



March 13, 2018

Mr. James F. Fisher  
Secretary to the Board of Trustees  
City Pension Fund for Firefighters and Police Officers  
in the City of Pembroke Pines, Florida  
Hampton Professional Center  
1951 NW 150th Avenue – Suite 104  
Pembroke Pines, Florida 33028

**Re: October 1, 2017 Projection Actuarial Valuation Report**

Dear Jim:

As requested, we are pleased to enclose fifteen (15) bound copies and one (1) unbound copy of the October 1, 2017 Projection Actuarial Valuation Report for the City Pension Fund for Firefighters and Police Officers in the City of Pembroke Pines, Florida.

As you are aware, the State issued a Memorandum on January 20, 2017 announcing the activation of their new online reporting portal for pension plans. Upon approval of the Actuarial Valuation Report, we will upload a copy of the Actuarial Valuation Report along with the newly required disclosure information as required by the State.

We appreciate the opportunity to have performed this important assignment on behalf of the Board and look forward to presenting the key results at Thursday's Board Meeting.

If you should have any questions concerning the above, please do not hesitate to contact us.

Sincerest regards,

A handwritten signature in black ink that reads "L. F. Wilson". The signature is written in a cursive style with a large, prominent "L" and "W".

Lawrence F. Wilson, A.S.A.  
Senior Consultant and Actuary

Enclosures

# City Pension Fund for Firefighters and Police Officers In the City of Pembroke Pines, Florida

ACTUARIAL VALUATION AS OF OCTOBER 1, 2017

This Valuation Determines the Annual Contribution for the Fund Year October 1, 2018 through September 30, 2019 to be paid in Fiscal Year October 1, 2018 to September 30, 2019





**City Pension Fund for Firefighters and Police Officers  
in the City of Pembroke Pines, Florida**

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March 13, 2018

Board of Trustees  
c/o Mr. James F. Fisher  
Plan Administrator  
City Pension Fund for Firefighters and Police Officers  
in the City of Pembroke Pines, Florida  
Hampton Professional Center  
1951 NW 150th Avenue – Suite 104  
Pembroke Pines, Florida 33028

Dear Board Members:

### **October 1, 2017 Actuarial Valuation**

We are pleased to present our October 1, 2017 Projection Actuarial Valuation for the City Pension Fund for Firefighters and Police Officers in the City of Pembroke Pines, Florida. The purpose of this report is to indicate appropriate contribution levels, comment on the actuarial stability of the Fund and to satisfy State requirements. The Board of Trustees has retained Gabriel, Roeder, Smith and Company (GRS) to prepare an annual actuarial valuation under Section 34.60 of the Fund Ordinance.

This report consists of this commentary, detailed Tables I through XVII and the State Required Exhibit on Table XVIII. The Tables contain basic Fund cost figures plus significant details on the benefits, liabilities and experience of the Fund. We suggest that you thoroughly review the report at your convenience and contact us with any questions that may arise.

### **Retirement Fund Costs**

Our Projection Actuarial Valuation develops the required minimum Retirement Fund payment under the Florida Protection of Public Employee Retirement Benefits Act and for Fire and Police Retirement Chapters 175 and 185. The minimum payment consists of payment of annual normal costs including amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law. The **minimum payment for fiscal year ending September 30, 2019 is \$32,764,579 (98.3% / 123.0%)**. The figures in parentheses are the minimum payment expressed as a percentage of projected covered annual payroll including DROP payroll (\$33,318,825) and projected covered annual payroll excluding DROP payroll (\$26,646,456), respectively as of October 1, 2018.

This total cost is to be met by member, City and State contributions. We anticipate that member contributions will be **\$2,537,321 (7.6% / 9.5%)**, the State will contribute **\$2,420,304 (7.3% / 9.1%)** and the resulting minimum required City contribution will be **\$27,806,954 (83.5% / 104.4%)**. The City

contribution includes an interest adjustment and must be increased if State contributions are less than \$2,420,304.

### **Changes in Actuarial Assumptions, Methods and Fund Benefits**

Assumed investment return was updated to 7.85% from 7.90%, net of investment expense. The remaining actuarial assumptions and methods are unchanged from the October 1, 2016 Actuarial Valuation. The actuarial assumptions and methods are summarized on Table XI.

The Fund provisions are unchanged from the October 1, 2016 Actuarial Valuation. Fund benefits are summarized on Table X.

### **Comparison of October 1, 2016 and October 1, 2017 Valuation Results**

Table II of our report provides information of a comparative nature. The left columns of the Table indicate the costs as calculated for the October 1, 2016 Actuarial Valuation. The center columns indicate the costs as calculated for October 1, 2017 prior to the assumption changes. The right columns indicate the costs as calculated for October 1, 2017 after the assumption changes.

Comparing the left and center columns of Table II shows the effect of Fund experience during the year. The number of active participants decreased by approximately 2%. Covered payroll including DROP payroll decreased by approximately 2%. Covered payroll net of DROP payroll increased by approximately 2%. Total Fund membership increased by approximately 2%. Total normal cost increased both as a dollar amount and as a percentage of covered payrolls including DROP payroll but decreased as a percentage of covered payroll excluding DROP payroll. The unfunded actuarial accrued liability decreased both as a dollar amount and as a percentage of covered payroll excluding DROP payroll but increased as a percentage of covered payroll including DROP payroll. The net City minimum funding requirement increased both as a dollar amount and as a percentage of covered payroll including DROP payroll but remained level as a percentage of covered payroll excluding DROP payroll.

Comparing the center and right columns of Table II shows the effect of the update of actuarial assumptions. Total normal cost, the unfunded actuarial accrued liability and the net City minimum funding requirement increased both as a dollar amount and as a percentage of covered payrolls.

The value of vested accrued benefits exceeds Fund assets, resulting in a Vested Benefit Security Ratio (VBSR) of 77.1% (77.7% prior to assumption changes) which is an increase from 73.9% as of the October 1, 2016 Actuarial Valuation. The VBSR is measured on a market value of assets basis.

### **Fund Experience**

The Fund experienced an actuarial loss in the amount of \$3,344,371 this year. This indicates net Fund experience was less favorable than expected based upon the actuarial assumptions.

Table XVI (salary, turnover and investment yield) provides figures on recent Fund experience. Salary experience indicates actual salary increases (excluding DROP payroll) averaged approximately 6.1% for Fund Year ended September 30, 2017. The average salary increase assumption was 3.5%. Salary increase experience was the major source of actuarial loss. Three, five and ten-year average annual salary increases are 4.2%, 3.6% and 3.9%, respectively.

Employee turnover this year was approximately 220% of the assumed turnover and was an offsetting source of actuarial gain. Three, five and ten-year average annual turnover is 190%, 140% and 90% of assumed, respectively.

This year's smoothed value investment return of 8.14% exceeded the Fund's investment return assumption of 7.90% (prior assumption). Investment return was an additional offsetting source of actuarial gain during the year. Three, five and ten-year average annual investment returns are 7.5%, 7.8% and 6.1%, respectively on a smoothed actuarial value basis. Average annual market value returns for the one, three, five and ten-year periods have been 11.48%, 7.4%, 9.3% and 5.5%, respectively.

Table VIII provides figures on recent Fund payroll growth experience. Recent Fund covered payroll growth experience, excluding DROP payroll, indicates actual payroll growth averaged approximately 0.0% annually for the ten fiscal years ended September 30, 2017. The payroll growth assumption is 5.3%, not in excess of the ten (10) year average annual payroll growth assumption. The cap on payroll growth assumption is provided under Florida Statute. The payroll growth assumption last year was also 0.0%.

### **Member Census and Financial Data**

The City submitted the Member census data as of October 1, 2017 used for this actuarial valuation to us. This information contains name, Social Security number, date of birth, date of hire, October 1, 2017 rate of pay, actual salary paid and member contributions for the previous year. Dates of termination and retirement are provided where applicable. The Board updated information on inactive participants including retirees, beneficiaries and vested terminees.

We received financial information as of September 30, 2017 concerning Fund assets from the Fund Auditors. We do not audit the Member census data and asset information that is provided to us; however, we perform certain reasonableness checks. The Fund is responsible for the accuracy of the data.

## **Summary**

In our opinion the benefits provided for under the current Fund will be sufficiently funded through the payment of the amount as indicated in this and future Actuarial Valuation reports. We will continue to update you on the future payment requirements for the Fund through our actuarial valuation reports. These reports will also continue to monitor emerging experience of the Fund.

The actuarial assumptions used in this Actuarial Valuation are as adopted by the Board of Trustees. The economic and demographic actuarial assumptions are based on the results of an actuarial experience study for the period October 1, 2009 – September 30, 2014. The mortality assumptions are prescribed by statute. Each assumption represents an estimate of future Fund experience.

If all actuarial assumptions are met and if all future minimum required contributions are paid, Fund assets will be sufficient to pay all Fund benefits, future contributions are expected to remain relatively stable as a percent of payroll and the funded status is expected to improve. Fund minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act, Firefighters Retirement Chapter 175 and Police Officers Retirement Chapter 185 with normal cost determined as a level percent of covered payroll and a level percent amortization payment using an initial amortization period of 30 years.

The Unfunded Actuarial Accrued Liability (UAAL) may not be appropriate for assessing the sufficiency of Fund assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions. The UAAL would be different if it reflected the market value of assets rather than the actuarial value of assets.

The Unfunded Actuarial Present Value of Vested Accrued Benefits and the corresponding Vested Benefit Security Ratio may be appropriate for assessing the sufficiency of Fund assets to meet the estimated cost of settling benefit obligations but may not be appropriate for assessing the need for or the amount of future contributions.

The GASB Net Pension Liability and Fund Fiduciary Net Position as a Percentage of Total Pension Liability may not be appropriate for assessing the sufficiency of Fund assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Fund experience differing from anticipated under the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period) and changes in Fund provisions or

applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

This report should not be relied upon for any purpose other than the purpose described in the primary communication. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Fund as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

This report may be provided to parties other than the Board only in its entirety and only with the permission of an approved representative of the Board.

The signing actuaries are independent of the Fund sponsor.

The undersigned are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. We are available to respond to any questions with regards to matters covered in this report.

Very truly yours,



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Lawrence F. Wilson, A.S.A., E.A.  
Senior Consultant and Actuary



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Jennifer M. Borregard, E.A.  
Consultant and Actuary

**Summary of Retirement Plan Costs as of October 1, 2017**

	Prior Assumptions								
	Hired after April 30, 2010			Hired before May 1, 2010			Total		
	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>
A. Participant Data Summary (Table III)									
1. Active Employees	108	N/A	N/A	227	N/A	N/A	335	N/A	N/A
2. Terminated Vested	0	N/A	N/A	5	N/A	N/A	5	N/A	N/A
3. Receiving Benefits (including DROPs)	0	N/A	N/A	374	N/A	N/A	374	N/A	N/A
4. Total Annual Payroll of Active Employees Excluding DROPs	\$ 6,879,717	100.0%	N/A	\$ 19,766,739	100.0%	N/A	\$ 26,646,456	100.0%	80.0%
5. Total Annual Payroll of Active Employees Including DROPs	N/A	N/A	N/A	N/A	N/A	N/A	\$ 33,318,825	125.0%	100.0%
B. Total Normal Costs									
1. Age Retirement Benefits	\$ 1,478,906	N/A	N/A	\$ 6,867,514	N/A	N/A	\$ 8,346,420	31.3%	25.1%
2. Termination Benefits	34,733	N/A	N/A	61,996	N/A	N/A	96,729	0.4%	0.3%
3. Death Benefits	31,197	N/A	N/A	78,166	N/A	N/A	109,363	0.4%	0.3%
4. Disability Benefits	180,943	N/A	N/A	450,030	N/A	N/A	630,973	2.4%	1.9%
5. Subtotal	\$ 1,725,779	25.1%	N/A	\$ 7,457,706	37.7%	N/A	\$ 9,183,485	34.5%	27.6%
6. Estimated Expenses	N/A			N/A			654,307	2.5%	2.0%
7. Total Annual Normal Costs	N/A			N/A			\$ 9,837,792	36.9%	29.5%

