,876,861,507

**SECTION 3 – ASSETS**

**TABLE 2**  
**SCHOOL RETIREMENT SYSTEM**  
**CHANGE IN MARKET VALUE OF ASSETS**

	<u>Nebraska School</u> <u>System</u>	<u>Omaha Service</u> <u>Annuity</u>	<u>Total</u>
1. Market Value of Assets, July 1, 2017	\$ 10,865,728,564	\$ 11,132,943	\$ 10,876,861,507
2. Contributions			
(a) Member (includes purchased service)	\$ 191,483,632	\$ 0	\$ 191,483,632
(b) Employer	190,657,058	0	190,657,058
(c) State appropriations	39,339,378	1,243,169	40,582,547
(d) Total	<u>\$ 421,480,068</u>	<u>\$ 1,243,169</u>	<u>\$ 422,723,237</u>
3. Expenditures			
(a) Benefit payments	\$ 586,470,979	\$ 1,513,422	\$ 587,984,401
(b) Administrative expenses	3,300,321	0	3,300,321
(c) Total	<u>\$ 589,771,300</u>	<u>\$ 1,513,422</u>	<u>\$ 591,284,722</u>
4. Investment Return, Net of Expenses			
(a) Investment income	\$ 164,320,792	\$ 163,817	\$ 164,484,609
(b) Securities lending income	4,525,405	4,073	4,529,478
(c) Securities lending expense	(3,105,603)	(2,795)	(3,108,398)
(d) Net appreciation/(depreciation) in fair value of investments	761,315,433	742,345	762,057,778
(e) Other	35,414	0	35,414
(f) Total investment return	<u>\$ 927,091,441</u>	<u>\$ 907,440</u>	<u>\$ 927,998,881</u>
5. Market Value of Assets, June 30, 2018 [1 + 2(d) - 3(c) + 4(f)]	\$ 11,624,528,773	\$ 11,770,130	\$ 11,636,298,903
6. Rate of Return, Net of Expenses*			8.6%

\* As reported by the Nebraska Investment Council



**TABLE 3**  
**SCHOOL RETIREMENT SYSTEM**  
**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

	Year End			
	6/30/2015	6/30/2016	6/30/2017	6/30/2018
1. Actuarial Value of Assets, Beginning of Year	\$ 8,622,023,999	\$ 9,485,594,650	\$ 10,045,925,478	\$ 10,810,539,558
2. Unrecognized Return Beginning of Year	\$ 828,957,724	\$ 200,221,403	\$ (347,340,668)	\$ 66,321,949
3. Contributions During Year				
(a) Member	\$ 174,797,341	\$ 178,613,265	\$ 186,176,743	\$ 191,483,632
(b) Employer	173,013,848	178,608,695	184,903,366	190,657,058
(c) State appropriations	36,491,449	37,916,718	39,031,798	40,582,547
(d) Total	<u>\$ 384,302,638</u>	<u>\$ 395,138,678</u>	<u>\$ 410,111,907</u>	<u>\$ 422,723,237</u>
4. Benefit Payments	\$ 502,190,816	\$ 528,499,067	\$ 554,369,720	\$ 587,984,401
5. Expected Investment Income on (1), (2), (3) and (4)*	\$ 753,124,603	\$ 771,391,900	\$ 772,071,965	\$ 811,513,641
6. Actual Return on Market Value, Net of All Expenses	\$ 352,722,508	\$ 146,129,146	\$ 1,322,534,510	\$ 924,698,560
7. Return to be Spread, End of Year	\$ (400,402,095)	\$ (625,262,754)	\$ 550,462,545	\$ 113,184,919

\* Based on the investment return assumption applicable at the beginning of the year. The assumption was 8.0% through year end 6/30/2017 and 7.5% thereafter.



**TABLE 3  
(continued)**

**SCHOOL RETIREMENT SYSTEM**

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

8. Return to be Spread

<u>Plan Year</u> <u>Ending</u>	<u>Return to be</u> <u>Spread</u>	<u>Unrecognized</u> <u>Percent</u>	<u>Unrecognized</u> <u>Return</u>
2018	\$113,184,919	80%	\$90,547,935
2017	550,462,545	60%	330,277,527
2016	(625,262,754)	40%	(250,105,102)
2015	(400,402,095)	20%	(80,080,419)
			<hr/> \$90,639,941

9. Total Market Value of Assets as of July 1, 2018 \$11,636,298,903

10. Total Actuarial Value of Assets as of July 1, 2018 \$11,545,658,962  
[9 - 8]

11. Asset Ratios

(a) Actuarial Value to Market Value [10 / 9]	99.22%
(b) Market Value to Actuarial Value [9 / 10]	100.79%



## **SECTION 4 – SYSTEM LIABILITIES**

---

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the School Retirement System as of the valuation date, July 1, 2018. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities.

Table 4 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries.

The liabilities summarized in Table 4 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes the measurement of both benefits already earned and future benefits to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and for the lives of the surviving beneficiaries.

All liabilities reflect the benefit provisions in place as of July 1, 2018.

### **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 5 contains the calculation of actuarial accrued liability for the System. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.



**SECTION 4 – SYSTEM LIABILITIES**

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**TABLE 4**  
**SCHOOL RETIREMENT SYSTEM**  
**PRESENT VALUE OF FUTURE BENEFITS (PVFB)**  
**AS OF JULY 1, 2018**

	<u>Nebraska School System</u>	<u>Omaha Service Annuity</u>	<u>Total</u>
1. Active Employees			
(a) Retirement	\$ 7,486,041,915	\$ 19,320,996	\$ 7,505,362,911
(b) Withdrawal	522,756,100	1,817,080	524,573,180
(c) Death	77,280,847	136,705	77,417,552
(d) Disability	52,732,693	216,936	52,949,629
(e) Total	<u>\$ 8,138,811,555</u>	<u>\$ 21,491,717</u>	<u>\$ 8,160,303,272</u>
2. Inactive Vested Members	350,182,260	1,427,024	351,609,284
3. Inactive Nonvested Members	45,881,935	0	45,881,935
4. Disabled Members	48,873,985	0	48,873,985
5. Retirees	6,578,477,214	0	6,578,477,214
6. Beneficiaries	<u>248,755,629</u>	<u>0</u>	<u>248,755,629</u>
7. Total Present Value of Future Benefits [1(e) + 2 + 3 + 4 + 5 + 6]	<u>\$ 15,410,982,578</u>	<u>\$ 22,918,741</u>	<u>\$ 15,433,901,319</u>





**TABLE 5**  
**SCHOOL RETIREMENT SYSTEM**  
**ACTUARIAL ACCRUED LIABILITY**  
**AS OF JULY 1, 2018**

	<u>Nebraska School</u> <u>System</u>	<u>Omaha Service</u> <u>Annuity</u>	<u>Total</u>
1. Present Value of Future Benefits for Active Members	\$ 8,138,811,555	\$ 21,491,717	\$ 8,160,303,272
2. Present Value of Future Normal Costs for Active Members			
(a) Retirement benefit	\$ 1,851,480,010	\$ 4,561,274	\$ 1,856,041,284
(b) Termination benefit	531,496,414	1,413,576	532,909,990
(c) Pre-Retirement death benefit	25,294,336	39,781	25,334,117
(d) Disability benefit	18,244,333	83,134	18,327,467
(e) Total	<u>\$ 2,426,515,093</u>	<u>\$ 6,097,765</u>	<u>\$ 2,432,612,858</u>
3. Actuarial Accrued Liability for Active Members [1 - 2(e)]	\$ 5,712,296,462	\$ 15,393,952	\$ 5,727,690,414
4. Actuarial Accrued Liability for Inactive Members	7,272,171,023	1,427,024	7,273,598,047
5. Total Actuarial Accrued Liability [3 + 4]	12,984,467,485	16,820,976	13,001,288,461
6. Actuarial Value of Assets	11,533,980,514	11,678,448	11,545,658,962
7. Unfunded Actuarial Accrued Liability [5- 6]	\$ 1,450,486,971	\$ 5,142,528	\$ 1,455,629,499



**SECTION 4 – SYSTEM LIABILITIES**

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**TABLE 6**  
**SCHOOL RETIREMENT SYSTEM**  
**ACTUARIAL BALANCE SHEET**  
**AS OF JULY 1, 2018**

<u>ASSETS</u>	
Actuarial Value of Assets	\$ 11,545,658,962
Unfunded Actuarial Accrued Liability	1,455,629,499
Present Value of Future Normal Costs	<u>2,432,612,858</u>
Total Assets	\$ 15,433,901,319

<u>LIABILITIES</u>	
Present Value of Future Benefits	
Active members	
Retirement	\$ 7,486,041,915
Withdrawal	522,756,100
Death	77,280,847
Disability	52,732,693
Total	<u>\$ 8,138,811,555</u>
Inactive members	
Currently receiving benefits	6,876,106,828
Not currently receiving benefits	396,064,195
Total	<u>\$ 7,272,171,023</u>
Omaha Service Annuity	
Active	21,491,717
Inactive vested	1,427,024
Total	<u>\$ 22,918,741</u>
Total Liabilities	\$ 15,433,901,319



