



Ohio Police & Fire Pension Fund

Jan. 1, 2017 Actuarial
Valuation of Pension Benefits

October 2017

October 2017

Board of Trustees
Ohio Police & Fire Pension Fund
140 East Town Street
Columbus, Ohio 43215

Members of the Board:

Conduent HR Services, LLC (Conduent), formerly known as Buck Consultants, LLC, is pleased to present this report on the results of the actuarial valuation of the Ohio Police & Fire Pension Fund (OP&F). This report presents the results of the annual actuarial valuation of the assets and liabilities of OP&F as of Jan. 1, 2017, prepared in accordance with Chapter 742 of the Ohio Revised Code (ORC), as amended by Senate Bill No. 340. The valuation takes into account all of the promised benefits to which members are entitled, including pension and survivor benefits.

The principal results of the valuation do not take into account Medicare Part B premium reimbursements or any other health care benefits. However, at the request of the Ohio Retirement Study Council (ORSC), supplemental results have been prepared that do take into account the liability for Medicare Part B premium reimbursements and are presented in Table 1A in the report.

The purpose of the valuation is to determine the financial status of OP&F on an actuarial basis. Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. Conduent will not accept any liability for any statement made about the report without prior review by Conduent.

Where presented, references to “funded ratio” and “unfunded accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

This report does not include accounting disclosure information under Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68. Conduent will provide disclosure information under Statement Nos. 67 and 68 in a separate report after OP&F’s 2017 year-end. Conduent prepares a separate valuation of OP&F retiree health care benefits.

The valuation was based on the actuarial assumptions and methods that have been adopted by the Board of Trustees, including a valuation interest rate of 8.00 percent per annum compounded annually. The assumptions were effective Jan. 1, 2017 and recommended by the actuary based on a five-year experience review covering the period 2012-2016. The next experience review will cover the five-year period 2017-2021. Actuarial Standards of Practice require that the likelihood and extent of future mortality improvements be considered. We have reflected future mortality improvement in the valuation.

Assets and Membership Data

OP&F reported to the actuary the individual data for members as of the valuation date. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the pension trust fund taken into account in the valuation was based on financial statements prepared for us by OP&F.

An assumption is made by Conduent to account for salary adjustments reported by employers assumed to occur after the census information has been provided to Conduent by OP&F.

Funding Objectives and Progress

The actuary uses an actuarial cost method to determine the portion of OP&F's liabilities accrued by the members as of the valuation date and the portion that is attributable to future years of service. The rate of contribution necessary to systematically fund the future service liabilities, the normal cost rate, is calculated under the cost method to be a level percentage of active member payroll. The portion of the liabilities accrued as of the valuation date, the actuarial accrued liability (AAL), is compared to a market-related, actuarial value of OP&F's assets. The amount of liabilities in excess of the assets is called the unfunded actuarial accrued liability (UAAL).

The actuary determines how many years are required by OP&F to completely amortize the UAAL (the funding period), using the member and employer contributions reduced by the amount allocated to health care and the amount of normal cost for the year. For 2003-2012, the funding period was infinite years, meaning the annual contribution toward the unfunded when compared to the unfunded amount was not sufficient to pay it off. As a result of benefit and member contribution changes under Senate Bill No. 340, changes to the DROP program, and a reduction in the contribution allocation to the Health Care Stabilization Fund by the Board of Trustees, and favorable asset investment gains, the pension funding period has decreased to 47 years, 33 years, 30 years and 29 years for 2013, 2014, 2015 and 2016, respectively. As of Jan. 1, 2017, the funding period is 28 years.

Section 742.16 of the ORC, as adopted by Senate Bill No. 82, sets forth an objective that the funding period is no more than 30 years. If the funding period exceeds 30 years, a plan shall be developed and presented by the Board of Trustees to the ORSC to reduce the funding period to not more than 30 years. Section 742.14 of the ORC, as amended by Senate Bill No. 340, sets forth that the 30-year funding analysis be performed every three years and the 30-year funding plan, if necessary, be developed and presented not later than 90 days after the Board of Trustees' receipt of the actuarial valuation and 30-year funding analysis. The most recent triennial analysis was based on the Jan. 1, 2016 actuarial valuation, which showed the funding period was 29 years, so no 30-year funding plan was required. The next analysis will be performed based on the Jan. 1, 2019 actuarial valuation.

The funded ratio (i.e., the ratio of actuarial assets to the AAL) determined as of Jan. 1, 2017 is 69.8 percent, compared to 71.3 percent determined as of Jan. 1, 2016. If measured using the market value of assets, the funded ratio would be lower at 67.4 percent on account of net investment losses not yet reflected in the actuarial assets. Taking into account the AAL for Medicare Part B premium reimbursements, the funded ratio would be 68.0 percent using the actuarial assets and 65.7 percent using the market value of assets. The funded ratio is not intended to measure the adequacy of funding in any analysis of a possible settlement of plan liabilities.

Supporting Schedules and Certification

The valuation report shows detailed summaries of the financial results of the valuation and membership data used in preparing this valuation. The actuary prepared the following supporting schedules for inclusion in the Actuarial and Statistical Sections of the OP&F Comprehensive Annual Financial Report: Analysis of Financial Experience, Short-Term Solvency Test, Schedule of Funding Progress, Calculation of Actuarial Value of Assets, and Retirees and Beneficiaries Added to and Removed from the Rolls.

The valuation assumptions were chosen by the Board of Trustees with the advice of the actuary. The assumptions used to develop the Jan. 1, 2017 valuation are individually reasonable and in combination represent our best estimate of anticipated experience under the plan.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Conduent performed no analysis of the potential range of such future differences.

This report was prepared under the supervision of Aaron Shapiro and Paul Wilkinson who are pension actuaries, Enrolled Actuaries, Associates or Fellows of the Society of Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the pension actuarial opinions contained in this report. Bob Besenhofer is a health care actuary, Associate of the Society of Actuaries and Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report regarding the liability adjustments provided in Table 1A for Medicare Part B reimbursements. This report has been prepared in accordance with all Applicable Actuarial Standards of Practice. We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate.

Conduent is completely independent of OP&F and its officers and key personnel. Neither we, nor anyone closely associated with us, has any relationship with them that would impair our independence.

Respectfully submitted,



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Summary of Principal Results

Introduction

This report presents the results of the actuarial valuation as of Jan. 1, 2017 of pension benefits for the OP&F Pension Fund.

The principal valuation results include:

- The unfunded actuarial accrued liability funding period, which is 28 years.
- The funded status of the plan determined as of Jan. 1, 2017 based on the actuarial accrued liability and the actuarial value of assets as of that date, which is 69.8 percent.
- The determination of the experience gain or loss as of Jan. 1, 2017, which is a loss of \$569.5 million. This loss includes losses of \$245.3 million due to demographic or investment experience, \$314.4 million due to assumption changes resulting from the experience review conducted in 2017, and \$9.8 million due to an update to the assumption for late reported salaries.

This valuation report does not contain information under GASB Statement Nos. 67 and 68. Conduent Consultants will provide disclosure information under Statement Nos. 67 and 68 in a separate report after OP&F's 2017 year-end.

The valuation was completed based upon membership and financial data submitted by OP&F.

An assumption is being made for late reported salary adjustments from employers. Thus, any salary amounts in this report are the amounts reported to Conduent by OP&F increased by an assumed percentage. The reported salaries for 2017 have been increased by 1.427 percent.

A separate valuation is performed for all health care benefits. However, at the request of the ORSC, this report includes a supplemental table, Table 1A, that shows what the valuation results would be if the normal cost and AAL for Medicare Part B premium reimbursements were included in this valuation. It does not assume any related transfer of assets or contributions from the health care trust to the pension trust.

Changes since Last Year

The plan provisions used in this valuation are unchanged from last year.

A five-year experience review was prepared by Conduent in 2017 covering the period 2012-2016. This review resulted in changes to the mortality and turnover assumptions, rates of service and disability retirement, the average benefit percentage payable to joint annuitants and timing of DROP distributions to retirees. In addition, the inflation assumption was reduced resulting in changes to the assumed investment return, salary scale, and payroll growth, as well as the CPI-based COLA rate and DROP interest rate. The actuarial assumptions were adopted as of Jan. 1, 2017 and are summarized in Table 9. These changes increased the AAL by \$314 million and reduced the normal cost rate by 1.51 percent of payroll.

Conduent has adjusted the census data reported by OP&F to account for member salaries accrued but not reported by the time of the valuation. The late reported salaries for 2016 have been estimated by Conduent based on the average percentage of late reported salaries for 2014 and 2015. The increase adjustment for 2016 late reported salaries is 1.427 percent for the 2017 valuation. The analogous assumption for 2016 was 1.246 percent.

Summary of Principal Results

Summarized below are the principal financial results for the OP&F Pension Fund based upon the actuarial valuation as of Jan. 1, 2017. Comparable results from the Jan. 1, 2016 valuation are also shown.

Item	Jan. 1, 2017	Jan. 1, 2016
Membership Data		
Active Members		
➤ Number	27,990	27,446
➤ Annualized Salaries	\$ 2,144,265,467	\$ 2,018,844,301
➤ Average Pay	76,608	73,557
➤ Membership Payroll	2,180,910,604	2,060,850,584
Retirees and Beneficiaries		
➤ Number	28,913	28,402
➤ Annual Allowances	\$ 1,021,509,077	\$ 975,928,917
➤ Average Benefit Payment	35,330	34,361
Vested Former Members		
➤ Number	200	236
Contribution Rates (as a Percentage of Payroll)		
Statutory Contribution Rates:		
➤ Employer Average	21.61 %	21.61 %
➤ Member	<u>12.25</u>	<u>12.25</u>
➤ Total	33.86 %	33.86 %
Allocation of Employer Contribution Rate:		
➤ Pension Contribution Rate:		
— Employer Normal Cost	3.78 %	5.31 %
— Accrued Liability Rate	<u>17.33</u>	<u>15.80</u>
— Total Employer Pension Rate	21.11 %	21.11 %
➤ Health Care Contribution Rate	<u>0.50</u>	<u>0.50</u>
➤ Total Employer Contribution Rate	21.61 %	21.61 %
Actuarial Funded Status		
➤ Actuarial Accrued Liability (AAL)	\$ 20,290,393,633	\$ 19,135,875,916
➤ Actuarial Assets	14,162,487,807	13,653,004,516
➤ Unfunded Accrued Liability (UAAL)	6,127,905,826	5,482,871,400
➤ Funded Ratio	69.8 %	71.3 %
➤ Funding Period	28 Years	29 Years

Actuarial Funded Status

OP&F's funded status is measured by comparing the actuarial value of assets with the AAL. The AAL is the present value of benefits attributed to past service under OP&F's funding method and reflects future pay increases for active members. The actuarial value of assets is a value based on OP&F's market value, but defers recognition over four years of any market returns that are greater than or less than the assumed valuation assumption of 8.25 percent that was in effect during those years. The use of this asset valuation method mitigates, or smooths, market fluctuation in the valuation assets from year to year. The actuarial valuation method includes a 20 percent corridor around the market value, so that the actuarial value must be no less than 80 percent and no greater than 120 percent of the market value.

As of Jan. 1, 2017, the AAL exceeds the actuarial value of assets, resulting in an unfunded actuarial accrued liability of \$6.1 billion. The funded ratio, which is the ratio of the assets to the AAL, is 69.8 percent. These figures are based on an actuarial value of assets of \$14,162,487,807 and an AAL of \$20,290,393,633.

Reasons for Change in the Funded Ratio

The funded ratio decreased from 71.3 percent as of Jan. 1, 2016 to 69.8 percent as of Jan. 1, 2017, a decrease of 1.5 percentage points. The primary reasons for the increase are as follows:

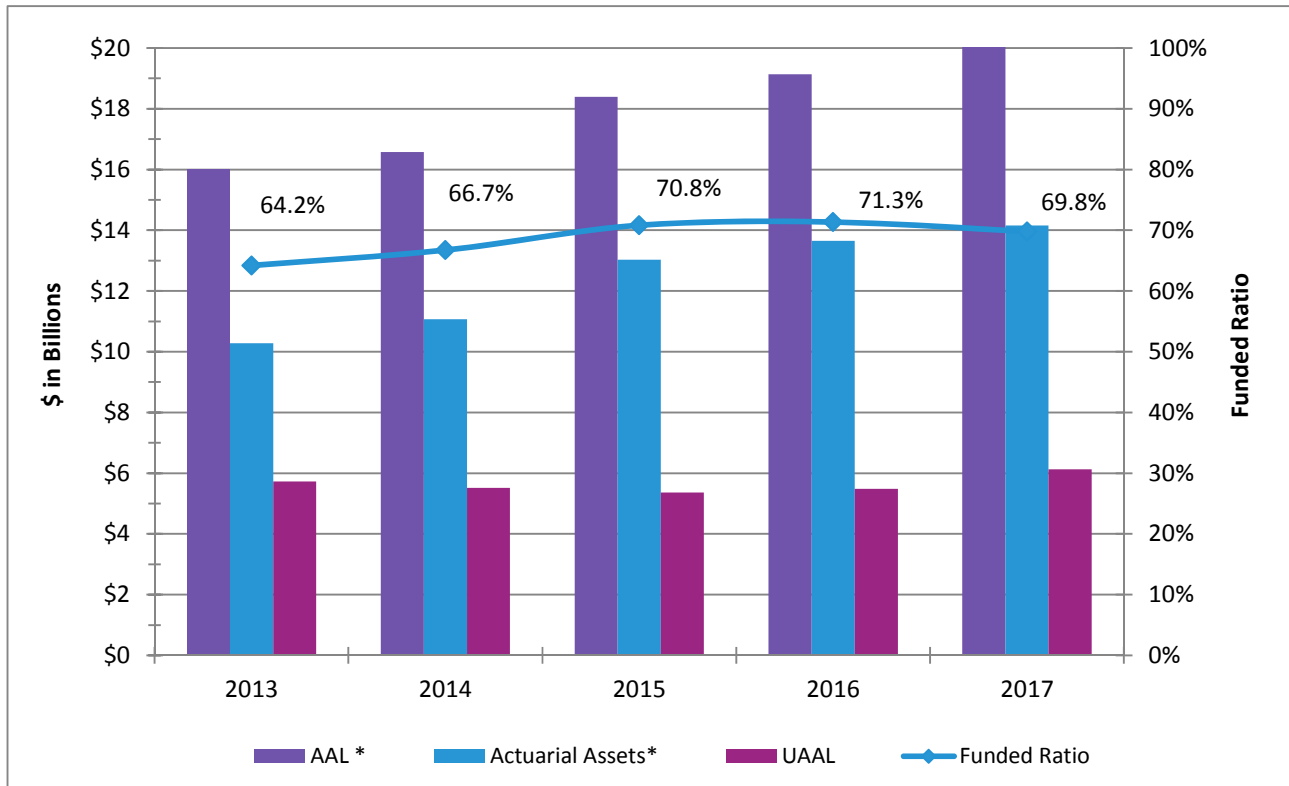
	Increase or (Decrease)
Net investment loss based on actuarial value of assets	(0.6)%
Net liability loss due to plan experience	(0.5)
Liability loss due to assumption change for late reported salaries	(0.0)
Liability loss due to assumption changes per experience study	(1.1)
Contribution level	0.7
Net increase (decrease)	(1.5)%

Five-Year History of Actuarial Funded Status

Valuation as of Jan. 1	Actuarial Accrued Liability (AAL) *	Actuarial Assets*	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio
2017	\$ 20,290,393,633	\$ 14,162,487,807	\$ 6,127,905,826	69.8 %
2016	19,135,875,916	13,653,004,516	5,482,871,400	71.3
2015	18,395,592,476	13,029,291,146	5,366,301,330	70.8
2014	16,577,754,827	11,063,198,418	5,514,556,409	66.7
2013	16,007,887,648	10,278,030,866	5,729,856,782	64.2

* AAL and asset values shown prior to 2015 exclude DROP balances

Five-Year History of Liabilities, Assets and Funded Ratio



* AAL and asset values shown prior to 2015 exclude DROP balances

Net Actuarial Gain (Loss)

The results of the valuation as of Jan. 1, 2017 determine the net actuarial gain or loss due to plan experience for the year ended Dec. 31, 2016. There was a net experience loss of \$569.5 million, consisting of a loss of \$114.9 million on the actuarial value of assets and a loss of \$454.6 million on liabilities. The asset loss reflects investment performance on a market value basis during 2016 and the previous three years. The liability loss reflects a \$130.5 million in demographic experience, a \$9.8 million loss due to the change in the late reported pay assumption, and a \$314.4 million loss due to assumption changes resulting from the experience study. The analysis of the net experience gain/loss is shown in Table 5.

Five-Year History of Actuarial Gains or (Losses)

Fiscal Year Ended	Net Gain or (Loss)
Dec. 31	
2016	\$ (569,516,945)
2015	(10,335,098)
2014	291,700,284
2013	454,507,614
2012	(380,991,785)

Rate of Return on Assets

The investment returns of the trust fund on a market value basis (i.e., total return including both realized and unrealized gains and losses) for years ended Dec. 31, 2012 through Dec. 31, 2016 are shown below. Also shown are the rates of return on the actuarial value of assets used to determine OP&F's actuarial funded status.

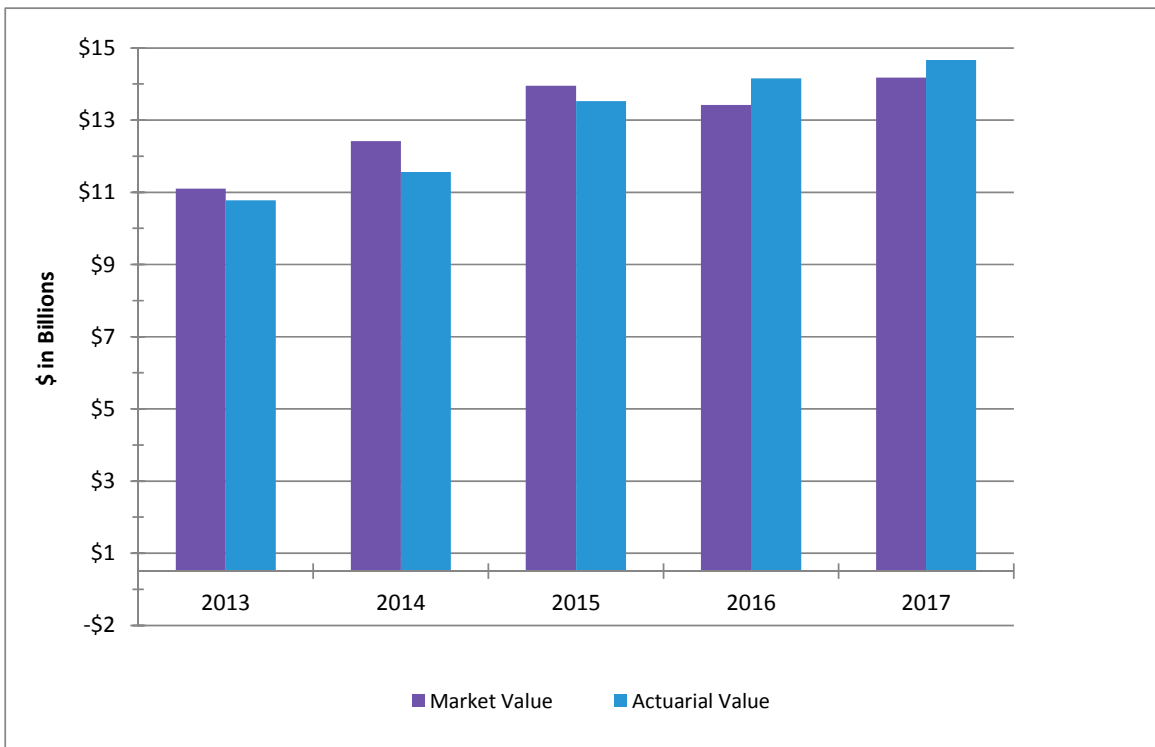
Five-Year History of Rates of Return

Year Ended Dec. 31	Rate of Return Based on	
	Market Value*	Actuarial Assets**
2016	11.51 %	7.33 %
2015	0.65	8.94
2014	6.79	10.11
2013	16.94	13.63
2012	15.41	5.86

* Rate of return on market value of assets, gross of fees, as reported in the OP&F CAFR

** Rate of return on actuarial value of assets is net of fees

Five-Year History of Market Value and Actuarial Assets as of Jan. 1



Asset values shown prior to 2015 exclude DROP balances.

Funding Period

The actuary determines how many years are required to completely amortize the UAAL (the funding period), using the member and employer contributions reduced by the amount allocated to health care and the amount of normal cost for the year. The calculation of the funding period takes into account future payroll growth, currently assumed at 3.25 percent per year. The calculation also takes into account adjustments in the normal cost rate and changes in the statutory contribution rates as a result of Senate Bill No. 340.

