

RETIREMENT PLAN FOR THE FIREFIGHTERS AND
POLICE OFFICERS OF THE CITY OF LONGWOOD

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2018

DETERMINES THE CONTRIBUTION
FOR THE 2019/20 FISCAL YEAR



	<u>Page</u>
Discussion	1
 <u>Funding Results</u>	
Table I-A Minimum Required Contribution	I-1
Table I-B Sensitivity Analysis	I-3
Table I-C Gain and Loss Analysis	I-4
Table I-D Present Value of Future Benefits	I-5
Table I-E Present Value of Accrued Benefits	I-6
Table I-F Present Value of Vested Benefits	I-7
Table I-G Entry Age Normal Accrued Liability	I-8
 <u>Accounting Results</u>	
GASB 67/68 Supplement as of September 30, 2018	
 <u>Assets</u>	
Table II-A Actuarial Value of Assets	II-1
Table II-B Market Value of Assets	II-2
Table II-C Investment Return	II-3
Table II-D Asset Reconciliation	II-4
Table II-E Historical Trust Fund Detail	II-5
Table II-F Other Reconciliations	II-6
Table II-G Historical Chapter 175/185 Contributions	II-7
 <u>Data</u>	
Table III-A Summary of Participant Data	III-1
Table III-B Data Reconciliation	III-2
Table III-C Active Participant Data	III-3
Table III-D Active Age-Service Distribution	III-4
Table III-E Active Age-Service-Salary Table	III-5
Table III-F Inactive Participant Data	III-6
Table III-G Projected Benefit Payments	III-7
 <u>Methods & Assumptions</u>	
Table IV-A Summary of Actuarial Methods and Assumptions	IV-1
Table IV-B Changes in Actuarial Methods and Assumptions	IV-3
 <u>Plan Provisions</u>	
Table V-A Summary of Plan Provisions	V-1
Table V-B Summary of Plan Amendments	V-5



February 2, 2019

Introduction

This report presents the results of the October 1, 2018 actuarial valuation of the Retirement Plan for the Firefighters and Police Officers of the City of Longwood. The report is based on the participant data and asset information provided by the pension plan administrator and, except for a cursory review for reasonableness including a comparison to the data provided for the previous valuation, we have not attempted to verify the accuracy of this information.

The primary purpose of this report is to provide a summary of the funded status of the plan as of October 1, 2018 and to determine the minimum required contribution under Chapter 112, Florida Statutes, for the 2019/20 plan year. In addition, this report provides a projection of the long-term funding requirements of the plan, statistical information concerning the assets held in the trust, statistical information concerning the participant population, and a summary of any recent plan changes.

The liabilities and cost presented in this report are based on numerous assumptions concerning the cost of benefits to be provided in the future, long-term investment returns, and the future demographic experience of the current participants. Anyone referring to this report should remember that the cost developed herein is only an estimate of the true cost of providing post-employment pension benefits. No one can predict with certainty whether the true cost will be higher or lower than the cost presented in this report. The calculated cost is entirely dependent upon the assumptions that are described in Table IV-A. If any of the assumptions is changed, then the cost shown in this report will change accordingly. Likewise, if any of the assumptions is not completely realized, then the cost shown in this report will change in the future.

Certain assumptions play a bigger role than others in determining the cost of the post-employment pension benefits. In some cases, relatively small changes in a particular assumption can have a dramatic impact on the anticipated cost of benefits. Although a thorough analysis of the impact of such changes is beyond the scope of this report, Table I-B illustrates the impact that alternative long-term investment returns would have on the minimum required contribution rate.

Minimum Required Contribution

Table I-A shows the development of the minimum required contribution for the 2019/20 plan year. The minimum required contribution rate is 20.27% of covered payroll, which represents a decrease of 1.85% of payroll from the prior valuation.

The normal cost rate is 20.39% of payroll, which is 2.11% of payroll lower than the normal cost rate that was developed in the prior valuation. Table I-C provides a breakdown of the sources of change in the normal cost rate. Significantly, the rate decreased by 0.66% of payroll due to investment gains and decreased by another 1.45% of payroll due to



demographic experience. The market value of assets earned 7.25% during the 2017/18 plan year, whereas a 7.00% annual investment return was required to maintain a stable contribution rate.

Chapter 112, Florida Statutes, sets forth the rules concerning the minimum required contribution for public pension plans within the state. Essentially, the City must contribute an amount equal to the annual normal cost of the plan plus an adjustment as necessary to reflect interest on any delayed payment of the contribution beyond the valuation date. On this basis, the City's 2019/20 minimum required contribution will be equal to 20.27% multiplied by the total pensionable earnings for the 2019/20 plan year for the active employees who are covered by the plan and reduced by the portion of the Chapter 175/185 contribution that is allowed to be recognized during the 2019/20 plan year.

Based on the current assets, participant data, and actuarial assumptions and methods that are used to value the plan, the present-day value of the total long-term funding requirement is \$22,275,076. As illustrated in Table I-A, current assets are sufficient to cover \$15,793,749 of this amount, the employer's 2018/19 expected contribution will cover \$822,530 of this amount, the employer's 2019/20 expected contribution will cover \$783,902 of this amount, and future employee contributions are expected to cover \$302,983 of this amount, leaving \$4,571,912 to be covered by future employer funding beyond the 2019/20 fiscal year. Again, demographic and investment experience that differs from that assumed will either increase or decrease the future employer funding requirement.

DRAGO Fund

Any Chapter 175/185 contributions received in excess of the "base amount" are deposited into the Defined Retirement Accumulation Group Obligation (DRAGO) Fund. As of October 1, 2018, the "base amount" is \$302,812, which is equal to the portion of the annual Chapter 175/185 contributions that the City may apply towards the minimum required contribution. In addition, the DRAGO Fund is credited with interest at the valuation rate of 7.00% as of each September 30, whereby the interest rate is applied to the balance in the DRAGO Fund as of the preceding October 1. DRAGO Fund assets are comingled with the pension fund assets. Upon retirement from active employment, the retiree is entitled to receive a pro-rata share of the DRAGO Fund balance as of his date of retirement, where his pro-rata share is determined by dividing the retiree's credited service as of the October 1 preceding his last day of employment by the total credited service for all active employees on that date.

As of October 1, 2018, the DRAGO Fund balance is \$2,338,773, which reflects the DRAGO Fund balance of \$2,233,382 as of October 1, 2017 plus Chapter 175/185 contributions of \$18,505 plus investment earnings of \$156,337, and minus benefit distributions of \$69,451 for the 2017/18 plan year as shown in Table II-F.

Advance Employer Contribution

The City has made contributions to the plan in excess of the minimum amount that was required to be contributed pursuant to Chapter 112. In this report, the excess contributions are referred to as an "advance employer contribution." As of October 1, 2018, the advance employer contribution is \$41,253, which reflects the advance employer contribution of zero as of October 1, 2017 plus \$41,253 of actual City contributions in excess of the minimum required contribution for the 2017/18 plan year as shown in Table II-F.



The City may apply all or any portion of the advance employer contribution towards the minimum required contribution for the 2018/19 plan year or for any later plan year. The minimum required contribution for that plan year will be reduced dollar-for-dollar by the amount of the advance employer contribution that is applied in this manner.

Alternatively, at any time, the City may apply all or any portion of the advance employer contribution as an extra contribution in excess of the minimum required contribution.

Contents of the Report

Tables I-D through I-G provide a detailed breakdown of various liability amounts by type of benefit and by participant group. Tables II-A through II-F provide information concerning the assets of the trust fund. Specifically, Table II-A shows the development of the actuarial value of assets, which is based on the market value of assets. Tables III-A through III-G provide statistical information concerning the plan's participant population. In particular, Table III-G gives a 10-year projection of the cash that is expected to be required from the trust fund in order to pay benefits to the current group of participants. Finally, Tables IV-A through V-B provide a summary of the actuarial assumptions and methods that are used to value the plan's benefits and of the relevant plan provisions as of October 1, 2018, as well as a summary of the changes that have occurred since the previous valuation report was prepared.

Refund of Participant Contributions

It is our understanding that there are 36 participants who are due a refund of their contributions. We have estimated the accumulated amount of their refunds to be \$16,119 as of October 1, 2018. The average amount owed to these individuals is \$448 each. We recommend that the accumulated contributions be distributed to these individuals if possible in order to simplify the administration of the plan and to reduce future administrative costs.

Certification

This actuarial valuation was prepared 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 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 otherwise taken into account in the valuation. All known events or trends which may require a material change in plan costs or required contribution rates have been taken into account in the valuation.



For the firm,



Charles T. Carr
Consulting Actuary
Southern Actuarial Services Company, Inc.