**TABLE 7**  
**SCHOOL RETIREMENT SYSTEM**  
**ACTUARIAL GAIN/(LOSS)**

**Liabilities**

1. Actuarial Accrued Liability as of July 1, 2017	\$ 12,466,139,649
2. Normal Cost for Plan Year Ending June 30, 2018	242,853,741
3. Benefit Payments During Plan Year Ending June 30, 2018	(587,984,401)
4. Interest at 7.5%	<u>933,357,989</u>
5. Expected Actuarial Accrued Liability as of July 1, 2018	\$ 13,054,366,978
6. Actuarial Accrued Liability as of July 1, 2018	\$ 13,001,288,461

**Assets**

7. Actuarial Value of Assets as of July 1, 2017	\$ 10,810,539,558
8. Contributions During Plan Year Ending June 30, 2018	422,723,237
9. Benefit Payments During Plan Year Ending June 30, 2018	(587,984,401)
10. Interest at 7.5%	<u>806,539,495</u>
11. Expected Actuarial Value of Assets as of July 1, 2018	\$ 11,451,817,889
12. Actuarial Value of Assets as of July 1, 2018	\$ 11,545,658,962

**Gain / (Loss)**

13. Actuarial Gain / (Loss) on Liabilities [5 - 6]	\$ 53,078,517
14. Actuarial Gain / (Loss) on Assets [12 - 11]	\$ 93,841,073
15. Total Actuarial Gain / (Loss) for Plan Year Ending June 30, 2018 [13 + 14]	\$ 146,919,590



**TABLE 8**  
**SCHOOL RETIREMENT SYSTEM**  
**GAIN/(LOSS) ANALYSIS BY SOURCE**

<b>Liability Sources</b>	<b>Gain/(Loss)</b>
Retirement	\$ (7,188,000)
Termination	(23,131,000)
Disability	(433,000)
Mortality	12,208,000
Salary	93,623,000
New Entrants/Rehires	(25,689,000)
COLA	(15,654,000)
Inactive Vested Interest Credit	17,910,000
Miscellaneous	1,433,000
Total Liability Gain/(Loss)	\$ 53,079,000
Asset Gain/(Loss)	\$ 93,841,000
Net Actuarial Gain/(Loss)	\$ 146,920,000



**SECTION 4 – SYSTEM LIABILITIES**

**TABLE 9**  
**SCHOOL RETIREMENT SYSTEM**  
**PROJECTED BENEFIT PAYMENTS**  
**AS OF JULY 1, 2018**

<u>Plan Year</u> <u>Ending June 30</u>	<u>Current</u> <u>Active Members</u>	<u>Current In-Pay</u> <u>Members</u>	<u>Total</u>
2019	\$ 48,851,000	\$ 584,985,000	\$ 633,836,000
2020	82,359,000	590,370,000	672,729,000
2021	116,852,000	595,043,000	711,895,000
2022	152,451,000	599,241,000	751,692,000
2023	189,453,000	602,484,000	791,937,000
2024	227,911,000	604,938,000	832,849,000
2025	267,553,000	606,605,000	874,158,000
2026	309,045,000	607,194,000	916,239,000
2027	352,362,000	606,512,000	958,874,000
2028	397,502,000	604,456,000	1,001,958,000
2029	445,036,000	601,188,000	1,046,224,000
2030	494,952,000	596,510,000	1,091,462,000
2031	547,262,000	590,200,000	1,137,462,000
2032	602,178,000	582,212,000	1,184,390,000
2033	659,359,000	572,126,000	1,231,485,000
2034	718,198,000	560,362,000	1,278,560,000
2035	778,378,000	546,744,000	1,325,122,000
2036	840,368,000	530,872,000	1,371,240,000
2037	904,989,000	512,675,000	1,417,664,000
2038	971,373,000	492,147,000	1,463,520,000
2039	1,039,049,000	469,347,000	1,508,396,000
2040	1,107,676,000	444,424,000	1,552,100,000
2041	1,176,824,000	417,592,000	1,594,416,000
2042	1,246,153,000	389,153,000	1,635,306,000
2043	1,315,619,000	359,485,000	1,675,104,000
2044	1,384,327,000	329,008,000	1,713,335,000
2045	1,451,641,000	298,169,000	1,749,810,000
2046	1,516,076,000	267,440,000	1,783,516,000
2047	1,577,269,000	237,293,000	1,814,562,000
2048	1,634,001,000	208,188,000	1,842,189,000

Note: Cash flows are the expected future non-discounted payments to current members. These numbers exclude refund payouts to any current vested or nonvested inactives and assume future retirees elect the normal form of payment. Also excludes Omaha appropriations.



## **SECTION 5 – EMPLOYER CONTRIBUTIONS**

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The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 3 and 4 indicates that current assets fall short of meeting the present value of future benefits (total liability). This is expected in all but a completely closed fund, where no further contributions are anticipated. In an active system, there will almost always be a difference between the actuarial value of assets and total liabilities. This deficiency has to be made up by future contributions and investment returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost rate and (2) the unfunded actuarial accrued liability contribution rate.

The term "fully funded" is often applied to a system in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, systems are not fully funded, either because of past benefit improvements that have not been completely funded or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated by the actuarial assumptions. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists. Likewise, when the actuarial value of assets is greater than the actuarial accrued liability, a surplus exists.

### **Description of Contribution Rate Components**

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

In general, contributions are computed in accordance with a level percent-of-payroll funding objective. The contribution rate based on the July 1, 2018 actuarial valuation will be used to determine the actuarial required employer contribution rate to the School Retirement System for the plan year ending June 30, 2019. Any State contributions are expected to be deposited on July 1, 2019 (State fiscal year 2020). 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.

### **Contribution Rate Summary**

In Table 10 the amortization payment related to the unfunded actuarial accrued liability, as of July 1, 2018, is developed. Table 11 develops the actuarial required contribution rate for the System and the amount of required State contributions.

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



SECTION 5 – EMPLOYER CONTRIBUTIONS

TABLE 10
SCHOOL RETIREMENT SYSTEM
SCHEDULE OF AMORTIZATION BASES

Table with 6 columns: Amortization Bases, Original Amount, July 1, 2018 Remaining Payments, Date of Last Payment, Outstanding Balance as of July 1, 2018, Annual Contribution\*. Rows include UAAL Bases from 2006 to 2018 and Experience Bases from 2013 to 2016, plus a Total row.

\* Contribution amount reflects mid-year timing.

- 1. Total UAAL Amortization Payments \$ 110,827,165
2. Projected Payroll for FY 2019 \$ 2,027,180,460
3. UAAL Amortization Payment Rate 5.47%

Note: Beginning with the July 1, 2017 valuation, the payments on each UAAL base are determined as a level-percent of payroll using a 3.50% payroll growth assumption.



**SECTION 5 – EMPLOYER CONTRIBUTIONS**

**TABLE 11**

**SCHOOL RETIREMENT SYSTEM**

**ACTUARIAL REQUIRED CONTRIBUTION  
FOR PLAN YEAR ENDING JUNE 30, 2019**

**and  
DEVELOPMENT OF ADDITIONAL STATE CONTRIBUTION**

1. Normal Cost - Nebraska School System		
(a) Amount	\$	248,719,749
(b) Expected pay for current actives		1,873,293,660
(c) Normal Cost Rate as % of pay		13.28%
2. Amortization Cost - Nebraska School System		
(a) Amount		110,435,629
(b) Expected pay for all actives		2,027,180,460
(c) Amortization Rate as % of pay		5.45%
3. Total Actuarial Required Contribution Rate - Nebraska School System		18.73%
[1(c) + 2(c)]		
4. Statutory Contribution Rates - Nebraska School System		
(a) Member		9.78%
(b) Employer (101% of Member)		9.88%
(c) State		2.00%
(d) Total		<u>21.66%</u>
5. Shortfall/(Margin) - Nebraska School System		(2.93%)
[3 - 4(d)]		
6. Expected pay for all actives for FY 2019		2,027,180,460
7. Additional Required State Contribution payable July 1, 2019		
[5 * 6 , but not less than 0]	\$	0
8. State Contribution due July 1, 2019		
(a) State Statutory Amount due July 1, 2019	\$	40,543,609
[2% x Expected pay]		
(b) Omaha Service Annuity due July 1, 2019		
(i) Normal Cost amount	\$	842,344
(ii) Amortization amount		<u>405,953</u>
(iii) Total amount		1,248,297
(d) Additional Contribution		<u>0</u>
(e) Total	\$	<u>41,791,906</u>





## **SECTION 6 – HISTORICAL FUNDING AND OTHER INFORMATION**

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This section of the report provides a historical perspective on the System’s funding and contribution practices, along with other information that may be of interest.