The funding period based on the Jan. 1, 2017 valuation is 28 years. This is the number of years it will take to pay off the \$6.1 billion UAAL as of Jan. 1, 2017. The funding period decreased from 29 years as of Jan. 1, 2016 despite the various experience losses, primarily due to a higher than expected increase in payroll which is expected to increase future funding levels.

If all assumptions are met on an actuarial basis, the funding period will continue to decrease each year. However, if all assumptions are not met, the period could increase. Two assumptions that greatly impact the funding period are investment returns and future payroll growth. OP&F has experienced overall favorable investment results the last four years through 2016, but returns for 2014 and 2015 were below the assumed 8.25 percent rate of return, resulting in investment losses to be recognized over four years. As those losses are recognized, and if no significant gains are realized in the next few years to offset the losses, the funding period may increase. If future returns are lower than the assumed 8.00 percent, projected contributions may not be sufficient to keep the funding period at or below 30 years. If the investment assumption is met, but payroll growth is less than 3.25 percent over time, which it has been in recent years (though it has exceeded that rate the last two years), future contributions will be less than projected and may be insufficient to pay off the UAAL over 30 years.

Recent white papers regarding public sector actuarial practice favor a funding period for a system's UAAL of 15 to 20 years. Similar to a mortgage, the shorter the amortization period, the higher the annual payments needed, the faster the UAAL is paid off and the lesser the overall interest costs.

Five-Year History of Contribution Rates and Funding Period

Member contribution rates increased from 10 percent to 10.75 percent on July 2, 2013, to 11.50 percent on July 2, 2014 and to 12.25 percent on July 2, 2015. The member rates shown in the table below for 2013, 2014 and 2015 are the average, or blended, rates for the year. A funding period of infinity means the contribution level is not sufficient to pay down the unfunded over any number of years.

Valuation as of Jan. 1	Contribution Rates				Allocation		Funding Period
	Member	Police Employer	Fire Employer	Employer Average	Health Care	Pension	
2017	12.25 %	19.50 %	24.00 %	21.61 %	0.50 %	33.36 %	28 Years
2016	12.25	19.50	24.00	21.61	0.50	33.36	29 Years
2015	11.88	19.50	24.00	21.61	0.50	32.99	30 Years
2014	11.13	19.50	24.00	21.61	0.50	32.24	33 Years
2013	10.38	19.50	24.00	21.61	3.62	28.37	47 years

The remainder of this report consists of tables and exhibits.

Table 1 - Summary of Results of Actuarial Valuation as of January 1, 2017

Item	Police	Firefighters	Total
Membership Data			
1. Number of Members			
a) Active Members			
i) Vested Actives	7,686	6,882	14,568
ii) Non-Vested Actives	<u>7,384</u>	<u>6,038</u>	<u>13,422</u>
iii) Total Actives	15,070	12,920	27,990
b) Vested Former Members	128	72	200
c) Rehired Retirees	135	50	185
d) Retirees and Disableds	12,039	8,957	20,996
e) Beneficiaries and Survivors	4,484	3,433	7,917
f) Contributions Refund Due	<u>2,454</u>	<u>660</u>	<u>3,114</u>
g) Total	34,310	26,092	60,402
2. Annualized Salaries	\$ 1,141,890,785	\$ 1,002,374,682	\$ 2,144,265,467
3. Membership Payroll	1,159,566,700	1,021,343,904	2,180,910,604
4. Annual Allowances	582,177,566	439,331,511	1,021,509,077
Valuation Results			
5. Present Value of Future Benefits (PVFB)			
a) Active Members	\$ 6,104,501,737	\$ 5,568,218,814	\$ 11,672,720,551
b) Vested Former Members	18,200,477	8,016,059	26,216,536
c) Rehired Retirees	9,530,733	3,666,918	13,197,651
d) Retirees and Disableds	6,156,696,985	4,626,628,790	10,783,325,775
e) Beneficiaries and Survivors	419,494,773	296,360,948	715,855,721
f) Contributions Refund Due	<u>22,317,939</u>	<u>8,390,369</u>	<u>30,708,308</u>
g) Total PVFB	\$ 12,730,742,644	\$ 10,511,281,898	\$ 23,242,024,542
6. Normal Cost			
a) Normal Cost	\$ 171,849,183	\$ 154,232,827	\$ 326,082,010
b) Administrative Expenses	13,643,697	10,292,613	23,936,311
c) State Subsidy	<u>226,952</u>	<u>171,209</u>	<u>398,161</u>
d) Total: (a) + (b) - (c)	\$ 185,265,928	\$ 164,354,231	\$ 349,620,160
e) Normal Cost Rate: (d) / (3)	15.98%	16.09%	16.03%
7. Present Value of Future Normal Cost	\$ 1,508,550,895	\$ 1,425,430,742	\$ 2,933,981,637

**Table 1 - Summary of Results of Actuarial Valuation as of January 1, 2017
(continued)**

Item	Police	Firefighters	Total
8. Actuarial Accrued Liability (AAL)			
a) Active Members	\$ 4,595,950,842	\$ 4,142,788,072	\$ 8,738,738,914
b) Vested Former Members	18,200,477	8,016,059	26,216,536
c) Rehired Retirees	9,530,733	3,666,918	13,197,651
d) Retirees and Disableds	6,156,696,985	4,626,628,790	10,783,325,775
e) Beneficiaries and Survivors	419,494,773	296,360,948	715,855,721
f) Contributions Refund Due	<u>22,317,939</u>	<u>8,390,369</u>	<u>30,708,308</u>
g) Total	\$ 11,222,191,749	\$ 9,085,851,156	\$ 20,308,042,905
h) Employer Accrued Liability	<u>(10,144,227)</u>	<u>(7,505,045)</u>	<u>(17,649,272)</u>
i) Adjusted AAL	\$ 11,212,047,522	\$ 9,078,346,111	\$ 20,290,393,633
9. Actuarial Value of Assets *	\$ 7,825,894,815	\$ 6,336,592,992	\$ 14,162,487,807
10. Unfunded Accrued Liability: (8) - (9)	\$ 3,386,152,707	\$ 2,741,753,119	\$ 6,127,905,826
11. Funding Period			28 Years
12. Funded Ratio	69.8%	69.8%	69.8%
Allocation of Employer Contribution Rate			
13. Employer Contribution Rate			
a) Total Employer Rate (by law)	19.50%	24.00%	21.61%
b) Health Care Stabilization Fund Allocation	<u>0.50%</u>	<u>0.50%</u>	<u>0.50%</u>
c) Employer Pension Rate: (a) - (b)	19.00%	23.50%	21.11%
d) Total Normal Cost Rate	15.98%	16.09%	16.03%
e) Member Rate (by law)	<u>12.25%</u>	<u>12.25%</u>	<u>12.25%</u>
f) Employer Normal Cost Rate: (d) - (e)	3.73%	3.84%	3.78%
g) Unfunded Accrued Liability Amortization Rate: (c) - (f)	15.27%	19.66%	17.33%

* The Actuarial Value of Assets is split between Police and Firefighters in proportion to the Actuarial Accrued Liability.

Table 1A - Valuation Results as of January 1, 2017 Adjusted for Medicare Part B Reimbursement Liabilities

Item	Police	Firefighters	Total
Valuation Results			
1. Present Value of Future Benefits			
a) Pension Benefits	\$ 12,730,742,644	\$ 10,511,281,898	\$ 23,242,024,542
b) Medicare Part B Benefits	<u>352,323,487</u>	<u>297,150,437</u>	<u>649,473,924</u>
c) Total	\$ 13,083,066,131	\$ 10,808,432,335	\$ 23,891,498,466
2. Normal Cost			
a) Pension Benefits	15.98%	16.09%	16.03%
b) Medicare Part B Benefits	<u>0.46%</u>	<u>0.47%</u>	<u>0.47%</u>
c) Total	16.44%	16.56%	16.50%
3. Actuarial Accrued Liability			
a) Pension Benefits	\$ 11,212,047,522	\$ 9,078,346,111	\$ 20,290,393,633
b) Medicare Part B Benefits	<u>302,210,404</u>	<u>248,755,806</u>	<u>550,966,210</u>
c) Total	\$ 11,514,257,926	\$ 9,327,101,917	\$ 20,841,359,843
4. Actuarial Value of Assets *	\$ 7,825,894,815	\$ 6,336,592,992	\$ 14,162,487,807
5. Unfunded Accrued Liability	\$ 3,688,363,111	\$ 2,990,508,925	\$ 6,678,872,036
6. Funded Ratio	68.0%	67.9%	68.0%
Allocation of Employer Contribution Rate			
7. Employer Contribution Rate			
a) Total Employer Rate (by law)	19.50%	24.00%	21.61%
b) Health Care Stabilization Fund Allocation	<u>0.50%</u>	<u>0.50%</u>	<u>0.50%</u>
c) Employer Pension Rate: (a) - (b)	19.00%	23.50%	21.11%
d) Pension Normal Cost Rate	15.98%	16.09%	16.03%
e) Medicare Part B Normal Cost Rate	<u>0.46%</u>	<u>0.47%</u>	<u>0.47%</u>
f) Total Normal Cost Rate: (d) + (e)	16.44%	16.56%	16.50%
g) Member Rate (by law)	<u>12.25%</u>	<u>12.25%</u>	<u>12.25%</u>
h) Employer Normal Cost Rate: (f) - (g)	4.19%	4.31%	4.25%
i) Unfunded Accrued Liability Amortization Rate: (c) - (h)	14.81%	19.19%	16.86%

* The Actuarial Value of Assets is split between Police and Firefighters in proportion to the pension Actuarial Accrued Liability. While the Actuarial Accrued Liability and Normal Cost have been adjusted in this illustration to reflect the liability for Medicare Part B reimbursements, the Actuarial Value of Assets and Employer Contribution Rate are unadjusted for any Health Care Stabilization Fund assets or contribution that might be associated with Medicare Part B reimbursements.

Table 2
Summary of Market Value of Plan Assets as of December 31, 2016

Item	Amount
1. Market Value of Assets as of Dec. 31, 2015*	\$ 12,923,943,156
2. Contributions During 2016	
a) Member	\$ 268,594,295
b) Employer	454,745,371
c) State Subsidy	398,161
d) Total	\$ 723,737,827
3. Benefit Payments During 2016	1,187,020,466
4. Administrative Expenses During 2016	18,851,765
5. Income During 2016	
a) Interest, Dividends and Other Income	\$ 334,507,668
b) Appreciation/(Depreciation)	940,788,275
c) Investment Expenses	42,726,835
d) Investment Return After Expenses (a) + (b) - (c)	\$ 1,232,569,108
e) Other Income	8,011,380
f) Total Income (d) + (e)	\$ 1,240,580,488
6. Market Value of Assets as of Dec. 31, 2016*	
(1) + (2d) - (3) - (4) + (5f)	\$ 13,682,389,240
7. Rate of Return	9.72 %
(5d) / [(1) + 0.5 * ((2d) - (3) - (4) + (5e))]	

* The Market Value of Assets includes the DROP accrual balances of \$1,362,869,292 at Dec. 31, 2015 and \$1,462,807,757 at Dec. 31, 2016.

Table 3
Derivation of Actuarial Value of Assets as of January 1, 2017

Item		Amount			
1. Market Value of Assets as of Dec. 31, 2016		\$ 13,682,389,240			
2. Determination of Deferred Gain (Loss)					
Return on Market Value of Assets					
<u>Year</u>	<u>Actual</u>	<u>Expected</u>	<u>Gain/(Loss)</u>	<u>% Deferred</u>	<u>Deferred Amount</u>
2016	\$ 1,232,569,108	\$ 1,046,667,736	\$ 185,901,372	75%	\$ 139,426,029
2015	(11,259,198)	1,088,245,528	(1,099,504,726)	50%	(549,752,363)
2014	786,522,451	1,065,611,384	(279,088,933)	25%	(69,772,233)
2013	1,893,854,624	953,408,015	940,446,609	0%	-
					\$ (480,098,567)
3. Adjustment for 20% corridor					\$ -
4. Actuarial Value of Assets as of Jan. 1, 2017: (1) - (2) + (3)					\$ 14,162,487,807
5. Actuarial Rate of Return *					
a) Actuarial Value of Assets as of Jan. 1, 2016					\$ 13,653,004,516
b) Contributions During 2016					723,737,827
c) Benefits Paid During 2016					1,187,020,466
d) Expenses During 2016					18,851,765
e) Other Income					8,011,380
f) Return on an Actuarial Basis					983,606,315
g) Actuarial Rate of Return: (e) / [(a) + 0.5 * ((b) - (c) - (d) + (e))]					7.33%

* The actuarial rate of return is the rate of return based on the change in the actuarial value of assets from last year to this year. The rate of return is calculated assuming contributions and disbursements occur halfway through the year.

Table 4

Analysis of Change in Unfunded Actuarial Accrued Liability as of January 1, 2017

Item	Amount
1. Unfunded Accrued Liability at Jan. 1, 2016	\$ 5,482,871,400
2. Contributions Toward Unfunded Accrued Liability	\$ 361,891,390
3. Interest Credit at 8.25% to Dec. 31, 2016	\$ 437,408,871
4. Expected Unfunded Accrued Liability at Dec. 31, 2016 (1) - (2) + (3)	\$ 5,558,388,881
5. Actual Unfunded Accrued Liability at Jan. 1, 2017	\$ 6,127,905,826
6. Net Loss (4) - (5)	\$ (569,516,945)
7. Reasons for Net Loss	
(a) Experience Gains (Losses)	
(i) Loss from Investment Return on Actuarial Value of Assets	\$ (114,867,133)
(ii) Loss from Demographic Experience and Other	\$ <u>(130,464,752)</u>
Subtotal	\$ (245,331,885)
(b) Loss from Pay Load Adjustment for Late Reported Pays	\$ (9,769,347)
(c) Loss from Assumption Changes per Experience Study	\$ <u>(314,415,713)</u>
(d) Total	\$ (569,516,945)

Table 5

Detailed Analysis of Gains and Losses due to Plan Experience Resulting In Differences between Assumed and Actual Experience

Type of Activity	Gain (Loss)	
	Jan. 1, 2017	Jan. 1, 2016
Plan Experience:		
Turnover If more liabilities are released by withdrawal separations from active membership than assumed, there is a gain. If smaller releases, there is a loss.	\$ (15,352,380)	\$ (1,786,735)
Retirement If members retire at older ages than assumed, there is a gain. If younger, there is a loss.	(2,247,634)	(4,939,352)
Death among retired members and beneficiaries If more deaths occur than assumed, there is a gain. If fewer deaths than assumed, there is a loss.	(66,348,845)	(16,176,502)
Disability retirements If disability claims are less than assumed, there is a gain. If more claims, a loss.	27,852,993	25,587,040
Salary increase/decrease If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(78,167,764)	40,251,935
Return to work If participants return to work with previous service restored, there is a loss.	(2,786,430)	(1,215,348)
New Entrants If new entrants join OP&F, there is a loss.	(6,622,672)	(5,043,837)
Deaths among actives If claims costs are less than assumed, there is a gain. If more claims, a loss.	1,591,296	(2,396,203)
Investment If there is greater investment return than assumed, there is a gain. If less return, a loss.	(114,867,133)	81,193,240
Other Experience and Payroll Growth If other experience, including less than expected payroll growth, increases the unfunded liability, there is a loss. Otherwise, there is a gain.	<u>11,616,684</u>	<u>(2,481,749)</u>
Net gain (or loss) during the year due to plan experience	\$ (245,331,885)	\$ 112,992,489

Table 6 Schedule of Funding Progress

(\$ Amounts in Millions)

Valuation as of Jan. 1	Valuation Assets	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Ratio of Assets to AAL	Active Member Payroll	UAAL as Percentage of Active Member Payroll
2017	\$ 14,162.5	\$ 20,290.4	\$ 6,127.9	69.8 %	\$ 2,180.9	281.0 %
2016	13,653.0	19,135.9	5,482.9	71.3 %	2,060.9	266.1 %
2015	13,029.3	18,395.6	5,366.3	70.8 %	1,986.6	270.1 %
2014	11,063.2	16,577.8	5,514.6	66.7 %	1,942.3	283.9 %
2013	10,278.0	16,007.9	5,729.9	64.2 %	1,913.4	299.5 %
2012	10,309.0	16,346.7	6,037.7	63.1 %	1,897.4	318.2 %
2011	10,681.0	15,384.4	4,703.4	69.4 %	1,868.5	251.7 %
2010	10,794.1	14,830.7	4,036.6	72.8 %	1,895.2	213.0 %
2009	9,309.2	14,307.1	4,997.9	65.1 %	1,900.9	262.9 %
2008	11,212.9	13,727.8	2,514.9	81.7 %	1,831.4	137.3 %

Note: Actuarial Assets and Liabilities prior to Jan. 1, 2015 are net of DROP balances

Table 7
Unfunded Actuarial Accrued Liability Funding Period

Year	Plan Year	Outstanding Balance at Beginning of Year of January 1, 2017		Assumed Amortization Contribution	Assumed Payroll 3.25%	Mid-Year Amortization Contribution	Outstanding Balance at End of Year of January 1, 2017
		UAAL (a)	Rate ¹ (b)	Growth Rate (c)	Amount ² (d)	UAAL ³ (e)	
1	2017	\$ 6,127,905,826	17.33%	\$ 2,213,954,094	\$ 383,678,244	\$ 6,219,408,164	
2	2018	6,219,408,164	17.42%	2,285,907,602	398,205,104	6,303,133,934	
3	2019	6,303,133,934	17.50%	2,360,199,599	413,034,930	6,378,146,158	
4	2020	6,378,146,158	17.56%	2,436,906,086	427,920,709	6,443,689,605	
5	2021	6,443,689,605	17.63%	2,516,105,534	443,589,406	6,498,193,141	
6	2022	6,498,193,141	17.68%	2,597,878,964	459,305,001	6,540,724,834	
7	2023	6,540,724,834	17.72%	2,682,310,030	475,305,337	6,570,031,024	
8	2024	6,570,031,024	17.76%	2,769,485,106	491,860,555	6,584,477,024	
9	2025	6,584,477,024	17.79%	2,859,493,372	508,703,871	6,582,574,615	
10	2026	6,582,574,615	17.82%	2,952,426,907	526,122,475	6,562,418,070	
11	2027	6,562,418,070	17.85%	3,048,380,781	544,135,969	6,521,928,829	
12	2028	6,521,928,829	17.88%	3,147,453,156	562,764,624	6,458,840,982	
13	2029	6,458,840,982	17.92%	3,249,745,384	582,354,373	6,370,347,843	
14	2030	6,370,347,843	17.94%	3,355,362,109	601,951,962	6,254,408,841	
15	2031	6,254,408,841	17.97%	3,464,411,378	622,554,725	6,107,783,700	
16	2032	6,107,783,700	17.98%	3,577,004,747	643,145,454	5,928,030,035	
17	2033	5,928,030,035	17.99%	3,693,257,402	664,417,007	5,711,790,030	
18	2034	5,711,790,030	17.99%	3,813,288,267	686,010,559	5,455,810,147	
19	2035	5,455,810,147	17.99%	3,937,220,136	708,305,902	5,156,181,872	
20	2036	5,156,181,872	18.00%	4,065,179,790	731,732,362	4,808,237,845	
21	2037	4,808,237,845	18.00%	4,197,298,133	755,513,664	4,407,744,041	
22	2038	4,407,744,041	18.00%	4,333,710,323	780,067,858	3,949,693,266	
23	2039	3,949,693,266	18.01%	4,474,555,908	805,867,519	3,428,186,635	
24	2040	3,428,186,635	18.01%	4,619,978,975	832,058,213	2,837,741,306	
25	2041	2,837,741,306	18.02%	4,770,128,292	859,577,118	2,171,461,865	
26	2042	2,171,461,865	18.02%	4,925,157,461	887,513,375	1,422,847,860	
27	2043	1,422,847,860	18.03%	5,085,225,079	916,866,082	583,840,506	
28	2044	583,840,506	18.03%	5,250,494,894	946,664,229	-	
29	2045	-	18.04%	5,421,135,978	977,972,930	-	
30	2046	-	18.04%	5,597,322,897	1,009,757,051	-	

Resulting Funding Period = 28 Years

¹ The amortization contribution rate is the total statutory contribution rate, minus the total normal cost rate, minus the health care contribution rate. The statutory contribution rate is assumed to remain unchanged except for any legislated increases, for which none are assumed after the July 1, 2015 member contribution rate increase. The impact of SB 340 and changes adopted by OP&F that will impact new members will reduce the total normal cost rate over time, and, thus, increase the amortization contribution rate, as reflected above.