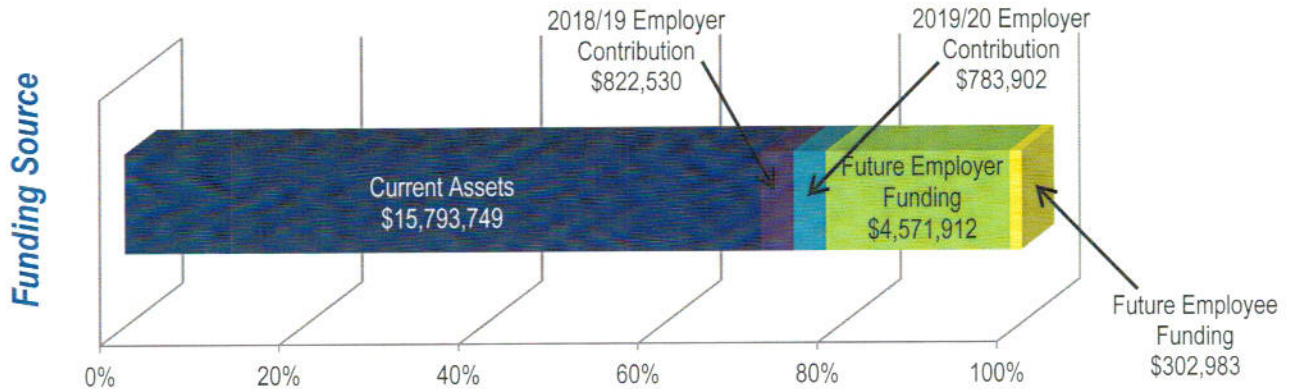
Enrolled Actuary No. 17-04927

The individual above is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Minimum Required Contribution

Table I-A



For the 2019/20 Plan Year

Present Value of Future Benefits	\$21,626,287
Present Value of Future Administrative Expenses	\$648,789
Actuarial Value of Assets	(\$15,793,749)
Present Value of Future Employee Contributions	(\$302,983)
Present Value of Future Normal Costs	\$6,178,344
Present Value of Future Payroll	÷ \$30,297,959
Normal Cost Rate	= 20.3919%
Expected Payroll	x \$3,718,491
Normal Cost	\$758,273
Adjustment to Reflect Monthly Employer Contributions	\$28,156
Expected Employer Contribution for the 2018/19 Plan Year	(\$822,530)
Remaining Contribution Due/(Credit) for the 2018/19 Plan Year	(\$36,101)
	x 0.07
One Year's Interest Charge/(Credit) on the Remaining Contribution	(\$2,527)
Preliminary Employer Contribution for the 2019/20 Plan Year	\$783,902
Expected Payroll for the 2019/20 Plan Year	÷ \$3,867,231

Minimum Required Contribution Rate **20.27%**

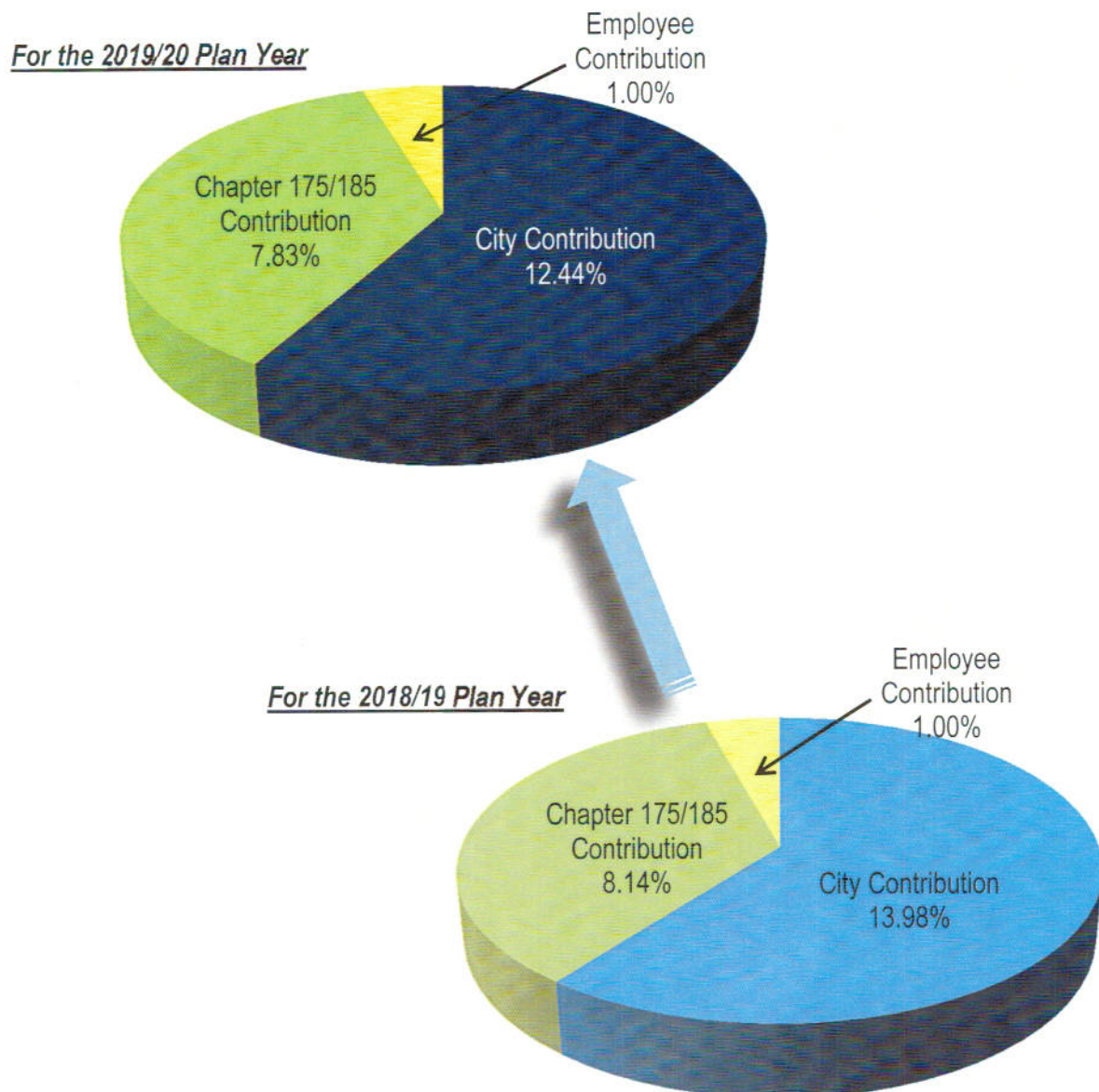
(The actual contribution should be based on the minimum required contribution rate multiplied by the actual payroll for the year.)



Minimum Required Contribution

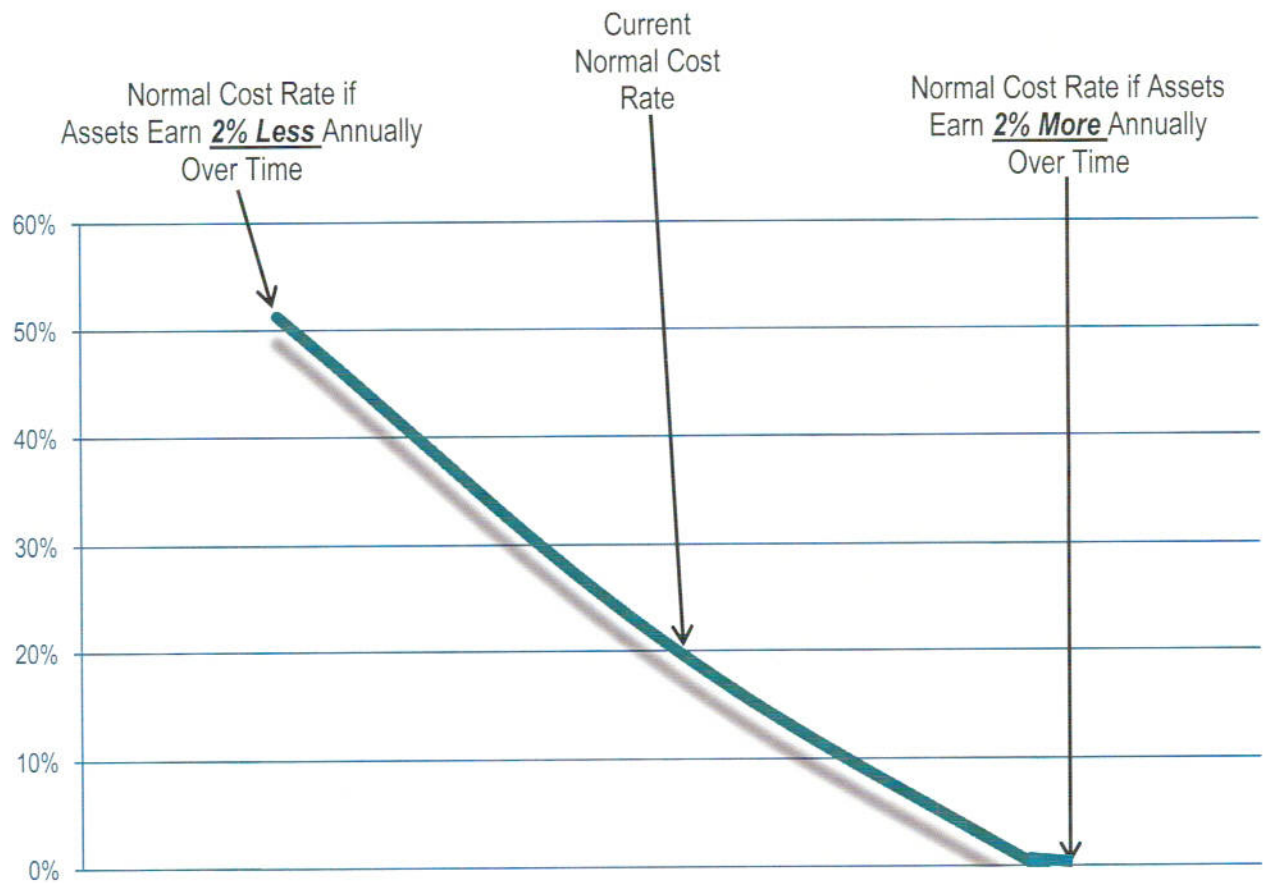
Table I-A
(continued)