SECTION 6 – HISTORICAL FUNDING AND OTHER INFORMATION

TABLE 12  
SCHOOL RETIREMENT SYSTEM  
HISTORICAL FUNDING INFORMATION  
SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded Actuarial Accrued Liability (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a % of Covered Payroll [(b - a) / c]
June 30, 2003	\$4,952,902,870	\$5,464,572,876	\$511,670,006	90.6%	\$1,138,776,241	44.9%
June 30, 2004	5,118,011,165	5,868,266,970	750,255,805	87.2%	1,170,601,127	64.1%
June 30, 2005	5,335,197,409	6,234,657,830	899,460,421	85.6%	1,214,227,197	74.1%
June 30, 2006	5,739,048,994	6,584,275,406	845,226,412	87.2%	1,247,684,378	67.7%
June 30, 2007	6,396,336,863	7,070,308,583	673,971,720	90.5%	1,325,616,322	50.8%
June 30, 2008	6,932,918,638	7,654,536,359	721,617,721	90.6%	1,389,124,819	51.9%
June 30, 2009	7,007,581,825	8,092,339,318	1,084,757,493	86.6%	1,481,568,432	73.2%
June 30, 2010	7,040,908,599	8,542,119,000	1,501,210,401	82.4%	1,543,930,532	97.2%
June 30, 2011	7,267,497,259	9,039,744,995	1,772,247,736	80.4%	1,590,225,983	111.4%
June 30, 2012	7,358,964,135	9,609,157,134	2,250,192,999	76.6%	1,593,184,929	141.2%
June 30, 2013	7,703,084,507	9,984,898,998	2,281,814,491	77.1%	1,735,175,956	131.5%
June 30, 2014	8,622,023,999	10,426,112,609	1,804,088,610	82.7%	1,774,679,549	101.7%
June 30, 2015	9,485,594,650	10,778,303,637	1,292,708,987	88.0%	1,845,979,997	70.0%
June 30, 2016	10,045,925,478	11,207,298,169	1,161,372,691	89.6%	1,901,967,362	61.1%
June 30, 2017	10,810,539,558	12,466,139,649	1,655,600,091	86.7%	1,966,968,901	84.2%
June 30, 2018	11,545,658,962	13,001,288,461	1,455,629,499	88.8%	2,027,180,460	71.8%

Note: Information before 2013 was produced by the prior actuary.



**SECTION 6 – HISTORICAL FUNDING AND OTHER INFORMATION**

**TABLE 13**

**SCHOOL RETIREMENT SYSTEM**

**HISTORICAL FUNDING INFORMATION**

**SCHEDULE OF CONTRIBUTIONS FROM EMPLOYERS  
AND OTHER CONTRIBUTING ENTITIES**

Plan Year Ending	Actuarial Required Contributions*			Percent Contributed
	School	State	Total	
June 30, 2005	\$90,178,025	\$30,274,438	\$120,452,463	87%
June 30, 2006	102,089,105	28,056,703	130,145,808	100%
June 30, 2007	102,849,748	15,219,871	118,069,619	104%
June 30, 2008	101,368,968	15,832,941	117,201,909	104%
June 30, 2009	105,497,775	20,620,548	126,118,323	104%
June 30, 2010	121,277,758	21,380,352	142,658,110	105%
June 30, 2011	135,328,339	40,779,653	176,107,992	89%
June 30, 2012	145,582,040	45,866,350	191,448,390	88%
June 30, 2013	161,922,831	64,966,961	226,889,792	79%
June 30, 2014	138,544,708	34,703,519	173,248,227	117%
June 30, 2015	115,776,948	35,493,591	151,270,539	138%
June 30, 2016	94,929,605	36,919,600	131,849,205	163%
June 30, 2017	90,038,793	38,039,347	128,078,140	174%
June 30, 2018	145,340,830	39,339,378	184,680,208	125%

\* Excludes Omaha appropriations.

Note: Contribution information is consistent with that shown in the GASB 67 report prepared for the System.



**APPENDIX A – MEMBERSHIP DATA**

**SCHOOL RETIREMENT SYSTEM  
MEMBER DATA RECONCILIATION**

	Active Members	Inactive Vested	Inactive Non-vested	Retirees and Beneficiaries	Disabled Members	Total
As of July 1, 2017	41,943	6,090	16,211	23,325	329	87,898
Changes in status						
a) Retirement	(1,090)	(225)	0	1,315	0	0
b) Death	(36)	(13)	(21)	(601)	(16)	(687)
c) Non-vested termination	(1,670)	0	1,670	0	0	0
d) Vested termination	(759)	759	0	0	0	0
e) Contribution refund	(721)	(239)	(878)	0	0	(1,838)
f) Beneficiary in receipt	0	0	0	168	0	168
g) Disability retirement	(1)	(3)	0	0	4	0
h) Return to active service	591	(196)	(395)	0	0	0
i) Expired benefit	0	0	0	(39)	0	(39)
j) Data adjustment	<u>(1)</u>	<u>(4)</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>0</u>
Total changes in status	(3,687)	79	380	844	(12)	(2,396)
New entrants	4,093	0	349	0	0	4,442
Net Change	406	79	729	844	(12)	2,046
As of July 1, 2018	42,349	6,169	16,940	24,169	317	89,944



**APPENDIX A – MEMBERSHIP DATA**

**SCHOOL RETIREMENT SYSTEM  
SUMMARY OF MEMBERSHIP DATA**

<b>A. ACTIVE MEMBERS</b>	<b>July 1, 2018</b>	<b>July 1, 2017</b>	<b>% Change</b>
1. Number of Active Members			
(a) Tier 1	28,246	30,125	(6.2%)
(b) Tier 2	9,961	11,818	(15.7%)
(c) Tier 3	4,142	0	NA
(d) Total	<u>42,349</u>	<u>41,943</u>	1.0%
2. Annual Reported Salary			
(a) Tier 1	\$ 1,479,298,923	\$ 1,513,758,740	(2.3%)
(b) Tier 2	333,886,291	350,359,957	(4.7%)
(c) Tier 3	107,895,040	0	NA
(d) Total	\$ <u>1,921,080,254</u>	\$ <u>1,864,118,697</u>	3.1%
3. Accumulated Contributions	\$ 1,785,633,657	\$ 1,710,638,753	4.4%
4. Active Member Averages			
(a) Age	45.1	45.2	(0.2%)
(b) Service	11.2	11.3	(0.9%)
(c) Compensation	\$ 45,363	\$ 44,444	2.1%
<b>B. INACTIVE MEMBERS</b>			
1. Number of Inactive Members			
(a) System vested	6,169	6,090	1.3%
(b) System nonvested (refund only)	16,940	16,211	4.5%
(d) Total	<u>23,109</u>	<u>22,301</u>	3.6%
2. Accumulated Member Contributions (excluding Omaha)	\$ 214,003,776	\$ 204,521,872	4.6%
3. Inactive Member Averages (excluding Omaha)			
(a) Age (vesteds only)	51.9	51.8	0.2%
(b) Accumulated member contributions	\$ 9,261	\$ 9,171	1.0%
<b>C. RETIREES, DISABLEDS, AND BENEFICIARIES</b>			
1. Number of Members			
(a) Retired	22,741	21,974	3.5%
(b) Disabled	317	329	(3.6%)
(c) Beneficiaries	1,428	1,351	5.7%
(d) Total	<u>24,486</u>	<u>23,654</u>	3.5%
2. Annual Benefits			
(a) Retired	\$ 555,512,556	\$ 518,831,509	7.1%
(b) Disabled	4,561,978	4,628,917	(1.4%)
(c) Beneficiaries	28,115,008	25,609,963	9.8%
(d) Total	\$ <u>588,189,542</u>	\$ <u>549,070,389</u>	7.1%



**OMAHA SCHOOL EMPLOYEES**

**SUMMARY OF MEMBERSHIP DATA**

<b>A. ACTIVE MEMBERS</b>	<b>January 1, 2018</b>	<b>January 1, 2017</b>	<b>% Change</b>
1. Number of Active Members	7,569	7,466	1.4%
2. Average Age	44.5	44.5	0.0%
3. Average Service	10.5	10.5	0.0%
<b>B. INACTIVE VESTED MEMBERS</b>			
1. Number of Inactive Members	1,043	1,035	0.8%
2. Average Age	46.0	45.8	0.4%
3. Average Service	9.0	9.1	(1.1%)

Note: Data was provided by the Omaha Schools Employee Retirement System (OSERS) for use in estimating the Service Annuity obligation. The data provided is from the most recent OSERS valuation.

