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**Sixty-Seventh
Annual Actuarial Report**

**OMAHA SCHOOL EMPLOYEES'
RETIREMENT SYSTEM**

as of January 1, 2019





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

May 21, 2019

Board of Trustees
Omaha School Employees' Retirement System
3215 Cuming Street
Omaha, Nebraska 68131

Re: Sixty-Seventh Annual Actuarial Report

Members of the Board:

At your request, we have performed an actuarial valuation of the Omaha School Employees' Retirement System (OSERS) as of January 1, 2019. The major findings of the valuation are contained in this report, including the actuarial contribution rate and the additional School District contribution for the year ending December 31, 2019. There have been no changes to the System's actuarial assumptions or benefit provisions since the prior valuation. However, legislation passed in the 2017 session modified the benefit provisions for members hired on or after July 1, 2018, creating a new benefit tier. This is the first valuation that includes members covered by the new tier.

At their March 6, 2019 meeting, the Board modified the method for amortizing the unfunded actuarial accrued liability (UAAL). While the amortization policy continues to use the layered amortization methodology, the Board reset the initial amortization base to the UAAL as of January 1, 2019. This base is now the "legacy" base and is amortized over a closed 30-year period, beginning January 1, 2019, with payments as a level-percent of payroll. New amortization bases in the future will also be amortized over closed 30-year periods, with payments as a level-percent of payroll. The change to the UAAL amortization method, which reduced the actuarial required contribution rate, is discussed further in the Executive Summary of this report.

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



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

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

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

This is to certify that the independent consulting actuaries have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. We, Patrice A. Beckham, FSA and Bryan K. Hoge, FSA, are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in this report or to provide explanations or further details as may be appropriate.

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

Respectfully Submitted,

Cavanaugh Macdonald Consulting, LLC

A handwritten signature in black ink, reading 'Patrice Beckham' in a cursive script.

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

A handwritten signature in black ink, reading 'Bryan K. Hoge' in a cursive script.

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



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The primary purposes of performing the actuarial valuation are as follows:

- to calculate the actuarial required contribution (ARC) rate necessary to maintain the solvency of the System, as set out in the Board of Trustees' Funding Policy,
- to determine the additional contribution amount, if any, from the School District given the fixed statutory contribution rates for members, the School District (101% of members' contributions), and the State of Nebraska;
- to evaluate the funded status of the System and disclose various asset and liability measures as of the valuation date;
- to evaluate and disclose the key risks to funding the System pursuant to Actuarial Standard of Practice Number 51;
- to determine the experience of the System since the last valuation; and
- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.

This report presents the results of the January 1, 2019 actuarial valuation of the Omaha School Employees' Retirement System (OSERS). The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2019 based on the System's membership, benefit structure, and assets on that date. The valuation results reflect net unfavorable experience for the 2018 plan year as demonstrated by an unfunded actuarial accrued liability that was higher than expected, based on the results of the prior valuation. The largest source of unfavorable experience (\$62 million) resulted from not meeting the expected return of 7.50% on the actuarial value of assets. This experience was partially offset by a net liability gain of \$18 million.

At the March 6, 2019 meeting, the Board of Trustees modified the System's Funding Policy to reset the legacy amortization base to the unfunded actuarial accrued liability (UAAL) as of January 1, 2019. Payments are calculated as a level percentage of payroll over a closed 30-year period. New layers of UAAL that occur in the future will be amortized over new 30-year periods. This change reduced the actuarial contribution rate in the current valuation by 1.62%. The contribution shortfall in the 2019 valuation is 5.31% which results in an additional District contribution of \$18.2 million for 2019.

Membership

The table on the following page summarizes the System's membership, by group, in the current and prior valuation. The active member count decreased from 7,569 to 7,177 (5.2%) and the number of members receiving a benefit increased from 4,678 to 4,826 (3.2%). Total projected payroll decreased by 3.0% from \$349.9 million in the January 1, 2018 valuation to \$339.5 million in the current valuation, partially due to the decrease in the number of active members.

The 2017 session of the Nebraska Legislature created a new benefit structure for members hired on or after July 1, 2018 (referred to as Tier 4). The key change was a change to the minimum age for retirement under Rule of 85 from age 55 to 60. As a result, the cost of the Tier 4 benefit structure is somewhat lower than the cost of the prior benefit structures. Due to the effective date, this is the first valuation that includes Tier 4 members. Over time, as current active members covered by the other benefit tiers leave covered employment and are replaced by Tier 4 members the cost of the System is expected to decrease slightly. However, it will likely take ten to fifteen years before the impact on the valuation is material.



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SYSTEM MEMBERSHIP	Jan. 1, 2019	Jan. 1, 2018	% Chg
1. Active Members			
a. Certificated			
(1) Tier 1	3,021	3,247	(7.0)
(2) Tier 2	842	988	(14.8)
(3) Tier 3	633	637	(0.6)
(4) Tier 4	<u>233</u>	<u>0</u>	NA
(5) Total	4,729	4,872	(2.9)
b. Classified			
(1) Tier 1	1,363	1,589	(14.2)
(2) Tier 2	504	701	(28.1)
(3) Tier 3	414	407	1.7
(4) Tier 4	<u>167</u>	<u>0</u>	NA
(5) Total	2,448	2,697	(9.2)
c. Total			
(1) Tier 1	4,384	4,836	(9.3)
(2) Tier 2	1,346	1,689	(20.3)
(3) Tier 3	1,047	1,044	0.3
(4) Tier 4	<u>400</u>	<u>0</u>	NA
(5) Total	7,177	7,569	(5.2)
2. Retirees and Disabled Members	4,570	4,426	3.3
3. Beneficiaries	256	252	1.6
4. Inactive Vested Members			
(1) Tier 1	1,089	1,043	4.4
(2) Tier 2	<u>25</u>	<u>0</u>	NA
(3) Total	1,114	1,043	6.8
5. Nonvested Terminations			
(1) Tier 1	302	198	52.5
(2) Tier 2	130	133	(2.3)
(3) Tier 3	163	82	98.8
(4) Tier 4	<u>76</u>	<u>0</u>	NA
(5) Total	671	413	62.5
6. Total	13,788	13,703	0.6

Assets

As of January 1, 2019, the System had total assets of \$1.194 billion measured on a market value basis. This was a decrease of \$40.2 million from the prior valuation and represents an annualized rate of return of -1.2%, net of all expenses. The components of this change are shown in the following table:



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	Market Value (\$M)
Net Assets, January 1, 2018	\$ 1,234
• District, State and Member Contributions	+ 102
• Benefit Payments and Refunds	- 128
• Administrative Expenses	- 1
• Investment Return	- 13
Net Assets, January 1, 2019	\$ 1,194

The market value of assets is not used directly in the calculation of the unfunded actuarial accrued liability (UAAL) and actuarial contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is used to determine the value of assets used in the valuation. This amount, called the “actuarial value of assets”, is equal to the expected asset value, based on the actuarial value in the prior valuation and the assumed investment return in the prior valuation of 7.5%, plus 25% of the difference between the actual market value and the expected asset value. The resulting value must be no less than 80% of market value and no more than 120% of market value (referred to as a “corridor”). The corridor did not apply this year as the actuarial value of assets was 115% of market value. The actuarial value of assets as of January 1, 2019 was \$1.379 billion, an increase of \$14 million from the prior year. The components of change in the actuarial value of assets from January 1, 2018 to January 1, 2019 are shown in the following table.

	Actuarial Value (\$M)
Actuarial Assets, January 1, 2018	\$ 1,365
• District, State and Member Contributions	+ 102
• Benefit Payments and Refunds	- 128
• Expected Investment Income (based on 7.5% assumption)	+ 102
• Actuarial Investment Gain/(Loss)	- 62
Preliminary Actuarial Assets, January 1, 2019	\$ 1,379
• Application of Corridor	N/A
Final Actuarial Assets, January 1, 2019	\$ 1,379

The dollar-weighted annualized rate of return, net of investment and administrative expenses, measured on the actuarial value of assets was approximately 2.9%. A comparison of asset values on both the market and actuarial basis is shown below:

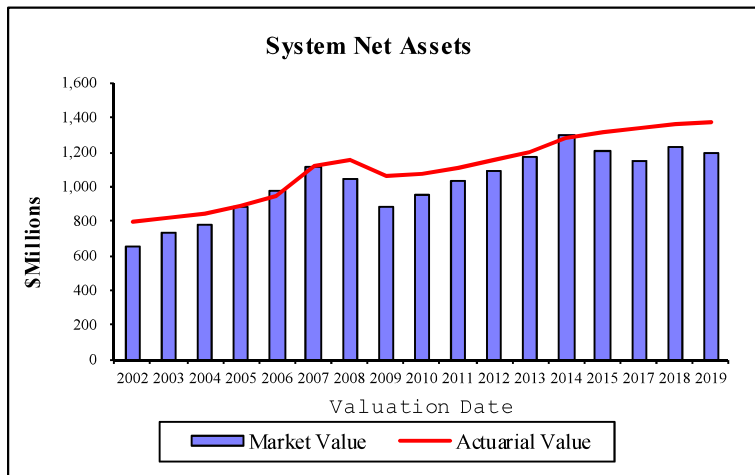
	<u>9/1/2014</u>	<u>9/1/2015</u>	<u>1/1/2017</u>	<u>1/1/2018</u>	<u>1/1/2019</u>
Market Value of Assets	\$ 1,295	\$ 1,211	\$ 1,149	\$ 1,234	\$ 1,194
Actuarial Value of Assets	1,278	1,313	1,338	1,365	1,379
Actuarial Value/Market Value	99%	108%	116%	111%	115%

The actuarial value of assets continues to be higher than the market value of assets. However, the difference has increased and the deferred (or unrecognized) investment loss is now \$185 million, about 15% of the market value of assets. Absent favorable investment experience in future years to offset the recognition of this significant deferred loss, it will decrease the System’s funded ratio and increase the actuarial contribution rate as it is reflected through the asset smoothing method. The recognition of the deferred

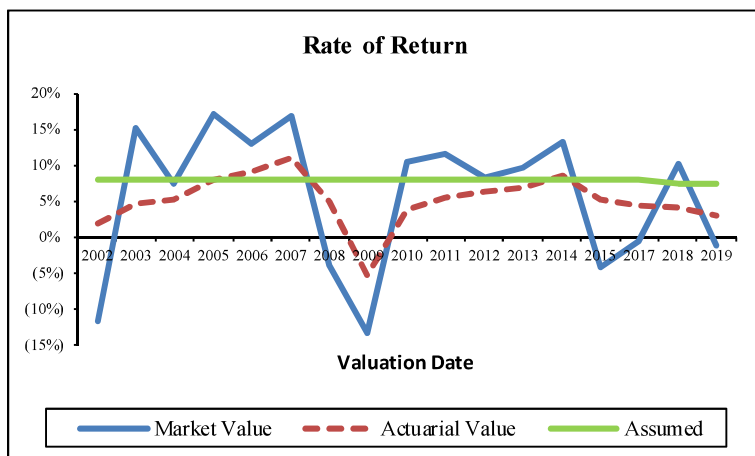


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investment loss in future years is expected to cause the amount of any additional School District contributions to increase as well (see Exhibit 7).



With the use of an asset smoothing method, the actuarial value is expected to be both above and below the market value of assets over a long period of time. However, for most of this period, the actuarial value of assets has exceeded the market value of assets.



The estimated rate of return on both the actuarial and market value of assets for the last decade is shown in this graph. The asset smoothing method mitigates the volatility of market value returns as shown in the rates of return on the actuarial versus market value of assets.

Liabilities

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and asset values at the same date is referred to as the unfunded actuarial accrued liability (UAAL). The unfunded actuarial accrued liability will be reduced if the employer's contributions exceed the employer's normal cost for the year, after allowing for interest earned on the previous balance of the unfunded actuarial accrued liability. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and methods will also impact the total actuarial accrued liability (AAL) and the unfunded portion thereof.



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The unfunded actuarial accrued liability as of January 1, 2019 is shown below:

Actuarial Accrued Liability	\$ 2,192,893,000
Actuarial Value of Assets	<u>1,378,824,000</u>
Unfunded Actuarial Accrued Liability	\$ 814,069,000

Numerous factors contributed to the change in the System's UAAL during the 2018 plan year. The components are examined in the following discussion.

Actuarial gains (or losses) result from actual experience that is more (or less) favorable than anticipated based on the actuarial assumptions. These "experience" (or actuarial) gains or losses are reflected in the UAAL and are measured as the difference between the expected unfunded actuarial accrued liability and the actual unfunded actuarial accrued liability, taking into account any changes due to assumption, method or benefit provision changes. Overall, the System experienced an actuarial loss of \$43 million. The investment return on the actuarial value of assets was lower than assumed during the 2018 plan year, resulting in an actuarial loss of \$62 million. There was an actuarial gain of \$18 million on the actuarial accrued liability, largely due to actual salary increases that were lower than expected.

The change in the unfunded actuarial accrued liability between January 1, 2018 and January 1, 2019 is shown in the following table (in millions):

Unfunded Actuarial Accrued Liability, January 1, 2018	\$ 771
• Expected change in UAAL	
– Amortization method	+ 7
– Contributions less than the actuarial required contribution	+ 0
• Investment experience	+ 62
• Liability experience	– 18
• Other experience	– 8
Unfunded Actuarial Accrued Liability, January 1, 2019	\$ 814

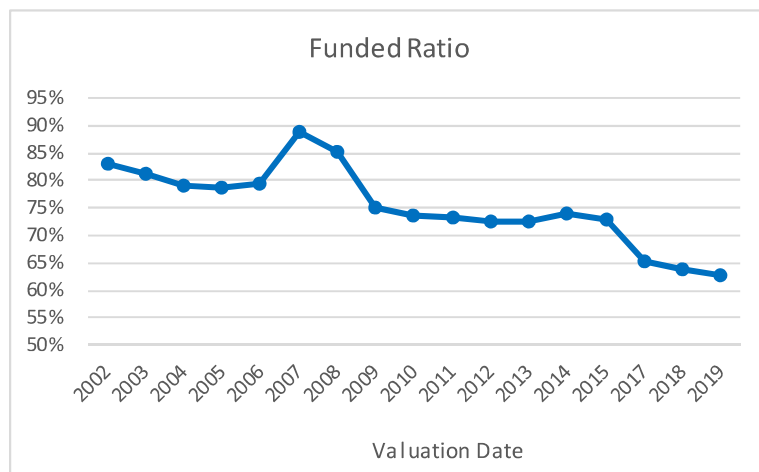
An evaluation of the unfunded actuarial accrued liability on a pure-dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. Another way to evaluate the unfunded actuarial accrued liability and the progress made in its funding is to track the funded status, the ratio of the actuarial value of assets to the actuarial accrued liability. Note that the funded ratio does not necessarily indicate whether or not additional funding is needed, nor does it indicate whether or not the plan has sufficient funds to settle all current obligations.



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The funded status information for OSERS is shown below (in millions):

	9/1/13	9/1/14	9/1/15	1/1/17	1/1/18	1/1/19
Using Actuarial Value of Assets:						
Funded Ratio (AVA/AAL)	73%	74%	73%	65%	64%	63%
Unfunded AAL (AAL - AVA)	\$454	\$446	\$486	\$713	\$771	\$814
Using Market Value of Assets:						
Funded Ratio (MVA/AAL)	70%	75%	67%	56%	58%	54%
Unfunded AAL (AAL - MVA)	\$490	\$429	\$588	\$902	\$902	\$999



Changes in actuarial assumptions and methods, coupled with investment returns below the assumed rate and contributions below the actuarial rate significantly reduced the funded ratio over much of this period. However, with the adoption of the Board's current funding policy, the funded ratio is expected to increase in the future, assuming all assumptions are met and the full actuarial contribution amounts are made as required in state statute.

Contributions

The actuarial contribution rate for the System consists of:

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

The actuarial contribution rate is computed based on the Board of Trustees' Funding Policy. On that basis, the actuarial contribution rate (item 3 below) is equal to the normal cost rate plus the amortization payment on the UAAL. Effective with the January 1, 2017 valuation, OSERS began to amortize the UAAL using a “layered” approach. Under this method, the UAAL is split into pieces or “layers”; the initial or legacy UAAL was amortized, as a level-percent of payroll, over a closed 30-year period that began with the September 1, 2013 valuation (27 years remained as of the January 1, 2017 valuation). All ensuing UAAL bases were to be amortized, as a level-percent of payroll, over a new 25-year period commencing on the respective valuation date. At the March 6, 2019 meeting, the Board of Trustees modified the System's Funding Policy to reset the legacy amortization base to the unfunded actuarial accrued liability (UAAL) as of January 1, 2019. Payments continue to be calculated as a level percentage of payroll, but over a



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closed 30-year period. New layers of UAAL that occur in the future are also amortized over new 30-year periods. This change reduced the actuarial contribution rate in the January 1, 2019 valuation by 1.62%.

The actuarial contribution rate for the plan year ending December 31, 2019, and any resulting additional School District contribution, is computed based on the January 1, 2019 actuarial valuation. The ongoing, fixed contributions to the System are set by state statute and are shown below in item 4, “Statutory Contribution Rate”. They include the member contribution rate of 9.78%, the State contribution rate of 2%, and the School District contribution rate which is 101% of the member contribution rate.

Based on the results of the valuation, there is a contribution shortfall for the 2019 plan year of 5.31%, or \$18.2 million, as shown in the table below:

Contribution Rate	Actuarial Valuation	
	1/1/2019	1/1/2018
1. Normal Cost	12.96%	13.00%
2. UAAL Contribution	<u>14.01%</u>	<u>14.05%</u>
3. Total Actuarial Contribution Rate	26.97%	27.05%
4. Statutory Contribution Rate	21.66%	21.66%
5. Contribution Shortfall/(Margin) (3) – (4)	5.31%	5.39%
6. Additional District Contribution (\$M)	\$18.2	\$18.9

The unfavorable experience on the actuarial value of assets during 2018, along with partial recognition of the deferred investment experience from the 2018 valuation, resulted in an increase in the actuarial contribution rate from the prior valuation. The actual increase in covered payroll was lower than assumed which also increased the contribution rate. Without the change in Funding Policy that reset the amortization of the UAAL, as of January 1, 2019 over 30 years, the actuarial contribution rate would have increased to 28.59% and the additional District contribution would have been \$23.8 million. Overall, there was a decrease of 0.08% in the actuarial contribution rate from the January 1, 2018 valuation to the January 1, 2019 valuation, as shown below.

