

ESTERO FIRE RESCUE
FIREFIGHTERS' RETIREMENT PLAN

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2018

DETERMINES THE CONTRIBUTION
FOR THE 2019/20 FISCAL YEAR



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January 19, 2019

Introduction

This report presents the results of the October 1, 2018 actuarial valuation of the Estero Fire Rescue Firefighters' Retirement Plan. 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 29.54% of covered payroll, which represents a decrease of 2.10% of payroll from the prior valuation.

The normal cost rate is 29.85%, which is 1.96% 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 increased by 0.06% of payroll due to investment losses, decreased by 0.49% of payroll due to demographic experience, and decreased by another 1.53% of payroll due to the assumption change that is described below.



Although the market value of assets earned 7.41% during the 2017/18 plan year, the actuarial value of assets is based on a five-year phase-in of the market value gains and losses. On this basis, the actuarial value of assets only earned 6.90% 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 District 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 District's 2019/20 minimum required contribution will be equal to 29.54% 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. As of the date of this report, the allowable portion of the Chapter 175/185 contribution is \$267,811 per 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 \$33,874,685. As illustrated in Table I-A, current assets are sufficient to cover \$22,382,042 of this amount, the employer's 2018/19 expected contribution will cover \$1,480,841 of this amount, the employer's 2019/20 expected contribution will cover \$1,444,570 of this amount, and future employee contributions are expected to cover \$1,049,526 of this amount, leaving \$7,517,706 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.

Advance Employer Contribution

The District 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 \$587,171, which reflects the advance employer contribution of \$587,174 as of October 1, 2017 minus \$3 which was used to cover the shortfall between the District's cash contribution and the minimum required contribution for the 2017/18 plan year as shown in Table II-F.

The District 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 District may apply all or any portion of the advance employer contribution as an *extra* contribution in excess of the minimum required contribution. In this case, the immediate application of the entire balance of the advance employer contribution as of October 1, 2018 would reduce the normal cost rate to 28.17% of payroll and would reduce the minimum required contribution for the 2019/20 plan year to 27.76% of payroll.



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, adjusted to reflect a five-year phase-in of the net investment gains and losses. 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.

Assumption Change

Since the previous valuation was prepared, the mortality basis was changed from the RP-2000 Combined Mortality Table to the RP-2000 Blue Collar Mortality Table, both with full generational improvements in mortality using Scale BB.

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.

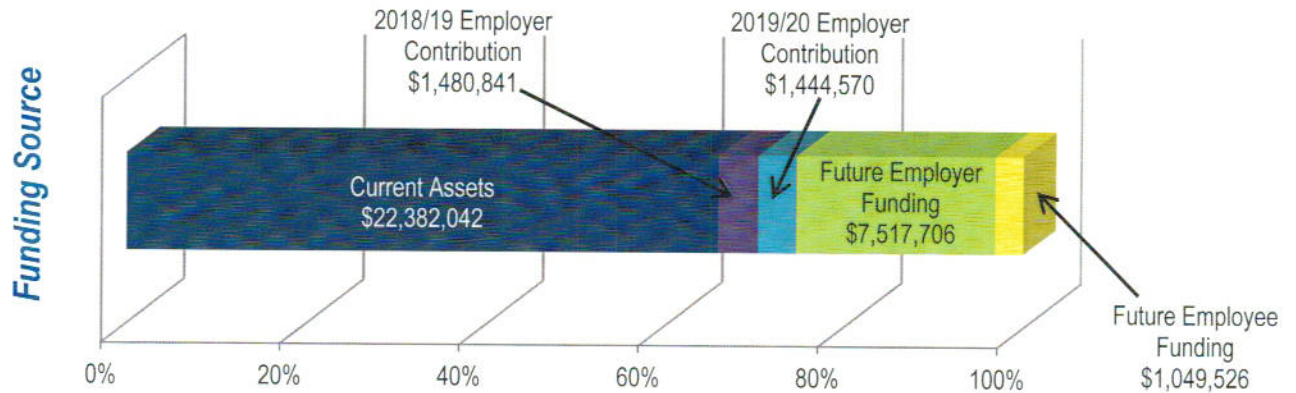
Enrolled Actuary No. 17-04927

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	\$33,292,074
Present Value of Future Administrative Expenses	\$582,611
Actuarial Value of Assets	(\$22,382,042)
Present Value of Future Employee Contributions	(\$1,049,526)
Present Value of Future Normal Costs	\$10,443,117
Present Value of Future Payroll	÷ \$34,984,230
Normal Cost Rate	= 29.8509%
Expected Payroll	x \$4,680,282
Normal Cost	\$1,397,108
Adjustment to Reflect Semi-Monthly Employer Contributions	\$49,835
Expected Employer Contribution for the 2018/19 Plan Year	(\$1,480,841)
Remaining Contribution Due/(Credit) for the 2018/19 Plan Year	(\$33,898)
	x 0.07
One Year's Interest Charge/(Credit) on the Remaining Contribution	(\$2,373)
Preliminary Employer Contribution for the 2019/20 Plan Year	\$1,444,570
Expected Payroll for the 2019/20 Plan Year	÷ \$4,890,895

