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The City of Omaha
Police & Fire Retirement System

Actuarial Valuation as of
January 1, 2016

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CONSULTING, LLC
The experience and dedication you deserve

September 14, 2016

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

RE: January 1, 2016 Actuarial Valuation

Dear Members of the Board:

In accordance with your request, we have completed an actuarial valuation of the City of Omaha Police and Fire Retirement System as of January 1, 2016 for the plan year ending December 31, 2016. The major findings of the valuation are contained in this report. There have been no changes to the plan provisions, actuarial assumptions, or other actuarial methods since the prior report.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information provided in prior years. There was no labor agreement with the Police union in place so the reported salaries for 2015 reflected the 2014 pay schedules. As a result, active salary amounts were increased by 2% to anticipate higher pay rates once an agreement is reached. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our calculations may need to be revised.

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

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

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

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

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

Sincerely,

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

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This report presents the results of the January 1, 2016 actuarial valuation of the City of Omaha Police and Fire Retirement System. The primary purposes of performing the valuation are:

- to estimate the liabilities for the future benefits expected to be paid by the System;
- to determine the actuarial contribution rate, based on the System's funding policy;
- to measure and disclose various asset and liability measures;
- to monitor any deviation between actual plan experience and experience 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 have been no changes to the plan provisions, actuarial assumptions, or actuarial methods since the prior valuation. There was no labor agreement in place with the Police bargaining unit for 2015 so the actual reported salaries for 2015 in the valuation data reflected the 2014 pay schedules. For valuation purposes, active salary amounts for 2015 were increased by 2% to approximate the higher pay rates that might occur once an agreement is reached. While the actual salary increase amount for 2015 in the final labor agreement may differ from that assumed, this methodology should reduce the likelihood of an actuarial gain from salary experience in the 2016 valuation, followed by an actuarial loss in the 2017 valuation.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on January 1, 2016. The unfunded actuarial liability (UAL) in the current valuation is $603 million, an increase of $4 million from last year's UAL of $599 million.

The valuation results reflect net unfavorable experience for the past plan year as is demonstrated by an unfunded actuarial liability that was higher than expected, based on the actuarial assumptions used in the January 1, 2015 actuarial valuation. Unfavorable experience on the actuarial value of assets resulted in a loss of $9 million, and favorable demographic experience produced an actuarial gain on liabilities of $7 million. Based on the amortization methodology and period, the UAL was expected to increase by $11 million. This report reflects a change to the valuation methodology for records with a Qualified Domestic Relations Order (QDRO). When a new QDRO is approved, a new record is created in the data for the alternate payee's benefit amount. In the past, this benefit amount has been valued as a system obligation. During our review of this year's data, we became aware of the fact that the member's record reflects the total benefits to be paid to both the member and the alternate payee, so the benefit amount for the alternate payee should not be valued separately. This change reduced the actuarial liability by $9 million (and the beneficiary count by 35).

The System uses an asset smoothing method in the valuation process. As a result, the System's funded status and the actuarial contribution rate are based on the actuarial (smoothed) value of assets – not the pure market value. The investment return on the market value of assets during 2015, net of expenses, was 0.2%, lower than the assumed rate of 8.0%. However, due to deferred favorable investment experience from prior years, the rate of return on the actuarial value of assets for the 2015 plan year was 6.5%. The System's deferred investment experience went from a $10 million deferred gain in last year's valuation to a $27 million deferred loss in the current valuation (actuarial value of assets greater than market value). Actual returns over the next few years will determine the rate at which the deferred investment loss of $27 million is recognized. With the current deferred losses, a return of 13% on the market value of assets in 2016 would result in an 8% return on the actuarial value of assets.

ASSETS

As of January 1, 2016, the System had total funds of $594.2 million, when measured on a market value basis. This was a decrease of $5.7 million from the prior year and represents an approximate rate of return, net of expenses, of 0.2%.

The market value of assets is not used directly in the actuarial calculation of the System's funded status and the actuarial contribution rate. An asset valuation method is used to smooth the effects of market fluctuations. The actuarial value of assets is equal to the expected asset value (based on last year's actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 8.0%) plus 25% of the difference between the actual market value and the expected asset value. See Exhibit 2 for the detailed development of the actuarial value of assets as of January 1, 2016. The rate of return on the actuarial value of assets was 6.5%.

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

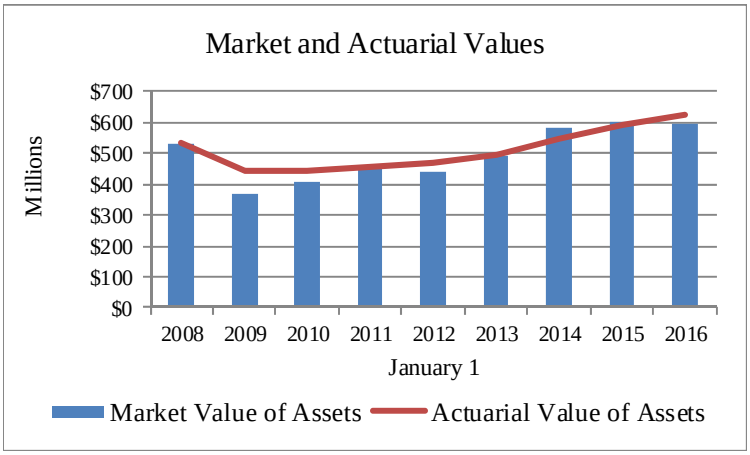
	Market Value ($M)	Actuarial Value ($M)
Net Assets, January 1, 2015	**$** 599.9	**$** 590.2
• City and Member Contributions	+ 61.8	+ 61.8
• Benefit Payments and Refunds	– 68.5	– 68.5
• Investment Gain/(Loss)	+ 1.0	+ 37.9
Net Assets, January 1, 2016	**$** 594.2	**$** 621.4
Estimated Net Rate of Return	0.2%	6.5%

The total investment loss that is not recognized as of January 1, 2016 is $27.2 million, a $36.9 million decrease from the deferred gain of $9.7 million in last year's valuation. The unrecognized losses will be reflected in the determination of the actuarial value of assets for funding purposes over time, to the extent there are not future gains to offset the deferred losses. This means that earning the assumed rate of investment return of 8.0% per year on a market value basis will result in an actuarial loss on the actuarial value of assets in the future.

The unrecognized investment loss is 4.6% of the market value of assets at January 1, 2016. If the deferred losses were recognized immediately in the actuarial value of assets, the unfunded actuarial liability would increase by $27.2 million to $629.8 million, the funded percentage would decrease from 51% to 49%, the actuarially determined contribution rate would increase from 50.097% to 51.336%, and the contribution margin of 0.446% would turn into a contribution shortfall of 0.793%.

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

	January 1 ($M)					
	2016	2015	2014	2013	2012	2011
Actuarial Value of Assets	$621	$590	$548	$496	$467	$456
Market Value of Assets	$594	$600	$579	$490	$440	$453
Actuarial Value/Market Value	105%	98%	95%	101%	106%	101%



An asset smoothing method is used to mitigate the volatility in the market value of assets. By using a smoothing method, the actuarial (or smoothed) value is expected to be both above and below the pure market value at different points in time. The significant investment losses in 2008 resulted in the actuarial value of assets exceeding the market value from 2009 through 2013. In the current valuation, the actuarial value of assets is again larger than the market value of assets due to the 2015 investment loss.

LIABILITIES

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

The other critical measurement of System liabilities in the valuation process is the actuarial liability (AL). This is the portion of the PVFB that will not be paid by the future normal costs (i.e. it is the portion of the PVFB that is allocated to past service).

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

	As of January 1	
	2016	2015
Actuarial Liability (AL)	$ 1,223,966,110	$ 1,189,002,221
Assets at Actuarial Value	621,403,975	590,191,585
Unfunded Actuarial Liability (Actuarial Value)	$ 602,562,135	$ 598,810,636
Funded Ratio (Actuarial Value)	51%	50%
Assets at Market Value	$ 594,178,499	$ 599,927,168
Unfunded Actuarial Liability (Market Value)	$ 629,787,611	$ 589,075,053
Funded Ratio (Market Value)	49%	50%

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 2015 PLAN YEAR

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

Actuarial gains (or losses) result from actual experience that is more (or less) favorable than anticipated based on the actuarial assumptions. These "experience" (or actuarial) gains or losses are reflected in the unfunded actuarial liability and are measured as the difference between the expected unfunded actuarial liability and the actual unfunded actuarial liability, taking into account any changes due to assumptions, methods or benefit provision changes. The experience for 2015, in total, was unfavorable. There was an actuarial loss of around $9 million on the actuarial value of assets and an actuarial gain of about $7 million on liabilities.

The change in the unfunded actuarial liability between January 1, 2015 and January 1, 2016 is shown below (in millions):

Unfunded Actuarial Liability, January 1, 2015	$599
• Expected change in UAL	11
• Contribution surplus in 2015	0
• Investment experience	9
• Demographic experience	(7)
• Other experience	0
• Change in valuation methodology for QDROs	(9)
Unfunded Actuarial Liability, January 1, 2016	$603

CONTRIBUTION LEVELS

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

(1) The normal cost (which is the allocation of costs attributed to the current year of service) and,
(2) The amortization payment on the Unfunded Actuarial Liability (UAL).

The normal cost rate is independent of the System's funded status and represents the cost, as a percent of payroll, of the benefits provided by the System which is allocated to the current year of service. The UAL payment is intended to fund the UAL over the amortization period set in the funding policy, a closed 30-year period that began on January 1, 2014 of which 28 years remain in the current valuation.

		January 1, 2016	January 1, 2015	% Chg
1.	Normal Cost Rate	22.146%	22.191%	(0.2)
2.	UAL Contribution Rate	27.951%	27.840%	0.4
3.	Total Contribution Rate (1) + (2)	50.097%	50.031%	0.1
4.	Less Employee Contribution Rate	(16.177%)	(16.195%)	(0.1)
5.	Less City Contribution Per Ordinance	(33.342%)	(33.339%)	0.0
6.	Less City Prior Service Payment	(1.024%)	(1.047%)	(2.2)
7.	Contribution Shortfall/(Margin)	(0.446%)	(0.550%)	(18.9)

The total normal cost for the System is 22.146% of pay, or about $27 million this year. When offset by the expected employee contributions, the employer portion of the normal cost is 5.969% of pay, or about $7 million. The normal cost represents the long-term cost of the benefit structure in the System, given the current actuarial assumptions and plan membership. As new members who are covered by a different benefit structure with a lower cost enter the System in future years, the normal cost rate is expected to decline.