Total Actuarial Contribution Rate	
January 1, 2018	27.05%
Contributions Different Than Actuarial Rate	0.00%
Investment Experience	1.06%
Liability Experience	(0.31%)
Change in Normal Cost Rate	(0.04%)
Payroll Growth Different Than Expected	0.85%
Change in Actuarial Methods	(1.62%)
Other Experience	<u>(0.02%)</u>
January 1, 2019	26.97%



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The difference in the actuarial contribution rate and the statutory contribution rate results in a contribution shortfall for 2019 of 5.31% of covered payroll, or \$18.2 million. Due to the investment experience for the 2018 plan year, a \$185 million deferred investment loss exists (market value is lower than actuarial value of assets). Absent favorable investment experience in future years to offset the recognition of the deferred investment loss, the actuarial contribution rate is expected to increase as the deferred investment experience is reflected through the asset smoothing method. If this occurs, the System's funded status is expected to decrease and the contribution shortfall is expected to increase. The following table illustrates the impact of the deferred investment experience on the District's additional contribution, if all assumptions are met in the future:

Year Ended December 31,	Total Payroll	Actuarial Recommended Contribution	Member and State Statutory	District Statutory	District Additional	District Additional (August 31)
2019	\$339,468,617	26.97%	11.78%	9.88%	5.31%	\$18,244,371
2020	350,603,394	27.70%	11.78%	9.88%	6.04%	21,433,239
2021	362,758,636	28.24%	11.78%	9.88%	6.58%	24,158,969
2022	374,989,720	28.65%	11.78%	9.88%	6.99%	26,529,635
2023	387,960,751	28.94%	11.78%	9.88%	7.28%	28,586,035
2024	401,247,012	29.14%	11.78%	9.88%	7.48%	30,377,229
2025	414,762,969	29.30%	11.78%	9.88%	7.64%	32,072,150

Comments

The System's unfunded actuarial accrued liability increased from \$771 million in the January 1, 2018 valuation to \$814 million in the January 1, 2019 actuarial valuation, and the funded ratio declined slightly from 64% to 63%. Net unfavorable experience occurred during the 2018 plan year, the result of a \$62 million actuarial loss on assets and an \$18 million gain on liabilities. This experience increased the unfunded actuarial accrued liability and the payment thereon. However, the Board of Trustees modified the amortization policy effective with the January 1, 2019 valuation by resetting the legacy UAAL over a closed 30-year period. New layers of UAAL will also be amortized over closed 30-year amortization periods, with payments as a level percentage of payroll. This change in the amortization policy reduced the actuarial contribution rate by 1.62%, which more than offset the increase due to the higher UAAL. The net impact was a reduction in the actuarial contribution rate from 27.05% in the January 1, 2018 valuation to 26.97% in the January 1, 2019 valuation.

The Nebraska statutes provide that the School District shall contribute the greater of (a) one hundred and one percent of the contributions made by the employees or (b) such amount as may be necessary to maintain the solvency of the System, as determined annually by the Board of Education upon recommendation of the actuary retained by the Board of Trustees. The Trustees have adopted a Funding Policy that sets the criteria for determining the contribution amount necessary to maintain the solvency of the System. On this basis, the Actuarial Contribution Rate for the plan year ending December 31, 2019 is 26.97% of payroll. The total of contributions made by members, the State, and the School District for plan year ending December 31, 2019 is 21.66% of payroll, so the actuarial contribution rate exceeds the statutory contribution rates by 5.31%. This contribution shortfall of \$18.2 million represents the additional required contribution by the School District needed for the 2019 plan year. With the amount



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of unrecognized investment losses, the additional District contribution is expected to be needed for many years in the future.

The deferred investment loss (actuarial value less market value of assets) is \$185 million as of January 1, 2019, up from \$131 million as of January 1, 2018. Absent favorable investment experience in future years, the deferred investment loss of \$185 million will eventually be reflected in the actuarial value of assets in future years. While the use of an asset smoothing method is a common method used by public retirement systems, it is important to identify the potential impact of the deferred investment experience. This is accomplished by comparing the key valuation results from the January 1, 2019 actuarial valuation using both the actuarial and market value of assets (see following table).

	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Accrued Liability	\$2,192,893,000	\$2,192,893,000
Asset Value	<u>1,378,824,000</u>	<u>1,193,800,000</u>
Unfunded Actuarial Accrued Liability	\$814,069,000	\$999,093,000
Funded Ratio	62.88%	54.44%
Normal Cost Rate	12.96%	12.96%
UAAL Contribution Rate	<u>14.01%</u>	<u>17.19%</u>
Actuarial Contribution Rate	26.97%	30.15%
Total Statutory Contribution Rate	<u>(21.66%)</u>	<u>(21.66%)</u>
Contribution Shortfall	5.31%	8.49%
Additional District Contribution	\$18,244,371	\$29,170,379

A typical retirement plan faces many different risks. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. Actuarial Standard of Practice Number 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions. Risk evaluation is an important part of managing a defined benefit plan. Please see the Risk Considerations section of this report for an in-depth discussion of the specific risks facing OSERS.

We conclude this executive summary by presenting comparative statistics and actuarial information from both the January 1, 2018 and January 1, 2019 valuations.



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	Jan. 1, 2019	Jan. 1, 2018	% Chg
SYSTEM MEMBERSHIP			
1. Active Membership			
- Number of Members	7,177	7,569	(5.2)
- Projected Payroll for Upcoming Fiscal Year	\$339.5M	\$349.9M	(3.0)
- Average Salary	47,300	46,233	2.3
2. Inactive Membership			
- Number Not in Pay Status	1,785	1,456	22.6
- Number of Retirees/Beneficiaries/Disableds	4,826	4,678	3.2
- Total Annual Benefits in Pay	\$126.0M	\$120.9M	4.2
ASSETS AND LIABILITIES			
1. Net Assets			
- Market Value	\$1,194M	\$1,234M	(3.2)
- Actuarial Value	1,379M	1,365M	1.0
2. Projected Liabilities			
- Retired Members	\$1,311M	\$1,275M	2.8
- Inactive Members	45M	37M	21.6
- Active Members	<u>1,223M</u>	<u>1,221M</u>	0.2
- Total Liability	2,580M	2,533M	1.9
3. Actuarial Accrued Liability (AAL)	\$2,193M	\$2,136M	2.7
4. Unfunded Actuarial Accrued Liability	\$814M	\$771M	5.6
5. Funded Ratio			
a. Actuarial Value Assets/AAL	62.88%	63.89%	(1.6)
b. Market Value Assets/AAL	54.44%	57.76%	(5.7)
SYSTEM CONTRIBUTIONS			
1. Total Actuarial Contribution Rate	26.97%	27.05%	(0.3)
2. Statutory Contribution Rate			
a. Member Contribution Rate	9.78%	9.78%	0.0
b. Employer Contribution Rate	9.88%	9.88%	0.0
c. State Contribution Rate	<u>2.00%</u>	<u>2.00%</u>	0.0
d. Total	21.66%	21.66%	0.0
3. Contribution Shortfall/(Margin) (1.) - (2.d.)	5.31%	5.39%	(1.5)
4. Additional District Contribution*	\$18,244,371	\$18,861,681	(3.3)

M = (\$)Millions

Note: Numbers may not add due to rounding

* Contribution amount is calculated as of August 31



EXECUTIVE SUMMARY

HISTORICAL CHANGES IN THE OSERS UNFUNDED ACTUARIAL ACCRUED LIABILITY

(dollars in millions)

		9/1/03	9/1/04	9/1/05	9/1/06	9/1/07	9/1/08	9/1/09	9/1/10	9/1/11	9/1/12	9/1/13	9/1/14	9/1/15	1/1/17	1/1/18	1/1/19	Total
Prior Valuation UAAL		163	191	223	240	246	138	198	349	390	406	437	455	446	486	713	771	
Amortization Method	4	5	6	7	7	5	3	4	6	2	8	9	10	9	12	7	7	104
Actual Contributions																		
Less than ARC	0	0	2	0	0	3	0	0	2	4	0	2	0	0	0	3	0	16
More than ARC	0	0	0	(2)	(2)	0	(7)	(2)	0	0	(4)	0	(4)	(5)	(4)	0	0	(28)
Actual vs Expected Experience																		
Investment	27	23	1	(10)	(29)	(29)	33	151	42	26	20	12	(6)	34	63	44	62	493
Salary	(5)	(6)	(1)	4	1	1	1	0	(13)	(15)	(12)	(6)	(8)	(3)	*	3	(29)	(89)
Retirement	3	0	3	2	2	2	3	(2)	(4)	(1)	4	4	6	9	*	7	6	42
Mortality	2	5	4	3	3	3	1	(2)	0	(2)	2	(2)	(1)	2	*	(1)	6	20
Termination of Employment	(4)	(1)	2	3	3	1	7	2	3	2	0	1	(1)	(2)	*	(1)	(6)	6
Other	1	3	0	(1)	(1)	(3)	(1)	0	0	0	13	(8)	(5)	(4)	(6)	(4)	(3)	(18)
Benefit Changes	0	0	0	0	0	(3) ²	0	0	0	0	0	(4)	0	0	0	0	0	(7)
Assumption Changes	0	0	0	0	0	0	20	0	0	0	0	10	0	0	138	0	0	168
Change to Actuarial Methods	0	3 ¹	0	0	0	(88) ³	0	0	5	0	0	0	0	0	0	0	0	(80)
Total Change for Year End	28	32	17	6	(108)	(108)	60	151	41	16	31	18	(9)	40	227*	58	43	
UAAL on Valuation Date	191	223	240	246	246	138	198	349	390	406	437	455	446	486	713	771	814	

¹Included part-time members who are vested

²Increase in member contribution rate

³Actuarial asset value reset to market value

* Not calculated. Total liability experience was a \$24 million loss, which is included in the total change at year end.

Note: Although a total column is shown, the amounts in each year are not additive because they are calculated on each valuation date and, therefore, represent a value at a different point in time.



EXHIBIT 1 – SUMMARY OF FUND ACTIVITY (MARKET VALUE OF ASSETS)

SUMMARY OF FUND ACTIVITY (Market Value Basis)

For Period Ended December 31, 2018

NET ASSETS ON JANUARY 1, 2018 **\$ 1,234,040,000**

ADDITIONS

Salary deductions	\$ 36,734,000
School District contributions	56,001,000
Purchases of service	328,000
State service annuity receipts	1,530,000
Sec. 79-916 deposits	7,111,000
Income from investments, including realized and unrealized gains	(13,454,000)
Total additions	\$ 88,250,000

DEDUCTIONS

Retirement benefits	\$ (120,620,000)
Refunds to employees	(6,958,000)
Professional fees	(406,000)
Other	(42,000)
Personnel costs	(464,000)
Total deductions	\$ (128,490,000)

NET ASSETS ON JANUARY 1, 2019 **\$ 1,193,800,000**

Note: Starting with the January 1, 2018 valuation, the asset balance is calculated on a Cash Basis. In prior valuations, the market value of assets was calculated on an Accrual Basis.



EXHIBIT 2 – ACTUARIAL VALUE OF NET ASSETS

ACTUARIAL VALUE OF NET ASSETS

As of January 1, 2019

1. Actuarial Value of Assets as of January 1, 2018	\$ 1,365,013,000
2. Actual Contributions/Disbursements	
a. Contributions	101,704,000
b. Benefit payments	(127,578,000)
c. Net change	<u>(25,874,000)</u>
3. Expected Value of Assets as of January 1, 2019	1,440,499,000
4. Market Value of Assets as of January 1, 2019	1,193,800,000
5. Difference between Market and Expected Values (4) – (3)	(246,699,000)
6. Initial Actuarial Value of Assets as of January 1, 2019 (3) + [(5) x 25%]	1,378,824,000
7. Corridor as of January 1, 2019	
a. 120% of Market Value of Assets as of January 1, 2019	1,432,560,000
b. 80% of Market Value of Assets as of January 1, 2019	955,040,000
8. Final Actuarial Value of Assets as of January 1, 2019* (6), but not greater than (7a), nor less than (7b)	1,378,824,000
9. Actuarial value divided by market value (8) / (4)	115.5%
10. Market value less actuarial value	\$ (185,024,000)

* The estimated annualized rate of return on the actuarial value of assets for the period ended December 31, 2018 is about 2.9%



EXHIBIT 3 – ACTUARIAL BALANCE SHEET

ACTUARIAL BALANCE SHEET

As of January 1, 2019

ASSETS

Actuarial Value of Assets	\$	1,378,824,000
Present Value of Contributions for Unfunded Actuarial Accrued Liability		814,069,000
Present Value of Future Normal Costs		<u>386,734,000</u>
Total Assets	\$	2,579,627,000

LIABILITIES

<u>Present Value of Future Benefits</u>		
Retirees, Beneficiaries, and Disableds	\$	1,311,452,000
Inactive Vesteds		41,762,000
Nonvested Terminations		3,401,000
Active Members		
Retirement benefits	\$	1,156,625,000
Termination benefits		56,112,000
Death benefits		<u>10,275,000</u>
		<u>1,223,012,000</u>
Total Liabilities	\$	2,579,627,000



EXHIBIT 4 – UNFUNDED ACTUARIAL ACCRUED LIABILITY

UNFUNDED ACTUARIAL ACCRUED LIABILITY

As of January 1, 2019

1. Present Value of Future Benefits	\$ 2,579,627,000
2. Present Value of Future Normal Costs	<u>386,734,000</u>
3. Actuarial Accrued Liability (1) – (2)	2,192,893,000
4. Actuarial Value of Assets	\$ <u>1,378,824,000</u>
5. Unfunded Actuarial Accrued Liability (3) – (4)	814,069,000



EXHIBIT 5 – AMORTIZATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)

AMORTIZATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)

Effective with the January 1, 2017 valuation, OSERS began to amortize the UAAL using a “layered” approach. Under this method, the UAAL is split into pieces or layers; the initial or legacy UAAL was amortized, as a level-percent of payroll, over a closed 30-year period that began with the September 1, 2013 valuation (27 years remaining as of the January 1, 2017 valuation). All ensuing UAAL bases were to be amortized, as a level-percent of payroll, over a new 25-year period commencing on the respective valuation date. At the March 6, 2019 meeting, the Board of Trustees modified the System’s Funding Policy to reset the legacy amortization base to the unfunded actuarial accrued liability (UAAL) as of January 1, 2019. Payments continue to be calculated as a level percentage of payroll over a closed 30 year period. New layers of UAAL that occur in the future will also be amortized over new thirty-year periods.

Amortization Bases	Original Amount	1/1/2019 Remaining Payments	Date of Last Payment	Outstanding Balance as of 1/1/2019	Annual Contribution*
2019 UAAL Base	\$ 814,069,000	30	1/1/2048	\$ 814,069,000	\$ 47,545,253
Total				\$ 814,069,000	\$ 47,545,253

* Contribution amount reflects mid-year timing.

1. Total UAAL Amortization Payments	\$ 47,545,253
2. Projected Payroll for plan year ending December 31, 2019	\$ 339,468,617
3. UAAL Amortization Payment Rate	14.01%

**EXHIBIT 6 – ANALYSIS OF CONTRIBUTION RATE**

ANALYSIS OF CONTRIBUTION RATE

The System is financed by contributions from the members, the School District and the State. Effective September 1, 2013, the members contribute 9.78% of pay. The District is obligated to pay the greater of (a) one hundred and one percent of the member contributions or (b) such amount as may be necessary to maintain the solvency of the System. Under the Funding Policy adopted by the Board in May, 2013, the Actuarial Recommended Contribution rate (ARC) is the normal cost rate plus the contribution necessary to amortize the UAAL. Effective July 1, 2014, the State of Nebraska contributes 2.0% of pay.

1. Normal Cost	\$ 40,360,760
2. a. Expected Payroll for Current Actives for Year End December 31, 2019	311,456,960
b. Total Expected Payroll for Year End December 31, 2019	339,468,617
3. Normal Cost Rate (1)/(2a)	12.96%
4. Unfunded Actuarial Accrued Liability at Valuation Date	814,069,000
5. UAAL Contribution at Mid-Year	47,545,253
6. UAAL Contribution Rate (5)/(2b)	14.01%
7. Actuarial Recommended Contribution Rate (3) + (6)	26.97%
8. Statutory Contribution Rate:	
(a) Member	9.78%
(b) District	9.88%
(c) State	<u>2.00%</u>
(d) Total	21.66%
9. Contribution Shortfall (7) - (8d)	5.31%
10. Additional District Contribution at August 31, 2019 (9) * (2b) * (1.075 ^ (2/12))	\$ 18,244,371



EXHIBIT 7 – PROJECTION OF ADDITIONAL DISTRICT CONTRIBUTIONS

PROJECTION OF ADDITIONAL DISTRICT CONTRIBUTIONS

The projections below are based on the open group projection model prepared in conjunction with the January 1, 2019 actuarial valuation. It is assumed that all actuarial assumptions are met each year in the future, including a 7.5% assumed rate of return on the market value of assets. The projections also assume the number of active members remains constant in the future. To the extent actual experience differs from that assumed, the actual valuation results in future years will also differ and the additional contribution required by the District will vary from the amounts shown below. The projections are not intended to predict the amount of the additional District contributions in the future, but rather to indicate the general trend and magnitude of such contributions if the actuarial assumptions are met.

Year Ended December 31,	Total Payroll	Actuarial Recommended Contribution	Member and State Statutory	District Statutory	District Additional	District Additional (August 31)
2019	\$339,468,617	26.97%	11.78%	9.88%	5.31%	\$18,244,371
2020	350,603,394	27.70%	11.78%	9.88%	6.04%	21,433,239
2021	362,758,636	28.24%	11.78%	9.88%	6.58%	24,158,969
2022	374,989,720	28.65%	11.78%	9.88%	6.99%	26,529,635
2023	387,960,751	28.94%	11.78%	9.88%	7.28%	28,586,035
2024	401,247,012	29.14%	11.78%	9.88%	7.48%	30,377,229
2025	414,762,969	29.30%	11.78%	9.88%	7.64%	32,072,150



EXHIBIT 8 – CALCULATION OF ACTUARIAL GAIN/(LOSS)

CALCULATION OF ACTUARIAL GAIN/(LOSS)

The overall actuarial gain/(loss) is comprised of both a liability gain/(loss) and an actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of January 1, 2019.

1.	Expected Actuarial Accrued Liability	
a.	Actuarial Accrued Liability as of January 1, 2018	\$ 2,136,385,000
b.	Normal cost for plan year ending December 31, 2018	41,703,000
c.	Benefit payments for plan year ending December 31, 2018	(127,578,000)
d.	Additional liability for state service annuities and service purchases	1,858,000
e.	Interest on a., b., c., and d. to end of year	158,727,000
f.	Expected Actuarial Accrued Liability	\$ 2,211,095,000
2.	Actuarial Accrued Liability as of January 1, 2019	\$ 2,192,893,000
3.	Liability Gain/(Loss) (1.f.) – (2)	\$ 18,202,000
4.	Liability Gain/(Loss) as a Percent of Actuarial Accrued Liability	0.83%
5.	Expected Actuarial Value of Assets	
a.	Actuarial value of assets as of January 1, 2018	\$ 1,365,013,000
b.	Contributions for plan year ending December 31, 2018 (including state service annuities and service purchases)	101,704,000
c.	Benefit payments for plan year ending December 31, 2018	(127,578,000)
d.	Interest on a., b., and c. to end of year	101,360,000
e.	Expected actuarial value of assets	\$ 1,440,499,000
6.	Actuarial Value of Assets as of January 1, 2019	\$ 1,378,824,000
7.	Asset Gain/(Loss) (6) – (5.e.)	\$ (61,675,000)
8.	Asset Gain/(Loss) as a Percent of Actuarial Value of Assets	(4.47%)
9.	Overall Actuarial Gain/(Loss) (3) + (7)	\$ (43,473,000)



EXHIBIT 8 – CALCULATION OF ACTUARIAL GAIN/(LOSS)

Gain/(Loss) By Source

The System experienced a net actuarial gain on liabilities of about \$18.2 million during the plan year ended December 31, 2018. The major components of this overall loss are shown below:

Liability Sources	<u>\$Millions</u>
Salary Increases	\$ 28.9
Mortality	(5.7)
Terminations	5.8
Retirements	(5.9)
Disability	0.0
New Entrants/Rehires	(3.0)
Miscellaneous	<u>(1.9)</u>
Total Liability Gain/(Loss)	\$ 18.2
Asset Gain/(Loss)	\$ (61.7)
Net Actuarial Gain/(Loss)	\$ (43.5)

Comments

The purpose of conducting an actuarial valuation of a retirement system is to determine the costs and liabilities for the benefits under the system, to determine the annual level of contribution required to support these benefits and, finally, to analyze the system's overall experience as it compares with the actuarial assumptions used in the valuation. The costs and liabilities of a retirement system reported in the valuation depend not only upon the level of benefits provided, but also upon factors such as investment return on invested funds, mortality rates for active and retired members, withdrawal rates among active members, rates at which salaries increase, and rates of retirement for ages at which members retire. The actuarial assumptions employed as to these and other contingencies in the current valuation are set forth in Appendix C of this report.