The minimum required contribution rate of 20.27% includes both the City contribution and the allowable Chapter 175/185 contribution. In addition, employees are required to contribute 1.00% of pensionable earnings. The actual City contribution rate is expected to be approximately 12.44% based on the allowable Chapter 175/185 contribution for the 2018/19 plan year. The chart below shows the expected contribution rate by source for the 2019/20 plan year based on the expected payroll. A comparative chart shows the contribution rate by source for the previous plan year.



Sensitivity Analysis

Table I-B



The line above illustrates the sensitivity of the normal cost rate to changes in the long-term investment return.



Gain and Loss Analysis

Table I-C

Previous normal cost rate	22.50%
Increase (decrease) due to investment gains and losses	-0.66%
Increase (decrease) due to demographic experience	-1.45%
Increase (decrease) due to plan amendments	0.00%
Increase (decrease) due to actuarial assumption changes	0.00%
Increase (decrease) due to actuarial method changes	0.00%
Current normal cost rate	<u>20.39%</u>



Present Value of Future Benefits

Table I-D

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
<u>Actively Employed Participants</u>			
Retirement benefits	\$14,370,795	\$14,370,795	\$14,370,795
Termination benefits	\$1,473,633	\$1,473,633	\$1,473,633
Disability benefits	\$608,595	\$608,595	\$608,595
Death benefits	\$89,367	\$89,367	\$89,367
Refund of employee contributions	\$62,174	\$62,174	\$62,174
Sub-total	\$16,604,564	\$16,604,564	\$16,604,564
<u>Deferred Vested Participants</u>			
Retirement benefits	\$3,091,578	\$3,091,578	\$3,091,578
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$3,091,578	\$3,091,578	\$3,091,578
<u>Due a Refund of Contributions</u>	\$16,119	\$16,119	\$16,119
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$769,473	\$769,473	\$769,473
Disability retirements	\$663,698	\$663,698	\$663,698
Beneficiaries receiving	\$480,855	\$480,855	\$480,855
DROP participants	\$0	\$0	\$0
Sub-total	\$1,914,026	\$1,914,026	\$1,914,026
<u>Grand Total</u>	<u>\$21,626,287</u>	<u>\$21,626,287</u>	<u>\$21,626,287</u>
Present Value of Future Payroll	\$30,297,959	\$30,297,959	\$30,297,959
Present Value of Future Employee Contribs.	\$302,983	\$302,983	\$302,983
Present Value of Future Employer Contribs.	\$6,178,344	\$6,178,344	\$6,178,344



Present Value of Accrued Benefits

Table I-E

	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<u>Actively Employed Participants</u>			
Retirement benefits	\$5,940,676	\$5,940,676	\$5,940,676
Termination benefits	\$646,010	\$646,010	\$646,010
Disability benefits	\$476,994	\$476,994	\$476,994
Death benefits	\$53,358	\$53,358	\$53,358
Refund of employee contributions	\$31,336	\$31,336	\$31,336
Sub-total	\$7,148,374	\$7,148,374	\$7,148,374
<u>Deferred Vested Participants</u>			
Retirement benefits	\$3,091,578	\$3,091,578	\$3,091,578
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$3,091,578	\$3,091,578	\$3,091,578
<u>Due a Refund of Contributions</u>	\$16,119	\$16,119	\$16,119
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$769,473	\$769,473	\$769,473
Disability retirements	\$663,698	\$663,698	\$663,698
Beneficiaries receiving	\$480,855	\$480,855	\$480,855
DROP participants	\$0	\$0	\$0
Sub-total	\$1,914,026	\$1,914,026	\$1,914,026
<u>Grand Total</u>	<u>\$12,170,097</u>	<u>\$12,170,097</u>	<u>\$12,170,097</u>
<u>Funded Percentage</u>	130.11%	130.11%	130.11%

(Note: Funded percentage is equal to the ratio of the usable portion of the market value of assets divided by the present value of accrued benefits.)



Present Value of Vested Benefits

Table I-F

	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<u>Actively Employed Participants</u>			
Retirement benefits	\$5,940,676	\$5,940,676	\$5,940,676
Termination benefits	\$628,613	\$628,613	\$628,613
Disability benefits	\$476,994	\$476,994	\$476,994
Death benefits	\$51,002	\$51,002	\$51,002
Refund of employee contributions	\$32,097	\$32,097	\$32,097
Sub-total	\$7,129,382	\$7,129,382	\$7,129,382
<u>Deferred Vested Participants</u>			
Retirement benefits	\$3,091,578	\$3,091,578	\$3,091,578
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$3,091,578	\$3,091,578	\$3,091,578
<u>Due a Refund of Contributions</u>	\$16,119	\$16,119	\$16,119
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$769,473	\$769,473	\$769,473
Disability retirements	\$663,698	\$663,698	\$663,698
Beneficiaries receiving	\$480,855	\$480,855	\$480,855
DROP participants	\$0	\$0	\$0
Sub-total	\$1,914,026	\$1,914,026	\$1,914,026
<u>Grand Total</u>	<u>\$12,151,105</u>	<u>\$12,151,105</u>	<u>\$12,151,105</u>



Entry Age Normal Accrued Liability

Table I-G

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
<u>Actively Employed Participants</u>			
Retirement benefits	\$8,758,338	\$8,758,338	\$8,758,338
Termination benefits	\$907,411	\$907,411	\$907,411
Disability benefits	\$365,624	\$365,624	\$365,624
Death benefits	\$54,248	\$54,248	\$54,248
Refund of employee contributions	\$35,316	\$35,316	\$35,316
Sub-total	\$10,120,937	\$10,120,937	\$10,120,937
<u>Deferred Vested Participants</u>			
Retirement benefits	\$3,091,578	\$3,091,578	\$3,091,578
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$3,091,578	\$3,091,578	\$3,091,578
<u>Due a Refund of Contributions</u>	\$16,119	\$16,119	\$16,119
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$769,473	\$769,473	\$769,473
Disability retirements	\$663,698	\$663,698	\$663,698
Beneficiaries receiving	\$480,855	\$480,855	\$480,855
DROP participants	\$0	\$0	\$0
Sub-total	\$1,914,026	\$1,914,026	\$1,914,026
<u>Grand Total</u>	<u>\$15,142,660</u>	<u>\$15,142,660</u>	<u>\$15,142,660</u>



Actuarial Value of Assets

Table II-A

Market Value of Assets as of October 1, 2018	\$18,173,775
Minus DRAGO account balances	(\$2,338,773)
Minus advance employer contributions	(\$41,253)
Minus excess Chapter 175/185 contributions	\$0
Actuarial Value of Assets as of October 1, 2018	<u>\$15,793,749</u>

Historical Actuarial Value of Assets

October 1, 2009	\$2,788,273
October 1, 2010	\$3,865,856
October 1, 2011	\$4,551,114
October 1, 2012	\$6,337,454
October 1, 2013	\$7,990,635
October 1, 2014	\$9,257,516
October 1, 2015	\$9,649,781
October 1, 2016	\$11,046,422
October 1, 2017	\$13,778,290
October 1, 2018	\$15,793,749