The System's total actuarial contribution rate (payable as a percent of member payroll) increased by 0.066% of pay, from 50.031% in the January 1, 2015 valuation to 50.097% in the January 1, 2016 valuation. As a result, there is a contribution margin of 0.446% in the current valuation. The primary components of the change in the total actuarial contribution rate are shown in the following table:

	Rate	
Total Actuarial Contribution Rate, January 1, 2015	50.031	%
• Actuarial (Gain) / Loss - Investment Experience	0.397	
• Actuarial (Gain) / Loss - Demographic Experience	(0.321)	
• Other Experience	(0.006)	
• Contributions Above The Actuarial Rate	(0.033)	
• Change in Normal Cost Rate	(0.045)	
• Payroll Growth Lower than Expected	0.484	
• Change in Valuation Methodology for QDROs	(0.410)	
Total Actuarial Contribution Rate, January 1, 2016	50.097	%

As the table above shows, the actuarial contribution rate increased from 50.031% to 50.097%. The most significant factor for the increase in the actuarial contribution rate was the lower payroll growth than expected from January 1, 2015 to January 1, 2016, based on actuarial assumptions. The UAL as of January 1, 2016 is $603 million and the resulting UAL payment is 27.951% of pay. As a result, the total contribution rate for 2016 is 50.097% of pay (22.146% + 27.951%). The scheduled contributions for the year are 50.543%, resulting in a contribution margin of 0.446%.

COMMENTS

On January 1, 2016, the actuarial value of assets was $621 million and the market value of assets was $594 million. Due to the return on the market value of assets of 0.2%, the deferred investment gain of $10 million that existed in the prior valuation has been eliminated and a $27 million deferred loss now exists. The return on the actuarial value of assets was below the assumed 8.0% and resulted in a $9 million actuarial loss. There was a liability gain of $7 million during 2015, primarily due to salary increases that were smaller than were expected based on the actuarial assumptions. The funded ratio of the System remains low, but held steady (50% as of January 1, 2015 to 51% as of January 1, 2016), based on the actuarial value of assets.

Scheduled contribution rates for the members and City exceed the actuarial contribution rate, but only by 0.446% of pay. Given the volatility inherent in investment returns from year to year and the related impact it has on the actuarial contribution rate, the contribution margin this year could revert to a contribution shortfall in future years. Given that fact and the current funded status of the System, we firmly believe that no action should be taken to reduce contributions to the system at this time.

The contribution margin of 0.446% is based on the actuarial valuation performed on January 1, 2016 which is a snapshot measurement on that date and which assumes no future change in either the normal cost rate or the UAL contribution rate. While the System's financial health is expected to improve in future years due to a decrease in the normal cost over time, the impact on the System's long-term funding cannot be quantified without performing an open group projection of future valuation results. Such analysis was not performed because it is outside the regular scope of services requested by the Board and a special request was not made.

As mentioned earlier in this report, the System uses an asset smoothing method in the actuarial valuation. While this is a very common practice for public retirement systems, it is important to be aware of the potential impact of the unrecognized investment experience. The key valuation results from the 2016 valuation, using both the actuarial and market value of assets, are shown in the following table to provide full disclosure of the impact of asset smoothing on the funding of the System. Because the actuarial and market value of assets are only slightly different, so are the actuarial contribution rates.

	$ Millions	
	Using Actuarial Value of Assets	**Using Market Value of Assets**
Actuarial Liability	$1,224.0	$1,224.0
Asset Value	621.4	594.2
Unfunded Actuarial Liability	602.6	629.8
Funded Ratio	50.8%	48.5%
Normal Cost Rate	22.146%	22.146%
UAL Contribution Rate	27.951%	29.190%
Actuarial Contribution Rate	50.097%	51.336%
Employee Contribution Rate	(16.177%)	(16.177%)
City Contribution Rate	(34.366%)	(34.366%)
Contribution Shortfall/(Margin)	(0.446%)	0.793%

THE CITY OF OMAHA POLICE AND FIRE RETIREMENT SYSTEM

PRINCIPAL VALUATION RESULTS

		January 1, 2016	January 1, 2015	% Chg
MEMBERSHIP				
1.	Active Membership			
	- Number of Active Members	1,398	1,370	2.0
	- Number of DROP Participants	47	51	(7.8)
	- Total Employees	1,445	1,421	1.7
	- Projected Payroll for Upcoming Fiscal Year	$129,633,658	$126,843,763	2.2
	- Average Projected Payroll	$89,712	$89,264	0.5
	- Average Active Attained Age	40.9	40.4	1.2
	- Average Active Entry Age	28.5	28.5	0.0
2.	Inactive Membership			
	- Number of Retirees / Beneficiaries	1,249	1,278	(2.3)
	- Number of Disabilities	224	222	0.9
	- Number of Deferred Vesteds	11	10	10.0
	- Average Annual Benefit	$45,569	$44,209	3.1
ASSETS AND LIABILITIES				
1.	Net Assets			
	- Market Value	$594,178,499	$599,927,168	(1.0)
	- Actuarial Value	$621,403,975	$590,191,585	5.3
2.	Projected Liabilities			
	- Retired Members and Beneficiaries	$672,741,277	$674,225,250	(0.2)
	- Disabled Members	82,337,776	80,612,025	2.1
	- DROP Participants	52,944,166	53,772,291	(1.5)
	- Other Inactive Members	2,283,932	2,950,879	(22.6)
	- Active Members, Non-DROP	698,268,037	667,687,486	4.6
	- Total Liability	$1,508,575,188	$1,479,247,931	2.0
3.	Actuarial Liability	$1,223,966,110	$1,189,002,221	2.9
4.	Unfunded Actuarial Liability	$602,562,135	$598,810,636	0.6
5.	Funded Ratios			
	Actuarial Value Assets / Actuarial Liability	50.77%	49.64%	2.3
	Market Value Assets / Actuarial Liability	48.55%	50.46%	(3.8)
CONTRIBUTIONS				
1.	Normal Cost Rate	22.146%	22.191%	(0.2)
2.	UAL Rate	27.951%	27.840%	0.4
3.	Total Contribution Rate (1) + (2)	50.097%	50.031%	0.1
4.	Less Employee Contribution Rate	(16.177%)	(16.195%)	(0.1)
5.	Less City Contribution Per Ordinance	(33.342%)	(33.339%)	0.0
6.	Less City Prior Service Payment	(1.024%)	(1.047%)	(2.2)
7.	Contribution Shortfall/(Margin)	(0.446%)	(0.550%)	(18.9)

EXHIBIT 1
SUMMARY OF FUND ACTIVITY

(Market Value Basis)

For Year Ended December 31, 2015

Assets at January 1, 2015	$	599,927,168
Receipts:		
City Contributions		42,138,403
Employee Contributions		19,704,991
Investment Earnings, Net of Expenses		935,657
Total Receipts		62,779,051
Disbursements:		
Benefits Payments		66,980,108
Refund of Contributions		1,529,544
Administrative Expenses		18,068
Total Disbursements		68,527,720
Assets as of December 31, 2015	$	594,178,499
Annualized Net Yield		0.2%

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, 2015	$	590,191,585
2.	Actual Receipts / Disbursements		
	a. Total Contributions		61,843,394
	b. Benefit Payments/Other		(68,509,652)
	c. Net Change		(6,666,258)
3.	Expected Actuarial Value of Assets as of January 1, 2016 [(1) * 1.08] + [(2c) * $1.08^{½}$]		630,479,133
4.	Market Value of Assets as of January 1, 2016		594,178,499
5.	Excess of Market Value over Expected Actuarial Value as of January 1, 2016		(36,300,634)
6.	Preliminary Actuarial Value of Assets as of January 1, 2016 [(3) + 25% of (5)]		621,403,975
7.	Calculation of 20% Corridor		
	a. 80% of (4)		475,342,799
	b. 120% of (4)		713,014,199
8.	Final Actuarial Value of Assets as of January 1, 2016 (6), but not < (7a), nor > (7b)	$	621,403,975
9.	Rate of Return on Actuarial Value of Assets		6.5%

EXHIBIT 2 (continued)

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

Date	Market Value of Assets (MVA)	Actuarial Value of Assets (AVA)	AVA / MVA
1/1/2008	$529,923,390	$530,493,413	100.1%
1/1/2009	365,923,877	439,108,652	120.0%
1/1/2010	405,390,038	440,478,409	108.7%
1/1/2011	452,640,303	456,158,774	100.8%
1/1/2012	440,429,392	467,375,458	106.1%
1/1/2013	489,800,140	495,847,234	101.2%
1/1/2014	579,494,652	548,360,223	94.6%
1/1/2015	599,927,168	590,191,585	98.4%
1/1/2016	594,178,499	621,403,975	104.6%

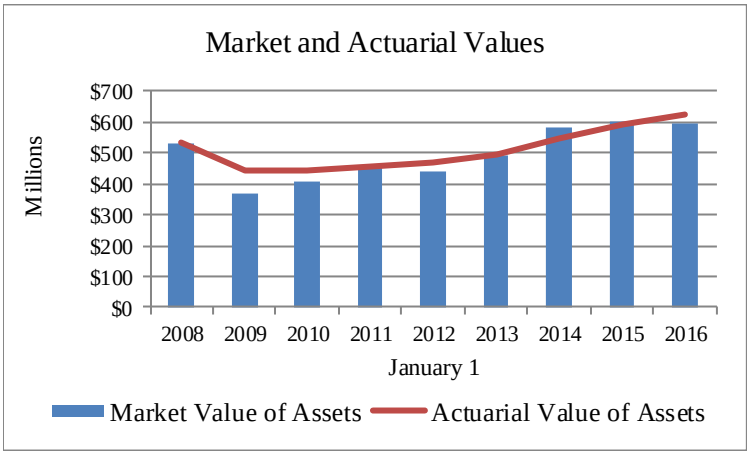


EXHIBIT 3

ACTUARIAL BALANCE SHEET

An actuarial statement of the status of the plan in balance sheet form as of January 1, 2016 is as follows:

Assets

Current assets (actuarial value)		$ 621,403,975
Present value of future normal costs		284,609,078
Present value of future contributions to fund unfunded actuarial liability		602,562,135
Total Assets		$ 1,508,575,188

Liabilities

Present value of future retirement benefits for:

Active employees	$ 683,102,208	
Retired employees, contingent annuitants and spouses receiving benefits	672,741,277	
DROP Participants	52,944,166	
Deferred vested employees	1,816,199	
Inactive employees due refunds	467,733	
Inactive employees – disabled	82,337,776	
Total		$ 1,493,409,359
Present value of future death benefits payable upon death of active members		10,536,759
Present value of future benefits payable upon termination of active members		4,629,070
Total Liabilities		$ 1,508,575,188

EXHIBIT 4

UNFUNDED ACTUARIAL LIABILITY

As of January 1, 2016

The actuarial liability is the portion of the present value of future benefits which will not be paid by future normal costs. The actuarial value of assets is subtracted from the actuarial liability to determine the unfunded actuarial liability.