Net demographic actuarial experience for the year was a gain of \$18.2 million, about 0.8% of actuarial accrued liability. The largest source of favorable experience was a \$28.9 million gain due to lower salary increases than expected.

Another significant component of the experience for the year ending December 31, 2018 was the investment experience. Due to unfavorable asset experience on a market value basis, there was a loss on the actuarial value of assets of \$61.7 million. As of January 1, 2019, there is a deferred investment loss of \$185 million. Absent favorable investment experience, the deferred loss will flow through the valuation over the next few years and increase both the UAAL and the actuarial contribution rate.



EXHIBIT 9 – SCHEDULE OF CONTRIBUTIONS

**SCHEDULE OF CONTRIBUTIONS FROM THE EMPLOYER
AND OTHER CONTRIBUTING ENTITIES**

HISTORICAL FUNDING INFORMATION

Year Ending	Annual Required Contribution (a)	Total Employer Contribution* (b)	Percentage of ARC Contribution (b) / (a)
8/31/2005	\$22,459,221	\$20,210,403	89.99%
8/31/2006	24,311,628	26,766,000	110.10%
8/31/2007	28,143,388	24,981,000	88.76%
8/31/2008	19,491,557	26,162,000	134.22%
8/31/2009	24,103,114	25,918,000	107.53%
8/31/2010	30,900,224	29,182,000	94.44%
8/31/2011	34,180,566	30,255,000	88.52%
8/31/2012	32,957,547	37,109,000	112.60%
8/31/2013	35,032,074	33,623,000	95.98%
8/31/2014	34,225,147	38,198,000	111.61%
8/31/2015	34,614,093	39,562,000	114.29%
8/31/2016	37,665,061	40,564,000	107.70%
12/31/2016**	12,836,281	13,861,000	107.98%
12/31/2017	57,941,493	55,145,000	95.17%
12/31/2018	63,111,681	63,112,000	100.00%

* Includes State and School District contributions.

** For the short Plan Year from September 1, 2016 through December 31, 2016.

Note: The Total Employer Contribution for fiscal year ending 8/31/2014 was changed because during our work on the GASB reports, we discovered the Service Annuity contribution was different from what was initially reported to us. This figure now matches the number found in the GASB reports.



EXHIBIT 10 – SCHEDULE OF FUNDING PROGRESS

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b - a)/c]
9/1/2005	\$ 887,165,000	\$ 1,126,967,000	\$ 239,802,000	78.72%	\$ 231,708,783	103.49%
9/1/2006	948,938,000	1,195,354,000	246,416,000	79.39%	248,759,070	99.06%
9/1/2007	1,117,628,000 *	1,255,527,000	137,899,000	89.02%	272,844,149	50.54%
9/1/2008	1,149,289,000	1,346,999,000	197,710,000	85.32%	272,720,007	72.50%
9/1/2009	1,061,326,000	1,410,318,000	348,992,000	75.25%	287,770,291	121.27%
9/1/2010	1,078,269,000	1,467,850,000	389,581,000	73.46%	302,229,282	128.90%
9/1/2011	1,110,033,000	1,516,284,000	406,251,000	73.21%	310,228,916	130.95%
9/1/2012	1,155,495,000	1,592,738,000	437,243,000	72.55%	307,258,065	142.30%
9/1/2013	1,205,265,000	1,660,287,000	455,022,000	72.59%	313,946,237	144.94%
9/1/2014	1,277,546,000	1,723,970,000	446,424,000	74.10%	323,077,710	138.18%
9/1/2015	1,312,905,000	1,798,706,000	485,801,000	72.99%	333,166,135	145.81%
1/1/2017	1,337,983,000	2,050,581,000	712,598,000	65.25%	351,940,122 **	202.48%
1/1/2018	1,365,013,000	2,136,385,000	771,372,000	63.89%	359,359,507	214.65%
1/1/2019	1,378,824,000	2,192,893,000	814,069,000	62.88%	375,598,301	216.74%

* The actuarial value of assets was reset to market value as of 9/1/2007.

** Covered Payroll was annualized for the short Plan Year in 2016.



EXHIBIT 11 – SOLVENCY TEST

SOLVENCY TEST

A short-term solvency test, which is one method of determining a system's progress under its funding program, compares the plan's present assets with: 1) the liability for active member contributions on deposit; 2) the liability for future benefits to present retirees; and (3) the liability for service already rendered by active members. In a system that has been following the level-percent of payroll financing discipline, the obligation for active member contributions on deposit (Item 1) and the liabilities for future benefits to present retired lives (Item 2) will be fully covered by present assets with the exception of rare circumstances. The obligation for service already rendered by active members (Item 3) will be partially covered by the remainder of present assets. Absent any significant benefit changes, if the system has been using level cost financing, the funded portion of Item 3 usually will increase over a period of time.

Actuarial Valuation*	Active Member Contributions (1)	Retirees, Beneficiaries, and Inactives (2)	Active Members Employer Financed Portion (3)	Actuarial Value of Assets	Portion of Liabilities Covered by Assets		
					(1)	(2)	(3)
2012	\$249,903,000	\$955,399,000	\$387,436,000	\$1,155,495,000	100%	95%	0%
2013	272,347,000	1,001,953,000	385,987,000	1,205,265,000	100%	93%	0%
2014	281,672,000	1,058,156,000	384,142,000	1,277,546,000	100%	94%	0%
2015	292,731,000	1,129,399,000	376,576,000	1,312,905,000	100%	90%	0%
2017	306,276,000	1,266,557,000	477,748,000	1,337,983,000	100%	81%	0%
2018	316,337,000	1,311,949,000	508,099,000	1,365,013,000	100%	80%	0%
2019	326,524,000	1,356,615,000	509,754,000	1,378,824,000	100%	78%	0%

* The actuarial valuation date for years prior to 2017 was September 1.

**EXHIBIT 12 – ESTIMATED BENEFIT PAYMENTS**

ESTIMATED BENEFIT PAYMENTS*

Year End	Currently In-Pay	Currently Not-In-Pay	Total
2019	\$122,947,000	\$ 7,193,000	\$130,140,000
2020	122,810,000	11,745,000	134,555,000
2021	122,412,000	16,506,000	138,918,000
2022	121,753,000	21,431,000	143,184,000
2023	120,960,000	26,496,000	147,456,000
2024	120,094,000	32,028,000	152,122,000
2025	119,107,000	37,824,000	156,931,000
2026	118,009,000	44,056,000	162,065,000
2027	116,674,000	50,662,000	167,336,000
2028	115,226,000	57,388,000	172,614,000
2029	113,419,000	64,823,000	178,242,000
2030	111,291,000	72,915,000	184,206,000
2031	108,933,000	81,141,000	190,074,000
2032	106,400,000	89,785,000	196,185,000
2033	103,466,000	98,798,000	202,264,000

*Amounts shown are the cash flows for current members only, based on the current benefit structure and assuming that all actuarial assumptions are met in each future year. To the extent that actual experience deviates from that expected, results will vary. Amounts are shown in future nominal dollars and have not been discounted to the valuation date.



RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, is first applicable for the January 1, 2019 actuarial valuation for the Omaha School Employees' Retirement System (System).

A typical retirement plan faces many different risks. The term "risk" is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of any defined benefit plan. These include:

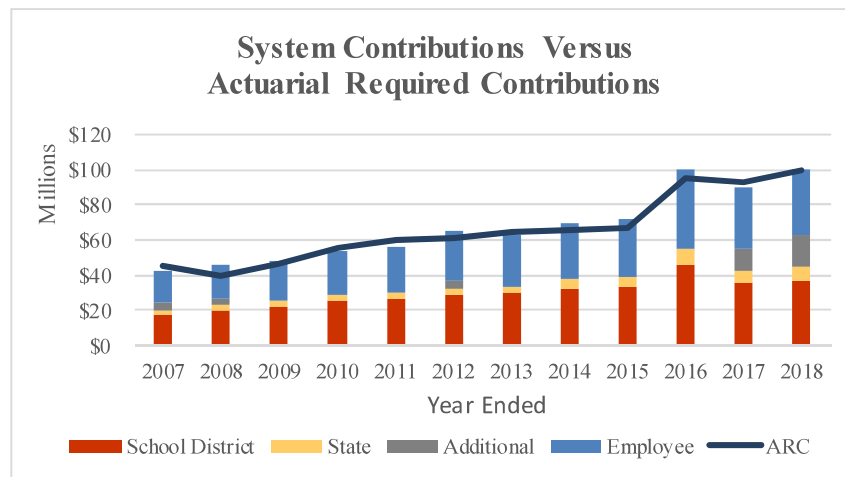
- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, active membership size, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay; and
- external risks such as the regulatory and political environment.

In assessing the risks associated with funding a pension plan, it is important to realize that each retirement system is unique and may have different risks. This discussion is intended to identify and disclose the more significant risks to the funding of OSERS'.

The biggest risk to any retirement system is the inability to pay benefits when they are due. That risk is minimized by the accumulation of assets in the System's trust. There is generally a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution each year. As the following graph illustrates, the School District has contributed at least the full actuarial required contribution in seven of the past twelve years and has contributed an amount very close to the actuarial contribution in the other years.



RISK CONSIDERATIONS



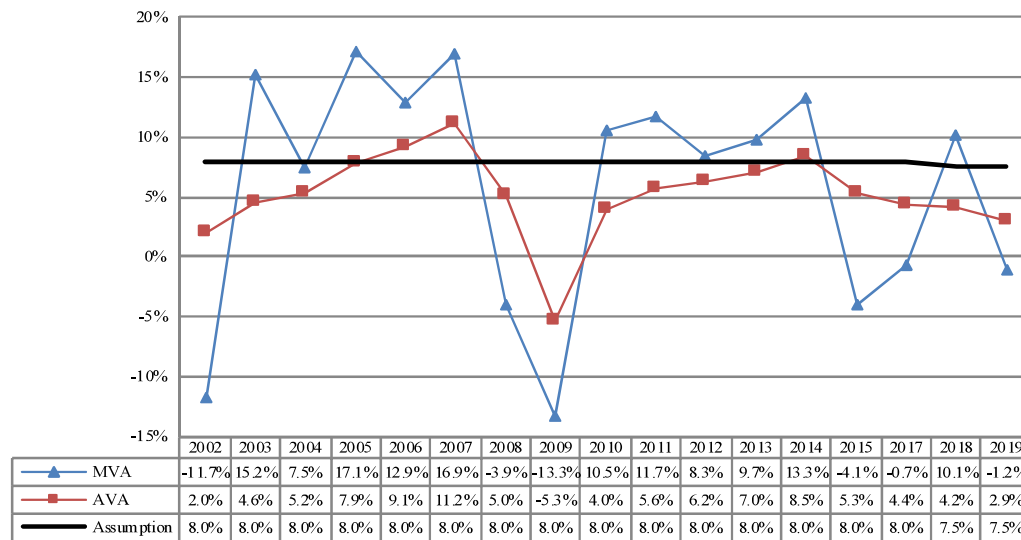
Current state statutes require the School District to contribute any shortfall between the actuarial required contribution rate and the statutory contributions by members, the State of Nebraska and the School District on or before August 31. As a result, the full actuarial contribution rate can be expected to be contributed in future years and the funded status of OSERS should improve over time, if actuarial assumptions are met.

The System's funding policy, as modified in 2019, amortizes each amortization layer, including the legacy UAAL, over a closed 30-year period, with payments calculated as a level-percent of pay. This is a relatively long amortization period and will thus tend to improve the System's funded status relatively slowly. The payment pattern which develops a payment schedule that is level as a percent of payroll is the most common method used by public plans, but it is less conservative than the level-dollar amortization method because the dollar amount of the unfunded actuarial accrued liability increases for many years before finally starting to decline, even if all assumptions are met. In addition, amortization as a level percent of pay requires the use of an assumption regarding the growth of covered payroll in future years (currently 3.25% per year). This introduces another possible source of variation between actual and expected experience, thus increasing the funding risk for the System. If actual payroll does not increase as assumed, which could be due to a decline in the number of active members or actual salary increases that are less than expected, the UAAL contribution rate will increase. The dollar payment on the UAAL is the same, but the higher UAAL contribution rate ultimately pushes more of the UAAL funding to the District's additional contribution.

Perhaps the most significant risk factor for most Systems, including OSERS, is investment return because of the volatility of returns associated with the asset allocations. Historically, actual returns each year have varied significantly from the assumed rate of return (see following graph). This is to be expected, given the underlying capital market assumptions and the System's asset allocation and standard deviation, but it does create a high degree of uncertainty or risk. The compound rate of return over this time period was about 5.3%, but the range of returns varied from +17% to -13%. When actual investment returns are lower than the assumed rate of return, the actuarial contribution rate increases absent offsetting gains on liabilities or changes in actuarial methods. The investment experience of the last decade has been much lower than the assumption, resulting in an increase in the actuarial contribution rate.



RISK CONSIDERATIONS



The System is currently 63% funded, using the actuarial value of assets and 54% funded on a market value basis. The low funded ratio has increased the actuarial required contribution rate and the School District now has an obligation to make an additional contribution of around 5% of covered payroll. As the District's obligation to make the additional contributions is statutory, some risk of unmanageable contribution levels exists. The risk associated with investment returns has the potential to create significant volatility in the amount of additional District contributions. Given the asset allocation of the portfolio and the associated volatility of returns in any one year, it would not be unexpected to have returns that are more than 10% lower than the assumed return of 7.50%. In that case, the District's additional contribution could increase significantly (around 0.50% of pay or \$1.7 million in the first year alone) because the full impact of the "miss" on investments would flow through to the District's additional contribution rate.

A key demographic risk for all retirement systems, including OSERS, is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined in every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, which would also be significant, although more easily absorbed. While either of these events could happen, it represents a relatively small probability and thus represents much less risk than the volatility associated with investment returns.

The following exhibits in this section summarize certain historical information that helps indicate how certain key risk metrics may have changed over time. Many of the changes are due to the maturing of the retirement plan.



EXHIBIT 13 – HISTORICAL ASSET VOLATILITY RATIOS

As a retirement plan matures, the size of the market value of assets usually increases relative to the covered payroll of active members, on which the Plan is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the plan. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions (contribution rates will be higher).

OSERS' historical trends are somewhat different than those observed in most public plans. This is due both to the length of time the System has been in existence (since 1909) and the slow growth of assets over this period compared to payroll. The result is a stable or decreasing asset volatility ratio rather than an increasing trend which is more typical. As the System's funding improves over the long term, the asset volatility ratio is expected to increase.

Actuarial Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
9/1/2006	\$978,431,000	\$248,759,070	3.93	2.30%
9/1/2007	1,117,628,000	272,844,149	4.10	2.39%
9/1/2008	1,050,281,000	272,720,007	3.85	2.25%
9/1/2009	884,438,000	287,770,291	3.07	1.79%
9/1/2010	951,214,000	302,229,282	3.15	1.84%
9/1/2011	1,033,128,000	310,228,916	3.33	1.94%
9/1/2012	1,095,565,000	307,258,065	3.57	2.09%
9/1/2013	1,170,347,000	313,946,237	3.73	2.18%
9/1/2014	1,294,722,000	323,077,710	4.01	2.34%
9/1/2015	1,211,107,000	333,166,135	3.64	2.13%
1/1/2017	1,148,582,000	351,940,122	3.26	1.90%
1/1/2018	1,234,040,000	359,359,507	3.43	2.00%
1/1/2019	1,193,800,000	375,598,301	3.18	1.86%

Note: Years prior to the 9/1/2010 valuation were provided by the prior actuary.

*The impact of asset smoothing is not reflected in the increase in the Actuarial Contribution Rate (ACR). Current year assumptions and methods are used for all years shown. With asset smoothing, the first year impact on contributions would be about 25% of the amount shown.

The assets at January 1, 2019 are 318% of payroll, so underperforming the investment return assumption by 10.00% (i.e., earning -2.50% for one year) is equivalent to a loss of about 31.8% of payroll. The impact on the actuarial contribution rate would be 1.86% once the full amount of actuarial loss worked through the asset smoothing method. While the impact in the first year is mitigated by the asset smoothing method, this illustrates the contribution risk associated with volatile investment returns.



EXHIBIT 14 – HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the System has negative cash flows and experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 4% to 5% of MVA that may cause significant concerns. In general, large negative cash flow is not a major risk for OSERS at this time.

Year End	Market Value of Assets (MVA)	Contributions*	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
8/31/2007	\$1,117,628,000	\$44,037,000	\$68,286,000	(\$24,249,000)	(2.17%)
8/31/2008	1,050,281,000	49,099,000	72,912,000	(23,813,000)	(2.27%)
8/31/2009	884,438,000	49,943,000	77,503,000	(27,560,000)	(3.12%)
8/31/2010	951,214,000	56,616,000	81,260,000	(24,644,000)	(2.59%)
8/31/2011	1,033,128,000	58,242,000	86,015,000	(27,773,000)	(2.69%)
8/31/2012	1,095,565,000	68,139,000	90,621,000	(22,482,000)	(2.05%)
8/31/2013	1,170,347,000	65,248,000	95,107,000	(29,859,000)	(2.55%)
8/31/2014	1,294,722,000	72,072,000	100,810,000	(28,738,000)	(2.22%)
8/31/2015	1,211,107,000	75,065,000	106,735,000	(31,670,000)	(2.61%)
12/31/2016	1,148,582,000	101,826,000	152,808,000	(50,982,000)	(4.44%)
12/31/2017	1,234,040,000	92,397,000	121,005,000	(28,608,000)	(2.32%)
12/31/2018	1,193,800,000	101,704,000	127,578,000	(25,874,000)	(2.17%)

Note: Years prior to Year End 8/31/2010 were provided by the prior actuary.

** Contributions include additional revenue coming into the System such as Purchases of Service and State Service Annuity receipts.*

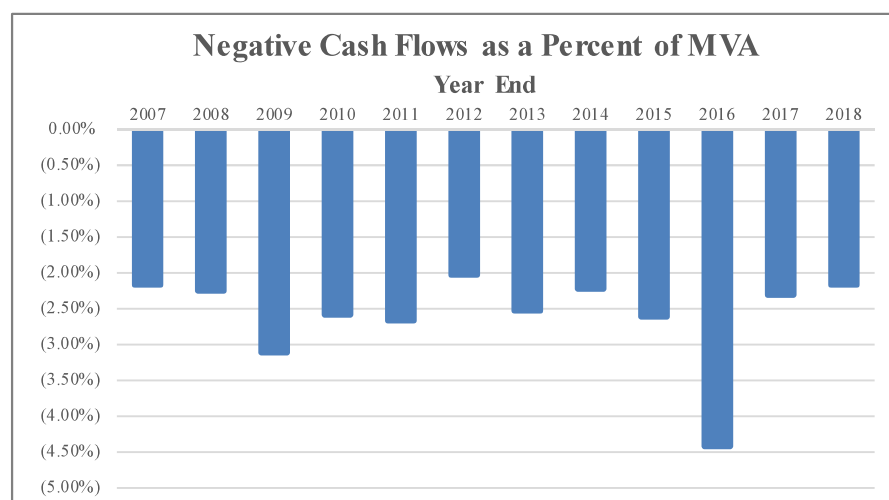




EXHIBIT 15 – LIABILITY MATURITY MEASUREMENTS

Like OSERS (which was created in its current form in 1951), most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the plan since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs. Because OSERS has been in existence for a very long time (prior systems dating back to 1909 were consolidated to create OSERS), there has been no significant change in the percent of liability attributable to retirees over the last 12 years. The ratio of retiree liability to covered payroll has increased over this time period, however, which indicates an increase in contribution risk.