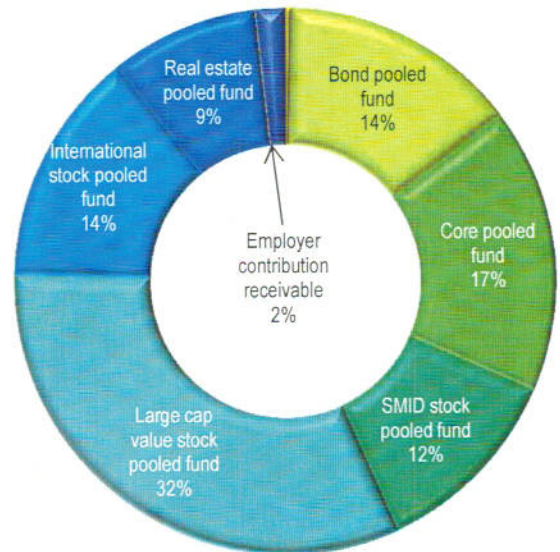


Market Value of Assets

Table II-B

As of October 1, 2018

Market Value of Assets	<u>\$18,173,775</u>
Cash	\$71,412
Bond pooled fund	\$2,588,678
Core pooled fund	\$3,070,708
SMID stock pooled fund	\$2,142,354
Large cap value stock pooled fund	\$5,837,915
International stock pooled fund	\$2,535,119
Real estate pooled fund	\$1,606,766
Employer contribution receivable	\$319,192
Employee contribution receivable	\$1,631

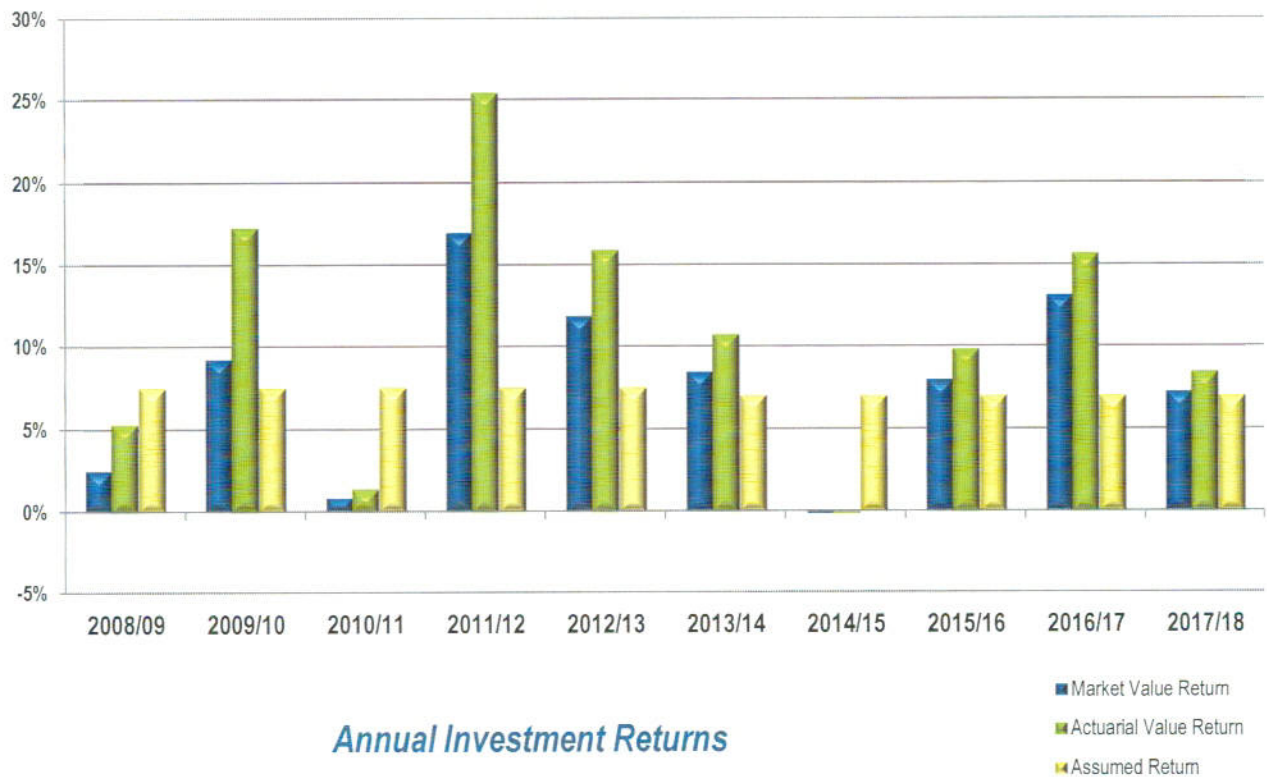
**Historical Market Value of Assets**

October 1, 2009	\$5,529,653
October 1, 2010	\$6,500,141
October 1, 2011	\$7,010,091
October 1, 2012	\$8,673,088
October 1, 2013	\$10,200,434
October 1, 2014	\$11,470,748
October 1, 2015	\$11,919,195
October 1, 2016	\$13,376,938
October 1, 2017	\$16,011,672
October 1, 2018	\$18,173,775



Investment Return

Table II-C

*Annual Investment Returns*

Plan Year	Market Value Return	Actuarial Value Return	Assumed Return
2008/09	2.52%	5.31%	7.50%
2009/10	9.21%	17.29%	7.50%
2010/11	0.86%	1.39%	7.50%
2011/12	16.98%	25.41%	7.50%
2012/13	11.84%	15.90%	7.50%
2013/14	8.45%	10.73%	7.00%
2014/15	-0.08%	-0.10%	7.00%
2015/16	7.97%	9.83%	7.00%
2016/17	13.12%	15.72%	7.00%
2017/18	7.25%	8.42%	7.00%
10yr. Avg.	7.69%	10.74%	7.25%



Asset Reconciliation

Table II-D

	<u>Market Value</u>	<u>Actuarial Value</u>
As of October 1, 2017	\$16,011,672	\$13,778,290
<i>Increases Due To:</i>		
Employer Contributions	\$596,990	\$596,990
Chapter 175/185 Contributions	\$621,877	\$621,877
Employee Contributions	\$41,442	\$41,442
Service Purchase Contributions	\$0	\$0
Total Contributions	<u>\$1,260,309</u>	<u>\$1,260,309</u>
Interest and Dividends	\$0	
Realized Gains (Losses)	\$0	
Unrealized Gains (Losses)	\$1,195,204	
Total Investment Income	<u>\$1,195,204</u>	\$1,195,204
Other Income	\$0	
Total Income	<u>\$2,455,513</u>	<u>\$2,455,513</u>
<i>Decreases Due To:</i>		
Monthly Benefit Payments	(\$237,405)	(\$237,405)
Lump Sum Distributions	(\$9,773)	(\$9,773)
DRAGO Credits		(\$105,391)
Total Benefit Payments	<u>(\$247,178)</u>	<u>(\$352,569)</u>
Investment Expenses	\$0	
Administrative Expenses	(\$46,232)	(\$46,232)
Advance Employer Contribution		(\$41,253)
Excess Chapter 175/185 Contribution		\$0
Total Expenses	<u>(\$293,410)</u>	<u>(\$440,054)</u>
As of October 1, 2018	<u><u>\$18,173,775</u></u>	<u><u>\$15,793,749</u></u>



Historical Trust Fund Detail

Table II-E

Income

Plan	Employer	Chapter	Employee	Service		Realized	Unrealized	Other
<u>Year</u>	<u>Contribs.</u>	<u>Contribs.</u>	<u>Contribs.</u>	<u>Purchase</u>	<u>Interest /</u>	<u>Gains /</u>	<u>Gains /</u>	<u>Income</u>
				<u>Contribs.</u>	<u>Dividends</u>	<u>Losses</u>	<u>Losses</u>	
2008/09	\$173,541	\$347,204	\$26,294	\$0	\$0	\$0	\$129,697	\$0
2009/10	\$179,107	\$277,356	\$27,138	\$0	\$0	\$0	\$529,526	\$0
2010/11	\$192,762	\$267,689	\$29,123	\$0	\$0	\$0	\$58,116	\$0
2011/12	\$177,290	\$263,829	\$29,128	\$0	\$0	\$0	\$1,227,569	\$0
2012/13	\$220,073	\$276,919	\$31,080	\$0	\$0	\$0	\$1,055,248	\$0
2013/14	\$203,639	\$312,175	\$30,855	\$0	\$0	\$0	\$878,167	\$0
2014/15	\$226,408	\$279,152	\$34,304	\$0	\$0	\$0	-\$9,679	\$0
2015/16	\$267,486	\$288,494	\$40,529	\$0	\$0	\$0	\$969,227	\$0
2016/17	\$879,207	\$2,252	\$41,578	\$0	\$0	\$0	\$1,808,976	\$0
2017/18	\$596,990	\$621,877	\$41,442	\$0	\$0	\$0	\$1,195,204	\$0

Expenses

Plan	Monthly	Lump			<u>Other Actuarial Adjustments</u>		
	Benefit	Sum	Admin.	Invest.	DRAGO	Advance	Excess
<u>Year</u>	<u>Payments</u>	<u>Distributions</u>	<u>Expenses</u>	<u>Expenses</u>	<u>Credits</u>	<u>Contribs.</u>	<u>Contribs.</u>
2008/09	\$0	\$3,470	\$28,929	\$0	\$132,770	-\$52,034	\$0
2009/10	\$0	\$0	\$42,639	\$0	\$98,336	-\$205,431	\$0
2010/11	\$0	\$1,849	\$35,891	\$0	\$105,711	-\$281,019	\$0
2011/12	\$0	\$1,400	\$33,419	\$0	\$113,639	-\$236,982	\$0
2012/13	\$0	\$2,631	\$53,343	\$0	\$122,162	-\$247,997	\$0
2013/14	\$23,310	\$63,724	\$67,488	\$0	\$72,114	-\$68,681	\$0
2014/15	\$37,140	\$0	\$44,598	\$0	\$127,617	-\$71,435	\$0
2015/16	\$51,945	\$1,429	\$54,619	\$0	\$136,551	-\$75,449	\$0
2016/17	\$51,944	\$1,491	\$43,844	\$0	\$146,109	-\$243,243	\$0
2017/18	\$237,405	\$9,773	\$46,232	\$0	\$105,391	\$41,253	\$0

Note: Information was not available to separate the investment expenses from the investment income nor was information available to separate the investment income by source.