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

1.	Present Value of Future Benefits	$ 1,508,575,188
2.	Present Value of Future Normal Costs	284,609,078
3.	Actuarial Liability (1) – (2)	1,223,966,110
4.	Actuarial Value of Assets	621,403,975
5.	Unfunded Actuarial Liability (3) – (4)	602,562,135
6.	Present Value of Prior Service Payments	10,904,700
7.	Adjusted Unfunded Actuarial Liability (Payable from Payroll Related Contributions) (5) – (6)	$ 591,657,435

EXHIBIT 5

CALCULATION OF ACTUARIAL GAIN / (LOSS)
For Plan Year Ending December 31, 2015

Liabilities		
1. Actuarial liability less prior service payments as of January 1, 2015	$	1,177,627,792
2. Normal cost for 2015		26,946,719
3. Interest at 8.00% on (1) and (2) to December 31, 2015		96,365,961
4. Benefit payments during 2015		(68,509,652)
5. Interest on benefit payments		(2,687,667)
6. Change in valuation methodology for QDROs		(9,356,078)
7. Expected actuarial liability as of December 31, 2015	$	1,220,387,075
8. Actuarial liability less prior service payments as of December 31, 2015	$	1,213,061,410
Assets		
9. Actuarial value of assets as of January 1, 2015	$	590,191,585
10. Contributions during 2015		61,843,394
11. Benefit payments during 2015		(68,509,652)
12. Interest on items (9), (10) and (11)		46,953,806
13. Expected actuarial value of assets as of December 31, 2015	$	630,479,133
14. Actual actuarial value of assets as of December 31, 2015	$	621,403,975
Gain / (Loss)		
15. Expected unfunded actuarial liability (7) – (13)	$	589,907,942
16. Actual unfunded actuarial liability (8) – (14)	$	591,657,435
17. Actuarial Gain / (Loss) (15) – (16)	$	(1,749,493)
18. Actuarial Gain / (Loss) on Actuarial Assets (14) – (13)	$	(9,075,158)
19. Actuarial Gain / (Loss) on Actuarial Liability (7) – (8)	$	7,325,665

EXHIBIT 6

ANALYSIS OF EXPERIENCE

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

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

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

Gain/(Loss) By Source

The System experienced a net actuarial gain on liabilities of $7.3 million during the plan year ended December 31, 2015, and an actuarial loss on assets of $9.1 million. The net actuarial loss was $1.7 million. The major components of this net actuarial experience loss are shown below:

Liability Sources		**Gain/(Loss)**
Salary Increases	$	8,994,000
Mortality		(2,434,000)
Terminations		(106,000)
Retirements/DROP		(379,000)
Disability		896,000
New Entrants/Rehires		(95,000)
Miscellaneous		450,000
Total Liability Gain/(Loss)	$	7,326,000
Asset Gain/(Loss)	$	(9,075,000)
Net Actuarial Gain/(Loss)	$	(1,749,000)

EXHIBIT 7

DEVELOPMENT OF 2016 ACTUARIAL CONTRIBUTION RATE

The actuarial cost method used to determine the required level of annual contributions to support the expected benefits is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate and the unfunded actuarial liability (UAL) payment. The System is financed by contributions from the employees and the City.

1.	(a)	Normal Cost	$	27,426,921
	(b)	Expected Payroll in 2016 for Current Actives	$	123,843,261
	(c)	Normal Cost Rate (a) / (b)		22.146%
2.		Unfunded Actuarial Liability Payable from Payroll Related Contributions	$	591,657,435
3.		Amortization Factor Level Percent of Payroll over 28 Years*		17.61505
4.		Unfunded Actuarial Liability (UAL) Payment [(2) / (3)] x $1.08^{½}$	$	34,905,859
5.		Prior Service Payment		1,327,600
6.		Total Projected Payroll for the Year, Including DROP Members	$	129,633,658
7.		UAL and Prior Service Payments as Percent of Pay [(4) + (5)] / (6)		27.951%
8.		Total Contribution Rate (1c) + (7)		50.097%
9.		Employee Contribution Rate		16.177%
10.		City Ordinance Contribution Rate		33.342%
11.		City Prior Service Contribution Rate		1.024%
12.		Contribution Shortfall/(Margin) (8) – (9) – (10) – (11)		(0.446%)

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

SECTION II

OTHER INFORMATION

The actuarial liability is a measure intended to help the reader assess (i) a retirement system's funded status on an ongoing concern basis and (ii) progress being made toward accumulating the assets needed to pay benefits as due. Allocation of the actuarial present value of projected benefits between past and future service was based on service using the Entry Age Normal actuarial cost method. Assumptions, including projected pay increases, were the same as used to determine the System's level percent of payroll annual required contribution between entry age and assumed exit age. Entry age was established by subtracting credited service from current age on the valuation date. The actuarial assumptions used in determining the actuarial liability as of January 1, 2016 can be found in Appendix B.

In the past, Governmental Accounting Standards Board (GASB) Statements No. 25, *Financial Reporting for Defined Benefit Pension Plans*, and Statement No. 27, *Accounting for Pensions by State and Local Governmental Employers*, applied to the preparation of financial reports of pension plans for state and local governments. GASB 67, which was first effective for the plan year ended December 31, 2014, replaced GASB 25 and GASB 68 has replaced GASB 27 for fiscal year end 2015.

GASB 67 separates accounting from funding by creating disclosure and reporting requirements that may or may not be consistent with the basis used for funding the System. A separate report that contains all of the information and exhibits of an actuarial nature that are necessary for the System's financial reporting under GASB 67 and the City's financial reporting under GASB 68 are prepared annually.

EXHIBIT 8

SCHEDULE OF EMPLOYER CONTRIBUTIONS

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

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

EXHIBIT 9

SCHEDULE OF FUNDING PROGRESS

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

1. Results prior to 2011 were provided by the prior actuary and were reported at the end of the year rather than the valuation date. All information prior to 2011 in this exhibit was provided by the prior actuary and has not been reviewed or verified by Cavanaugh Macdonald Consulting, LLC

2. As of 1/1/2011, the Unfunded AL is not reduced by the Present Value of Prior Service Payments. For the calculation of the Unfunded AL used for funding purposes, please refer to Exhibit 4 of this report.

3. As of 1/1/2014, covered payroll includes DROP participants' pay.

APPENDIX A

SUMMARY OF PLAN PROVISIONS

Average Final Monthly Compensation: Section 22 - 63	Police: Pensionable pay excludes certain overtime pay. For those hired before January 1, 2010, an adjustment is made to include a career average of overtime pay. For those who were age 45 and had at least twenty years of service as of January 1, 2010, highest average monthly compensation is calculated using the highest consecutive twenty-six (26) pay periods out of the last five years of service as a member of the system for which service credit had been earned. All others use the highest seventy-eight (78) pay periods with the final 130 pay periods of service. Fire: For members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of January 1, 2013, highest average monthly compensation during any consecutive twenty-six (26) pay periods out of the last five years of service as a member of the system for which service credit had been earned. All others use the highest seventy-eight (78) pay periods with the final 130 pay periods of service.
Career Overtime Average (COTA):	All Members: Each hour an employee earns for overtime is computed back to their date of hire or 1991 (whichever is later) and divided by the number of years the employee worked after December 31, 1990. This amount shall be included in the member's pension calculation. COTA is excluded for all Police members hired on or after January 1, 2010 and Fire members hired on or after January 1, 2013.
Member Contributions: Section 22 – 73(a) Section 22 - 68	Rates effective January 1, 2014 Police: 15.35% of total monthly salary for police. Fire: 17.15% of total monthly salary for fire.
City of Omaha Contributions: Section 22 – 73(b)	Rates effective January 1, 2013 Police: 33.67% of each member's pensionable earnings Fire: 32.965% of each member's pensionable earnings In addition, the City shall make contributions of $1,327,600 annually through the year 2028.
Service Retirement Eligibility Section 22 - 75	Police: After age 55 and 10 years of service or age 45 and 20 years of service. Members hired after January 1, 2010 must be 50 rather than 45. If retiring with less than 30 years of service a 7% reduction is applied for each year prior to age 55. Fire: Age 55 and 10 years of service or age 50 and 20 years of service. Members hired before 1/1/2013 can also retire at age 45 if they have at least 25 years of service.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Service Retirement Pension
Section 22 - 76

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

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

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

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

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

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

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

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

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

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

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

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

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

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

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

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

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

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

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Deferred Retirement Option Program (DROP):

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

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

APPENDIX A

SUMMARY OF PLAN PROVISIONS (continued)

Disability Retirement

1. In Line of Duty
Section 22 - 78

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

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

* 55% for Fire members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of latest contract effective date.

2. Not in Line of Duty
Section 22 - 79

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

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

Note: Not payable while full salary continues

Spouse's pension:

1. Death of Active member in Line of Duty:

A monthly pension equal to 49% (52% Fire members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of most recent contract date) of the member's average final monthly compensation is paid to the surviving spouse if death occurs while the active member has less than 25 years of service. A monthly pension equal to 69% (72% Fire members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of most recent contract date) of the member's average final monthly compensation is paid to the surviving spouse if death occurs after the active member has 25 years or more of service.

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

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

The following monthly pension is paid to the surviving spouse.

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

* add 3% to each number for Fire members who were age 45 and had at least 25 years of service or age 50 with at least 20 years of service as of most recent contract date

Note: Benefit terminates upon remarriage of spouse.