Actuarial Valuation Date	Retiree Liability (a)	Total Actuarial Accrued Liability (b)	Retiree Percentage (a) / (b)	Covered Payroll (c)	Ratio (b) / (c)
9/1/2007	\$725,838,000	\$1,255,527,000	57.8%	\$272,844,149	4.60
9/1/2008	783,518,000	1,346,999,000	58.2%	272,720,007	4.94
9/1/2009	818,000,000	1,410,318,000	58.0%	287,770,291	4.90
9/1/2010	850,325,000	1,467,850,000	57.9%	302,229,282	4.86
9/1/2011	874,656,000	1,516,284,000	57.7%	310,228,916	4.89
9/1/2012	935,442,000	1,592,738,000	58.7%	307,258,065	5.18
9/1/2013	978,397,000	1,660,287,000	58.9%	313,946,237	5.29
9/1/2014	1,028,802,000	1,723,970,000	59.7%	323,077,710	5.34
9/1/2015	1,099,161,000	1,798,706,000	61.1%	333,166,135	5.40
1/1/2017	1,230,588,000	2,050,581,000	60.0%	351,940,122	5.83
1/1/2018	1,274,528,000	2,136,385,000	59.7%	359,359,507	5.94
1/1/2019	1,311,452,000	2,192,893,000	59.8%	375,598,301	5.84

Note: Years prior to the 9/1/2010 valuation were provided by the prior actuary.

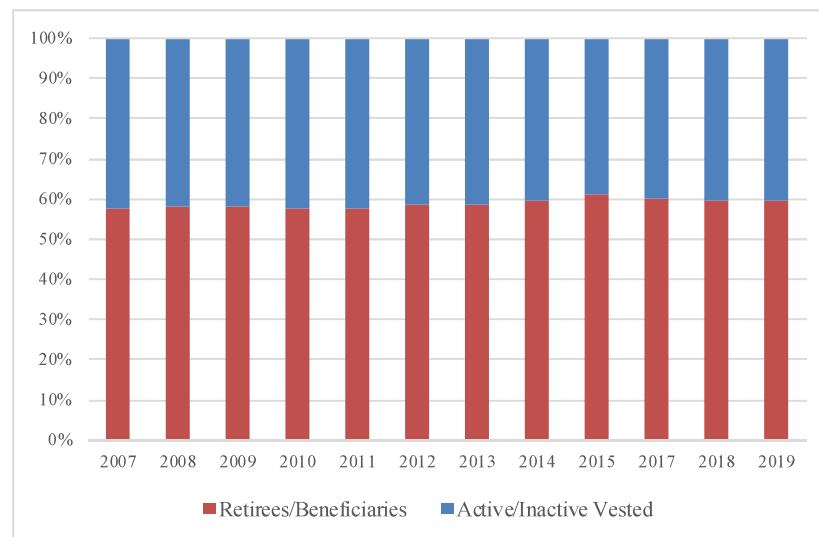




EXHIBIT 16 – COMPARISON OF VALUATION RESULTS UNDER ALTERNATE INVESTMENT RETURN ASSUMPTIONS

This exhibit is a sensitivity analysis that compares the key January 1, 2019 valuation results under the current investment return assumption and four (4) alternate investment return assumptions, both higher and lower than the current assumption. This information is intended to illustrate the impact of the investment return assumption on the funding of the System. Note that only the investment return assumption is changed for this purpose, as identified in the heading below. This may not result in a set of economic actuarial assumptions that complies with Actuarial Standard of Practice Number 27. The alternate return assumptions are only for purposes of identifying the impact of different investment return assumptions on the funding results. All other actuarial assumptions are unchanged for purposes of this analysis.

Investment Return Assumption	7.00%	7.25%	7.50%	7.75%	8.00%
Contributions					
Normal Cost Rate	14.61%	13.75%	12.96%	12.22%	11.54%
UAAL Contribution	15.39%	14.70%	14.01%	13.30%	12.60%
Total Actuarial Contribution Rate	30.00%	28.45%	26.97%	25.52%	24.14%
Statutory Contribution Rate	21.66%	21.66%	21.66%	21.66%	21.66%
Contribution Shortfall/(Margin)	8.34%	6.79%	5.31%	3.86%	2.48%
Additional District Contribution	\$28,632,745	\$23,320,380	\$18,244,371	\$13,267,522	\$8,527,504
Actuarial Value of Assets (\$ in millions)	\$1,378.8	\$1,378.8	\$1,378.8	\$1,378.8	\$1,378.8
Actuarial Liability (\$ in millions)	\$2,326.0	\$2,257.9	\$2,192.9	\$2,130.9	\$2,071.6
Funded Ratio	59.3%	61.1%	62.9%	64.7%	66.6%



APPENDIX A

HISTORICAL BACKGROUND



APPENDIX A – HISTORICAL BACKGROUND

Historical Background

Since 1909, the Omaha School District has maintained a retirement system for its teachers. Since then, systems covering other employees were added. In 1951, the Nebraska Legislature consolidated the existing systems into one new System. Amendments of significance in the Nebraska statutes and federal Social Security Act have occurred from time to time. These changes in order of their occurrence are outlined briefly below:

1951 - New System

Prior to 1951, three separate retirement systems existed. In 1951 the Nebraska Legislature repealed these three separate systems and created the present single System covering all employees. This act provided, however, that a member of a pre-existing system might elect to retain his benefit and contribution rights under one of the former systems in lieu of the new System benefits and contributions. The members who so elected then became known by the following titles for retirement purposes:

- (1) Employees covered by the former Omaha Teachers Retirement System were known as "Teachers,"
- (2) Employees covered by the former Non-Teaching Employee Retirement System were known as "Non-Teachers,"
- (3) Employees covered by the former Cafeteria Employee Retirement System were known as "Cafeteria."

All other employees became members of the new System and received credit for membership service starting September 1, 1951. Benefits as well as contributions under the new System became directly related to a member's compensation by formula. The maximum covered annual compensation under the new System became \$5,000, but the maximum for Teachers, Non-Teachers and Cafeteria remained \$3,000.

1955 Amendments

On September 24, 1955, Omaha School employees voted to become participants in the federal Social Security program. All Social Security benefits are payable in addition to the System benefits. As a result of Social Security coverage, changes were made in the benefit and contribution formulas of the System effective August 31, 1955. In general, the changes reduced contributions and benefits to 60% of the rates formerly in effect. In addition, the maximum covered compensation was increased from \$5,000 to \$6,000 except for Teachers, Non-Teachers and Cafeteria which remained at \$3,000.

The amount contributed by the School District was also reduced to 60% of the rates in effect prior to the change and the School District's contributions, matching the refunds paid upon the withdrawal or death of employees, were retained in the retirement fund rather than being returned to the School District.

1963 Amendments

Effective September 1, 1963, several changes were made in the new System. The limit on covered compensation for contributions and benefits of members was removed.



APPENDIX A – HISTORICAL BACKGROUND

The service retirement annuity credit was increased in order to integrate with the modifications in federal Social Security between 1955 and 1963. The disability annuity for members was increased to 100% of the service retirement annuity accrued to date of disability and the restriction as to the number of years for which it was payable was removed. The offset in the benefit formula for the Nebraska State Service Annuity credit was placed on a year-to-year basis for all members, increasing the annuity credit for service after September 1, 1951 for active and retired alike.

The employees who were participating as Teachers, Non-Teachers and Cafeteria began to make contributions and receive benefit credits at the same rates as other members of the System. It should be noted that any employee who retained rights under a pre-existing system still receives credit in accordance with the provisions of the former system if this is more than the credit, after the State service annuity offset, would be under the 1963 amendments.

The contribution rate for employees was changed to integrate with the modifications in Social Security and was no longer subject to revision depending upon the degree of actuarial soundness of the System as had been provided in 1962. The School District became solely responsible for maintaining the solvency of the System on the basis of annual actuarial valuations. The School District again became entitled to refunds equal to the refunds paid upon withdrawal or death of employees.

The restriction prohibiting the crediting of interest on refunds to employees who withdraw from employment during the first ten years of service was removed. Thus, all employees who withdraw after one year or more of service receive interest on their contributions made since September 1, 1951.

1965 Amendments

Effective September 1, 1965, a pre-retirement survivor's annuity was added to the System for long-service employees. This change gave an employee with 25 or more years of service protection at death approximately equivalent in value to the vesting which already existed at termination of employment for an employee with the same period of service.

Effective January 1, 1966, the Social Security tax base was increased from \$4,800 to \$6,600 per year. This change became effective in the System's contribution and benefit formulas as of September 1, 1966.

1967 Amendments

The 77th Session of the Nebraska Legislature enacted LB 494 which amended the Nebraska School Retirement System, effective October 23, 1967. A major change was the increase in the State service annuity credit from \$1.50 to \$3.00 per month for each year of credited service after July 1, 1968 and the removal of the 35 year limitation on credited State service. For the purpose of determining the new State service annuity offset in calculating the net Omaha annuity, the additional \$1.50 per month for each year of service after July 1, 1968 is not applicable, but removal of the 35 year limitation does apply. This means that the State service annuity offset is still determined on the basis of \$1.50 per month for each year of service. The increase in the State service annuity offset by virtue of eliminating the 35 year limitation represents a lower cost to the Omaha System for those members having more than 35 years of State service by age 65.



APPENDIX A – HISTORICAL BACKGROUND

Another change with regard to the State service annuity was the manner in which the funds are transferred from the State to the Omaha System to pay these annuities. For retirements occurring after the effective date of the amendments (October 23, 1967), the State transfers the commuted value (equivalent single sum) of the individual State service annuity to the Omaha System and then the payment of the monthly annuity to the retired member is the School District's responsibility.

In 1967 the eligibility provisions for the pre-retirement survivors' annuity and the vested retirement rights were changed, reducing the service required from 25 years to 20 years and thereby granting these options to a larger number of employees.

Effective January 1, 1968, the federal Social Security taxable wage base was increased from \$6,600 to \$7,800 per year. This change became effective in the System's contribution and benefit formulas as of September 1, 1968.

1969 Amendments

The 80th Session of the Nebraska Legislature enacted LB 530 which amended the System effective August 11, 1969. The provisions of this bill improved the benefit structure of the System in two ways. The membership annuity credits (credits after 9/1/51) were increased approximately 10% and the Social Security wage base was "frozen" at the \$7,800 level for purposes of calculating benefit credits and employee contributions.

By freezing the Social Security base, benefit credits and employee contributions for service after September 1, 1969 will not be reduced by virtue of future increases in the Social Security wage base. The System benefits will remain integrated with the Social Security program at the level provided by the \$7,800 base.

1972 Amendments

During 1972, the Nebraska Legislature enacted LB 1116 which amended the System. These amendments were to become effective for retirements occurring on or after September 1, 1972. The provisions of this bill improved the benefit structure of the System and liberalized the eligibility condition for qualification upon termination for the deferred vested retirement benefit.

The benefits of the System were improved by increasing the membership annuity credits (credits after 9/1/51) by approximately 20% over those in existence on September 1, 1971.

In order to be eligible upon resignation to elect a deferred vested service annuity, the years of creditable service was reduced from 20 years to 15 years.

1973 Amendments

The 1973 Session of the Nebraska Legislature enacted LB 445 which created increases in the State service annuity of the Nebraska School Retirement System. LB 445 provides for (a) a State service annuity credit of \$3.00 per month for each year of creditable service for all emeritus members and for all full time school employees who retire on or after July 1, 1973 and (b) for increases in the State service annuity for members who retired prior to July 1, 1973 based upon the difference between the Consumers Price Index on the date of retirement and July 1, 1973.



APPENDIX A – HISTORICAL BACKGROUND

1976 Amendments

The 1976 Session of the Nebraska Legislature enacted LB 994 which increased the membership annuity credits (credits after 9/1/51) by 20%.

The members' contributions were increased to 2.90% of compensation up to \$7,800 per year plus 5.25% of salary in excess of that amount.

1979 Amendments

The 1979 Session of the Nebraska Legislature changed the mandatory retirement date from age 65 to age 70. Late retirement benefits are actuarially increased from what would have been payable at the normal retirement date.

1982 Amendments

The 1982 Session of the Nebraska Legislature enacted LB 131 which made considerable changes to the System. LB 131 was approved by the Governor on February 19, 1982.

The most major revision in the System was to change the previous primary benefit formula from the step rate formula based on each year of salary to a final average compensation formula. The primary benefit formula became 1.5% of final average compensation for each year of creditable service not in excess of 30. Final average compensation was then defined to be 1/36 of the total compensation received during the three fiscal years of highest compensation. Also, the creditable service not in excess of 30 years was allowed to continue to accrue after the fiscal year in which the employee attains age 65. In addition, the State service annuity offset of \$1.50 per year of creditable service was removed with respect to the final average compensation formula. The prior provisions of the System were retained as a minimum benefit, recognizing creditable service for those provisions through the earlier of the date of retirement or August 31, 1983.

Another major revision in the System was to change the step rate formula for employee contributions to a level 4.90% of compensation. In addition, the provision entitling the School District to receive refunds of its own contributions equal to the contributions refunded to employees was removed.

The early retirement date was liberalized. Previously an employee needed to have either 35 years of creditable service or to have attained age 60 with 25 years of creditable service. Now an employee can retire early if he has at least 10 years of creditable service and has attained age 55.

The actuarial equivalent of the annuity payable at the end of the fiscal year in which the employee attains age 65 was changed in the following two ways:

1. For employees retiring before age 62, the monthly formula retirement annuity is a reduced amount based on the actuarial equivalent of the annuity deferred to the employee's 62nd birthday. If retirement is at age 62 or later, there is no actuarial reduction. Previously there was an actuarial reduction, based on the benefit deferred to age 65, for any retirement before age 65.
2. For employees retiring on or after age 65, the monthly formula retirement annuity is to be based on total years of creditable service (not in excess of 30) and the employee's entire compensation history at date of retirement. Consequently, for retirements after the fiscal year in which the employee attains age 65 there is no longer an actuarial increase from the benefit available at the normal retirement date.



APPENDIX A – HISTORICAL BACKGROUND

The eligibility provision to elect a deferred vested service annuity upon resignation was changed from 15 years of creditable service to 10 years.

1983 Amendments

The 1983 Session of the Nebraska Legislature enacted LB 488 which created benefit increases effective September 1, 1983 for members having retired before February 21, 1982. The amount of benefit increase was limited to the smaller of:

1. The percentage increase in the Consumer Price Index for all Urban consumers from the effective date of retirement to June 30, 1983 applied to benefits being paid and
2. The sum of \$1.50 per month for each year of creditable service and \$1.00 per month for each completed year of retirement from the effective date of retirement to June 30, 1983, actuarially adjusted for joint and survivor elections.

1985 Amendments

The 1985 Session of the Nebraska Legislature enacted LB 215 which removed the 30 year limit on years of service used in the benefit formula, provided for vesting after five years of service rather than ten years, and reduced the eligibility period for disability from ten years of service to five years of service.

LP215 also provided for the employer “pick up” of employee contribution under IRC 414(h), thereby allowing employee contributions to be made on a pre-tax basis.

Unisex factors are now being used for determining early retirement reductions and actuarial equivalents for joint and survivor optional benefits.

1986 Amendments

The 1985 Session of the Nebraska Legislature enacted LB 1048 which granted increases in benefits for most retirees to reflect cost-of-living increases over the last several years. The increases ranged up to a maximum of 10.5%.

1987 Amendments

A "window of opportunity" was created for the buy-in or buy-back of service credits for participants qualifying for that right.

1989 Amendments

LB 237 was enacted by the 1989 Session of the Nebraska Legislature and provided: annual benefit accruals of 1.65% of final average compensation (up from 1.50%), unreduced benefits if a member retires with 35 or more years of service, a five year certain and life thereafter annuity as the normal form of benefit (instead of just a life annuity), employee contributions of 5.8% of pay (up from 4.9%), and increased benefits to retirees (the increases ranged up to 9.0%). There were some other changes as a result of this bill, but none that had a direct actuarial cost impact.



APPENDIX A – HISTORICAL BACKGROUND

1992 Amendments

The 1992 Session of the Nebraska Legislature enacted LB 1001 which increased annual benefit accruals from 1.65% of final average compensation to 1.70%, and increased benefits to retirees (3% increase per year of retirement, not exceeding 9% total increase), a change in the preretirement joint and survivor option to allow it to become effective automatically after 20 years of service, and allowed employees to “buy-in” their time with other public school systems by means of a tax-deferred rollover of their refund from that System.

1995 Amendments

The 1995 Session of the Nebraska Legislature enacted LB 505 which increased annual benefit accruals from 1.70% to 1.80% of final average compensation. It also provided for unreduced retirement benefits when the sum of age and service equals or exceeds 85 (still maintaining the age 55 minimum), and reduced early retirement reductions to .25% per month prior to age 62. Early retirement at 84, 83, or 82 points is also allowed with a maximum reduction of 3%, 6% and 9% respectively. Employee contributions were increased to 6.3% of pay. The bill also provided for a one time increase to current retirees of 3% per year since retirement (not to exceed 9%), or if larger, 90% restoration of the purchasing power of their original pension. There are other changes resulting from this bill, which are not included since they did not have a direct actuarial impact. One change with no actuarial impact but worth noting is the provision for employer “pick up” of employee contributions to the System used to buy in outside service, pursuant to Section 414(h) of the Internal Revenue Code.

1998 Amendments

The 1998 Session of the Nebraska Legislature enacted LB 497 which increased annual benefit accruals from 1.80% to 1.85% of final average compensation. The bill also provided for a one time increase to current retirees of 3% per year since retirement (not to exceed 9%) and provides an annual automatic cost of living adjustment, not greater than 1.5%, beginning January 1, 2000.

2000 Amendments and Cost of Living Adjustment

The 2000 session of the Nebraska Legislature enacted LB 155 which increased accruals from 1.85% to 2.00% of final average compensation.

Pursuant to LB 497, the OSERS Board and the Omaha School District Board authorized a 1.5% discretionary COLA beginning January 1, 2000 in addition to the automatic COLA.

2001 Amendments and Cost of Living Adjustment

The 2001 session of the Nebraska Legislature enacted LB 711 which provided that certain members who previously left employment due to pregnancy could purchase their “lost” service. It also provided a post-retirement supplemental benefit to assist with medical costs. The supplement commences 10 years after retirement, beginning at \$10 per month for each year retired and increasing by \$10 each year to a maximum of \$250 per month. For retirees with less than twenty years of service, the benefit is reduced proportionately.

Additionally, the OSERS Board and the Omaha School Board authorized a discretionary COLA to restore full purchasing power, beginning January 1, 2001, in addition to the automatic COLA.



APPENDIX A – HISTORICAL BACKGROUND

2002 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2002.

2003 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2003.

2004 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2004.

2005 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2005.

2006 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2006.

2007 Amendment and Cost of Living Adjustment

The 2007 session of the Nebraska Legislature enacted Section 79-9, 113 which changed the employee contribution rate from 6.30% of compensation to 7.30% and provided for an employer contribution equal to 101% of the employee contribution rate.

The automatic 1.5% COLA was granted beginning January 1, 2007.

2008 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2008.

2009 Amendment and Cost of Living Adjustment

The 2009 session of the Nebraska Legislature enacted Legislative Bill 187 (LB 187), which increased the State's contribution from 0.7% to 1.0% of covered pay from July 1, 2009 to July 1, 2014. On July 1, 2014 the State's contribution returns to 0.7%. LB 187 also increased the employee contribution rate from 7.30% of compensation to 8.30%. The School District's contribution is equal to 101% of the employee contribution rate so the District's contribution rate increased from 7.373% of compensation to 8.383% as a result of the increase in the member contribution rate.

The automatic 1.5% COLA was granted beginning January 1, 2009.

2010 Amendment and Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2010.



APPENDIX A – HISTORICAL BACKGROUND

2011 Amendment and Cost of Living Adjustment

The 2011 session of the Nebraska Legislature enacted Legislative Bill 382 (LB 382), which increased the Member's contribution from 8.30% of compensation to 9.30%. The School District's contribution is equal to 101% of the employee contribution rate so the District's contribution rate increased from 8.383% of compensation to 9.393% as a result of the increase in the member contribution rate. LB 382 also extended the 1% of payroll contribution by the State from July 1, 2014 to July 1, 2017.