Minimum Required Contribution Rate **29.54%**

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

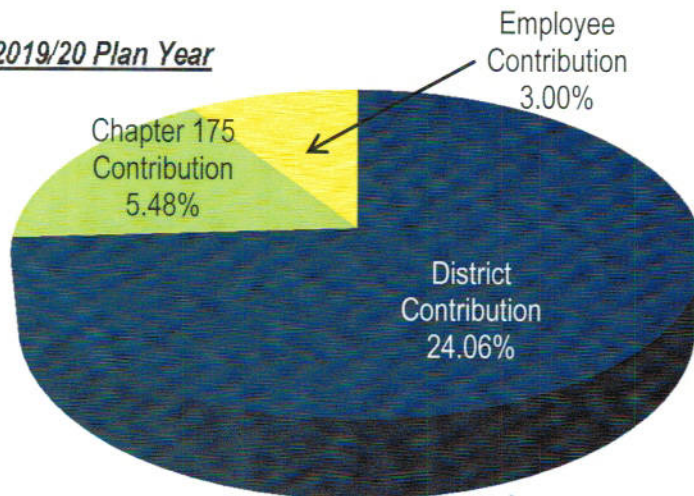


Minimum Required Contribution

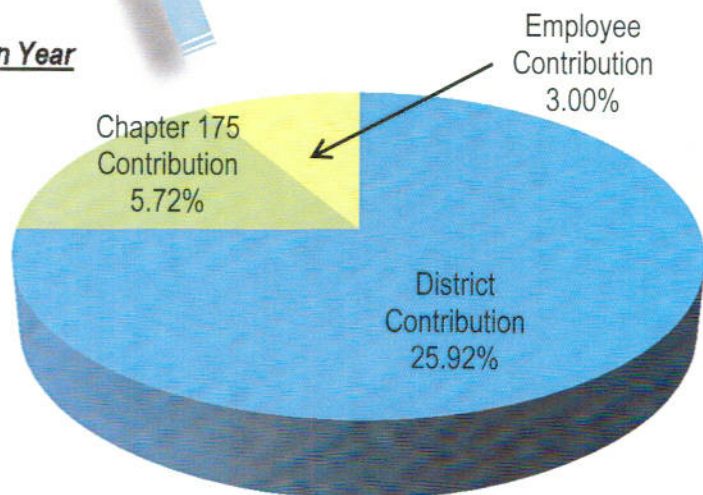
Table I-A
(continued)

The minimum required contribution rate of 29.54% includes both the District contribution and the allowable Chapter 175 contribution. In addition, employees are required to contribute 3.00% of pensionable earnings. The actual District contribution rate is expected to be approximately 24.06% based on the allowable Chapter 175 contribution for the previous 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.

For the 2019/20 Plan Year

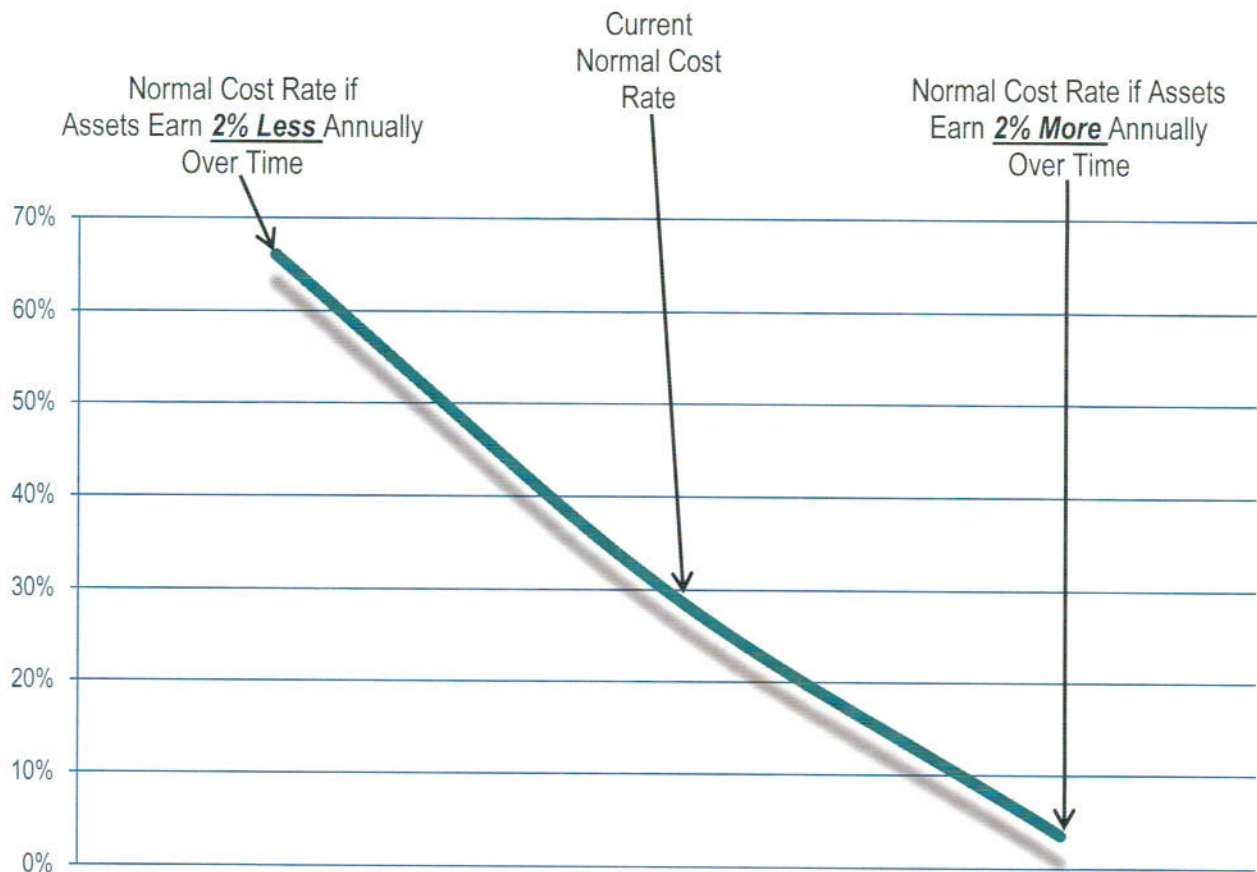


For the 2018/19 Plan Year



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	31.81%
Increase (decrease) due to investment gains and losses	0.06%
Increase (decrease) due to demographic experience	-0.49%
Increase (decrease) due to plan amendments	0.00%
Increase (decrease) due to actuarial assumption changes	-1.53%
Increase (decrease) due to actuarial method changes	0.00%
Current normal cost rate	<u>29.85%</u>



Present Value of Future Benefits

Table I-D

	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<i><u>Actively Employed Participants</u></i>			
Retirement benefits	\$26,827,064	\$26,827,064	\$26,334,772
Termination benefits	\$2,068,635	\$2,068,635	\$2,025,958
Disability benefits	\$1,363,103	\$1,363,103	\$1,344,099
Death benefits	\$103,075	\$103,075	\$142,632
Refund of employee contributions	\$47,467	\$47,467	\$47,707
Sub-total	\$30,409,344	\$30,409,344	\$29,895,168
<i><u>Deferred Vested Participants</u></i>			
Retirement benefits	\$343,593	\$343,593	\$336,560
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$343,593	\$343,593	\$336,560
<i><u>Due a Refund of Contributions</u></i>	\$11,498	\$11,498	\$11,498
<i><u>Deferred Beneficiaries</u></i>	\$0	\$0	\$0
<i><u>Retired Participants</u></i>			
Service retirements	\$972,293	\$972,293	\$958,399
Disability retirements	\$1,408,013	\$1,408,013	\$1,397,213
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$696,722	\$696,722	\$693,236
Sub-total	\$3,077,028	\$3,077,028	\$3,048,848
<i><u>Grand Total</u></i>	<u>\$33,841,463</u>	<u>\$33,841,463</u>	<u>\$33,292,074</u>
Present Value of Future Payroll	\$35,048,738	\$35,048,738	\$34,984,230
Present Value of Future Employee Contribs.	\$1,051,462	\$1,051,462	\$1,049,526
Present Value of Future Employer Contribs.	\$11,000,185	\$11,000,185	\$10,443,117

