



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

The City of Omaha Employees' Retirement System

Actuarial Valuation as of January 1, 2019





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

November 11, 2019

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

RE: January 1, 2019 Actuarial Valuation

Members of the Board:

In accordance with your request, we have completed an actuarial valuation of the City of Omaha Employees' Retirement System as of January 1, 2019 for the plan year ending December 31, 2019. The major findings of the valuation are contained in this report. There have been no changes to the plan provisions or actuarial methods and assumptions since the prior valuation.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information provided in prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our 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: experience differing from that anticipated by the economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the System's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.



Board of Trustees
November 11, 2019
Page 2

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

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

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries, has experience in performing valuations for public retirement plans, and meets the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board and the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures based on the current provisions of the retirement plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix B.

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

Sincerely,

A handwritten signature in blue ink that reads 'Patrice Beckham'. The signature is written in a cursive, flowing style.

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



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EXECUTIVE SUMMARY

This report presents the results of the January 1, 2019 actuarial valuation of the City of Omaha Employees' Retirement System. The primary purposes of performing the valuation are:

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

There were no changes to the benefit provisions or actuarial methods and assumptions since last year's report. The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2019. The unfunded actuarial liability (UAL) in the current valuation is \$232.5 million, an increase of \$9.2 million from last year's UAL of \$223.3 million. The valuation results reflect net unfavorable experience for the past plan year as demonstrated by a higher UAL than expected, based on the actuarial assumptions used in the January 1, 2018 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in an experience loss of \$4.3 million. There was also a net experience loss on liabilities of \$2.9 million. Based on the contribution rates in the bargaining agreements, the actual contributions during 2018 were lower than the actuarial contributions by \$1.4 million which increased the unfunded actuarial liability.

The System uses an asset smoothing method in the valuation process. As a result, the System's funded status and the actuarial contribution rate are based on the actuarial (smoothed) value of assets – not the pure market value. The estimated investment return, net of expenses, on the market value of assets during 2018 was -0.8%. The unfavorable investment experience during 2018 resulted in a rate of return on the actuarial value of assets of +5.7% for 2018, which is below the assumed return of 7.5%. As a result, it generated an actuarial experience loss of \$4.3 million. The actuarial value of assets now exceeds the market value of assets by \$12.8 million or 5.4% of the market value. Actual market returns over the next few years will determine the rate at which the deferred investment loss is actually recognized. With the current deferred loss, a return of about 13% on the market value of assets in 2019 would be required to meet the 7.5% return on the actuarial value of assets.

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

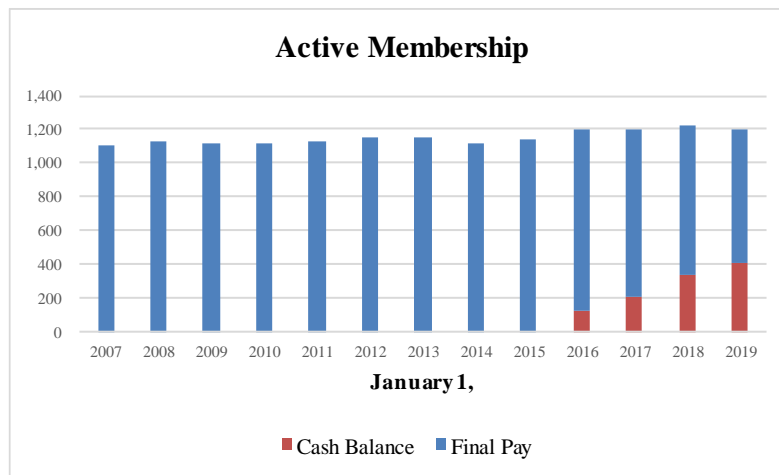
MEMBERSHIP

There were 1,201 active members in the 2019 valuation compared to 1,222 in the 2018 valuation, a decrease of 1.7%. The following graph shows the number of active members in the valuation over the last 13 years, which has fluctuated up and down. When the number of active members increases, it has a positive influence on the System's funding and actuarial contribution rate. While the normal cost rate is unaffected by the size of the membership, the UAL contribution rate is favorably impacted by a larger group of active members and the resulting higher payroll. In the valuation, the UAL is amortized assuming covered payroll will also grow at 3.0% per year. If total payroll grows more than the assumed rate of 3.0%, the UAL payment will be divided by covered payroll that is higher than expected, resulting in a lower UAL contribution rate.



EXECUTIVE SUMMARY

The graph below also shows the portion of total actives covered by the Final Average Pay Plan (for employees hired before March 1, 2015) and the Cash Balance Plan (for employees hired on/after March 1, 2015). In the 2019 valuation, there were 404 members covered by the Cash Balance Plan, about 34% of the total active membership. In the January 1, 2018 valuation, the Cash Balance Plan covered about 27% of the total active group.



ASSETS

As of January 1, 2019, the System had total funds of \$236.7 million, when measured on a market value basis. This was a decrease of \$17.8 million from the prior year’s value of \$254.5 million, and represents an approximate rate of return, net of expenses, of -0.8%.

The market value of assets is not used directly in the actuarial calculation of the System’s funded status and the actuarial contribution rate. An asset valuation method is used to smooth the effects of market fluctuations. The actuarial value of assets is equal to the expected asset value (based on last year’s actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of return (7.5%)) plus 25% of the difference between the actual market value and the expected asset value. See Exhibit 2 for the detailed development of the actuarial value of assets as of January 1, 2019. The rate of return on the actuarial value of assets was +5.7%, resulting in an actuarial loss of \$4.3 million.

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

	Market Value (\$M)	Actuarial Value (\$M)
Net Assets, January 1, 2018	\$ 254.5	\$ 251.3
City and Member Contributions	+ 21.0	+ 21.0
Benefit Payments and Refunds	- 36.8	- 36.8
Investment Gain/(Loss)	+ (2.0)	+ 14.0
Net Assets, January 1, 2019	236.7	249.5
Estimated Rate of Return	(0.8%)	+5.7%



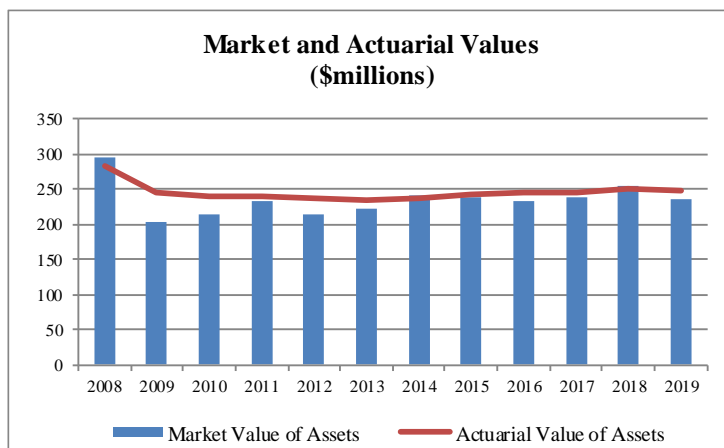
EXECUTIVE SUMMARY

The deferred investment loss (difference between the actuarial value of assets and market value of assets) as of January 1, 2019 is \$12.8 million, compared with \$3.2 million of deferred investment gain in last year's valuation. The unrecognized investment loss of \$12.8 million will be reflected in the determination of the actuarial value of assets for funding purposes over time, to the extent it is not offset by future investment gains. This means that earning the assumed rate of investment return of 7.5% per year (net of investment expenses) on a market value basis will result in small actuarial losses on the actuarial value of assets in the future.

The deferred investment loss represents about 5.4% of the market value of assets (compared to a deferred investment gain of 1.3% of the market value in the 2018 valuation). If the deferred loss was recognized immediately in the actuarial value assets, the UAL would increase by \$12.8 million to \$245.3 million, the funded ratio would decrease to 49.1%, the actuarial contribution rate would increase from 31.662% to 32.945%, and the contribution shortfall would increase from 2.812% to 4.095% of payroll.

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

	January 1 (\$M)					
	2014	2015	2016	2017	2018	2019
Actuarial Value of Assets	\$238	\$242	\$244	\$246	\$251	\$250
Market Value of Assets	\$240	\$239	\$232	\$240	\$255	\$237
Actuarial Value/Market Value	99%	101%	105%	103%	99%	105%



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

LIABILITIES

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



EXECUTIVE SUMMARY

The other critical measurement of System liabilities in the valuation process is the actuarial liability (AL). This is the portion of the PVFB that will not be paid by the future normal costs (i.e. the portion of the PVFB that is allocated to prior service periods). As of January 1, 2019, the AL for the System is \$482.0 million.

The following chart compares the AL and System assets for the current and prior valuation:

	As of January 1	
	2019	2018
Actuarial Liability (AL)	\$482,025,309	\$474,607,516
Assets at Actuarial Value	\$249,518,547	\$251,320,837
Unfunded Actuarial Liability (AVA)	\$232,506,762	\$223,286,679
Funded Ratio (Actuarial Value)	52%	53%
Assets at Market Value	\$236,701,312	\$254,532,138
Unfunded Actuarial Liability (MVA)	\$245,323,997	\$220,075,378
Funded Ratio (Market Value)	49%	54%

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

EXPERIENCE FOR THE 2018 PLAN YEAR

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

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 UAL and are measured as the difference between the expected UAL and the actual UAL, taking into account any changes due to assumptions/methods or benefit provision changes. During 2018, the net experience was unfavorable (a higher UAL than expected). There was an actuarial loss for 2018 of \$4.3 million on the actuarial value of assets and an actuarial loss of \$2.9 million on liabilities. The largest source of loss for the System’s liabilities was salary increases that were higher than expected.

The change in the UAL between January 1, 2018 and January 1, 2019 is shown below (in millions):

Unfunded Actuarial Liability, January 1, 2018	223.3
· Expected change in UAL	0.8
· Contributions below actuarial rate	1.4
· Investment experience	4.3
· Demographic experience	2.9
· Other experience	(0.2)
Unfunded Actuarial Liability, January 1, 2019	232.5



EXECUTIVE SUMMARY

CONTRIBUTION LEVELS

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

- (1) Normal cost (which is the allocation of costs attributed to the current year's membership service) and,
- (2) Amortization payment on the unfunded actuarial liability.

The normal cost rate is independent of the System's funded status and represents the cost, as a percent of payroll, of the benefits provided by the System which is allocated to the current year of service. The total normal cost for the System is 9.818% of pay, or \$6.7 million this year. The normal cost rate represents the long-term cost of the benefit structure for the current active members.