The automatic 1.5% COLA was granted beginning January 1, 2011.

2012 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2012.

2013 Amendments and Cost of Living Adjustment

The 2013 session of the Nebraska Legislature enacted Legislative Bill 553 (LB 553), which increased the Member contribution rate from 9.30% of pay to 9.78% of pay. The School District's contribution is equal to 101% of the employee contribution rate so the District's contribution rate increased from 9.393% of pay to 9.878% of pay as a result of the increase in the member contribution rate. LB 553 also ended the scheduled decrease in the State contribution rate and instead increased the State contribution from 1.0% of pay to 2.0% of pay, effective July 1, 2014. LB 553 also created a new benefit structure for members hired on or after July 1, 2013. For these members, annual cost of living adjustments will be the lesser of 1.0% or CPI, and the final average compensation is defined as 1/60 of the total compensation received during the five fiscal years of highest compensation.

The automatic 1.5% COLA was granted beginning January 1, 2013.

2014 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2014.

2015 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2015.



APPENDIX A – HISTORICAL BACKGROUND

2016 Amendments and Cost of Living Adjustment

The 2016 session of the Nebraska Legislature enacted Legislative Bill 447 (LB 447), which created a new benefit structure for members hired on or after July 1, 2016. The changes result in the same benefit structure for new OSERS members as for new members of the Nebraska School Retirement System. These members will not receive the supplemental medical COLA offered to employees hired before July 1, 2016. Other changes for these employees include a revised early retirement benefit reduction schedule and different retirement eligibility requirements.

The automatic 1.5% COLA was granted beginning January 1, 2016.

2017 Cost of Living Adjustment

The automatic 1.5% COLA was granted beginning January 1, 2017.

2018 Amendments and Cost of Living Adjustment

The 2017 session of the Nebraska Legislature enacted Legislative Bill 415 (LB 415), which created a new benefit structure for members hired on or after July 1, 2018. The changes result in the same benefit structure for new OSERS members as for new members of the Nebraska School Retirement System. The changes for these employees include a revised early retirement benefit reduction schedule and different retirement eligibility requirements.

The 2018 session of the Nebraska Legislature enacted Legislative Bill 1005 (LB 1005), which also affects the benefit provisions for members hired on or after July 1, 2018. As a result of LB 1005, the Board has 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, 2018.

The automatic 1.5% COLA was granted beginning January 1, 2018.

2019 Cost of Living Adjustment

The automatic 1.5% COLA for members hired before July 1, 2013 was granted beginning January 1, 2019.



APPENDIX B

SUMMARY OF PLAN PROVISIONS



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Contributions

Employee Contributions: Employees contribute 9.78% of compensation, effective September 1, 2013. Such contributions are payable each year while employed. Contributions accumulated with interest are refundable at resignation unless the vested retirement benefit has been elected and at death unless the pre-retirement survivor's benefit has been elected.

State Contribution: The State contributes annually an amount equal to 2.0% of the members' compensation, effective July 1, 2014.

School District Contribution: The School District contributes the greater of (a) one hundred and one percent of the contributions by the employees or (b) such amount as may be necessary to maintain the solvency of the system, as determined annually by the board upon recommendation of the actuary and the trustees.

Interest Credited on Refunds: Contributions made prior to September 1, 1951 and refunded at withdrawal or death are not credited with interest. Contributions after September 1, 1951 are credited with interest at the rate declared annually by the Board of Education upon the recommendation of the Board of Trustees.

Benefits

General: The System provides annuities upon retirement from service or disability and upon death to designated survivors.

The service retirement formula is 2.0% per year of creditable service times the final average compensation.

Final average compensation is defined as 1/36 of the total compensation received during the three fiscal years of highest compensation for members hired before July 1, 2013. For members hired on or after July 1, 2013, final average compensation is defined as 1/60 of the total compensation received during the five fiscal years of highest compensation.

Annuities are paid for life, with 5 years guaranteed. Optional forms of payment are available.

The disability annuity, the pre-retirement survivor annuity and the vested retirement right are summarized in the following sections.

Benefits in pay status are subject to an annual cost of living adjustment equal to the lesser of 1.5% or CPI for members hired before July 1, 2013. There is an additional COLA if surplus assets exist beginning January 1, 2000. Effective October 3, 2001, a medical cost of living adjustment is payable to retired members. Such amount will commence 10 years after retirement and shall be an amount equal to \$10 per month for each year retired (subject to a maximum of \$250 per month), prorated for years of service less than 20. For members hired on or after July 1, 2013, the annual cost of living adjustment is capped at 1.0%.

Members hired on or after July 1, 2016 are not eligible to receive the medical COLA benefit.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Retirement Annuities: An employee hired before July 1, 2016 may begin receiving a retirement benefit once the employee has left the employment of the School district, selected a retirement date and

- (a) has completed 35 years of creditable service,
- or
- (b) has 10 years of creditable service (with at least five of those years being creditable Omaha service) and attained age 55,
- or
- (c) remained employed until his or her 65th birthday and completed at least five years of creditable Omaha service.

If an employee who was hired before July 1, 2016 begins receiving an annuity after age 62, or when age and service equals or exceeds 85, there is no adjustment for the retirement annuity. If, however, such employee begins receiving an annuity before age 62, the annuity shall be reduced by 0.25% for each month prior to age 62, but if 84 points have been achieved then the reduction is limited to 3%, if 83 points, 6%, and 82 points, 9%.

An employee hired on or after July 1, 2016 and before July 1, 2018 may begin receiving a retirement benefit once the employee has left the employment of the School district, selected a retirement date and

- (a) has attained age 55 and the sum of the member's attained age and creditable service totals 85,
- or
- (b) has 5 years of creditable service and attained age 60.

For employees who were hired on or after July 1, 2016 and before July 1, 2018, if an employee begins receiving an annuity before age 65, such annuity shall be reduced by 0.25% for each month prior to age 65. If, however, the employee has achieved 85 points and is at least age 55, then there is no reduction to the annuity.

An employee hired on or after July 1, 2018 may begin receiving a retirement benefit once the employee has left the employment of the School district, selected a retirement date and

- (a) has attained age 60 and the sum of the member's attained age and creditable service totals 85,
- or
- (b) has 5 years of creditable service and attained age 60.

For employees who were hired on or after July 1, 2018, if an employee begins receiving an annuity before age 65, such annuity shall be reduced by 0.25% for each month prior to age 65. If, however, the employee has achieved 85 points and is at least age 60, then there is no reduction to the annuity.

Disability Retirement Annuities: Each employee who becomes totally disabled and who has completed five or more years of creditable Omaha service is entitled to a disability retirement annuity equal to the amount of service annuity earned to date of disability. Alternatively, the employee may defer the disability retirement and accrue service and compensation increases in the interim. The disability retirement annuity is payable each month until disability ceases, if before unreduced retirement, or death.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

Pre-Retirement Survivor Annuities: Upon the death of a member who has completed 20 or more years of creditable service and who has not retired, a pre-retirement survivor annuity shall be paid to the member's primary beneficiary. The survivor must be a spouse or one other person whose attained age in the calendar year of the member's death is no more than 10 years less than the attained age of the member in such calendar year. The survivor annuity is the actuarial equivalent of the member's annuity accrued to the date of death, determined on the basis of the member's and beneficiary's attained ages on said date. The survivor annuity is payable in lieu of a refund of the member's accumulated contributions. However, a member may elect out of the survivor annuity and specify that such a refund be paid in lieu of the annuity. An election out of the pre-retirement survivor annuity is entirely independent of the election of a joint and survivor option at retirement. Within 60 days after the member's death, the beneficiary may request a refund of the member's accumulated contributions instead of the annuity; provided, however, that the member may direct the System to pay only an annuity.

If the member (not retired) has less than 20 years of creditable service, or the beneficiary does not meet the requirements stated above, a refund of the member's accumulated contributions shall be paid.

Vested Retirement Right: Each employee who has completed five or more years of creditable Omaha service is eligible upon resignation to elect a deferred vested benefit, first payable as an unreduced amount at age 65, in lieu of a refund of his accumulated contributions. With ten or more years of total creditable service (including at least five years of creditable Omaha service), the deferred vested benefit could commence, unreduced, at age 62 for employees who were hired before July 1, 2016. If benefits start before age 62 (but not earlier than attained age 55), the benefit shall then be reduced as described above.

For employees who were hired on or after July 1, 2016 and before July 1, 2018, the deferred vested benefit could commence, unreduced, at age 65. If benefits start before age 65 (but not earlier than attained age 55), the benefit shall then be reduced as described above.

For employees who were hired on or after July 1, 2018, the deferred vested benefit could commence, unreduced, at age 65. If benefits start before age 65 (but not earlier than attained age 60), the benefit shall then be reduced as described above.



APPENDIX C

ACTUARIAL ASSUMPTIONS AND METHODS



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

The valuation assumptions and methods used in conducting the current actuarial valuation are as follows:

Actuarial Assumptions

Investment Return Assumption: 7.50% per annum, compounded annually, net of expenses.

Mortality Rates: RP-2014 Mortality Table for males, set forward one year.
RP-2014 Mortality Table for females, set back one year.

Future mortality rates are projected on a generational basis using Scale MP-2016, which reflects the expectation that mortality rates will decline over time.

Disabled retirees use the RP-2014 Disabled Retiree Mortality Table, without generational improvement.

Disability: None assumed.

Termination of Employment:
(prior to retirement eligibility) Illustrative rates of termination are as follows:

Certificated:

Percent Terminating	
<u>Duration</u>	<u>Rate</u>
1	11.25%
5	8.00
10	4.50
15	2.25
20	1.00
25	1.00

Classified:

Percent Terminating		
<u>Duration</u>	<u>Male</u>	<u>Female</u>
1	11.00%	15.00%
5	6.00	9.00
10	2.40	4.00
15	1.00	1.75
20	1.00	1.00
25	1.00	1.00



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates:

Early retirement rates are assumed to occur according to the schedule illustrated below:

Members hired before July 1, 2016

Certificated:		Classified:	
<u>Age</u>	<u>Early</u>	<u>Age</u>	<u>Early</u>
55	10%	55	3%
56	6	56	3
57	6	57	3
58	6	58	3
59	8	59	3
60	12	60	5
61	12	61	10

Members hired on or after July 1, 2016

Certificated:		Classified:	
<u>Age</u>	<u>Early</u>	<u>Age</u>	<u>Early</u>
60	12%	60	5%
61	12	61	10
62	12	62	10
63	12	63	10
64	12	64	10



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Unreduced retirement rates are assumed to occur according to the schedule illustrated below:

Members hired before July 1, 2018

Certificated:

<u>Age</u>	<u>1st Year Eligible</u>	<u>Ultimate</u>
55	60%	
56	50	35%
57	45	35
58	45	35
59	45	25
60	35	25
61	25	25
62	25	25
63	25	25
64	30	30
65	35	35
66	35	35
67	35	35
68	35	35
69	100	35
70	100	100

Classified:

<u>Age</u>	<u>1st Year Eligible</u>	<u>Ultimate</u>
55	20%	
56	10	12%
57	10	12
58	10	12
59	15	12
60	15	12
61	15	20
62	20	20
63	20	20
64	20	20
65	25	35
66	20	23
67	20	23
68	20	23
69	20	23
70	100	100



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Members hired on or after July 1, 2018

Certificated:

<u>Age</u>	<u>1st Year Eligible</u>	<u>Ultimate</u>
60	65%	
61	25	25%
62	25	25
63	25	25
64	30	30
65	35	35
66	35	35
67	35	35
68	35	35
69	100	35
70	100	100

Classified:

<u>Age</u>	<u>1st Year Eligible</u>	<u>Ultimate</u>
60	40%	
61	15	20%
62	20	20
63	20	20
64	20	20
65	25	35
66	20	23
67	20	23
68	20	23
69	20	23
70	100	100

Deferred vested members are assumed to retire at first unreduced retirement age.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Salary Scale: Salaries are assumed to increase according to the schedule illustrated below:

<u>Duration</u>	<u>Annual Salary Increase</u>	
	<u>Certificated</u>	<u>Classified</u>
0	5.75%	6.25%
1	5.75	5.75
2	5.75	5.25
3	5.75	5.00
4-6	5.75	4.75
7-11	5.75	4.25
12-14	5.75	3.75
15-21	5.25	3.75
22+	4.25	3.75

Note: Salaries are assumed to increase by 2.0% for members who have not yet finalized their contract negotiations as of the valuation date.

Pre-Retirement Survivor Annuity: It is assumed that females are three years younger than males, and that all members are married.

Probability of Electing a Refund: The proportion of terminating vested members electing a refund of member contributions:

20% for Certificated members
40% for Classified members

Assumed Interest Rate Credited on Employee Contributions: 2.75% compounded annually.

Inflation (CPI): 2.75% compounded annually.

Total Payroll Growth: 3.25% compounded annually.

Decrement Timing: Middle of year

Cost of Living Adjustments: 1.5% for members hired before 7/1/2013
1.0% for members hired on or after 7/1/2013

Inactive Vested Load A 5% load on deferred monthly benefits is included to reflect that some inactive vested members' account balance is greater than the present value of their deferred benefit.



APPENDIX C – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Cost Method

The actuarial cost method is a procedure for allocating the actuarial present value of pension plan benefits and expenses to time periods. The method used for the valuation is known as the individual entry-age actuarial cost method, and has the following characteristics.

- (i) The annual normal costs for individual active member are sufficient to accumulate the value of the member's pension at time of retirement.
- (ii) Each annual normal cost is a constant percentage of the member's year-by-year projected pensionable compensation.

The entry-age actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's pensionable compensation between the entry-age of the member and the assumed exit-ages.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the actuarial accrued liability. Deducting accrued assets from the actuarial accrued liability determines the unfunded actuarial accrued liability (UAAL).

Asset Valuation Method

Assets are valued at expected value at the valuation date plus 25% of the difference between the market value and expected value. As a starting point for implementation of this asset valuation method, the actuarial value of assets as of September 1, 1996 was set equal to the market value. As of September 1, 2007, the actuarial value was again reset to market value. The smoothing method was again implemented in the 2008 valuation. Effective September 1, 2008, the actuarial value must fall within a corridor of 80% to 120% of market value.

UAAL Amortization Method

Effective with the January 1, 2019 valuation, OSERS amortizes the UAAL using a "layered" approach. Under this method, the UAAL is split into pieces; the first piece is amortized, as a level-percent of pay, over a closed 30-year period beginning with the January 1, 2019 valuation (so 30 years remain as of the January 1, 2019 valuation). All ensuing UAAL bases that result from future actuarial experience will be amortized, as a level-percent of pay, over a new 30-year closed period commencing on the respective valuation date.



APPENDIX D

MEMBERSHIP DATA



APPENDIX D— MEMBERSHIP DATA

SUMMARY OF MEMBERSHIP DATA

	<u>Active</u>	<u>Inactive</u> <u>Vesteds</u>	<u>Nonvested</u> <u>Terminations</u>	<u>Retirees*</u>	<u>Beneficiaries</u>	<u>Disabled</u> <u>Members</u>	<u>Total</u>
Members on 1/1/2018	7,569	1,043	413	4,406	252	20	13,703
Terminated – vested	(167)	167	0	0	0	0	0
Terminated – refund due	(274)	0	274	0	0	0	0
Terminated – refunded	(313)	(56)	(104)	0	0	0	(473)
Retired	(213)	(29)	0	242	0	0	0
Disability retirement	0	0	0	0	0	0	0
Death	(8)	(2)	0	(100)	(18)	0	(128)
Payments ended	0	0	0	0	(1)	0	(1)
New beneficiaries	0	0	0	0	23	0	23
New Alternate Payees	0	0	0	0	0	0	0
New members	555	0	105	1	0	0	661
Rehires	28	(11)	(17)	0	0	0	0
Corrections/adjustments	0	2	0	1	0	0	3
Members on 1/1/2019	7,177	1,114	671	4,550	256	20	13,788

* Includes QDROs



APPENDIX D— MEMBERSHIP DATA

HISTORICAL SUMMARY OF MEMBERS

The following table displays selected historical data that was used in the actuarial valuation for the System.

Valuation		Active Members						Average			Number		Act/Ret Ratio
Date	Total	Count	Number	Age	Entry Age	Service	Annual Pay (\$)	Pay Increase	Inactive Vested	Inactive Nonvested	Retired		
January 1*													
1998	8,204		5,680	44.2	33.7	10.5	28,912		330			2,194	2.59
1999	8,564		5,864	43.9	34.0	9.9	29,493	2.01%	386			2,314	2.53
2000	8,885		6,057	43.8	34.1	9.7	30,544	3.56%	380			2,448	2.47
2001	9,156		6,259	44.0	34.4	9.6	32,091	5.06%	368			2,529	2.47
2002	9,409		6,383	43.9	34.5	9.4	33,406	4.10%	384			2,642	2.42
2003	9,425		6,279	44.0	34.5	9.5	33,877	1.41%	385			2,761	2.27
2004	9,711		6,399	44.2	34.6	9.6	34,698	2.42%	473			2,839	2.25
2005	10,124		6,623	44.1	34.8	9.3	35,234	1.54%	485			3,016	2.20
2006	10,522		6,972	44.1	34.9	9.2	35,732	1.41%	442			3,108	2.24
2007	10,769		7,041	44.2	35.1	9.1	36,720	2.77%	483			3,245	2.17
2008	11,228		7,313	44.2	35.2	9.0	37,725	2.74%	515			3,400	2.15
2009	11,480		7,438	44.5	35.5	9.0	38,686	2.55%	553			3,489	2.13
2010	11,644		7,491	44.7	35.4	9.3	39,152	1.20%	566			3,587	2.09
2011	11,602		7,215	45.1	35.2	9.9	40,394	3.17%	680			3,707	1.95
2012	11,881		7,315	44.9	35.0	9.9	40,793	0.99%	723			3,843	1.90
2013	12,152		7,372	44.9	34.9	10.0	41,731	2.30%	813			3,967	1.86
2014	12,477		7,415	44.7	34.8	9.9	42,427	1.67%	937			4,125	1.80
2015	12,938		7,393	44.5	34.7	9.8	44,050	3.83%	984		210	4,351	1.70
2017	13,386		7,462	44.5	34.1	10.4	44,998	2.15%	1,035		347	4,542	1.64
2018	13,703		7,569	44.5	34.1	10.4	46,233	2.74%	1,043		413	4,678	1.62
2019	13,788		7,177	44.8	33.8	11.0	47,300	2.31%	1,114		671	4,826	1.49

* Years prior to 2017 have a valuation date of September 1.