Other Reconciliations

Table II-F

DRAGO* Account Reconciliation

DRAGO Fund Balance as of October 1, 2017	\$2,233,382
DRAGO Fund Contribution	\$18,505
DRAGO Fund Investment Return	\$156,337
DRAGO Fund Benefits Paid	(\$69,451)
Net DRAGO Fund Credit	\$105,391
DRAGO Fund Balance as of October 1, 2018	<u>\$2,338,773</u>

Advance Employer Contribution

Advance Employer Contribution as of October 1, 2017	\$0
Additional Employer Contribution	\$1,200,362
Minimum Required Contribution	(\$1,159,109)
Net Increase in Advance Employer Contribution	\$41,253
Advance Employer Contribution as of October 1, 2018	<u>\$41,253</u>

Excess Chapter 175/185 Contribution

Excess Chapter 175/185 Contribution as of October 1, 2017	\$0
Additional Chapter 175/185 Contribution	\$621,877
Allowable Chapter 175/185 Contribution	(\$603,372)
Transfer to DRAGO Fund	(\$18,505)
Net Increase in Excess Chapter 175/185 Contribution	\$0
Excess Chapter 175/185 Contribution as of October 1, 2018	<u>\$0</u>

* Defined Retirement Accumulation Group Obligation



Historical Chapter 175/185 Contributions

Table II-G

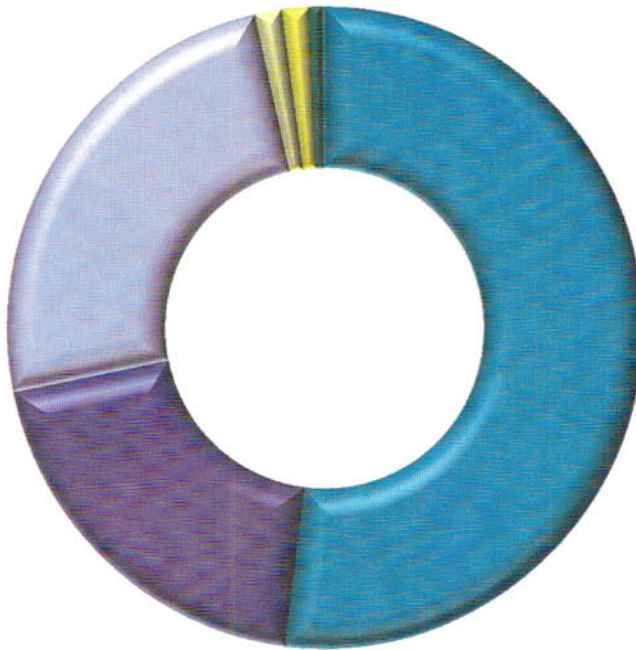
	<i>Total Accumulated Excess Chapter 175/185 Contribution</i>			\$0
	<u>Chapter 175 Regular Distribution</u>	<u>Chapter 175 Supplemental Distribution</u>	<u>Chapter 185 Distribution</u>	<u>Allowable Amount</u>
1998 Distribution	\$70,510	\$0	\$144,758	(\$215,268)
1999 Distribution	\$54,190	\$16,685	\$212,828	(\$283,703)
2000 Distribution	\$126,870	\$30,920	\$175,880	(\$333,670)
2001 Distribution	\$0	\$66,667	\$193,561	(\$260,228)
2002 Distribution	\$66,623	\$0	\$229,657	(\$296,280)
2003 Distribution	\$63,805	\$37,122	\$241,584	(\$342,511)
2004 Distribution	\$79,077	\$44,423	\$244,933	(\$368,433)
2005 Distribution	\$94,044	\$45,671	\$244,933	(\$384,648)
2006 Distribution	\$96,983	\$56,433	\$244,933	(\$398,349)
2007 Distribution	\$100,801	\$82,598	\$244,933	(\$428,332)
2008 Distribution	\$88,274	\$79,120	\$179,810	(\$347,204)
2009 Distribution	\$82,165	\$47,018	\$148,173	(\$277,356)
2010 Distribution	\$82,301	\$39,376	\$146,012	(\$267,689)
2011 Distribution	\$85,023	\$32,402	\$146,404	(\$263,829)
2012 Distribution	\$96,118	\$36,905	\$143,896	(\$276,919)
2013 Distribution	\$107,701	\$58,799	\$145,675	(\$306,831)
2014 Distribution	\$110,502	\$15,115	\$153,535	(\$279,152)
2015 Distribution	\$121,049	\$0	\$167,445	(\$288,494)
2016 Distribution	\$0	\$2,252	\$0	(\$2,252)
2017 Distribution	\$255,555	\$3,269	\$363,053	(\$603,372)
To DRAGO Fund				(\$23,849)



Summary of Participant Data

Table III-A

As of October 1, 2018

Actively Employed Participants

Active Participants	76
DROP Participants	0

Inactive Participants

Deferred Vested Participants	29
Due a Refund of Contributions	36
Deferred Beneficiaries	0

Participants Receiving a Benefit

Service Retirements	2
Disability Retirements	2
Beneficiaries Receiving	1

Total Participants 146

Number of Participants Included in Prior Valuations

	<i>Active</i>	<i>DROP</i>	<i>Inactive</i>	<i>Retired</i>	<i>Total</i>
October 1, 2009	55	0	18	0	73
October 1, 2010	58	0	24	0	82
October 1, 2011	57	0	25	0	82
October 1, 2012	58	0	26	0	84
October 1, 2013	65	0	30	0	95
October 1, 2014	67	0	35	1	103
October 1, 2015	68	0	48	2	118
October 1, 2016	67	0	52	2	121
October 1, 2017	65	0	63	2	130
October 1, 2018	76	0	65	5	146



Data Reconciliation

Table III-B

	<u>Active</u>	<u>DROP</u>	<u>Deferred Vested</u>	<u>Due a Refund</u>	<u>Def. Benef.</u>	<u>Service Retiree</u>	<u>Disabled Retiree</u>	<u>Benef. Rec'v.</u>	<u>Total</u>
<u>October 1, 2017</u>	65	0	28	35	0	0	2	0	130
<u>Change in Status</u>									
Re-employed									
Terminated	(9)		2	7					
Retired	(1)		(1)			2			
<u>Participation Ended</u>									
Transferred Out									
Cashed Out				(6)					(6)
Died	(1)								(1)
<u>Participation Began</u>									
Newly Hired	22								22
Transferred In									
New Beneficiary								1	1
<u>Other Adjustment</u>									
<u>October 1, 2018</u>	76	0	29	36	0	2	2	1	146

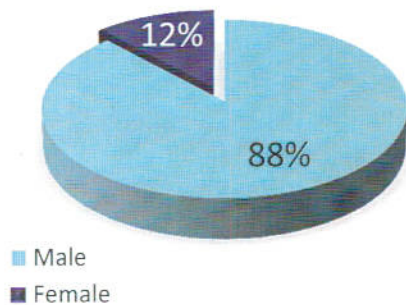


Active Participant Data

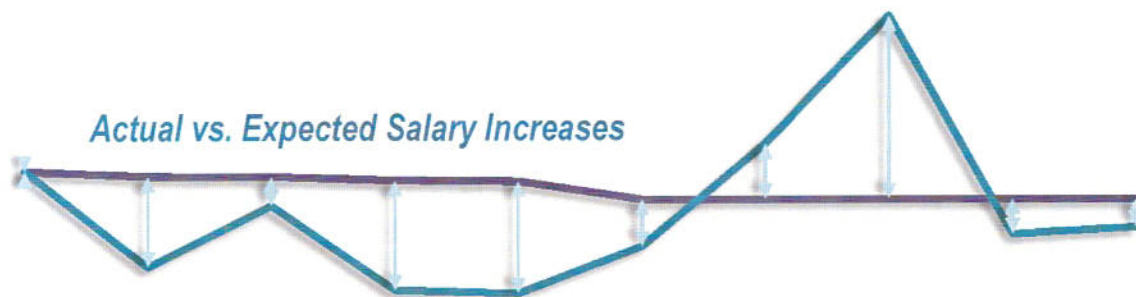
Table III-C

Gender Mix

As of October 1, 2018



Average Age	34.4 years
Average Service	6.4 years
Total Annualized Compensation for the Prior Year	\$4,243,625
Total Expected Compensation for the Current Year	\$3,718,491
Average Increase in Compensation for the Prior Year	1.88%
Expected Increase in Compensation for the Current Year	4.00%