**Summary of Retirement Plan Costs as of October 1, 2017**

	Current Assumptions								
	Hired after April 30, 2010			Hired before May 1, 2010			Total		
	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>
A. Participant Data Summary (Table III)									
1. Active Employees	108	N/A	N/A	227	N/A	N/A	335	N/A	N/A
2. Terminated Vested	0	N/A	N/A	5	N/A	N/A	5	N/A	N/A
3. Receiving Benefits (including DROPs)	0	N/A	N/A	374	N/A	N/A	374	N/A	N/A
4. Total Annual Payroll of Active Employees Excluding DROPs	\$ 6,879,717	100.0%	N/A	\$ 19,766,739	100.0%	N/A	\$ 26,646,456	100.0%	80.0%
5. Total Annual Payroll of Active Employees Including DROPs	N/A	N/A	N/A	N/A	N/A	N/A	\$ 33,318,825	125.0%	100.0%
B. Total Normal Costs									
1. Age Retirement Benefits	\$ 1,496,538	N/A	N/A	\$ 6,948,359	N/A	N/A	\$ 8,444,897	31.7%	25.3%
2. Termination Benefits	34,948	N/A	N/A	62,692	N/A	N/A	97,640	0.4%	0.3%
3. Death Benefits	31,396	N/A	N/A	78,670	N/A	N/A	110,066	0.4%	0.3%
4. Disability Benefits	182,196	N/A	N/A	453,347	N/A	N/A	635,543	2.4%	1.9%
5. Subtotal	\$ 1,745,078	25.4%	N/A	\$ 7,543,068	38.2%	N/A	\$ 9,288,146	34.9%	27.9%
6. Estimated Expenses	N/A			N/A			654,307	2.5%	2.0%
7. Total Annual Normal Costs	N/A			N/A			\$ 9,942,453	37.3%	29.8%

**Summary of Retirement Plan Costs as of October 1, 2017**

	Prior Assumptions			Current Assumptions		
	Cost Data	% of Base Payroll	% of Total Payroll	Cost Data	% of Base Payroll	% of Total Payroll
C. Total Actuarial Accrued Liability						
1. Age Retirement Benefits Active Employees	\$ 167,886,732	630.1%	503.9%	\$ 169,146,513	634.8%	507.7%
2. Termination Benefits Active Employees	500,235	1.9%	1.5%	504,261	1.9%	1.5%
3. Death Benefits Active Employees	466,062	1.7%	1.4%	468,193	1.8%	1.4%
4. Disability Benefits Active Employees	2,623,893	9.8%	7.9%	2,638,615	9.9%	7.9%
5. Retired or Terminated Vested Participants Receiving Benefits (including DROPs)	605,674,831	2273.0%	1817.8%	610,040,746	2289.4%	1830.9%
6. Terminated Vested Participants Entitled to Future Benefits	836,483	3.1%	2.5%	844,197	3.2%	2.5%
7. Deceased Participants Whose Beneficiaries are Receiving Benefits	8,025,172	30.1%	24.1%	8,064,935	30.3%	24.2%
8. Disabled Participants Receiving Benefits	15,455,829	58.0%	46.4%	15,541,357	58.3%	46.6%
9. Miscellaneous Liability (Refunds in Process)	137,154	0.5%	0.4%	137,154	0.5%	0.4%
10. Total Actuarial Accrued Liability	<u>\$ 801,606,391</u>	<u>3008.3%</u>	<u>2405.9%</u>	<u>\$ 807,385,971</u>	<u>3030.0%</u>	<u>2423.2%</u>
D. Net Assets (Table V)						
1. Smoothed Actuarial Value of Assets	\$ 593,996,849	2229.2%	1782.8%	\$ 593,996,849	2229.2%	1782.8%
2. Market Value of Assets	\$ 599,325,724	2249.2%	1798.8%	\$ 599,325,724	2249.2%	1798.8%
E. Unfunded Actuarial Accrued Liability (C. - D.1.)	\$ 207,609,542	779.1%	623.1%	\$ 213,389,122	800.8%	640.4%
F. Preliminary Minimum Required Contribution						
1. Total Normal Cost (including expenses)	\$ 9,837,792	36.9%	29.5%	\$ 9,942,453	37.3%	29.8%
2. Amortization of Unfunded Liability	20,925,194	78.5%	62.8%	21,332,683	80.1%	64.0%
3. Interest Adjustment	1,474,097	5.5%	4.4%	1,489,443	5.6%	4.5%
4. Total Preliminary Minimum Required Contribution	<u>\$ 32,237,083</u>	<u>121.0%</u>	<u>96.8%</u>	<u>\$ 32,764,579</u>	<u>123.0%</u>	<u>98.3%</u>

**Summary of Retirement Plan Costs as of October 1, 2017**

	Prior Assumptions			Current Assumptions		
	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>	<u>Cost Data</u>	<u>% of Base Payroll</u>	<u>% of Total Payroll</u>
G. Expected Payroll of Active Employees for 2018-2019 Fund Year						
Excluding DROPs: \$26,646,456 x 1.000	\$ 26,646,456	100.0%	80.0%	\$ 26,646,456	100.0%	80.0%
Including DROPs: \$33,318,825 x 1.000	\$ 33,318,825	125.0%	100.0%	\$ 33,318,825	125.0%	100.0%
H. Contribution Sources for <b>Fiscal Year Ending September 30, 2019</b>						
1. City	\$ 27,279,458	102.4%	81.9%	\$ 27,806,954	104.4%	83.5%
2. State	\$ 2,420,304	9.1%	7.3%	\$ 2,420,304	9.1%	7.3%
3. Member	\$ 2,537,321	9.5%	7.6%	\$ 2,537,321	9.5%	7.6%
I. Actuarial Gains / (Losses)	\$ (3,344,371)	(12.6%)	(10.0%)	\$ (3,344,371)	(12.6%)	(10.0%)
J. Actuarial Present Value of Vested Accrued Benefits						
1. Retired, Terminated Vested, Beneficiaries and Disabled Receiving Benefits (including DROPs)	\$ 629,155,832	2361.1%	1888.3%	\$ 633,647,038	2378.0%	1901.8%
2. Terminated Vested Participants Entitled to Future Benefits and Miscellaneous	973,637	3.7%	2.9%	981,351	3.7%	2.9%
3. Active Participants Entitled to Future Benefits	<u>141,242,988</u>	530.1%	423.9%	<u>142,329,550</u>	534.1%	427.2%
4. Total Actuarial Present Value of Vested Accrued Benefits	\$ 771,372,457	2894.8%	2315.1%	\$ 776,957,939	2915.8%	2331.9%
K. Unfunded Actuarial Present Value of Vested Accrued Benefits (J. - D.2., not less than zero)	\$ 172,046,733	645.7%	516.4%	\$ 177,632,215	666.6%	533.1%
L. Vested Benefit Security Ratio (D.2. ÷ J.)	77.7%	N/A	N/A	77.1%	N/A	N/A

Comparison of Cost Data of October 1, 2016 and October 1, 2017 Valuations

	October 1, 2016			Prior Assumptions October 1, 2017			Current Assumptions October 1, 2017		
	Cost Data	% of Base Annual Compensation <sup>1</sup>	% of Total Annual Compensation <sup>2</sup>	Cost Data	% of Base Annual Compensation <sup>1</sup>	% of Total Annual Compensation <sup>2</sup>	Cost Data	% of Base Annual Compensation <sup>1</sup>	% of Total Annual Compensation <sup>2</sup>
A. Participants									
1. Active Employees	341	N/A	N/A	335	N/A	N/A	335	N/A	N/A
2. Terminated Vested	7	N/A	N/A	5	N/A	N/A	5	N/A	N/A
3. Receiving Benefits (including DROPs)	355	N/A	N/A	374	N/A	N/A	374	N/A	N/A
4. Annual Payroll of Active Employees excluding DROPs	\$ 26,123,963	100.0%	77.0%	\$ 26,646,456	100.0%	80.0%	\$ 26,646,456	100.0%	80.0%
5. Annual Payroll of Active Employees including DROPs	\$ 33,919,591	129.8%	100.0%	\$ 33,318,825	125.0%	100.0%	\$ 33,318,825	125.0%	100.0%
B. Total Normal Costs	\$ 9,801,798	37.5%	28.9%	\$ 9,837,792	36.9%	29.5%	\$ 9,942,453	37.3%	29.8%
C. Actuarial Accrued Liability (EAN)	\$ 758,665,266	2904.1%	2236.7%	\$ 801,606,391	3008.3%	2405.9%	\$ 807,385,971	3030.0%	2423.2%
D. Present Value of Future Benefits	\$ 817,754,916	3130.3%	2410.9%	\$ 859,565,724	3225.8%	2579.8%	\$ 866,135,329	3250.5%	2599.5%
E. Smoothed Actuarial Value of Assets	\$ 550,554,481	2107.5%	1623.1%	\$ 593,996,849	2229.2%	1782.8%	\$ 593,996,849	2229.2%	1782.8%
F. Unfunded Actuarial Accrued Liability (EAN)	\$ 208,110,785	796.6%	613.5%	\$ 207,609,542	779.1%	623.1%	\$ 213,389,122	800.8%	640.4%
G. City Minimum Funding Payment									
For Fiscal Year Ending September 30, 2018	\$ 26,750,473	102.4% <sup>3</sup>	78.9% <sup>3</sup>	N/A	N/A	N/A	N/A	N/A	N/A
For Fiscal Year Ending September 30, 2019	N/A	N/A	N/A	\$ 27,279,458	102.4% <sup>4</sup>	81.9% <sup>4</sup>	\$ 27,806,954	104.4% <sup>4</sup>	83.5% <sup>4</sup>
H. Vested Benefit Security Ratio	73.9%	N/A	N/A	77.7%	N/A	N/A	77.1%	N/A	N/A

<sup>1</sup> Excludes DROP payroll<sup>2</sup> Includes DROP payroll<sup>3</sup> Percent of expected 2017-2018 covered payroll (\$26,123,963 / \$33,919,591)<sup>4</sup> Percent of expected 2018-2019 covered payroll (\$26,646,456 / \$33,318,825)

**Characteristics of Participants in  
Actuarial Valuation as of October 1, 2017**

A. Active Plan Participants Summary

1. Active participants fully vested	204
2. Active participants partially vested	0
3. Active participants non-vested	131
4. Total active participants	335
5. Annual rate of pay of active participants excluding DROPs	\$ 26,646,456
6. Annual rate of pay of active participants including DROPs	\$ 33,318,825

B. Retired and Terminated Vested Participant Summary

1. Retired or terminated vested participants receiving benefits (including DROPs)	336
2. Terminated vested participants entitled to future benefits	5
3. Deceased participants whose beneficiaries are receiving benefits	17
4. Disabled participants receiving benefits	21

C. Projected Annual Retirement Benefits

1. Retired or terminated vested receiving benefits (including DROPs)	\$ 31,404,831
2. Terminated vested entitled to future benefits	\$ 140,189
3. Beneficiaries of deceased participants	\$ 645,599
4. Disabled participants	\$ 1,079,481

Statement of Assets as of October 1, 2017 \*

<u>Assets</u>	<u>Market Value</u>
A. <u>Cash and Cash Equivalents</u>	\$ 21,243,741
B. <u>General Investments</u>	
1. Government Securities	\$ 15,828,178
2. Corporate Bonds	99,498,700
3. Equity Securities	374,937,204
4. Real Estate Funds	83,024,711
5. Property and Equipment, net	346,406
6. DROP Participant Loans	1,892,971
C. <u>Receivables</u>	
1. Accrued Interest	\$ 981,963
2. Contributions Receivable	0
3. Accounts Receivable	173,973
D. <u>Prepaid Benefits</u>	\$ 2,223,900
E. <u>Payables</u>	
1. Accounts Payable	\$ 535,589
2. Due to Broker	290,434
F. <u>Total</u>	
(A. + B. + C. + D. - E.)	\$ 599,325,724

\* Based on Plan's financial statements

**Reconciliation of Plan Assets \***

A. <u>Total Market Value of Assets as of October 1, 2016</u>		\$ 538,859,146
B. <u>Receipts During Period</u>		
1. Contributions		
a. Member	\$ 2,663,136	
b. City	24,935,503	
c. State	2,420,304	
d. Total	<u>\$ 30,018,943</u>	
2. Investment Income		
a. Interest and dividends	\$ 8,709,714	
b. Other income	8,131	
c. DROP loan interest	67,566	
d. Realized gains / (losses)	31,790,376	
e. Unrealized gains / (losses)	24,182,865	
f. Investment expenses	(2,960,997)	
g. Net investment income	<u>\$ 61,797,655</u>	
3. Total receipts during period		\$ 91,816,598
C. <u>Disbursements During Period</u>		
1. Pension payments	\$ 25,611,658	
2. DROP distributions	4,866,073	
3. Contribution refunds	133,935	
4. Administrative expenses	738,354	
5. Total disbursements during period	<u></u>	\$ 31,350,020
D. <u>Total Market Value of Assets as of September 30, 2017</u>		\$ 599,325,724
E. <u>Excess State Funds</u>		
1. Balance as of October 1, 2016	\$ 0	
2. Increase for current year	0	
3. Purchase of additional benefits	0	
4. Balance as of September 30, 2017	<u></u>	\$ 0
F. <u>Reconciliation of DROP Account Balances</u>		
1. DROP Accounts Balance as of October 1, 2016	\$ 115,430,040	
2. Benefit Payments into DROP Accounts during Year	6,525,082	
3. Loan Interest during Year	67,566	
4. Investment Gains / (Losses) during Year	9,192,538	
5. ESI Payments during Year	(32,749)	
6. Administration Fees during Year	(902)	
7. Distributions from DROP Accounts during Year	(4,866,073)	
8. DROP Accounts Balance as of September 30, 2017	<u></u>	\$ 126,315,502