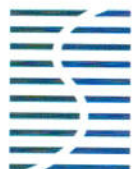


Present Value of Accrued Benefits

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	\$14,556,205	\$14,556,205	\$14,295,559
Termination benefits	\$1,280,754	\$1,280,754	\$1,254,184
Disability benefits	\$877,786	\$877,786	\$865,909
Death benefits	\$59,879	\$59,879	\$82,723
Refund of employee contributions	\$28,228	\$28,228	\$28,356
Sub-total	\$16,802,852	\$16,802,852	\$16,526,731
<u>Deferred Vested Participants</u>			
Retirement benefits	\$343,593	\$343,593	\$336,560
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$343,593	\$343,593	\$336,560
<u>Due a Refund of Contributions</u>	\$11,498	\$11,498	\$11,498
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$972,293	\$972,293	\$958,399
Disability retirements	\$1,408,013	\$1,408,013	\$1,397,213
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$696,722	\$696,722	\$693,236
Sub-total	\$3,077,028	\$3,077,028	\$3,048,848
<u>Grand Total</u>	<u>\$20,234,971</u>	<u>\$20,234,971</u>	<u>\$19,923,637</u>
<u>Funded Percentage</u>	131.29%	131.29%	133.34%

(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>
<i><u>Actively Employed Participants</u></i>			
Retirement benefits	\$14,271,822	\$14,271,822	\$14,016,321
Termination benefits	\$1,221,776	\$1,221,776	\$1,196,311
Disability benefits	\$877,786	\$877,786	\$865,909
Death benefits	\$55,975	\$55,975	\$77,257
Refund of employee contributions	\$37,868	\$37,868	\$38,195
Sub-total	\$16,465,227	\$16,465,227	\$16,193,993
<i><u>Deferred Vested Participants</u></i>			
Retirement benefits	\$343,593	\$343,593	\$336,560
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$343,593	\$343,593	\$336,560
<i><u>Due a Refund of Contributions</u></i>	\$11,498	\$11,498	\$11,498
<i><u>Deferred Beneficiaries</u></i>	\$0	\$0	\$0
<i><u>Retired Participants</u></i>			
Service retirements	\$972,293	\$972,293	\$958,399
Disability retirements	\$1,408,013	\$1,408,013	\$1,397,213
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$696,722	\$696,722	\$693,236
Sub-total	\$3,077,028	\$3,077,028	\$3,048,848
<i><u>Grand Total</u></i>	<u>\$19,897,346</u>	<u>\$19,897,346</u>	<u>\$19,590,899</u>



Entry Age Normal Accrued Liability

Table I-G

	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<i><u>Actively Employed Participants</u></i>			
Retirement benefits	\$20,203,079	\$20,203,079	\$19,843,173
Termination benefits	\$1,594,356	\$1,594,356	\$1,561,594
Disability benefits	\$1,031,682	\$1,031,682	\$1,017,650
Death benefits	\$78,302	\$78,302	\$108,388
Refund of employee contributions	\$31,555	\$31,555	\$31,708
Sub-total	\$22,938,974	\$22,938,974	\$22,562,513
<i><u>Deferred Vested Participants</u></i>			
Retirement benefits	\$343,593	\$343,593	\$336,560
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$343,593	\$343,593	\$336,560
<i><u>Due a Refund of Contributions</u></i>	\$11,498	\$11,498	\$11,498
<i><u>Deferred Beneficiaries</u></i>	\$0	\$0	\$0
<i><u>Retired Participants</u></i>			
Service retirements	\$972,293	\$972,293	\$958,399
Disability retirements	\$1,408,013	\$1,408,013	\$1,397,213
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$696,722	\$696,722	\$693,236
Sub-total	\$3,077,028	\$3,077,028	\$3,048,848
<i><u>Grand Total</u></i>	<u>\$26,371,093</u>	<u>\$26,371,093</u>	<u>\$25,959,419</u>



Actuarial Value of Assets

Table II-A

	<u>Net Investment Gain (Loss)</u>		<u>Unrecognized Gain (Loss)</u>
For the 2014/15 plan year	(\$40,658)	x 20%	(\$8,132)
For the 2015/16 plan year	\$1,428,448	x 40%	\$571,379
For the 2016/17 plan year	\$2,679,023	x 60%	\$1,607,414
For the 2017/18 plan year	\$1,782,592	x 80%	\$1,426,074
			<u>\$3,596,735</u>

Market Value of Assets as of October 1, 2018	\$26,634,104
Minus DROP account balances	(\$68,156)
Minus advance employer contributions	(\$587,171)
Minus excess Chapter 175/185 contributions	\$0

Adjustment for unrecognized gain or loss as shown above,
but restricted to an amount that keeps the actuarial value
of assets within an 80%-120% corridor of the market value

(\$3,596,735)

Actuarial Value of Assets as of October 1, 2018 **\$22,382,042**

<u>Historical Actuarial Value of Assets</u>	
October 1, 2009	\$3,802,396
October 1, 2010	\$4,732,004
October 1, 2011	\$6,873,907
October 1, 2012	\$8,155,956
October 1, 2013	\$13,182,471
October 1, 2014	\$14,500,351
October 1, 2015	\$15,719,506
October 1, 2016	\$17,235,291
October 1, 2017	\$19,474,289
October 1, 2018	\$22,382,042