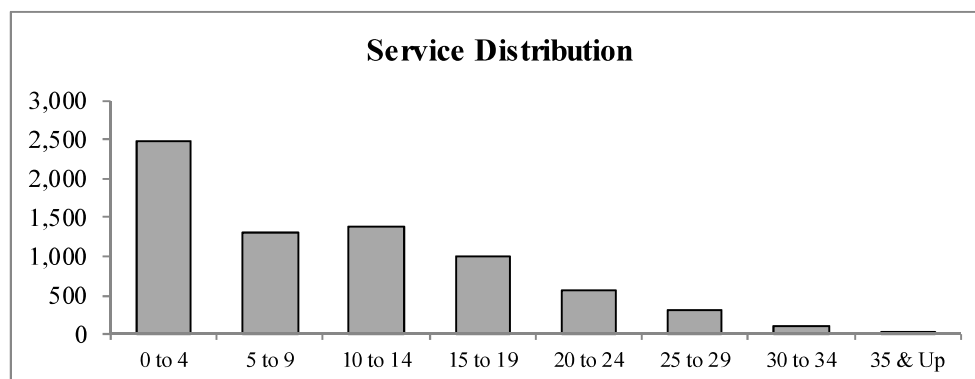
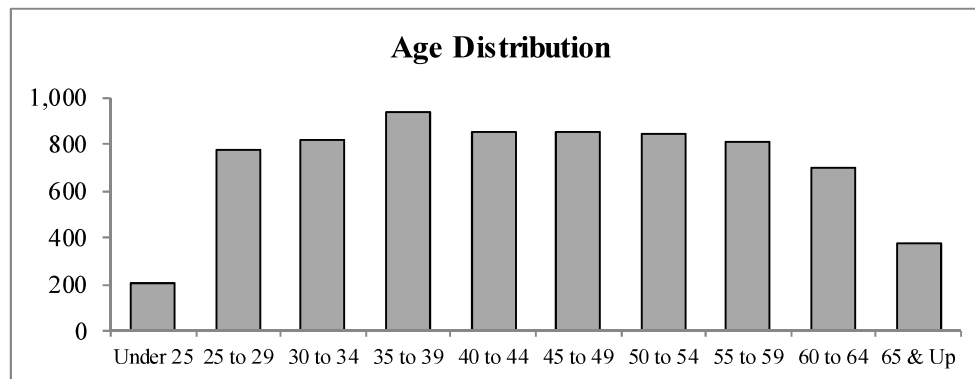
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Total

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	203	1	0	0	0	0	0	0	204
25 to 29	683	95	0	0	0	0	0	0	778
30 to 34	397	340	83	0	0	0	0	0	820
35 to 39	272	210	397	55	1	0	0	0	935
40 to 44	214	120	206	278	37	0	0	0	855
45 to 49	171	125	174	190	164	30	0	0	854
50 to 54	146	132	146	143	144	114	20	0	845
55 to 59	148	105	172	147	98	79	50	10	809
60 to 64	154	117	139	111	93	52	18	14	698
65 & Up	82	54	73	72	38	33	14	13	379
Total	2,470	1,299	1,390	996	575	308	102	37	7,177





APPENDIX D— MEMBERSHIP DATA

**OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SALARY DISTRIBUTION OF ACTIVE MEMBERS**

as of January 1, 2019

Total

Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	Total
Under 25	6,968,715	16,058	0	0	0	0	0	0	6,984,773
25 to 29	26,816,162	4,070,955	0	0	0	0	0	0	30,887,117
30 to 34	15,987,211	15,791,047	4,098,654	0	0	0	0	0	35,876,912
35 to 39	10,960,597	9,942,506	21,858,225	3,364,162	45,032	0	0	0	46,170,522
40 to 44	8,524,460	5,894,167	11,306,209	17,550,866	2,481,597	0	0	0	45,757,299
45 to 49	6,791,557	5,430,408	8,664,608	11,704,570	11,525,999	2,415,568	0	0	46,532,710
50 to 54	5,400,517	5,375,327	6,701,808	7,638,275	8,925,978	8,396,460	1,450,623	0	43,888,988
55 to 59	5,012,504	3,917,001	7,283,569	6,759,075	5,032,964	5,260,981	3,768,381	682,022	37,716,497
60 to 64	5,531,278	4,359,210	5,338,172	5,326,802	4,367,265	2,696,851	1,201,200	879,418	29,700,196
65 & Up	2,845,347	2,032,734	2,579,209	3,147,664	1,827,950	1,428,654	842,701	1,249,344	15,953,603
Total	94,838,348	56,829,413	67,830,454	55,491,414	34,206,785	20,198,514	7,262,905	2,810,784	339,468,617



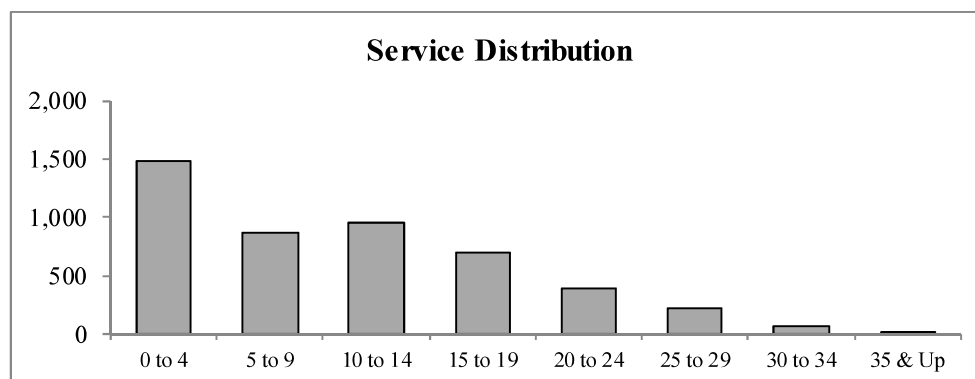
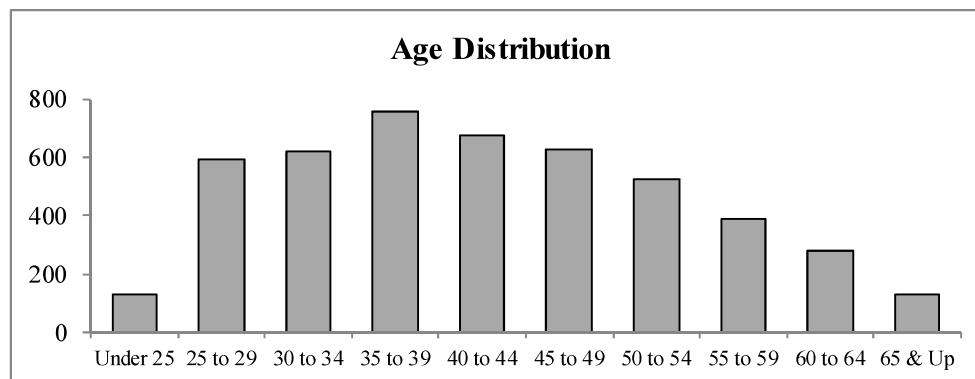
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Certificated - Total

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	130	0	0	0	0	0	0	0	130
25 to 29	517	75	0	0	0	0	0	0	592
30 to 34	272	284	65	0	0	0	0	0	621
35 to 39	172	178	360	45	0	0	0	0	755
40 to 44	121	91	180	254	30	0	0	0	676
45 to 49	93	77	117	161	150	28	0	0	626
50 to 54	63	65	78	87	111	104	17	0	525
55 to 59	44	38	82	71	46	59	43	5	388
60 to 64	50	38	55	62	39	22	10	7	283
65 & Up	24	20	17	25	17	11	9	10	133
Total	1,486	866	954	705	393	224	79	22	4,729





APPENDIX D— MEMBERSHIP DATA

**OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SALARY DISTRIBUTION OF ACTIVE MEMBERS**

as of January 1, 2019

Certificated - Total

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	5,441,624	0	0	0	0	0	0	0	5,441,624
25 to 29	23,289,643	3,614,608	0	0	0	0	0	0	26,904,251
30 to 34	13,193,691	14,277,976	3,558,402	0	0	0	0	0	31,030,069
35 to 39	8,628,900	9,038,149	20,890,222	3,058,985	0	0	0	0	41,616,256
40 to 44	6,473,781	5,070,047	10,554,739	16,791,601	2,160,856	0	0	0	41,051,024
45 to 49	4,940,403	4,163,130	7,026,733	10,763,715	11,038,357	2,316,535	0	0	40,248,873
50 to 54	3,329,645	3,506,817	4,549,115	5,827,714	7,634,066	8,015,457	1,297,061	0	34,159,875
55 to 59	2,553,396	2,020,288	4,619,335	4,609,991	3,074,468	4,414,124	3,425,838	417,653	25,135,093
60 to 64	3,044,666	2,232,533	3,154,312	3,915,637	2,633,774	1,575,552	750,542	579,032	17,886,048
65 & Up	1,479,920	1,185,734	1,106,797	1,744,609	1,118,336	796,680	657,590	1,153,376	9,243,042
Total	72,375,669	45,109,282	55,459,655	46,712,252	27,659,857	17,118,348	6,131,031	2,150,061	272,716,155



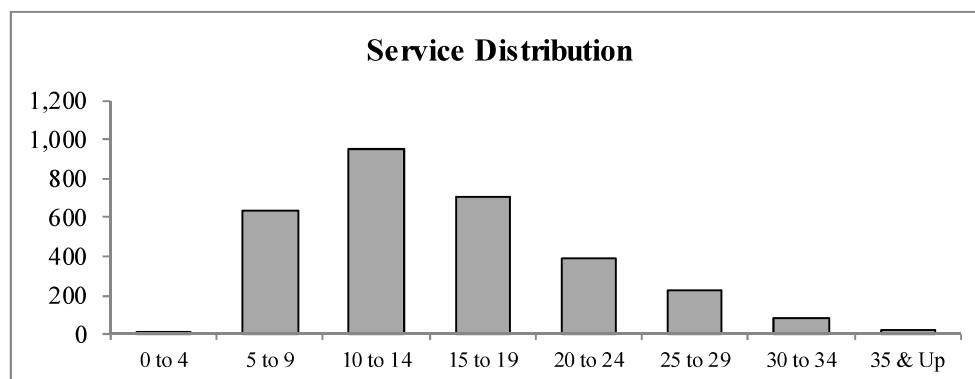
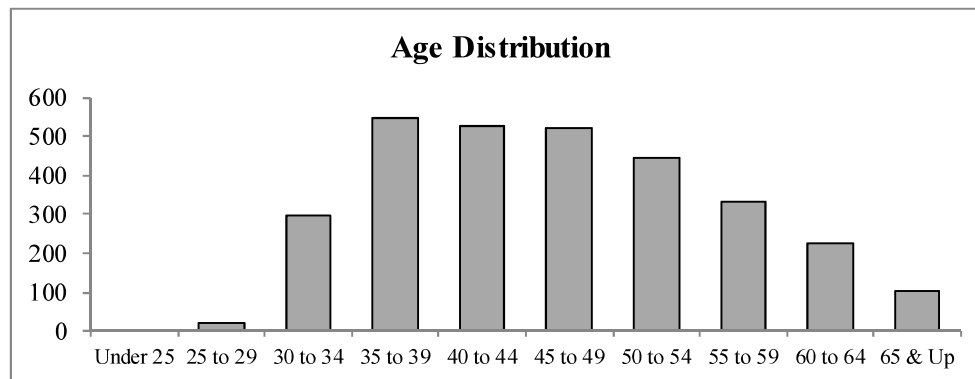
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Certificated - Tier 1

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	0	0	0	0	0	0	0	0	0
25 to 29	2	21	0	0	0	0	0	0	23
30 to 34	2	228	65	0	0	0	0	0	295
35 to 39	1	141	360	45	0	0	0	0	547
40 to 44	0	63	180	254	30	0	0	0	527
45 to 49	0	66	117	161	150	28	0	0	522
50 to 54	0	50	78	87	111	104	17	0	447
55 to 59	0	27	82	71	46	59	43	5	333
60 to 64	0	28	55	62	39	22	10	7	223
65 & Up	0	15	17	25	17	11	9	10	104
Total	5	639	954	705	393	224	79	22	3,021





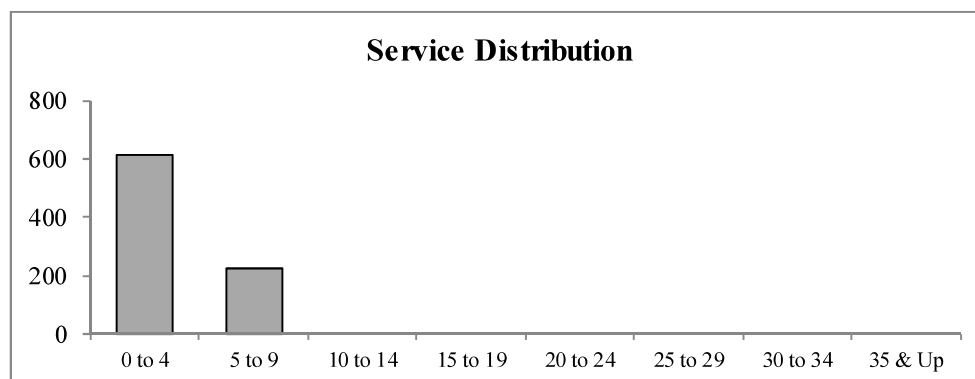
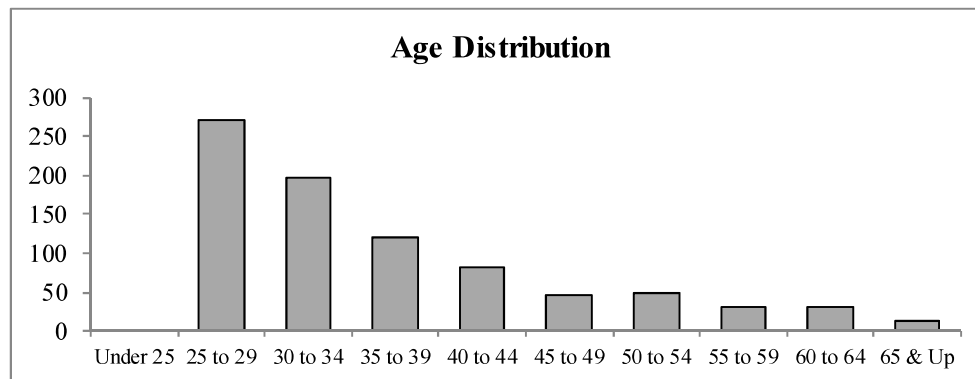
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Certificated - Tier 2

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	0	0	0	0	0	0	0	0	0
25 to 29	216	54	0	0	0	0	0	0	270
30 to 34	142	56	0	0	0	0	0	0	198
35 to 39	83	37	0	0	0	0	0	0	120
40 to 44	54	28	0	0	0	0	0	0	82
45 to 49	35	11	0	0	0	0	0	0	46
50 to 54	35	15	0	0	0	0	0	0	50
55 to 59	20	11	0	0	0	0	0	0	31
60 to 64	21	10	0	0	0	0	0	0	31
65 & Up	9	5	0	0	0	0	0	0	14
Total	615	227	0	0	0	0	0	0	842





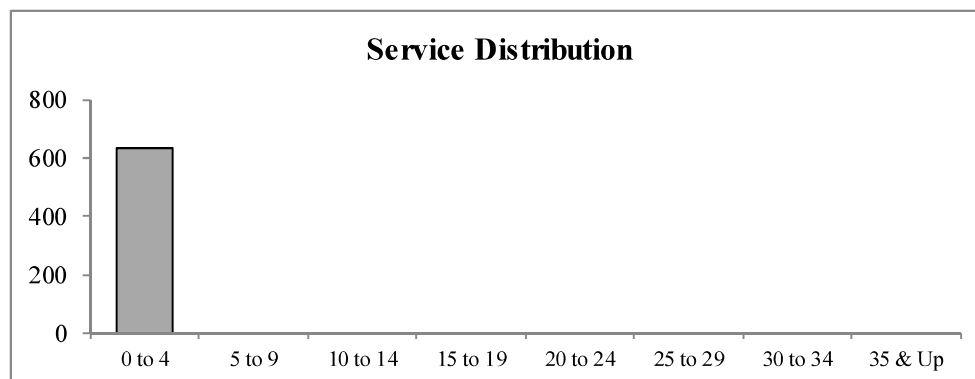
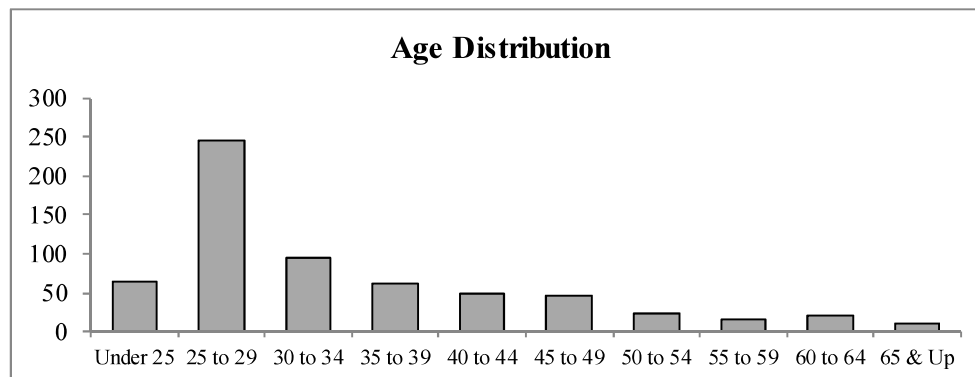
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Certificated - Tier 3

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	64	0	0	0	0	0	0	0	64
25 to 29	246	0	0	0	0	0	0	0	246
30 to 34	96	0	0	0	0	0	0	0	96
35 to 39	61	0	0	0	0	0	0	0	61
40 to 44	49	0	0	0	0	0	0	0	49
45 to 49	46	0	0	0	0	0	0	0	46
50 to 54	23	0	0	0	0	0	0	0	23
55 to 59	17	0	0	0	0	0	0	0	17
60 to 64	21	0	0	0	0	0	0	0	21
65 & Up	10	0	0	0	0	0	0	0	10
Total	633	0	0	0	0	0	0	0	633





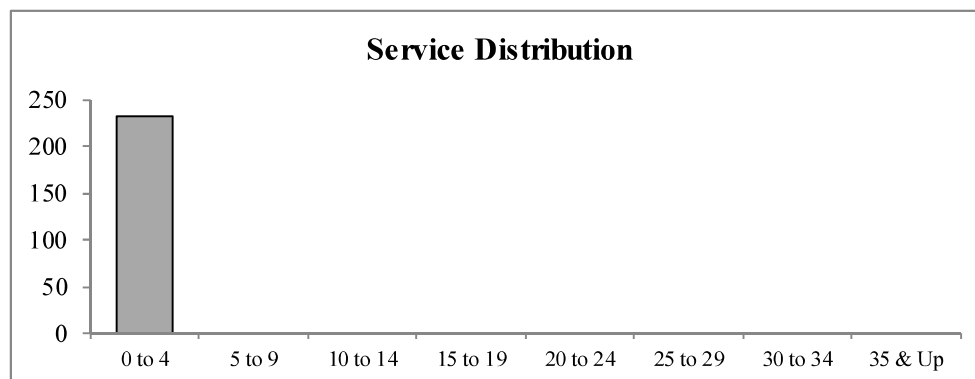
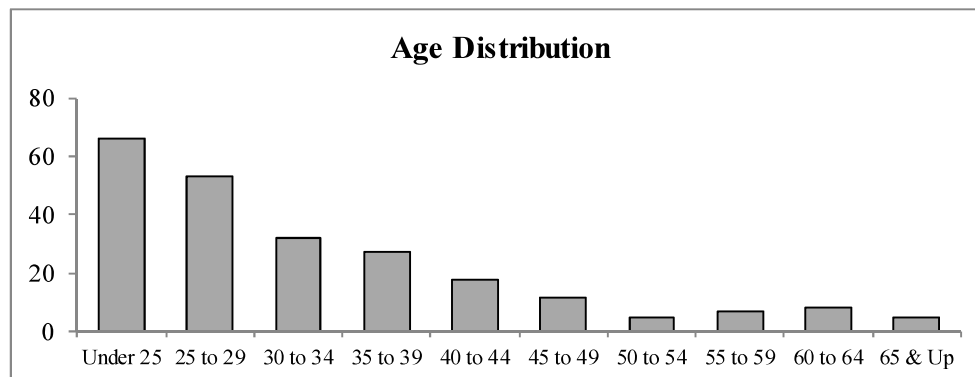
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Certificated - Tier 4