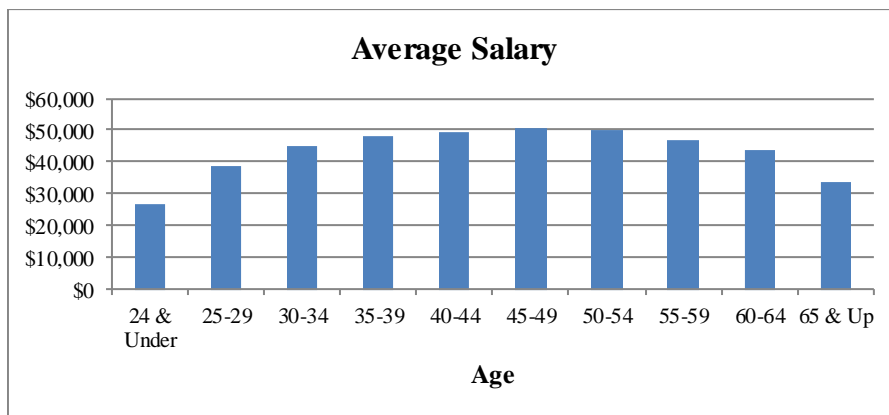
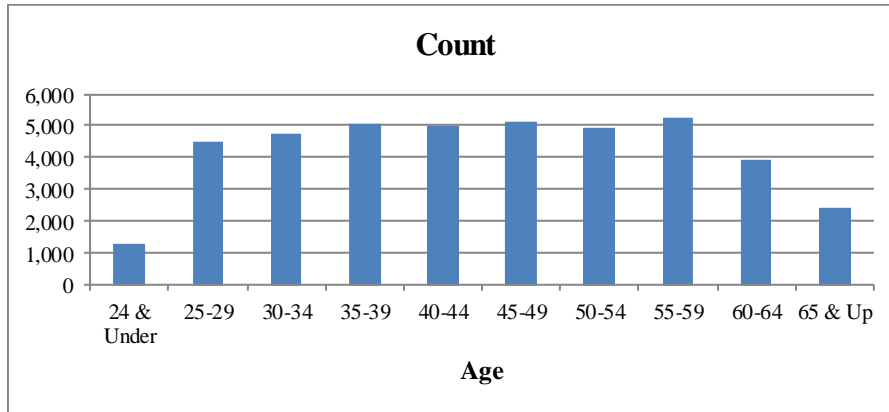


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2018**

**Total**

Age	Count			Reported FY 2018 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	268	1,036	1,304	\$ 7,330,936	\$ 27,263,012	\$ 34,593,948
25-29	1,084	3,437	4,521	44,683,440	129,658,417	174,341,857
30-34	1,221	3,546	4,767	61,550,369	151,775,639	213,326,008
35-39	1,268	3,815	5,083	74,044,744	171,835,014	245,879,758
40-44	1,163	3,866	5,029	73,922,890	173,869,513	247,792,403
45-49	1,173	3,928	5,101	77,398,058	180,554,733	257,952,791
50-54	1,132	3,802	4,934	73,815,372	172,047,073	245,862,445
55-59	1,264	4,005	5,269	76,360,194	171,724,602	248,084,796
60-64	1,064	2,863	3,927	55,109,982	117,135,471	172,245,453
65 & Up	<u>866</u>	<u>1,548</u>	<u>2,414</u>	<u>30,662,189</u>	<u>50,338,606</u>	<u>81,000,795</u>
Total	10,503	31,846	42,349	\$ 574,878,174	\$ 1,346,202,080	\$ 1,921,080,254



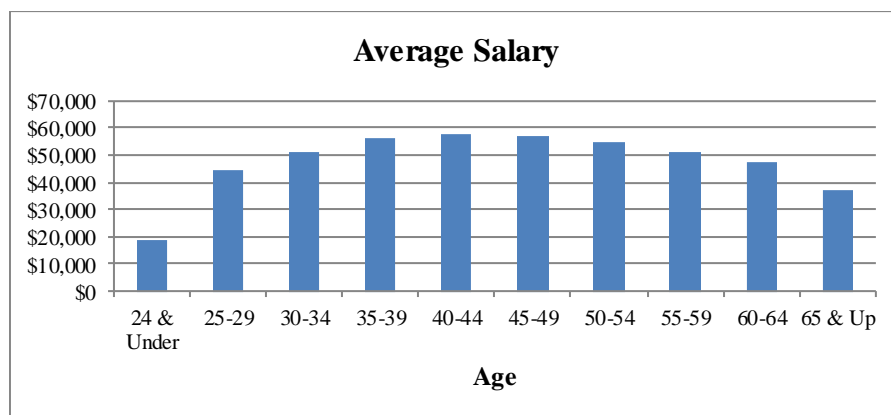
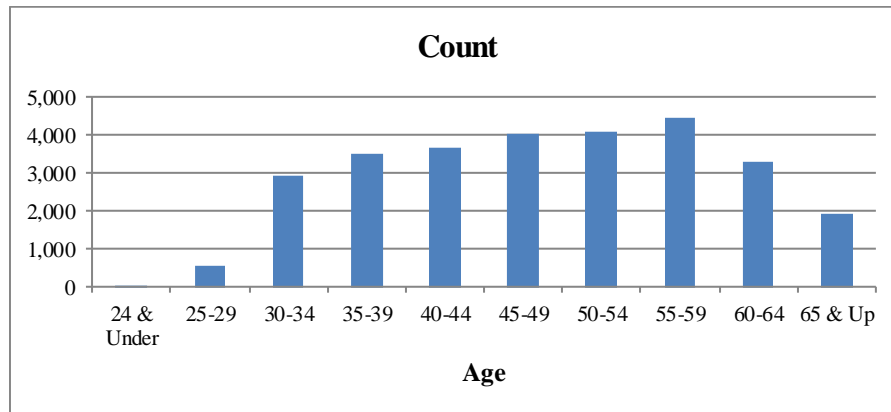


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2018**

**Tier 1 Members**

Age	Count			Reported FY 2018 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	1	2	3	\$ 4,544	\$ 51,295	\$ 55,839
25-29	129	430	559	6,218,193	18,733,961	24,952,154
30-34	728	2,175	2,903	40,419,619	106,936,477	147,356,096
35-39	929	2,568	3,497	59,525,580	137,677,125	197,202,705
40-44	923	2,696	3,619	63,762,709	144,678,882	208,441,591
45-49	958	3,027	3,985	68,601,975	157,915,866	226,517,841
50-54	955	3,128	4,083	67,697,576	155,723,870	223,421,446
55-59	1,027	3,414	4,441	67,862,926	157,697,216	225,560,142
60-64	831	2,433	3,264	47,973,806	107,142,017	155,115,823
65 & Up	<u>646</u>	<u>1,246</u>	<u>1,892</u>	<u>25,576,453</u>	<u>45,098,833</u>	<u>70,675,286</u>
Total	7,127	21,119	28,246	\$ 447,643,381	\$ 1,031,655,542	\$ 1,479,298,923





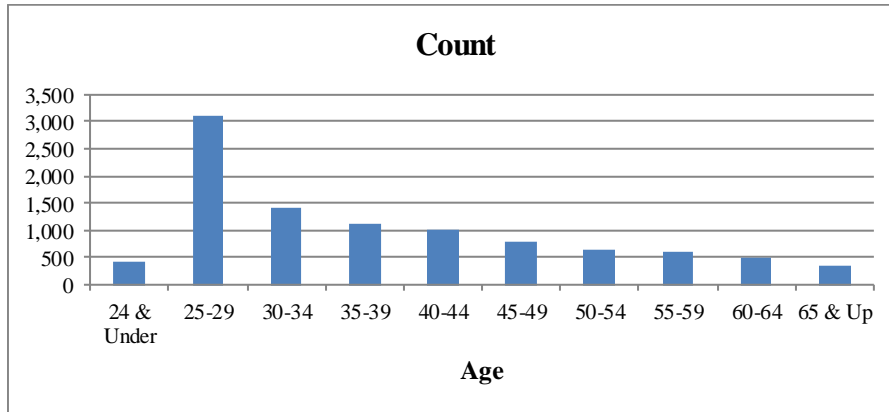


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2018**

**Tier 2 Members**

Age	Count			Reported FY 2018 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	89	351	440	\$ 2,405,034	\$ 8,868,675	\$ 11,273,709
25-29	753	2,360	3,113	32,151,348	92,053,023	124,204,371
30-34	395	1,011	1,406	17,733,383	35,914,449	53,647,832
35-39	241	887	1,128	10,819,445	26,682,989	37,502,434
40-44	168	855	1,023	7,572,024	22,605,840	30,177,864
45-49	143	652	795	6,439,764	17,308,381	23,748,145
50-54	127	500	627	4,672,533	12,123,839	16,796,372
55-59	166	432	598	6,160,054	10,554,596	16,714,650
60-64	178	304	482	5,692,217	7,199,068	12,891,285
65 & Up	<u>151</u>	<u>198</u>	<u>349</u>	<u>3,531,041</u>	<u>3,398,588</u>	<u>6,929,629</u>
Total	2,411	7,550	9,961	\$ 97,176,843	\$ 236,709,448	\$ 333,886,291