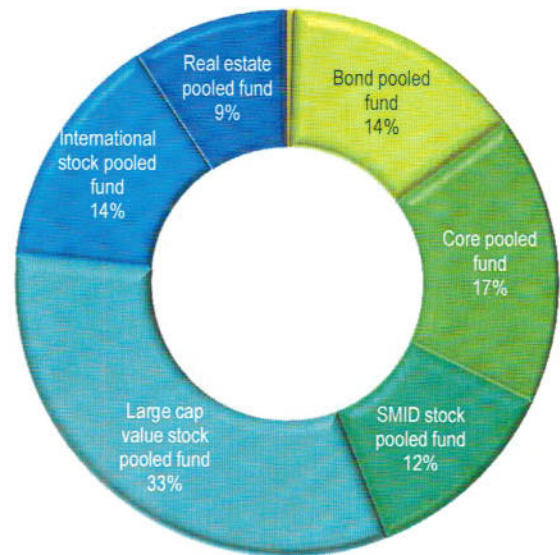


Market Value of Assets

Table II-B

As of October 1, 2018

Market Value of Assets	<u>\$26,634,104</u>
Cash	\$106,171
Bond pooled fund	\$3,848,694
Core pooled fund	\$4,565,347
SMID stock pooled fund	\$3,185,126
Large cap value stock pooled fund	\$8,679,468
International stock pooled fund	\$3,769,065
Real estate pooled fund	\$2,388,844
Employer contribution receivable	\$85,402
Employee contribution receivable	\$5,987

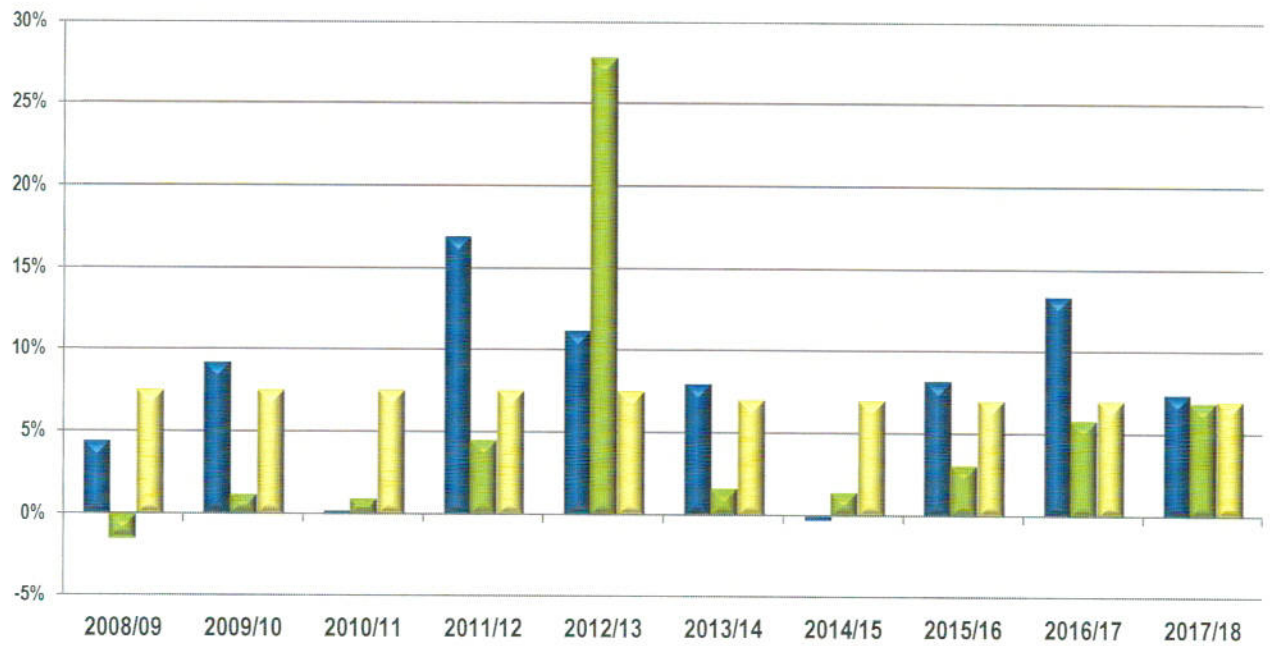
**Historical Market Value of Assets**

October 1, 2009	\$4,997,691
October 1, 2010	\$6,719,379
October 1, 2011	\$7,683,850
October 1, 2012	\$10,055,571
October 1, 2013	\$13,452,391
October 1, 2014	\$15,931,902
October 1, 2015	\$17,020,399
October 1, 2016	\$19,391,306
October 1, 2017	\$23,287,125
October 1, 2018	\$26,634,104



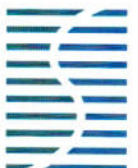
Investment Return

Table II-C

*Annual Investment Returns*

■ Market Value Return
■ Actuarial Value Return
■ Assumed Return

Plan Year	Market Value Return	Actuarial Value Return	Assumed Return
2008/09	4.43%	-1.48%	7.50%
2009/10	9.20%	1.21%	7.50%
2010/11	0.20%	0.94%	7.50%
2011/12	16.97%	4.51%	7.50%
2012/13	11.18%	27.83%	7.50%
2013/14	7.97%	1.64%	7.00%
2014/15	-0.25%	1.45%	7.00%
2015/16	8.17%	3.10%	7.00%
2016/17	13.40%	5.82%	7.00%
2017/18	7.41%	6.90%	7.00%
10yr. Avg.	7.75%	4.92%	7.25%



Asset Reconciliation

Table II-D

	<u>Market Value</u>	<u>Actuarial Value</u>
As of October 1, 2017	\$23,287,125	\$19,474,289
<i>Increases Due To:</i>		
Employer Contributions	\$1,380,648	\$1,380,648
Chapter 175/185 Contributions	\$300,072	\$300,072
Employee Contributions	\$158,408	\$158,408
Share Plan Transfer	(\$32,261)	(\$32,261)
Total Contributions	<u>\$1,806,867</u>	<u>\$1,806,867</u>
Interest and Dividends	\$0	
Realized Gains (Losses)	\$0	
Unrealized Gains (Losses)	\$1,782,592	
Total Investment Income	<u>\$1,782,592</u>	\$1,394,985
Other Income	\$0	
Total Income	<u>\$3,589,459</u>	<u>\$3,201,852</u>
<i>Decreases Due To:</i>		
Monthly Benefit Payments	(\$165,996)	(\$165,996)
Refund of Employee Contributions	\$0	\$0
DROP Credits		(\$51,622)
Total Benefit Payments	<u>(\$165,996)</u>	<u>(\$217,618)</u>
Investment Expenses	\$0	
Administrative Expenses	(\$76,484)	(\$76,484)
Advance Employer Contribution		\$3
Excess Chapter 175/185 Contribution		\$0
Total Expenses	<u>(\$242,480)</u>	<u>(\$294,099)</u>
As of October 1, 2018	<u>\$26,634,104</u>	<u>\$22,382,042</u>