The System's total actuarial contribution rate (payable as a percentage of member payroll) increased by 0.606% of pay, to 31.662% in the January 1, 2019 valuation, from 31.056% in the January 1, 2018 valuation. The primary components of the change in the actuarial contribution rate are shown in the following table:

	Rate
Total Actuarial Contribution Rate, January 1, 2018	31.056 %
· Actuarial (Gain) / Loss - Investment Experience	0.413
· Actuarial (Gain) / Loss - Demographic Experience	0.278
· Contributions Below the Actuarial Rate	0.135
· Change in Normal Cost Rate	(0.105)
· Payroll Growth Higher than Expected	(0.137)
· Other Experience	<u>0.022</u>
Total Actuarial Contribution Rate, January 1, 2019	31.662 %

As the table above shows, the actuarial contribution rate increased from 31.056% to 31.662%, mainly due to actuarial losses on both assets and liabilities. For the current valuation, the total actuarial contribution rate is 31.662% of pay (9.818% normal cost + 21.844% UAL payment). The scheduled contributions for the year are 28.850%, resulting in a contribution shortfall of 2.812%. This indicates that the target date for full funding will not occur at the end of the amortization period, even if all actuarial assumptions are met.

COMMENTS

As of January 1, 2019, 404 out of 1,201 active members are covered under the Cash Balance benefit structure, or about 34%. Although nearly 35% of active members are covered by the Cash Balance Plan, the majority of the actuarial liability is attributable to the legacy plan (the Final Average Pay Plan). It will take many years before the Cash Balance Plan design has a significant impact on the System's liabilities and costs. We expect to continue to see growth in the number of active members covered by the cash balance benefit structure, but the System's liabilities will continue to reside with members in the legacy benefit structure (final average pay plan) for many years.

The results of this valuation indicate that the fixed contribution rates for employees and the city in the current bargaining agreements are 2.812% lower than the total actuarial contribution rate. The contribution shortfall should not be misunderstood. It is an indication that, if all assumptions are met in the future, the System will not reach full funding at the date anticipated in the System's funding policy (end of the amortization periods). However, it does not necessarily mean the System will never be fully funded. With



EXECUTIVE SUMMARY

the new benefit structure for members hired after March 1, 2015, a projection of future valuation results is necessary in order to quantify the expected date the System will reach full funding. Such a project is outside the scope of this assignment, but we strongly encourage the System to perform such modeling to assist the Board and other interested parties in the evaluation of the long-term financial health of the System. The model can also be used to perform important analysis of the various risks related to funding the System.

The return on the market value of assets in 2018 was -0.8%. As a result, the deferred investment gain of \$3.2 million that existed on January 1, 2018 has been eliminated and there is now a deferred investment loss of \$12.8 million. The funded ratio of the system, on a market value basis, is 49% in the January 1, 2019 actuarial valuation. While the System's financial health in future years will be negatively impacted by the contribution shortfall and positively impacted by changes to the benefit structure, the net impact on the System's long-term funding cannot be quantified without performing an open group projection of future valuation results. As mentioned earlier, such analysis was not performed because it is outside the regular scope of services requested by the Board.

As mentioned earlier in this report, the System uses an asset smoothing method in the actuarial valuation. While this is a very common procedure for public retirement systems, it is important to be aware of the potential impact of the unrecognized investment experience. The System currently has a deferred investment loss of \$12.8 million. It is valuable to compare the key valuation results from the 2019 valuation using both the actuarial and market value of assets (see following table).

	\$ Millions	
	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Liability	\$482.0	\$482.0
Asset Value	249.5	236.7
Unfunded Actuarial Liability	\$232.5	\$245.3
Funded Ratio	51.8%	49.1%
Normal Cost Rate	9.818%	9.818%
UAL Contribution Rate	<u>21.844%</u>	<u>23.127%</u>
Total Actuarial Contribution Rate	31.662%	32.945%
Employee Contribution Rate	10.075%	10.075%
City Contribution Rate	18.775%	18.775%
Contribution (Shortfall)/Margin	(2.812%)	(4.095%)



EXECUTIVE SUMMARY

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 Section II of this report for an in-depth discussion of the specific risks facing the City of Omaha Employees’ Retirement System.



THE CITY OF OMAHA EMPLOYEES' RETIREMENT SYSTEM

PRINCIPAL VALUATION RESULTS

	January 1, 2019	January 1, 2018	% Chg
MEMBERSHIP			
1. Active Membership			
- Number of Members:			
Hired before March 1, 2015	797	889	(10.3)
Hired on or after March 1, 2015	<u>404</u>	<u>333</u>	21.3
Total	1,201	1,222	(1.7)
- Projected Payroll for Upcoming Fiscal Year	\$75,407,531	\$72,754,142	3.6
- Average Projected Pay	\$62,787	\$59,537	5.5
- Average Attained Age	45.6	45.6	0.0
- Average Entry Age	36.7	36.7	0.0
2. Inactive Membership			
- Number of Retirees / Beneficiaries	1,391	1,364	2.0
- Number of Disabled Members	96	101	(5.0)
- Number of Deferred Vested Members	96	81	18.5
- Average Annual Benefit	\$23,997	\$23,746	1.1
- Number of Participants Due a Refund	62	52	19.2
ASSETS AND LIABILITIES			
1. Net Assets			
- Market Value	\$236,701,312	\$254,532,138	(7.0)
- Actuarial Value	249,518,547	251,320,837	(0.7)
2. Projected Liabilities	\$539,115,182	\$529,259,210	1.9
3. Actuarial Liability	482,025,309	474,607,516	1.6
4. Unfunded Actuarial Liability	\$232,506,762	\$223,286,679	4.1
5. Funded Ratios			
Actuarial Value Assets / Actuarial Liability	51.76%	52.95%	(2.2)
Market Value Assets / Actuarial Liability	49.11%	53.63%	(8.4)
CONTRIBUTIONS			
1. Normal Cost Rate	9.818%	9.923%	(1.1)
2. UAL Contribution Rate	<u>21.844%</u>	<u>21.133%</u>	3.4
3. Total Actuarial Contribution Rate (1) + (2)	31.662%	31.056%	2.0
4. Employee Contribution Rate	10.075%	10.075%	0.0
5. City Contribution Rate Per Ordinance	18.775%	18.775%	0.0
6. Contribution (Shortfall)/Margin (4) + (5) - (3)	(2.812%)	(2.206%)	27.5



EXHIBIT 1

**SUMMARY OF FUND ACTIVITY
(Market Value Basis)**

For Year Ended December 31, 2018

Assets at January 1, 2018	\$ 254,532,138
Receipts:	
City Contributions	13,645,009
Employee Contributions	7,330,393
Investment Earnings, Net of Expenses	<u>(2,029,559)</u>
Total Receipts	18,945,843
Disbursements:	
Benefit Payments	35,785,560
Refund of Contributions	987,095
Administrative Expenses	<u>4,014</u>
Total Disbursements	36,776,669
Assets as of December 31, 2018	\$ 236,701,312
Estimated Net Rate of Return	(0.8%)



EXHIBIT 2

DETERMINATION OF ACTUARIAL VALUE OF ASSETS

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

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

1. Actuarial Value of Assets as of January 1, 2018	\$ 251,320,837
2. Actual Receipts / Disbursements	
a. Total Contributions	20,975,402
b. Benefit Payments/Other	(36,772,655)
c. Net Change	<u>(15,797,253)</u>
3. Expected Actuarial Value of Assets as of January 1, 2019 [(1) * 1.075] + [(2c) * 1.075 ^{1/2}]	253,790,959
4. Market Value of Assets as of January 1, 2019	236,701,312
5. Excess of Market Value over Expected Actuarial Value as of January 1, 2019	(17,089,647)
6. Preliminary Actuarial Value of Assets as of January 1, 2019 [(3) + 25% of (5)]	249,518,547
7. 20% Calculation of Corridor	
a. 80% of (4)	189,361,050
b. 120% of (4)	284,041,574
8. Final Actuarial Value of Assets as of January 1, 2019 (6) but not < (7a) nor > (7b)	\$ 249,518,547
9. Rate of Return on Actuarial Value of Assets	5.7%

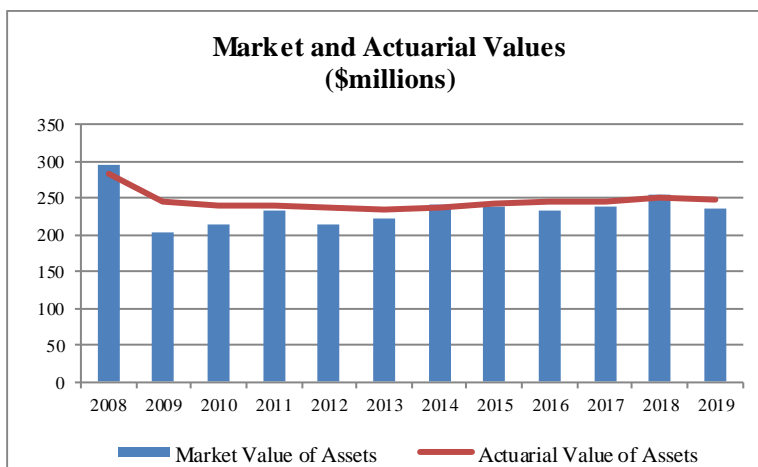


SECTION I – VALUATION RESULTS

EXHIBIT 2 (continued)

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

Date	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	AVA / MVA
1/1/2008	\$294,658,022	\$283,243,750	96.13%
1/1/2009	204,452,506	245,343,007	120.00%
1/1/2010	213,219,632	240,109,413	112.61%
1/1/2011	232,346,583	240,291,310	103.42%
1/1/2012	215,434,784	236,741,347	109.89%
1/1/2013	223,233,088	235,591,941	105.54%
1/1/2014	240,342,815	237,579,690	98.85%
1/1/2015	238,730,446	242,248,074	101.47%
1/1/2016	232,157,235	243,516,453	104.89%
1/1/2017	239,825,244	246,234,597	102.67%
1/1/2018	254,532,138	251,320,837	98.74%
1/1/2019	236,701,312	249,518,547	105.41%





SECTION I – VALUATION RESULTS

EXHIBIT 3

ACTUARIAL BALANCE SHEET

An actuarial statement of the status of the System in balance sheet form as of January 1, 2019 is as follows:

Assets

Current assets (actuarial value)	\$	249,518,547
Present value of future normal costs		57,089,873
Present value of future employer contributions to fund unfunded actuarial liability		<u>232,506,762</u>
Total Assets	\$	<u><u>539,115,182</u></u>

Liabilities

Present value of future retirement benefits for:

Active employees	\$	143,914,937
Retired employees, contingent annuitants and spouses receiving benefits		338,046,047
Deferred vested employees		7,303,362
Inactive employees due refunds		499,440
Inactive employees – disabled		<u>19,631,883</u>
Total	\$	509,395,669
Present value of future death benefits payable upon death of active members		3,592,105
Present value of future benefits payable upon termination of active members		15,704,149
Present value of future benefits payable upon disability of active members		<u>10,423,259</u>
Total Liabilities	\$	<u><u>539,115,182</u></u>



EXHIBIT 4

UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2019

The actuarial liability is the portion of the present value of future benefits which will not be paid by future normal costs, i.e., the portion allocated to past years of service. The actuarial value of assets is subtracted from the actuarial liability to determine the unfunded actuarial liability.