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

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

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

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Children's Pension
Section 22 - 82

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

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

Lump Sum Death Benefits

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

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

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

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

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

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

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

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

APPENDIX A

SUMMARY OF PLAN PROVISIONS
(continued)

Vesting:

Section 22 - 86

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

Section 22 - 86

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

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

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

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Cost Method

Valuations of the plan use the *"entry age-normal"* cost method. Under this actuarial method, the value of future costs attributable to future employment of participants is determined. This is called present value of future normal costs. The following steps indicate how this is determined for benefits expected to be paid upon normal retirement or the end of the Deferred Retirement Option Plan (DROP).

1. The expected pension benefit payable at the end of the employee's period in covered employment (later of normal retirement or the end of the DROP, is applicable) is determined for each participant.

2. A normal cost, as a level percent of pay, is determined for each participant assuming that such level percent is paid from the employee's entry age into employment to the end of his covered employment. This normal cost is determined so that its accumulated value at the end of covered employment is sufficient to provide the expected pension benefits.

3. The sum of the normal costs for all participants for one year determines the total normal cost of the plan for one year.

4. The value of future payments of normal cost in future years is determined for each participant based on his years of service to the end of covered employment.

5. The sum of the value of future payments of normal cost for all participants determines the present value of future normal costs.

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

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

Actuarial Value of Assets

The actuarial value of assets is equal to the expected asset value (based on last year's actuarial value of assets, net cash flows and a rate of return equal to the actuarial assumed rate of 8.0%) plus 1/4 of the difference between the actual market value and the expected asset value. The actuarial value of assets cannot exceed 120% or fall below 80% of the market value of assets.

Unfunded Actuarial Liability Amortization Method

The unfunded actuarial liability is amortized, as a level percentage of payroll, over a closed 30-year period that began on January 1, 2014.

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS (continued)

Interest:	8.00% per year, (net of investment expenses)
Salary Increases:	Merit increases based on service plus a general wage increase
Service Retirement Age:	Graduated rates based on service
Mortality:	
Active Members	RP-2000 Employee Table with generational improvements, set forward one year
Service Pensioners and Beneficiaries	RP-2000 Healthy Annuitant Table with generational improvements, set forward one year
Disabled	RP-2000 Healthy Annuitant Table with generational improvements, set forward five years
Disability:	Graduated Rates by age. See table on next page
Percent of Disabilities in Line of Duty:	85%
Medical Expenses for Disabilities in Line of Duty:	5% load on liability for current and future disabled members.
Percent Married at Death or Retirement:	75%
Spouse Age Difference:	Husbands assumed to be 3 years older than wives
Turnover:	Graduated rates by age. See table on next page
COTA Adjustment:	Members are assumed to retire with their current COTA
Increase in Total Annual Payroll:	4.00%
Assumed Annual Rate of Inflation:	3.25%
Decrement Timing:	Middle of year

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS (continued)

SAMPLE RATES

Age on 1/1/2010	Annual Mortality Rates		Current Age	Annual Disability Rates	Annual Turnover Rates
	Males	Females			
20	.03%	.02%	20	.21%	1.41%
30	.05	.03	30	.24	1.69
40	.10	.07	40	.42	.63
50	.19	.15	50	.76	.00
60	.46	.41	60	1.16	.00

Salary Progression - Police

Years of Service	Inflation	Productivity	Merit & Longevity	Total Increase
1	3.25%	0.75%	9.0%	13.0%
5	3.25%	0.75%	2.2	6.2
10	3.25%	0.75%	2.0	6.0
15	3.25%	0.75%	1.0	5.0
20	3.25%	0.75%	0.5	4.5
25	3.25%	0.75%	0.0	4.0

Salary Progression – Fire

Years of Service	Inflation	Productivity	Merit & Longevity	Total Increase
1	3.25%	0.75%	5.0%	9.0%
5	3.25%	0.75%	4.5	8.5
10	3.25%	0.75%	1.0	5.0
15	3.25%	0.75%	1.0	5.0
20	3.25%	0.75%	0.0	4.0

APPENDIX B

ACTUARIAL METHODS AND ASSUMPTIONS (continued)

Retirement Rates

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

Years of Service	Distribution	Annual Rate
Less than 25	0.0%	0.0%
25	100.0	100.0

If a member was hired after age 37, then it is assumed that member would retire at the later of age 62 or 10 years of service.

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

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

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

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

DROP Period: 5 years, but not beyond age 60

Interest Credited to DROP Accounts: 4% annually

MEMBERSHIP DATA FOR VALUATION

The summary of employee characteristics presented below covers the employee group as of January 1, 2016. The schedules at the end of the report show the distribution of the various employee groups by present age along with other pertinent data.

Total number of employees in valuation:

(a) Active employees	1,398
(b) DROP Participants	47
(c) Deferred vested employees	11
(d) Disabled employees	224
(e) Retired employees, spouses and children receiving benefits	1,249
(f) Total employees in valuation	2,929

Average age of employees in valuation:

(a) Active employees	
Attained Age	40.9
Hire Age	28.5
(b) DROP Participants	53.5
(c) Deferred vested employees	45.8
(d) Disabled employees	67.7
(e) Retired employees	65.1
(f) Spouses and children receiving benefits	68.5

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

(a) Employees eligible for deferred vested benefits	684
(b) Employees eligible for early or normal retirement benefits	186
(c) Employees eligible for refund of contributions only	528
(d) Total	1,398

MEMBERSHIP DATA RECONCILIATION

January 1, 2015 to January 1, 2016

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

	Active Members	Deferred Vested	Disabled	DROP Participants	Retirees	Beneficiaries	Total
Members as of 1/1/2015	1,370	10	222	51	973	305	2,931
New Members	56	0	0	0	0	0	56
Terminations							
Rehired	0	0	0	0	0	0	0
Refunded: Paid	(4)	0	0	0	0	0	(4)
Refunded: Due	(6)	0	0	0	0	0	(6)
Deferred Vested	(3)	3	0	0	0	0	0
Disabled	(3)	0	3	0	0	0	0
Retirements	(11)	(2)	0	(4)	17	0	0
Participating in DROP	0	0	0	0	0	0	0
Benefit Payments Ended	0	0	0	0	0	0	0
Data Corrections	0	0	1	0	(1)	(35)*	(35)
Deaths							
With Beneficiary	(1)	0	(1)	0	(16)	19	1
Without Beneficiary	0	0	(1)	0	(3)	(10)	(14)
Total Members 1/1/2016	1,398	11	224	47	970	279	2,929

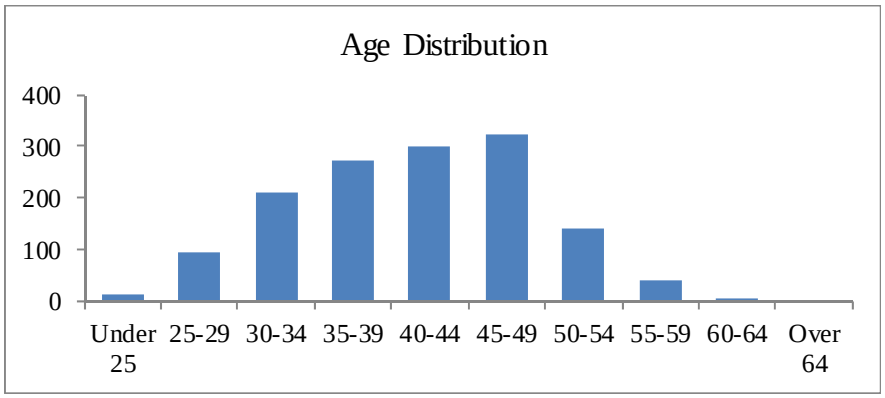
* 35 records for QDROs are no longer being valued.

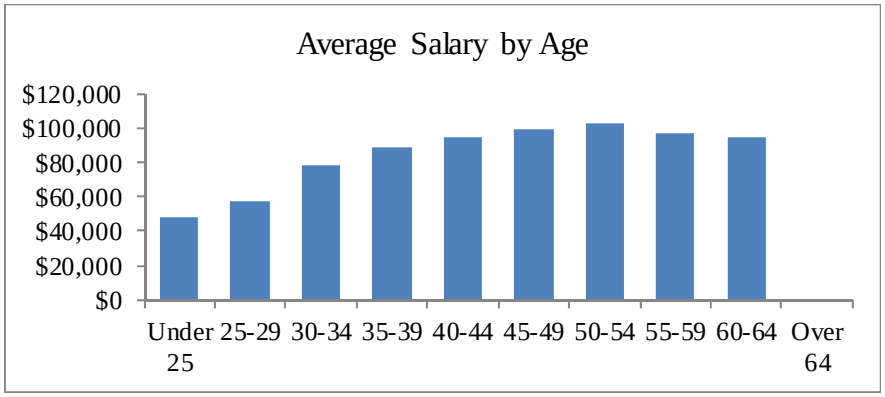
SCHEDULE I

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Total

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	13	1	14	$ 657,561	$ 20,435	$ 677,996
25-29	82	13	95	4,770,607	683,776	5,454,383
30-34	186	23	209	14,773,461	1,584,941	16,358,402
35-39	240	33	273	21,236,857	2,822,509	24,059,366
40-44	258	41	299	24,403,578	3,720,422	28,124,000
45-49	280	43	323	27,724,182	4,291,798	32,015,980
50-54	124	18	142	12,710,498	1,843,290	14,553,788
55-59	37	3	40	3,570,213	281,585	3,851,798
60-64	3	0	3	282,518	0	282,518
Over 64	0	0	0	0	0	0
Total	1,223	175	1,398	$110,129,475	$15,248,756	$125,378,231



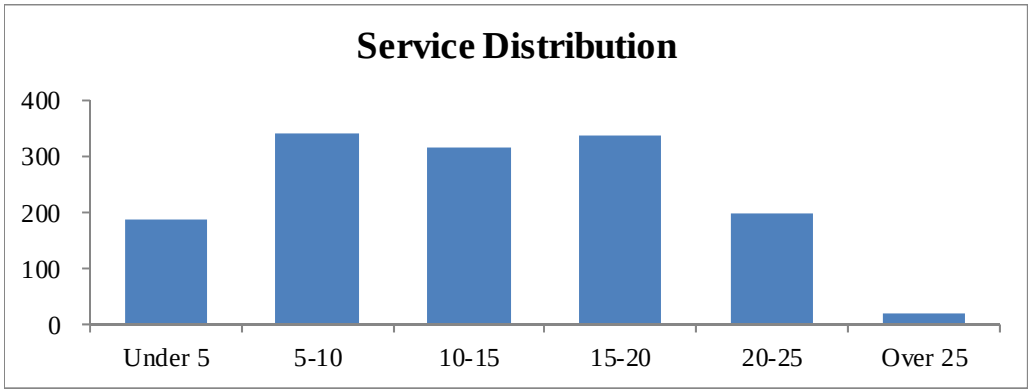


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Total

	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	14	0	0	0	0	0	0	0	0	14
25-29	75	20	0	0	0	0	0	0	0	95
30-34	56	129	24	0	0	0	0	0	0	209
35-39	26	108	108	31	0	0	0	0	0	273
40-44	12	54	100	112	21	0	0	0	0	299
45-49	5	24	60	119	108	7	0	0	0	323
50-54	0	1	20	53	58	10	0	0	0	142
55-59	0	4	4	20	9	3	0	0	0	40
60-64	0	0	0	0	2	1	0	0	0	3
Over 64	0	0	0	0	0	0	0	0	0	0
Total	188	340	316	335	198	21	0	0	0	1,398