² The contribution amount is the product of (b) the amortization contribution rate and (c) the assumed payroll amount.

³ The outstanding balance at the end of the year is derived from the outstanding balance at the beginning of the year with interest minus the mid-year amortization contribution with interest.

$$(e) = [(a) \times 1.08] - [(d) \times 1.08^{0.5}]$$

Table 8 Solvency Test - Comparative Summary of Actuarial Accrued Liability and Actuarial Value of Assets

(\$ Amounts in Thousands)

POLICE

Valuation as of January 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2017	\$ 1,451,473	\$ 6,576,192	\$ 3,184,383	\$ 7,825,895	100 %	97 %	0 %
2016	1,386,649	6,085,896	3,002,889	7,473,979	100 %	100 %	0 %
2015	1,210,400	5,857,146	3,015,390	7,141,575	100 %	100 %	2 %
2014	1,171,496	5,368,637	2,583,711	6,088,816	100 %	92 %	0 %
2013	1,131,664	5,166,808	2,532,580	5,670,069	100 %	88 %	0 %
2012	1,100,146	4,960,051	2,969,900	5,694,783	100 %	93 %	0 %
2011	1,100,251	4,368,659	3,008,219	5,885,449	100 %	100 %	14 %
2010	1,067,209	4,216,219	2,926,199	5,975,121	100 %	100 %	24 %

FIREFIGHTERS

Valuation as of January 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2017	\$ 1,276,582	\$ 4,922,990	\$ 2,878,774	\$ 6,336,593	100 %	100 %	5 %
2016	1,213,330	4,614,250	2,832,862	6,179,025	100 %	100 %	12 %
2015	1,062,097	4,337,819	2,912,741	5,887,716	100 %	100 %	17 %
2014	1,028,465	3,924,388	2,501,058	4,974,383	100 %	100 %	1 %
2013	974,362	3,751,279	2,451,195	4,607,962	100 %	97 %	0 %
2012	965,598	3,581,800	2,769,204	4,614,176	100 %	100 %	2 %
2011	956,559	3,132,521	2,818,228	4,795,563	100 %	100 %	25 %
2010	916,033	3,004,267	2,700,815	4,818,972	100 %	100 %	33 %

TOTAL

Valuation as of January 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2017	\$ 2,728,055	\$ 11,499,182	\$ 6,063,157	\$ 14,162,488	100 %	99 %	0 %
2016	2,599,979	10,700,146	5,835,751	13,653,004	100 %	100 %	6 %
2015	2,272,496	10,194,965	5,928,132	13,029,291	100 %	100 %	9 %
2014	2,199,961	9,293,025	5,084,769	11,063,199	100 %	95 %	0 %
2013	2,106,027	8,918,087	4,983,774	10,278,031	100 %	92 %	0 %
2012	2,065,744	8,541,851	5,739,104	10,308,959	100 %	97 %	0 %
2011	2,056,810	7,501,180	5,826,447	10,681,012	100 %	100 %	19 %
2010	1,983,242	7,220,486	5,627,014	10,794,093	100 %	100 %	28 %

Note: Actuarial Assets and Liabilities prior to Jan. 1, 2015 are net of DROP balances

Table 9 Description of Actuarial Assumptions and Methods

Assumptions

The actuarial assumptions were adopted as of Jan. 1, 2017, based on a five-year experience review covering the period 2012 through 2016. The next review of the actuarial assumptions is to be completed for adoption with the Jan. 1, 2022 valuation.

Interest Rate

8.00 percent per annum, compounded annually.

Salary Increase Rates

Assumed annual salary increases are as follows:

Years of Service	Salary Increase Rate
Less than 1	10.50%
1	9.00%
2	8.00%
3	6.00%
4	4.50%
5 or more	3.75%

Payroll Growth Rate

3.25 percent per annum, compounded annually, consisting of inflation rate of 2.75 percent plus productivity increase rate of 0.5 percent.

DROP Interest Crediting Rate

4.0 percent per annum, compounded annually.

CPI-Based COLA

2.2 percent simple for increases based on the lesser of the increase in CPI and three percent.

Withdrawal Rates

The following sample withdrawal rates are based on age and service (for causes other than death, disability, or retirement):

Table 9
Description of Actuarial Assumptions and Methods (continued)

Police

Years of Service	Age							
	25	30	35	40	45	50	55	60
0	9.62%	9.94%	15.93%	17.85%	15.22%	22.00%	18.68%	19.23%
1	5.88%	5.54%	6.49%	7.65%	5.99%	10.15%	11.21%	11.54%
2	3.27%	4.21%	3.92%	5.87%	5.80%	9.90%	9.34%	9.62%
3	4.11%	3.35%	4.66%	5.74%	5.61%	9.17%	8.78%	9.04%
4	3.64%	3.06%	4.29%	5.23%	4.95%	7.95%	7.47%	7.69%
5	2.59%	2.65%	3.49%	4.22%	4.22%	7.57%	8.79%	6.50%
6	2.64%	2.56%	3.28%	3.57%	3.44%	5.86%	7.03%	5.20%
7	2.58%	2.21%	3.18%	3.46%	3.44%	5.71%	6.90%	5.10%
8	2.39%	1.95%	2.56%	1.95%	2.06%	5.57%	6.63%	4.90%
9	2.12%	1.59%	1.74%	1.62%	1.18%	4.43%	6.09%	4.50%
10	1.56%	1.56%	1.66%	1.59%	1.09%	4.31%	6.03%	4.46%
11	1.49%	1.49%	1.58%	1.56%	1.00%	4.20%	5.98%	4.42%
12	1.41%	1.41%	1.50%	1.52%	0.91%	4.09%	5.92%	4.38%
13	1.31%	1.31%	1.42%	1.49%	0.83%	3.97%	5.87%	4.34%
14	1.21%	1.21%	1.33%	1.46%	0.74%	3.86%	5.82%	4.30%
15+	1.17%	1.17%	1.17%	0.91%	0.79%	0.91%	1.10%	1.96%

Firefighters

Years of Service	Age							
	25	30	35	40	45	50	55	60
0	2.69%	3.46%	3.66%	6.22%	8.48%	6.93%	8.73%	19.11%
1	2.11%	1.46%	2.96%	4.98%	7.01%	5.00%	7.16%	15.66%
2	1.53%	1.64%	1.83%	3.04%	4.98%	4.54%	7.16%	15.66%
3	1.44%	1.55%	1.74%	2.90%	4.80%	4.32%	7.16%	15.66%
4	1.15%	1.46%	1.66%	2.77%	4.61%	3.97%	5.73%	12.53%
5	0.83%	0.94%	1.33%	1.64%	2.05%	2.91%	5.33%	11.94%
6	0.78%	0.87%	1.24%	1.53%	1.72%	2.58%	3.66%	8.19%
7	0.78%	0.80%	1.19%	1.42%	1.51%	2.37%	3.35%	7.51%
8	0.72%	0.73%	1.05%	1.31%	1.40%	2.26%	3.05%	6.82%
9	0.73%	0.73%	0.86%	1.10%	1.18%	1.62%	2.29%	5.12%
10	0.73%	0.73%	0.84%	1.07%	1.16%	1.55%	2.21%	4.95%
11	0.71%	0.71%	0.82%	1.05%	1.14%	1.49%	2.13%	4.78%
12	0.68%	0.68%	0.80%	1.03%	1.12%	1.42%	2.06%	4.60%
13	0.65%	0.65%	0.78%	1.01%	1.10%	1.36%	1.98%	4.43%
14	0.61%	0.61%	0.76%	0.99%	1.07%	1.29%	1.91%	4.26%
15+	0.90%	0.90%	0.90%	0.47%	0.50%	0.59%	0.92%	1.21%

Table 9 Description of Actuarial Assumptions and Methods (continued)

Rates of Disability

The following are sample rates of disability and occurrence of disability by type:

Age	Police		Fire	
	Hired Before July 2, 2013	Hired After July 1, 2013	Hired Before July 2, 2013	Hired After July 1, 2013
20	0.001%	0.001%	0.001%	0.001%
25	0.007%	0.007%	0.005%	0.005%
30	0.089%	0.089%	0.022%	0.022%
35	0.154%	0.154%	0.091%	0.091%
40	0.403%	0.403%	0.204%	0.204%
45	0.533%	0.533%	0.347%	0.347%
50	1.351%	0.691%	1.337%	0.475%
55	1.119%	1.119%	2.025%	2.025%
60	2.078%	2.078%	3.060%	3.060%
64	3.099%	3.099%	7.190%	7.190%

Upon and after attainment of normal retirement eligibility, the rate is 0.300%.

Type of disability

On duty permanent and total	17%
On duty partial	58%
Off duty ordinary	25%

Retirement Rates

The following rates of retirement apply to members who have not elected to be in DROP:

Age	Police	Firefighters
48	0%	0%
49-50	5%	4%
51	6%	4%
52	6%	6%
53	10%	6%
54	10%	7%
55-57	11%	11%
58	5%	16%
59	10%	16%
60	18%	20%
61	19%	20%
62	25%	50%
63	25%	20%
64	25%	25%
65-69	35%	25%
70	100%	100%

Table 9 Description of Actuarial Assumptions and Methods (continued)

Deferred Retirement Option Plan Elections

90 percent of members who do not retire when first eligible are assumed to elect DROP.

DROP Retirement Rates

The following rates of retirement apply to members in DROP on or before July 1, 2013:

Police

Age	Years in DROP								
	0	1	2	3	4	5	6	7	8
48	5%								
49	4%	4%							
50	4%	4%	4%						
51	4%	4%	4%	10%					
52	3%	4%	4%	9%	9%				
53	3%	4%	4%	9%	8%	12%			
54	4%	5%	5%	10%	9%	13%	13%		
55	5%	5%	5%	16%	16%	14%	18%	44%	
56	5%	5%	5%	15%	15%	13%	17%	41%	100%
57	5%	5%	5%	16%	15%	14%	17%	43%	100%
58	5%	5%	5%	16%	15%	14%	17%	42%	100%
59	15%	5%	5%	15%	16%	16%	18%	44%	100%
60	17%	5%	5%	16%	17%	18%	19%	47%	100%
61	17%	5%	5%	17%	18%	18%	20%	48%	100%
62	16%	5%	5%	16%	17%	17%	19%	46%	100%
63	18%	6%	6%	18%	19%	19%	21%	50%	100%
64	19%	5%	5%	17%	17%	18%	19%	49%	100%
65	24%	6%	6%	23%	22%	22%	25%	59%	100%
66	24%	5%	6%	20%	19%	22%	22%	54%	100%
67	24%	5%	5%	20%	19%	22%	22%	53%	100%
68	24%	5%	5%	15%	19%	22%	22%	53%	100%
69	24%	5%	5%	20%	19%	22%	22%	47%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 9
Description of Actuarial Assumptions and Methods (continued)

Firefighters

Age	Years in DROP								
	0	1	2	3	4	5	6	7	8
48	2%								
49	4%	3%							
50	5%	4%	4%						
51	3%	3%	3%	9%					
52	3%	3%	3%	8%	9%				
53	4%	3%	4%	10%	11%	13%			
54	4%	3%	3%	9%	11%	13%	13%		
55	6%	4%	4%	13%	13%	15%	17%	38%	
56	5%	3%	4%	13%	12%	14%	17%	37%	100%
57	5%	3%	4%	13%	12%	14%	17%	37%	100%
58	5%	3%	4%	17%	15%	15%	18%	46%	100%
59	6%	3%	4%	17%	15%	16%	19%	46%	100%
60	6%	3%	4%	18%	16%	16%	19%	48%	100%
61	6%	3%	4%	17%	15%	15%	18%	45%	100%
62	6%	3%	4%	17%	15%	16%	18%	46%	100%
63	29%	3%	4%	20%	18%	20%	18%	52%	100%
64	32%	3%	4%	21%	20%	22%	19%	55%	100%
65	33%	4%	4%	22%	21%	23%	20%	57%	100%
66	38%	4%	5%	26%	24%	23%	24%	64%	100%
67	38%	4%	5%	26%	24%	23%	24%	65%	100%
68	38%	4%	5%	26%	24%	23%	24%	65%	100%
69	38%	4%	5%	20%	25%	23%	24%	65%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%

The same rates apply for members entering DROP after July 1, 2013, except the rates for years three and four are replaced with the rates for year two.

Table 9 Description of Actuarial Assumptions and Methods (continued)

The following rates of retirement apply to members who are not yet in DROP but may become eligible in the future:

Police

Age	Years Eligible for DROP									
	0	1	2	3	4	5	6	7	8	9+
47	6%									
48	12%									
49	7%	5%								
50	6%	5%	5%							
51	6%	5%	5%	5%						
52	6%	5%	5%	5%	5%					
53	11%	5%	5%	5%	5%	12%				
54	10%	5%	5%	5%	5%	13%	13%			
55	12%	6%	6%	6%	6%	14%	18%	43%		
56	12%	6%	5%	5%	5%	13%	17%	41%	96%	
57	13%	6%	5%	5%	5%	14%	17%	43%	94%	100%
58	7%	5%	5%	5%	5%	13%	17%	43%	98%	100%
59	10%	5%	5%	5%	5%	17%	18%	45%	97%	100%
60	20%	8%	6%	6%	6%	18%	20%	48%	98%	100%
61	32%	6%	5%	5%	5%	18%	19%	46%	93%	100%
62	29%	9%	5%	5%	5%	16%	17%	42%	92%	100%
63	33%	5%	7%	7%	7%	18%	19%	46%	95%	100%
64	31%	11%	7%	7%	7%	18%	19%	49%	93%	100%
65	47%	13%	6%	6%	6%	20%	22%	54%	100%	100%
66	47%	13%	5%	5%	5%	20%	20%	50%	100%	100%
67	47%	13%	18%	18%	18%	20%	20%	46%	100%	100%
68	47%	13%	18%	18%	18%	20%	20%	46%	100%	100%
69	47%	13%	18%	18%	18%	20%	20%	46%	100%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 9
Description of Actuarial Assumptions and Methods (continued)

Firefighters

Age	Years Eligible for DROP									
	0	1	2	3	4	5	6	7	8	9+
47	3%									
48	6%									
49	6%	4%								
50	6%	4%	4%							
51	5%	3%	4%	4%						
52	5%	3%	3%	3%	3%					
53	5%	4%	4%	4%	4%	13%				
54	5%	3%	4%	4%	4%	13%	13%			
55	8%	5%	5%	5%	5%	15%	18%	38%		
56	8%	5%	4%	4%	4%	14%	17%	38%	95%	
57	8%	4%	5%	5%	5%	15%	17%	38%	98%	100%
58	8%	5%	4%	4%	4%	16%	19%	46%	97%	100%
59	9%	5%	5%	5%	5%	16%	19%	46%	97%	100%
60	10%	5%	7%	7%	7%	17%	20%	49%	86%	100%
61	11%	5%	4%	4%	4%	16%	19%	45%	93%	100%
62	15%	7%	12%	12%	12%	16%	20%	49%	95%	100%
63	33%	7%	4%	4%	4%	19%	16%	48%	100%	100%
64	37%	7%	3%	3%	3%	20%	18%	49%	100%	100%
65	37%	7%	8%	8%	8%	20%	18%	51%	100%	100%
66	37%	7%	4%	4%	4%	23%	23%	61%	100%	100%
67	37%	7%	4%	4%	4%	23%	23%	53%	100%	100%
68	37%	7%	4%	4%	4%	23%	23%	53%	100%	100%
69	37%	7%	4%	4%	4%	23%	23%	47%	100%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Retirement Age for Inactive Vested Participants

Commencement at age 48 and 25 years of service from full-time hire date, whichever is later.

Table 9 Description of Actuarial Assumptions and Methods (continued)

Healthy Mortality

Mortality for non-disabled participants is based on the RP-2014 Total Employee and Healthy Annuitant Mortality Tables rolled back to 2006, adjusted according to the rates in the following table, and projected with the Conduent Modified 2016 Improvement Scale. Rates for surviving beneficiaries are adjusted by 120%.

Age	Police	Fire
67 or less	77%	68%
68 – 77	105%	87%
78 and up	115%	120%

Disabled Mortality

Mortality for disabled retirees is based on the RP-2014 Disabled Mortality Tables rolled back to 2006, adjusted according to the rates in the following table, and projected with the Conduent Modified 2016 Improvement Scale.

Age	Police	Fire
59 or less	35%	35%
60 – 69	60%	45%
70 – 79	75%	70%
80 and up	100%	90%

Credited Service

Credited service on the valuation date, as provided by OP&F, includes all service credited under the plan, including service transferred from other municipal plans and purchased service. The valuation assumes future service will be credited at the rate of one year per year worked, with no assumed future crediting of transferred service or purchased service.

415 Limits

Benefits are limited by the IRC Section 415, assumed to increase 2.75 percent per annum.

Future Expenses

The normal cost is increased by all administrative expenses budgeted, net of the State Subsidy received from the State of Ohio.

Unknown Data for Members

Same as those exhibited by members with similar known characteristics. Deferred benefits are estimated at termination until OP&F has determined the actual amount at retirement. Reported salaries that are less than \$10,000 when annualized are assumed to be anomalous and are reset to \$60,000. The adjustment for late reported salaries is not applied in this case.

Table 9

Description of Actuarial Assumptions and Methods (continued)

Late Reported Salaries

1.427 percent load to 2016 reported salaries to account for salaries accrued but not reported for the valuation. This adjustment is based on plan experience for the prior two years. This adjustment will be reviewed annually for future late reported salaries.

Percent Married

75 percent of active members are assumed to be married.

Age of Spouse

Wives are assumed to be three years younger than their husbands.

Optional Form Election

33 percent of service retirees and 10 percent of disability retirees are assumed to elect the 40 percent Joint and Survivor pension at retirement. If the joint annuitant predeceases the retiree, the increase, or pop-up, in the retiree's benefit associated with the 40 percent Joint and Survivor pension is assumed to be 14.36 percent for disability retirees and 10.50 percent for all other retirees.

DROP Account Distributions

For members who terminate DROP before the required three or five years, distribution of the account balance is assumed to be made in a lump sum payment at the end of the three or five year period. Distributions for other members are assumed to be made in a lump sum or installments at retirements in a pattern equivalent to 25 percent receiving lump sums, 30 percent receiving installments over two years, and 45 percent receiving installments over 10 years.

Dependent Parents

None anticipated, but dependency of any dependent parent in receipt of benefits is assumed to continue for the parent's lifetime.

Dependent Children

Each married member is assumed to have two children, born when the member was age 26. Dependency is assumed to cease when the child is 22.

Medicare Part B Premium Trend Rates

The Medicare Part B premium subsidy (\$134.00 per month for 2017) is assumed to increase as follows:

Year	Increase
2016	5.30%
2017	5.20%
2018	5.10%
2019 and Later	5.00%

Medicare Part B Premium Reimbursement

90 percent of members are assumed to be eligible for reimbursement once they reach age 65.

The Medicare Part B Premium assumptions are only used to determine the cost if the Medicare Part B reimbursement payments were to be paid from the pension trust instead of the Health Care Stabilization Fund.

Table 9

Description of Actuarial Assumptions and Methods (continued)

Methods

Actuarial Cost Method

Projected benefit method with individual level percentage entry age normal cost and actuarial accrued liability. Gains and losses are reflected in the actuarial accrued liability. Prior to Jan. 1, 2015, to be consistent with the asset methodology employed by OP&F, DROP balances were netted out of the liabilities.

Adjustment for Re-Employed Retirees

The present value of future benefits and the actuarial accrued liability are increased by an amount for the re-employed retirees' defined contribution plan benefit equal to two times the re-employed retirees' post-retirement contribution balances on the valuation date.

Adjustment for Employer Accrued Liability

The actuarial accrued liability is reduced by the present value of special employer contributions -- referred to as "Local Funds." Local governments are required by state statute to pay the unfunded portion of the actuarially-determined liability of the local police and firefighter's relief and pension funds that were merged to form OP&F in 1967. The ORC designates this obligation of the local governments to the Employers' Accrued Liability. Interest on the outstanding balance is being accrued at the rate of 4.25 percent, compounded semiannually. Local governments began repayment in 1969 and payments are required to be made until 2035. The present value of the remaining payments on the valuation date is determined using the valuation interest rate.

Asset Valuation Method

A four-year moving average market value of assets that spreads the difference between the actual investment income and the expected income on the market value (based on the valuation interest rate) over a period of four years. The actuarial value shall not be less than 80 percent or more than 120 percent of market value.