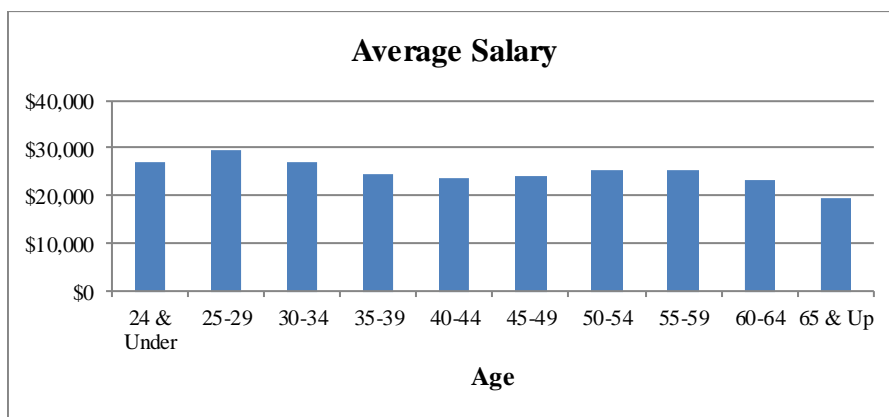
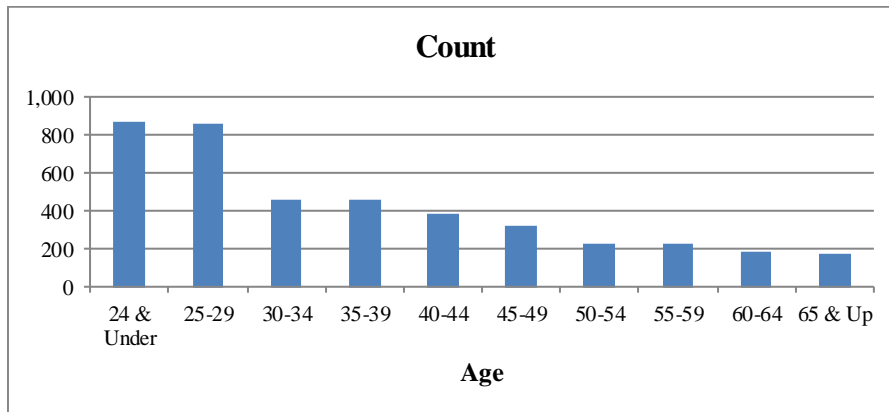


**APPENDIX A – MEMBERSHIP DATA**

**ACTIVE MEMBERS  
AS OF JULY 1, 2018**

**Tier 3 Members**

Age	Count			Reported FY 2018 Earnings		
	Male	Female	Total	Male	Female	Total
24 & Under	178	683	861	\$ 4,921,358	\$ 18,343,042	\$ 23,264,400
25-29	202	647	849	6,313,899	18,871,433	25,185,332
30-34	98	360	458	3,397,367	8,924,713	12,322,080
35-39	98	360	458	3,699,719	7,474,900	11,174,619
40-44	72	315	387	2,588,157	6,584,791	9,172,948
45-49	72	249	321	2,356,319	5,330,486	7,686,805
50-54	50	174	224	1,445,263	4,199,364	5,644,627
55-59	71	159	230	2,337,214	3,472,790	5,810,004
60-64	55	126	181	1,443,959	2,794,386	4,238,345
65 & Up	<u>69</u>	<u>104</u>	<u>173</u>	<u>1,554,695</u>	<u>1,841,185</u>	<u>3,395,880</u>
Total	965	3,177	4,142	\$ 30,057,950	\$ 77,837,090	\$ 107,895,040





**APPENDIX A – MEMBERSHIP DATA**

**AGE AND SERVICE DISTRIBUTION  
AS OF JULY 1, 2018**

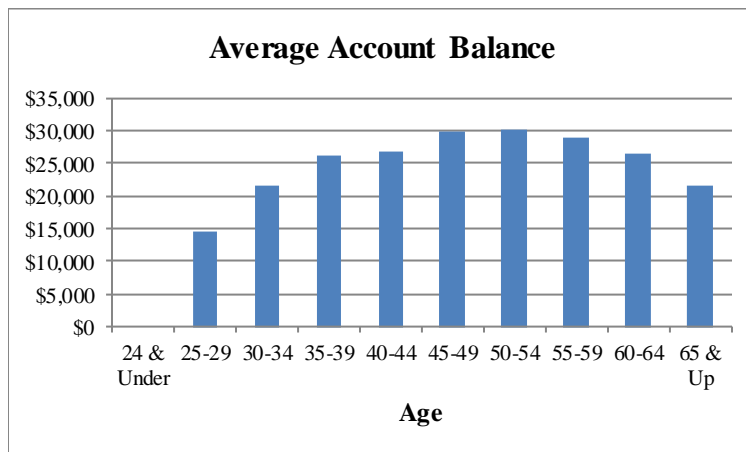
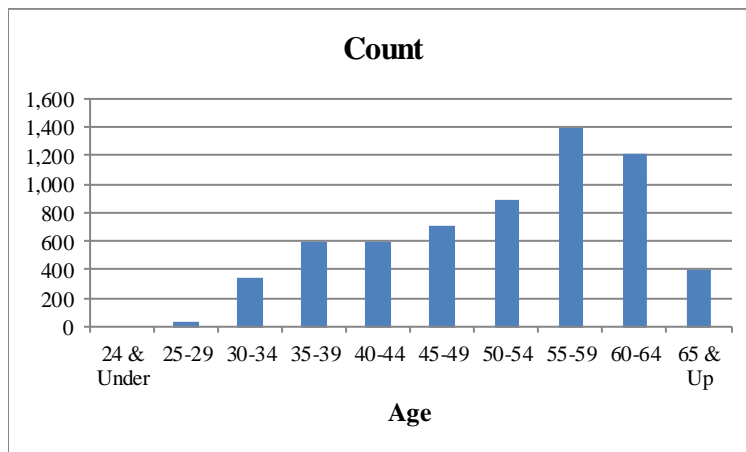
Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	Over 34	Total
<b>24 &amp; Under</b>	Number	1,300	4	0	0	0	0	0	0	1,304
	Total Salary	\$ 34,469,159	\$ 124,789	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 34,593,948
	Average Sal.	\$ 26,515	\$ 31,197	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 26,529
<b>25-29</b>	Number	3,625	892	4	0	0	0	0	0	4,521
	Total Salary	\$ 132,676,637	\$ 41,508,711	\$ 156,509	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 174,341,857
	Average Sal.	\$ 36,600	\$ 46,534	\$ 39,127	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,563
<b>30-34</b>	Number	1,709	2,461	597	0	0	0	0	0	4,767
	Total Salary	\$ 56,741,707	\$ 122,697,934	\$ 33,886,367	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 213,326,008
	Average Sal.	\$ 33,202	\$ 49,857	\$ 56,761	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 44,751
<b>35-39</b>	Number	1,579	1,159	1,970	375	0	0	0	0	5,083
	Total Salary	\$ 46,406,555	\$ 55,734,122	\$ 118,603,566	\$ 25,135,515	\$ 0	\$ 0	\$ 0	\$ 0	\$ 245,879,758
	Average Sal.	\$ 29,390	\$ 48,088	\$ 60,205	\$ 67,028	\$ 0	\$ 0	\$ 0	\$ 0	\$ 48,373
<b>40-44</b>	Number	1,437	917	897	1,462	316	0	0	0	5,029
	Total Salary	\$ 38,769,175	\$ 37,061,047	\$ 50,958,369	\$ 98,674,668	\$ 22,329,144	\$ 0	\$ 0	\$ 0	\$ 247,792,403
	Average Sal.	\$ 26,979	\$ 40,416	\$ 56,810	\$ 67,493	\$ 70,662	\$ 0	\$ 0	\$ 0	\$ 49,273
<b>45-49</b>	Number	1,134	892	825	769	1,222	259	0	0	5,101
	Total Salary	\$ 30,428,356	\$ 33,548,402	\$ 39,753,384	\$ 46,978,752	\$ 87,716,604	\$ 19,527,293	\$ 0	\$ 0	\$ 257,952,791
	Average Sal.	\$ 26,833	\$ 37,610	\$ 48,186	\$ 61,091	\$ 71,781	\$ 75,395	\$ 0	\$ 0	\$ 50,569
<b>50-54</b>	Number	909	732	796	674	606	956	260	1	4,934
	Total Salary	\$ 23,366,193	\$ 24,737,274	\$ 34,010,766	\$ 35,972,243	\$ 39,638,181	\$ 69,092,551	\$ 18,990,432	\$ 54,805	\$ 245,862,445
	Average Sal.	\$ 25,705	\$ 33,794	\$ 42,727	\$ 53,371	\$ 65,410	\$ 72,273	\$ 73,040	\$ 54,805	\$ 49,830
<b>55-59</b>	Number	888	652	820	842	617	572	673	205	5,269
	Total Salary	\$ 23,444,949	\$ 20,408,086	\$ 31,965,751	\$ 38,000,590	\$ 33,646,630	\$ 37,141,151	\$ 48,532,891	\$ 14,944,748	\$ 248,084,796
	Average Sal.	\$ 26,402	\$ 31,301	\$ 38,983	\$ 45,131	\$ 54,533	\$ 64,932	\$ 72,114	\$ 72,901	\$ 47,084
<b>60-64</b>	Number	722	510	490	598	498	412	251	446	3,927
	Total Salary	\$ 18,451,930	\$ 17,049,649	\$ 17,096,355	\$ 25,111,015	\$ 23,905,529	\$ 22,572,177	\$ 16,001,349	\$ 32,057,449	\$ 172,245,453
	Average Sal.	\$ 25,557	\$ 33,431	\$ 34,891	\$ 41,992	\$ 48,003	\$ 54,787	\$ 63,750	\$ 71,878	\$ 43,862
<b>65 &amp; Up</b>	Number	635	478	313	263	206	186	130	203	2,414
	Total Salary	\$ 12,132,441	\$ 11,461,095	\$ 10,270,871	\$ 9,261,757	\$ 9,193,461	\$ 8,791,221	\$ 6,667,658	\$ 13,222,291	\$ 81,000,795
	Average Sal.	\$ 19,106	\$ 23,977	\$ 32,814	\$ 35,216	\$ 44,628	\$ 47,265	\$ 51,290	\$ 65,134	\$ 33,555
<b>Total</b>	Number	13,938	8,697	6,712	4,983	3,465	2,385	1,314	855	42,349
	Total Salary	\$ 416,887,102	\$ 364,331,109	\$ 336,701,938	\$ 279,134,540	\$ 216,429,549	\$ 157,124,393	\$ 90,192,330	\$ 60,279,293	\$ 1,921,080,254
	Average Sal.	\$ 29,910	\$ 41,892	\$ 50,164	\$ 56,017	\$ 62,462	\$ 65,880	\$ 68,640	\$ 70,502	\$ 45,363