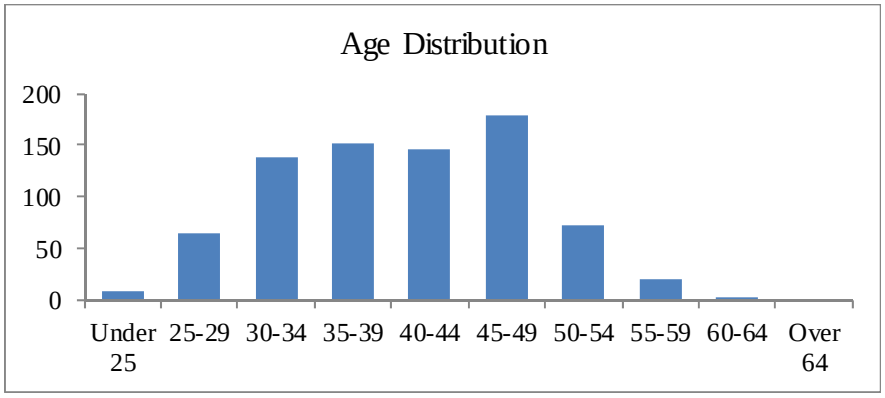


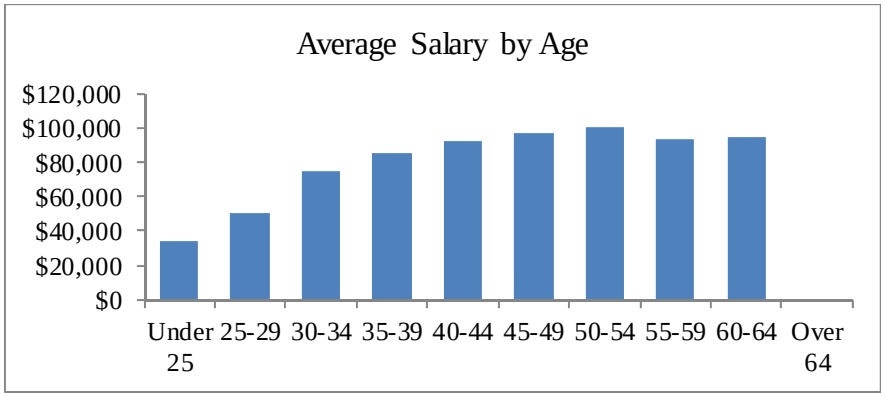
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

All Police Members

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	7	1	8	$ 253,676	$ 20,435	$ 274,111
25-29	53	12	65	2,618,670	614,276	3,232,946
30-34	120	19	139	9,210,698	1,249,136	10,459,834
35-39	125	27	152	10,734,158	2,265,968	13,000,126
40-44	112	33	145	10,445,200	2,960,393	13,405,593
45-49	142	36	178	13,627,737	3,578,665	17,206,402
50-54	58	15	73	5,825,132	1,528,131	7,353,263
55-59	16	3	19	1,501,934	281,585	1,783,519
60-64	3	0	3	282,518	0	282,518
Over 64	0	0	0	0	0	0
Total	636	146	782	$54,499,723	$12,498,589	$66,998,312



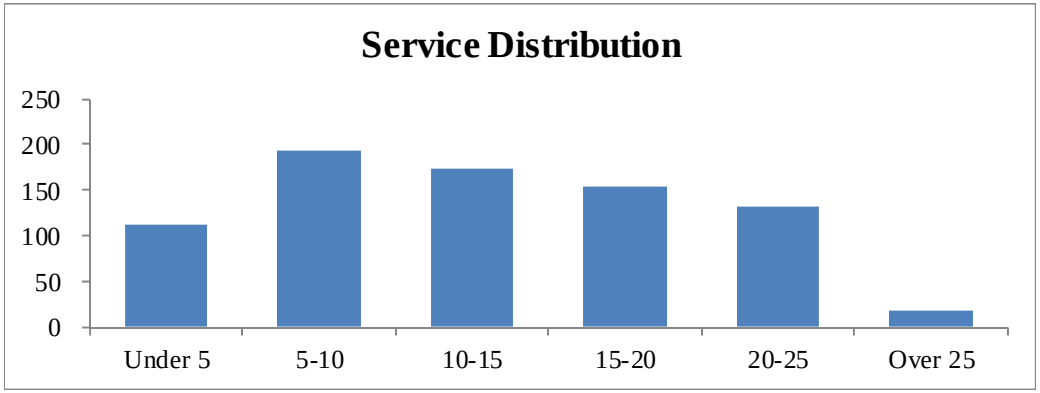


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

All Police Members

	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	8	0	0	0	0	0	0	0	0	8
25-29	51	14	0	0	0	0	0	0	0	65
30-34	30	87	22	0	0	0	0	0	0	139
35-39	14	52	69	17	0	0	0	0	0	152
40-44	7	26	43	53	16	0	0	0	0	145
45-49	3	12	31	53	75	4	0	0	0	178
50-54	0	0	6	26	32	9	0	0	0	73
55-59	0	3	3	4	6	3	0	0	0	19
60-64	0	0	0	0	2	1	0	0	0	3
Over 64	0	0	0	0	0	0	0	0	0	0
Total	113	194	174	153	131	17	0	0	0	782

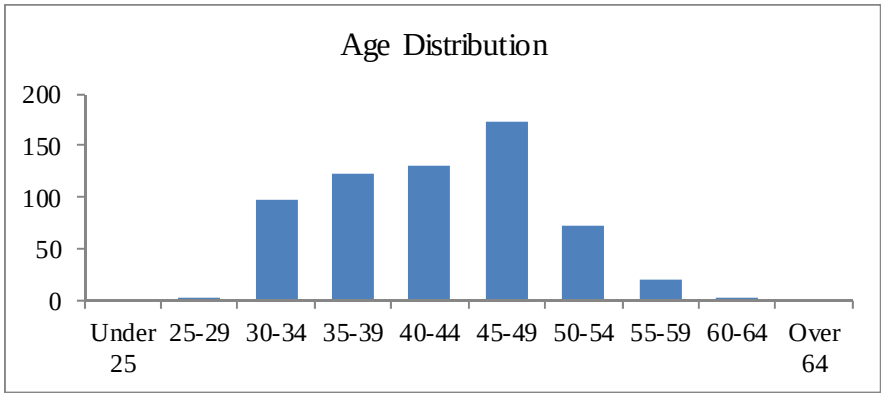


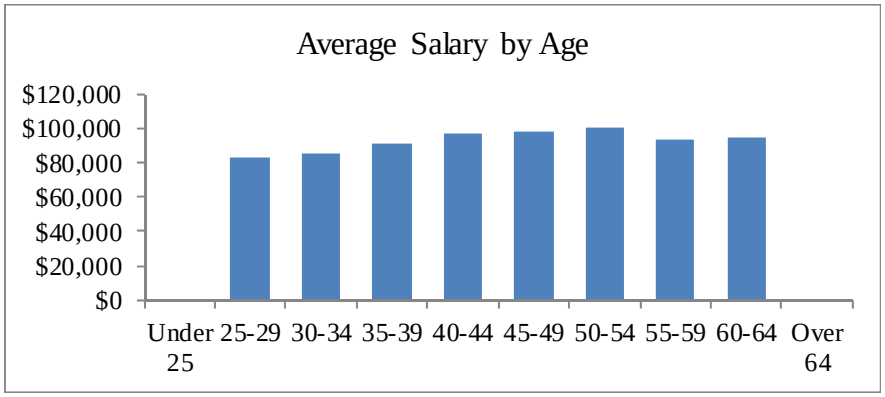
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Police Members Hired Before January 1, 2010

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25-29	3	0	3	247,985	0	247,985
30-34	86	12	98	7,405,690	972,143	8,377,833
35-39	99	24	123	9,093,984	2,068,545	11,162,529
40-44	100	31	131	9,746,566	2,865,126	12,611,692
45-49	137	36	173	13,368,763	3,578,665	16,947,428
50-54	58	15	73	5,825,132	1,528,131	7,353,263
55-59	16	3	19	1,501,934	281,585	1,783,519
60-64	3	0	3	282,518	0	282,518
Over 64	0	0	0	0	0	0
Total	502	121	623	$47,472,572	$11,294,195	$58,766,767



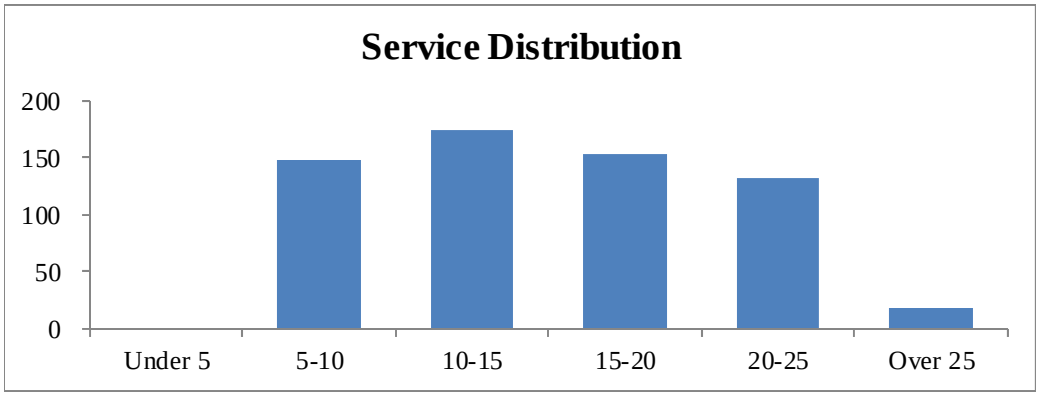


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Police Members Hired Before January 1, 2010