1. Present Value of Future Benefits	\$	539,115,182
2. Present Value of Future Normal Costs		<u>57,089,873</u>
3. Actuarial Liability (1) – (2)		482,025,309
4. Actuarial Value of Assets		<u>249,518,547</u>
5. Unfunded Actuarial Liability (3) – (4)	\$	232,506,762
6. Funded Ratio (4) / (3)		51.76%



EXHIBIT 5

SCHEDULE OF AMORTIZATION BASES

The System amortizes the unfunded actuarial liability (UAL) using a “layered” approach for the UAL where the UAL as of January 1, 2016 (initial base) is amortized over a closed amortization period of 25 years. Changes to the UAL resulting from changes in the set of actuarial assumptions are amortized over an appropriate period, as determined by the Board of Trustees in consultation with the actuary. Changes to the UAL in subsequent years that result from actual experience that is different than expected, based on the actuarial assumptions, are set up as a new amortization base with payments determined as a level percentage of payroll over a closed 20-year period beginning on that valuation date. The total UAL payment is the sum of the amortization payments on each of the amortization bases.

Note that although an actuarial contribution rate is determined for the City of Omaha Employees’ Retirement System, the System is funded based on fixed contribution rates specified in the various collective bargaining agreements.

Amortization Bases	Original Amount	January 1, 2019 Remaining Years	Year of Last Payment	Outstanding Balance as of January 1, 2019	Annual Contribution (mid-year)
2016 Initial UAL Base	\$ 193,616,559	22	2040	\$ 199,571,033	\$ 14,207,297
2017 Experience Base	1,111,921	18	2036	1,110,350	89,766
2018 Assumption Changes	27,470,165	24	2042	27,647,947	1,870,094
2018 Experience Base	(4,251,525)	19	2037	(4,237,556)	(330,644)
2019 Experience Base	8,414,988	20	2038	8,414,988	635,377
Total				\$ 232,506,762	\$ 16,471,890



EXHIBIT 6

DEVELOPMENT OF

2019 ACTUARIAL CONTRIBUTION RATE

The actuarial cost method used to determine the required level of annual contributions to support the expected benefits is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate and the unfunded actuarial liability payment. The System is financed by fixed contribution rates from the employees and the City as set out in the bargaining agreements with the various employee groups.

1. (a)	Normal Cost	\$	6,749,691
(b)	Expected Payroll in 2019 for Current Actives	\$	68,750,249
(c)	Normal Cost Rate		
(a) / (b)			9.818%
2.	Unfunded Actuarial Liability at Valuation Date	\$	232,506,762
3.	Unfunded Actuarial Liability Payment	\$	16,471,890
4.	Total Projected Payroll for 2019	\$	75,407,531
5.	Unfunded Actuarial Liability Payment as Percent of Pay (3) / (4)		21.844%
6.	Total Actuarial Contribution Rate (1c) + (5)		31.662%
7.	Employee Contribution Rate		10.075%
8.	City Contribution Rate		18.775%
9.	Contribution (Shortfall)/Margin* (7) + (8) - (6)		(2.812%)

*Shortfall indicates the UAL will not be fully amortized within the period set in the Funding Policy, if all assumptions are met in the future.



EXHIBIT 7

CALCULATION OF ACTUARIAL GAIN/(LOSS)

For Plan Year Ending December 31, 2018

Liabilities

1. Actuarial liability as of January 1, 2018	\$ 474,607,516
2. Normal cost for 2018	6,578,160
3. Interest at 7.50% on (1) and (2) to December 31, 2018	36,088,926
4. Benefit payments during 2018	(36,772,655)
5. Interest on benefit payments	(1,354,045)
6. Expected actuarial liability as of December 31, 2018	\$ 479,147,902
7. Actuarial liability as of December 31, 2018	\$ 482,025,309

Assets

8. Actuarial value of assets as of January 1, 2018	\$ 251,320,837
9. Contributions during 2018	20,975,402
10. Benefit payments during 2018	(36,772,655)
11. Interest at 7.50% on (8), (9) and (10) to December 31, 2018	18,267,375
12. Expected actuarial value of assets as of December 31, 2018	\$ 253,790,959
13. Actual actuarial value of assets as of December 31, 2018	\$ 249,518,547

Gain / (Loss)

14. Expected unfunded actuarial liability (6) – (12)	\$ 225,356,943
15. Actual unfunded actuarial liability (7) – (13)	232,506,762
16. Actuarial Gain / (Loss) (14) – (15)	(7,149,819)
17. Actuarial Gain / (Loss) on Actuarial Assets (13) – (12)	(4,272,412)
18. Actuarial Gain / (Loss) on Actuarial Liability (6) – (7)	\$ (2,877,407)



EXHIBIT 8

ANALYSIS OF EXPERIENCE

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

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

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

Gain/(Loss) By Source

The System experienced a net actuarial loss on liabilities of \$2,877,000 during the plan year ended December 31, 2018, and an actuarial loss on assets of \$4,272,000. The total actuarial loss was \$7,150,000. The major components of this aggregate actuarial experience are shown below:

<u>Liability Sources</u>	<u>Gain/(Loss)</u>
Salary Increases	\$ (2,655,000)
Mortality	1,204,000
Terminations	(194,000)
Retirements	(722,000)
Disability	(109,000)
New Entrants/Rehires	(247,000)
Disabled Retiree Conversions*	6,000
Miscellaneous	(160,000)
Total Liability Gain/(Loss)	\$ (2,877,000)
Asset Gain/(Loss)	\$ (4,272,000)
Total Actuarial Gain/(Loss)	\$ (7,150,000)

*Upon reaching age 65, disabled members are converted from disability retirement to service retirement and their benefits are recalculated.

Numbers may not add due to rounding.



SECTION II

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 City of Omaha Employees’ Retirement System (System).

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become “pay as you go”. 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 a defined benefit plan. These include:

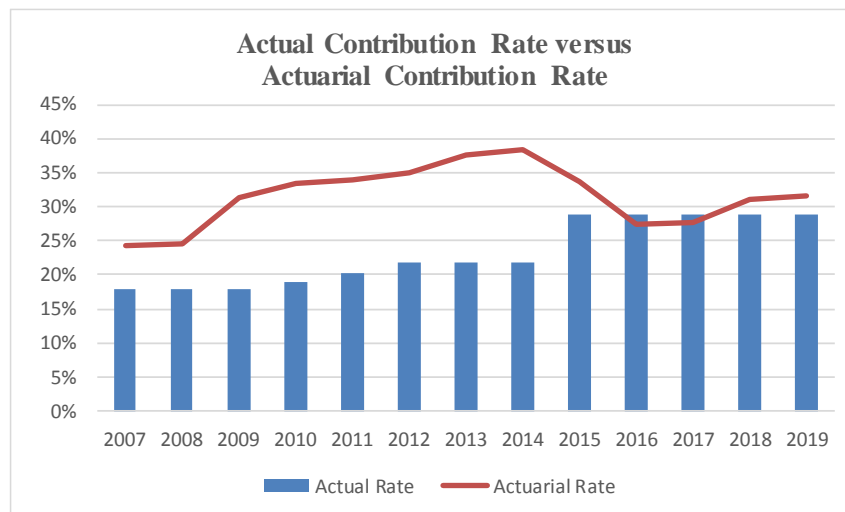
- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor to pay;
-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

Although the last two are real risks to the retirement system, ASOP 51 does not require the actuary to opine on those risks so no discussion is included here.

There is typically a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. The City of Omaha Employees’ Retirement System is funded by fixed contribution rates made by both the members and the City. This funding approach tends to create more risk than a system whose funding policy requires that the actuarial contribution rate be made each year. Although changes have been made in the past to both the benefits and the contribution rates to address long-term funding concerns, there is a lag in implementing such a change. The following graph illustrates that the fixed contribution rates have failed to meet the actuarial required contribution amount for 11 of the last 13 years.



SECTION II – RISK CONSIDERATIONS



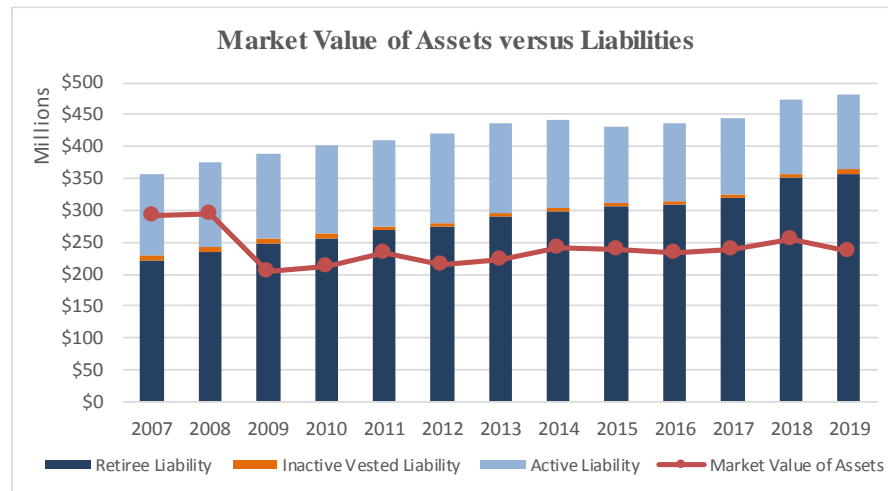
Funding a retirement system with fixed contribution rates creates some unique funding challenges. The most significant risk factor for the City of Omaha Employees' Retirement System is investment return because the inherent volatility of returns due to the asset allocation can produce wide variations in the actual return on the market value of assets from year to year. When the actual experience is lower than expected (based on the assumption), the contributions to the System do not automatically adjust to compensate for the loss of investment income. The delay in responding to adverse economic experience, due to the fact any changes to the benefits or contributions must be resolved in the bargaining process, can result in a significant reduction in funded status before any corrective action occurs.