**APPENDIX A – MEMBERSHIP DATA**

**INACTIVE VESTED MEMBERS  
AS OF JULY 1, 2018**

Age	Count			Account Balances		
	Male	Female	Total	Male	Female	Total
24 & Under	0	0	0	\$ 0	\$ 0	\$ 0
25-29	13	23	36	195,568	330,592	526,160
30-34	70	276	346	1,656,589	5,779,535	7,436,124
35-39	111	487	598	3,622,742	12,062,967	15,685,709
40-44	117	474	591	4,070,995	11,741,276	15,812,271
45-49	150	558	708	6,433,586	14,654,365	21,087,951
50-54	148	741	889	6,783,167	20,108,661	26,891,828
55-59	218	1,172	1,390	9,429,672	30,710,347	40,140,019
60-64	167	1,049	1,216	6,844,228	25,226,885	32,071,113
65 & Up	<u>61</u>	<u>334</u>	<u>395</u>	<u>2,064,340</u>	<u>6,406,326</u>	<u>8,470,666</u>
Total	1,055	5,114	6,169	\$ 41,100,887	\$ 127,020,954	\$ 168,121,841

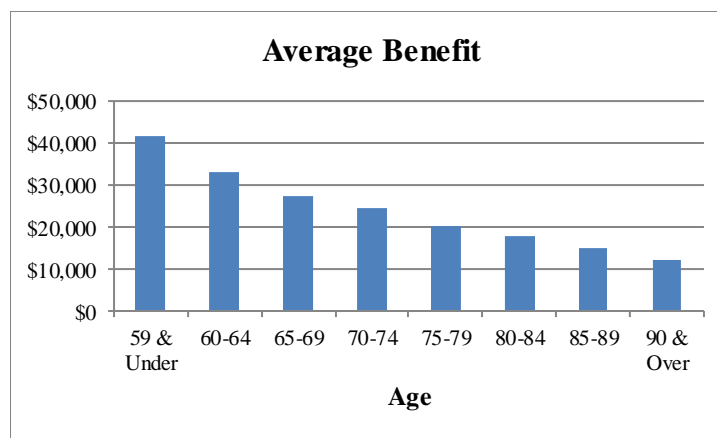
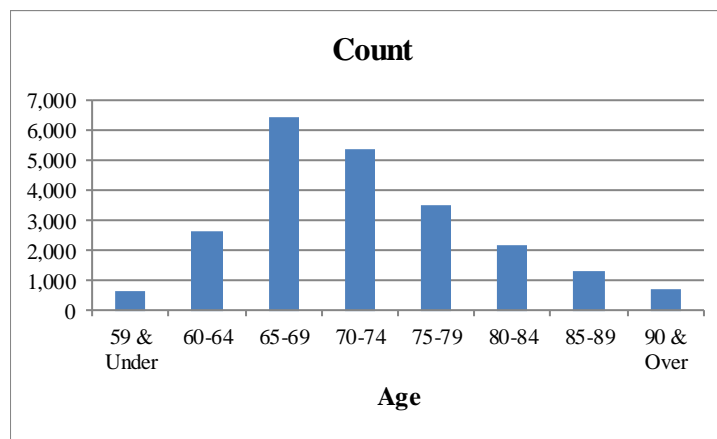




**APPENDIX A – MEMBERSHIP DATA**

**RETIRED MEMBERS  
AS OF JULY 1, 2018**

Age	Count			Annual Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	174	452	626	\$ 7,729,140	\$ 18,338,592	\$ 26,067,732
60-64	671	1,964	2,635	26,418,474	59,963,379	86,381,853
65-69	1,631	4,776	6,407	55,315,656	119,190,763	174,506,419
70-74	1,792	3,582	5,374	54,191,753	76,571,786	130,763,539
75-79	1,162	2,306	3,468	31,815,756	38,213,883	70,029,639
80-84	678	1,502	2,180	16,314,658	22,368,471	38,683,129
85-89	361	965	1,326	7,653,179	12,422,323	20,075,502
90 & Over	<u>155</u>	<u>570</u>	<u>725</u>	<u>2,857,260</u>	<u>6,147,483</u>	<u>9,004,743</u>
Total	6,624	16,117	22,741	\$ 202,295,876	\$ 353,216,680	\$ 555,512,556

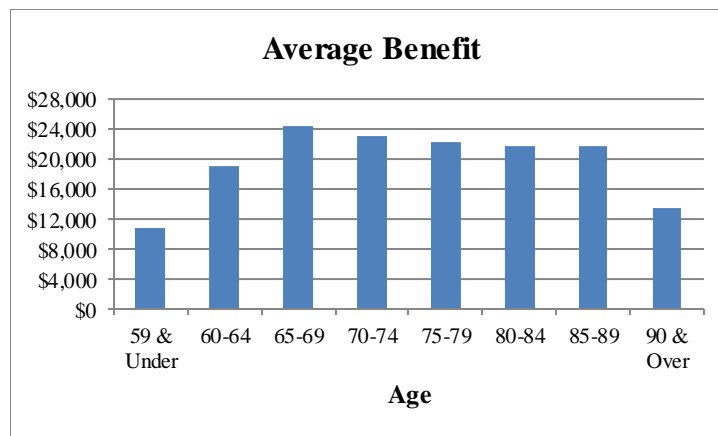
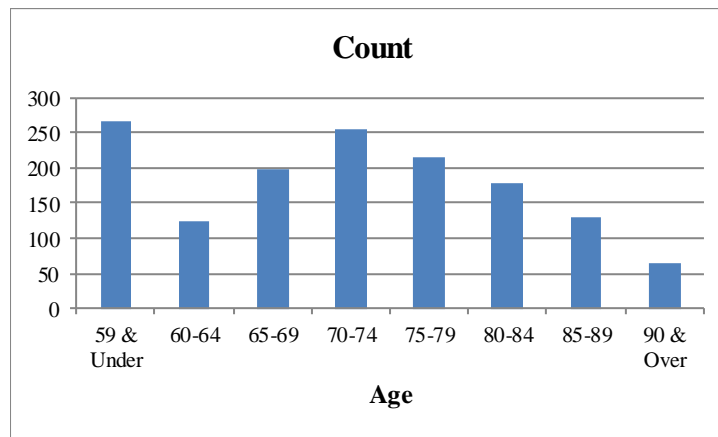




**APPENDIX A – MEMBERSHIP DATA**

**BENEFICIARIES RECEIVING BENEFITS  
AS OF JULY 1, 2018**

<u>Age</u>	<u>Count</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
59 & Under	124	141	265	\$ 1,093,496	\$ 1,758,579	\$ 2,852,075
60-64	52	72	124	770,492	1,581,673	2,352,165
65-69	79	118	197	1,756,127	3,024,511	4,780,638
70-74	98	156	254	1,867,782	3,955,368	5,823,150
75-79	72	142	214	1,204,820	3,531,516	4,736,336
80-84	38	140	178	605,037	3,252,390	3,857,427
85-89	23	107	130	455,305	2,364,998	2,820,303
90 & Over	<u>16</u>	<u>50</u>	<u>66</u>	<u>195,878</u>	<u>697,036</u>	<u>892,914</u>
Total	502	926	1,428	\$ 7,948,937	\$ 20,166,071	\$ 28,115,008

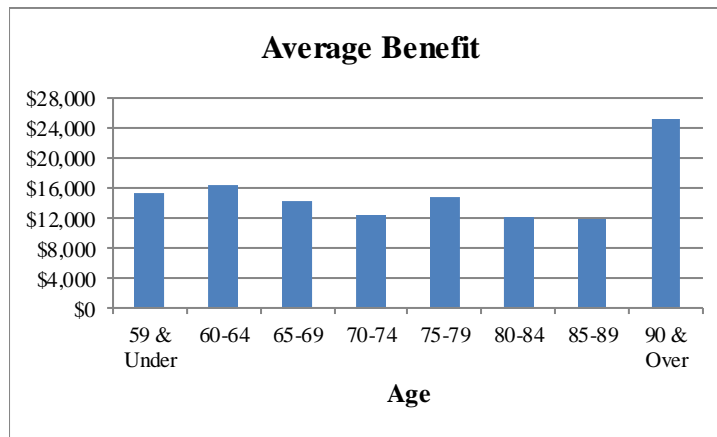
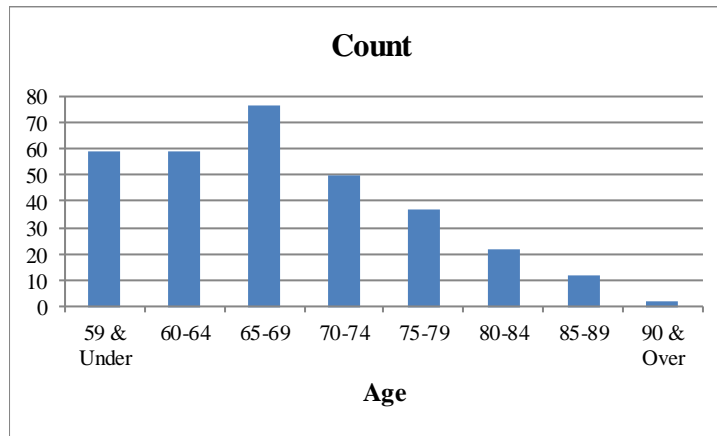