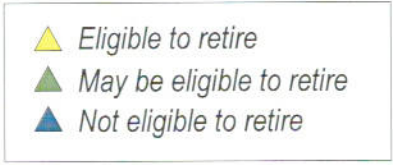
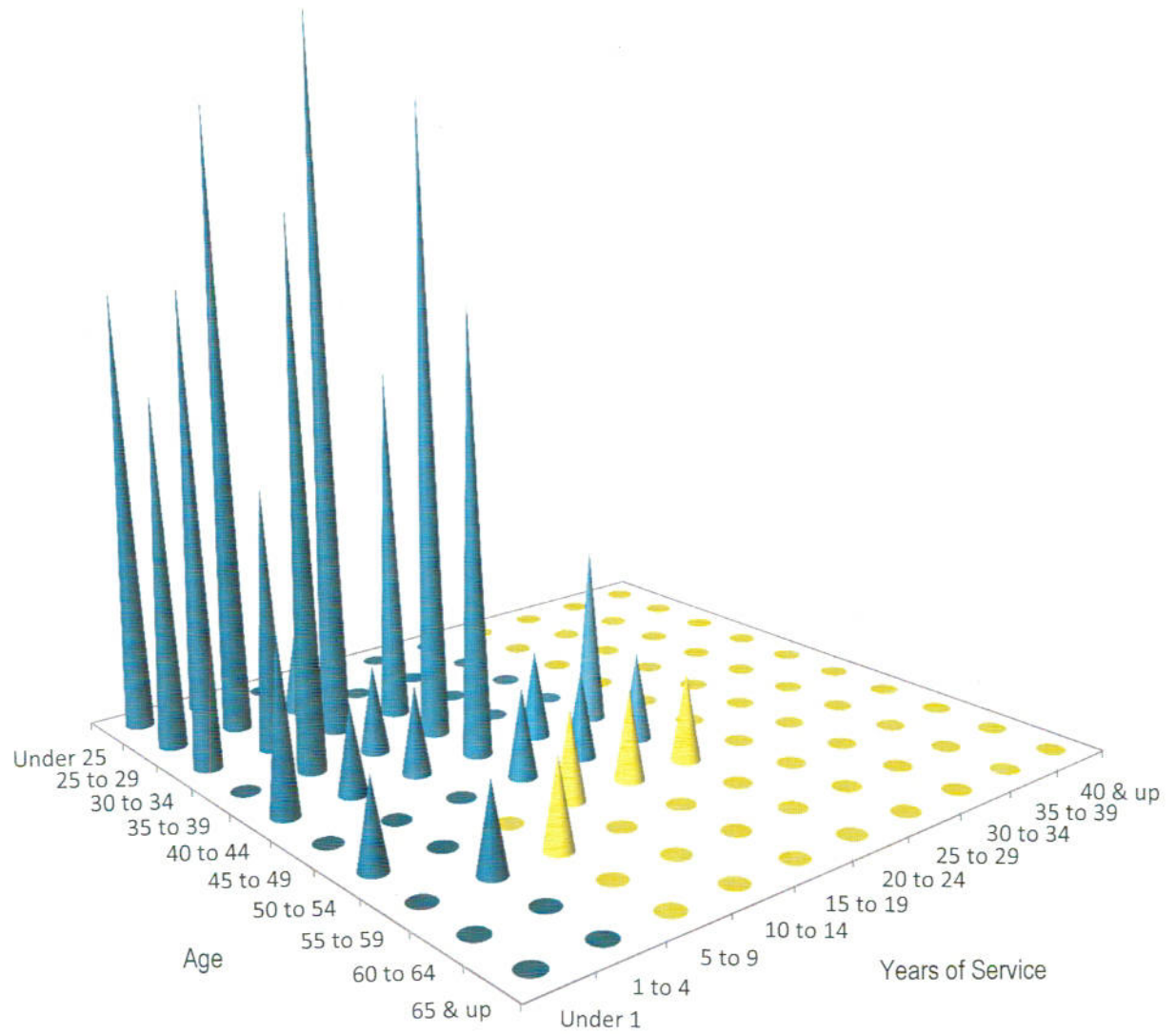
Active Participant Statistics From Prior Valuations

	Average Age	Average Service	Average Salary	Average Expected Salary Increase	Average Actual Salary Increase
October 1, 2009	33.7	4.5	\$48,945	6.16%	6.18%
October 1, 2010	33.7	4.7	\$48,411	5.79%	-1.03%
October 1, 2011	34.0	5.6	\$52,238	5.76%	3.60%
October 1, 2012	33.9	6.4	\$50,216	5.47%	-2.80%
October 1, 2013	34.0	6.2	\$47,080	5.37%	-3.06%
October 1, 2014	33.8	6.2	\$46,746	4.00%	0.48%
October 1, 2015	34.6	6.3	\$49,145	4.00%	8.15%
October 1, 2016	35.1	7.1	\$60,698	4.00%	17.56%
October 1, 2017	35.7	7.5	\$60,668	4.00%	1.36%
October 1, 2018	34.4	6.4	\$55,837	4.00%	1.88%