	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	0	0	0	0	0	0	0	0	0	0
25-29	0	3	0	0	0	0	0	0	0	3
30-34	0	76	22	0	0	0	0	0	0	98
35-39	0	37	69	17	0	0	0	0	0	123
40-44	0	19	43	53	16	0	0	0	0	131
45-49	0	10	31	53	75	4	0	0	0	173
50-54	0	0	6	26	32	9	0	0	0	73
55-59	0	3	3	4	6	3	0	0	0	19
60-64	0	0	0	0	2	1	0	0	0	3
Over 64	0	0	0	0	0	0	0	0	0	0
Total	0	148	174	153	131	17	0	0	0	623

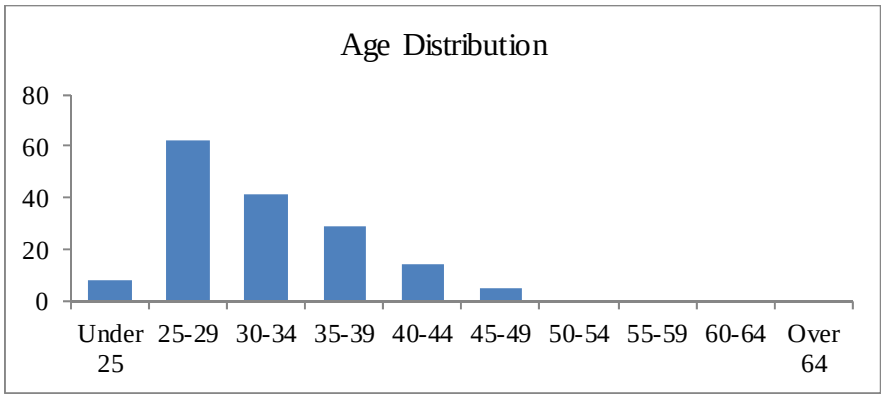


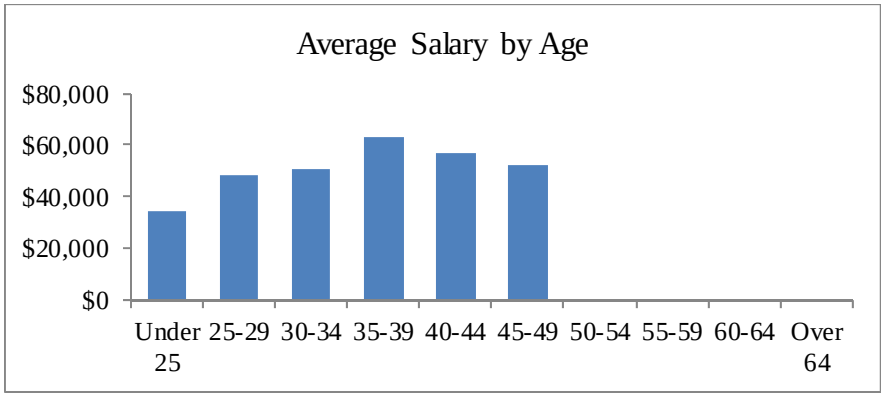
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Police Members Hired On or After January 1, 2010

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	7	1	8	$ 253,676	$ 20,435	$ 274,111
25-29	50	12	62	2,370,685	614,276	2,984,961
30-34	34	7	41	1,805,008	276,993	2,082,001
35-39	26	3	29	1,640,174	197,423	1,837,597
40-44	12	2	14	698,634	95,267	793,901
45-49	5	0	5	258,974	0	258,974
50-54	0	0	0	0	0	0
55-59	0	0	0	0	0	0
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	134	25	159	$7,027,151	$1,204,394	$8,231,545



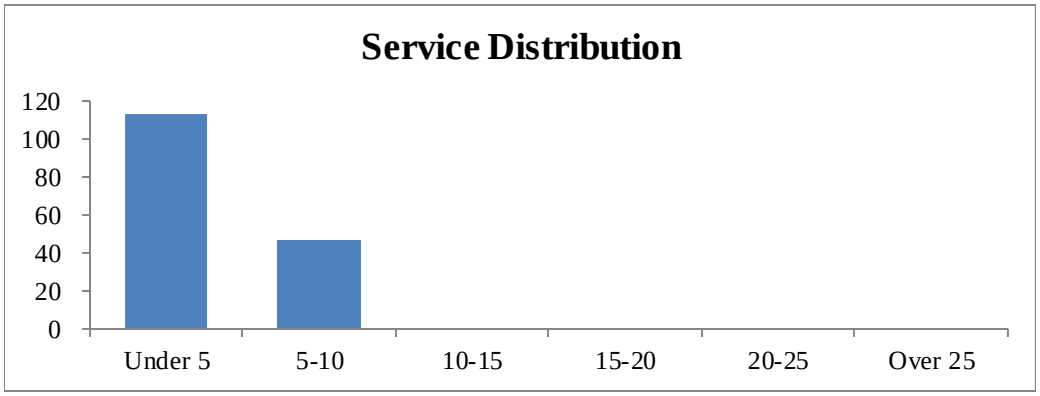


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Police Members Hired On or After January 1, 2010

	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	8	0	0	0	0	0	0	0	0	8
25-29	51	11	0	0	0	0	0	0	0	62
30-34	30	11	0	0	0	0	0	0	0	41
35-39	14	15	0	0	0	0	0	0	0	29
40-44	7	7	0	0	0	0	0	0	0	14
45-49	3	2	0	0	0	0	0	0	0	5
50-54	0	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	113	46	0	0	0	0	0	0	0	159

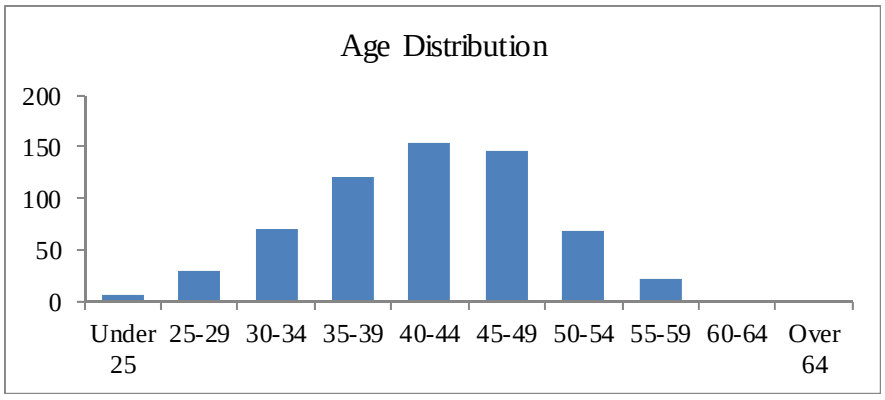


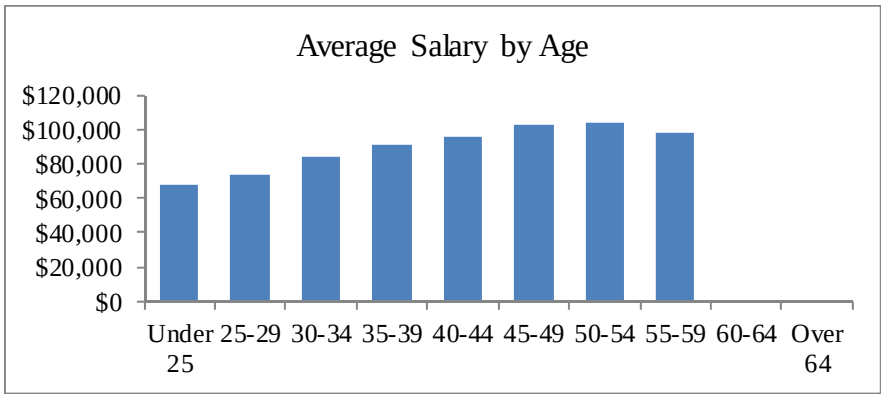
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

All Fire Members

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	6	0	6	$ 403,885	$ 0	$ 403,885
25-29	29	1	30	2,151,937	69,500	2,221,437
30-34	66	4	70	5,562,763	335,805	5,898,568
35-39	115	6	121	10,502,699	556,541	11,059,240
40-44	146	8	154	13,958,378	760,029	14,718,407
45-49	138	7	145	14,096,445	713,133	14,809,578
50-54	66	3	69	6,885,366	315,159	7,200,525
55-59	21	0	21	2,068,279	0	2,068,279
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	587	29	616	$55,629,752	$2,750,167	$58,379,919



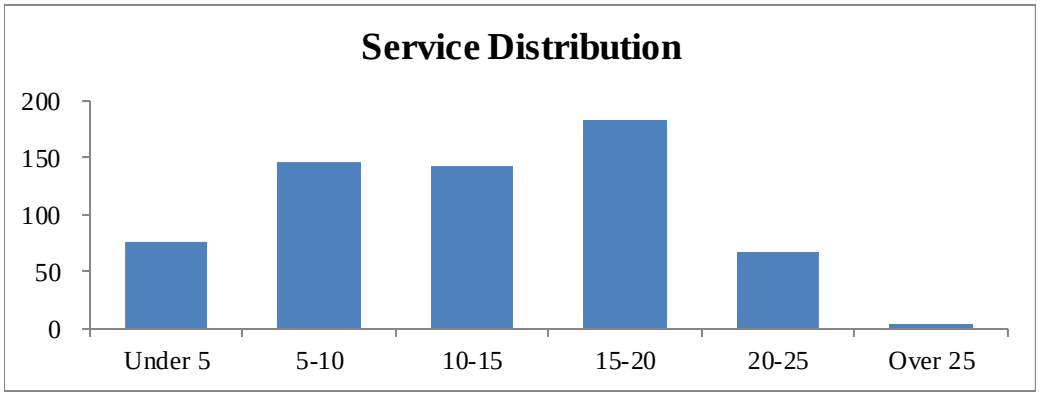


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

All Fire Members

	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	6	0	0	0	0	0	0	0	0	6
25-29	24	6	0	0	0	0	0	0	0	30
30-34	26	42	2	0	0	0	0	0	0	70
35-39	12	56	39	14	0	0	0	0	0	121
40-44	5	28	57	59	5	0	0	0	0	154
45-49	2	12	29	66	33	3	0	0	0	145
50-54	0	1	14	27	26	1	0	0	0	69
55-59	0	1	1	16	3	0	0	0	0	21
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	75	146	142	182	67	4	0	0	0	616