**APPENDIX A – MEMBERSHIP DATA**

**DISABLED MEMBERS  
AS OF JULY 1, 2018**

<u>Age</u>	<u>Count</u>			<u>Annual Benefits</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
59 & Under	16	43	59	\$ 245,077	\$ 657,876	\$ 902,953
60-64	16	43	59	268,682	690,100	958,782
65-69	19	57	76	254,133	821,978	1,076,111
70-74	20	30	50	245,837	379,864	625,701
75-79	14	23	37	215,493	326,331	541,824
80-84	7	15	22	78,069	186,331	264,400
85-89	4	8	12	39,354	102,563	141,917
90 & Over	<u>2</u>	<u>0</u>	<u>2</u>	<u>50,290</u>	<u>0</u>	<u>50,290</u>
Total	98	219	317	\$ 1,396,935	\$ 3,165,043	\$ 4,561,978





**APPENDIX B – SUMMARY OF PLAN PROVISIONS**

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<b>Member</b>	Any person employed by a public school 20 or more hours per week shall be a member of the system. Employees at the date of establishment could have elected not to participate, and those covered under another system do not participate. The Tier Two benefit structure covers members joining the System on or after July 1, 2013, but before July 1, 2017. The Tier Three benefit structure covers members joining the System on or after July 1, 2017, but before July 1, 2018. The Tier Four benefit structure covers members joining the System on or after July 1, 2018.
<b>Participation Date</b>	Date of becoming a member.
<b>Definitions</b>	
Final average earnings	The average of the three highest twelve month periods of service during the period ending on the earlier of the participant's termination date or retirement date. For employees who become a member on or after July 1, 1996, earnings will be capped at the maximum earning defined in Code 401(a) (17). For Tier Two, Three and Four members, it is the average of the five highest twelve month periods of service.
Fiscal year	Twelve month period ending June 30.
Contributions	Members contribute 9.78% of pay. Such contributions are credited with interest based on the 1-year Treasury yield curve on July 1 of each year, as determined by State Statutes. The School Districts contribute at a rate equal to 101% of the members' rate. The State contributes 2% of pay, effective July 1, 2014 (previously 1%).
Monthly pension benefit	The greater of (1) or (2).  (1) Amount: A monthly benefit equal to the sum of:  (a) A savings annuity which is the actuarial equivalent of the member's accumulated contributions, and (b) A service annuity equal to \$3.50 per year of service.  (2) Amount: Members employed by a class I, II, III, IV, VI School District may receive a formula annuity. The formula annuity is a monthly amount equal to the product of 2.00% of final average earnings times total years of service for those members who are employed on or after July 1, 2001.  To receive this benefit, retirement must occur after meeting the Rule of 85 requirements (minimum age 55) or attaining age 65.





## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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An automatic annual cost-of-living adjustment (COLA) equal to the change in the CPI-W index, with a maximum increase of 2.5% in any one year is provided for current and future retirees. Also provided is a minimum floor benefit equal to 75% of the purchasing power of the original benefit. For Tier Two, Three and Four members, whom are hired on or after July 1, 2013, an automatic cost-of-living adjustment (COLA) equal to the change in the CPI-W index, not to exceed 1.0% in any one year. No purchasing power COLA applies.

Normal Retirement Date (NRD) First of month coinciding with or next following the attainment of age 65 and one-half year of service.

Service Length of service includes all service as a school employee for which contributions have been made. This service only includes years for which the member was employed on at least a half-time basis, and includes declared emergency service in the armed forces, provided certain conditions are met. Special provisions allow credit for service prior to 1945 and for up to ten years of service in another State upon payment of the actuarial cost of the additional benefit granted.

Pensionable pay Gross earnings subject to contributions.

### Eligibility for Benefits

Deferred vested Termination for reasons other than death or disability retirement after completing five years of service.

Disability retirement Retirement by reason of disability.

Early retirement Retirement before NRD, as well as one of the following criteria:  
1. Attaining age 60 and completing 5 years of service,  
2. Attaining 35 years of service regardless of age,  
3. For members hired before July 1, 2018, attaining age 55 and age plus service equals at least 85 (Rule of 85).  
4. For members hired on or after July 1, 2018, attaining age 60 and age plus service equals at least 85 (Rule of 85).

Normal retirement Retire on NRD.

Postponed retirement Retire after NRD.

Pre-retirement spouse benefit Death prior to retirement.

### Monthly Benefits Payable

Normal retirement Monthly pension benefit determined as of NRD.



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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Early retirement	Monthly pension benefit determined as of early retirement date, reduced by 3% for each year that commencement of payment precedes age 65 (members must be age 60 with five years of service). Unreduced benefits are available to members who have met the applicable criteria for the Rule of 85. Benefits payable upon retirement prior to age 60 (based on the 35 year service rule) are actuarially reduced from age 65. The service annuity is a life annuity actuarially reduced before age 65. Actuarial reductions are based on the 1994 Group Annuity Mortality Table, 75% female, 25% male and 8% interest for members hired prior to July 1, 2017. For members hired on or after July 1, 2017, the Public Employees Retirement Board sets the actuarial assumptions used for actuarial reductions, with guidance from the System's actuary.
Postponed retirement	Monthly pension benefit determined as of actual retirement date.
Termination with deferred vested benefit	Monthly pension benefit determined as of termination date, reduced by 3% for each year that commencement of payment precedes age 65 (Early Commencement requires attainment of age 60).
Disability retirement	Monthly pension benefit determined as of disability retirement date.
Death with pre-retirement benefits	<p>Survivor portion of 100% Joint and Survivor Annuity paid to spouse assuming retirement by member at death if the member is age 65 or has 20 years of service at death. If the member has met the 5-year vesting service requirement, has less than 20 years of service and is under age 65, the spouse may choose between the following two options:</p> <ol style="list-style-type: none"><li>(1) a lump sum equal to the member's contributions with interest plus 101% of the member's contributions with interest, and</li><li>(2) an annuity which equals the survivor portion of the 100% Joint and Survivor value of the member's accrued benefit, payable immediately, reduced for commencement before age 65 and the 100% joint and survivor form of payment.</li></ol>
Forms of payment	<p>Pre-retirement death benefits are payable only as described above.</p> <p>Monthly pension benefits are paid under the form of payment elected by the retiree at retirement. Payment forms include: life annuity, 5- year certain and life annuity, 100% joint and survivor annuity (spouse only), 10-year certain and life annuity, 15-year certain and life annuity, or a modified cash refund annuity. The normal form of payment for the formula annuity is a 5-year certain and life annuity.</p> <p>For members hired on or after July 1, 2017, the Public Employee Retirement Board sets the actuarial assumptions used to determine</p>



## APPENDIX B – SUMMARY OF PLAN PROVISIONS

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the benefit amounts payable under optional forms of payment, with guidance from the System’s actuary.

### **Funding Arrangement**

Legislation enacted in 2002 created the School Retirement Fund. Balances existing on June 30, 2002 in the School Employers Deposit Account, the School Employees Savings Account, the Service Annuity Account, the Annuity Reserve Account, and the School Employees Retirement System Reserve Fund (RSRF) shall be combined and transferred into the School Retirement Fund.

There are four funds established in the State Treasury, which receive monies and pay the expenses and benefits of the retirement system, as follows:

1. School Retirement Fund – receives required deposits of the employers, the State, and employees. Upon retirement, the fund pays all savings annuities, service annuities, and formula annuities.
2. Contingent Account – receives all interest, dividends, and miscellaneous income, pays all regular interest allocated to the other accounts or funds, and meets any deficiencies occurring in the other accounts or funds.
3. Expense Fund – pays all expenses connected with the operation and administration of the system, and receives annual contributions to cover anticipated expenses.
4. Omaha Service Annuity Fund – pays service annuity benefits to Omaha members.

### **Benefits Reflected in Valuation**

All benefits were valued, including future cost-of-living increases granted by statute.

### **Plan Provisions Effective after July 1, 2018**

No future changes in plan provisions were recognized in determining the funded status or in determining the sufficiency of statutory contribution levels.

### **Changes in Plan Provisions Since the Prior Year**

There have been no changes to the plan provisions since the prior year.



## APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

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### A. ACTUARIAL METHODS

- 1. Calculation of Normal Cost and Actuarial Accrued Liability:** The method used to determine the normal cost and actuarial accrued liability was the Entry Age Actuarial Cost Method described below.