A new plan design, called a Cash Balance Plan, was created for members hired on/after March 1, 2015. The benefit structure shares the pre-retirement investment risk directly with the members by reflecting actual performance in the dividend interest crediting rate for the cash balance accounts. To the extent that actual returns are lower than assumed, the actual interest credited to the cash balance accounts will also be lower (although not dollar for dollar). As a result, the benefit amounts for members will be lower which will partially offset the impact of the lower returns. It will be many years before the full impact of the risk-sharing design of the Cash Balance Plan has a meaningful impact on the System's funding, but over the long term this is a positive factor for the System's funding.

The current funded status of the System, using the market value of assets, is 49%. The market value of assets on January 1, 2019 was \$237 million while the retiree liability on the same date was \$358 million. Essentially, the current assets are only sufficient to fund about 66% of the retiree liability, assuming all actuarial assumptions are met. As the graph below illustrates, the actuarial liabilities have increased steadily over this time period, but the asset value has held relatively steady since 2011. As a result, there has been an increasing amount of unfunded actuarial liability over this period.



SECTION II – RISK CONSIDERATIONS



A key demographic risk for all retirement systems, including the City of Omaha Employees' Retirement System, 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 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 small probability and thus represents much less risk than the volatility associated with investment returns.

Finally, the unfunded actuarial liability is amortized as a level percentage of payroll. The underlying assumption used in developing the payment schedule assumes an increasing payroll over time which is dependent on a stable employment level, i.e., active member count remains the same. If payroll does not grow as expected, fewer contribution dollars are received and funding progress is delayed which means that a decrease in the number of active members will have a negative impact on the funding of the System. Likewise, an increase in the number of active members, as has occurred over the past ten years, actually improves the funding of the System.

The following exhibits summarize some historical information that helps indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.



EXHIBIT 9

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System 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 System. The higher this ratio, the more sensitive a plan’s actuarial contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Actuarial Valuation Date	Market Value of Assets	Estimated Plan Year Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
1/1/2007	\$292,040,611	\$48,684,642	6.00	4.53%
1/1/2008	294,658,022	52,278,938	5.64	4.26%
1/1/2009	204,452,506	53,004,716	3.86	2.91%
1/1/2010	213,219,632	55,427,868	3.85	2.91%
1/1/2011	232,346,583	59,235,591	3.92	2.96%
1/1/2012	215,434,784	62,825,685	3.43	2.59%
1/1/2013	223,233,088	63,327,394	3.53	2.67%
1/1/2014	240,342,815	63,413,206	3.79	2.86%
1/1/2015	238,730,446	64,876,227	3.68	2.78%
1/1/2016	232,157,235	69,005,865	3.36	2.54%
1/1/2017	239,825,244	70,873,306	3.38	2.55%
1/1/2018	254,532,138	72,754,142	3.50	2.64%
1/1/2019	236,701,312	75,407,531	3.14	2.37%

Note: Years prior to 1/1/2011 were provided by the prior actuary.

*The impact of asset smoothing is not reflected in the impact on the Actuarial Contribution Rate (ACR). Current year assumptions are used for all years shown.

The assets at January 1, 2019 are 314% of payroll, so underperforming the investment return assumption by 10% (i.e., earn -2.50% for one year) is equivalent to 31.4% of payroll and moves the ACR by 2.37%. While the actual impact in the first year is mitigated by the asset smoothing method, this illustrates the risk associated with volatile investment returns.



EXHIBIT 10

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 then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. The City of Omaha Employees’ Retirement System has had negative cash flows of over 5% for the last ten years. This fact should be considered by the investment consultant in evaluating the System’s asset allocation.

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
12/31/2007	294,658,022	9,237,365	22,496,006	(13,258,641)	(4.50%)
12/31/2008	204,452,506	10,069,244	23,943,022	(13,873,778)	(6.79%)
12/31/2009	213,219,632	9,950,347	25,247,988	(15,297,641)	(7.17%)
12/31/2010	232,346,583	10,576,517	26,336,846	(15,760,329)	(6.78%)
12/31/2011	215,434,784	12,246,998	27,326,503	(15,079,505)	(7.00%)
12/31/2012	223,233,088	13,417,974	28,784,245	(15,366,271)	(6.88%)
12/31/2013	240,342,815	13,367,736	30,477,173	(17,109,437)	(7.12%)
12/31/2014	238,730,446	18,647,784	31,316,243	(12,668,459)	(5.31%)
12/31/2015	232,157,235	18,985,569	32,769,865	(13,784,296)	(5.94%)
12/31/2016	239,825,244	19,646,070	33,720,639	(14,074,569)	(5.87%)
12/31/2017	254,532,138	20,333,419	35,424,356	(15,090,937)	(5.93%)
12/31/2018	236,701,312	20,975,402	36,772,655	(15,797,253)	(6.67%)

Note: Years prior to 1/1/2011 were provided by the prior actuary.

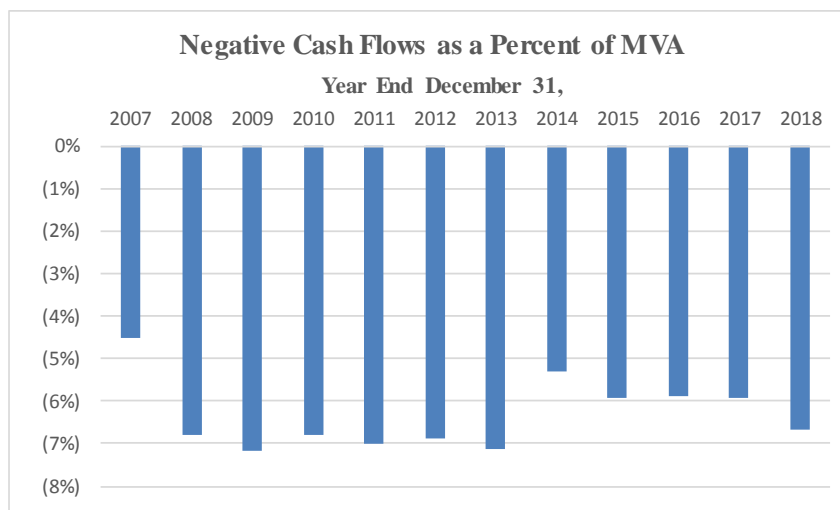




EXHIBIT 11

LIABILITY MATURITY MEASUREMENTS

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 system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs.

Valuation Date	Retiree Liability (a)	Total Actuarial Liability (b)	Retiree Percentage (a / b)	Market Value of Assets (c)	Ratio (c / a)
1/1/2007	\$220,955,272	\$357,060,698	61.9%	\$292,040,611	1.32
1/1/2008	233,841,457	374,918,443	62.4%	294,658,022	1.26
1/1/2009	248,744,279	389,986,183	63.8%	204,452,506	0.82
1/1/2010	254,677,923	401,416,694	63.4%	213,219,632	0.84
1/1/2011	267,983,708	409,442,601	65.5%	232,346,583	0.87
1/1/2012	273,287,125	420,810,359	64.9%	215,434,784	0.79
1/1/2013	291,595,687	436,270,409	66.8%	223,233,088	0.77
1/1/2014	298,858,244	442,754,113	67.5%	240,342,815	0.80
1/1/2015	305,515,709	431,160,038	70.9%	238,730,446	0.78
1/1/2016	308,712,233	437,133,012	70.6%	232,157,235	0.75
1/1/2017	320,526,759	443,771,621	72.2%	239,825,244	0.75
1/1/2018	351,551,713	474,607,516	74.1%	254,532,138	0.72
1/1/2019	357,677,930	482,025,309	74.2%	236,701,312	0.66

Note: Years prior to 1/1/2011 were provided by the prior actuary.

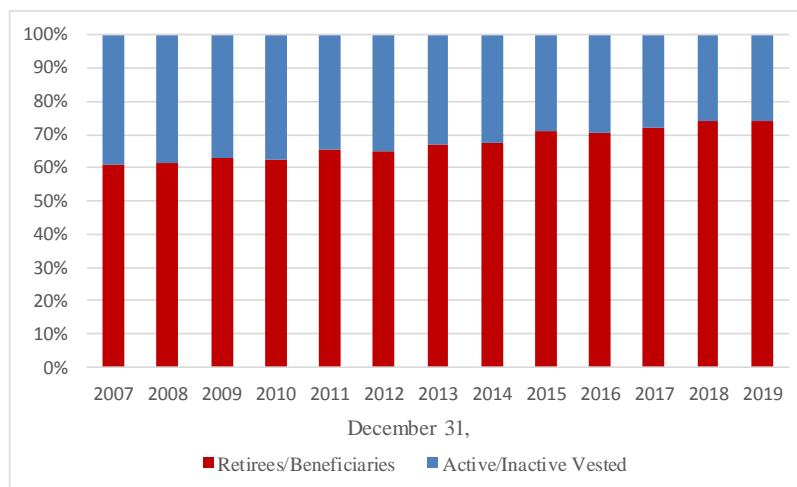




EXHIBIT 12

HISTORICAL MEMBER STATISTICS

Valuation Date January 1,	Number of		Active/ Retired
	Active	Retired	
2007	1,101	1,192	0.92
2008	1,125	1,223	0.92
2009	1,116	1,243	0.90
2010	1,116	1,257	0.89
2011	1,130	1,281	0.88
2012	1,156	1,308	0.88
2013	1,150	1,355	0.85
2014	1,116	1,370	0.81
2015	1,143	1,400	0.82
2016	1,194	1,386	0.86
2017	1,197	1,430	0.84
2018	1,222	1,465	0.83
2019	1,201	1,487	0.81

Note: Years prior to 1/1/2011 were provided by prior actuary.