Data

Census and Assets

The valuation was based on members of OP&F as of the valuation date and does not take into account future members. All census and asset data was supplied by OP&F. Salaries and benefits tabulated in the tables in this report were summed to pennies, but displayed to whole dollars, thus, totals may not be consistent with amounts displayed due to rounding.

Table 10 Plan Summary

Summary of Benefit and Contribution Provisions

The following is intended to summarize the key provisions valued in this valuation. Members of OP&F and other parties should not rely on this summary as a substitute for or legal interpretation of the laws and rules covering this retirement plan.

Membership

Membership in OP&F is mandatory under Ohio Law for all full-time police officers employed by Ohio municipalities and appointed under the required statutory provisions. Membership is also mandatory for all full-time firefighters employed by Ohio municipalities, townships, villages, joint fire districts or other political subdivisions. In order to become members of OP&F, full-time firefighters are required to satisfactorily complete, or have satisfactorily completed, a firefighter training course approved under former Section 3303.07, Section 4765.55 or conducted under Section 3737.33 of the ORC.

Eligibility for Membership

Full-time police officers or firefighters are eligible for membership in OP&F immediately upon commencement of employment as a full-time police officer or firefighter.

Contributions

Employer and member contributions are established by statute and both are due monthly. Employers of police officers pay 19.5 percent of salary; employers of firefighters pay 24 percent of salary. Members contributed 10 percent of salary through July 1, 2013. On July 2, 2013 the member contribution rate increased by 0.75 percent to 10.75 percent. The member contribution rate increased annually by 0.75 percent until it reached the current 12.25 percent on July 2, 2015.

Employer Contribution Rates – Percentage of Active Member Payroll:

Time Frame of Rates	Police	Fire
Jan 1, 1986 thru Present	19.50%	24.00%

Member Contribution Rates – Percentage of Active Member Payroll:

Time Frame of Rates	Police	Fire
July 2, 2015 and Thereafter	12.25%	12.25%
July 2, 2014 thru July 1, 2015	11.50%	11.50%
July 2, 2013 thru July 1, 2014	10.75%	10.75%
Sept. 9, 1988 thru July 1, 2013	10.00%	10.00%

Table 10

Plan Summary (continued)

Benefits

Service Retirement

Upon attaining a qualifying age with sufficient years of service, a member of OP&F may retire and receive a lifetime monthly pension. OP&F offers four types of service retirement: normal, service commuted, age/service commuted and actuarially reduced. Each type has different eligibility guidelines and is calculated using the member's average annual salary.

Since average annual salary is subject to certain statutory and administrative limitations, not all salary, earnings, or compensation may be used in the calculation. OP&F calculates allowable average annual salary as follows:

- For OP&F members with 15 or more years of service credit as of July 1, 2013, average annual salary is an average of the three years of highest allowable earnings, regardless of when in their career the highest years occurred.
- For OPF members with less than 15 years of service credit as of July 1, 2013, average annual salary is an average of the five years of highest allowable earnings, regardless of when in their career the highest years occurred.
- A "salary benchmark" is established for members with 15 or more years of service credit as of July 1, 2013, under which certain increases are excluded from salary for the purpose of determining allowable average annual salary. This benchmarking does not apply to members with less than 15 years of service credit as of July 1, 2013.

Normal Service Retirement

Eligibility

For members hired into an OP&F-covered position after July 1, 2013, minimum retirement age is 52 with at least 25 years of service credit.

For members hired into an OP&F-covered position on or before July 1, 2013, minimum retirement age is 48 with 25 years of service credit.

Benefit

An annual pension equal to a percentage of the allowable average annual salary. The percentage equals 2.5 percent for each of the first 20 years of service, 2.0 percent for each of the next five years of service, and 1.5 percent for each year of service in excess of 25 years. The maximum pension of 72 percent of the allowable average annual salary is paid after 33 years of service.

Service Commuted Retirement

Eligibility

For members hired into an OP&F-covered position after July 1, 2013, the minimum retirement age is 52, they must have at least 15 years of service credit and 25 years have elapsed from the date of their full-time hire.

For members hired into an OP&F-covered position on or before July 1, 2013, the minimum retirement age is 48, they must have at least 15 years of service credit and 25 years of service and 25 years have elapsed from the date of their full-time hire.

Table 10

Plan Summary (continued)

Benefit

An annual pension equal to 1.5 percent of the allowable average annual salary multiplied by the number of full years of service credit (up to 25 years).

Age/Service Commuted Retirement

Eligibility

Age 62, 15 years of service credit and still working as a full-time police officer or firefighter.

Benefit

An annual pension that uses the same formula as for the Normal Service Retirement benefit.

Actuarially Reduced

Eligibility

For members hired into an OP&F-covered position after July 1, 2013, age 48 with 25 years of service.

Benefit

An annual pension reduced to the actuarial equivalent of the amount payable had the member retired at age 52.

Rights Upon Separation From Service

Deferred Pension

If a member meets the years of service credit required for any of the service retirement pensions but leaves service before attaining the minimum retirement age, a pension becomes payable upon attainment of the qualifying age and filing the appropriate paperwork with OP&F.

Refund of Employee Contributions

Upon separation from service, a member can receive the contributions that he or she made to the plan or the employee share of member contributions picked-up on the member's behalf by their employer. Employer contributions are not refundable.

Termination before Retirement with 25 Years of Service Credit

Benefit

Same as the Normal Service Retirement benefit, except benefit commences once the member reaches minimum retirement age.

- For members hired into an OP&F-covered position after July 1, 2013, minimum retirement age is 52.
- For members hired into an OP&F-covered position on or before July 1, 2013, minimum retirement age is 48.

Table 10

Plan Summary (continued)

Termination before Retirement with 15 Years of Service Credit

Benefit

Same as the Service Commuted Retirement, except benefit commences once the member reaches minimum retirement age and 25 years have elapsed from the date of full-time hire.

- For members hired into an OP&F-covered position after July 1, 2013, the minimum retirement age is 52.
- For members hired into an OP&F-covered position on or before July 1, 2013, the minimum retirement age is 48.

Termination Before Retirement With Less Than 15 Years of Service Credit

Benefit

A lump sum amount equal to the sum of the member's contributions to OP&F.

Deferred Retirement Option Plan

Eligibility

When a member is eligible for a normal service retirement they can enter DROP by delaying retirement and continuing to work as a full-time police officer or firefighter.

- For members hired into an OP&F-covered position after July 1, 2013, normal service retirement eligibility is age 52 with at least 25 years of service credit.
- For members hired into an OP&F-covered position on or before July 1, 2013, normal service retirement eligibility is age 48 with at least 25 years of service credit.

Benefit

DROP is a cost neutral benefit offered by OP&F. Upon the DROP effective date, the member's pension is calculated as if that were their date of retirement. While the member continues to work and draw their normal salary, the amount they would have received in retirement benefits accumulates tax-deferred at OP&F on their behalf, as well as a portion of their OP&F employee contributions and interest. Since the member's pension has already been calculated:

- The years of DROP service do not apply towards the member's normal service retirement.
- If a member earns a higher salary after their DROP effective date due to a raise, job promotion, etc., it will not be used to recalculate their pension and, therefore, will not result in that member receiving a higher pension upon retirement.

The DROP interest rate is set by administrative rule and is subject to change at any time. OP&F credits interest to all DROP balances each month at a rate equal to the 10-year United States (U.S.) Treasury Note Business Day Series, as published by the U.S. Department of the Treasury, with a cap of five percent. This variable interest rate is adjusted quarterly to match the published 10-year U.S. Treasury Note rate for the last trading business day of the preceding quarter and is in effect for the subsequent quarter.

Members whose election to participate in DROP is effective after July 1, 2013 do not qualify for annual cost-of-living allowances (COLA) at any time during DROP. Members whose election to participate in DROP is effective on or before July 1, 2013 will continue to receive a cost-of-living allowance during DROP, but only when they reach 55 years of age and have been participating in DROP for at least one year. Those members whose enrollment date into DROP qualify them for a cost-of-living allowance during DROP will receive three percent of their base pension.

Table 10 Plan Summary (continued)

Member contributions are credited to their DROP account based on the number of years of DROP service. For those members whose election to participate in DROP is effective after July 1, 2013, OP&F applies contributions to DROP in the following manner:

Years of DROP Service	Percentage of Member Contributions
Years 1-3	50 percent of member's contributions
Year 4-5	75 percent of member's contribution
Years 6-8	100 percent of member's contributions

For this group of members, the minimum participation in DROP, without penalty, is five years and the maximum is eight.

- If a member terminates employment within the first five years of joining DROP, then the member forfeits all of their DROP interest. In addition to losing their accumulated interest, members who choose to terminate employment before completing their required participation period cannot withdraw any of the funds in their DROP account until the minimum participation period has expired. The only exception to this rule is if the member dies during the minimum participation period. The member's surviving spouse, designated beneficiary or estate, as applicable will receive the entire DROP account balance determined at the time of death.
- If a member chooses to continue working after eight years in DROP, the member forfeits all DROP benefits and receives the Normal Service Retirement benefit upon retirement, which will be calculated to include the service credit earned during the DROP participation period.

For those members whose election to participate in DROP was on or before July 1, 2013, member contributions are applied to DROP under the following schedule:

Years of DROP Service	Percentage of Member Contributions
Years 1-2	50 percent of member's contributions
Year 3	75 percent of member's contribution
Years 4-8	100 percent of member's contributions

For this group of members, the minimum participation in DROP, without penalty, is three years and the maximum is eight.

- If a member terminates employment within the first three years of joining DROP, then the member forfeits all of their DROP interest. In addition to losing their accumulated interest, members who choose to terminate employment before completing their required participation period cannot withdraw any of the funds in their DROP account until the minimum participation period has expired. The only exception to this rule is if the member dies during the minimum participation period. The member's surviving spouse, designated beneficiary or estate, as applicable will receive the entire DROP account balance determined at the time of death.
- If a member chooses to continue working after eight years in DROP, the member forfeits all DROP benefits and receives the Normal Service Retirement benefit upon retirement, which will be calculated to include the service credit earned during the DROP participation period.

All DROP members retiring before the eight-year max receive their Normal Service Retirement benefit determined at the time of DROP entry, with the COLA adjustment (if applicable) to date of retirement when eligible. These members will also receive the DROP account balance as a lump sum or monthly annuity.

Table 10

Plan Summary (continued)

If a member dies while participating in DROP, the member's surviving spouse, designated beneficiary or estate will receive the entire DROP account balance determined at the time of death. The surviving spouse or contingent dependent beneficiary will receive the greater of the retirement allowance made at the time of DROP entry or the Normal Service Retirement benefit paid with COLA adjustments (if applicable) to the date of death, paid as if the member had elected a 50 percent joint and survivor option at death. All other statutory death benefits will apply.

If the member becomes disabled while in DROP, and has not terminated employment, the member must choose either to receive a disability benefit or a service retirement with DROP. If the member chooses the disability benefit, the member forfeits all DROP benefits and receives the disability benefit, with service credit during the DROP period included.

Disability Benefits

Members who become unable to perform their official duties and whose earning capacities are impaired may qualify for disability benefits. Disability benefits are classified as either service-incurred (on-duty) or non-service-incurred (off-duty) and differ in eligibility requirements and benefit formulas. Annual medical evaluations are required for disability benefit recipients who would not have met the age and service requirements for a Normal Service Retirement, unless the Board of Trustee waives this requirement based upon an OP&F physician's certification that the disability is ongoing and further evaluation would not be cost effective. Annual earnings statements are also required to be submitted to OP&F.

Permanent and Total Disability (On-Duty)

Eligibility

No age or service requirement.

Benefit

An annual benefit equal to 72 percent of the allowable average annual salary.

Partial Disability (On-Duty)

Eligibility

No age or service requirement.

Benefit

If the member has less than 25 years of service credit an annual benefit fixed by the Board of Trustees to be a certain percent up to 60 percent of the allowable average annual salary. If the member has 25 or more years of service credit, the annual disability benefit is equal to the Normal Service Retirement amount.

Non-Service Incurred Disability (off-Duty)

Eligibility

Any age and five years of service credit.

Benefit

An annual amount is the percent awarded by the Board of Trustees and may not exceed 60 percent of the allowable average annual salary. Service over 25 years cannot be used in calculating an off-duty disability award.

Table 10

Plan Summary (continued)

Pre-Retirement Survivor Annuity

Eligibility

Upon death before retirement, but after having satisfied the requirements for a Normal Service Retirement or an Age/Service Commuted retirement.

Benefit

The surviving spouse or contingent dependent beneficiary will receive the equivalent of a 50 percent joint and survivor annuity, calculated under the assumption that the decedent had retired effective the day following his/her death.

Statutory Survivor Benefits

Eligibility

Upon death of any active or retired member of OP&F.

Benefit

- **Surviving Spouse's Benefit**

An annual amount equal to \$6,600 (\$550 monthly), plus an annual COLA of three percent of the original base benefit, paid each July 1, beginning July 1, 2000. The benefit is paid to the surviving spouse for life.

If the spouse is receiving a full death benefit under the Death Fund Benefit statute, the spouse's statutory survivor benefit is \$4,920 (\$410 monthly). The Death Benefit Fund is funded by the State of Ohio and provides special benefits to eligible survivors of public safety officers who are killed in the line of duty or who die from injuries or disease incurred in the performance of official duties. These eligible survivors are entitled to receive the member's full monthly salary, which will be reduced at the member's retirement eligibility date. These death benefit payments are in addition to any optional payment plan benefits elected by the member.

- **Surviving Child's Benefit**

An annual amount equal to \$1,800 (\$150 monthly), payable until such child attains age 18 or marries, whichever occurs first. The payment can continue to an unmarried full-time student until age 22. A dependent disabled child, regardless of age at time of member's death, is entitled to a benefit until death or recovery from disability. A COLA of three percent of the original base is payable each July 1.

- **Dependent Parents' Benefit**

If there is no surviving spouse or dependent children, an annual amount of \$2,400 (\$200 monthly) is payable to one dependent parent or \$1,200 (\$100 monthly) each to two dependent parents for life or until dependency ceases or remarriage. A COLA of three percent of the original base is payable each July 1.

Table 10
Plan Summary (continued)

Survivors	Monthly Pension	Causes of Termination
Widow / Widower	current amount + future COLA	* Death
Minor child	current amount + future COLA	* Death * Marriage * Attainment of age 18
Dependent disabled child	current amount + future COLA	* Death * Recovery from disability
Student	current amount + future COLA	* Death * Marriage * Attainment of age 22 * Loss of student status
One dependent parent	current amount + future COLA	* Death * Re-marriage
Two dependent parents	½ current amount (each) + future COLA	* Termination of dependency

Benefit Type	Base Monthly Benefit Amount	Base Monthly Benefit Amount Plus Increases Through July 1, 2016	Monthly Increases Effective July 1, 2017
Spouse *	\$550	\$826.10 **	\$16.50
Child	150	225.30 ***	4.50
One Parent	200	300.40 ****	6.00
Two Parents	100	150.20	3.00

* Spouse's benefit is \$410 if spouse is receiving a full death benefit under the Death Fund Benefit statute. There is no annual increase on this benefit payment.

** On July 1, 2000 the Statutory Surviving Spouse Benefit increased by \$12.10 per month. This increase was a percentage of the original benefit amount, equaling the percentage increase in the CPI plus unused prior increases, to a maximum of three percent. Every year after 2000, the monthly increase was \$16.50 or three percent of the base benefit.

*** On July 1, 2000 the Statutory Child Benefit increased by \$3.30 per month. This increase was a percentage of the original benefit amount, equaling the percentage increase in the CPI plus unused prior increases, to a maximum of three percent. Every year after 2000, the monthly increase was \$4.50 or three percent of base benefit.

**** On July 1, 2000 the Statutory Surviving One Parent Benefit increased by \$4.40 per month. This increase was a percentage of the original benefit amount, equaling the percentage increase in the CPI plus unused prior increases, to a maximum of three percent. Every year after 2000, the monthly increase was \$6.00 or three percent of base benefit.

Table 10

Plan Summary (continued)

Lump Sum Death Benefit

Eligibility

Upon death of any retired or disabled member of OP&F.

Benefit

A lump sum payment of \$1,000 is paid to the member's surviving spouse or, if no surviving spouse, to a designated beneficiary. If there is no surviving spouse or beneficiary, then it is paid to the member's estate.

Annuities

Effective Feb. 28, 1980, for those members who are retiring on either a service pension or a disability benefit, optional annuity plans can be chosen, subject to certain limitations. The member can elect actuarially reduced benefits under a joint and survivor annuity, life annuity certain and continuous, or multiple beneficiary annuity plan. The optional annuity plans allow the member's beneficiary(ies) to receive a lifetime payment upon the member's death.

Annuity Types

Single Life Annuity

For unmarried members, this is the standard annuity plan. Married members may elect this plan only if the spouse consents to the selection in writing. This plan pays the maximum retirement allowance that the member is entitled to receive and, upon the member's death, none of the pension or benefit is continued to any beneficiary.

Joint and Survivor Annuity (JSA)

Under this plan, a member designates that, upon his or her death, a certain percentage of the member's actuarially reduced benefit is continued to a surviving designated beneficiary for life.

Any percentage between one percent and 100 percent of the member's reduced pension may be continued to the surviving designated beneficiary, but the percent continued may be limited based on the beneficiary's age. If a member is married at the time benefits are elected, the standard plan is a 50 percent JSA continuing one-half of the member's reduced monthly benefit to his or her surviving spouse. If the member wants to select a plan which provides for the continuation of benefits for someone other than the spouse or less than 50 percent JSA to the spouse, the spouse must consent in writing to this choice. This plan automatically terminates upon death of the beneficiary, to be effective the month following OP&F's receipt of notice of death, or it may be cancelled upon divorce with the consent of the member's spouse or a specific court order, at which point the annuity reverts to the single life annuity to the member. Elected option may be cancelled within one year after benefits commence, with the consent of the beneficiary.

Multiple Beneficiary Annuity

Under the multiple beneficiary annuity plan, a member may designate up to four beneficiaries at the time of retirement so that, upon death, a certain percentage of the member's actuarially reduced benefit is continued to the surviving beneficiaries for their lives. If the member is married at the time of retirement, the spouse must consent in writing for an annuity selection that provides for less than 50 percent JSA payable to the spouse.

Table 10

Plan Summary (continued)

Life Annuity Certain and Continuous (LACC)

This plan provides a lifetime allowance to the member and will only be paid to a designated beneficiary if the member dies and the period elected by the member has not expired. The minimum guarantee period is five years and the maximum is 20 years. 100 percent of the member's reduced pension continues to the beneficiary for the guarantee period selected. Elected option may be cancelled within one-year after benefits commence, with the consent of the beneficiary. If the member is married at the time of retirement, the spouse must consent in writing for an annuity selection that provides for less than a 50 percent JSA payable to the spouse.

Tiered Retirement Plan – COLA or Terminal Pay (Non-COLA)

Members retiring on or after July 24, 1986, who had 15 or more years of service credit as of Jan. 1, 1989, are eligible to select between two different pension calculation plans. Under the terminal pay method, a member's monthly pension benefit is calculated using terminal payouts at the time of retirement such as accrued sick leave and vacation compensation to increase the amount of the average annual salary, but subject to certain limitations, and these members are not eligible to receive cost-of-living allowance adjustments. Under the COLA method, terminal payments are not included in the calculation of a member's average annual salary, but the member is eligible to receive COLA increases. The COLA method is the automatic calculation method for any active member with fewer than 15 years of service as of Jan. 1, 1989.

Under the COLA method, members who are at least 55 years old and have been receiving OP&F pension benefits for at least one year are eligible for cost-of-living allowance adjustments. The age 55 provision for receiving a COLA does not apply to those who are receiving a permanent and total disability benefit, surviving beneficiaries under optional plans and statutory survivors.

The COLA amount for members who have 15 or more years of service credit as of July 1, 2013 and members who are receiving a pension benefit that became effective before July 1, 2013 will be equal to three percent of the member's base pension benefit.

The COLA amount for members who have less than 15 years of service credit as of July 1, 2013, and members whose pension benefit became effective on or after July 1, 2013, will be equal to a percentage of the member's base pension benefit where the percentage is the lesser of three percent or the percentage increase in the consumer price index, if any, over the twelve-month period that ends on the thirtieth day of September of the immediately preceding year, rounded to the nearest one-tenth of one percent.

Members who retired prior to July 24, 1986 or their surviving beneficiaries under optional plans are entitled to cost-of-living allowance increases. The annual increase is paid on July 1st of each year. The annual COLA increase is \$360 under a Single Life Annuity Plan with proportional reductions for optional payment plans.