Historical Trust Fund Detail

Table II-E

Income

Plan	Employer	Chapter	Employee	Share		Realized	Unrealized	
<u>Year</u>	<u>Contribs.</u>	<u>Contribs.</u>	<u>Contribs.</u>	<u>Plan</u>	<u>Interest /</u>	<u>Gains /</u>	<u>Gains /</u>	<u>Other</u>
				<u>Transfer</u>	<u>Dividends</u>	<u>Losses</u>	<u>Losses</u>	<u>Income</u>
2008/09	\$726,676	\$373,692	\$118,295	\$0	\$0	\$0	\$186,989	\$0
2009/10	\$821,645	\$327,823	\$117,544	\$0	\$0	\$0	\$515,402	\$0
2010/11	\$890,424	\$336,261	\$122,143	-\$285,127	\$0	\$0	\$14,624	\$0
2011/12	\$720,076	\$267,811	\$125,340	\$0	\$0	\$0	\$1,387,118	\$0
2012/13	\$2,083,349	\$0	\$205,447	\$0	\$0	\$0	\$1,244,635	\$0
2013/14	\$839,232	\$654,290	\$134,012	-\$118,668	\$0	\$0	\$1,125,520	\$0
2014/15	\$871,489	\$345,330	\$146,502	-\$77,519	\$0	\$0	-\$40,658	\$0
2015/16	\$754,447	\$325,479	\$148,229	-\$57,668	\$0	\$0	\$1,428,448	\$0
2016/17	\$1,032,000	\$304,597	\$156,888	-\$36,786	\$0	\$0	\$2,679,023	\$0
2017/18	\$1,380,648	\$300,072	\$158,408	-\$32,261	\$0	\$0	\$1,782,592	\$0

Expenses

Plan	Monthly				<u>Other Actuarial Adjustments</u>		
<u>Year</u>	<u>Benefit</u>	<u>Contrib.</u>	<u>Admin.</u>	<u>Invest.</u>	<u>DROP</u>	<u>Advance</u>	<u>Excess</u>
	<u>Payments</u>	<u>Refunds</u>	<u>Expenses</u>	<u>Expenses</u>	<u>Credits</u>	<u>Employer</u>	<u>Chapter</u>
2008/09	\$18,305	\$0	\$25,515	\$0	\$0	\$184,594	\$322,558
2009/10	\$18,305	\$13,843	\$28,578	\$0	\$0	\$51,134	\$276,689
2010/11	\$67,160	\$0	\$46,694	\$0	\$0	\$267,811	-\$1,405,798
2011/12	\$93,875	\$0	\$34,749	\$0	\$0	\$34,049	\$0
2012/13	\$93,875	\$0	\$42,736	\$0	\$0	-\$267,668	\$0
2013/14	\$93,875	\$8,546	\$52,454	\$0	\$0	\$261,215	\$0
2014/15	\$93,875	\$0	\$62,772	\$0	\$0	\$126,972	\$0
2015/16	\$148,046	\$15,010	\$64,972	\$0	\$0	-\$70,663	\$0
2016/17	\$159,236	\$28,277	\$52,390	\$0	\$16,534	-\$270	\$0
2017/18	\$165,996	\$0	\$76,484	\$0	\$51,622	-\$3	\$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

DROP Account Reconciliation

DROP Balance as of October 1, 2017	\$16,534
DROP Benefit Credits	\$49,156
DROP Investment Credits	\$2,466
DROP Benefits Paid Out	\$0
Net DROP Credit	\$51,622
DROP Balance as of October 1, 2018	\$68,156

Advance Employer Contribution

Advance Employer Contribution as of October 1, 2017	\$587,174
Additional Employer Contribution	\$1,648,459
Minimum Required Contribution	(\$1,648,462)
Net Increase in Advance Employer Contribution	(\$3)
Advance Employer Contribution as of October 1, 2018	\$587,171

Excess Chapter 175/185 Contribution

Excess Chapter 175/185 Contribution as of October 1, 2017	\$0
Additional Chapter 175/185 Contribution	\$300,072
Share Plan Transfer	(\$32,261)
Allowable Chapter 175/185 Contribution	(\$267,811)
Net Increase in Excess Chapter 175/185 Contribution	\$0
Excess Chapter 175/185 Contribution as of October 1, 2018	\$0



Historical Chapter 175/185 Contributions

Table II-G

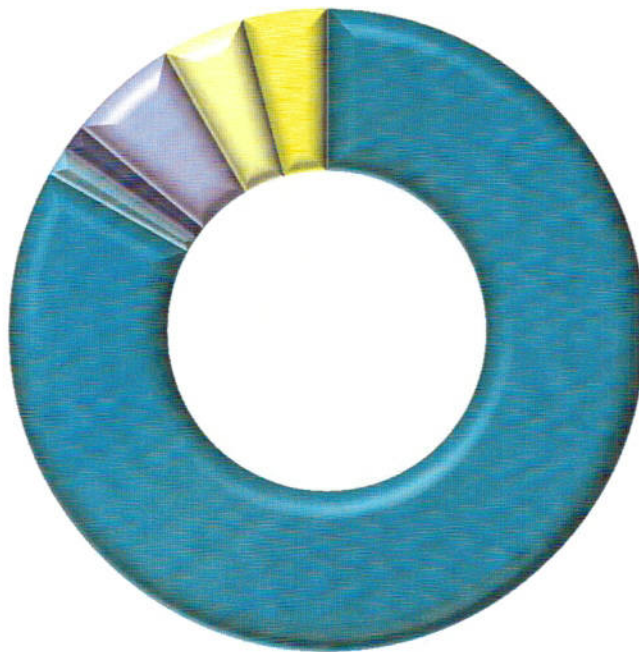
<i>Total Accumulated Excess Chapter 175/185 Contribution</i>				\$0
	<u>Chapter 175 Regular Distribution</u>	<u>Chapter 175 Supplemental Distribution</u>	<u>Chapter 185 Distribution</u>	<u>Allowable Amount</u>
1998 Distribution	\$0	\$0	\$0	\$0
1999 Distribution	\$0	\$0	\$0	\$0
2000 Distribution	\$17,375	\$0	\$0	\$0
2001 Distribution	\$44,684	\$0	\$0	\$0
2002 Distribution	\$82,744	\$0	\$0	(\$113,193)
2003 Distribution	\$104,260	\$0	\$0	(\$53,243)
2004 Distribution	\$140,205	\$0	\$0	(\$51,134)
2005 Distribution	\$185,628	\$0	\$0	(\$51,134)
2006 Distribution	\$269,186	\$0	\$0	(\$51,134)
2007 Distribution	\$288,552	\$42,518	\$0	(\$51,134)
2008 Distribution	\$328,893	\$44,799	\$0	(\$51,134)
2009 Distribution	\$327,823	\$0	\$0	(\$51,134)
2010 Distribution	\$333,647	\$2,614	\$0	(\$267,811)
2011 Distribution	\$338,804	\$0	\$0	(\$267,811)
2013 Distribution	\$654,290	\$0	\$0	(\$535,622)
2014 Distribution	\$345,330	\$0	\$0	(\$267,811)
2015 Distribution	\$325,479	\$0	\$0	(\$267,811)
2016 Distribution	\$304,597	\$0	\$0	(\$267,811)
2017 Distribution	\$300,072	\$0	\$0	(\$267,811)
Interest Adjustment				\$2,371
Transfer to Share Plan				(\$679,022)
One-Time Use				(\$1,189,121)