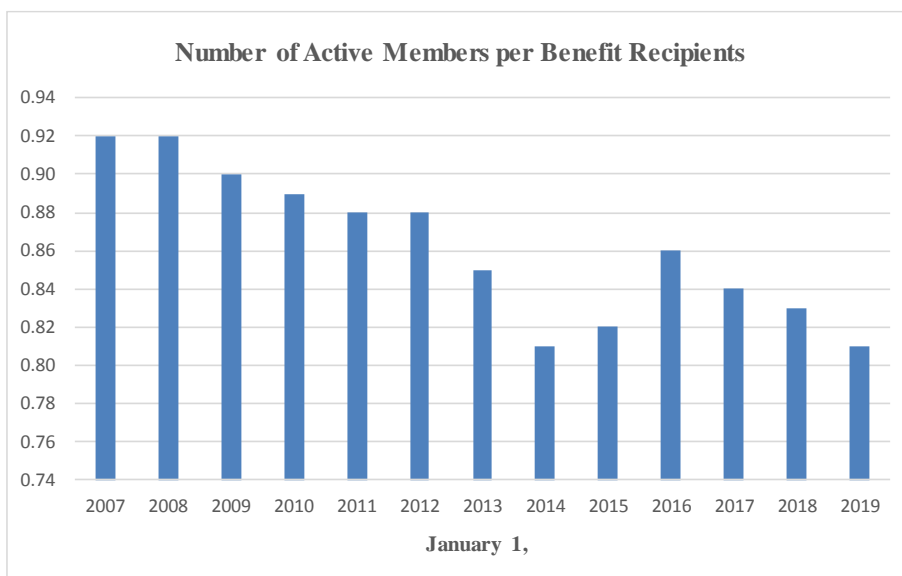




EXHIBIT 13

COMPARISON OF VALUATION RESULTS UNDER ALTERNATE INVESTMENT RETURN ASSUMPTIONS

This exhibit compares the key January 1, 2019 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions are unchanged for purposes of this analysis.

Investment Return Assumption	7.00%	7.25%	7.50%	7.75%	8.00%
Contributions					
Total Normal Cost	10.808%	10.296%	9.818%	9.370%	8.950%
UAL Contribution Rate	23.215%	22.526%	21.844%	21.168%	20.498%
Total Actuarial Contribution Rate	34.023%	32.822%	31.662%	30.538%	29.448%
Employee Contribution Rate	10.075%	10.075%	10.075%	10.075%	10.075%
City Contribution Rate Per Ordinance	18.775%	18.775%	18.775%	18.775%	18.775%
Contribution (Shortfall)/Margin	(5.173%)	(3.972%)	(2.812%)	(1.688%)	(0.598%)
Actuarial Liability (\$ in thousands)	\$506,084	\$493,802	\$482,025	\$470,728	\$459,886
Actuarial Value of Assets	249,519	249,519	249,519	249,519	249,519
Unfunded Actuarial Liability	\$256,565	\$244,283	\$232,507	\$221,210	\$210,367
Funded Ratio	49.30%	50.53%	51.76%	53.01%	54.26%

Note: All other assumptions are unchanged for purposes of this sensitivity analysis.



SECTION III – OTHER INFORMATION

SECTION III

OTHER INFORMATION

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



EXHIBIT 14

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending	Annual Required Contribution* (a)	Total Employer Contribution* (b)	Percentage of ARC Contributed* (b) / (a)
12/31/2005	\$ 6,877,913	\$ 4,500,192	65.43%
12/31/2006	6,213,801	4,145,033	66.71%
12/31/2007	8,883,617	4,975,039	56.00%
12/31/2008	9,212,669	5,374,082	58.33%
12/31/2009	12,893,331	5,310,754	41.19%
12/31/2010	14,149,386	5,717,610	40.41%
12/31/2011	14,564,847	6,618,110	45.44%
12/31/2012	15,658,045	7,216,050	46.09%
12/31/2013	17,406,168	7,194,482	41.33%
12/31/2014	17,162,883	12,326,643	71.82%
12/31/2015	14,676,786	12,401,231	84.50%
12/31/2016	11,794,456	12,779,968	108.36%
12/31/2017	12,383,422	13,227,230	106.81%
12/31/2018	14,990,504	13,645,009	91.02%

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

Note: Although an actuarial contribution rate is calculated in the valuation, the system is funded by fixed contribution rates set out in the bargaining agreements for the individual employee groups.



EXHIBIT 15

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date ¹	Actuarial Value of Assets (a)	Actuarial Liability (AL) (b)	Unfunded AL (UAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (P/R) (c)	UAL as a Percentage of Covered P / R [(b-a)/c]
12/31/2006	\$292,000,000	\$361,700,000	\$ 69,700,000	80.7%	\$48,200,000	144.6%
12/31/2007	294,700,000	369,000,000	74,300,000	79.9%	54,000,000	137.6%
12/31/2008	204,500,000	387,700,000	183,200,000	52.7%	56,400,000	324.8%
12/31/2009	213,200,000	402,800,000	189,600,000	52.9%	55,700,000	340.4%
12/31/2010	232,400,000	414,500,000	182,100,000	56.1%	56,700,000	321.2%
1/1/2011	240,291,310	409,442,601	169,151,291	58.7%	59,235,591	285.6%
1/1/2012	236,741,347	420,810,359	184,069,012	56.3%	62,825,685	293.0%
1/1/2013	235,591,941	436,270,409	200,678,468	54.0%	63,327,394	316.9%
1/1/2014	237,579,690	442,754,113	205,174,423	53.7%	63,413,206	323.6%
1/1/2015	242,248,074	431,160,038	188,911,964	56.2%	64,876,227	291.2%
1/1/2016	244,543,841	437,133,012	192,589,171	55.9%	69,005,865	279.1%
1/1/2017	246,234,597	443,771,621	197,537,024	55.5%	70,873,306	278.7%
1/1/2018	251,320,837	474,607,516	223,286,679	53.0%	72,754,142	306.9%
1/1/2019	249,518,547	482,025,309	232,506,762	51.8%	75,407,531	308.3%

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

Note: the investment return assumption was changed from 8.0% to 7.5% in the 2018 valuation.



APPENDIX A

SUMMARY OF PLAN PROVISIONS

Effective Date: Section 22 - 21	January 1, 1949
Active Member: Section 22 – 24 and 25	All City employees except: policemen, firemen, persons paid on a contractual or fee basis, seasonal, temporary and part-time employees, and elected officials who do not make written application.
Final Average Compensation (FAC): Section 22 - 32	Highest 78 pay periods in the employee's last 130 pay periods of employment divided by three for members who are within five years of normal retirement as of March 1, 2015 under the eligibility criteria set forth in the 2009 through 2012 labor agreements; or the last 130 pay periods divided by five for all other employees. Minimum FAC, regardless of retirement date, shall never be less than the FAC determined as of 2/28/2015 (highest consecutive 26 pay periods in 130 pay periods prior to 2/28/2015).
Member Contributions: Section 22 – 26(a)	Each member will contribute 10.075% of total compensation.
City of Omaha Contributions: Section 22 – 26(e)	The City will contribute a percentage of each member’s total compensation as shown in the following table.

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

Service Credits
Section 22 – 28 and 29

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

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



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Service Retirement Eligibility:
Section 22 - 30

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

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

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

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

Service Retirement Pension:
Section 22 - 32

For members hired before March 1, 2015, a monthly pension equal to 2.25% of Final Average Compensation times years of service during and before 2014, plus 1.90% for years of service during and after 2015.

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



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

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

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

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

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

Disability Benefits:

1. Non-Service Related
Section 22 - 35

An employee who sustains an injury or illness not in the line of duty and as a result becomes unfit for active duty shall be granted a non-service-connected disability retirement of 1.50% multiplied by the employee's years of service multiplied by their Final Average Compensation. Members who were hired before March 1, 2015 are eligible for this benefit with five years of service. Members who were hired on or after March 1, 2015 are eligible for this benefit with ten years of service.



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

2. Service-Related
Section 22 - 35

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

Spouse's Pension:

1. Death of Active Member
Section 22 - 36

For members hired before March 1, 2015, a monthly pension equal to 75% of the member's accrued pension is paid to the surviving spouse until death or remarriage. The member must have had five years of service or had a service-connected death and six months of service.

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

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

For members hired before March 1, 2015, if the surviving spouse was legally married to the member for at least one year, then they shall be entitled to 75% of the pension the member was receiving or was eligible to receive at the time of death. Upon the spouse's remarriage, all benefits cease.

Children's Pension:
Section 22 - 36

For members hired before March 1, 2015, upon the death of the active or retired member, the following benefit will be paid to the surviving children until age 18 or prior to death or marriage, except that if a child is totally disabled, the full pension continues until the cessation of total disability or dependency for support whichever occurs first:



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

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

Lump Sum Death Benefits:

- | | |
|--|---|
| 1. Active Member without Eligible Dependents
Section 22 - 37 | Accumulated member’s contributions, plus \$5,000. |
| 2. Retired Member without Eligible Dependents
Section 22 - 37 | Accumulated member’s contribution less previous pension payments made, plus \$5000. |
| 3. Active Member with Eligible Dependents
Section 22 - 37 | \$5,000 |
| 4. Retired Member with Eligible Dependents
Section 22 - 37 | \$5,000 |

Vesting:
Section 22 – 39

For members who were hired before March 1, 2015, upon severance of employment with less than five years of service and prior to obtaining eligibility under Section 22 – 30, a refund of such member’s accumulated contributions, including credited interest, will be paid.

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



APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Section 22 – 40

For members who were hired before March 1, 2015, upon severance of employment with more than five years of service and prior to obtaining eligibility for retirement, the member may elect, in lieu of receiving a refund of contributions, to receive a monthly pension, reduced for early retirement if applicable. Such deferred pension shall be based on service credited to the date of severance.

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

Supplemental Pension:
Section 22 – 123

Retirees (including widows, widowers and children) receive a supplemental pension (Cost of Living Adjustment – COLA) after five years equal to the lesser of 3% or \$50 per month. The COLA is granted for the full remaining period that benefits are payable. No COLAs will be available for members who retire after January 28, 1998.



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Cost Method

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

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

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

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

Actuarial Value of Assets

The actuarial value of assets is equal to the expected asset value (based on last year’s actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 7.5%) plus 1/4 of the difference between the actual market value and the expected asset value. The actuarial value of assets cannot exceed 120% or fall below 80% of the market value of assets.