Re-employed Retiree's Defined Contribution Plan Benefit

Effective June 30, 1991, every person who is retired under an Ohio public pension plan and who is re-employed in an OP&F covered position must contribute to OP&F at the same rate as other police officers or firefighters. The employer pays the normal rate as well. If the re-employed member terminates employment before age 60, Ohio law allows the member to receive a lump sum payment of post-retirement employee contributions made during the period of re-employment, plus interest. If the member waits until age 60 to receive this benefit, he or she can choose to receive either a lump sum payment in an amount equal to twice his or her contributions, plus

Table 10

Plan Summary (continued)

interest, or a lifetime annuity paid monthly. If, after calculation, the member's lifetime monthly annuity is less than \$25, the member may only select the lump sum payment option. If the member is married spousal consent is required before payment can occur.

Group Health Insurance and Medicare

Commencing Jan. 1, 1974, the Board of Trustees may contract for group health insurance on the basis of part or all of the cost of the premium for the coverage to be paid by OP&F. Medical and prescription drug coverage sponsored by OP&F are not vested rights and are subject to change at any time upon action of the Board of Trustees.

Effective Jan. 1, 1977, OP&F is mandated to pay the premium for supplemental Medicare (Part B) up to the statutory maximum provided the benefit recipient is not eligible for reimbursement from any other sources. By law, OP&F is required to pay monthly to each recipient of service benefits, disability benefits and survivor benefits not less than \$96.40, with the exception that OP&F cannot pay an amount that exceeds the amount paid by the recipient for the coverage. Once OP&F obtains the proper documentation from the service retiree, disability retiree or surviving beneficiary of their enrollment in the Medicare program, Medicare (Part B) premium payments begin.

Note: This benefit is not included in the principal valuation results, but is included in the retiree health care valuation results.

Effective July 1992, retirees and survivors make monthly medical benefit contributions, which are credited to the Health Care Stabilization Fund. These contributions are reviewed on an annual basis to determine adequacy with the rising cost of health care. In 2004, a new contribution strategy was implemented. Retirees and survivors now pay a percentage of the full cost of the benefit. The percentage ranges from 25 percent to 100 percent for themselves and dependents based on the year of retirement.

Table 11
Summary of Membership Data as of January 1, 2017

Active Members

POLICE

Item	Male	Female	Total
Number of Members	13,620	1,450	15,070
Annual Salaries	\$ 1,035,751,523	\$ 106,139,261	\$ 1,141,890,785
Average Annual Salary	\$ 76,046	\$ 73,199	\$ 75,772
Average Age	42.1	41.6	42.0
Average Service	14.8	14.0	14.8

FIREFIGHTERS

Item	Male	Female	Total
Number of Members	12,581	339	12,920
Annual Salaries	\$ 977,409,340	\$ 24,965,342	\$ 1,002,374,682
Average Annual Salary	\$ 77,689	\$ 73,644	\$ 77,583
Average Age	42.9	41.9	42.8
Average Service	15.4	13.2	15.3

TOTAL

Item	Male	Female	Total
Number of Members	26,201	1,789	27,990
Annual Salaries	\$ 2,013,160,864	\$ 131,104,603	\$ 2,144,265,467
Average Annual Salary	\$ 76,835	\$ 73,284	\$ 76,608
Average Age	42.4	41.6	42.3
Average Service	15.1	13.9	15.0

Table 11
Summary of Membership Data as of January 1, 2017 (continued)

Inactive Members

POLICE

Item	Male	Female	Total
Eligible for Allowances	117	11	128
Eligible for Refunds Only	<u>2,123</u>	<u>331</u>	<u>2,454</u>
Total	2,240	342	2,582

FIREFIGHTERS

Item	Male	Female	Total
Eligible for Allowances	69	3	72
Eligible for Refunds Only	<u>600</u>	<u>60</u>	<u>660</u>
Total	669	63	732

TOTAL

Item	Male	Female	Total
Eligible for Allowances	186	14	200
Eligible for Refunds Only	<u>2,723</u>	<u>391</u>	<u>3,114</u>
Total	2,909	405	3,314

Table 11
Summary of Membership Data as of January 1, 2017 (continued)

Retirees and Beneficiaries

POLICE

Item	Number	Annual Allowance	Average Allowance	Average Age
Service Retirees	8,307	\$ 389,564,090	\$ 46,896	68.0
Survivors and Beneficiaries	4,484	48,150,356	10,738	71.5
Disability Retirees	<u>3,732</u>	<u>144,463,120</u>	38,709	62.8
Total	16,523	\$ 582,177,566	\$ 35,234	67.8

FIREFIGHTERS

Item	Number	Annual Allowance	Average Allowance	Average Age
Service Retirees	6,406	\$ 299,235,268	\$ 46,712	68.8
Survivors and Beneficiaries	3,433	36,558,834	10,649	73.8
Disability Retirees	<u>2,551</u>	<u>103,537,409</u>	40,587	64.8
Total	12,390	\$ 439,331,511	\$ 35,459	69.4

TOTAL

Item	Number	Annual Allowance	Average Allowance	Average Age
Service Retirees	14,713	\$ 688,799,358	\$ 46,816	68.4
Survivors and Beneficiaries	7,917	84,709,190	10,700	72.5
Disability Retirees	<u>6,283</u>	<u>248,000,529</u>	39,472	63.6
Total	28,913	\$ 1,021,509,077	\$ 35,330	68.5

Exhibit I

Active Membership Data as of January 1, 2017

Number and Allowable Average Annual Salary

Police

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	441 \$48,753									441 \$48,753
25-29	1,536 \$56,748	174 \$78,349								1,710 \$58,946
30-34	938 \$59,185	859 \$75,235	209 \$82,474							2,006 \$68,484
35-39	366 \$59,779	509 \$73,358	787 \$80,142	304 \$84,782	2 \$99,128					1,968 \$75,337
40-44	148 \$50,972	218 \$69,212	498 \$77,734	1,143 \$81,668	382 \$87,709	7 \$104,985				2,396 \$78,852
45-49	74 \$50,735	113 \$68,984	283 \$75,237	789 \$78,588	1,476 \$86,530	450 \$89,807	6 \$82,697			3,191 \$82,569
50-54	28 \$56,696	37 \$64,692	88 \$72,455	212 \$75,780	544 \$81,665	964 \$89,767	274 \$90,330	8 \$89,377	1 \$91,221	2,156 \$84,852
55-59	12 \$49,919	17 \$63,249	21 \$69,579	57 \$71,530	168 \$75,178	304 \$84,687	288 \$90,711	35 \$95,892	1 \$89,885	903 \$83,232
60-64	8 \$53,848	10 \$61,649	5 \$84,460	15 \$64,137	57 \$74,673	71 \$76,905	64 \$87,109	23 \$89,079	3 \$118,821	256 \$78,627
Over 64	2 \$ 29,250	2 \$ 80,021	1 \$ 74,034	3 \$ 78,870	4 \$ 83,871	10 \$ 71,287	8 \$ 83,447	4 \$ 67,171	9 \$ 89,232	43 \$ 77,137
Total	3,553 \$56,300	1,939 \$73,609	1,892 \$78,566	2,523 \$80,249	2,633 \$84,721	1,806 \$88,373	640 \$90,022	70 \$91,268	14 \$95,761	15,070 \$75,772

Note: Excludes rehired retirees.

Exhibit I

Active Membership Data as of January 1, 2017

Number and Allowable Average Annual Salary (continued)

Firefighters

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	289 \$51,353	1 \$72,474								290 \$51,426
25-29	1,008 \$57,388	173 \$71,184								1,181 \$59,409
30-34	789 \$60,187	723 \$73,478	216 \$80,512							1,728 \$68,289
35-39	362 \$60,944	526 \$74,682	665 \$79,194	337 \$83,453	4 \$91,805					1,894 \$75,237
40-44	88 \$58,111	187 \$75,322	463 \$78,211	1,009 \$83,024	285 \$86,107	5 \$88,743				2,037 \$80,592
45-49	25 \$57,681	79 \$74,546	266 \$76,389	755 \$81,186	866 \$87,046	363 \$92,036	3 \$80,669			2,357 \$83,997
50-54	11 \$55,230	21 \$69,855	82 \$74,504	272 \$82,052	594 \$85,596	764 \$88,049	267 \$92,037	7 \$92,912		2,018 \$86,145
55-59	6 \$66,780	13 \$66,657	24 \$73,718	84 \$81,146	227 \$84,787	387 \$85,354	295 \$90,580	45 \$93,077	1 \$70,193	1,082 \$86,055
60-64	2 \$55,512	4 \$46,970	12 \$74,140	25 \$77,063	54 \$81,985	77 \$81,073	89 \$89,615	20 \$89,952	4 \$93,381	287 \$83,391
Over 64			3 \$82,351	2 \$77,811	11 \$79,638	11 \$81,478	10 \$83,140	6 \$81,670	3 \$90,291	46 \$81,897
Total	2,580 \$58,106	1,727 \$73,706	1,731 \$78,337	2,484 \$82,289	2,041 \$86,077	1,607 \$87,924	664 \$90,880	78 \$91,384	8 \$89,324	12,920 \$77,583

Note: Excludes rehired retirees.

Exhibit I

Active Membership Data as of January 1, 2017

Number and Allowable Average Annual Salary (continued)

Total

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 25	730 \$49,783	1 \$72,474								731 \$49,814
25-29	2,544 \$57,002	347 \$74,777								2,891 \$59,135
30-34	1,727 \$59,643	1,582 \$74,432	425 \$81,477							3,734 \$68,394
35-39	728 \$60,358	1,035 \$74,031	1,452 \$79,708	641 \$84,083	6 \$94,246					3,862 \$75,288
40-44	236 \$53,634	405 \$72,033	961 \$77,964	2,152 \$82,303	667 \$87,024	12 \$98,218				4,433 \$79,652
45-49	99 \$52,489	192 \$71,272	549 \$75,795	1,544 \$79,859	2,342 \$86,721	813 \$90,803	9 \$82,021			5,548 \$83,175
50-54	39 \$56,282	58 \$66,561	170 \$73,443	484 \$79,305	1,138 \$83,717	1,728 \$89,008	541 \$91,173	15 \$91,027	1 \$91,221	4,174 \$85,477
55-59	18 \$55,540	30 \$64,726	45 \$71,787	141 \$77,259	395 \$80,700	691 \$85,061	583 \$90,645	80 \$94,309	2 \$80,039	1,985 \$84,771
60-64	10 \$54,181	14 \$57,455	17 \$77,175	40 \$72,216	111 \$78,230	148 \$79,074	153 \$88,566	43 \$89,485	7 \$104,284	543 \$81,145
Over 64	2 \$29,250	2 \$80,021	4 \$80,272	5 \$78,446	15 \$80,767	21 \$76,625	18 \$83,277	10 \$75,871	12 \$89,497	89 \$79,597
Total	6,133 \$57,060	3,666 \$73,655	3,623 \$78,456	5,007 \$81,261	4,674 \$85,313	3,413 \$88,161	1,304 \$90,459	148 \$91,329	22 \$93,420	27,990 \$76,608

Note: Excludes rehired retirees.

Exhibit II

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances

Police

Annual Allowances as of January 1, 2017				
Group	Number	Basic	Cost-of-Living Increases	Total
Service Retirees				
Males	7,876	\$ 274,784,833	\$ 94,189,847	\$ 368,974,680
Females	<u>431</u>	<u>16,520,696</u>	<u>4,068,714</u>	<u>20,589,410</u>
Subtotal	8,307	\$ 291,305,529	\$ 98,258,561	\$ 389,564,090
Survivors and Beneficiaries				
Males	185	\$ 790,207	\$ 317,354	\$ 1,107,561
Females	<u>4,299</u>	<u>32,251,491</u>	<u>14,791,304</u>	<u>47,042,795</u>
Subtotal	4,484	\$ 33,041,698	\$ 15,108,658	\$ 48,150,356
Disability Retirees				
Males	3,233	\$ 91,841,971	\$ 33,703,523	\$ 125,545,494
Females	<u>499</u>	<u>14,472,385</u>	<u>4,445,241</u>	<u>18,917,626</u>
Subtotal	3,732	\$ 106,314,356	\$ 38,148,764	\$ 144,463,120
Grand Total	16,523	\$ 430,661,583	\$ 151,515,983	\$ 582,177,566

Exhibit II

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances (continued)

Firefighters

Annual Allowances as of January 1, 2017				
Group	Number	Basic	Cost-of-Living Increases	Total
Service Retirees				
Males	6,357	\$ 222,257,958	\$ 74,759,691	\$ 297,017,649
Females	<u>49</u>	<u>1,997,587</u>	<u>220,032</u>	<u>2,217,619</u>
Subtotal	6,406	\$ 224,255,545	\$ 74,979,723	\$ 299,235,268
Survivors and Beneficiaries				
Males	112	\$ 271,190	\$ 114,320	\$ 385,510
Females	<u>3,321</u>	<u>24,927,378</u>	<u>11,245,946</u>	<u>36,173,324</u>
Subtotal	3,433	\$ 25,198,568	\$ 11,360,266	\$ 36,558,834
Disability Retirees				
Males	2,448	\$ 74,323,653	\$ 25,593,332	\$ 99,916,985
Females	<u>103</u>	<u>2,958,024</u>	<u>662,400</u>	<u>3,620,424</u>
Subtotal	2,551	\$ 77,281,677	\$ 26,255,732	\$ 103,537,409
Grand Total	12,390	\$ 326,735,790	\$ 112,595,721	\$ 439,331,511

Exhibit II

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances (continued)

Total

Group	Number	Annual Allowances as of January 1, 2017		
		Basic	Cost-of-Living Increases	Total
Service Retirees				
Males	14,233	\$ 497,042,791	\$ 168,949,538	\$ 665,992,329
Females	<u>480</u>	<u>18,518,283</u>	<u>4,288,746</u>	<u>22,807,029</u>
Subtotal	14,713	\$ 515,561,074	\$ 173,238,284	\$ 688,799,358
Survivors and Beneficiaries				
Males	297	\$ 1,061,397	\$ 431,674	\$ 1,493,071
Females	<u>7,620</u>	<u>57,178,869</u>	<u>26,037,250</u>	<u>83,216,119</u>
Subtotal	7,917	\$ 58,240,266	\$ 26,468,924	\$ 84,709,190
Disability Retirees				
Males	5,681	\$ 166,165,624	\$ 59,296,855	\$ 225,462,479
Females	<u>602</u>	<u>17,430,409</u>	<u>5,107,641</u>	<u>22,538,050</u>
Subtotal	6,283	\$ 183,596,033	\$ 64,404,496	\$ 248,000,529
Grand Total	28,913	\$ 757,397,373	\$ 264,111,704	\$ 1,021,509,077

Exhibit III

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Average Annual Allowance

Police

Age Last Birthday	Number	Annual Allowance	Average Annual Allowance
Service Retirees			
Under 60	1,506	\$ 72,127,172	\$ 47,893
60 - 64	1,754	90,309,381	51,488
65 - 69	1,906	96,867,698	50,823
70 - 74	1,418	66,994,344	47,246
75 - 79	898	36,875,394	41,064
Over 79	<u>825</u>	<u>26,390,101</u>	<u>31,988</u>
Total	8,307	\$ 389,564,090	\$ 46,896
Survivors and Beneficiaries			
Under 60	759	\$ 7,546,873	\$ 9,943
60 - 64	383	4,666,468	12,184
65 - 69	602	7,365,784	12,236
70 - 74	594	6,633,158	11,167
75 - 79	653	7,048,781	10,794
Over 79	<u>1,493</u>	<u>14,889,292</u>	<u>9,973</u>
Total	4,484	\$ 48,150,356	\$ 10,738
Disability Retirees			
Under 60	1,475	\$ 58,476,865	\$ 39,645
60 - 64	592	24,828,864	41,941
65 - 69	677	26,949,806	39,808
70 - 74	497	18,582,108	37,389
75 - 79	281	9,719,195	34,588
Over 79	<u>210</u>	<u>5,906,282</u>	<u>28,125</u>
Total	3,732	\$ 144,463,120	\$ 38,709

Exhibit III

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Average Annual Allowance (continued)

Firefighters

Age Last Birthday	Number	Annual Allowance	Average Annual Allowance
Service Retirees			
Under 60	1,209	\$ 59,953,197	\$ 49,589
60 - 64	1,319	68,659,719	52,054
65 - 69	1,270	63,630,960	50,103
70 - 74	986	46,069,403	46,724
75 - 79	690	30,451,804	44,133
Over 79	<u>932</u>	<u>30,470,185</u>	<u>32,693</u>
Total	6,406	\$ 299,235,268	\$ 46,712
Survivors and Beneficiaries			
Under 60	506	\$ 5,159,314	\$ 10,196
60 - 64	202	2,661,482	13,176
65 - 69	318	4,008,437	12,605
70 - 74	415	4,683,294	11,285
75 - 79	523	5,518,668	10,552
Over 79	<u>1,469</u>	<u>14,527,639</u>	<u>9,889</u>
Total	3,433	\$ 36,558,834	\$ 10,649
Disability Retirees			
Under 60	827	\$ 33,212,836	\$ 40,161
60 - 64	441	19,655,041	44,569
65 - 69	477	21,090,880	44,216
70 - 74	362	14,437,320	39,882
75 - 79	256	9,626,505	37,604
Over 79	<u>188</u>	<u>5,514,827</u>	<u>29,334</u>
Total	2,551	\$ 103,537,409	\$ 40,587

Exhibit III

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Average Annual Allowance (continued)

Total

Age Last Birthday	Number	Annual Allowance	Average Annual Allowance
Service Retirees			
Under 60	2,715	\$ 132,080,369	\$ 48,648
60 - 64	3,073	158,969,100	51,731
65 - 69	3,176	160,498,658	50,535
70 - 74	2,404	113,063,747	47,032
75 - 79	1,588	67,327,198	42,397
Over 79	<u>1,757</u>	<u>56,860,286</u>	<u>32,362</u>
Total	14,713	\$ 688,799,358	\$ 46,816
Survivors and Beneficiaries			
Under 60	1,265	\$ 12,706,187	\$ 10,044
60 - 64	585	7,327,950	12,526
65 - 69	920	11,374,221	12,363
70 - 74	1,009	11,316,452	11,216
75 - 79	1,176	12,567,449	10,687
Over 79	<u>2,962</u>	<u>29,416,931</u>	<u>9,931</u>
Total	7,917	\$ 84,709,190	\$ 10,700
Disability Retirees			
Under 60	2,302	\$ 91,689,701	\$ 39,830
60 - 64	1,033	44,483,905	43,063
65 - 69	1,154	48,040,686	41,630
70 - 74	859	33,019,428	38,439
75 - 79	537	19,345,700	36,026
Over 79	<u>398</u>	<u>11,421,109</u>	<u>28,696</u>
Total	6,283	\$ 248,000,529	\$ 39,472

Exhibit IV - 10-Year History of Membership Data

ACTIVE MEMBERS (Dollars in Thousands)

Valuation as of Jan. 1	Number of Members *	Percentage Change in Membership	Valuation Membership Payroll	Percentage Change in Payroll
2017	28,175	1.99%	\$ 2,153,765	4.51% **
2016	27,624	(0.52%)	2,060,851	3.74%
2015	27,769	0.59%	1,986,569	2.28%
2014	27,605	0.59%	1,942,269	1.51%
2013	27,444	(0.65%)	1,913,383	0.84%
2012	27,623	(2.12%)	1,897,413	1.55%
2011	28,222	(1.39%)	1,868,502	(1.41%)
2010	28,619	(1.52%)	1,895,196	(0.30%)
2009	29,062	0.69%	1,900,935	3.79%
2008	28,864		1,831,438	

* Includes rehired retirees

** Increase for 2017 includes 1.427% assumed increase for late reported salaries

RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS (Dollars in Thousands)

Year Ended Dec. 31	Added to Rolls		Removed from Rolls		Number on Rolls End of Year	Annual Allowances	Percentage Change in Allowances	Average Annual Allowances	Percentage Change in Membership
	Number	Annual Allowances	Number	Annual Allowances					
2016	1,401	\$ 47,436	890	\$ 21,186	28,913	\$ 1,021,509	4.67%	\$ 35.33	1.80%
2015	1,450	48,864	1,011	22,141	28,402	975,929	4.81%	34.36	1.57%
2014	1,261	41,378	859	17,204	27,963	931,176	4.59%	33.30	1.46%
2013	1,362	44,842	1,044	23,851	27,561	890,288	4.42%	32.30	1.17%
2012	1,390	48,249	1,225	19,469	27,243	852,602	5.58%	31.30	0.61%
2011	1,783	65,572	779	16,397	27,078	807,550	8.52%	29.82	3.85%
2010	1,165	34,553	803	15,721	26,074	744,144	4.74%	28.54	1.41%
2009	1,128	30,920	733	14,566	25,712	710,463	4.52%	27.63	1.56%
2008	1,046	25,590	607	12,825	25,317	679,769	4.18%	26.85	1.76%
2007	1,128	27,877	933	14,586	24,878	652,474		26.23	0.79%