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	66	0	0	0	0	0	0	0	66
25 to 29	53	0	0	0	0	0	0	0	53
30 to 34	32	0	0	0	0	0	0	0	32
35 to 39	27	0	0	0	0	0	0	0	27
40 to 44	18	0	0	0	0	0	0	0	18
45 to 49	12	0	0	0	0	0	0	0	12
50 to 54	5	0	0	0	0	0	0	0	5
55 to 59	7	0	0	0	0	0	0	0	7
60 to 64	8	0	0	0	0	0	0	0	8
65 & Up	5	0	0	0	0	0	0	0	5
Total	233	0	0	0	0	0	0	0	233





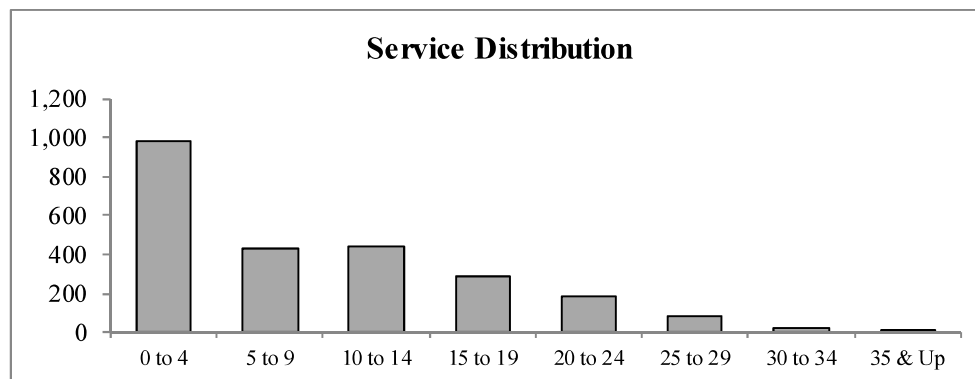
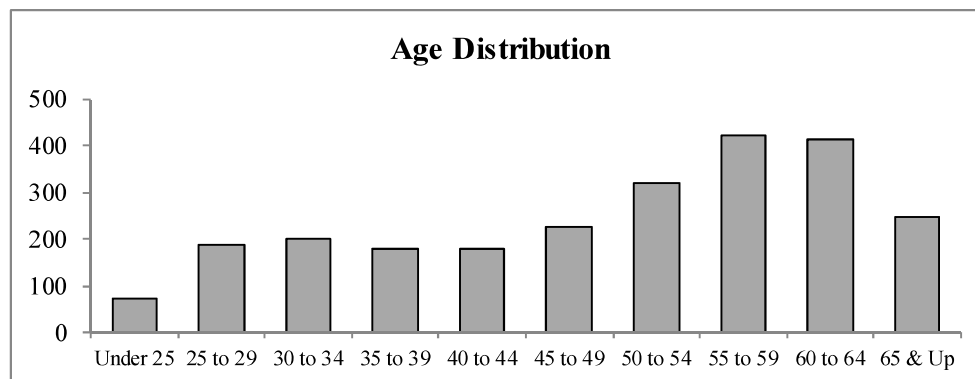
APPENDIX D— MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Classified - Total

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	73	1	0	0	0	0	0	0	74
25 to 29	166	20	0	0	0	0	0	0	186
30 to 34	125	56	18	0	0	0	0	0	199
35 to 39	100	32	37	10	1	0	0	0	180
40 to 44	93	29	26	24	7	0	0	0	179
45 to 49	78	48	57	29	14	2	0	0	228
50 to 54	83	67	68	56	33	10	3	0	320
55 to 59	104	67	90	76	52	20	7	5	421
60 to 64	104	79	84	49	54	30	8	7	415
65 & Up	58	34	56	47	21	22	5	3	246
Total	984	433	436	291	182	84	23	15	2,448





APPENDIX D— MEMBERSHIP DATA

**OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM
SALARY DISTRIBUTION OF ACTIVE MEMBERS**

as of January 1, 2019

Classified - Total

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	1,527,091	16,058	0	0	0	0	0	0	1,543,149
25 to 29	3,526,519	456,347	0	0	0	0	0	0	3,982,866
30 to 34	2,793,521	1,513,070	540,252	0	0	0	0	0	4,846,843
35 to 39	2,331,698	904,356	968,003	305,177	45,032	0	0	0	4,554,266
40 to 44	2,050,678	824,121	751,470	759,265	320,741	0	0	0	4,706,275
45 to 49	1,851,155	1,267,278	1,637,875	940,854	487,642	99,033	0	0	6,283,837
50 to 54	2,070,871	1,868,510	2,152,693	1,810,562	1,291,912	381,003	153,562	0	9,729,113
55 to 59	2,459,109	1,896,713	2,664,234	2,149,083	1,958,496	846,857	342,543	264,369	12,581,404
60 to 64	2,486,612	2,126,677	2,183,860	1,411,165	1,733,491	1,121,299	450,658	300,386	11,814,148
65 & Up	1,365,427	847,000	1,472,412	1,403,055	709,614	631,973	185,111	95,969	6,710,561
Total	22,462,681	11,720,130	12,370,799	8,779,161	6,546,928	3,080,165	1,131,874	660,724	66,752,462



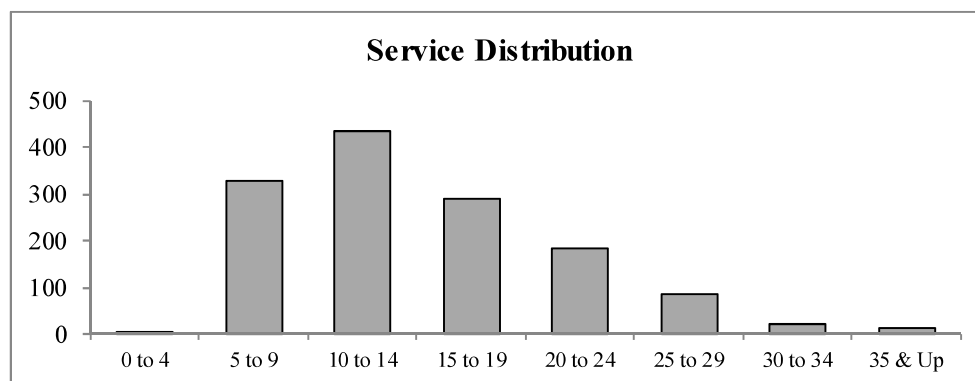
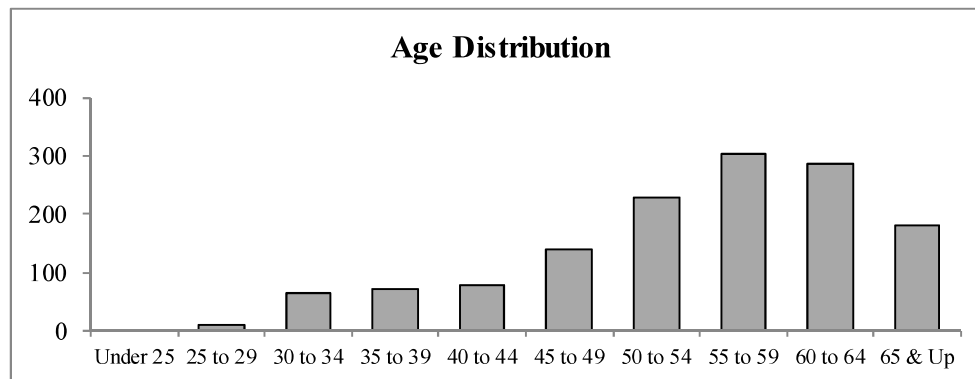
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Classified - Tier 1

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	0	0	0	0	0	0	0	0	0
25 to 29	0	12	0	0	0	0	0	0	12
30 to 34	1	45	18	0	0	0	0	0	64
35 to 39	1	24	37	10	1	0	0	0	73
40 to 44	0	23	26	24	7	0	0	0	80
45 to 49	1	36	57	29	14	2	0	0	139
50 to 54	1	56	68	56	33	10	3	0	227
55 to 59	1	51	90	76	52	20	7	5	302
60 to 64	0	53	84	49	54	30	8	7	285
65 & Up	0	27	56	47	21	22	5	3	181
Total	5	327	436	291	182	84	23	15	1,363





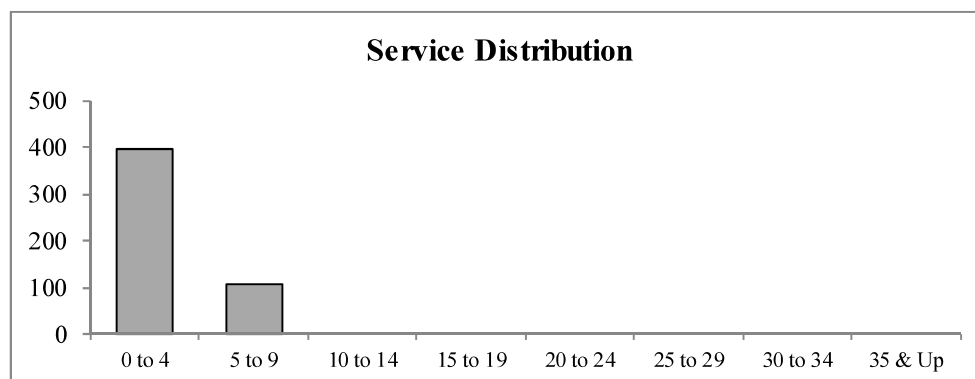
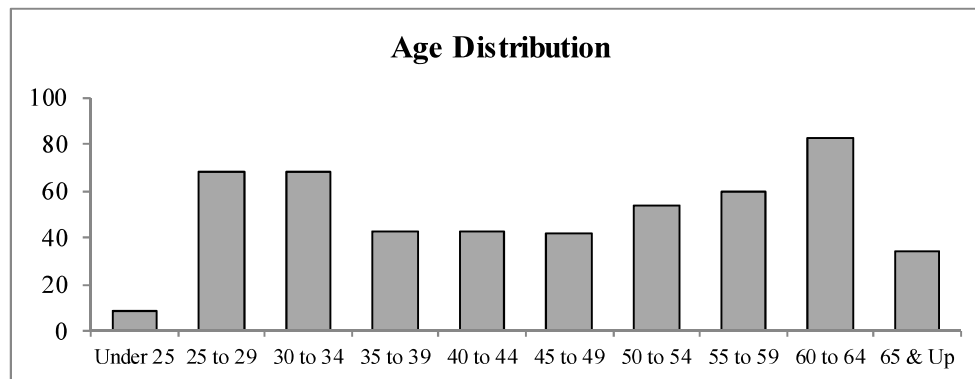
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Classified - Tier 2

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	8	1	0	0	0	0	0	0	9
25 to 29	60	8	0	0	0	0	0	0	68
30 to 34	57	11	0	0	0	0	0	0	68
35 to 39	35	8	0	0	0	0	0	0	43
40 to 44	37	6	0	0	0	0	0	0	43
45 to 49	30	12	0	0	0	0	0	0	42
50 to 54	43	11	0	0	0	0	0	0	54
55 to 59	44	16	0	0	0	0	0	0	60
60 to 64	57	26	0	0	0	0	0	0	83
65 & Up	27	7	0	0	0	0	0	0	34
Total	398	106	0	0	0	0	0	0	504





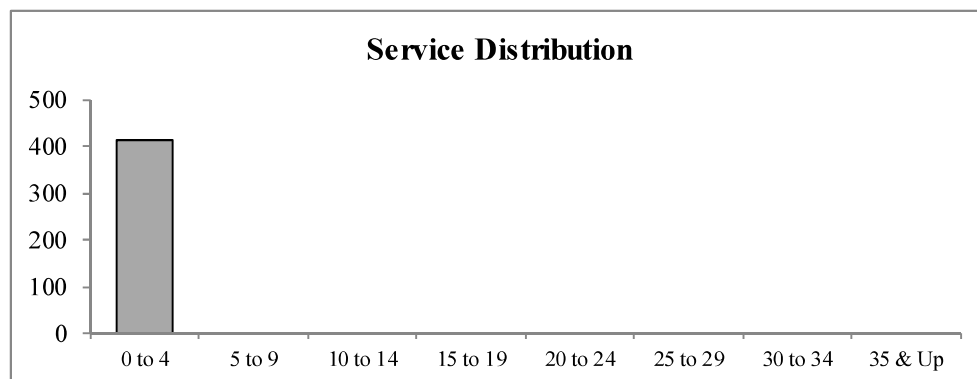
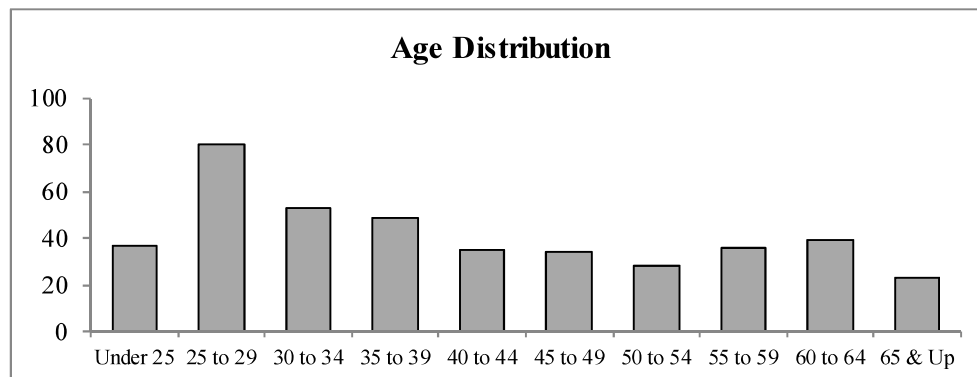
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Classified - Tier 3

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	37	0	0	0	0	0	0	0	37
25 to 29	80	0	0	0	0	0	0	0	80
30 to 34	53	0	0	0	0	0	0	0	53
35 to 39	49	0	0	0	0	0	0	0	49
40 to 44	35	0	0	0	0	0	0	0	35
45 to 49	34	0	0	0	0	0	0	0	34
50 to 54	28	0	0	0	0	0	0	0	28
55 to 59	36	0	0	0	0	0	0	0	36
60 to 64	39	0	0	0	0	0	0	0	39
65 & Up	23	0	0	0	0	0	0	0	23
Total	414	0	0	0	0	0	0	0	414





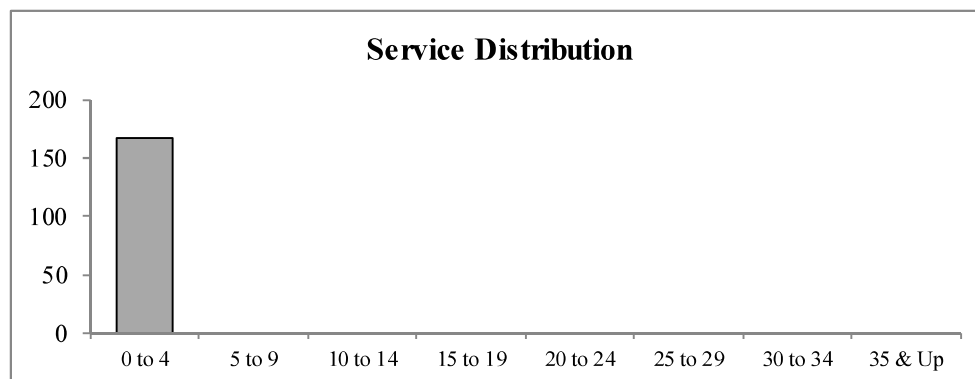
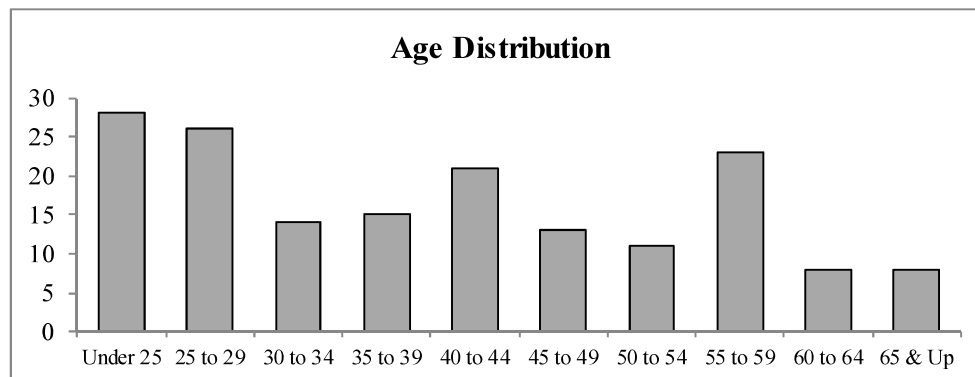
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS

as of January 1, 2019

Classified - Tier 4

Age	Service								Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	28	0	0	0	0	0	0	0	28
25 to 29	26	0	0	0	0	0	0	0	26
30 to 34	14	0	0	0	0	0	0	0	14
35 to 39	15	0	0	0	0	0	0	0	15
40 to 44	21	0	0	0	0	0	0	0	21
45 to 49	13	0	0	0	0	0	0	0	13
50 to 54	11	0	0	0	0	0	0	0	11
55 to 59	23	0	0	0	0	0	0	0	23
60 to 64	8	0	0	0	0	0	0	0	8
65 & Up	8	0	0	0	0	0	0	0	8
Total	167	0	0	0	0	0	0	0	167



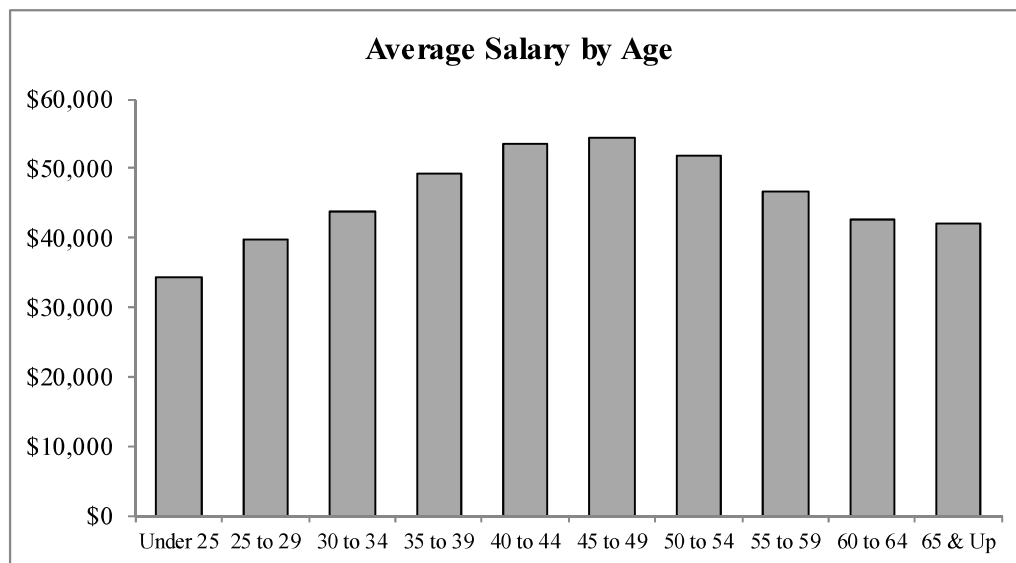


OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF ACTIVE MEMBERS

as of January 1, 2019

Total

Age	Number			Salaries		
	Males	Females	Total	Males	Females	Total
Under 25	46	158	204	\$ 1,704,063	\$ 5,280,710	\$ 6,984,773
25 to 29	157	621	778	6,318,823	24,568,294	30,887,117
30 to 34	206	614	820	8,965,933	26,910,979	35,876,912
35 to 39	254	681	935	12,821,461	33,349,061	46,170,522
40 to 44	226	629	855	12,890,582	32,866,717	45,757,299
45 to 49	209	645	854	12,690,358	33,842,352	46,532,710
50 to 54	209	636	845	11,754,101	32,134,887	43,888,988
55 to 59	230	579	809	11,672,260	26,044,237	37,716,497
60 to 64	200	498	698	9,118,447	20,581,749	29,700,196
65 & Up	141	238	379	6,311,095	9,642,508	15,953,603
Total	1,878	5,299	7,177	\$ 94,247,123	\$ 245,221,494	\$ 339,468,617