Unfunded Actuarial Liability Amortization Method

The unfunded actuarial liability (UAL) is funded on a “layered” basis, with the initial base being funded as a level-percent of payroll over a 25-year closed period that began January 1, 2016. In addition, a new base is created in each valuation which is equal to the unexpected change in the UAL from actual versus expected experience, as measured in that valuation. Each experience base is funded as a level percent of payroll over a 20-year closed period. Each assumption change base is funded as a level percent of payroll over a closed period selected by the Board.



APPENDIX B

**ACTUARIAL METHODS AND ASSUMPTIONS
(continued)**

Investment Return: 7.50% per year, net of investment expenses.

Price Inflation: 2.50% per year, net of investment expenses.

**Interest Credited to
Cash Balance Accounts:** 6.00% per year

Individual Salary Increases:

<u>Years of Service</u>	<u>Annual Rate of Increase For Sample Years</u>			<u>Total Increase</u>
	<u>Inflation</u>	<u>Productivity</u>	<u>Merit & Longevity</u>	
1	2.50%	0.60%	4.90%	8.00%
5	2.50%	0.60%	1.40%	4.50%
10	2.50%	0.60%	0.90%	4.00%
15	2.50%	0.60%	0.65%	3.75%
20	2.50%	0.60%	0.15%	3.25%
25	2.50%	0.60%	0.15%	3.25%
30	2.50%	0.60%	0.15%	3.25%
35+	2.50%	0.60%	0.00%	3.10%

Payroll Growth Assumption: 3.00%

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

<u>Age</u>	<u>Eligible for Unreduced Retirement</u>	
	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
50-53	35%	25%
54-55	35%	20%
56-60	30%	20%
61	25%	20%
62	25%	30%
63-64	25%	25%
65-69	50%	30%
70	100%	100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 3.50% per year from age 55 to 59.



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

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

<u>Eligible for Unreduced Retirement</u>		
<u>Age</u>	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
55	35%	20%
56-60	30%	20%
61	25%	20%
62	25%	30%
63-64		25%
65-69		30%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 3.50% per year from age 57 to 61.

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

<u>Eligible for Unreduced Retirement</u>		
<u>Age</u>	<u>1st Year Eligible</u>	<u>Subsequent Years</u>
55	35%	20%
56-60	30%	20%
61	25%	20%
62	25%	30%
63-64	25%	25%
65	50%	30%
66-69		30%
70		100%

Members eligible for Early, but not Unreduced Retirement, are assumed to retire at a rate of 3.50% per year from age 60 to 64.



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

Members Hired on or After March 1, 2015

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

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

Decrement Timing

Middle of year

Mortality:

Active Members

RP-2014 Mortality Table, adjusted to 2006 (reflecting the 2006 base mortality rates), with generational projection using the ultimate projection scale used by the Nebraska Public Employees Retirement System

Pensioners

RP-2014 Mortality Table, adjusted to 2006 (reflecting the 2006 base mortality rates), with generational projection using the ultimate projection scale used by the Nebraska Public Employees Retirement System

Disabled

RP-2014 Disabled Mortality Table, adjusted to 2006 (reflecting the 2006 base mortality rates), with generational projection using the MP-2016 scale

Disability:

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

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

**Percent Married at Death
or Retirement:**

75%



APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS
(continued)

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

Number of Children per Married Member: 0

Termination:

<u>Years of Service</u>	<u>Annual Rate</u>	
	<u>Male</u>	<u>Female</u>
0	11.00%	15.00%
1	10.00%	14.00%
2	8.25%	12.00%
3	7.25%	10.50%
4	6.25%	9.00%
5	5.50%	8.00%
6	5.00%	7.00%
7	4.50%	6.00%
8	4.25%	5.00%
9	4.00%	4.50%
10	3.75%	4.30%
11	3.50%	4.00%
12	3.25%	3.80%
13	3.00%	3.50%
14	2.75%	3.00%
15	2.50%	2.50%
16	2.25%	2.00%
17+	2.00%	2.00%

Vested Terminations Electing Refund:

50% of members with less than 20 years of service.

Member hired prior to March 1, 2015 are assumed to take the more valuable of a lump sum or the present value of an annuity at age 65.

For members hired on or after March 1, 2015, members are assumed to take the more valuable of a lump sum or the present value of an annuity at age 60.



APPENDIX C

HISTORICAL SUMMARY OF MEMBERSHIP

The following table displays selected historical data as available.

Valuation Date 1-Jan	Total Count	Active Members						Number			
		Number	Age	Entry Age	Average Service	Annual Pay (\$)*	Pay Increase	Disabled	Terminated Refund Due	Deferred Vested	Retired
2009	2,440	1,116	47.3	36.4	10.9	47,495	2.21%	122		81	1,121
2010	2,456	1,116	47.8	37.1	10.8	49,667	4.57%	124		83	1,133
2011	2,493	1,130	47.4	36.9	10.5	49,030	(1.28%)	120		82	1,161
2012	2,568	1,156	47.3	36.8	10.5	50,335	2.66%	121	27	77	1,187
2013	2,608	1,150	46.9	36.7	10.2	50,842	1.01%	122	28	75	1,233
2014	2,607	1,116	47.1	36.7	10.4	51,501	1.30%	121	44	77	1,249
2015	2,656	1,143	46.6	36.5	10.1	50,774	(1.41%)	114	39	74	1,286
2016	2,691	1,194	46.5	36.7	9.8	52,439	3.28%	112	34	77	1,274
2017	2,739	1,197	46.2	36.7	9.5	54,347	3.64%	109	36	76	1,321
2018	2,820	1,222	45.6	36.7	8.9	54,718	0.68%	101	52	81	1,364
2019	2,846	1,201	45.6	36.7	8.9	55,935	2.22%	96	62	96	1,391

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



**MEMBERSHIP DATA FOR VALUATION
(Hired before March 1, 2015)**

The summary of member characteristics presented below covers the membership as of January 1, 2019. The schedules at the end of the report show the distribution of the various member groups by present age, along with other pertinent data.

Total number of members in valuation:

(a) Active members	797
(b) Deferred vested members	96
(c) Terminated members due a refund	24
(d) Disabled members	96
(e) Retired members, spouses and children receiving benefits	<u>1,391</u>
(f) Total members in valuation	2,404

Average age of members in valuation:

(a) Active members	
Attained Age	48.8
Hire Age	36.3
(b) Deferred vested members	47.9
(c) Disabled members	64.7
(d) Retired members	70.1
(e) Spouses and children receiving benefits	73.1

Active members eligible for vested benefits as of January 1, 2019:

(a) Members under age 55 with 5 or more years of service – eligible for deferred vested benefits	446
(b) Members age 55 and over with 5 or more years of service – eligible for early or normal retirement benefits	253
(c) Members eligible for refund of contributions only	<u>98</u>
(d) Total	797



**MEMBERSHIP DATA FOR VALUATION
(Hired on or after March 1, 2015)**

The summary of member characteristics presented below covers the membership as of January 1, 2019. The schedules at the end of the report show the distribution of the various member groups by present age, along with other pertinent data.

Total number of members in valuation:

(a) Active members	404
(b) Deferred vested members	0
(c) Terminated members due a refund	38
(d) Disabled members	0
(e) Retired members, spouses and children receiving benefits	<u>0</u>
(f) Total members in valuation	442

Average age of members in valuation:

(a) Active members	
Attained Age	39.2
Hire Age	37.5
(b) Deferred vested members	N/A
(c) Disabled members	N/A
(d) Retired members	N/A
(e) Spouses and children receiving benefits	N/A

Active members eligible for vested benefits as of January 1, 2019:

(a) Members under age 55 with 10 or more years of service – eligible for deferred vested benefits	0
(b) Members age 55 and over with 10 or more years of service – eligible for early or normal retirement benefits	0
(c) Members eligible for refund of contributions only	<u>404</u>
(d) Total	404



MEMBERSHIP DATA RECONCILIATION

January 1, 2018 to January 1, 2019

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

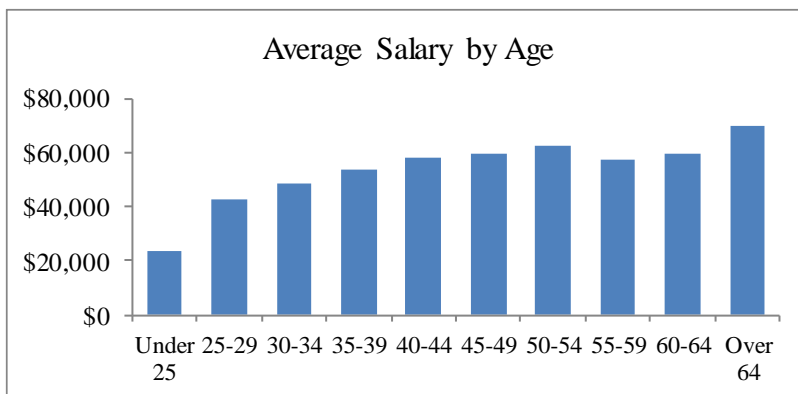
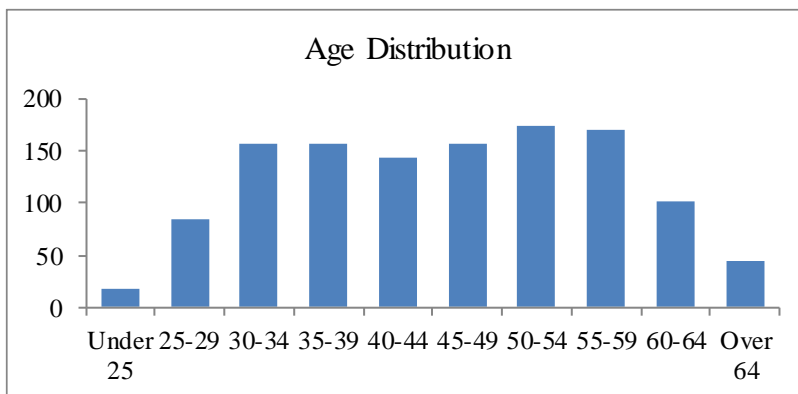
	<u>Active Members</u>	<u>Termination Refund Due</u>	<u>Deferred Vested</u>	<u>Disabled</u>	<u>Retirees</u>	<u>Beneficiaries</u>	<u>Total</u>
Total Members as of 1/1/2018	1,222	52	81	101	1,101	263	2,820
New Members	121	6	0	0	0	0	127
Terminations							
Rehired	1	(1)	0	0	0	0	0
Refunded: Paid	(46)	(21)	(2)	0	0	0	(69)
Refunded: Due	(26)	26	0	0	0	0	0
Deferred Vested	(22)	0	22	0	0	0	0
LTD	0	0	0	0	0	0	0
Retirements	(49)	0	(4)	0	53	0	0
Benefits Expired	0	0	0	0	0	0	0
Data Corrections	0	0	0	0	1	0	1
Deaths							
With Beneficiary	0	0	0	(2)	(8)	10	0
Without Beneficiary	0	0	(1)	(3)	(16)	(13)	(33)
Total Members as of 1/1/2019	1,201	62	96	96	1,131	260	2,846