#### Entry Age Actuarial Cost Method

Projected pension and preretirement spouse's death benefits were determined for all active members under age 80. Cost factors designed to produce annual costs as a constant percentage of each member's expected compensation in each year from the assumed entry age to the assumed retirement age were applied to the projected benefits to determine the normal cost (the portion of the total cost of the plan allocated to the current year under the method). The normal cost is determined by summing intermediate results for active members under age 80 and determining an average normal cost rate which is then related to the total payroll of active members. The actuarial assumptions shown on the following page were used in determining the projected benefits and cost factors. The actuarial accrued liability for active members (the portion of the total cost of the plan allocated to prior years under the method) was determined as the excess of the actuarial present value of projected benefits over the actuarial present value of future normal costs.

The actuarial accrued liability for retired members and their beneficiaries currently receiving benefits, active members age 80 and over, terminated vested members and disabled members not yet receiving benefits was determined as the actuarial present value of the benefits expected to be paid. No future normal costs are payable for these members.

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 accrued liability is the excess of the actuarial accrued liability over the actuarial value of plan assets measured on the valuation date. The initial unfunded actuarial accrued liability established July 1, 2004, is amortized with a level-dollar payment amount over 25 years. At subsequent valuation dates, amortization bases equal to changes in the unfunded actuarial accrued liability are established and amortized with a level-dollar payment over a 25-year period. Beginning July 1, 2006, the unfunded actuarial accrued liability was reinitialized as of July 1, 2006 and amortized over a 30-year period. At subsequent valuation dates, amortization bases equal to changes in the unfunded actuarial accrued liability are established and amortized over a level-dollar payment over a 30-year period. If the unfunded actuarial accrued liability is \$0 or less on the valuation date, all previous amortization bases are considered fully amortized. Effective with the July 1, 2013 valuation, amortization payments were recalculated to amortize the remaining bases as a level-percent of expected payroll, and new bases are amortized over 30 years.

Under this Entry Age 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 accrued liability.

- 2. Calculation of the Actuarial Value of Assets:** 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



## APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

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excess of or below the expected return. The market value of assets as 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 of assets and (2) the expected return of actuarial value of assets. Effective July 1, 2000, the expected return on actuarial value of assets includes interest on the previous year's unrecognized return.

The passage of legislation in the 2013 session changed the amortization of the unfunded actuarial accrued liability (UAAL) from a level-dollar payment to a level-percent of payroll payment, where the dollar amount of the payment increases with the assumed payroll growth each year in the future. This change lowered the dollar amount of the UAAL payment in the 2013 valuation, but creates a payment schedule where the dollar amount of UAAL contribution increases 3.50% each year in the future. If actual payroll increases at the assumed rate of 3.50%, the UAAL contribution rate will remain level. If payroll increases are less than the 3.50% assumption, the UAAL contribution rate will increase.

### B. VALUATION PROCEDURES

#### Data Procedures

Salaries for first year members are annualized by using the client's Calculated Salary field. For continuing active members, the Accumulated Salary field is used.

Active members who are missing a date of birth on their record are assumed to have been hired at age 35.

Members who are missing a gender are assumed to be female.

#### Other Valuation Procedures

The compensation amounts used in the projection of benefits and liabilities for active members were prior plan year compensations. Salary increases are assumed to apply to annual amounts.

Projected benefits were limited by the dollar limitation required by the Internal Revenue Code Section 415 as it applies to governmental plans and compensation limited by Section 401(a)(17).

Decrements are assumed to occur mid-year, except that immediate retirement is assumed for those who are at or above the age at which retirement rates are 100%. Standard adjustments are made for multiple decrements.



## **APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

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No actuarial accrued liability is included for participants who terminated without being vested prior to the valuation date, except those due a refund of contributions.

Future monthly benefit amounts are not calculated or available for deferred vested members. The benefit liability for deferred vested members was calculated by loading the accumulated member contribution balances for deferred vested members by 100% to estimate the value of deferred benefit payments.

### **Changes in Methods and Procedures since the Prior Year**

There have been no changes to the methods and procedures since last year.



**APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

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**ACTUARIAL ASSUMPTIONS**

**Economic Assumptions**

- 1. Investment Return 7.50% per annum, compounded annually, net of expenses.
- 2. Inflation 2.75% per annum, compounded annually
- 3. Salary Increases Rates vary by service. Sample rates are as follows:

<b>Rates by Service</b>	
<b>Years</b>	<b>Rate</b>
<1	8.50%
1	8.00
5	6.46
10	5.18
15	4.71
20	4.45
25	4.24
30	4.07
35	3.82
40+	3.50

- 4. Payroll Growth 3.50% per annum
- 5. Investment on Employee Contributions 3.00% per annum compounded annually.
- 6. Increase in Compensation And Benefit Limits 2.75% per annum on the 401(a)(17) compensation limit and 415 benefit limit

**Demographic Assumptions**

- 1. Mortality
  - a. Healthy lives - Active members RP-2014 White Collar Table for Employees (100% of male rates for males, 55% of female rates for females), projected generationally with MP-2015.
  - b. Healthy lives – Retired members and beneficiaries RP-2014 White Collar Table for Employees, set back two years, scaled (males: under 80, 1.008; over 80, 1.449; females: under 85, .924; over 85, 1.5855; geometrically blended), projected generationally from 2013 with a SOA projection scale tool using 0.5% ultimate 2035 rate in 2035.
  - c. Disabled lives RP-2014 Disabled Lives Table (static table)



**APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

d. Healthy mortality rates and life expectancies are shown below at sample ages:

<b>Pre-retirement Mortality</b>		
<b>Mortality Rate (Base Rates)</b>		
<b>Sample Age</b>	<b>Males</b>	<b>Females</b>
20	0.03%	0.01%
30	0.03	0.01
40	0.04	0.02
50	0.12	0.05
60	0.33	0.11

<b>Post-retirement Mortality</b>		
<b>Mortality Rate (Base Rates)</b>		
<b>Sample Age</b>	<b>Males</b>	<b>Females</b>
50	0.23%	0.17%
60	0.47	0.31
70	1.03	0.82
80	3.65	2.28
90	14.57	12.63

<b>Projection Scale – Post-retirement Mortality</b>						
<b>Sample Age</b>	<b>Scale (2020)</b>		<b>Scale (2030)</b>		<b>Scale (2040)</b>	
	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>
50	0.0252	0.0144	0.0080	0.0052	0.0050	0.0050
60	0.0083	0.0051	0.0066	0.0059	0.0050	0.0050
70	0.0088	0.0121	0.0061	0.0057	0.0050	0.0050
80	0.0114	0.0104	0.0057	0.0058	0.0050	0.0050
90	0.0109	0.0104	0.0057	0.0057	0.0046	0.0046

e. Disabled mortality rates and life expectancies are shown below at sample ages:

<b>Sample Age</b>	<b>Males</b>	<b>Females</b>
30	0.79%	0.30%
40	1.10	0.55
50	2.04	1.19
60	2.66	1.70
70	4.03	2.82
80	7.66	6.10





**APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

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2. Retirement

Rates vary by age and eligibility for benefits.  
Rates are as follows:

<b>Retirement Rates When Eligible for Unreduced Benefits</b>	
<b>Age</b>	<b>Rate</b>
55	18%
56	15
57	15
58	15
59	15
60	25
61	25
62	30
63	25
64	25
65	30
66	30
67	30
68	25
69	25
70	25
71	25
72	25
73	25
74	25
75	25
76	25
77	25
78	35
79	35
80	100

<b>Retirement Rates When Eligible for Reduced Benefits</b>	
<b>Age</b>	<b>Rate</b>
60	10%
61	12
62	12
63	12
64	15



**APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS**

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3. Termination

Rates vary by service.  
Sample rates are as follows:

Rates by Service		
Years	Male	Female
<1	27.5%	31.7%
1	15.0	19.0
5	6.0	8.0
10	3.5	4.7
15	2.3	3.1
20	1.0	2.0
25+	1.0	1.0

4. Disability

Rates vary by age.  
Sample rates are as follows:

Age	Male	Female
Under 35	.00%	.00%
35	.02	.01
40	.02	.01
45	.03	.03
50	.05	.04
55	.07	.06
60	.10	.08

**Other Assumptions**

1. Form of Payment

Service annuity – Life annuity  
Formula annuity – Five year certain and life annuity.

Members who terminated vested are assumed to take a refund of contributions if it is more valuable than their deferred benefit.

2. Marital Status

- a. Percent married
- b. Spouse’s age

85% married  
Females assumed to be two years younger than males.

3. Administrative Expense

Investment return is assumed to be net of expenses.

4. Commencement age for deferred vested benefit

Age 62



## APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS

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- |                              |  |
|------------------------------|--|
| 5. Cost of Living Adjustment | Service annuity – none<br><br>Formula annuity – For members hired before January 1, 2013, it is 2.25% per annum, compounded annually. For members hired on or after January 1, 2013, it is 1.00% per annum, compounded annually.                         |
| 6. State Contribution        | State contributions for the current plan year are assumed to be contributed in a lump sum on the July 1 following the plan year end. These amounts from the prior plan year are treated as a contribution receivable on the plan's financial statements. |

### **Changes in Assumptions since the Prior Year**

There have been no changes to the assumptions since the prior year.



## APPENDIX D – GLOSSARY OF TERMS

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