\* Based on Plan's financial statements

**Development of Smoothed Actuarial Value of Assets as of September 30**

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
A. Preliminary smoothed actuarial value from prior year	399,960,017	437,914,935	477,837,128	513,213,837	550,554,481
B. Market value end of year	436,512,061	483,895,286	495,206,739	538,859,146	599,325,724
C. Market value beginning of year	376,680,848	436,512,061	483,895,286	495,206,739	538,859,146
D. Non-investment net cash flow	6,066,188	3,244,671	1,587,994	(515,530)	(1,331,077)
E. Expected investment return [A. x I] + [D. x I/2]	32,239,449	35,162,982	38,290,490	40,780,008	43,441,226
F. Expected smoothed actuarial value of assets A. + D. + E.	438,265,654	476,322,588	517,715,612	553,478,315	592,664,630
G. Excess of market value over expected smoothed actuarial value B. - F.	(1,753,593)	7,572,698	(22,508,873)	(14,619,169)	6,661,094
H. 20% adjustment towards market value .20 x G.	(350,719)	1,514,540	(4,501,775)	(2,923,834)	1,332,219
I. Preliminary smoothed actuarial value end of year F. + H.	437,914,935	477,837,128	513,213,837	550,554,481	593,996,849
J. Upper corridor limit: 120% of B.	523,814,473	580,674,343	594,248,087	646,630,975	719,190,869
K. Lower corridor limit: 80% of B.	349,209,649	387,116,229	396,165,391	431,087,317	479,460,579
L. Smoothed actuarial value end of year I., not more than J., nor less than K.	437,914,935	477,837,128	513,213,837	550,554,481	593,996,849
M. Smoothed actuarial value rate of return	7.9%	8.3%	7.1%	7.38%	8.14%
N. Market value rate of return	14.2%	10.1%	2.0%	8.92%	11.48%
O. Excess of market value over smoothed actuarial value end of year (B. - L.)	(1,402,874)	6,058,158	(18,007,098)	(11,695,335)	5,328,875

**Actuarial Gains / (Losses) for Plan Year**  
**Ended September 30, 2017**

A. <u>Derivation of Actuarial Gain / (Loss)</u>	
1. Employer normal cost previous valuation	\$ 7,279,386
2. Unfunded actuarial accrued liability previous valuation	\$ 208,110,785
3. Employer contributions previous year:	
(a) City	\$ 24,935,503
(b) State	2,420,304
(c) Total	<u>\$ 27,355,807</u>
4. Interest on:	
(a) Employer normal cost	\$ 575,071
(b) Unfunded actuarial accrued liability	16,440,752
(c) Contributions	785,016
(d) Net total: (a) + (b) - (c)	<u>\$ 16,230,807</u>
5. Increase / (decrease) in unfunded actuarial accrued liability due to assumption changes	\$ 5,779,580
6. Expected unfunded actuarial liability current year:	
(1. + 2. - 3. + 4. + 5.)	\$ 210,044,751
7. Actual unfunded actuarial liability current year	<u>213,389,122</u>
8. Actuarial gain / (loss): (6. - 7.)	<u>\$ (3,344,371)</u>
B. <u>Approximate Portion of Gain / (Loss) due to Investments</u>	
1. Smoothed actuarial value of assets previous year	\$ 550,554,481
2. Contributions during period	30,018,943
3. Benefits, refunds and admin expenses during period	31,350,020
4. Expected net appreciation for period	<u>43,441,226</u>
5. Expected smoothed actuarial value assets current year:	
(1. + 2. - 3. + 4.)	\$ 592,664,630
6. Actual smoothed actuarial value of assets current year	\$ 593,996,849
7. Approximate gain / (loss) due to investments: (6. - 5.)	\$ 1,332,219
C. <u>Approximate Portion of Gain / (Loss) due to Liabilities: (A. - B.)</u>	\$ (4,676,590)

**Historic Actuarial Gains / (Losses)**Historic Gains / (Losses)

<u>Year Ended</u>	<u>Actuarial Gain / (Loss)</u>
09/30/2017	\$ (3,344,371)
09/30/2016	\$ (4,391,458)
09/30/2015	\$ (4,114,818)
09/30/2014	\$ 5,068,959
09/30/2013	\$ 643,561
09/30/2012	\$ (4,435,113)
09/30/2011	\$ (10,855,137)
09/30/2010	\$ (13,820,665)
09/30/2009	\$ (23,430,002)
09/30/2008	\$ (21,456,556)
09/30/2007	\$ 2,084,686
09/30/2006	\$ (14,201,369)
09/30/2005	\$ (10,226,167)
09/30/2004	\$ (9,403,506)
09/30/2003	\$ (4,856,940)

**Amortization of Unfunded Actuarial Accrued Liability**A. Unfunded Actuarial Accrued Liability

<u>Date</u>	<u>Unfunded Liability</u>	<u>Amortization Payment</u>
October 1, 2017	\$ 213,389,122	\$ 21,332,683
October 1, 2018	\$ 207,132,869	\$ 21,332,683
October 1, 2019	\$ 200,385,501	\$ 21,332,683
October 1, 2020	\$ 193,108,464	\$ 21,332,683
October 1, 2021	\$ 185,260,180	\$ 21,332,683
...		
...		
October 1, 2047	\$ 0	\$ 0

B. Covered Payroll History

<u>Date</u>	<u>Covered Payroll *</u>	<u>Annual Increase</u>
October 1, 2017	\$ 26,646,456	2.0%
October 1, 2016	\$ 26,123,963	(2.1%)
October 1, 2015	\$ 26,675,674	(4.3%)
October 1, 2014	\$ 27,875,138	1.0%
October 1, 2013	\$ 27,588,952	2.1%
October 1, 2012	\$ 27,011,016	0.6%
October 1, 2011	\$ 26,857,833	(1.0%)
October 1, 2010	\$ 27,129,273	(1.4%)
October 1, 2009	\$ 27,528,175	3.4%
October 1, 2008	\$ 26,616,124	0.0%
October 1, 2007	\$ 26,610,708	N/A
Ten-Year Average Annual Increase		0.0%

\* Excludes DROP payroll

Accounting Disclosure Exhibit

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
<b>I. <u>Number of Plan Members</u></b>			
a. Retirees and beneficiaries receiving benefits	355	374	374
b. Terminated plan members entitled to but not yet receiving benefits	7	5	5
c. Active plan members	341	335	335
d. Total	<u>703</u>	<u>714</u>	<u>714</u>
<b>II. <u>Financial Accounting Standards Board Allocation as of October 1, 2017</u></b>			
<b>A. <u>Statement of Accumulated Plan Benefits</u></b>			
1. Actuarial present value of accumulated vested plan benefits			
a. Participants currently receiving benefits	\$ 589,300,561	\$ 629,155,832	\$ 633,647,038
b. Other participants	139,452,283	142,216,625	143,310,901
c. Total	<u>\$ 728,752,844</u>	<u>\$ 771,372,457</u>	<u>\$ 776,957,939</u>
2. Actuarial present value of accumulated non-vested plan benefits	\$ 7,667,760	\$ 6,789,518	\$ 6,891,075
3. Total actuarial present value of accumulated plan benefits	<u>\$ 736,420,604</u>	<u>\$ 778,161,975</u>	<u>\$ 783,849,014</u>
<b>B. <u>Statement of Change in Accumulated Plan Benefits</u></b>			
1. Actuarial present value of accumulated plan benefits as of October 1, 2016			\$ 736,420,604
2. Increase (decrease) during year attributable to:			
a. Plan amendment			\$ 0
b. Change in actuarial assumptions			5,687,039
c. Benefits paid including refunds			(30,611,666)
d. Other, including benefits accumulated, increase for interest due to decrease in the discount period			72,353,037
e. Net increase			<u>\$ 47,428,410</u>
3. Actuarial present value of accumulated plan benefits as of October 1, 2017			\$ 783,849,014
<b>C. <u>Significant Matters Affecting Calculations</u></b>			
1. Assumed rate of return used in determining actuarial present values			7.85%
2. Change in plan provisions			None.
3. Change in actuarial assumptions			See Table XI - Item N.

**Accounting Disclosure Exhibit**

III. Net Pension Liability and Related Ratios (GASB No. 67 & No. 68)

Measurement Date	9/30/2014	9/30/2015	9/30/2016	9/30/2017	Projected 9/30/2018 *
<b>A. <u>Total Pension Liability (TPL)</u></b>					
Service Cost	\$ 10,631,405	\$ 10,619,978	\$ 9,537,905	\$ 9,212,121	\$ 9,288,146
Interest	50,687,264	53,286,992	56,386,139	59,453,153	62,850,285
Benefit Changes	0	765,470	22,338	0	0
Difference Between Actual and Expected Experience	(679,355)	(3,834,368)	399,811	1,830,547	4,810,588
Assumption Changes	0	0	8,511,772	5,790,909	5,779,580
Benefit Payments, including Refunds of Member Contributions	(25,391,326)	(27,070,511)	(29,062,537)	(30,611,666)	(32,067,092)
Net Change in Total Pension Liability	\$ 35,247,988	\$ 33,767,561	\$ 45,795,428	\$ 45,675,064	\$ 50,661,507
Total Pension Liability (TPL) - (beginning of year)	636,309,762	671,557,750	705,325,311	751,120,739	796,795,803
Total Pension Liability (TPL) - (end of year)	<u>\$ 671,557,750</u>	<u>\$ 705,325,311</u>	<u>\$ 751,120,739</u>	<u>\$ 796,795,803</u>	<u>\$ 847,457,310</u>
<b>B. <u>Fund Fiduciary Net Position</u></b>					
Contributions - City and State	\$ 26,214,407	\$ 26,190,282	\$ 26,354,499	\$ 27,355,807	\$ 29,196,005
Contributions - Member	2,983,425	3,065,485	2,819,814	2,663,136	2,537,321
Net Investment Income	44,138,554	9,650,600	44,141,730	61,789,524	47,008,287
Benefit Payments, including Refunds of Member Contributions	(25,391,326)	(27,070,511)	(29,062,537)	(30,611,666)	(32,067,092)
Administrative Expenses	(544,463)	(597,262)	(627,306)	(738,354)	(654,307)
Other	(17,372)	72,859	26,207	8,131	0
Net Change in Fund Fiduciary Net Position	\$ 47,383,225	\$ 11,311,453	\$ 43,652,407	\$ 60,466,578	\$ 46,020,214
Fund Fiduciary Net Position - (beginning of year)	436,512,061	483,895,286	495,206,739	538,859,146	599,325,724
Fund Fiduciary Net Position - (end of year)	<u>\$ 483,895,286</u>	<u>\$ 495,206,739</u>	<u>\$ 538,859,146</u>	<u>\$ 599,325,724</u>	<u>\$ 645,345,938</u>
<b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b>					
	\$ 187,662,464	\$ 210,118,572	\$ 212,261,593	\$ 197,470,079	\$ 202,111,372
<b>D. <u>Fund Fiduciary Net Position as a Percentage of TPL: (B) / (A)</u></b>					
	72.06 %	70.21 %	71.74 %	75.22 %	76.15 %
<b>E. <u>Covered Employee Payroll **</u></b>					
	\$ 28,252,541	\$ 28,831,332	\$ 27,677,991	\$ 27,697,423	\$ 26,646,456
<b>F. <u>NPL as a Percentage of Covered Employee Payroll: (C) / (E)</u></b>					
	664.23 %	728.79 %	766.90 %	712.95 %	758.49 %
<b>G. <u>Notes to Schedule:</u></b>					
Valuation Date	10/01/2013	10/01/2014	10/01/2015	10/01/2016	10/01/2017
Reporting Date (GASB No. 68)	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019

Update procedures used to roll forward TPL excluding DROP account balances to the measurement dates - actual DROP account balances as of measurement dates included in TPL.

See Table IX, Item V and Table XI, Item N. for benefit and assumption changes during the years.

\* Projected - actual amounts will be available after fiscal year end.

\*\* Reported payroll on which contributions to the Fund are based as provided under GASB No. 82.