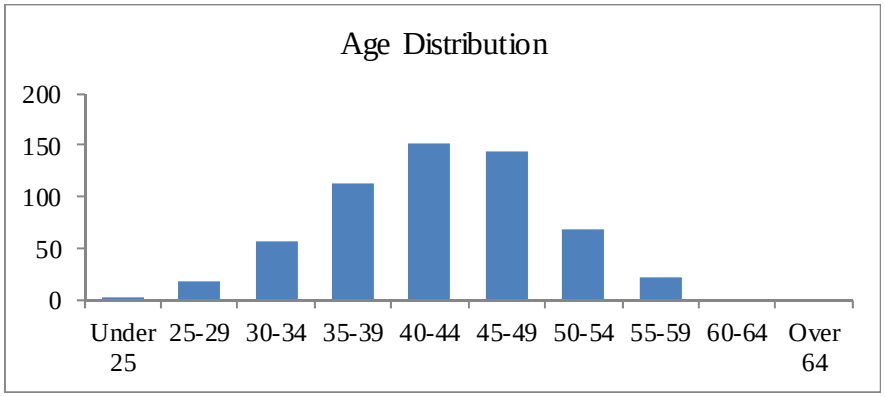


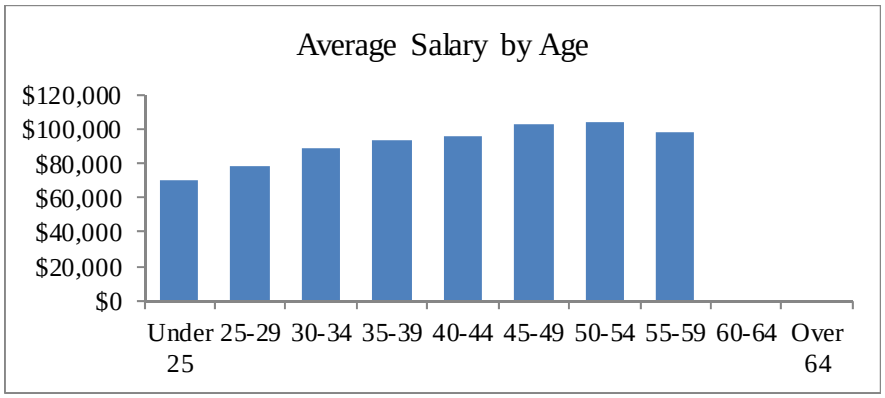
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Fire Members Hired Before January 1, 2013

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	1	0	1	$ 69,515	$ 0	$ 69,515
25-29	16	1	17	1,255,400	69,500	1,324,900
30-34	53	3	56	4,680,911	269,696	4,950,607
35-39	108	5	113	10,034,446	483,069	10,517,515
40-44	143	8	151	13,760,150	760,029	14,520,179
45-49	137	7	144	14,027,075	713,133	14,740,208
50-54	66	3	69	6,885,366	315,159	7,200,525
55-59	21	0	21	2,068,279	0	2,068,279
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	545	27	572	$52,781,142	$2,610,586	$55,391,728



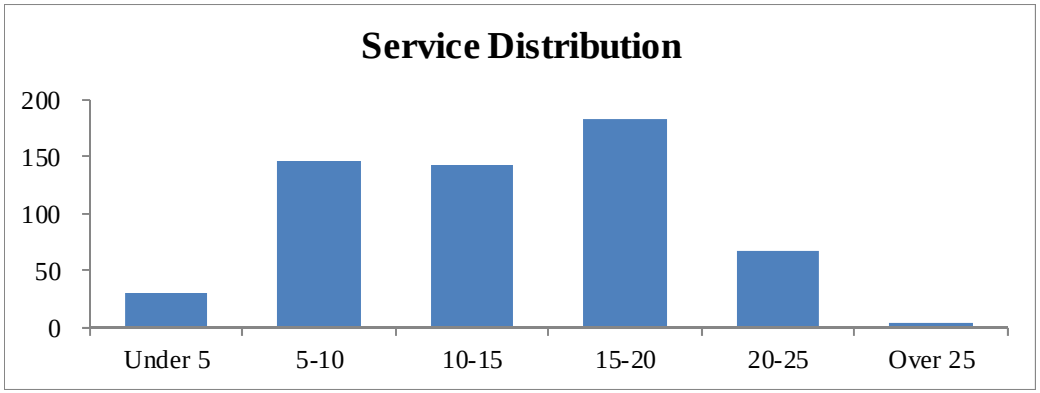


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Fire Members Hired Before January 1, 2013

	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	1	0	0	0	0	0	0	0	0	1
25-29	11	6	0	0	0	0	0	0	0	17
30-34	12	42	2	0	0	0	0	0	0	56
35-39	4	56	39	14	0	0	0	0	0	113
40-44	2	28	57	59	5	0	0	0	0	151
45-49	1	12	29	66	33	3	0	0	0	144
50-54	0	1	14	27	26	1	0	0	0	69
55-59	0	1	1	16	3	0	0	0	0	21
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	31	146	142	182	67	4	0	0	0	572

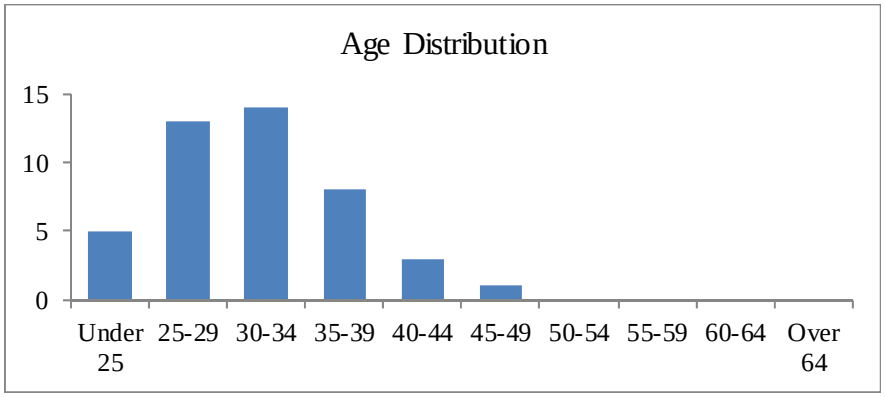


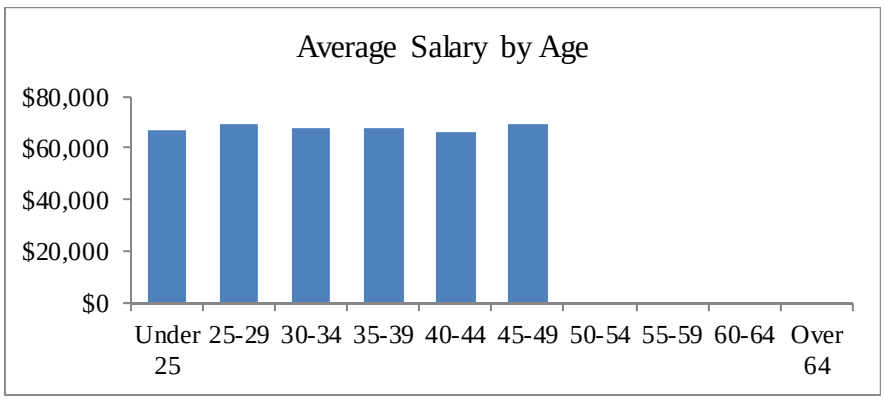
SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Fire Members Hired On or After January 1, 2013

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 25	5	0	5	$ 334,370	$ 0	$ 334,370
25-29	13	0	13	896,537	0	896,537
30-34	13	1	14	881,852	66,109	947,961
35-39	7	1	8	468,253	73,472	541,725
40-44	3	0	3	198,228	0	198,228
45-49	1	0	1	69,370	0	69,370
50-54	0	0	0	0	0	0
55-59	0	0	0	0	0	0
60-64	0	0	0	0	0	0
Over 64	0	0	0	0	0	0
Total	42	2	44	$2,848,610	$139,581	$2,988,191



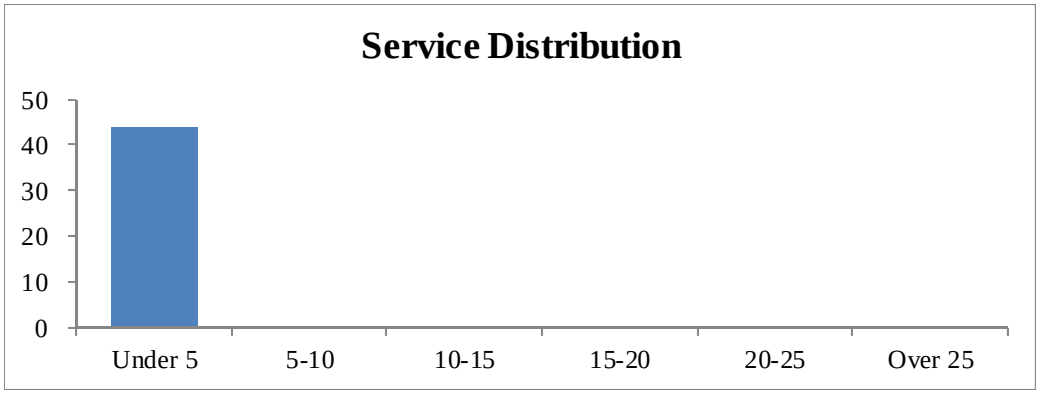


SCHEDULE I (continued)