Exhibit V

Reconciliation of Membership Data from January 1, 2016 to January 1, 2017

Police

	Active Members	Vested Former Members	Rehired Retirees	Disableds	Service Retirees	Beneficiaries	Total
Number as of January 1, 2016	14,719	151	127	3,754	8,048	4,424	31,223
New participants	970	0	0	0	0	0	970
Vested terminations	(11)	11	0	0	0	0	0
Non-vested terminations	(86)	0	0	0	0	0	(86)
Retirements	(415)	(11)	(7)	0	426	0	(7)
Disabilities	(53)	(5)	0	58	0	0	0
Return to work	41	(8)	0	0	0	0	33
Died with beneficiary	(13)	0	(1)	(57)	(100)	254	83
Died without beneficiary	(1)	(2)	0	(30)	(72)	(178)	(283)
Rehired retirees	0	0	23	0	0	0	23
Cessation of benefits/ cash out	(74)	(5)	(3)	0	0	(16)	(98)
Data corrections	<u>(7)</u>	<u>(3)</u>	<u>(4)</u>	<u>7</u>	<u>5</u>	<u>0</u>	<u>(2)</u>
Number as of January 1, 2017	15,070	128	135	3,732	8,307	4,484	31,856

Exhibit V

Reconciliation of Membership Data from January 1, 2016 to January 1, 2017 (continued)

Firefighters

	Active Members	Vested Former Members	Rehired Retirees	Disableds	Service Retirees	Beneficiaries	Total
Number as of January 1, 2016	12,727	85	51	2,563	6,207	3,406	25,039
New participants	655	0	0	0	0	0	655
Vested terminations	(6)	6	0	0	0	0	0
Non-vested terminations	(27)	0	0	0	0	0	(27)
Retirements	(349)	(8)	(6)	0	357	0	(6)
Disabilities	(55)	(5)	0	60	0	0	0
Return to work	19	(1)	0	0	0	0	18
Died with beneficiary	(10)	0	0	(47)	(98)	223	68
Died without beneficiary	(3)	(1)	0	(26)	(64)	(184)	(278)
Rehired retirees	0	0	5	0	0	0	5
Cessation of benefits/ Cash out	(27)	(2)	0	0	0	(12)	(41)
Data corrections	<u>(4)</u>	<u>(2)</u>	<u>0</u>	<u>1</u>	<u>4</u>	<u>0</u>	<u>(1)</u>
Number as of January 1, 2017	12,920	72	50	2,551	6,406	3,433	25,432

Exhibit V

Reconciliation of Membership Data from January 1, 2016 to January 1, 2017 (continued)

Total

	Active Members	Vested Former Members	Rehired Retirees	Disableds	Service Retirees	Beneficiaries	Total
Number as of January 1, 2016	27,446	236	178	6,317	14,255	7,830	56,262
New participants	1,625	0	0	0	0	0	1,625
Vested terminations	(17)	17	0	0	0	0	0
Non-vested terminations	(113)	0	0	0	0	0	(113)
Retirements	(764)	(19)	(13)	0	783	0	(13)
Disabilities	(108)	(10)	0	118	0	0	0
Return to work	60	(9)	0	0	0	0	51
Died with beneficiary	(23)	0	(1)	(104)	(198)	477	151
Died without beneficiary	(4)	(3)	0	(56)	(136)	(362)	(561)
Rehired retirees	0	0	28	0	0	0	28
Cessation of benefits	(101)	(7)	(3)	0	0	(28)	(139)
Data corrections	<u>(11)</u>	<u>(5)</u>	<u>(4)</u>	<u>8</u>	<u>9</u>	<u>0</u>	<u>(3)</u>
Number as of January 1, 2017	27,990	200	185	6,283	14,713	7,917	57,288

Exhibit VI
Detailed Tabulations of the Data

Exhibit VI-1

Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Age

Police

Age	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
19	3	\$ 121,687			3	\$ 121,687
20	1	60,000			1	60,000
21	12	441,217	3	159,382	15	600,599
22	50	2,204,296	10	428,380	60	2,632,676
23	129	6,185,326	25	1,087,336	154	7,272,662
24	171	8,938,556	37	1,874,066	208	10,812,622
25	227	11,995,243	41	2,199,241	268	14,194,485
26	292	16,612,442	37	2,132,399	329	18,744,840
27	303	18,158,164	43	2,238,435	346	20,396,598
28	348	21,200,665	21	1,217,026	369	22,417,691
29	370	23,339,753	28	1,704,739	398	25,044,493
30	333	21,466,718	37	2,312,693	370	23,779,411
31	380	25,520,348	28	1,943,122	408	27,463,471
32	379	26,200,258	38	2,514,873	417	28,715,131
33	370	26,554,229	36	2,506,230	406	29,060,459
34	369	25,804,798	36	2,556,434	405	28,361,231
35	345	25,284,138	38	2,781,868	383	28,066,006
36	370	27,411,613	46	3,376,316	416	30,787,929
37	344	25,991,708	37	2,718,355	381	28,710,063
38	347	26,318,618	32	2,530,166	379	28,848,784
39	389	30,315,730	20	1,534,002	409	31,849,732
40	365	27,943,884	42	3,029,451	407	30,973,335
41	395	31,029,987	38	3,069,923	433	34,099,910
42	422	33,300,031	45	3,365,261	467	36,665,292
43	453	36,176,174	55	4,328,080	508	40,504,254
44	527	42,384,061	54	4,302,883	581	46,686,944
45	599	48,599,396	57	4,546,613	656	53,146,009
46	656	53,520,058	80	6,476,091	736	59,996,149
47	594	49,244,889	62	4,948,052	656	54,192,941
48	557	46,727,208	50	4,058,360	607	50,785,569
49	482	40,945,953	54	4,409,540	536	45,355,493
50	473	39,797,629	56	4,503,865	529	44,301,495
51	438	38,051,592	45	3,343,838	483	41,395,430
52	405	34,467,264	46	3,858,427	451	38,325,691
53	332	28,168,995	36	2,903,199	368	31,072,194
54	299	25,758,527	26	2,087,198	325	27,845,725
55	265	22,381,356	25	2,210,469	290	24,591,826
56	198	16,656,506	19	1,505,844	217	18,162,350
57	152	12,643,200	13	1,053,421	165	13,696,621
58	109	8,714,623	20	1,603,713	129	10,318,337

Exhibit VI-1

Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Age

Police (continued)

Age	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
59	90	7,379,167	12	1,010,147	102	8,389,315
60	75	5,797,794	7	493,909	82	6,291,703
61	63	5,086,447	5	477,293	68	5,563,740
62	39	2,960,125	5	351,057	44	3,311,182
63	32	2,549,909	2	169,422	34	2,719,331
64	27	2,167,909	1	74,588	28	2,242,497
65	10	854,598	1	77,971	11	932,569
66	8	634,562			8	634,562
67	8	629,510			8	629,510
68	6	429,944			6	429,944
69	3	240,040			3	240,040
70	3	182,558	1	65,583	4	248,141
71						
72	1	37,130			1	37,130
73	1	40,589			1	40,589
74						
75						
76						
77	1	124,398			1	124,398
Total	13,620	\$1,035,751,523	1,450	\$ 106,139,261	15,070	\$1,141,890,785

Exhibit VI-2 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Years of Service

Police

Years of Service	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	820	\$ 37,382,042	146	\$ 6,763,443	966	\$ 44,145,485
1	692	38,435,662	95	5,340,777	787	43,776,439
2	606	36,081,448	52	2,954,947	658	39,036,394
3	570	35,195,504	48	2,885,202	618	38,080,706
4	492	32,832,600	32	2,162,956	524	34,995,556
5	387	27,861,292	33	2,294,863	420	30,156,154
6	297	21,995,837	15	1,039,950	312	23,035,786
7	215	15,378,277	16	1,233,632	231	16,611,909
8	381	28,122,184	44	3,217,588	425	31,339,772
9	492	37,044,184	59	4,540,186	551	41,584,370
10	389	30,665,838	46	3,470,673	435	34,136,510
11	291	22,446,226	42	3,169,006	333	25,615,232
12	321	25,313,368	39	2,955,763	360	28,269,131
13	297	23,509,741	34	2,593,026	331	26,102,767
14	386	30,721,942	47	3,800,657	433	34,522,599
15	423	33,166,181	53	4,306,431	476	37,472,612
16	404	32,267,477	33	2,595,817	437	34,863,294
17	451	35,617,494	53	4,256,244	504	39,873,738
18	510	41,186,079	50	3,776,382	560	44,962,461
19	498	41,294,970	48	4,000,121	546	45,295,091
20	508	42,012,878	56	4,631,240	564	46,644,118
21	532	44,916,818	53	4,135,576	585	49,052,394
22	492	42,245,807	53	4,326,348	545	46,572,155
23	431	37,666,661	58	4,682,896	489	42,349,556
24	401	34,282,686	49	4,168,763	450	38,451,449
25	372	31,842,457	34	2,880,548	406	34,723,006
26	390	34,426,372	39	3,344,374	429	37,770,746
27	317	28,343,418	29	2,472,817	346	30,816,235
28	292	26,339,077	24	1,994,930	316	28,334,007
29	284	25,827,766	25	2,129,877	309	27,957,643
30	199	17,653,778	7	571,862	206	18,225,640
31	163	14,943,682	16	1,433,517	179	16,377,199
32	134	11,928,407	10	903,082	144	12,831,489
33	71	6,578,985	5	398,776	76	6,977,762
34	31	2,880,895	4	321,087	35	3,201,982
35	27	2,405,578			27	2,405,578
36	15	1,390,612	1	90,441	16	1,481,053
37	10	832,677	2	295,463	12	1,128,140
38	6	534,156			6	534,156
39	9	839,818			9	839,818

Exhibit VI-2 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Years of Service

Police (continued)

Years of Service	Number	Male		Female		Totals	
		Number	Compensation	Number	Compensation	Number	Compensation
40	2		226,984			2	226,984
41	2		149,729			2	149,729
42							
43	2		276,046			2	276,046
44	2		176,229			2	176,229
45	2		150,575			2	150,575
46	2		176,691			2	176,691
47							
48							
49	1		60,000			1	60,000
50							
51							
52							
53							
54							
55	1		124,398			1	124,398
Total	13,620	\$ 1,035,751,523		1,450	\$ 106,139,261	15,070	\$ 1,141,890,785

Exhibit VI-3 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Age

Firefighters

Age	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
18	1	\$ 40,923			1	\$ 40,923
19	2	96,947			2	96,947
20	6	215,644			6	215,644
21	23	1,079,028			23	1,079,028
22	49	2,423,375	2	123,648	51	2,547,023
23	81	4,156,410	2	89,069	83	4,245,479
24	122	6,581,425	2	107,089	124	6,688,514
25	161	9,081,233	5	300,195	166	9,381,428
26	202	11,486,069	3	165,591	205	11,651,660
27	235	13,778,463	4	231,671	239	14,010,134
28	245	14,539,235	11	697,148	256	15,236,384
29	304	19,238,157	11	643,897	315	19,882,054
30	312	20,153,191	7	439,366	319	20,592,557
31	339	22,729,152	10	671,106	349	23,400,257
32	332	22,706,907	14	892,955	346	23,599,863
33	328	22,935,445	15	905,483	343	23,840,928
34	359	25,703,467	12	865,943	371	26,569,410
35	360	25,951,355	10	667,371	370	26,618,726
36	361	26,580,180	15	1,051,470	376	27,631,649
37	381	28,716,945	9	731,841	390	29,448,786
38	387	29,957,730	10	777,936	397	30,735,666
39	350	27,258,562	11	806,022	361	28,064,584
40	374	29,555,950	13	900,681	387	30,456,632
41	386	30,867,409	14	1,084,259	400	31,951,667
42	396	32,214,909	7	553,479	403	32,768,388
43	379	30,742,067	11	887,680	390	31,629,747
44	447	36,608,740	10	750,404	457	37,359,144
45	489	40,091,510	14	1,065,221	503	41,156,731
46	501	41,595,821	7	558,468	508	42,154,289
47	490	41,867,064	13	1,140,896	503	43,007,960
48	433	36,637,613	12	977,450	445	37,615,063
49	392	33,465,863	6	579,916	398	34,045,778
50	402	34,654,686	8	694,010	410	35,348,695
51	424	36,330,986	8	563,993	432	36,894,979
52	453	39,223,390	8	664,061	461	39,887,451
53	358	30,570,914	9	681,543	367	31,252,458
54	341	29,981,939	7	474,567	348	30,456,506
55	319	27,695,281	7	540,023	326	28,235,304

Exhibit VI-3 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Age

Firefighters (continued)

Age	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
56	255	21,921,679	7	637,832	262	22,559,511
57	190	16,286,607	5	379,189	195	16,665,796
58	166	14,209,928	5	423,821	171	14,633,749
59	123	10,642,594	5	374,077	128	11,016,671
60	97	8,158,369	2	155,826	99	8,314,195
61	68	5,433,132	6	544,031	74	5,977,163
62	52	4,393,134	1	104,361	53	4,497,495
63	34	2,897,569	1	61,752	35	2,959,321
64	26	2,185,091			26	2,185,091
65	16	1,386,559			16	1,386,559
66	10	730,021			10	730,021
67	5	409,120			5	409,120
68	5	418,580			5	418,580
69	5	380,524			5	380,524
70	1	62,280			1	62,280
71	1	97,135			1	97,135
72	1	63,601			1	63,601
73						
74	2	219,432			2	219,432
Total	12,581	\$ 977,409,340	339	\$ 24,965,342	12,920	\$ 1,002,374,682

Exhibit VI-4

Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Years of Service

Firefighters

Years of Service	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	624	\$ 30,095,843	18	\$ 784,478	642	\$ 30,880,321
1	517	27,831,742	12	632,316	529	28,464,058
2	490	29,684,300	24	1,499,700	514	31,184,000
3	485	31,316,439	17	1,057,093	502	32,373,532
4	379	26,170,975	14	839,379	393	27,010,354
5	398	28,457,880	10	713,115	408	29,170,995
6	324	24,710,967	10	754,248	334	25,465,215
7	248	18,025,126	6	453,555	254	18,478,681
8	369	27,482,708	10	714,696	379	28,197,404
9	341	25,164,379	11	813,530	352	25,977,909
10	359	27,981,498	13	1,029,641	372	29,011,140
11	260	19,953,212	9	634,439	269	20,587,651
12	287	22,800,657	11	732,651	298	23,533,308
13	423	33,016,960	9	659,118	432	33,676,078
14	344	27,536,542	16	1,256,563	360	28,793,105
15	439	35,505,789	16	1,216,571	455	36,722,361
16	480	38,654,556	19	1,544,144	499	40,198,700
17	497	41,210,865	17	1,444,543	514	42,655,408
18	495	41,121,630	22	1,849,263	517	42,970,894
19	494	41,490,478	5	369,093	499	41,859,572
20	483	41,094,457	12	1,000,784	495	42,095,241
21	413	35,029,668	3	227,439	416	35,257,107
22	382	33,031,951	4	370,705	386	33,402,655
23	355	30,734,774	6	516,662	361	31,251,436
24	379	33,325,566	4	351,961	383	33,677,527
25	341	30,048,761	5	454,869	346	30,503,630
26	281	24,108,187	4	348,029	285	24,456,216
27	429	37,536,569	7	546,133	436	38,082,702
28	285	25,252,670	5	425,070	290	25,677,740
29	246	22,274,415	4	298,728	250	22,573,143
30	197	18,024,229	5	434,589	202	18,458,818
31	230	20,840,157	7	664,739	237	21,504,896
32	125	11,308,771	2	165,500	127	11,474,271
33	64	5,706,203	1	78,190	65	5,784,393
34	33	3,121,708			33	3,121,708
35	32	2,873,942	1	83,809	33	2,957,750
36	19	1,752,638			19	1,752,638
37	9	831,783			9	831,783
38	8	801,034			8	801,034
39	9	784,716			9	784,716

Exhibit VI-4 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Years of Service

Firefighters (continued)

Years of Service	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
40	1	97,966			1	97,966
41	1	89,120			1	89,120
42	2	147,746			2	147,746
43						
44						
45						
46	1	70,193			1	70,193
47	1	80,618			1	80,618
48	1	122,090			1	122,090
49						
50	1	106,859			1	106,859
Total	12,581	\$ 977,409,340	339	\$ 24,965,342	12,920	\$ 1,002,374,682

Exhibit VI-5 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Age

Total

Age	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
18	1	\$ 40,923			1	\$ 40,923
19	5	218,634			5	218,634
20	7	275,644			7	275,644
21	35	1,520,245	3	159,382	38	1,679,627
22	99	4,627,671	12	552,028	111	5,179,699
23	210	10,341,736	27	1,176,406	237	11,518,141
24	293	15,519,980	39	1,981,155	332	17,501,136
25	388	21,076,477	46	2,499,436	434	23,575,913
26	494	28,098,511	40	2,297,989	534	30,396,501
27	538	31,936,627	47	2,470,106	585	34,406,733
28	593	35,739,901	32	1,914,174	625	37,654,075
29	674	42,577,910	39	2,348,636	713	44,926,546
30	645	41,619,909	44	2,752,059	689	44,371,968
31	719	48,249,500	38	2,614,228	757	50,863,728
32	711	48,907,165	52	3,407,829	763	52,314,994
33	698	49,489,674	51	3,411,713	749	52,901,387
34	728	51,508,265	48	3,422,377	776	54,930,642
35	705	51,235,493	48	3,449,239	753	54,684,732
36	731	53,991,793	61	4,427,786	792	58,419,579
37	725	54,708,653	46	3,450,197	771	58,158,850
38	734	56,276,347	42	3,308,103	776	59,584,450
39	739	57,574,292	31	2,340,024	770	59,914,316
40	739	57,499,834	55	3,930,132	794	61,429,966
41	781	61,897,396	52	4,154,182	833	66,051,577
42	818	65,514,940	52	3,918,740	870	69,433,680
43	832	66,918,242	66	5,215,760	898	72,134,001
44	974	78,992,801	64	5,053,287	1,038	84,046,088
45	1,088	88,690,906	71	5,611,833	1,159	94,302,740
46	1,157	95,115,879	87	7,034,559	1,244	102,150,438
47	1,084	91,111,953	75	6,088,948	1,159	97,200,901
48	990	83,364,821	62	5,035,810	1,052	88,400,631
49	874	74,411,816	60	4,989,455	934	79,401,271
50	875	74,452,315	64	5,197,875	939	79,650,190
51	862	74,382,578	53	3,907,831	915	78,290,409
52	858	73,690,654	54	4,522,488	912	78,213,142
53	690	58,739,910	45	3,584,742	735	62,324,652
54	640	55,740,466	33	2,561,766	673	58,302,231
55	584	50,076,637	32	2,750,492	616	52,827,129

Exhibit VI-5 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Age

Total (continued)

Age	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
56	453	38,578,185	26	2,143,676	479	40,721,861
57	342	28,929,807	18	1,432,609	360	30,362,417
58	275	22,924,551	25	2,027,534	300	24,952,085
59	213	18,021,761	17	1,384,225	230	19,405,986
60	172	13,956,164	9	649,735	181	14,605,899
61	131	10,519,579	11	1,021,324	142	11,540,903
62	91	7,353,259	6	455,419	97	7,808,677
63	66	5,447,478	3	231,174	69	5,678,652
64	53	4,352,999	1	74,588	54	4,427,587
65	26	2,241,157	1	77,971	27	2,319,128
66	18	1,364,583			18	1,364,583
67	13	1,038,630			13	1,038,630
68	11	848,524			11	848,524
69	8	620,564			8	620,564
70	4	244,838	1	65,583	5	310,421
71	1	97,135			1	97,135
72	2	100,731			2	100,731
73	1	40,589			1	40,589
74	2	219,432			2	219,432
75						
76						
77	1	124,398			1	124,398
Total	26,201	\$2,013,160,864	1,789	\$ 131,104,603	27,990	\$2,144,265,467

Exhibit VI-6 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Years of Service