**Accounting Disclosure Exhibit**

IV. Schedule of Employer Contributions (GASB No. 67 & No. 68)

<u>Fiscal Year Ended</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll<sup>1,2</sup></u>	<u>Actual Contribution as a % of Covered Payroll</u>
2008	\$ 17,795,174	\$ 17,795,174	\$ 0	\$ 26,610,708	66.87%
2009	21,935,003	21,935,003	0	26,616,124	82.41%
2010	24,538,413	24,538,413	0	27,528,175	89.14%
2011	23,289,867	23,289,867	0	27,129,273	85.85%
2012	23,882,116	23,882,116	0	26,857,833	88.92%
2013	25,213,704	25,213,704	0	27,011,016	93.35%
2014	26,214,407	26,214,407	0	28,252,541	92.79%
2015	26,190,282	26,190,282	0	28,831,332	90.84%
2016	26,354,499	26,354,499	0	27,677,991	95.22%
2017	27,355,807	27,355,807	0	27,697,423	98.77%
2018 <sup>3</sup>	29,196,005	29,196,005	0	26,646,456	109.57%

<sup>1</sup> Projected prior to fiscal year ended September 30, 2014.

<sup>2</sup> Reported payroll on which contributions to the Fund are based as provided under GASB No. 82.

<sup>3</sup> Projected - actual amounts will be available after fiscal year end.

**Accounting Disclosure Exhibit**

V. Notes to Schedule of Contributions (GASB No. 67 & No. 68)

**Valuation Date:** Actuarially determined contributions are calculated as of October 1st - two year(s) prior the fiscal year end in which contributions are reported.

**Methods and Assumptions Used to Determine Contribution Rates:**

Actuarial Cost Method	Entry Age Normal				
Amortization Method	Level Percentage, Closed				
Amortization Period	30 years				
Asset Valuation Method	5-year smoothed market				
Inflation	2.75%				
Salary Increases	3% - 8%				
Investment Rate of Return	7.9%				
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition				
Mortality	<p>For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.</p> <p>For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.</p> <p>For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements.</p>				
Cost-of-Living Increases	<table border="0"> <tr> <td>Firefighters:</td> <td>0.0%, 1.5%, 2.0% or 3.0%</td> </tr> <tr> <td>Police:</td> <td>0.0%, 1.5%, 2.0%, 2.5% or 3.0%</td> </tr> </table>	Firefighters:	0.0%, 1.5%, 2.0% or 3.0%	Police:	0.0%, 1.5%, 2.0%, 2.5% or 3.0%
Firefighters:	0.0%, 1.5%, 2.0% or 3.0%				
Police:	0.0%, 1.5%, 2.0%, 2.5% or 3.0%				

**Accounting Disclosure Exhibit**

V. Notes to Schedule of Contributions (GASB No. 67 & No. 68) (continued)

**Other Information:**

Benefit Changes

2015 - Employee contributions reduced to 7% for Firefighters hired on or after May 1, 2010. 2014 - Employee contributions reduced to 7% for Police Officers hired on or after May 1, 2010. 2013 - Additional benefits provided upon rehire. 2010 - Hours of accrued unused sick and vacation leave frozen as of May 1, 2010, normal retirement multiplier reduced to 3.5% per year of continuous service after April 30, 2010, fixed interest DROP crediting rate reduced or eliminated for certain members along with COLA reduction for certain members. 2007 - Added maximum benefit cap of 98% of average monthly regular wages for certain members, amended COLA for certain members and added an excess benefits plan.

Assumption Changes

2016 - Investment return updated. 2015 - Assumed mortality rates, investment return, employee withdrawal rates, salary increase rates and retirement rates updated. 2013 - Load added for assumed future rehired members. 2011 - Assumed withdrawal and salary increase rates updated. 2010 - Load on average monthly earnings to reflect additional earnings in pensionable pay reduced, retirement rates and COLA assumptions updated. 2009 - Assumed mortality rates updated, investment return updated to net of investment expenses only and actuarial cost method updated to Entry Age Normal method. 2007 - Retirement rates and COLA assumptions updated and a load on regular wages added.

VI. Discount Rate (GASB No. 67 & No. 68)

Discount rates of 7.9% and 7.85% were used to measure the September 30, 2017 TPL and the September 30, 2018 TPL, respectively. These discount rates were based on the expected rate of return on Fund investments of 7.9% and 7.85%. The projection of cash flows used to determine these discount rates assumed member contributions will be made at the current contribution rate and employer contributions will be made at rates equal to the difference between actuarially determined current contribution rates and the member contribution rate. Based on these assumptions, the pension Fund's fiduciary net position was projected to be available to make all projected future expected benefit payments of current Fund members. Therefore, the long-term expected rate of return on Fund investments was applied to all periods of projected benefit payments to determine the TPL.

**Accounting Disclosure Exhibit**

VII. Sensitivity of the NPL to the Discount Rate Assumption (GASB No. 67 & No. 68)

Measurement date: September 30, 2017

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.9%	7.9%	8.9%
NPL	\$ 286,725,003	\$ 197,470,079	\$ 119,469,165

Measurement date: September 30, 2018 \*

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.85%	7.85%	8.85%
NPL	\$ 333,365,533	\$ 202,111,372	\$ 119,973,038

\* Projected - actual amounts will be available after fiscal year end

**Accounting Disclosure Exhibit**

VIII. Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions - Reporting Date (GASB No. 68)

Pension Expense for Fiscal Year Ending September 30, 2018 \$ 26,228,781

Summary of Outstanding Deferred Inflows and Outflows of Resources as of September 30, 2018

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience on liabilities	1,641,838	1,680,273
Changes of assumptions or other inputs	9,146,824	0
Net difference between projected and actual earnings on pension plan investments	0	8,459,451
Total	\$ 10,788,662	\$ 10,139,724

Projected Deferred Outflows for City Contributions to Be Recognized in the Pension Expense for Fiscal Year Ending September 30, 2019 \$ 26,750,473

Summary of Deferred Outflows and Inflows of Resources that will be Recognized in Pension Expense in Future Years.

Year Ending 30-Sep	Amount
2019	\$ 2,014,034
2020	3,951,487
2021	(2,309,031)
2022	(3,007,552)
2023	0
Thereafter	0

**Accounting Disclosure Exhibit**

The following information is not required to be disclosed but is provided for informational purposes.

IX. Components of Pension Expense (GASB No. 68)

Measurement Date	<u>9/30/2014</u>	<u>9/30/2015</u>	<u>9/30/2016</u>	<u>9/30/2017</u>	<u>Projected 9/30/2018 *</u>
Service Cost	\$ 10,631,405	\$ 10,619,978	\$ 9,537,905	\$ 9,212,121	\$ 9,288,146
Interest on Total Pension Liability	50,687,264	53,286,992	56,386,139	59,453,153	62,850,285
Current-Period Benefit Changes	0	765,470	22,338	0	0
Contributions - Member	(2,983,425)	(3,065,485)	(2,819,814)	(2,663,136)	(2,537,321)
Projected Earnings on Plan Investments	(35,050,752)	(38,778,057)	(39,349,485)	(42,517,616)	(47,008,287)
Administrative Expenses	544,463	597,262	627,306	738,354	654,307
Other Changes in Plan Fiduciary Net Position	17,372	(72,859)	(26,207)	(8,131)	0
Recognition of Beginning Deferred Outflows / (Inflows) due to Liabilities	(133,207)	(900,081)	1,125,279	2,818,936	5,281,766
Recognition of Beginning Deferred Outflows / (Inflows) due to Assets	(1,817,560)	4,007,931	3,049,482	(804,900)	(804,902)
Total Pension Expense	<u>\$ 21,895,560</u>	<u>\$ 26,461,151</u>	<u>\$ 28,552,943</u>	<u>\$ 26,228,781</u>	<u>\$ 27,723,994</u>

\* Projected - actual amounts will be available after measurement date

**Accounting Disclosure Exhibit**

The following information is not required to be disclosed but is provided for informational purposes.

X. Recognition of Deferred Outflows and (Inflows) due to Liabilities - Measurement Date (GASB No. 68)

Recognition of Deferred Outflows due to Differences Between Actual and Expected Experience on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2017	Recognition Amount for 2016 / 2017	Balance as of 9/30/2017
2013 / 2014	\$ 0	5.1	1.1	\$ 0	\$ 0
2014 / 2015	0	5.0	2.0	0	0
2015 / 2016	399,811	4.4	2.4	90,866	218,079
2016 / 2017	1,830,547	4.5	3.5	406,788	1,423,759
TOTAL				\$ 497,654	\$ 1,641,838

Recognition of Deferred (Inflows) due to Differences Between Actual and Expected Experience on Liabilities

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2017	Recognition Amount for 2016 / 2017	Balance as of 9/30/2017
2013 / 2014	\$ (679,355)	5.1	1.1	\$ (133,207)	\$ (146,527)
2014 / 2015	(3,834,368)	5.0	2.0	(766,874)	(1,533,746)
2015 / 2016	0	4.4	2.4	0	0
2016 / 2017	0	4.5	3.5	0	0
TOTAL				\$ (900,081)	\$ (1,680,273)

Recognition of Deferred Outflows due to Changes of Assumptions or Other Inputs

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2017	Recognition Amount for 2016 / 2017	Balance as of 9/30/2017
2013 / 2014	\$ 0	5.1	1.1	\$ 0	\$ 0
2014 / 2015	0	5.0	2.0	0	0
2015 / 2016	8,511,772	4.4	2.4	1,934,494	4,642,784
2016 / 2017	5,790,909	4.5	3.5	1,286,869	4,504,040
TOTAL				\$ 3,221,363	\$ 9,146,824

**Accounting Disclosure Exhibit**

The following information is not required to be disclosed but is provided for informational purposes.

X. Recognition of Deferred Outflows and (Inflows) due to Liabilities - Measurement Date (GASB No. 68) (cont'd)

Recognition of Deferred (Inflows) due to Changes of Assumptions or Other Inputs

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2017	Recognition Amount for 2016 / 2017	Balance as of 9/30/2017
2013 / 2014	\$ 0	5.1	1.1	\$ 0	\$ 0
2014 / 2015	0	5.0	2.0	0	0
2015 / 2016	0	4.4	2.4	0	0
2016 / 2017	0	4.5	3.5	0	0
TOTAL				\$ 0	\$ 0

XI. Recognition of Deferred Outflows and (Inflows) due to Assets - Measurement Date (GASB No. 68)

Recognition of Deferred Outflows / (Inflows) due to Difference Between Projected and Actual Earnings on Pension Plan Investments

Established	Initial Balance	Initial Recognition Period	Remaining Recognition Period as of 9/30/2017	Recognition Amount for 2016 / 2017	Balance as of 9/30/2017
2013 / 2014	\$ (9,087,802)	5	1	\$ (1,817,560)	\$ (1,817,562)
2014 / 2015	29,127,457	5	2	5,825,491	11,650,984
2015 / 2016	(4,792,245)	5	3	(958,449)	(2,875,347)
2016 / 2017	(19,271,908)	5	4	(3,854,382)	(15,417,526)
TOTAL				\$ (804,900)	\$ (8,459,451)

**Outline of Principal Provisions of the Retirement Plan**

A. Effective Date:

October 1, 1973, revised and restated as of February 19, 1981. Most recently amended Ordinance 1824.

B. Eligibility Requirements:

1. Participants in previous Retirement Plan as of February 19, 1981 are automatically and immediately included.
2. Mandatory participation (with satisfactory physical) for Police Officers and Firefighters upon date of hire or attainment of age 18, if later. The Fire Chief and Police Chief may elect to participate.

C. Continuous Service:

Years and completed months of uninterrupted service from the date of hire to date of retirement or termination.

D. Earnings:

Base wages, regular longevity, overtime, voluntary deductions and IRC 457 deferred compensation. Earnings shall include payment of up to 1,000 hours of accrued unused sick and vacation leave, but limited to amounts accrued as of May 1, 2010. Maximum annual earnings limited to \$270,000 subject to annual increase.

E. Average Monthly Earnings:

Average monthly earnings (AME) during the highest two years of continuous service for Firefighters and Police Officers preceding the date on which the participant retires or terminates.

F. Regular Wages:

Base pay including any incentive pay, regular longevity, assignment pay and any current or future additional pensionable compensation, but excluding overtime or accrued unused leave. Regular wages shall be used to calculate the maximum retirement benefit for Firefighters hired on or after April 1, 2006.

G. Average Monthly Regular Wages:

Average monthly regular wages coinciding with the highest two years of continuous service for Firefighters preceding the date on which the participant retires or terminates, used in the AME.

**Outline of Principal Provisions of the Retirement Plan**

H. Normal Retirement:

1. Eligibility:

Earliest of:

- (a) Attainment of age 50 and completion of 10 years of continuous service.
- (b) Completion of 20 years of continuous service.

2. Benefit:

- (a) For Firefighters, 3.0% times AME times years of Continuous Service. Maximum 80% of average monthly earnings for the highest two years of continuous service.