SCHEDULE I

**ACTIVE MEMBERS AS OF JANUARY 1, 2019
(Total)**

<u>Age</u>	<u>Count of Members</u>			<u>Valuation Salaries of Members</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	15	3	18	\$ 353,599	\$ 71,498	\$ 425,097
25-29	56	28	84	2,327,977	1,253,191	3,581,168
30-34	94	62	156	4,562,284	2,980,551	7,542,835
35-39	107	49	156	5,676,644	2,682,967	8,359,611
40-44	103	40	143	5,953,343	2,324,252	8,277,595
45-49	118	39	157	7,324,054	1,966,506	9,290,560
50-54	132	41	173	8,457,362	2,387,318	10,844,680
55-59	123	46	169	7,446,070	2,296,205	9,742,275
60-64	63	38	101	3,781,336	2,255,047	6,036,383
Over 64	28	16	44	2,121,509	955,735	3,077,244
Total	839	362	1,201	\$48,004,178	\$19,173,270	\$67,177,448

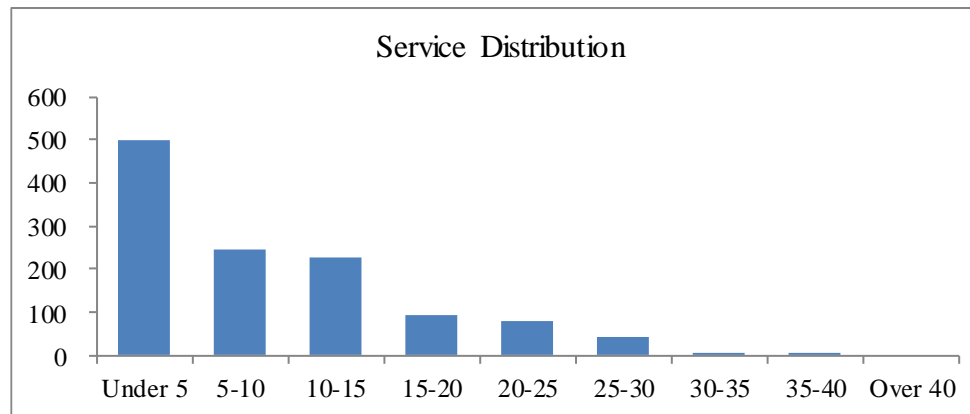




SCHEDULE I (continued)

**ACTIVE MEMBERS AS OF JANUARY 1, 2019
(Total)**

<u>Age</u>	Service									Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	
Under 25	18	0	0	0	0	0	0	0	0	18
25-29	75	9	0	0	0	0	0	0	0	84
30-34	105	43	8	0	0	0	0	0	0	156
35-39	89	37	27	3	0	0	0	0	0	156
40-44	58	35	37	10	3	0	0	0	0	143
45-49	48	37	38	20	14	0	0	0	0	157
50-54	48	22	42	20	27	13	1	0	0	173
55-59	39	28	44	26	14	13	3	2	0	169
60-64	17	29	20	11	12	11	0	1	0	101
Over 64	4	7	11	4	10	5	3	0	0	44
Total	501	247	227	94	80	42	7	3	0	1,201

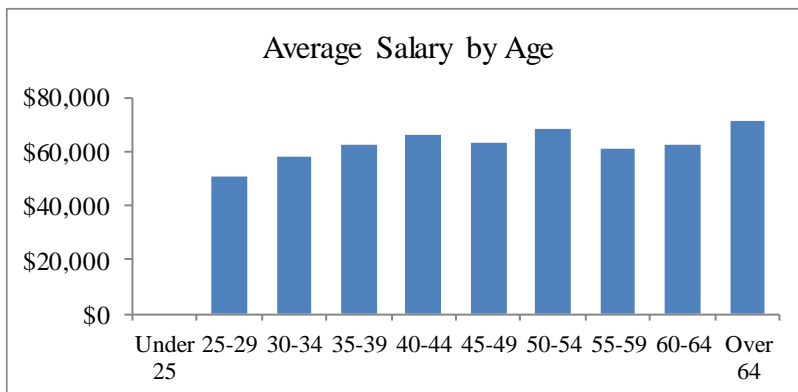
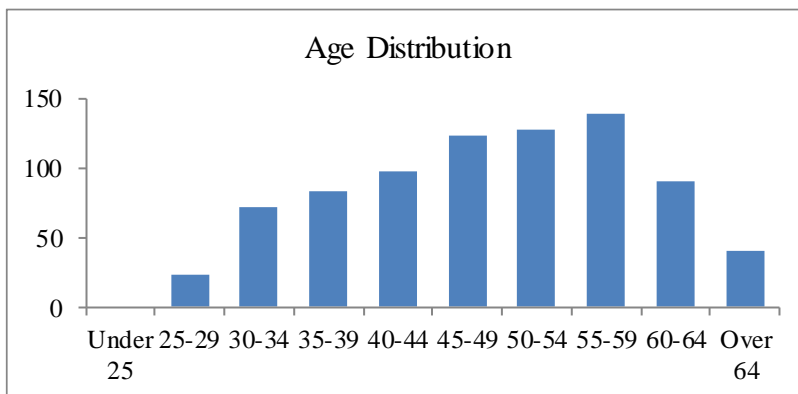




SCHEDULE I (continued)

**ACTIVE MEMBERS AS OF JANUARY 1, 2019
(Hired before March 1, 2015)**

<u>Age</u>	<u>Count of Members</u>			<u>Valuation Salaries of Members</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25-29	20	3	23	1,018,630	147,382	1,166,012
30-34	43	29	72	2,476,843	1,708,862	4,185,705
35-39	57	26	83	3,585,472	1,587,235	5,172,707
40-44	70	28	98	4,576,573	1,873,407	6,449,980
45-49	95	28	123	6,319,191	1,485,611	7,804,802
50-54	101	27	128	7,044,043	1,668,050	8,712,093
55-59	103	36	139	6,535,372	1,915,810	8,451,182
60-64	56	34	90	3,531,002	2,098,821	5,629,823
Over 64	25	16	41	1,960,274	955,735	2,916,009
Total	570	227	797	\$37,047,400	\$13,440,913	\$50,488,313

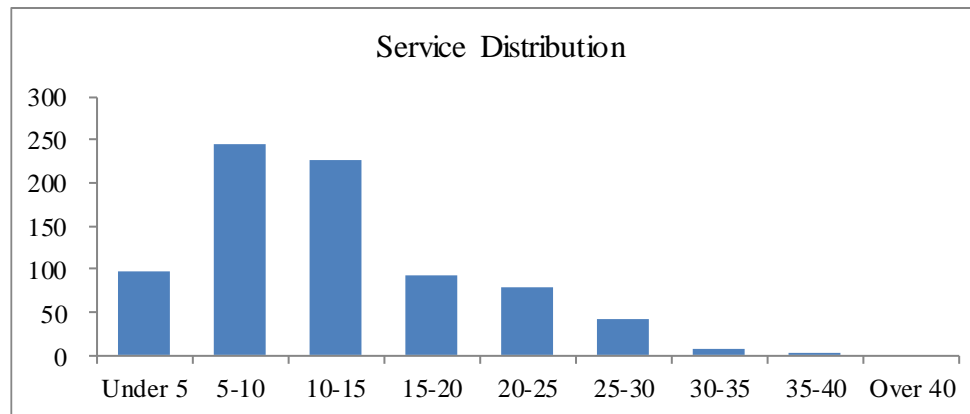




SCHEDULE I (continued)

**ACTIVE MEMBERS AS OF JANUARY 1, 2019
(Hired before March 1, 2015)**

<u>Age</u>	Service									Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	
Under 25	0	0	0	0	0	0	0	0	0	0
25-29	14	9	0	0	0	0	0	0	0	23
30-34	21	43	8	0	0	0	0	0	0	72
35-39	16	37	27	3	0	0	0	0	0	83
40-44	13	35	37	10	3	0	0	0	0	98
45-49	14	37	38	20	14	0	0	0	0	123
50-54	3	22	42	20	27	13	1	0	0	128
55-59	10	27	44	26	14	13	3	2	0	139
60-64	6	29	20	11	12	11	0	1	0	90
Over 64	1	7	11	4	10	5	3	0	0	41
Total	98	246	227	94	80	42	7	3	0	797

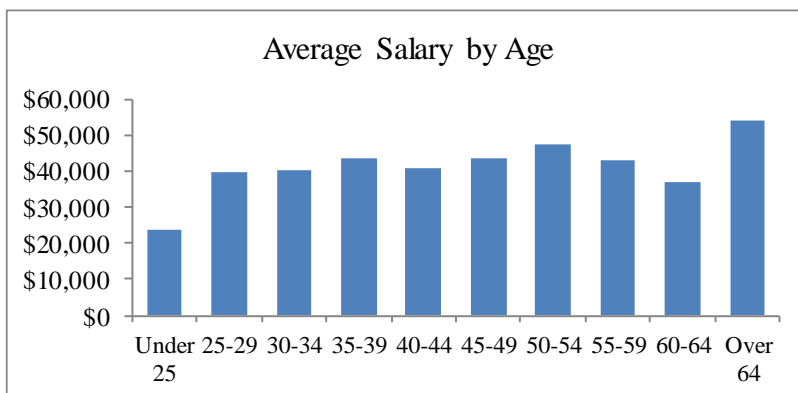
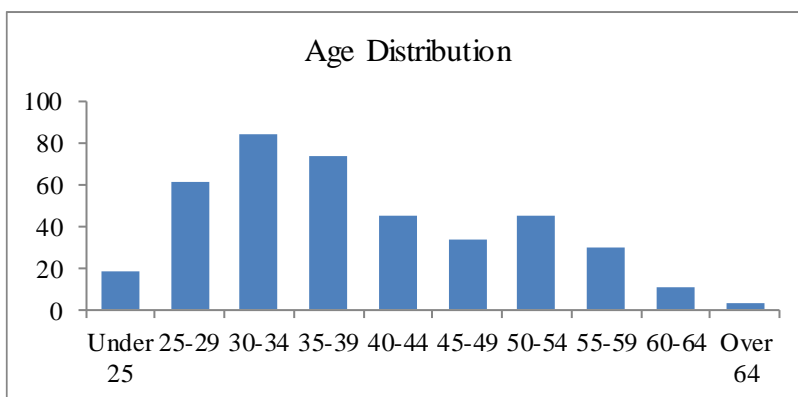