Total

Years of Service	Male		Female		Totals	
	Number	Compensation	Number	Compensation	Number	Compensation
0	1,444	\$ 67,477,885	164	\$ 7,547,921	1,608	\$ 75,025,806
1	1,209	66,267,404	107	5,973,093	1,316	72,240,497
2	1,096	65,765,747	76	4,454,647	1,172	70,220,394
3	1,055	66,511,943	65	3,942,295	1,120	70,454,238
4	871	59,003,575	46	3,002,336	917	62,005,910
5	785	56,319,172	43	3,007,978	828	59,327,150
6	621	46,706,804	25	1,794,198	646	48,501,002
7	463	33,403,403	22	1,687,187	485	35,090,590
8	750	55,604,893	54	3,932,284	804	59,537,177
9	833	62,208,563	70	5,353,716	903	67,562,279
10	748	58,647,336	59	4,500,314	807	63,147,650
11	551	42,399,439	51	3,803,445	602	46,202,883
12	608	48,114,026	50	3,688,414	658	51,802,440
13	720	56,526,701	43	3,252,144	763	59,778,845
14	730	58,258,484	63	5,057,220	793	63,315,704
15	862	68,671,970	69	5,523,003	931	74,194,972
16	884	70,922,033	52	4,139,961	936	75,061,994
17	948	76,828,360	70	5,700,787	1,018	82,529,146
18	1,005	82,307,710	72	5,625,645	1,077	87,933,355
19	992	82,785,448	53	4,369,215	1,045	87,154,663
20	991	83,107,335	68	5,632,024	1,059	88,739,360
21	945	79,946,486	56	4,363,015	1,001	84,309,501
22	874	75,277,757	57	4,697,053	931	79,974,811
23	786	68,401,435	64	5,199,557	850	73,600,992
24	780	67,608,252	53	4,520,724	833	72,128,976
25	713	61,891,219	39	3,335,417	752	65,226,635
26	671	58,534,559	43	3,692,403	714	62,226,962
27	746	65,879,987	36	3,018,950	782	68,898,937
28	577	51,591,747	29	2,420,000	606	54,011,746
29	530	48,102,181	29	2,428,605	559	50,530,786
30	396	35,678,007	12	1,006,451	408	36,684,458
31	393	35,783,839	23	2,098,256	416	37,882,095
32	259	23,237,178	12	1,068,582	271	24,305,760
33	135	12,285,188	6	476,966	141	12,762,154
34	64	6,002,602	4	321,087	68	6,323,690
35	59	5,279,520	1	83,809	60	5,363,328
36	34	3,143,249	1	90,441	35	3,233,690
37	19	1,664,460	2	295,463	21	1,959,923
38	14	1,335,190			14	1,335,190
39	18	1,624,534			18	1,624,534
40	3	324,950			3	324,950

Exhibit VI-6 Active Membership Data as of January 1, 2017

Number and Annual Salaries Distributed by Years of Service

Total (continued)

Years of Service	Number	Male		Female		Totals	
		Number	Compensation	Number	Compensation	Number	Compensation
41	3		238,849			3	238,849
42	2		147,746			2	147,746
43	2		276,046			2	276,046
44	2		176,229			2	176,229
45	2		150,575			2	150,575
46	3		246,884			3	246,884
47	1		80,618			1	80,618
48	1		122,090			1	122,090
49	1		60,000			1	60,000
50	1		106,859			1	106,859
51							
52							
53							
54							
55	1		124,398			1	124,398
Total	26,201		\$ 2,013,160,864	1,789	\$ 131,104,603	27,990	\$ 2,144,265,467

Exhibit VI-7

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Police Service Retirees

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
48	19	\$ 843,488	3	\$ 172,006	22	\$ 1,015,494
49	38	1,724,065	3	143,445	41	1,867,510
50	56	2,340,194	5	216,446	61	2,556,640
51	74	3,434,205	8	336,481	82	3,770,686
52	86	3,730,172	7	322,902	93	4,053,074
53	85	3,483,520	14	549,130	99	4,032,650
54	101	4,408,694	10	436,743	111	4,845,437
55	115	5,235,718	23	1,078,918	138	6,314,636
56	123	6,052,436	13	652,668	136	6,705,103
57	180	9,284,680	14	719,147	194	10,003,827
58	215	11,183,734	28	1,393,023	243	12,576,757
59	259	13,167,089	27	1,218,271	286	14,385,360
60	310	16,077,071	34	1,645,741	344	17,722,812
61	318	16,472,431	26	1,307,996	344	17,780,427
62	348	18,215,503	34	1,686,294	382	19,901,797
63	308	15,783,413	25	1,233,828	333	17,017,242
64	327	16,666,834	24	1,220,269	351	17,887,103
65	340	17,529,343	21	1,077,429	361	18,606,773
66	339	16,781,516	18	881,256	357	17,662,771
67	345	17,261,504	18	847,204	363	18,108,708
68	373	19,320,349	12	607,983	385	19,928,332
69	424	21,717,451	16	843,663	440	22,561,114
70	349	16,867,135	5	237,307	354	17,104,442
71	254	12,238,329	10	468,022	264	12,706,351
72	246	11,925,373	8	414,373	254	12,339,747
73	263	12,176,357	2	66,417	265	12,242,775
74	275	12,332,184	6	268,846	281	12,601,030
75	250	10,853,659	3	148,027	253	11,001,687
76	187	7,742,497	3	106,798	190	7,849,295
77	166	6,681,555			166	6,681,555
78	151	5,942,094			151	5,942,094
79	138	5,400,763			138	5,400,763
80	96	3,754,173	3	85,131	99	3,839,304
81	108	3,767,893	1	39,728	109	3,807,621
82	79	2,805,519			79	2,805,519
83	83	2,968,610	2	37,743	85	3,006,352
84	68	2,129,193	4	104,869	72	2,234,062
85	53	1,546,215	1	21,310	54	1,567,525

Exhibit VI-7 Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Police Service Retirees (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
86	53	1,597,233			53	1,597,233
87	47	1,385,153			47	1,385,153
88	57	1,625,005			57	1,625,005
89	35	1,048,951			35	1,048,951
90	46	1,251,641			46	1,251,641
91	30	803,756			30	803,756
92	24	603,384			24	603,384
93	15	352,136			15	352,136
94	4	94,910			4	94,910
95	6	154,938			6	154,938
96	6	128,111			6	128,111
97	2	37,942			2	37,942
98	2	46,555			2	46,555
Total	7,876	\$ 368,974,680	431	\$ 20,589,410	8,307	\$ 389,564,090

Exhibit VI-8

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Police Disability Retirees

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
33	1	\$ 17,778			1	\$ 17,778
34	3	91,727	2	57,642	5	149,368
35	3	95,486	1	35,029	4	130,515
36	5	157,724	1	27,156	6	184,881
37	7	195,291	2	30,371	9	225,662
38	9	282,666	1	26,822	10	309,489
39	7	245,488	4	157,444	11	402,932
40	9	314,724	1	17,694	10	332,419
41	18	646,967	9	315,668	27	962,635
42	26	825,919	5	176,456	31	1,002,375
43	15	497,605	13	448,746	28	946,350
44	40	1,464,776	8	212,976	48	1,677,752
45	45	1,818,608	10	396,053	55	2,214,661
46	58	2,314,357	16	610,644	74	2,925,001
47	48	1,711,966	14	542,310	62	2,254,277
48	63	2,548,465	19	679,326	82	3,227,792
49	84	3,314,320	11	337,223	95	3,651,542
50	70	2,778,844	16	576,332	86	3,355,177
51	80	3,386,956	19	728,131	99	4,115,087
52	77	3,002,916	24	841,859	101	3,844,775
53	63	2,565,165	18	740,465	81	3,305,630
54	57	2,351,569	18	706,843	75	3,058,412
55	75	3,000,806	15	497,037	90	3,497,844
56	67	2,871,241	10	435,927	77	3,307,167
57	66	2,849,327	12	498,059	78	3,347,386
58	78	3,327,907	17	749,917	95	4,077,825
59	106	4,764,627	29	1,187,506	135	5,952,133
60	73	3,082,588	29	1,066,725	102	4,149,314
61	84	3,423,199	22	889,402	106	4,312,602
62	116	5,062,071	17	578,391	133	5,640,462
63	101	4,442,093	24	981,618	125	5,423,711
64	107	4,486,234	19	816,541	126	5,302,776
65	123	4,888,509	11	463,274	134	5,351,782

Exhibit VI-8 Retiree and Beneficiary Membership Data as of January 1, 2016 (continued)

Number and Annual Retirement Allowances Distributed by Age

Police Disability Retirees (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
66	106	4,194,517	15	601,640	121	4,796,157
67	106	4,162,344	17	662,690	123	4,825,034
68	116	4,648,797	12	507,223	128	5,156,020
69	159	6,425,172	12	395,640	171	6,820,812
70	123	4,712,376	10	361,984	133	5,074,360
71	93	3,776,974	3	90,480	96	3,867,453
72	82	3,111,729	4	152,492	86	3,264,221
73	101	3,671,973	1	34,528	102	3,706,501
74	77	2,585,184	3	84,387	80	2,669,572
75	66	2,437,594	1	39,281	67	2,476,875
76	51	1,820,762			51	1,820,762
77	66	2,212,737			66	2,212,737
78	52	1,638,454	3	135,311	55	1,773,765
79	42	1,435,056			42	1,435,056
80	33	1,125,330			33	1,125,330
81	41	1,189,098			41	1,189,098
82	19	577,373			19	577,373
83	17	477,299			17	477,299
84	12	327,836			12	327,836
85	11	271,118			11	271,118
86	21	578,015			21	578,015
87	12	298,995			12	298,995
88	7	172,822			7	172,822
89	11	298,216			11	298,216
90	8	205,041			8	205,041
91	6	124,746			6	124,746
92	6	144,835			6	144,835
93	3	58,408			3	58,408
94	2	34,772	1	22,378	3	57,150
Total	3,233	\$ 125,545,494	499	\$ 18,917,626	3,732	\$ 144,463,120

Exhibit VI-9

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Police Survivors and Beneficiaries

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
1	1	\$ 2,704			1	\$ 2,704
2						
3			2	5,407	2	5,407
4	4	10,814			4	10,814
5	1	2,704			1	2,704
6	1	2,704	2	5,407	3	8,111
7	1	2,704	1	2,704	2	5,407
8	4	10,814	4	10,814	8	21,629
9	5	13,518	1	2,704	6	16,222
10	9	24,332	5	13,518	14	37,850
11	5	13,518	5	13,518	10	27,036
12	7	18,925	4	10,814	11	29,740
13	3	8,111	5	13,518	8	21,629
14	7	35,100	8	21,629	15	56,729
15	11	29,740	6	16,222	17	45,961
16	7	18,925	11	29,552	18	48,478
17	9	24,332	6	16,182	15	40,514
18	15	53,383	8	21,481	23	74,864
19	8	21,575	11	37,796	19	59,371
20	9	32,281	8	37,508	17	69,790
21	2	5,407	5	13,518	7	18,925
22	1	5,299	3	7,949	4	13,248
23	2	5,353	1	2,650	3	8,003
24						
25						
26	1	2,704			1	2,704
27	1	2,704	1	2,704	2	5,407
28						
29			2	12,617	2	12,617
30	1	26,014			1	26,014
31			2	12,140	2	12,140
32						
33						
34			2	19,826	2	19,826
35						
36	2	29,448	4	20,240	6	49,688
37	2	5,407	1	4,920	3	10,327
38						
39	1	2,704	3	30,088	4	32,792
40			6	81,479	6	81,479

Exhibit VI-9

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Police Survivors and Beneficiaries (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
41			6	62,093	6	62,093
42	1	2,704	7	59,406	8	62,110
43	1	2,704	14	169,751	15	172,455
44	1	14,938	6	88,547	7	103,485
45	2	30,340	10	95,728	12	126,069
46	1	2,704	15	253,081	16	255,785
47	3	36,591	11	99,059	14	135,650
48	1	2,704	14	140,348	15	143,052
49	5	48,667	26	388,667	31	437,334
50	1	9,913	21	276,943	22	286,857
51	1	2,704	22	329,532	23	332,236
52	1	2,704	35	468,959	36	471,663
53	3	22,530	25	332,667	28	355,197
54	1	2,704	33	407,920	34	410,623
55	3	16,647	38	488,422	41	505,068
56	6	84,406	39	476,176	45	560,583
57	3	48,751	39	496,153	42	544,904
58	2	12,617	57	784,482	59	797,099
59	4	47,942	64	858,542	68	906,484
60	3	35,157	46	558,078	49	593,235
61	1	9,913	60	620,273	61	630,186
62	1	9,913	58	719,011	59	728,924
63			99	1,272,465	99	1,272,465
64			115	1,441,659	115	1,441,659
65	1	9,913	96	1,219,427	97	1,229,341
66	4	61,559	78	895,912	82	957,472
67	2	19,826	134	1,717,712	136	1,737,538
68	3	29,740	142	1,793,427	145	1,823,166
69			142	1,618,267	142	1,618,267
70	1	9,913	105	1,196,790	106	1,206,704
71	1	30,217	68	733,914	69	764,131
72			135	1,533,706	135	1,533,706
73			135	1,541,531	135	1,541,531
74	1	9,913	148	1,577,173	149	1,587,086
75			137	1,558,509	137	1,558,509
76	1	2,704	126	1,366,799	127	1,369,502
77	2	35,647	120	1,271,587	122	1,307,234
78			138	1,461,693	138	1,461,693
79			129	1,351,842	129	1,351,842
80			135	1,413,234	135	1,413,234

Exhibit VI-9 Retiree and Beneficiary Membership Data as of January 1, 2016 (continued)

Number and Annual Retirement Allowances Distributed by Age

Police Survivors and Beneficiaries (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
81			143	1,452,340	143	1,452,340
82	2	19,826	106	1,099,088	108	1,118,915
83			115	1,165,389	115	1,165,389
84			115	1,114,000	115	1,114,000
85	1	9,913	107	1,113,850	108	1,123,763
86			128	1,276,498	128	1,276,498
87			112	1,117,739	112	1,117,739
88			124	1,195,613	124	1,195,613
89			93	923,079	93	923,079
90			79	764,509	79	764,509
91			52	503,739	52	503,739
92			60	588,081	60	588,081
93			31	302,950	31	302,950
94			20	180,645	20	180,645
95			25	224,150	25	224,150
96	1	9,913	17	158,160	18	168,073
97			7	69,392	7	69,392
98						
99			8	68,224	8	68,224
100			4	39,653	4	39,653
101			4	39,653	4	39,653
102			2	19,826	2	19,826
103			2	19,826	2	19,826
Total	185	\$ 1,107,561	4,299	\$ 47,042,795	4,484	\$ 48,150,356

Exhibit VI-10 Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Service Retirees

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
48	7	255,004	1	34,952	8	289,955
49	21	831,081			21	831,081
50	28	1,253,715	2	100,164	30	1,353,879
51	38	1,664,934	2	84,113	40	1,749,048
52	46	1,984,713	5	204,630	51	2,189,342
53	57	2,546,287	4	188,685	61	2,734,971
54	91	4,218,805	2	113,826	93	4,332,631
55	104	4,946,286	5	219,119	109	5,165,405
56	155	7,841,189	3	95,884	158	7,937,074
57	181	9,107,201	4	215,553	185	9,322,754
58	212	11,383,210	3	160,102	215	11,543,312
59	236	12,423,117	2	80,627	238	12,503,744
60	237	12,514,104	1	78,642	238	12,592,746
61	278	14,685,329			278	14,685,329
62	270	14,030,645	1	39,599	271	14,070,245
63	272	13,925,365	4	195,845	276	14,121,210
64	254	13,107,049	2	83,141	256	13,190,190
65	274	14,285,422	1	26,736	275	14,312,158
66	254	12,780,283	2	84,153	256	12,864,436
67	231	11,623,162	1	43,271	232	11,666,434
68	232	11,623,470	1	39,899	233	11,663,370
69	274	13,124,562			274	13,124,562
70	236	11,344,404			236	11,344,404
71	151	7,284,311	2	84,366	153	7,368,677
72	187	8,743,072	1	44,311	188	8,787,383
73	205	9,348,182			205	9,348,182
74	204	9,220,757			204	9,220,757
75	160	7,287,408			160	7,287,408
76	160	7,138,141			160	7,138,141
77	137	5,932,541			137	5,932,541
78	133	5,573,796			133	5,573,796
79	100	4,519,917			100	4,519,917
80	106	4,141,251			106	4,141,251
81	103	3,885,601			103	3,885,601
82	100	3,700,327			100	3,700,327
83	80	2,767,281			80	2,767,281
84	64	2,014,990			64	2,014,990
85	95	3,087,299			95	3,087,299

Exhibit VI-10

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Service Retirees (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
86	83	2,528,381			83	2,528,381
87	58	1,689,649			58	1,689,649
88	54	1,492,226			54	1,492,226
89	72	1,982,905			72	1,982,905
90	42	1,251,233			42	1,251,233
91	26	676,155			26	676,155
92	18	488,710			18	488,710
93	11	274,278			11	274,278
94	7	162,332			7	162,332
95	4	102,981			4	102,981
96	5	121,315			5	121,315
97	2	56,574			2	56,574
98	1	24,003			1	24,003
99	1	22,694			1	22,694
Total	6,357	\$ 297,017,649	49	\$ 2,217,619	6,406	\$ 299,235,268

Exhibit VI-11

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Disability Retirees

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
31	2	\$ 53,275			2	\$ 53,275
32						
33	1	29,886			1	29,886
34	2	58,589			2	58,589
35	3	99,117	2	28,601	5	127,718
36	1	15,213			1	15,213
37	3	107,316	1	10,353	4	117,669
38	6	184,792	1	22,766	7	207,558
39	5	126,316	1	34,640	6	160,956
40	3	110,834	1	11,271	4	122,106
41	5	170,963			5	170,963
42	13	462,092	1	40,359	14	502,451
43	16	619,494			16	619,494
44	14	443,208	2	60,313	16	503,521
45	21	758,147	2	33,458	23	791,604
46	28	1,122,863	1	45,411	29	1,168,273
47	18	780,769	5	148,530	23	929,299
48	29	1,092,969	2	118,944	31	1,211,913
49	39	1,340,995	4	141,175	43	1,482,171
50	35	1,532,570	3	98,856	38	1,631,425
51	48	1,830,944	3	113,501	51	1,944,445
52	50	2,097,203	8	294,610	58	2,391,813
53	48	1,927,545	3	117,426	51	2,044,971
54	49	2,021,475	7	218,896	56	2,240,371
55	58	2,329,778	4	149,736	62	2,479,514
56	54	2,448,369	5	189,380	59	2,637,748
57	58	2,531,498	2	112,646	60	2,644,144
58	71	3,145,991	7	234,102	78	3,380,093
59	72	3,182,047	10	363,606	82	3,545,652
60	84	3,674,263	4	113,839	88	3,788,102
61	73	3,395,080	3	125,256	76	3,520,336
62	75	3,348,580	5	206,948	80	3,555,528
63	92	4,335,207	3	136,288	95	4,471,494
64	98	4,205,191	4	114,390	102	4,319,580
65	84	3,790,905	1	54,372	85	3,845,277

Exhibit VI-11

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Disability Retirees (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
66	87	3,893,279	2	57,913	89	3,951,191
67	100	4,445,020	2	86,283	102	4,531,303
68	89	3,814,493	3	100,797	92	3,915,289
69	109	4,847,819			109	4,847,819
70	90	3,683,694	1	35,760	91	3,719,454
71	61	2,443,040			61	2,443,040
72	65	2,556,457			65	2,556,457
73	76	2,929,404			76	2,929,404
74	69	2,788,965			69	2,788,965
75	65	2,502,551			65	2,502,551
76	59	2,319,366			59	2,319,366
77	49	2,033,983			49	2,033,983
78	45	1,549,386			45	1,549,386
79	38	1,221,219			38	1,221,219
80	33	1,110,388			33	1,110,388
81	23	744,327			23	744,327
82	21	676,823			21	676,823
83	14	392,202			14	392,202
84	16	487,669			16	487,669
85	11	301,533			11	301,533
86	11	293,879			11	293,879
87	6	170,579			6	170,579
88	18	503,176			18	503,176
89	14	315,286			14	315,286
90	9	235,571			9	235,571
91	9	216,404			9	216,404
92						
93	1	29,526			1	29,526
94	1	20,425			1	20,425
95	1	17,040			1	17,040
Total	2,448	\$ 99,916,985	103	\$ 3,620,424	2,551	\$ 103,537,408