ACTIVE MEMBERS AS OF JANUARY 1, 2016

Fire Members Hired On or After January 1, 2013

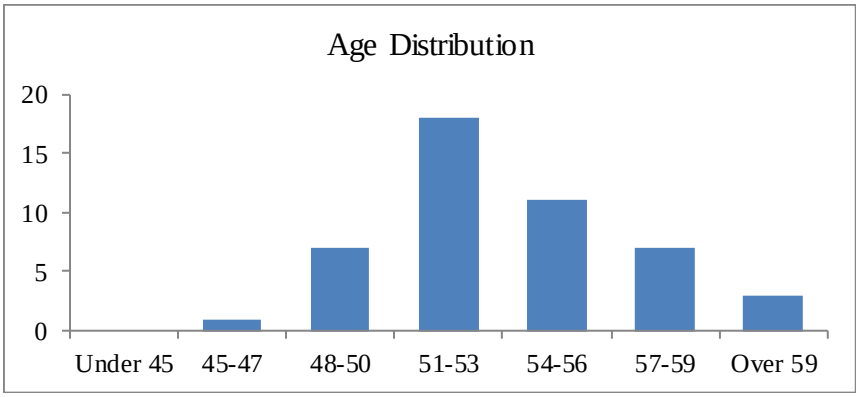
	Service									
Age	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	Over 40	Total
Under 25	5	0	0	0	0	0	0	0	0	5
25-29	13	0	0	0	0	0	0	0	0	13
30-34	14	0	0	0	0	0	0	0	0	14
35-39	8	0	0	0	0	0	0	0	0	8
40-44	3	0	0	0	0	0	0	0	0	3
45-49	1	0	0	0	0	0	0	0	0	1
50-54	0	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0	0
Over 64	0	0	0	0	0	0	0	0	0	0
Total	44	0	0	0	0	0	0	0	0	44

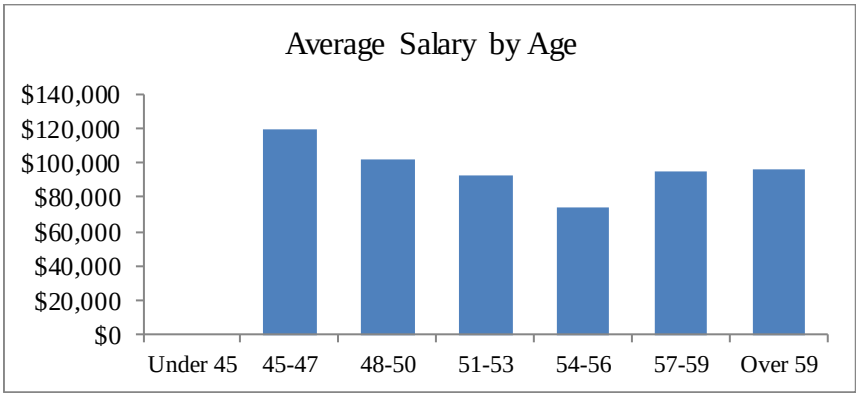


SCHEDULE II

DROP PARTICIPANTS AS OF JANUARY 1, 2016

	Count of Members			Valuation Salaries of Members		
Age	Males	Females	Total	Males	Females	Total
Under 45	0	0	0	$ 0	$ 0	$ 0
45-47	1	0	1	119,396	0	119,396
48-50	7	0	7	708,947	0	708,947
51-53	16	2	18	1,439,301	227,704	1,667,005
54-56	11	0	11	809,226	0	809,226
57-59	6	1	7	584,024	78,073	662,097
Over 59	3	0	3	288,756	0	288,756
Total	44	3	47	$3,949,650	$305,777	$4,255,427

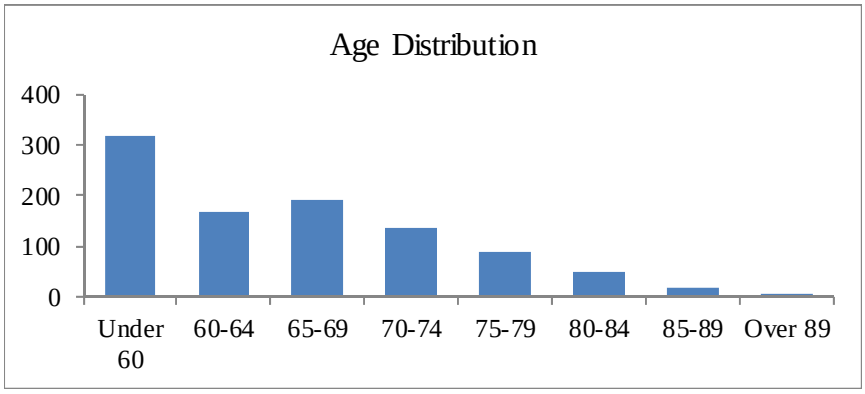


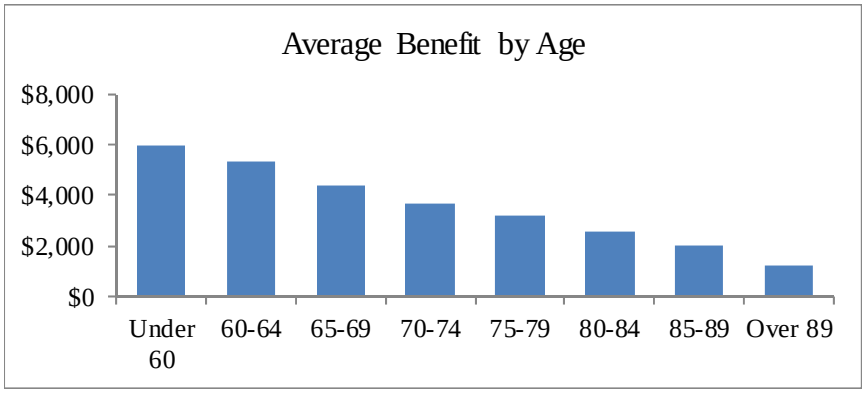


SCHEDULE III

RETIRED MEMBERS AS OF JANUARY 1, 2016

	Count of Retirees			Current Monthly Benefits		
Age	Males	Females	Total	Males	Females	Total
Under 60	276	40	316	$1,673,231	$199,240	$1,872,471
60-64	158	11	169	839,993	59,836	899,829
65-69	184	5	189	807,048	17,193	824,241
70-74	134	2	136	493,681	8,656	502,337
75-79	87	0	87	278,090	0	278,090
80-84	48	0	48	121,886	0	121,886
85-89	19	0	19	37,808	0	37,808
Over 89	6	0	6	7,435	0	7,435
Total	912	58	970	$4,259,172	$284,925	$4,544,097

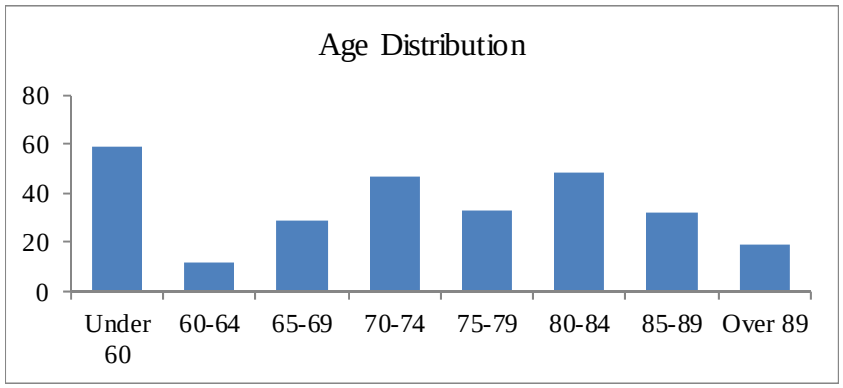


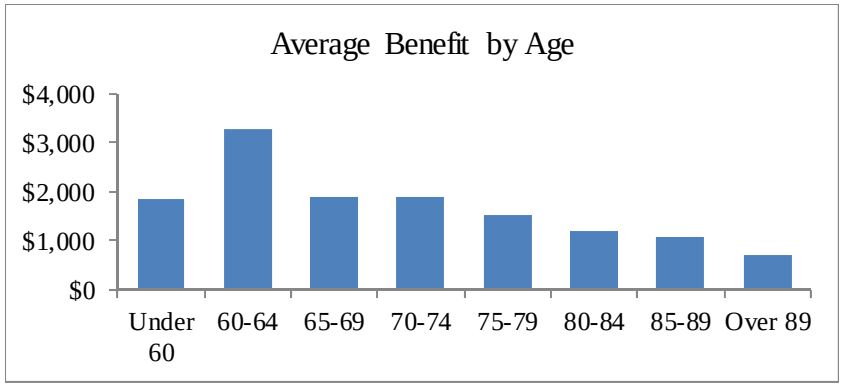


SCHEDULE IV

BENEFICIARIES RECEIVING BENEFITS AS OF JANUARY 1, 2016

	Count of Beneficiaries			Current Monthly Benefits		
Age	Males	Females	Total	Males	Females	Total
Under 60	13	46	59	$17,458	$ 90,656	$108,114
60-64	0	12	12	0	39,288	39,288
65-69	0	29	29	0	54,253	54,253
70-74	0	47	47	0	88,142	88,142
75-79	0	33	33	0	49,818	49,818
80-84	0	48	48	0	56,389	56,389
85-89	0	32	32	0	34,327	34,327
Over 89	0	19	19	0	13,161	13,161
Total	13	266	279	$17,458	$426,034	$443,492





SCHEDULE V

DEFERRED VESTED MEMBERS AS OF JANUARY 1, 2016

	Count of Members			Expected Monthly Benefit		
Age	Males	Females	Total	Males	Females	Total
Under 25	0	0	0	$ 0	$ 0	$ 0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	2	1	3	3,266	1,349	4,615
40-44	2	0	2	3,458	0	3,458
45-49	1	0	1	1,268	0	1,268
50-54	5	0	5	8,646	0	8,646
55-59	0	0	0	0	0	0
Over 59	0	0	0	0	0	0
Total	10	1	11	$16,638	$1,349	$17,987

SCHEDULE VI

DISABLED MEMBERS AS OF JANUARY 1, 2016

	Count of Members			Current Monthly Benefits		
Age	Males	Females	Total	Males	Females	Total
Under 30	0	0	0	$ 0	$ 0	$ 0
30-34	0	0	0	0	0	0
35-39	1	0	1	2,794	0	2,794
40-44	4	3	7	14,428	8,616	23,044
45-49	8	3	11	25,201	11,580	36,781
50-54	16	4	20	56,952	11,213	68,165
55-59	11	6	17	30,959	17,568	48,527
60-64	12	2	14	46,577	3,280	49,857
65-69	41	0	41	131,819	0	131,819
70-74	50	0	50	134,028	0	134,028
75-79	30	0	30	75,898	0	75,898
80-84	17	0	17	36,234	0	36,234
85-89	15	0	15	21,413	0	21,413
Over 89	1	0	1	1,251	0	1,251
Total	206	18	224	$577,554	$52,257	$629,811