Summary of Participant Data

Table III-A

As of October 1, 2018

*Participant Distribution by Status*Actively Employed Participants

Active Participants	59
DROP Participants	1

Inactive Participants

Deferred Vested Participants	1
Due a Refund of Contributions	4
Deferred Beneficiaries	0

Participants Receiving a Benefit

Service Retirements	3
Disability Retirements	3
Beneficiaries Receiving	0

Total Participants 71

Number of Participants Included in Prior Valuations

	Active	DROP	Inactive	Retired	Total
October 1, 2009	52	0	4	2	58
October 1, 2010	51	0	3	2	56
October 1, 2011	50	0	3	4	57
October 1, 2012	50	0	4	4	58
October 1, 2013	53	0	6	4	63
October 1, 2014	51	0	7	4	62
October 1, 2015	59	0	7	4	70
October 1, 2016	60	0	5	6	71
October 1, 2017	57	1	5	5	68
October 1, 2018	59	1	5	6	71



Data Reconciliation

Table III-B

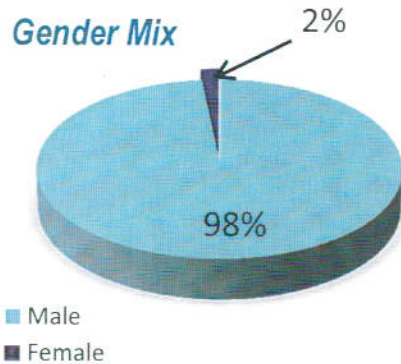
	<u>Active</u>	<u>DROP</u>	<u>Deferred Vested</u>	<u>Due a Refund</u>	<u>Def. Benef.</u>	<u>Service Retiree</u>	<u>Disabled Retiree</u>	<u>Benef. Rec'v.</u>	<u>Total</u>
<u>October 1, 2017</u>	57	1	1	4	0	3	2	0	68
<u>Change in Status</u>									
Re-employed									
Terminated									
Retired	(1)						1		
<u>Participation Ended</u>									
Transferred Out									
Cashed Out									
Died									
<u>Participation Began</u>									
Newly Hired	3								3
Transferred In									
New Beneficiary									
<u>Other Adjustment</u>									
<u>October 1, 2018</u>	59	1	1	4	0	3	3	0	71



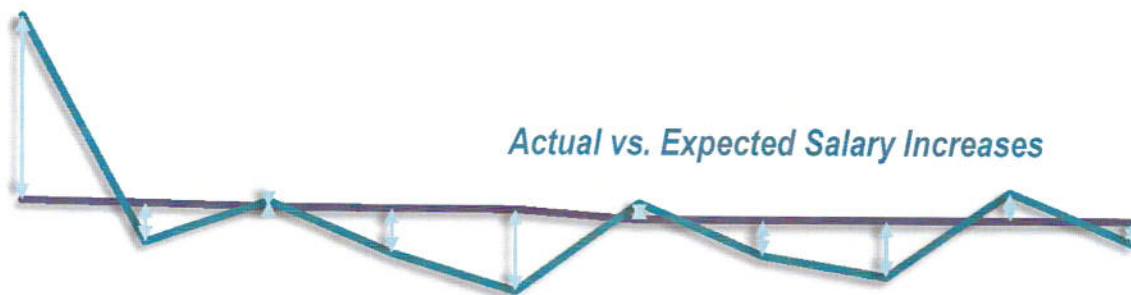
Active Participant Data

Table III-C

As of October 1, 2018



Average Age	41.6 years
Average Service	11.5 years
Total Annualized Compensation for the Prior Year	\$5,285,353
Total Expected Compensation for the Current Year	\$4,680,282
Average Increase in Compensation for the Prior Year	3.17%
Expected Increase in Compensation for the Current Year	4.50%
Accumulated Contributions for Active Employees	\$1,568,961