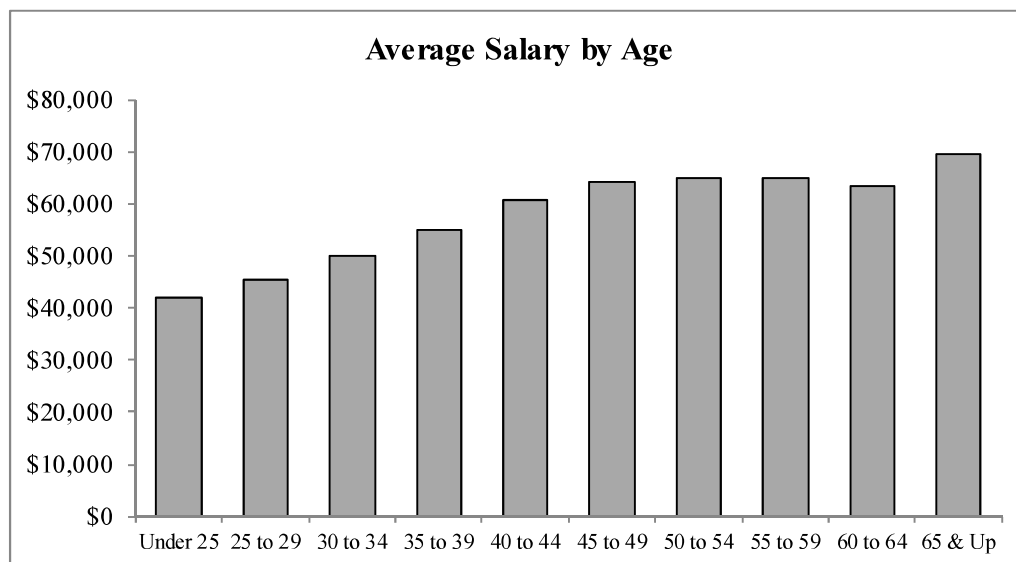


OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF ACTIVE MEMBERS

as of January 1, 2019

Certificated

Age	Number			Salaries		
	Males	Females	Total	Males	Females	Total
Under 25	26	104	130	\$ 1,086,269	\$ 4,355,355	\$ 5,441,624
25 to 29	114	478	592	5,124,211	21,780,040	26,904,251
30 to 34	137	484	621	6,799,789	24,230,280	31,030,069
35 to 39	196	559	755	11,016,180	30,600,076	41,616,256
40 to 44	173	503	676	10,983,809	30,067,215	41,051,024
45 to 49	151	475	626	10,476,540	29,772,333	40,248,873
50 to 54	105	420	525	7,083,525	27,076,350	34,159,875
55 to 59	91	297	388	5,855,547	19,279,546	25,135,093
60 to 64	64	219	283	3,955,395	13,930,653	17,886,048
65 & Up	44	89	133	3,203,928	6,039,114	9,243,042
Total	1,101	3,628	4,729	\$ 65,585,193	\$ 207,130,962	\$ 272,716,155





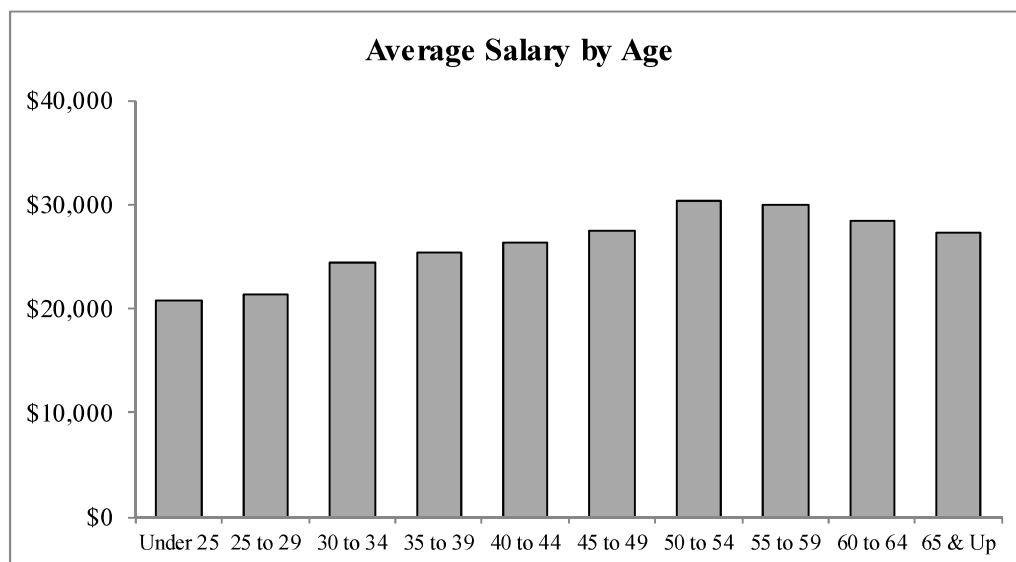
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF ACTIVE MEMBERS

as of January 1, 2019

Classified

Age	Number			Salaries		
	Males	Females	Total	Males	Females	Total
Under 25	20	54	74	\$ 617,794	\$ 925,355	\$ 1,543,149
25 to 29	43	143	186	1,194,612	2,788,254	3,982,866
30 to 34	69	130	199	2,166,144	2,680,699	4,846,843
35 to 39	58	122	180	1,805,281	2,748,985	4,554,266
40 to 44	53	126	179	1,906,773	2,799,502	4,706,275
45 to 49	58	170	228	2,213,818	4,070,019	6,283,837
50 to 54	104	216	320	4,670,576	5,058,537	9,729,113
55 to 59	139	282	421	5,816,713	6,764,691	12,581,404
60 to 64	136	279	415	5,163,052	6,651,096	11,814,148
65 & Up	97	149	246	3,107,167	3,603,394	6,710,561
Total	777	1,671	2,448	\$ 28,661,930	\$ 38,090,532	\$ 66,752,462



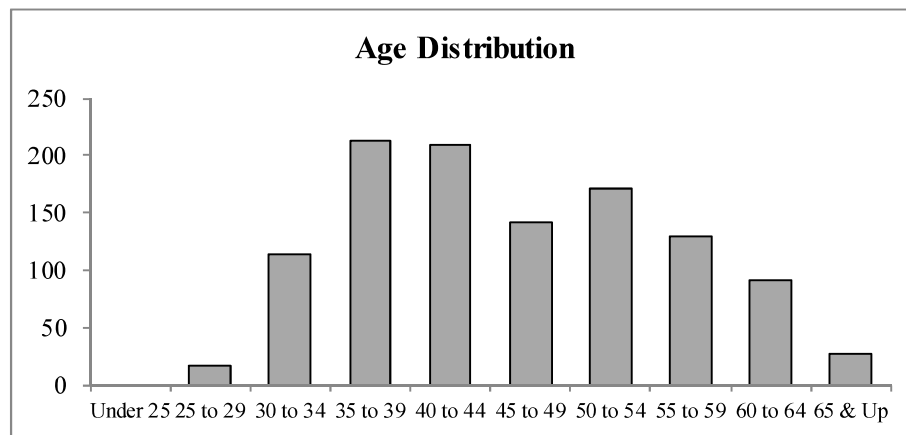


OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF INACTIVE VESTED MEMBERS

as of January 1, 2019

Total

Age	Number			Monthly Benefit at Unreduced Retirement		
	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25 to 29	4	12	16	1,534	4,449	5,983
30 to 34	26	88	114	12,458	42,796	55,254
35 to 39	43	170	213	28,176	109,065	137,241
40 to 44	49	160	209	38,747	108,148	146,895
45 to 49	24	118	142	24,725	80,653	105,378
50 to 54	42	129	171	41,582	83,147	124,729
55 to 59	20	110	130	19,120	69,902	89,022
60 to 64	14	77	91	9,606	35,339	44,945
65 & Up	4	24	28	2,903	8,929	11,832
Total	226	888	1,114	\$ 178,851	\$ 542,428	\$ 721,279





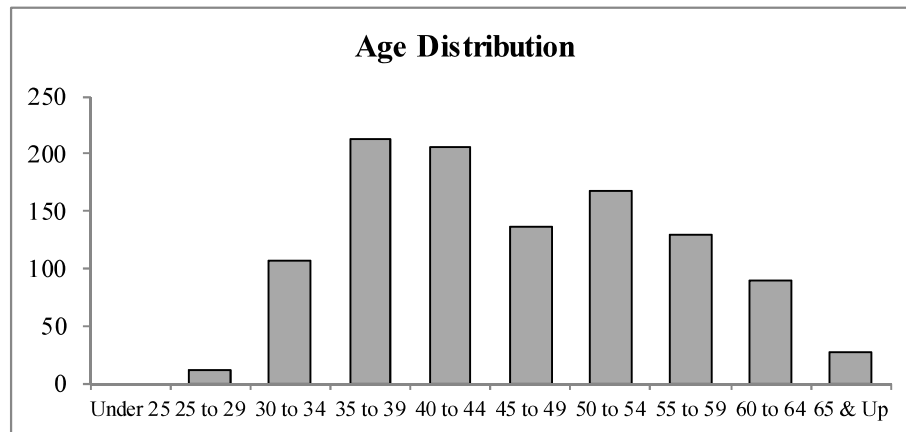
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF INACTIVE VESTED MEMBERS

as of January 1, 2019

Tier 1

Age	Number			Monthly Benefit at Unreduced Retirement		
	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25 to 29	2	10	12	870	3,681	4,551
30 to 34	25	82	107	12,040	40,776	52,816
35 to 39	43	170	213	28,176	109,065	137,241
40 to 44	49	157	206	38,747	107,008	145,755
45 to 49	24	112	136	24,725	78,871	103,596
50 to 54	41	127	168	40,997	82,718	123,715
55 to 59	20	110	130	19,120	69,902	89,022
60 to 64	13	77	90	7,214	35,339	42,553
65 & Up	3	24	27	2,542	8,929	11,471
Total	220	869	1,089	\$ 174,431	\$ 536,289	\$ 710,720



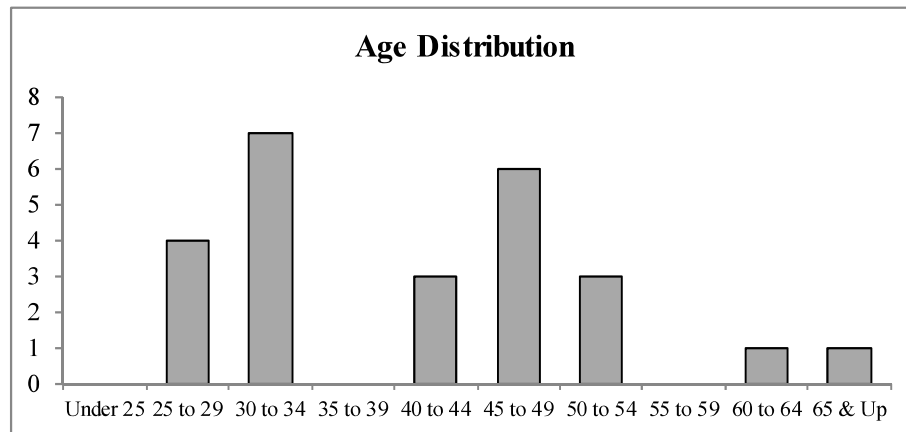


OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF INACTIVE VESTED MEMBERS

as of January 1, 2019

Tier 2

Age	Number			Monthly Benefit at Unreduced Retirement		
	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25 to 29	2	2	4	664	768	1,432
30 to 34	1	6	7	418	2,020	2,438
35 to 39	0	0	0	0	0	0
40 to 44	0	3	3	0	1,140	1,140
45 to 49	0	6	6	0	1,782	1,782
50 to 54	1	2	3	585	429	1,014
55 to 59	0	0	0	0	0	0
60 to 64	1	0	1	2,392	0	2,392
65 & Up	1	0	1	361	0	361
Total	6	19	25	\$ 4,420	\$ 6,139	\$ 10,559





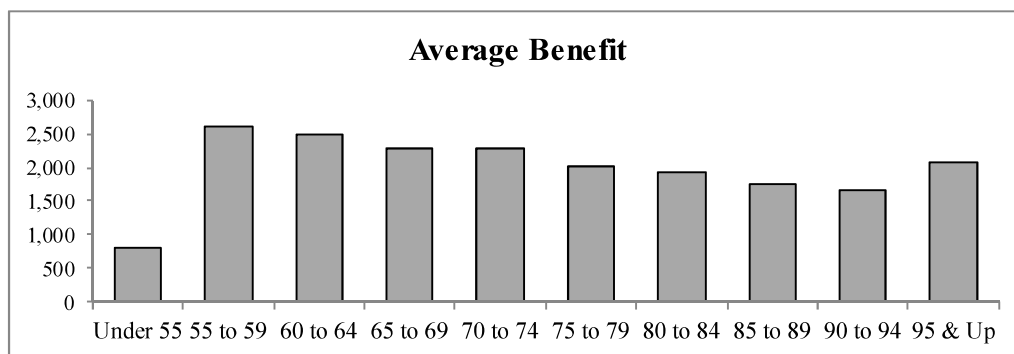
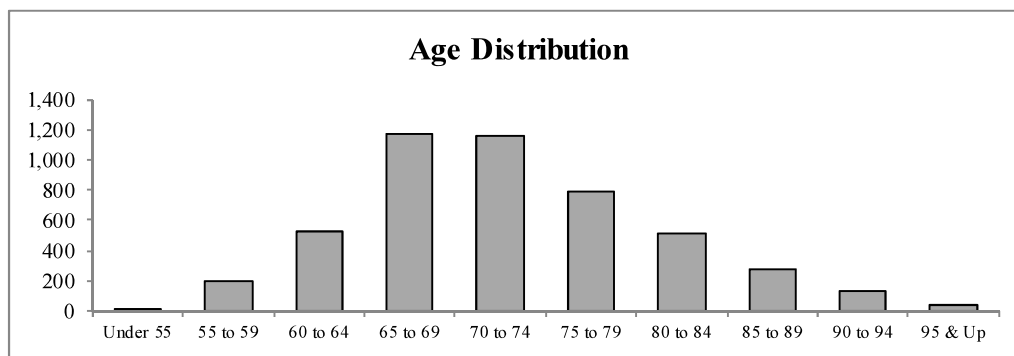
APPENDIX D— MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF RETIREES, BENEFICIARIES AND DISABLED MEMBERS

as of January 1, 2019

Total

Age	Number			Total Monthly Benefit		
	Males	Females	Total	Males	Females	Total
Under 55	4	13	17	\$ 1,629	\$ 12,067	\$ 13,696
55 to 59	55	148	203	132,685	395,397	528,082
60 to 64	122	402	524	295,655	1,006,565	1,302,220
65 to 69	290	883	1,173	728,473	1,930,190	2,658,663
70 to 74	349	810	1,159	865,165	1,767,736	2,632,901
75 to 79	259	531	790	627,982	966,959	1,594,941
80 to 84	161	357	518	344,505	650,629	995,134
85 to 89	67	210	277	148,357	335,696	484,053
90 to 94	28	99	127	65,251	144,822	210,073
95 & Up	8	30	38	17,226	61,184	78,410
Total	1,343	3,483	4,826	\$3,226,928	\$7,271,245	\$10,498,173





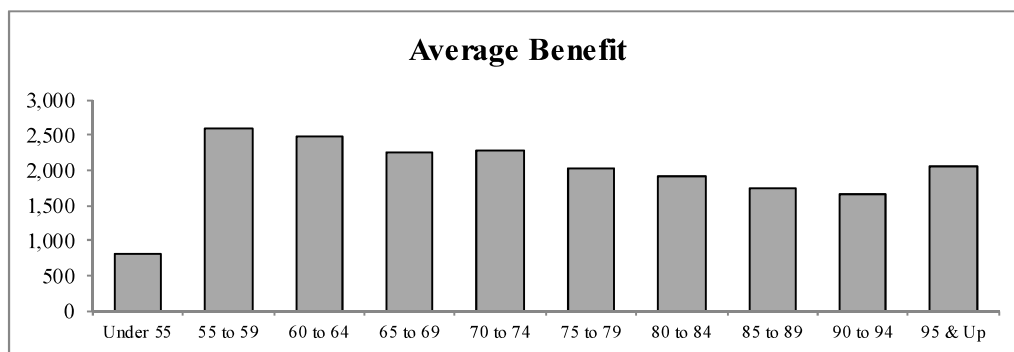
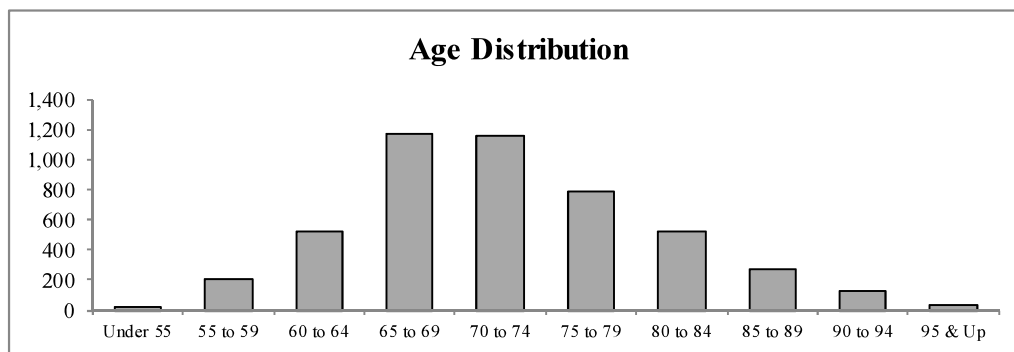
APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF RETIREES, BENEFICIARIES AND DISABLED MEMBERS

as of January 1, 2019

Tier 1

Age	Number			Total Monthly Benefit		
	Males	Females	Total	Males	Females	Total
Under 55	4	13	17	\$ 1,629	\$ 12,067	\$ 13,696
55 to 59	55	148	203	132,685	395,397	528,082
60 to 64	122	402	524	295,655	1,006,565	1,302,220
65 to 69	290	881	1,171	728,473	1,923,774	2,652,247
70 to 74	349	810	1,159	865,165	1,767,736	2,632,901
75 to 79	259	531	790	627,982	966,959	1,594,941
80 to 84	161	357	518	344,505	650,629	995,134
85 to 89	67	210	277	148,357	335,696	484,053
90 to 94	28	99	127	65,251	144,822	210,073
95 & Up	8	30	38	17,226	61,184	78,410
Total	1,343	3,481	4,824	\$3,226,928	\$7,264,829	\$10,491,757





APPENDIX D—MEMBERSHIP DATA

OMAHA SCHOOL EMPLOYEES' RETIREMENT SYSTEM SUMMARY OF RETIREES, BENEFICIARIES AND DISABLED MEMBERS

as of January 1, 2019

Tier 2

Age	Number			Total Monthly Benefit		
	Males	Females	Total	Males	Females	Total
Under 55	0	0	0	\$ 0	\$ 0	\$ 0
55 to 59	0	0	0	0	0	0
60 to 64	0	0	0	0	0	0
65 to 69	0	2	2	0	6,416	6,416
70 to 74	0	0	0	0	0	0
75 to 79	0	0	0	0	0	0
80 to 84	0	0	0	0	0	0
85 to 89	0	0	0	0	0	0
90 to 94	0	0	0	0	0	0
95 & Up	0	0	0	0	0	0
Total	0	2	2	\$ 0	\$6,416	\$6,416