Firefighters hired on or before June 18, 2003 shall receive a benefit amount equal to 4.0% per year of continuous service prior to May 1, 2010 plus 3.5% per year of continuous service after April 30, 2010 times AME - maximum 80% of AME, provided they retire or enter the DROP anytime on or after attaining age 50 with 10 years of continuous service but no later than the date they accrue the maximum 80% benefit.

Firefighters hired after June 18, 2003 but before May 1, 2010 shall receive a benefit amount equal to 4.0% per year of continuous service prior to May 1, 2010 plus 3.5% per year of continuous service after April 30, 2010 times AME - maximum 80% of AME. To obtain this benefit, such Firefighters were previously required to retire or enter the DROP upon the earlier of completion of 20 years of continuous service or attainment of age 50 with 10 years of service. To obtain this benefit, such Firefighters now are required to retire or enter the DROP no earlier than upon completion of 20 years of continuous service or attainment of age 50 with 10 years of service, and no later than the date they accrue the same accrual percentage they would have reached under the terms of the Fund in effect prior to April 30, 2010.

In no event shall the benefit for firefighters hired after March 31, 2006 exceed 98% of average monthly regular wages.

Firefighters hired after April 30, 2010 shall receive a benefit amount equal to 3.0% times AME times years of continuous service – maximum 80% of AME.

- (b) For Police Officers, 3.0% times AME times years of Continuous Service up to 20 years of service plus 3.5% times AME times years of Continuous Service in excess of 20 years. Maximum 80% of average monthly earnings for the highest two years of continuous service.

**Outline of Principal Provisions of the Retirement Plan**

H. Normal Retirement (cont'd):

Police Officers hired before May 1, 2010 shall receive a benefit amount equal to 4.0% per year of continuous service prior to May 1, 2010 plus 3.5% per year of continuous service after April 30, 2010 times AME - maximum 80% of AME, provided they retire or enter the DROP anytime on or after attaining age 50 with 10 years of continuous service but no later than the date they accrue the maximum 80% benefit.

Police Officers hired after April 30, 2010 shall receive a benefit amount equal to 3.0% times AME times years of continuous service – maximum 80% of AME.

I. Deferred Retirement:

1. Eligibility:

Any first day of a month past Normal Retirement Date.

2. Benefit:

Benefit calculated as for Normal Retirement based upon service and pay to Deferred Retirement Date.

J. Disability Retirement:

1. Eligibility:

Totally and permanently disabled meaning incapacity to perform regular duty as Firefighter or Police Officer (and completion of at least 10 years of continuous service for non-service incurred disability).

2. Benefit:

(a) Service Incurred:

Greater of:

- Accrued benefit
- 66 2/3% of monthly earnings rate on date of disability.

(b) Non-Service Incurred:

Greater of:

- Accrued benefit
- 35% of AME on date of disability.

**Outline of Principal Provisions of the Retirement Plan**

K. Death Benefit:

1. Service Incurred:

To spouse, 50% of AME payable for life. To unmarried children, 5% of AME until death or attainment of age 18 (if full time student attainment of age 22). Total monthly benefit not to exceed 60% of AME. Upon death of spouse, the 5% child allowance shall be increased to 10%, subject to a maximum combined total of 35% of AME.

Benefit above reduced by the actuarial equivalent of payment of:

- if the Member had less than ten (10) years of Continuous Service, Member contributions to the beneficiary with 3% simple interest, or
- if the Member had ten (10) or more years of Continuous Service, benefit otherwise payable to the Member at the Member's Normal Retirement Date, if applicable, for ten years certain.

2. Non-Service Incurred:

- Less than five (5) years of Continuous Service, the designated beneficiary receives a lump sum of \$2,500 or return of Member contributions with 3% interest, whichever is greater.
- Five (5) or more years of Continuous Service, the designated beneficiary receives a lump sum of the greater of Member contributions (without interest) or \$2,500, plus, if married, the spouse receives a monthly benefit equal to 50% of the Accrued Benefit as of Member's date of death but not less than 20% of the monthly Earnings rate. To unmarried children of the deceased Member, same benefits as are payable for Service Incurred death. Combined monthly benefit not to exceed 50% of AME, or 35% of AME after the death or remarriage of spouse.

Benefit above reduced by the actuarial equivalent of payment of:

- if the Member had ten (10) or more years of Continuous Service, benefit otherwise payable to the Member at the Member's Normal Retirement Date, if applicable, for ten years certain.

L. Employee Contributions:

10.4% (6% prior to April 1, 1991) of annual earnings until completion of 26 2/3 years of Continuous Service.

For Firefighters and Police Officers hired on or after May 1, 2010, 7% of annual earnings until completion of 26 2/3 years of Continuous Service.

**Outline of Principal Provisions of the Retirement Plan**

M. Vested Benefit Upon Termination:

1. Eligibility:

Completion of at least ten (10) years of Continuous Service at date of termination.

2. Benefit:

Accrued benefit based upon AME and years of Continuous Service as of date of termination payable at attainment of age 50.

3. Alternate Benefit:

In lieu of the above, deferred benefit payable at Normal Retirement Date; otherwise, a Member can elect to withdraw his employee contributions plus 3% simple interest per annum.

N. Termination Benefit:

1. Eligibility:

Termination of service prior to eligibility for vested benefit upon termination.

2. Benefit:

Refund of Member contributions plus 3% simple interest per annum.

O. Normal Form of Payment of Retirement Income:

Monthly accrued benefit for ten (10) years certain and life thereafter with 100% of benefit continuing to spouse for one year and 50% of benefit payable to spouse thereafter until death.

Other Options:

Actuarially equivalent joint and survivor or joint and last survivor at 25%, 50%, 66 2/3%, 75%, 100%; life annuity; or ten years certain and life; or other option (except lump sum), subject to Board approval.

**Outline of Principal Provisions of the Retirement Plan**

P. Deferred Retirement Option Plan (DROP):

1. Eligibility:

A Member who has reached Normal Retirement Date is eligible to elect to participate in DROP. A Firefighter who reaches Normal Retirement Date before age 50 may participate for the lesser of five years or until age 55, provided that Firefighters employed as of December 20, 2000 and hired after their 30th birthday, may participate in the DROP no later than completion of 20 years of Continuous Service in order to participate in the DROP for a full five years. A Police Officer hired after his 25th birthday may participate in the DROP no later than completion of 25 years of Continuous Service in order to participate in the DROP for a full five years. An election to participate in the DROP is irrevocable.

2. Benefit:

Accrued benefit as of entry into DROP.

3. Interest Credits:

Members entering the DROP prior to May 1, 2010 could elect annually in advance interest credits of a fixed 8% per annum or Fund return.

Members hired before May 1, 2010 entering the DROP after April 30, 2010, may elect annually in advance DROP interest credits based upon either Fund gross return or Fund gross return subject to a minimum of 5% and a maximum of 8% per annum.

For Members hired after April 30, 2010 entering the DROP, DROP interest credits will be based upon Fund gross return.

4. DROP Loan Program:

Current DROP participants or retirees may borrow against their DROP account balance up to the maximum amount permitted by the IRS.

No interest shall be earned or paid by the Plan on funds loaned from the DROP account until repaid.

The DROP loan program administered in accordance with loan policy adopted by the Board of Trustees and shall comply with all applicable IRS rules and regulations governing such loans.

**Outline of Principal Provisions of the Retirement Plan**

Q. 13th Check Program (Police Officers only)

1. Eligibility:

Service or disabled retired Police Officer or beneficiary receiving pension or DROP benefits.

2. Benefit:

For Police Officers retired prior to October 1, 2003, up to 2% of investment return in excess of 8% based upon present value of future pension payments of current Police Officer members, not to exceed outstanding balance of cumulative net actuarial gains. Any distributable amount allocated to eligible members based upon years of service with prorata share during first year of entitlement. See Item R. regarding election.

For Police Officers retired on or after October 1, 2003 but before October 1, 2006, up to 2% of investment return in excess of 9% based upon present value of future pension payments of current Police Officer members, not to exceed outstanding balance of cumulative net actuarial gains. Any distributable amount allocated to eligible members based upon years of service with prorata share during first year of entitlement. See Item R. regarding election.

For Police Officers retired on or after October 1, 2006 there is no 13th check.

R. Cost of Living Adjustment

For Firefighters, effective April 1, 2005 and each April 1st thereafter, retirees, beneficiaries and DROP participants who were receiving benefits on June 18, 2003 will receive either a 2% cost of living adjustment or an adjustment equal to the total percentage increase in base wages, excluding performance or merit adjustments, whichever is greater.

For Firefighters, effective April 1, 2005 and each April 1st thereafter, retirees, beneficiaries and DROP participants who were hired on or before June 18, 2003 and retire or enter the DROP prior to May 1, 2010 and anytime on or after attaining age 50 with 10 years of service but no later than attainment of 20 years of service will receive either a 2% cost of living adjustment or an adjustment equal to the total percentage increase in base wages, excluding performance or merit adjustments, whichever is greater. For those receiving for less than one year the increase shall be prorated.

**Outline of Principal Provisions of the Retirement Plan**

R. Cost of Living Adjustment (cont'd)

Firefighter members who were hired prior to April 1, 2006 who retire prior to May 1, 2010, current retirees and DROP participants shall have the option within sixty (60) days of the effective date of Ordinance 2006-10 to irrevocably elect to receive the cost of living adjustment provided above in lieu of their current cost of living adjustment.

For Firefighters, effective April 1, 2011 and each April 1st thereafter, retirees, beneficiaries and DROP participants who were hired before May 1, 2010 and retire or enter the DROP after April 30, 2010 at their normal retirement age receive a 2% cost of living adjustment – prorated for less than one year receipt of benefits.

For Firefighters hired after April 30, 2010, the cost of living adjustment is 1.5%.

Police Officer retirees, DROPs, disabilities and their beneficiaries who retired prior to October 1, 2003 eligible for any supplemental benefit based upon an 8% Fund return threshold subject to cumulative actuarial gains may elect within 60 days to replace this supplemental benefit eligibility entitlement with an annual 2.0% cost of living adjustment retroactive to October 1, 2004.

Police Officer retirees, DROPs, disabilities and their beneficiaries who retired on or after October 1, 2003 but not later than September 30, 2006 or were in the DROP on or after October 1, 2003 and entered the DROP not later than September 30, 2006 eligible for any supplemental benefit based upon a 9% Fund return threshold subject to cumulative actuarial gains along with a 1.5% cost of living adjustment effective October 1, 2009 and each October 1st thereafter may elect within 60 days to replace this supplemental benefit eligibility and 1.5% deferred cost of living adjustment entitlement with an annual 2.5% cost of living adjustment retroactive to October 1, 2004.

Police Officer retirees, DROPs, disabilities and their beneficiaries who retire or enter the DROP on or after October 1, 2006 but not later than April 30, 2010 will receive a 3.0% cost of living adjustment effective October 1, 2009 and each October 1st thereafter.

For Police Officers, effective October 1, 2010 and each October 1st thereafter, retirees, beneficiaries and DROP participants who were hired before May 1, 2010 and retire or enter the DROP after April 30, 2010 at their normal retirement age receive a 2% cost of living adjustment – prorated for less than one year receipt of benefits.

For Police Officers hired after April 30, 2010, the cost of living adjustment is 1.5%.

**Outline of Principal Provisions of the Retirement Plan**

S. Excess Benefit Plan

An excess benefits plan is established to pay retirement benefits above the limits permitted by the Internal Revenue Code. Excess Benefit Plan benefits are not included in this actuarial valuation.

T. Additional Benefits Upon Rehire

Retired members receiving benefits who are rehired as certified police officers or firefighters who work 30 or more hours per week and 52 weeks per year will again become contributing members of the Fund and accrue benefits during their period of reemployment.

Rehired members shall continue to receive retirement benefit, earnings on DROP accounts and may elect to receive payments from DROP accounts.

U. Changes Since Previous Valuation

None.

**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation**

A. Mortality

For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements.

Sample Ages (2017)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Men	Women	Men	Women
55	29.73	32.50	29.21	32.30
60	24.84	27.46	24.64	27.31
62	22.97	25.50	22.85	25.39

  

Sample Ages (2037)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Men	Women	Men	Women
55	31.96	34.44	31.46	34.27
60	27.11	29.40	26.92	29.27
62	25.23	27.41	25.12	27.33

B. Investment Return

7.85%, compounded annually, net of investment expenses - includes inflation at 2.75%.

C. Allowances for Expenses or Contingencies

Average of actual administrative expenses during prior three (3) years.