Active Age-Service Distribution

Table III-D



Active Age-Service-Salary Table

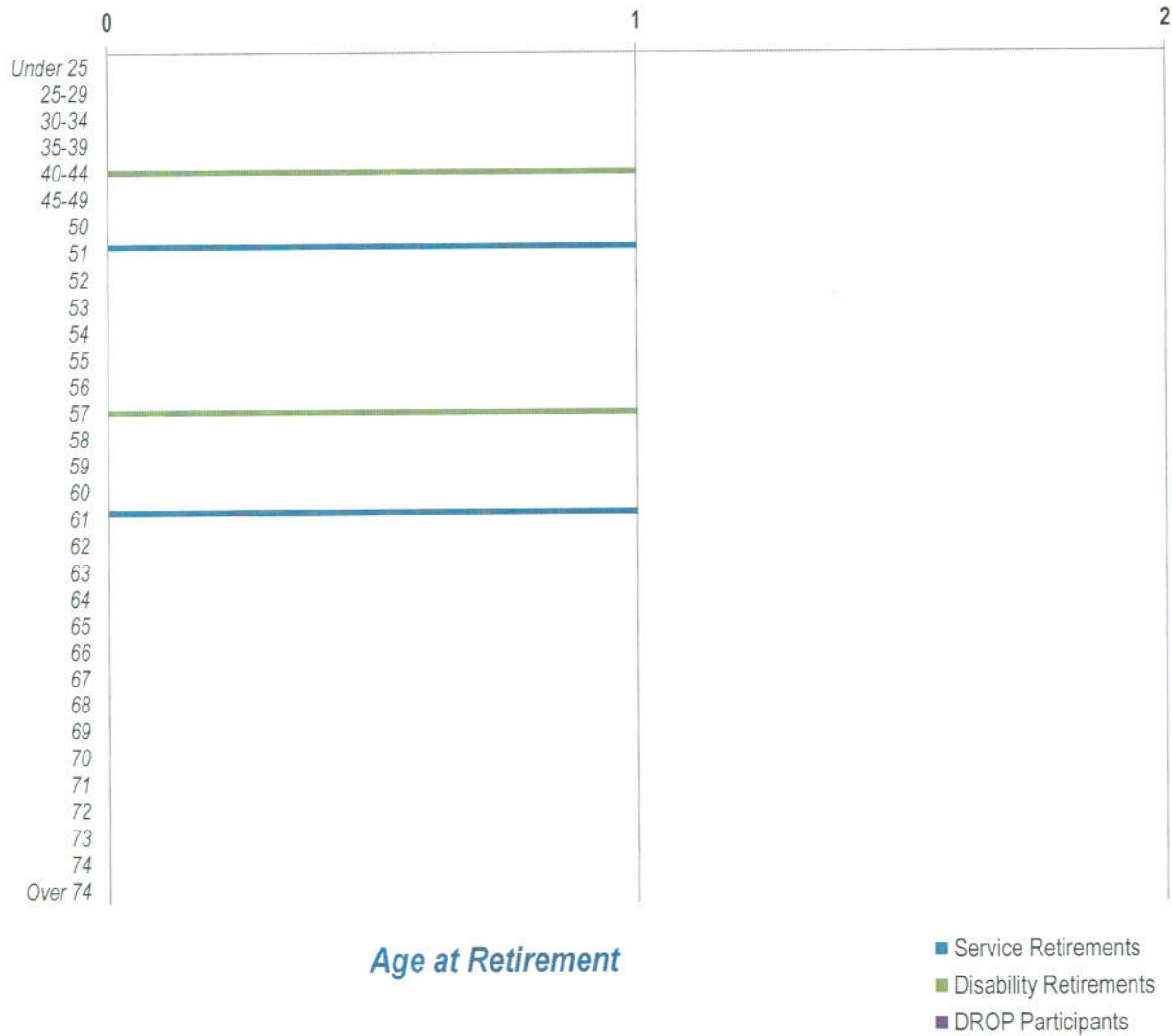
Table III-E

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	5	5	0	0	0	0	0	0	0	0	10
Avg.Pay	35,203	39,448	0	0	0	0	0	0	0	0	37,326
25 to 29	4	7	1	0	0	0	0	0	0	0	12
Avg.Pay	30,942	44,941	70,948	0	0	0	0	0	0	0	42,442
30 to 34	4	3	8	4	0	0	0	0	0	0	19
Avg.Pay	45,359	55,835	63,962	62,555	0	0	0	0	0	0	58,466
35 to 39	0	6	1	7	0	0	0	0	0	0	14
Avg.Pay	0	54,987	57,610	67,362	0	0	0	0	0	0	61,362
40 to 44	2	1	1	5	1	2	0	0	0	0	12
Avg.Pay	37,478	55,118	59,646	79,888	58,859	78,426	0	0	0	0	67,073
45 to 49	0	0	0	1	1	1	0	0	0	0	3
Avg.Pay	0	0	0	61,743	59,125	74,629	0	0	0	0	65,166
50 to 54	1	0	0	1	1	1	0	0	0	0	4
Avg.Pay	47,903	0	0	60,601	68,833	69,004	0	0	0	0	61,585
55 to 59	0	1	1	0	0	0	0	0	0	0	2
Avg.Pay	0	93,248	51,187	0	0	0	0	0	0	0	72,218
60 to 64	0	0	0	0	0	0	0	0	0	0	0
Avg.Pay	0	0	0	0	0	0	0	0	0	0	0
65 & up	0	0	0	0	0	0	0	0	0	0	0
Avg.Pay	0	0	0	0	0	0	0	0	0	0	0
Total	16	23	12	18	3	4	0	0	0	0	76
Avg.Pay	37,755	50,331	62,590	69,086	62,272	75,121	0	0	0	0	55,837



Inactive Participant Data

Table III-F

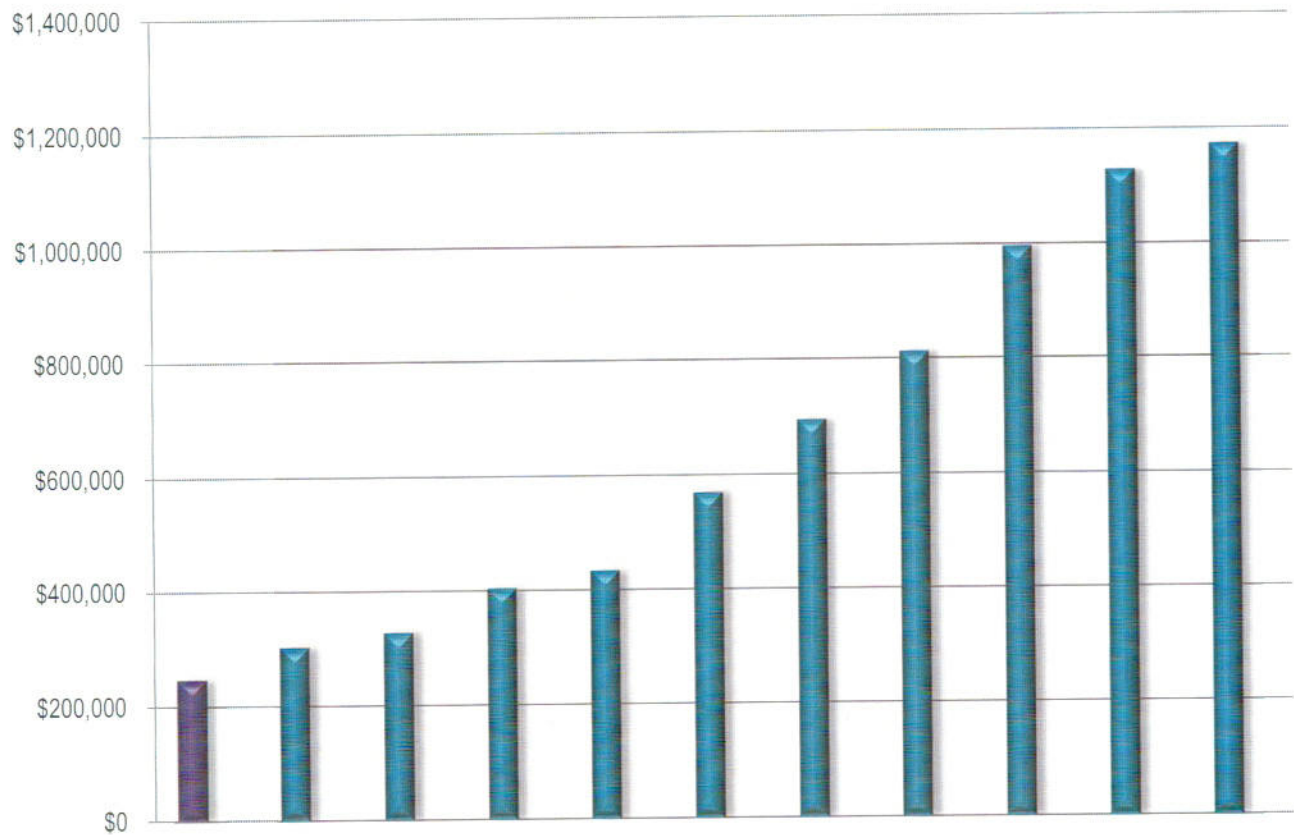
Average Monthly Benefit

Service Retirements	\$2,717.26
Disability Retirements	\$2,164.35
Beneficiaries Receiving	\$2,960.70
DROP Participants	Not applicable
Deferred Vested Participants	\$1,139.75
Deferred Beneficiaries	Not applicable



Projected Benefit Payments

Table III-G

Actual

For the period October 1, 2017 through September 30, 2018

\$247,178

Projected

For the period October 1, 2018 through September 30, 2019

\$303,045

For the period October 1, 2019 through September 30, 2020

\$327,749

For the period October 1, 2020 through September 30, 2021

\$405,020

For the period October 1, 2021 through September 30, 2022

\$434,580

For the period October 1, 2022 through September 30, 2023

\$570,444

For the period October 1, 2023 through September 30, 2024

\$696,356

For the period October 1, 2024 through September 30, 2025

\$813,384

For the period October 1, 2025 through September 30, 2026

\$997,503

For the period October 1, 2026 through September 30, 2027

\$1,129,780

For the period October 1, 2027 through September 30, 2028

\$1,173,896



Summary of Actuarial Methods and Assumptions

Table IV-A

NOTE: The following assumptions and methods have been selected and approved by the Board of Trustees based in part on the advice of the plan's enrolled actuary in accordance with the authority granted to the Board under the pension ordinances and State law.

1. **Actuarial Cost Method**

Aggregate cost method. Under this actuarial cost method, a funding cost is developed for the plan as a level percentage of payroll. The level funding percentage is calculated as the excess of the total future benefit liability over accumulated assets and future employee contributions, with this excess spread over the expected future payroll for current active participants. The normal cost is equal to the level funding percentage multiplied by the expected payroll for the year immediately following the valuation date. The actuarial accrued liability is equal to the accumulated assets. Therefore, under the aggregate cost method, no unfunded accrued liability is developed.

2. **Asset Method**

The actuarial value of assets is equal to the market value of assets, reduced by the DRAGO Fund balance and any accumulated excess employer contributions.

3. **Interest (or Discount) Rate**

7.00% per annum

4. **Salary Increases**

Plan compensation is assumed to increase at the rate of 4.00% per annum, unless actual plan compensation is known for a prior plan year.

5. **Decrement**

- Pre-retirement mortality: Sex-distinct rates set forth in the RP-2000 Blue Collar Mortality Table, with full generational improvements in mortality using Scale BB
- Post-retirement mortality: Sex-distinct rates set forth in the RP-2000 Blue Collar Mortality Table, with full generational improvements in mortality using Scale BB
- Disability: Age- and gender-based rates of disability were assumed, ranging from 0.067% for males and 0.040% for females at age 25, 0.119% for males and 0.118% for females at age 35, 0.462% for males and 0.435% for females at age 45, and 1.000% for males and 0.840% for females at age 55; all disabilities are assumed to be service-related.