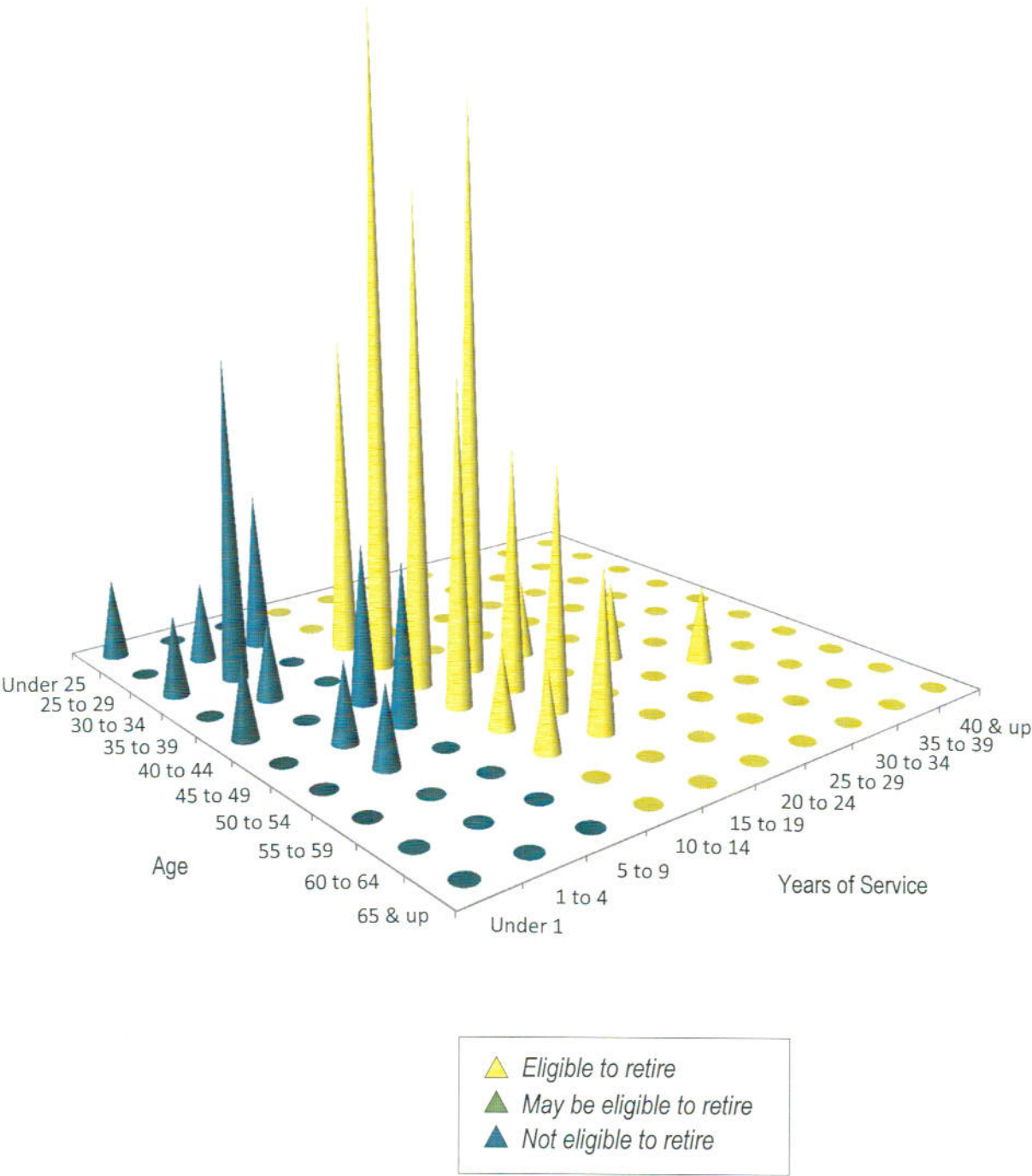
Active Participant Statistics From Prior Valuations

	Average Age	Average Service	Average Salary	Average Expected Salary Increase	Average Actual Salary Increase
October 1, 2009	35.3	6.0	\$73,889	5.56%	16.53%
October 1, 2010	36.5	7.1	\$76,456	5.41%	3.08%
October 1, 2011	36.8	7.5	\$82,281	5.22%	5.57%
October 1, 2012	37.4	8.2	\$82,097	5.14%	2.47%
October 1, 2013	38.4	8.9	\$81,233	5.11%	0.25%
October 1, 2014	39.1	9.5	\$85,793	4.50%	5.50%
October 1, 2015	38.6	9.4	\$81,492	4.50%	2.37%
October 1, 2016	40.0	10.1	\$82,872	4.50%	1.15%
October 1, 2017	41.1	11.2	\$89,329	4.50%	6.22%
October 1, 2018	41.6	11.5	\$89,582	4.50%	3.17%