**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation**

D. Employee Withdrawal Rates

Withdrawal rates for males and for females were used in accordance with the following illustrative example:

Age	Withdrawal Rates Per 100 Employees			
	Males		Females	
	<u>First 5 Years</u>	<u>5+ Years</u>	<u>First 5 Years</u>	<u>5+ Years</u>
20	2.50	2.19	5.75	3.93
25	2.50	1.59	5.75	2.58
30	2.50	1.16	5.75	1.79
35	2.50	0.68	5.75	1.08
40	2.50	0.38	5.75	0.76
45	2.50	0.18	5.75	0.41
50	2.50	0.03	5.75	0.23
55	2.50	0.02	5.75	0.14
60	2.50	0.00	5.75	0.04
62 & Over	0.00	0.00	0.00	0.00

E. Disability Rates

1. The 1985 Disability Study - Class 2, with separate rate for males and females.
2. 80% of disabilities are assumed to be service incurred - 20% non-service incurred.

F. Payroll Growth Assumption

5.3%, per annum - not greater than historical 10-year average (0.0% as of October 1, 2017).

G. Load for Future Rehires

The normal cost and accrued liabilities are loaded 0.1% for assumed future rehired members.

**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation**

H. Salary Increase Factors

Current salary is assumed to increase at a rate based on the table below per year until retirement - includes wage inflation of 3.0%.

<u>Service</u>	<u>Salary Increase</u>
0 years	8%
1	8%
2	7%
3	6%
4	5%
5	4%
6	4%
7 + years	3%

For members hired before May 1, 2010, average monthly earnings for retirements and DROPs are increased between 5.5% and 28.0% to reflect additional earnings during the averaging period including the inclusion in pensionable earnings of up to 1,000 hours of accrued unused leave as of April 30, 2010 payable at retirement or DROP entry.

The increase is calculated as follows:

$$5.5\% + \frac{\text{Total Hours of Accrued Unused Leave (1,000 maximum)}}{1,000} \times 22.5\%$$

For members hired on or after May 1, 2010, average monthly earnings for retirements and DROPs are increased 5.5% to reflect additional earnings during the averaging period.

The assumed salary increase rate after 7+ years of service reflects frozen longevity pay as of April 30, 2010.

I. Assumed Retirement Age

The retirement rates ***for members hired before May 1, 2010 who are expected to reach the 80% of AME maximum benefit in the 21st year of service*** are as follows:

1. 75% of members are assumed to retire the first year after attaining age fifty (50) and ten (10) years of credited service.
2. 50% of members are assumed to retire each year thereafter until reaching twenty (20) years of credited service.
3. 60% of members are assumed to retire after completing twenty (20) years of credited service.
4. 100% of members are assumed to retire upon attainment of twenty-one (21) years of credited service.

**Actuarial Assumptions and Actuarial Cost Methods**  
**Used in the Valuation**

I. Assumed Retirement Age (cont'd)

The retirement rates **for members hired before May 1, 2010 who are expected to reach the 80% of AME maximum benefit in the 22nd year of service** are as follows:

1. 70% of members are assumed to retire the first year after attaining age fifty (50) and ten (10) years of credited service.
2. 20% of members are assumed to retire each year thereafter until reaching twenty (20) years of credited service.
3. 60% of members are assumed to retire after completing twenty (20) years of credited service.
4. 15% of members are assumed to retire after completing twenty-one (21) years of credited service.
5. 100% of members are assumed to retire upon attainment of twenty-two (22) years of credited service.

The retirement rates **for members hired before May 1, 2010 who are expected to reach the 80% of AME maximum benefit in the 23rd year of service** are as follows:

1. 60% of members are assumed to retire the first year after attaining age fifty (50) and ten (10) years of credited service.
2. 18% of members are assumed to retire each year thereafter until reaching twenty (20) years of credited service.
3. 40% of members are assumed to retire after completing twenty (20) years of credited service.
4. 15% of members are assumed to retire after completing twenty-one (21) years of credited service.
5. 15% of members are assumed to retire after completing twenty-two (22) years of credited service.
6. 100% of members are assumed to retire upon attainment of twenty-three (23) years of credited service.

**For Firefighters hired after June 18, 2003 but before May 1, 2010 who are expected to reach age 50 before completion of twenty (20) years of service**, 100% are assumed to retire upon reaching the same multiplier (% of AME) they would have reached under the Plan in effect prior to April 30, 2010.

The retirement rates **for members hired on or after May 1, 2010** are as follows:

1. 50% of members who complete ten (10) years of service after reaching age 50 are assumed to retire upon completion of ten (10) years of credited service.
2. 15% of members who reach age 50 after completion of ten (10) years of credited service are assumed to retire upon reaching age 50.
3. 15% of members are assumed to retire each year thereafter, until reaching twenty (20) years of credited service.
4. 20% of members are assumed to retire upon reaching twenty (20) years of credited service.
5. 15% of members are assumed to retire each year thereafter, until reaching twenty-five (25) years of credited service.
6. 100% of members are assumed to retire upon reaching twenty-five (25) years of credited service.

**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation**

J. Marital Assumptions

1. 50% of deaths are assumed to be service incurred - 50% non-service incurred.
2. There are no children eligible for benefits.
3. 95% of participants are married.
4. Spouses are assumed to be the same age as members.

K. Cost of Living Adjustment

Firefighters: For Firefighters who retired or entered the DROP prior to May 1, 2010, 2.0% for those who elected the fluctuating COLA and 3.0% for those who elected the fixed COLA. 2.0% for Firefighters hired before May 1, 2010 who are expected to retire or enter the DROP after April 30, 2010. 1.5% for Firefighters hired after April 30, 2010.

Police Officers: 0.0%, 2.0% or 2.5% based upon election for Police Officers who retired or entered the DROP prior to October 1, 2006. 3.0% for Police Officers who retired or entered the DROP on or after October 1, 2006 but before May 1, 2010. 2.0% for Police Officers hired before May 1, 2010 who are expected to retire or enter the DROP after April 30, 2010. 1.5% for Police Officers hired after April 30, 2010.

L. Smoothed Asset Valuation Method

Smoothed actuarial value of assets is equal to the expected smoothed actuarial value of assets adjusted by 20% of the difference between the expected smoothed actuarial value and market value.

M. Cost Method

Normal Retirement, Termination, Disability, and Death Benefits: Entry Age Normal Cost Method

Under this method the normal cost for each active employee is the amount which is calculated to be a level percentage of pay that would be required annually from his entry age to his assumed retirement age to fund his estimated benefits, assuming the Fund had always been in effect. The normal cost for the Fund is the sum of such amounts for all employees. The actuarial accrued liability as of any valuation date for each active employee or inactive employee who is eligible to receive benefits under the Fund is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the assets of the Fund.

The DROP accounts balance is included in the assets and liabilities as of the valuation date.

N. Changes Since Previous Valuation

Investment Return was:

7.90%, compounded annually, net of investment expenses.

**Distribution by Attained Age Groups  
and Service Groups as of October 1, 2017**

**Active Firefighters**

<u>Attained Age Group</u>	-----COMPLETED YEARS OF SERVICE-----							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 &amp; Over</u>	
Under 25	8	-	-	-	-	-	-	8
25 - 29	14	7	-	-	-	-	-	21
30 - 34	5	4	16	-	-	-	-	25
35 - 39	1	1	15	11	-	-	-	28
40 - 44	2	2	12	28	-	-	-	44
45 - 49	-	1	10	12	1	-	-	24
50 - 54	-	-	1	6	-	-	-	7
55 - 59	-	-	1	-	-	-	-	1
60 - 64	-	-	-	-	-	-	-	0
65 & Over	-	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>30</b>	<b>15</b>	<b>55</b>	<b>57</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>158</b>
Average Attained Age				<u>10/01/2016</u> 37.82 years				<u>10/01/2017</u> 38.29 years
Average Hire Age				26.89 years				26.78 years
Average Pay				\$ 75,486				\$ 76,463
Percent Female				3.7%				2.5%

Table XII  
(Cont'd)

**Distribution by Attained Age Groups  
and Service Groups as of October 1, 2017**

**Active Police Officers**

<u>Attained Age Group</u>	-----COMPLETED YEARS OF SERVICE-----							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 &amp; Over</u>	
Under 25	8	-	-	-	-	-	-	8
25 - 29	20	6	-	-	-	-	-	26
30 - 34	15	14	-	-	-	-	-	29
35 - 39	4	4	17	2	-	-	-	27
40 - 44	3	5	13	27	1	-	-	49
45 - 49	-	3	6	15	1	-	-	25
50 - 54	1	1	1	5	-	-	-	8
55 - 59	-	1	1	2	-	-	-	4
60 - 64	1	-	-	-	-	-	-	1
65 & Over	-	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>52</b>	<b>34</b>	<b>38</b>	<b>51</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>177</b>
				<u>10/01/2016</u>		<u>10/01/2017</u>		
Average Attained Age				38.20 years		38.19 years		
Average Hire Age				27.88 years		28.07 years		
Average Pay				\$ 77,627		\$ 82,289		
Percent Female				16.8%		16.4%		

Table XII  
(Cont'd)

**Distribution by Attained Age Groups  
and Service Groups as of October 1, 2017**

**All Active Members**

<u>Attained Age Group</u>	-----COMPLETED YEARS OF SERVICE-----							<u>Total</u>
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30 &amp; Over</u>	
Under 25	16	-	-	-	-	-	-	16
25 - 29	34	13	-	-	-	-	-	47
30 - 34	20	18	16	-	-	-	-	54
35 - 39	5	5	32	13	-	-	-	55
40 - 44	5	7	25	55	1	-	-	93
45 - 49	-	4	16	27	2	-	-	49
50 - 54	1	1	2	11	-	-	-	15
55 - 59	-	1	2	2	-	-	-	5
60 - 64	1	-	-	-	-	-	-	1
65 & Over	-	-	-	-	-	-	-	0
<b>TOTAL</b>	<b>82</b>	<b>49</b>	<b>93</b>	<b>108</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>335</b>
				<u>10/01/2016</u>		<u>10/01/2017</u>		
Average Attained Age				38.02 years		38.24 years		
Average Hire Age				27.41 years		27.46 years		
Average Pay				\$ 76,610		\$ 79,542		
Percent Female				10.6%		9.9%		

**Statistics for Participants Entitled to Deferred Benefits  
and Participants Receiving Benefits**

A. Entitled to Deferred Benefits

<b><u>Current Age Group</u></b>	<b><u>Count</u></b>	<b><u>Total Annual Benefit</u></b>	<b><u>Average Annual Benefit</u></b>
<b>Less than 40</b>	2	\$ 48,870	\$ 24,435
40 - 44	3	91,319	30,440
45 - 49	-	-	-
50 - 54	-	-	-
55 - 59	-	-	-
60 - 64	-	-	-
65 & Over	-	-	-
<b>TOTAL</b>	<b>5</b>	<b>\$ 140,189</b>	<b>\$ 28,038</b>

B. Receiving Benefits (including DROPs)

<b><u>Current Age Group</u></b>	<b><u>Count</u></b>	<b><u>Total Annual Benefit</u></b>	<b><u>Average Annual Benefit</u></b>
<b>Less than 50</b>	86	\$ 8,074,152	\$ 93,885
50 - 54	102	10,119,823	99,214
55 - 59	85	7,890,176	92,826
60 - 64	53	4,382,482	82,688
65 - 69	20	1,498,843	74,942
70 - 74	15	699,652	46,643
75 - 79	6	274,542	45,757
80 - 84	4	134,836	33,709
85 & Over	3	55,405	18,468
<b>TOTAL</b>	<b>374</b>	<b>\$ 33,129,911</b>	<b>\$ 88,583</b>

**Reconciliation of Employee Data - Firefighters**

<b>A. <u>Active Participants</u></b>	
1. Active participants previous year	162
2. Retired during year	0
3. Entered DROP	(6)
4. Died during year	0
5. Disabled during year	0
6. Terminated during year	(3)
7. New active participants	5
8. Transferred from General Plan	0
9. Reinstated during year	0
10. Active participants current year	<u>158</u>
<b>B. <u>Participants Receiving Benefits</u></b>	
1. Participants receiving benefits previous year	132
2. New retired participants	0
3. New terminated vested receiving benefits	2
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Former DROPs now receiving benefits	7
7. Died or ceased payment during year	0
8. Retired or terminated vested receiving benefits current year	<u>141</u>
<b>C. <u>DROP Participants</u></b>	
1. DROP participants previous year	39
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	(7)
5. Entered DROP during year	6
6. DROP participants current year	<u>38</u>
<b>D. <u>Terminated Vested Participants Entitled to Future Benefits</u></b>	
1. Terminated vested entitled previous year	4
2. Died during year	0
3. Commenced receiving benefits during year	(2)
4. New terminated vested	0
5. Terminated vested paid lump sum	0
6. Terminated vested entitled current year	<u>2</u>