SCHEDULE I (continued)

**ACTIVE MEMBERS AS OF JANUARY 1, 2019
(Hired on or after March 1, 2015)**

<u>Age</u>	<u>Count of Members</u>			<u>Valuation Salaries of Members</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	15	3	18	\$ 353,599	\$ 71,498	\$ 425,097
25-29	36	25	61	1,309,347	1,105,809	2,415,156
30-34	51	33	84	2,085,441	1,271,689	3,357,130
35-39	50	23	73	2,091,172	1,095,732	3,186,904
40-44	33	12	45	1,376,770	450,845	1,827,615
45-49	23	11	34	1,004,863	480,895	1,485,758
50-54	31	14	45	1,413,319	719,268	2,132,587
55-59	20	10	30	910,698	380,395	1,291,093
60-64	7	4	11	250,334	156,226	406,560
Over 64	3	0	3	161,235	0	161,235
Total	269	135	404	\$10,956,778	\$5,732,357	\$16,689,135

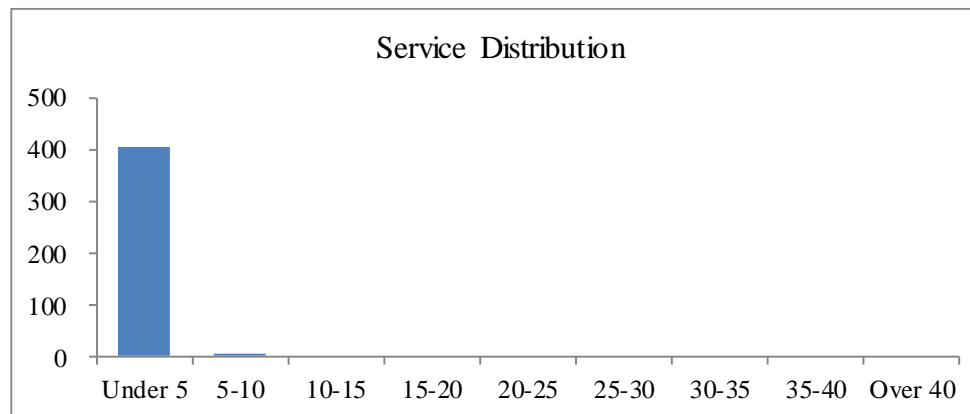




SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2019
(Hired on or after March 1, 2015)

Age	Service									Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	
Under 25	18	0	0	0	0	0	0	0	0	18
25-29	61	0	0	0	0	0	0	0	0	61
30-34	84	0	0	0	0	0	0	0	0	84
35-39	73	0	0	0	0	0	0	0	0	73
40-44	45	0	0	0	0	0	0	0	0	45
45-49	34	0	0	0	0	0	0	0	0	34
50-54	45	0	0	0	0	0	0	0	0	45
55-59	29	1	0	0	0	0	0	0	0	30
60-64	11	0	0	0	0	0	0	0	0	11
Over 64	3	0	0	0	0	0	0	0	0	3
Total	403	1	0	0	0	0	0	0	0	404

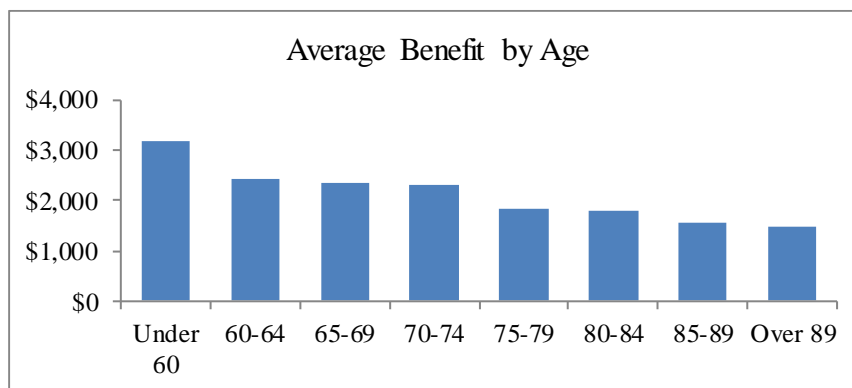
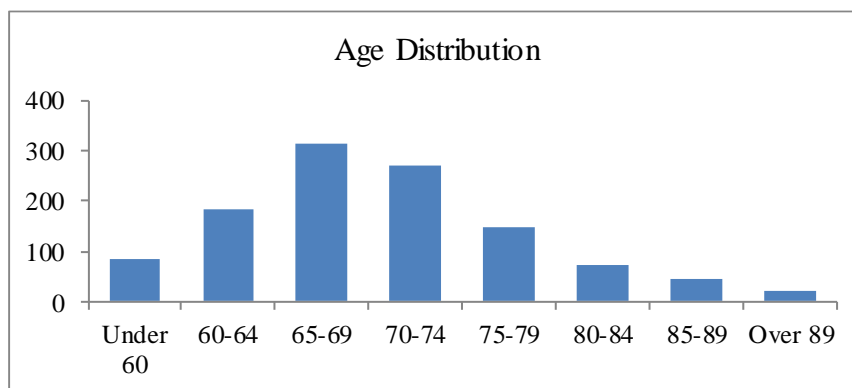




SCHEDULE II

RETIRED MEMBERS AS OF JANUARY 1, 2019

<u>Age</u>	<u>Count of Retirees</u>			<u>Current Monthly Benefits</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 60	51	32	83	\$ 161,351	\$103,101	\$ 264,452
60-64	108	76	184	279,122	168,710	447,832
65-69	209	103	312	510,063	224,238	734,301
70-74	180	89	269	446,837	175,978	622,815
75-79	105	41	146	202,878	62,672	265,550
80-84	53	19	72	98,413	30,341	128,754
85-89	29	15	44	52,731	15,665	68,396
Over 89	13	8	21	21,948	8,961	30,909
Total	748	383	1,131	\$1,773,343	\$789,666	\$2,563,009

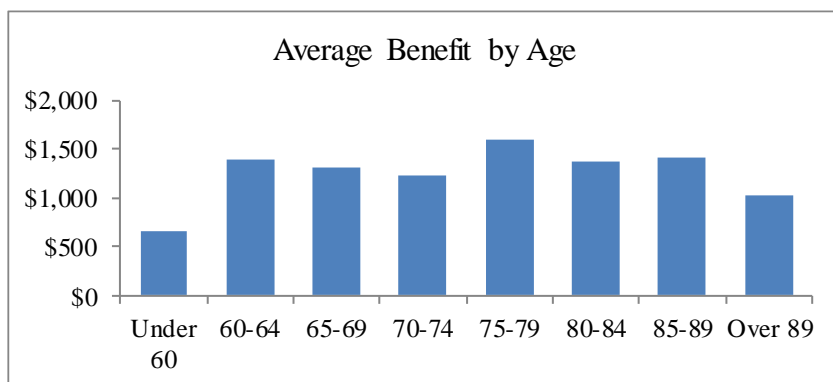
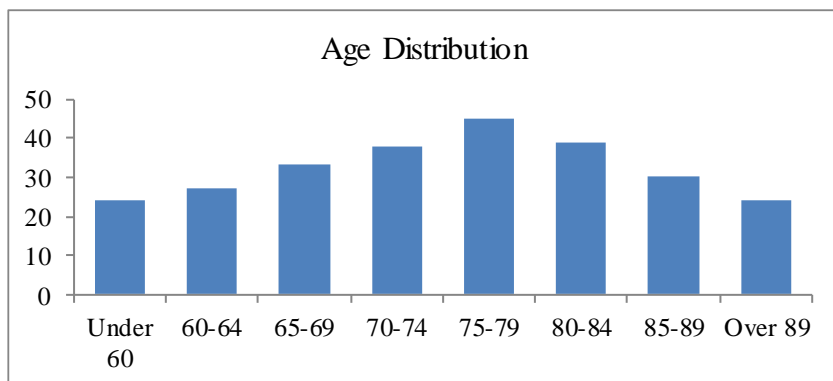




SCHEDULE III

BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2019

<u>Age</u>	<u>Count of Beneficiaries</u>			<u>Current Monthly Benefits</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 60	4	20	24	\$ 1,644	\$ 14,330	\$ 15,974
60-64	2	25	27	690	37,089	37,779
65-69	6	27	33	5,871	37,602	43,473
70-74	5	33	38	4,875	41,985	46,860
75-79	2	43	45	3,179	68,891	72,070
80-84	0	39	39	0	53,796	53,796
85-89	2	28	30	2,857	39,651	42,508
Over 89	2	22	24	1,880	22,907	24,787
Total	23	237	260	\$20,996	\$316,251	\$337,247





**SCHEDULE IV
DEFERRED VESTED MEMBERS AS OF JANUARY 1, 2019**

<u>Age</u>	<u>Count of Members</u>			<u>Expected Monthly Benefit</u>		
	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25-29	0	0	0	0	0	0
30-34	4	3	7	2,453	1,975	4,428
35-39	4	7	11	4,275	5,191	9,466
40-44	8	5	13	10,205	4,897	15,102
45-49	10	10	20	12,663	9,881	22,544
50-54	13	8	21	16,594	9,284	25,878
55-59	11	11	22	16,196	15,314	31,510
Over 59	2	0	2	1,951	0	1,951
Total	52	44	96	\$64,337	\$46,542	\$110,879



SCHEDULE V

DISABLED MEMBERS RECEIVING BENEFITS AS OF JANUARY 1, 2019

Age	Count of Members			Current Monthly Benefit		
	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	\$ 0	\$ 0	\$ 0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	1	1	0	2,052	2,052
45-49	3	0	3	5,639	0	5,639
50-54	7	0	7	12,211	0	12,211
55-59	15	2	17	29,183	3,408	32,591
Over 59	56	12	68	84,890	17,036	101,926
Total	81	15	96	\$131,923	\$22,496	\$154,419