Exhibit VI-12

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Survivors and Beneficiaries

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
1	1	\$ 2,704			1	\$ 2,704
2						
3	1	2,704	1	2,704	2	5,407
4	2	5,407	2	5,407	4	10,814
5	1	2,704			1	2,704
6	1	2,704	3	8,111	4	10,814
7			2	5,407	2	5,407
8	1	2,704			1	2,704
9	1	2,704	3	8,111	4	10,814
10	1	2,704	3	8,111	4	10,814
11	4	10,814	4	10,814	8	21,629
12	1	2,704	3	8,111	4	10,814
13	4	10,814	6	16,222	10	27,036
14	10	30,842	7	18,925	17	49,767
15	4	10,721	5	13,518	9	24,239
16	9	24,332	9	24,239	18	48,571
17	7	18,925	8	21,629	15	40,554
18	12	34,866	6	16,222	18	51,088
19	8	21,575	9	28,084	17	49,659
20	9	24,185	8	21,467	17	45,652
21	2	5,407	4	10,814	6	16,222
22	2	5,299			2	5,299
23			1	2,650	1	2,650
24			1	11,218	1	11,218
25						
26			2	20,726	2	20,726
27			1	2,704	1	2,704
28			1	47,372	1	47,372
29	1	2,704			1	2,704
30			3	23,403	3	23,403
31			1	9,913	1	9,913
32			2	21,131	2	21,131
33			3	10,327	3	10,327
34	1	2,704	2	19,826	3	22,530
35			1	9,913	1	9,913
36			2	19,826	2	19,826
37						
38			2	47,218	2	47,218
39			1	9,913	1	9,913
40			1	9,913	1	9,913

Exhibit VI-12

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Survivors and Beneficiaries (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
41	1	27,012	4	34,660	5	61,672
42			2	51,217	2	51,217
43			5	81,356	5	81,356
44			10	140,419	10	140,419
45	1	2,704	7	110,372	8	113,076
46	1	2,704	10	163,371	11	166,074
47	1	2,704	10	153,371	11	156,075
48	2	12,617	7	78,280	9	90,897
49	2	5,407	13	283,034	15	288,441
50	2	3,820	12	130,162	14	133,981
51			17	209,833	17	209,833
52	1	2,704	21	345,528	22	348,231
53	2	5,407	19	338,594	21	344,001
54	2	5,407	23	353,035	25	358,443
55	1	2,704	16	218,974	17	221,677
56	1	2,704	23	296,380	24	299,084
57	4	50,555	24	344,855	28	395,410
58			26	323,259	26	323,259
59			46	651,995	46	651,995
60	1	2,704	30	421,020	31	423,723
61	1	2,704	37	512,454	38	515,157
62			42	520,084	42	520,084
63			33	386,602	33	386,602
64			58	815,915	58	815,915
65			54	836,544	54	836,544
66			52	610,540	52	610,540
67	1	2,704	60	753,304	61	756,007
68			77	922,783	77	922,783
69	1	2,704	73	879,859	74	882,563
70			80	989,002	80	989,002
71			68	745,171	68	745,171
72	1	2,704	84	950,341	85	953,045
73			86	938,740	86	938,740
74	1	9,913	95	1,047,422	96	1,057,336
75			99	1,073,102	99	1,073,102
76			114	1,216,605	114	1,216,605
77			111	1,160,647	111	1,160,647
78			84	876,035	84	876,035
79			115	1,192,279	115	1,192,279
80			80	800,944	80	800,944

Exhibit VI-12

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Firefighters Survivors and Beneficiaries (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
81			104	1,053,391	104	1,053,391
82			123	1,210,937	123	1,210,937
83			136	1,365,677	136	1,365,677
84	1	2,704	109	1,105,603	110	1,108,307
85			82	788,165	82	788,165
86			144	1,417,898	144	1,417,898
87			105	1,072,912	105	1,072,912
88	1	2,704	101	1,008,688	102	1,011,392
89			105	1,041,510	105	1,041,510
90			90	850,087	90	850,087
91			83	788,401	83	788,401
92			57	577,045	57	577,045
93			49	488,462	49	488,462
94			19	174,438	19	174,438
95			27	248,362	27	248,362
96			20	219,584	20	219,584
97			13	122,367	13	122,367
98			8	74,182	8	74,182
99			4	39,653	4	39,653
100			6	54,097	6	54,097
101						
102						
103			1	9,913	1	9,913
104						
105			1	9,913	1	9,913
Total	112	\$ 385,510	3,321	\$ 36,173,324	3,433	\$ 36,558,834

Exhibit VI-13

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Service Retirees

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
48	26	\$ 1,098,492	4	\$ 206,958	30	\$ 1,305,449
49	59	2,555,146	3	143,445	62	2,698,591
50	84	3,593,909	7	316,610	91	3,910,519
51	112	5,099,140	10	420,594	122	5,519,734
52	132	5,714,885	12	527,532	144	6,242,417
53	142	6,029,807	18	737,814	160	6,767,621
54	192	8,627,499	12	550,569	204	9,178,068
55	219	10,182,003	28	1,298,037	247	11,480,040
56	278	13,893,625	16	748,552	294	14,642,177
57	361	18,391,881	18	934,700	379	19,326,581
58	427	22,566,944	31	1,553,125	458	24,120,069
59	495	25,590,206	29	1,298,897	524	26,889,103
60	547	28,591,175	35	1,724,383	582	30,315,558
61	596	31,157,760	26	1,307,996	622	32,465,755
62	618	32,246,148	35	1,725,893	653	33,972,041
63	580	29,708,779	29	1,429,673	609	31,138,452
64	581	29,773,883	26	1,303,409	607	31,077,293
65	614	31,814,765	22	1,104,165	636	32,918,931
66	593	29,561,799	20	965,409	613	30,527,208
67	576	28,884,666	19	890,476	595	29,775,142
68	605	30,943,820	13	647,882	618	31,591,702
69	698	34,842,013	16	843,663	714	35,685,676
70	585	28,211,539	5	237,307	590	28,448,845
71	405	19,522,640	12	552,388	417	20,075,028
72	433	20,668,445	9	458,684	442	21,127,129
73	468	21,524,540	2	66,417	470	21,590,957
74	479	21,552,941	6	268,846	485	21,821,787
75	410	18,141,068	3	148,027	413	18,289,095
76	347	14,880,639	3	106,798	350	14,987,437
77	303	12,614,096			303	12,614,096
78	284	11,515,890			284	11,515,890
79	238	9,920,680			238	9,920,680
80	202	7,895,424	3	85,131	205	7,980,554
81	211	7,653,494	1	39,728	212	7,693,222
82	179	6,505,847			179	6,505,847
83	163	5,735,890	2	37,743	165	5,773,633
84	132	4,144,183	4	104,869	136	4,249,052
85	148	4,633,514	1	21,310	149	4,654,824

Exhibit VI-13

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Service Retirees (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
86	136	4,125,614			136	4,125,614
87	105	3,074,802			105	3,074,802
88	111	3,117,232			111	3,117,232
89	107	3,031,857			107	3,031,857
90	88	2,502,874			88	2,502,874
91	56	1,479,912			56	1,479,912
92	42	1,092,094			42	1,092,094
93	26	626,414			26	626,414
94	11	257,242			11	257,242
95	10	257,919			10	257,919
96	11	249,426			11	249,426
97	4	94,516			4	94,516
98	3	70,559			3	70,559
99	1	22,694			1	22,694
Total	14,233	\$ 665,992,329	480	\$ 22,807,029	14,713	\$ 688,799,357

Exhibit VI-14

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Disability Retirees

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
31	2	\$ 53,275			2	\$ 53,275
32						
33	2	47,664			2	47,664
34	5	150,316	2	57,642	7	207,957
35	6	194,603	3	63,631	9	258,234
36	6	172,938	1	27,156	7	200,094
37	10	302,608	3	40,724	13	343,331
38	15	467,458	2	49,588	17	517,046
39	12	371,805	5	192,084	17	563,888
40	12	425,559	2	28,966	14	454,524
41	23	817,930	9	315,668	32	1,133,598
42	39	1,288,011	6	216,815	45	1,504,826
43	31	1,117,099	13	448,746	44	1,565,845
44	54	1,907,984	10	273,288	64	2,181,273
45	66	2,576,755	12	429,510	78	3,006,265
46	86	3,437,220	17	656,055	103	4,093,275
47	66	2,492,735	19	690,840	85	3,183,575
48	92	3,641,434	21	798,271	113	4,439,705
49	123	4,655,315	15	478,398	138	5,133,713
50	105	4,311,414	19	675,188	124	4,986,602
51	128	5,217,899	22	841,633	150	6,059,532
52	127	5,100,119	32	1,136,469	159	6,236,588
53	111	4,492,710	21	857,891	132	5,350,601
54	106	4,373,043	25	925,740	131	5,298,783
55	133	5,330,584	19	646,773	152	5,977,357
56	121	5,319,609	15	625,306	136	5,944,916
57	124	5,380,824	14	610,706	138	5,991,530
58	149	6,473,899	24	984,019	173	7,457,918
59	178	7,946,674	39	1,551,112	217	9,497,786
60	157	6,756,851	33	1,180,565	190	7,937,416
61	157	6,818,279	25	1,014,658	182	7,832,937
62	191	8,410,650	22	785,339	213	9,195,990
63	193	8,777,300	27	1,117,906	220	9,895,206
64	205	8,691,425	23	930,931	228	9,622,356
65	207	8,679,414	12	517,645	219	9,197,060

Exhibit VI-14

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Disability Retirees (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
66	193	8,087,796	17	659,553	210	8,747,349
67	206	8,607,364	19	748,973	225	9,356,337
68	205	8,463,289	15	608,020	220	9,071,309
69	268	11,272,991	12	395,640	280	11,668,631
70	213	8,396,070	11	397,744	224	8,793,814
71	154	6,220,013	3	90,480	157	6,310,493
72	147	5,668,187	4	152,492	151	5,820,678
73	177	6,601,377	1	34,528	178	6,635,905
74	146	5,374,150	3	84,387	149	5,458,537
75	131	4,940,145	1	39,281	132	4,979,426
76	110	4,140,128			110	4,140,128
77	115	4,246,720			115	4,246,720
78	97	3,187,840	3	135,311	100	3,323,151
79	80	2,656,275			80	2,656,275
80	66	2,235,718			66	2,235,718
81	64	1,933,425			64	1,933,425
82	40	1,254,196			40	1,254,196
83	31	869,501			31	869,501
84	28	815,505			28	815,505
85	22	572,651			22	572,651
86	32	871,894			32	871,894
87	18	469,574			18	469,574
88	25	675,998			25	675,998
89	25	613,502			25	613,502
90	17	440,612			17	440,612
91	15	341,150			15	341,150
92	6	144,835			6	144,835
93	4	87,934			4	87,934
94	3	55,197	1	22,378	4	77,575
95	1	17,040			1	17,040
Total	5,681	\$ 225,462,479	602	\$ 22,538,049	6,283	\$ 248,000,528

Exhibit VI-15

Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Survivors and Beneficiaries

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
1	2	\$ 5,407			2	\$ 5,407
2						
3	1	2,704	3	8,111	4	10,814
4	6	16,222	2	5,407	8	21,629
5	2	5,407			2	5,407
6	2	5,407	5	13,518	7	18,925
7	1	2,704	3	8,111	4	10,814
8	5	13,518	4	10,814	9	24,332
9	6	16,222	4	10,814	10	27,036
10	10	27,036	8	21,629	18	48,665
11	9	24,332	9	24,332	18	48,665
12	8	21,629	7	18,925	15	40,554
13	7	18,925	11	29,740	18	48,665
14	17	65,942	15	40,554	32	106,496
15	15	40,460	11	29,740	26	70,200
16	16	43,258	20	53,791	36	97,049
17	16	43,258	14	37,811	30	81,068
18	27	88,249	14	37,703	41	125,951
19	16	43,150	20	65,881	36	109,030
20	18	56,466	16	58,975	34	115,441
21	4	10,814	9	24,332	13	35,147
22	3	10,598	3	7,949	6	18,547
23	2	5,353	2	5,299	4	10,652
24			1	11,218	1	11,218
25						
26	1	2,704	2	20,726	3	23,430
27	1	2,704	2	5,407	3	8,111
28			1	47,372	1	47,372
29	1	2,704	2	12,617	3	15,320
30	1	26,014	3	23,403	4	49,417
31			3	22,053	3	22,053
32			2	21,131	2	21,131
33			3	10,327	3	10,327
34	1	2,704	4	39,653	5	42,356
35			1	9,913	1	9,913
36	2	29,448	6	40,067	8	69,514
37	2	5,407	1	4,920	3	10,327
38			2	47,218	2	47,218
39	1	2,704	4	40,001	5	42,705
40			7	91,392	7	91,392

Exhibit VI-15 - Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Survivors and Beneficiaries (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
41	1	27,012	10	96,753	11	123,765
42	1	2,704	9	110,623	10	113,326
43	1	2,704	19	251,107	20	253,811
44	1	14,938	16	228,966	17	243,904
45	3	33,044	17	206,100	20	239,144
46	2	5,407	25	416,452	27	421,859
47	4	39,295	21	252,430	25	291,725
48	3	15,320	21	218,628	24	233,949
49	7	54,075	39	671,700	46	725,775
50	3	13,733	33	407,105	36	420,838
51	1	2,704	39	539,365	40	542,068
52	2	5,407	56	814,487	58	819,894
53	5	27,937	44	671,260	49	699,198
54	3	8,111	56	760,955	59	769,066
55	4	19,350	54	707,395	58	726,746
56	7	87,110	62	772,557	69	859,667
57	7	99,306	63	841,008	70	940,314
58	2	12,617	83	1,107,741	85	1,120,357
59	4	47,942	110	1,510,537	114	1,558,479
60	4	37,860	76	979,098	80	1,016,958
61	2	12,617	97	1,132,726	99	1,145,343
62	1	9,913	100	1,239,096	101	1,249,009
63			132	1,659,066	132	1,659,066
64			173	2,257,573	173	2,257,573
65	1	9,913	150	2,055,971	151	2,065,885
66	4	61,559	130	1,506,453	134	1,568,012
67	3	22,530	194	2,471,016	197	2,493,546
68	3	29,740	219	2,716,210	222	2,745,949
69	1	2,704	215	2,498,126	216	2,500,830
70	1	9,913	185	2,185,793	186	2,195,706
71	1	30,217	136	1,479,085	137	1,509,303
72	1	2,704	219	2,484,047	220	2,486,751
73			221	2,480,271	221	2,480,271
74	2	19,826	243	2,624,595	245	2,644,422
75			236	2,631,612	236	2,631,612
76	1	2,704	240	2,583,404	241	2,586,108
77	2	35,647	231	2,432,233	233	2,467,881
78			222	2,337,728	222	2,337,728
79			244	2,544,121	244	2,544,121
80			215	2,214,178	215	2,214,178

Exhibit VI-15 - Retiree and Beneficiary Membership Data as of January 1, 2017

Number and Annual Retirement Allowances Distributed by Age

Total Survivors and Beneficiaries (continued)

Age	Male		Female		Totals	
	Number	Annuities	Number	Annuities	Number	Annuities
81			247	2,505,732	247	2,505,732
82	2	19,826	229	2,310,025	231	2,329,852
83			251	2,531,065	251	2,531,065
84	1	2,704	224	2,219,604	225	2,222,307
85	1	9,913	189	1,902,015	190	1,911,928
86			272	2,694,396	272	2,694,396
87			217	2,190,652	217	2,190,652
88	1	2,704	225	2,204,301	226	2,207,005
89			198	1,964,589	198	1,964,589
90			169	1,614,597	169	1,614,597
91			135	1,292,140	135	1,292,140
92			117	1,165,126	117	1,165,126
93			80	791,412	80	791,412
94			39	355,083	39	355,083
95			52	472,513	52	472,513
96	1	9,913	37	377,743	38	387,657
97			20	191,760	20	191,760
98			8	74,182	8	74,182
99			12	107,877	12	107,877
100			10	93,750	10	93,750
101			4	39,653	4	39,653
102			2	19,826	2	19,826
103			3	29,740	3	29,740
104						
105			1	9,913	1	9,913
Total	297	\$ 1,493,071	7,620	\$ 83,216,119	7,917	\$ 84,709,189

Glossary of Terms

Note that the first definitions given are the “official” definitions of the term. For some terms there is a second definition, in dark gray.

Actuarial Accrued Liability (AAL)

The portion of the Present Value of Projected Benefits (PVFB) allocated to past service. Also difference between (i) the actuarial present value of future benefits, and (ii) the present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

The amount of money that should be in the Fund. The funding target.

Actuarial Assumptions

Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Demographic (“people”) assumptions (rates of mortality, separation, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic (“money”) assumptions (salary increases and investment income) consist of an underlying rate appropriate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Estimates of future events used to project what we know now- current member data, assets, and benefit provisions – into an estimate of future benefits.

Actuarial Cost Method

A mathematical budgeting procedure for allocating the dollar amount of the Present Value of Projected Benefits (PVFB) between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Methods

The collective term for the Actuarial Cost Method, the Amortization Payment for UAAL Method, and the Asset Valuation Method used to develop the contribution requirements for the Retirement System.

The Funding Policy.

Actuarial Equivalent

Benefits whose actuarial present values are equal.

Actuarial Present Value

The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA)

The value of assets used to determine the contribution requirement and funded ratio. The AVA can be thought of as the average value of assets over a period of years. This smoothed value of assets is used to limit contribution volatility. Also known as the funding value of assets.

Smoothed value of assets.

Glossary of Terms (continued)

Amortization Payment for UAAL

Payment of the unfunded actuarial accrued liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment. The components of the amortization payment for UAAL includes:

- **Amortization Period Length**
Generally amortization periods up to 30 years are allowed, although more recent white papers regarding public sector actuarial practice favor reducing the period to 15 to 20 years. Similar to a mortgage, the shorter the amortization period, the higher the payment and the faster the UAAL is paid off.
- **Amortization payment increases**
Future payments can be level dollar, like a mortgage, or as a level percent of pay. Most PERS amortize UAAL as a level percent of pay which when combined with the employer normal cost that is developed as a level percent of pay can result in contributions that are easier to budget.
- **Amortization schedule can be closed or open.** A closed amortization schedule is similar to a mortgage. At the end of the amortization period the UAAL is designed to be paid off. An open amortization period is similar to refinancing the UAAL year after year.
- **Amortization schedule UAAL can be amortized over a single amortization period, or it can be amortized over a schedule, also known as layered amortization.**

The amortization payment for UAAL can be thought of as the UAAL mortgage payment.

Asset Valuation Method

The components of how the actuarial value of assets is to be developed. Typical components are the averaging period and the corridor. The averaging period tends to be 3 to 5 years but can be longer. The corridor limits the actuarial value of assets to within a percent, say 20%, of the actual market value. Corridors are more common with longer averaging periods; white papers on the subject suggest that no corridor is needed for averaging periods of five years or less because the period is short enough to recognize asset gains and losses over a sufficiently small period and because corridors provide for excessive contribution volatility.

Experience Gain Loss

A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

The experience Gain (Loss) represents how much the actuary missed the mark in a given year.

Fiduciary Net Position (FNP)

Used for GASB 67, it represents the assets, measured at fair value, held in trust to provide benefits.

Funded Ratio

The percent of the actuarial accrued liabilities covered by the actuarial value of assets. Also known as the funded status.

The ratio of how much money you actually have in the fund to the amount you should have in the fund.

Glossary of Terms (continued)

Net Pension Liability (NPL)

Used for GASB 67, it is the difference between the total pension liability (TPL) and fiduciary net position (FNP). It is similar to the UAAL. It represents the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.

Normal Cost

The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” An amortization payment toward the unfunded actuarial accrued liability is paid in addition to the normal cost to arrive at the total contribution in a given year.

The cost of benefits accruing during the year.

PERS

A generic term given to a Public Employees Retirement System

Present Value of Future Normal Cost (PVFNC)

The portion of the Present Value of Future Benefits (PVFB) allocated to future service.

The value in today's dollars of the amount of contribution to be made in the future for benefits accruing for members in the Retirement System as of the valuation date. Note that in practice, this number is rarely discussed.

Present Value of Future Benefits (PVFB)

The projected future benefit payments of the plan are discounted into today's dollars using an assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is the discounted value of the projected benefits promised to all members as of a valuation date, including future pay and service for members which has not yet been earned.

If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.

Reserve Account

An account used to indicate that funds have been set aside for a specific purpose and is not generally available for other uses.

Service Cost

Used for GASB 67, it is the annual cost assigned, using the cost method (entry age normal) and assumptions under GASB 67, to current and subsequent plan years. It is similar to normal cost.

Total Pension Liability (TPL)

Used for GASB 67, it is the portion of the Present Value of Future Benefits (PVFB) allocated to past service using the cost method (entry age normal) and assumptions under GASB 67. It is similar to the actuarial accrued liability.

Glossary of Terms (continued)

Unfunded Actuarial Accrued Liability (UAAL)

The difference between the actuarial accrued liability (AAL) and actuarial value of assets (AVA). The UAAL is sometimes referred to as “unfunded accrued liability.”

Funding shortfall, pension debt or prefunded amount if negative.

Valuation Date

The date that the actuarial valuation calculations are performed as of.

Also known as the “snapshot date”.