**Reconciliation of Employee Data - Police Officers**

<b>A. <u>Active Participants</u></b>	
1. Active participants previous year	179
2. Retired during year	0
3. Entered DROP	(10)
4. Died during year	0
5. Disabled during year	0
6. Terminated during year	(5)
7. New active participants	12
8. Transferred from General Plan	1
9. Reinstated during year	0
10. Active participants current year	<u>177</u>
<b>B. <u>Participants Receiving Benefits</u></b>	
1. Participants receiving benefits previous year	154
2. New retired participants	0
3. New terminated vested receiving benefits	1
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Former DROPs now receiving benefits	8
7. Died or ceased payment during year	0
8. Retired or terminated vested receiving benefits current year	<u>163</u>
<b>C. <u>DROP Participants</u></b>	
1. DROP participants previous year	30
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	(8)
5. Entered DROP during year	10
6. DROP participants current year	<u>32</u>
<b>D. <u>Terminated Vested Participants Entitled to Future Benefits</u></b>	
1. Terminated vested entitled previous year	3
2. Died during year	0
3. Commenced receiving benefits during year	(1)
4. New terminated vested	1
5. Terminated vested paid lump sum	0
6. Terminated vested entitled current year	<u>3</u>

**Reconciliation of Employee Data - All Members**

<b>A. <u>Active Participants</u></b>	
1. Active participants previous year	341
2. Retired during year	0
3. Entered DROP	(16)
4. Died during year	0
5. Disabled during year	0
6. Terminated during year	(8)
7. New active participants	17
8. Transferred from General Plan	1
9. Reinstated during year	0
10. Active participants current year	<u>335</u>
<b>B. <u>Participants Receiving Benefits</u></b>	
1. Participants receiving benefits previous year	286
2. New retired participants	0
3. New terminated vested receiving benefits	3
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	0
6. Former DROPs now receiving benefits	15
7. Died or ceased payment during year	0
8. Retired or terminated vested receiving benefits current year	<u>304</u>
<b>C. <u>DROP Participants</u></b>	
1. DROP participants previous year	69
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	(15)
5. Entered DROP during year	16
6. DROP participants current year	<u>70</u>
<b>D. <u>Terminated Vested Participants Entitled to Future Benefits</u></b>	
1. Terminated vested entitled previous year	7
2. Died during year	0
3. Commenced receiving benefits during year	(3)
4. New terminated vested	1
5. Terminated vested paid lump sum	0
6. Terminated vested entitled current year	<u>5</u>

**Projected Retirement Benefits**

<b><u>Fiscal Year</u></b>	<b><u>Projected Total Annual Payout</u></b>
2018	\$ 33,470,205
2019	\$ 36,279,922
2020	\$ 38,187,260
2021	\$ 40,578,276
2022	\$ 42,979,665
2023	\$ 45,575,136
2024	\$ 47,969,127
2025	\$ 49,975,976
2026	\$ 52,167,918
2027	\$ 54,272,903

The above projected payout of Plan benefits during the next ten years is based on assumptions involving all decrements. Actual payouts may differ from the above estimates depending upon the death, salary and retirement experience of the Plan. However, since the projected payment is recomputed each valuation date, there is an automatic correction to the extent that actual experience varies from expected experience.

**Analysis of Investment Yield as of October 1, 2017**

This Table sets forth the results of an analysis made of investment yields on the assets held under the Pension Plan for Firefighters and Police Officers of the City of Pembroke Pines.

The basic sources for this analysis were the Statements produced by the Plan Auditors.

The basic data was initially checked for internal consistency. Since no difficulties were encountered with the data, yield rates were calculated directly from the transaction information submitted. A summary of the transaction information is set forth on the following page.

**Table XVI  
(Cont'd)**

**Summary of Transaction Information**

Year Ending	Benefits Paid <sup>1</sup>	Administrative Expenses	Employee Contributions	City Contributions	State Contributions	Smoothed Actuarial Value <sup>2,3</sup>
09/30/2017	\$ 30,611,666	\$ 738,354	\$ 2,663,136	\$ 24,935,503	\$ 2,420,304	\$ 593,996,849
09/30/2016	29,062,537	627,306	2,819,814	23,908,967	2,445,532	550,554,481
09/30/2015	27,070,511	597,262	3,065,485	23,719,361	2,470,921	513,213,837
09/30/2014	25,391,326	544,463	2,983,425	23,585,326	2,629,081	477,837,128
09/30/2013	21,666,150	415,911	2,951,917	22,754,765	2,458,939	437,914,935
09/30/2012	22,423,335	423,570	2,945,195	21,540,037	2,342,079	316,002,633
09/30/2011	20,419,430	447,082	3,002,699	21,020,757	2,269,110	294,227,027
09/30/2010	18,268,505	572,279	3,012,468	22,200,904	2,337,509	280,775,729
09/30/2009	16,256,428	461,151	3,153,447	19,505,427	2,429,576	261,948,320
09/30/2008	13,835,750	403,851	3,333,603	15,214,031	2,581,143	246,182,224
09/30/2007	12,327,080	394,778	3,240,932	11,812,342	2,442,108	229,650,770
09/30/2006	9,586,049	376,632	3,474,437	8,205,196	2,028,350	205,102,670
09/30/2005	7,956,368	346,802	4,041,657	6,461,387	1,861,332	186,347,282
09/30/2004	10,865,749	372,004	3,123,907	29,374,983	1,730,676	168,315,697
09/30/2003	11,167,454	740,669	3,019,022	40,192,188	1,426,440	134,868,154
09/30/2002	2,392,216	529,831	2,683,777	3,643,183	1,233,840	96,599,615
09/30/2001	1,801,729	450,439	2,563,794	3,257,207	1,013,126	89,587,047
09/30/2000	1,498,201	430,328	2,113,222	2,580,359	970,129	81,679,522
09/30/1999	1,198,877	379,577	1,971,856	1,762,362	988,366	68,869,101
09/30/1998	1,143,202	310,971	1,790,908	1,450,517	915,599	58,718,121
09/30/1997	842,191	286,905	1,667,877	1,608,478	858,522	50,565,572
09/30/1996	694,974	237,252	1,563,652	1,588,045	671,056	39,919,818
09/30/1995	605,296	208,915	1,294,421	1,934,238	540,655	33,180,866

<sup>1</sup> Effective for year ending September 30, 2013, includes DROP distributions (previously included DROP benefit payments)

<sup>2</sup> Effective for year ending September 30, 2013, includes DROP account balances

<sup>3</sup> Market value prior to 2001

**Table XVI  
(Cont'd)**

**Recent Compensation, Termination and Investment Return Experience**

Valuation Date	Compensation *		Termination	Investment Return		
	% Increase (Decrease)	Assumed Increase	Ratio of Actual to Expected	Net Market Value Yield	Net Actuarial Value Yield	Assumed Rate of Return
10/01/2017	6.1%	3.5%	2.2	11.48%	8.14%	7.90%
10/01/2016	3.5%	3.6%	1.5	8.92%	7.38%	7.95%
10/01/2015	3.1%	4.5%	2.2	2.0%	7.1%	8.0%
10/01/2014	1.2%	4.5%	0.8	10.1%	8.3%	8.0%
10/01/2013	4.0%	4.6%	1.0	14.2%	7.9%	8.0%
10/01/2012	3.8%	4.6%	1.1	19.0%	6.4%	8.0%
10/01/2011	1.6%	5.5%	0.2	(0.2%)	3.8%	8.0%
10/01/2010	3.6%	5.7%	0.2	8.1%	4.5%	8.0%
10/01/2009	4.6%	6.2%	1.0	(1.0%)	3.6%	8.0%
10/01/2008	8.1%	6.3%	1.2	(13.7%)	4.4%	8.0%
Last 3 Years	4.2%	3.9%	1.9	7.4%	7.5%	7.9%
Last 5 Years	3.6%	4.1%	1.4	9.3%	7.8%	8.0%
Last 10 Years	3.9%	4.9%	0.9	5.5%	6.1%	8.0%

\* Excludes DROP payroll

**Employer Contribution Information**

<u>Valuation Date</u>	<u>Contribution Fiscal Year End</u>	<u>Minimum Required Employer Contributions</u>	<u>Actual City Contributions Made</u>	<u>Actual State Contributions Made</u>	<u>Actual Employer Contributions Made</u>
10/01/2017	09/30/2019	\$ 30,227,258	N/A	N/A	N/A
10/01/2016	09/30/2018	\$ 29,196,005	N/A	N/A	N/A
10/01/2015	09/30/2017	\$ 27,355,807	\$ 24,935,503	\$ 2,420,304	\$ 27,355,807
10/01/2014	09/30/2016	\$ 26,354,499	\$ 23,908,967	\$ 2,445,532	\$ 26,354,499
10/01/2013	09/30/2015	\$ 26,190,282	\$ 23,719,361	\$ 2,470,921	\$ 26,190,282
10/01/2012	09/30/2014	\$ 26,214,407	\$ 23,585,326	\$ 2,629,081	\$ 26,214,407
10/01/2011	09/30/2013	\$ 25,213,704	\$ 22,754,765	\$ 2,458,939	\$ 25,213,704
10/01/2010	09/30/2012	\$ 23,882,116	\$ 21,540,037	\$ 2,342,079	\$ 23,882,116
10/01/2010	09/30/2011	\$ 23,289,867	\$ 21,020,757	\$ 2,269,110	\$ 23,289,867
10/01/2009	09/30/2010	\$ 24,538,413	\$ 22,200,904	\$ 2,337,509	\$ 24,538,413
10/01/2008	09/30/2009	\$ 21,935,003	\$ 19,505,427	\$ 2,429,576	\$ 21,935,003
10/01/2007	09/30/2008	\$ 17,795,174	\$ 15,214,031	\$ 2,581,143	\$ 17,795,174
10/01/2006	09/30/2007	\$ 14,254,450	\$ 11,812,342	\$ 2,442,108	\$ 14,254,450
10/01/2005	09/30/2006	\$ 10,233,546	\$ 8,205,196	\$ 2,028,350	\$ 10,233,546
10/01/2004	09/30/2005	\$ 8,322,719	\$ 6,461,387	\$ 1,861,332	\$ 8,322,719

**Actuarial Valuation as of October 1, 2017****State Required Exhibit - Firefighters**

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
<b>A. Participant Data</b>			
1. Active participants	162	158	158
2. Retired participants and beneficiaries receiving benefits (including DROPs)	163	169	169
3. Disabled participants receiving benefits	8	10	10
4. Terminated vested participants	4	2	2
5. Annual payroll of active participants excluding DROPs	\$ 12,228,752	\$ 12,081,217	\$ 12,081,217
6. Annual payroll of active participants including DROPs	\$ 16,828,269	\$ 15,986,197	\$ 15,986,197
7. Annual benefits payable to those currently receiving benefits (including DROPs)	\$ 15,253,076	\$ 16,103,371	\$ 16,103,371
<b>B. Liabilities</b>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 103,651,028	\$ 104,461,093	\$ 105,410,070
b. Vesting benefits	594,968	549,813	555,446
c. Death benefits	556,778	537,473	541,215
d. Disability benefits	3,047,749	2,926,875	2,950,058
e. Total	<u>\$ 107,850,523</u>	<u>\$ 108,475,254</u>	<u>\$ 109,456,789</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 1,039,287	\$ 230,436	\$ 232,904
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	\$ 285,204,811	\$ 300,896,189	\$ 303,099,573
b. Disability retired	6,020,801	7,527,784	7,570,313
c. Beneficiaries	5,674,446	5,718,277	5,747,339
d. Miscellaneous (Refunds in Process)	6,680	104,281	104,281
e. Total	<u>\$ 296,906,738</u>	<u>\$ 314,246,531</u>	<u>\$ 316,521,506</u>

**Actuarial Valuation as of October 1, 2017**

**State Required Exhibit - Firefighters**

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
4. Total actuarial present value of future expected benefit payments	\$ 405,796,548	\$ 422,952,221	\$ 426,211,199
5. Actuarial accrued liabilities (EAN)	\$ 377,403,794	\$ 396,588,247	\$ 399,487,819
<b>C. <u>Statement of Accumulated Plan Benefits</u></b>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 296,900,058	\$ 314,142,250	\$ 316,417,225
b. Other participants	65,969,634	69,577,256	70,135,394
c. Total	\$ 362,869,692	\$ 383,719,506	\$ 386,552,619
2. Actuarial present value of accumulated non-vested plan benefits	2,565,599	1,827,351	1,856,438
3. Total actuarial present value of accumulated plan benefits	\$ 365,435,291	\$ 385,546,857	\$ 388,409,057
<b>D. <u>Disclosure of Following Items:</u></b>			
1. Actuarial present value of future salaries - attained age	\$ 85,477,871	\$ 81,384,756	\$ 81,562,433
2. Actuarial present value of future employee contributions - attained age	\$ 8,314,105	\$ 7,769,363	\$ 7,785,314
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 14,732,708	\$ 15,336,732	\$ 15,336,732
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