Summary of Actuarial Methods and Assumptions

Table IV-A

(continued)

- Termination: With respect to participants with less than 10 years of service, the termination rates are both gender- and service-based, ranging from 15.00% for males and 10.01% for females with less than two years of service to 4.30% for males and 4.75% for females with between eight and 10 years of service; with respect to participants with at least 10 years of service, the termination rates are both gender- and age-based, ranging from 4.28% for males and 5.41% for females at age 25 to 0.00% for both genders at age 55.
- Retirement: Retirement is assumed to occur upon the attainment of normal retirement age.

6. Form of Payment

Future retirees have been assumed to select the 10-year certain and life annuity, except that participants who terminate their service with less than 15 years of service or prior to age 40 are assumed to receive a refund of their accumulated employee contributions.

7. Expenses

The total projected benefit liability has been loaded by 3.00% to account for anticipated administrative expenses. In addition, the interest rate set forth in item 3. above is assumed to be net of investment expenses and commissions.



Changes in Actuarial Methods and Assumptions

Table IV-B

No methods or assumptions have been changed since the completion of the previous valuation.

The following additional assumption and method changes were made during the past 10 years:

- (1) Effective October 1, 2016, the mortality basis was changed from a 2015 projection of the RP-2000 Mortality Table for annuitants to a full generational projection using Scale BB of the RP-2000 Blue Collar Mortality Table as required by State law.
- (2) Effective October 1, 2013, the assumed interest (or discount) rate was decreased from 7.50% per annum to 7.00% per annum.
- (3) Effective October 1, 2013, the assumed increase in future salaries was changed from a range of rates based on service (8.00% for employees with less than one year of service, 7.00% for employees with at least one but less than two years of service, 6.00% for employees with at least two but less than three years of service, 5.50% for employees with at least three but less than four years of service, and 5.00% for all other employees) to a flat 4.00% per year.
- (4) Effective October 1, 2013, the 3.00% loading to account for non-recurring compensation payments was removed.
- (5) Effective October 1, 2013, the mortality basis was changed from the RP-2000 Mortality Table, projected to 2007 by Scale AA, to the RP-2000 Mortality Table, projected to 2015 by Scale AA, both as published by the Internal Revenue Service (IRS) for purposes of Internal Revenue Code (IRC) section 430.
- (6) Effective October 1, 2009, the administrative expense assumption was changed from a flat \$25,000 per year to a 3.00% loading of the total projected benefit liability.
- (7) Effective October 1, 2008, the pre-retirement mortality table was changed from the male rates set forth in the 1983 Group Annuity Mortality Table, set back five years for females, to the sex-distinct rates set forth in the RP-2000 Mortality Table for non-annuitants.
- (8) Effective October 1, 2008, the post-retirement healthy mortality table was changed from the male rates set forth in the 1983 Group Annuity Mortality Table, set back five years for females, to the sex-distinct rates set forth in the RP-2000 Mortality Table for annuitants.
- (9) Effective October 1, 2008, the post-retirement disabled mortality table was changed from the sex-distinct rates set forth in the 1983 Group Annuity Mortality Table, set forward five years for males, to the sex-distinct rates set forth in the RP-2000 Mortality Table for annuitants.
- (10) Effective October 1, 2008, the assumed administrative expenses were increased from \$15,000 per year to \$25,000 per year.



Summary of Plan Provisions

Table V-A

1. Monthly Accrued Benefit

3% of Average Final Compensation multiplied by Credited Service

2. Normal Retirement Age and Benefit

- **Age**

Age 50 with at least five years of Credited Service; or
Any age with at least 25 years of Credited Service

- **Amount**

Monthly Accrued Benefit

- **Form of Payment**

Actuarially increased single life annuity (optional);
10-year certain and life annuity (normal form of payment);
Actuarially reduced 50% joint and contingent annuity (optional);
Actuarially reduced 66 $\frac{2}{3}$ % joint and contingent annuity (optional);
Actuarially reduced 75% joint and contingent annuity (optional);
Actuarially reduced 100% joint and contingent annuity (optional);
Any other actuarially equivalent form of payment approved by the Board; or
Actuarially equivalent lump sum distribution (automatic if the single sum value of the participant's benefit is less than or equal to \$5,000 or the monthly annuity is less than \$100)

(Note: A participant may change his joint annuitant up to two times after retirement.)

3. Service Incurred Disability Eligibility and Benefit

- **Eligibility**

The participant is eligible if his disability was incurred during the course of his employment with the City.

- **Condition**

The Board must find that the participant has a physical or mental condition resulting from bodily injury, disease, or a mental disorder which renders him incapable of employment as a firefighter or police officer.

- **Amount Payable**

A monthly 10-year certain and life annuity equal to the larger of (a) or (b), as follows, but offset as necessary to preclude the total of the participant's worker's compensation, disability benefit, and other City-provided disability compensation from exceeding his Average Final Compensation:

- (a) Monthly Accrued Benefit based on a 2% benefit formula multiplier; or
- (b) 50% of Average Final Compensation

- **Form of Payment**

Same as for Normal Retirement



Summary of Plan Provisions

Table V-A

(continued)

4. Non-Service Incurred Disability Eligibility and Benefit

- **Eligibility**

The participant must have earned at least 10 years of Credited Service if his disability was incurred other than during the course of his employment with the City.

- **Condition**

Same as for a Service Incurred Disability Benefit

- **Amount Payable**

A monthly 10-year certain and life annuity equal to the larger of (a) or (b), as follows, but offset as necessary to preclude the total of the participant's worker's compensation, disability benefit, and other City-provided disability compensation from exceeding his Average Final Compensation:

- (a) Monthly Accrued Benefit based on a 2% benefit formula multiplier; or
- (b) 25% of Average Final Compensation

- **Form of Payment**

Same as for Normal Retirement

5. Delayed Retirement Age and Benefit

- **Age**

After Normal Retirement Age

- **Amount**

Monthly Accrued Benefit

- **Form of Payment**

Same as for Normal Retirement

6. Deferred Vested Benefit

- **Age**

Any age with at least five years of Credited Service

- **Amount**

Monthly Accrued Benefit (payable at Normal Retirement Age)

- **Form of Payment**

Same as for Normal Retirement



Summary of Plan Provisions

Table V-A

(continued)

7. Pre-Retirement Death Benefit

In the case of the death of a vested participant prior to retirement, his beneficiary will receive the participant's Monthly Accrued Benefit payable at normal retirement age for 10 years certain plus an immediate \$50,000 lump sum payment. In the case of the death of a non-vested participant prior to retirement, his beneficiary will receive the participant's Accumulated Contributions plus an immediate \$50,000 lump sum payment.

8. Average Final Compensation

Average of the highest three years of Compensation out of the last 10 years of employment (or career average, if higher)

9. Compensation

Total cash remuneration, excluding overtime in excess of 300 hours per year after the effective date of the first collective bargaining agreement that comes into effect after June 30, 2011, excluding payments for extra duty or special detail work performed on behalf of a second party employer, and excluding lump sum payments for accrued annual leave and sick leave; annual compensation in excess of \$200,000 (as indexed) is excluded in accordance with Internal Revenue Code (IRC) §401(a)(17).

10. Credited Service

The elapsed time from the participant's date of hire until his date of termination, retirement, or death, provided that the participant made all required contributions.

11. Participation Requirement

All police officers and full-time firefighters of the City of Longwood automatically become a participant in the plan on their date of hire; however, the police chief, fire chief, and public safety director are not eligible to participate.

12. Accumulated Contributions

The Employee Contributions accumulated with no interest; if the participant terminates his employment with less than five years of Credited Service, he receives his Accumulated Contributions in lieu of any other benefits payable from the plan.



Summary of Plan Provisions

Table V-A

(continued)

13. **Participant Contribution**

1.00% of earnings

14. **Definition of Actuarially Equivalent**

- **Interest Rate**

7.00% per annum

- **Mortality Table**

Unisex mortality table promulgated by the Secretary of the Treasury for purposes of determining lump sum distributions under Internal Revenue Code (IRC) section 417(e)(3)

15. **Plan Effective Date**

January 1, 1996



Summary of Plan Amendments

Table V-B

Since the completion of the previous valuation, Ordinance No. 18-2148 was adopted to be effective November 19, 2018. This ordinance clarifies eligibility for disability retirement for terminated employees and makes several changes that are required in order to preserve compliance with the Internal Revenue Code (IRC). The ordinance had no actuarial impact on the plan.

The following additional plan amendments were adopted during the past 10 years and were reflected in prior valuation reports:

- (1) *Effective during the 2010/11 plan year, the definition of plan compensation was amended to include total cash remuneration for firefighters instead of fixed monthly salary, although lump sum payments of accrued unused sick and annual leave continue to be excluded from compensation. (Ordinance No. 11-1980)*
- (2) *Effective during the 2010/11 plan year, the definition of compensation was amended for all participants to limit overtime earnings to 300 hours per year effective with the first collective bargaining agreement that is effective after June 30, 2011. (Ordinance No. 11-1980)*