Actuarial Valuation as of October 1, 2017

State Required Exhibit - Police Officers

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
<b>A. <u>Participant Data</u></b>			
1. Active participants	179	177	177
2. Retired participants and beneficiaries receiving benefits (including DROPs)	173	184	184
3. Disabled participants receiving benefits	11	11	11
4. Terminated vested participants	3	3	3
5. Annual payroll of active participants excluding DROPs	\$ 13,895,211	\$ 14,565,239	\$ 14,565,239
6. Annual payroll of active participants including DROPs	\$ 17,091,322	\$ 17,332,628	\$ 17,332,628
7. Annual benefits payable to those currently receiving benefits (including DROPs)	\$ 15,720,679	\$ 17,026,540	\$ 17,026,540
<b>B. <u>Liabilities</u></b>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 113,843,475	\$ 115,580,470	\$ 116,625,040
b. Vesting benefits	697,124	713,215	720,151
c. Death benefits	635,187	676,079	681,030
d. Disability benefits	3,702,187	3,991,237	4,023,930
e. Total	<u>\$ 118,877,973</u>	<u>\$ 120,961,001</u>	<u>\$ 122,050,151</u>
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 673,298	\$ 606,047	\$ 611,293
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	\$ 283,183,052	\$ 304,778,642	\$ 306,941,173
b. Disability retired	7,838,559	7,928,045	7,971,044
c. Beneficiaries	1,378,892	2,306,895	2,317,596
d. Miscellaneous (Refunds in Process)	6,594	32,873	32,873
e. Total	<u>\$ 292,407,097</u>	<u>\$ 315,046,455</u>	<u>\$ 317,262,686</u>

**Actuarial Valuation as of October 1, 2017**

**State Required Exhibit - Police Officers**

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
4. Total actuarial present value of future expected benefit payments	\$ 411,958,368	\$ 436,613,503	\$ 439,924,130
5. Actuarial accrued liabilities (EAN)	\$ 381,261,472	\$ 405,018,144	\$ 407,898,152
<b>C. <u>Statement of Accumulated Plan Benefits</u></b>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 292,400,503	\$ 315,013,582	\$ 317,229,813
b. Other participants	73,482,649	72,639,369	73,175,507
c. Total	<u>\$ 365,883,152</u>	<u>\$ 387,652,951</u>	<u>\$ 390,405,320</u>
2. Actuarial present value of accumulated non-vested plan benefits	<u>5,102,161</u>	<u>4,962,167</u>	<u>5,034,637</u>
3. Total actuarial present value of accumulated plan benefits	\$ 370,985,313	\$ 392,615,118	\$ 395,439,957
<b>D. <u>Disclosure of Following Items:</u></b>			
1. Actuarial present value of future salaries - attained age	\$ 97,607,600	\$ 103,605,924	\$ 103,864,756
2. Actuarial present value of future employee contributions - attained age	\$ 8,960,622	\$ 9,289,760	\$ 9,311,334
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 15,844,348	\$ 15,513,291	\$ 15,513,291
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

Actuarial Valuation as of October 1, 2017

State Required Exhibit - All Members

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
<b>A. <u>Participant Data</u></b>			
1. Active participants	341	335	335
2. Retired participants and beneficiaries receiving benefits (including DROPs)	336	353	353
3. Disabled participants receiving benefits	19	21	21
4. Terminated vested participants	7	5	5
5. Annual payroll of active participants excluding DROPs	\$ 26,123,963	\$ 26,646,456	\$ 26,646,456
6. Annual payroll of active participants including DROPs	\$ 33,919,591	\$ 33,318,825	\$ 33,318,825
7. Annual benefits payable to those currently receiving benefits (including DROPs)	\$ 30,973,755	\$ 33,129,911	\$ 33,129,911
<b>B. <u>Value of Assets (Net)</u></b>			
1. Smoothed Actuarial Value	\$ 550,554,481	\$ 593,996,849	\$ 593,996,849
2. Market Value	\$ 538,859,146	\$ 599,325,724	\$ 599,325,724
<b>C. <u>Liabilities</u></b>			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	\$ 217,494,503	\$ 220,041,563	\$ 222,035,110
b. Vesting benefits	1,292,092	1,263,028	1,275,597
c. Death benefits	1,191,965	1,213,552	1,222,245
d. Disability benefits	6,749,936	6,918,112	6,973,988
e. Total	\$ 226,728,496	\$ 229,436,255	\$ 231,506,940
2. Actuarial present value of future expected benefit payments for terminated vested members	\$ 1,712,585	\$ 836,483	\$ 844,197
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	\$ 568,387,863	\$ 605,674,831	\$ 610,040,746
b. Disability retired	13,859,360	15,455,829	15,541,357
c. Beneficiaries	7,053,338	8,025,172	8,064,935
d. Miscellaneous (Refunds in Process)	13,274	137,154	137,154
e. Total	\$ 589,313,835	\$ 629,292,986	\$ 633,784,192

**Actuarial Valuation as of October 1, 2017**

**State Required Exhibit - All Members**

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
<b>C. Liabilities (cont'd)</b>			
4. Total actuarial present value of future expected benefit payments	\$ 817,754,916	\$ 859,565,724	\$ 866,135,329
5. Actuarial accrued liabilities (EAN)	\$ 758,665,266	\$ 801,606,391	\$ 807,385,971
6. Unfunded actuarial liabilities (EAN)	\$ 208,110,785	\$ 207,609,542	\$ 213,389,122
<b>D. Statement of Accumulated Plan Benefits</b>			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	\$ 589,300,561	\$ 629,155,832	\$ 633,647,038
b. Other participants	139,452,283	142,216,625	143,310,901
c. Total	<u>\$ 728,752,844</u>	<u>\$ 771,372,457</u>	<u>\$ 776,957,939</u>
2. Actuarial present value of accumulated non-vested plan benefits	<u>7,667,760</u>	<u>6,789,518</u>	<u>6,891,075</u>
3. Total actuarial present value of accumulated plan benefits	\$ 736,420,604	\$ 778,161,975	\$ 783,849,014
<b>E. Pension Cost</b>			
1. Total normal cost	\$ 9,801,798	\$ 9,837,792	\$ 9,942,453
2. Payment required to amortize unfunded liability	20,465,889	20,925,194	21,332,683
3. Interest adjustment	1,450,730	1,474,097	1,489,443
4. Total required contribution	<u>\$ 31,718,417</u>	<u>\$ 32,237,083</u>	<u>\$ 32,764,579</u>
5. a. Item 4 as a percentage of base payroll <sup>1</sup>	121.4%	121.0%	123.0%
b. Item 4 as a percentage of total payroll <sup>2</sup>	93.5%	96.8%	98.3%
6. Estimated employee contributions	\$ 2,522,412 <sup>3</sup>	\$ 2,537,321 <sup>5</sup>	\$ 2,537,321 <sup>5</sup>
7. a. Item 6 as a percentage of base payroll <sup>1</sup>	9.7%	9.5%	9.5%
b. Item 6 as a percentage of total payroll <sup>2</sup>	7.4% <sup>4</sup>	7.6% <sup>6</sup>	7.6% <sup>6</sup>
8. Estimated State contributions	\$ 2,445,532	\$ 2,420,304	\$ 2,420,304
9. a. Item 8 as a percentage of base payroll <sup>1</sup>	9.4% <sup>4</sup>	9.1% <sup>6</sup>	9.1% <sup>6</sup>
b. Item 8 as a percentage of total payroll <sup>2</sup>	7.2% <sup>4</sup>	7.3% <sup>6</sup>	7.3% <sup>6</sup>
10. Net amount payable by City	\$ 26,750,473	\$ 27,279,458	\$ 27,806,954
11. a. Item 10 as a percentage of base payroll <sup>1</sup>	102.4% <sup>4</sup>	102.4% <sup>6</sup>	104.4% <sup>6</sup>
b. Item 10 as a percentage of total payroll <sup>2</sup>	78.9% <sup>4</sup>	81.9% <sup>6</sup>	83.5% <sup>6</sup>

<sup>1</sup> Excludes DROP payroll

<sup>2</sup> Includes DROP payroll

<sup>3</sup> Percent of pay applied to expected 2017-2018 base payroll excluding DROP payroll (\$26,123,963)

<sup>4</sup> Percent of expected 2017-2018 covered payroll (\$26,123,963 / \$33,919,591)

<sup>5</sup> Percent of pay applied to expected 2018-2019 base payroll excluding DROP payroll (\$26,646,456)

<sup>6</sup> Percent of expected 2018-2019 covered payroll (\$26,646,456 / \$33,318,825)

Actuarial Valuation as of October 1, 2017

State Required Exhibit - All Members

	<u>10/01/2016</u>	<u>Prior Assumptions 10/01/2017</u>	<u>Current Assumptions 10/01/2017</u>
<b>F. <u>Past Contributions</u></b>			
1. Total contribution required (prior valuation)	\$ 30,011,067	\$ 31,718,417	\$ 31,718,417
2. Actual contributions made:			
a. Members	\$ 2,663,136	N/A	N/A
b. City	24,935,503	N/A	N/A
c. State	2,420,304	N/A	N/A
d. Total	<u>\$ 30,018,943</u>	N/A	N/A
<b>G. <u>Disclosure of Following Items:</u></b>			
1. Actuarial present value of future salaries excluding DROP payroll - attained age	\$ 183,085,471	\$ 184,990,680	\$ 185,427,189
2. Actuarial present value of future employee contributions - attained age	\$ 17,274,727	\$ 17,059,123	\$ 17,096,648
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	\$ 30,577,056	\$ 30,850,023	\$ 30,850,023
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

**State Required Exhibit**

Amortization balances are written down in proportion to amortization payments.

	<u>Unfunded Actuarial Accrued Liabilities</u>	<u>Current Unfunded Liabilities</u>	<u>Current Assumptions Amortization Payment</u>	<u>Prior Assumptions Amortization Payment</u>	<u>Remaining Funding Period</u>
10/01/2003	Gain and Loss Bases	\$ 11,996,690	\$ 1,924,648	\$ 1,927,419	8.000 years
10/01/2003	Others	699,408	112,207	112,369	8.000 years
10/01/2003	Plan Amendment	61,999,304	6,432,507	6,450,204	16.000 years
10/01/2004	Plan Amendment	39,353,586	3,960,352	3,971,804	17.000 years
10/01/2004	Plan Amendment	359,012	36,129	36,234	17.000 years
10/01/2006	Assumption Change	7,022,189	670,683	672,800	19.000 years
10/01/2006	Plan Amendment	30,554,614	2,918,243	2,927,457	19.000 years
10/01/2006	Plan Amendment	2,394,735	228,719	229,441	19.000 years
10/01/2009	Assumption Change	13,283,551	1,193,142	1,197,342	22.000 years
10/01/2009	Method Change	26,172,216	2,350,814	2,359,090	22.000 years
05/01/2010	Plan Amendment	(34,908,215)	(3,104,160)	(3,115,292)	22.583 years
10/01/2010	Actuarial (Gain) / Loss	13,888,231	1,226,560	1,231,016	23.000 years
10/01/2011	Actuarial (Gain) / Loss	10,864,718	944,860	948,394	24.000 years
10/01/2011	Assumption Change	(1,692,752)	(147,212)	(147,762)	24.000 years
10/01/2012	Actuarial (Gain) / Loss	4,429,434	379,824	381,284	25.000 years
10/01/2013	Actuarial (Gain) / Loss	(643,295)	(54,457)	(54,671)	26.000 years
10/01/2013	Plan Amendment	762,857	64,578	64,832	26.000 years
10/01/2014	Actuarial (Gain) / Loss	(5,065,660)	(423,792)	(425,504)	27.000 years
10/01/2014	Plan Amendment	13,069	1,093	1,098	27.000 years
10/01/2015	Actuarial (Gain) / Loss	4,108,944	340,056	341,460	28.000 years
10/01/2015	Plan Amendment	9,216	763	766	28.000 years
10/01/2015	Assumption Change	8,499,617	703,428	706,332	28.000 years
10/01/2016	Actuarial (Gain) / Loss	4,383,408	359,188	360,703	29.000 years
10/01/2016	Assumption Change	5,780,294	473,653	475,650	29.000 years
10/01/2017	Actuarial (Gain) / Loss	3,344,371	271,560	272,728	30.000 years
10/01/2017	Assumption Change	5,779,580	469,297	N/A	30.000 years
	<b>TOTAL</b>	<b>\$ 213,389,122</b>	<b>\$ 21,332,683</b>	<b>\$ 20,925,194</b>	

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or other wise provided for in the valuation. All known events or trends which may require material increase in plan costs or required contribution rates have been taken into account in the valuation.

Enrollment Number: 17-02802  
Dated: March 13, 2018

  
Lawrence F. Wilson, A.S.A.