Active Age-Service Distribution

Table III-D



Active Age-Service-Salary Table

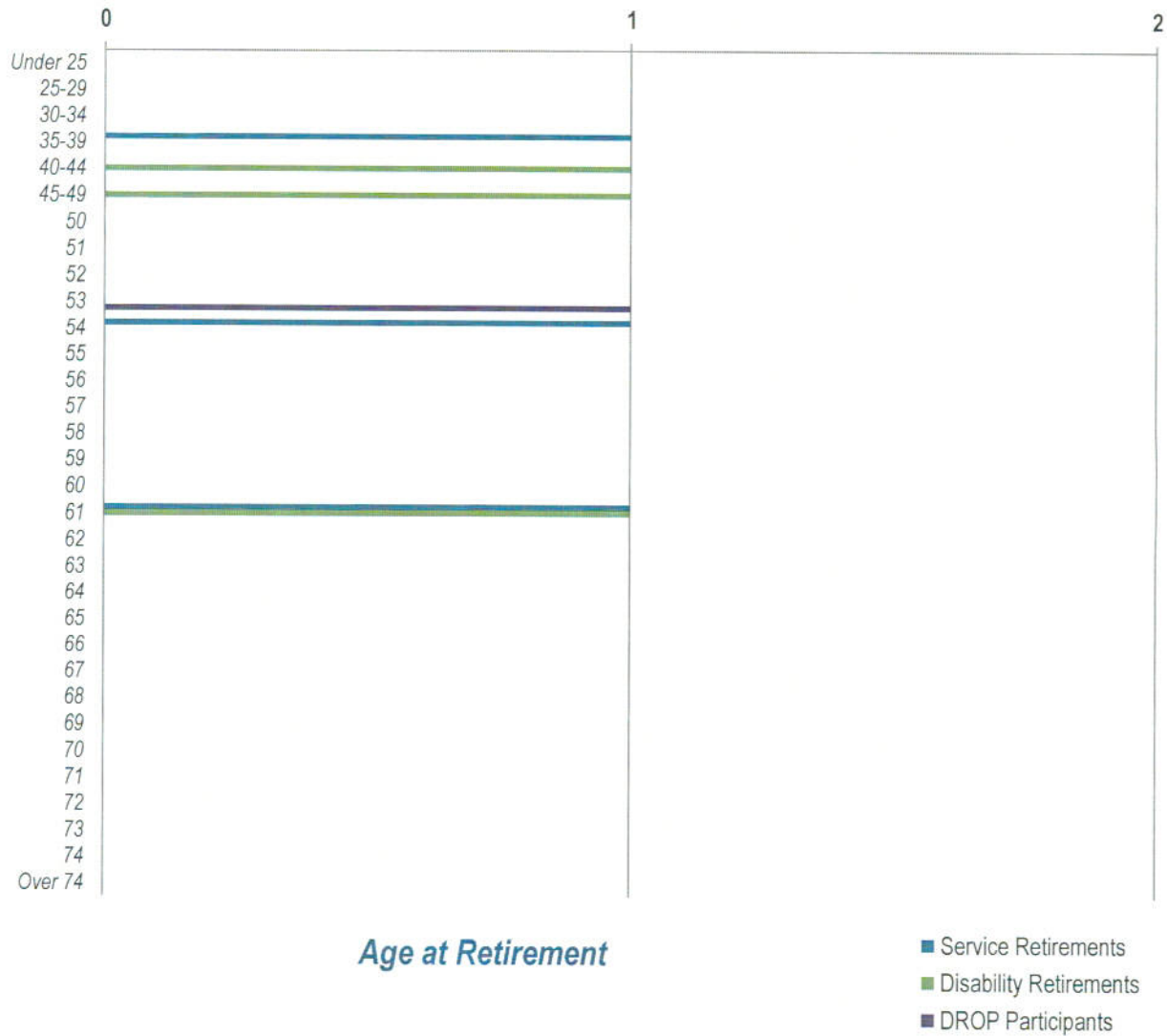
Table III-E

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	1	0	0	0	0	0	0	0	0	0	1
Avg.Pay	41,976	0	0	0	0	0	0	0	0	0	41,976
25 to 29	0	1	2	0	0	0	0	0	0	0	3
Avg.Pay	0	71,448	82,307	0	0	0	0	0	0	0	78,687
30 to 34	1	4	0	4	0	0	0	0	0	0	9
Avg.Pay	42,341	65,167	0	80,754	0	0	0	0	0	0	69,559
35 to 39	0	1	0	8	0	0	0	0	0	0	9
Avg.Pay	0	55,389	0	92,681	0	0	0	0	0	0	88,537
40 to 44	1	0	2	6	7	1	0	0	0	0	17
Avg.Pay	42,341	0	81,279	86,651	97,248	142,583	0	0	0	0	91,066
45 to 49	0	1	2	4	3	0	1	0	0	0	11
Avg.Pay	0	67,599	79,439	91,867	93,799	0	113,343	0	0	0	89,880
50 to 54	0	1	0	1	3	0	0	1	0	0	6
Avg.Pay	0	87,269	0	84,351	132,077	0	0	113,343	0	0	113,532
55 to 59	0	0	0	1	2	0	0	0	0	0	3
Avg.Pay	0	0	0	120,246	123,103	0	0	0	0	0	122,151
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	3	8	6	24	15	1	1	1	0	0	59
Avg.Pay	42,219	67,797	81,008	89,851	106,971	142,583	113,343	113,343	0	0	89,582



Inactive Participant Data

Table III-F

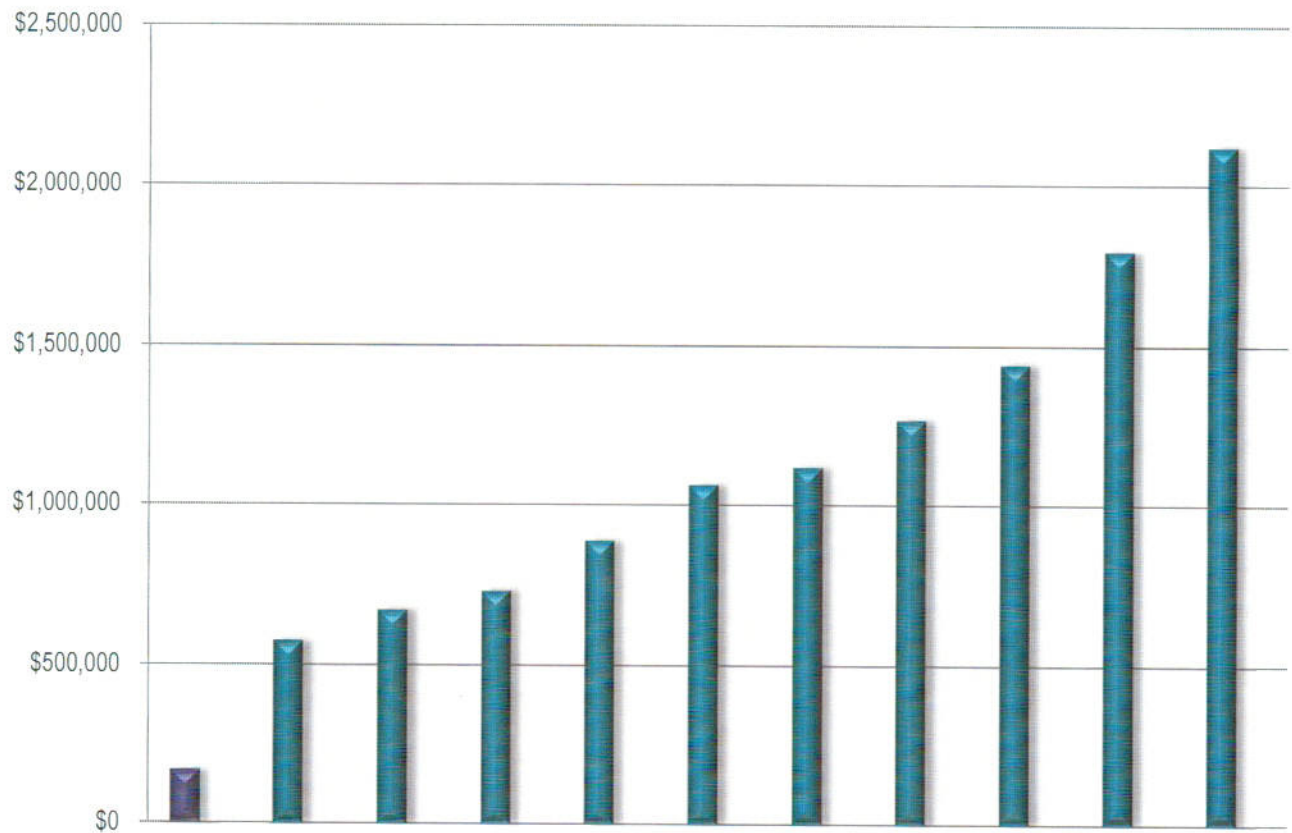
Average Monthly Benefit

Service Retirements	\$2,270.39
Disability Retirements	\$2,902.15
Beneficiaries Receiving	Not applicable
DROP Participants	\$4,096.34
Deferred Vested Participants	\$3,646.34
Deferred Beneficiaries	Not applicable



Projected Benefit Payments

Table III-G

Actual

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

\$166,996

Projected

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

\$576,865

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

\$673,224

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

\$732,968

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

\$891,728

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

\$1,065,099

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

\$1,118,906

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

\$1,268,582

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

\$1,443,261

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

\$1,793,187

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

\$2,123,151



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, adjusted to reflect a five-year phase-in of the net investment gains and losses that occur after September 30, 2013.

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

7.00% per annum

4. **Salary Increases**

Plan compensation is assumed to increase at the rate of 4.50% per annum, unless actual plan compensation is known for a prior plan year.

5. **Decrements**

- 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



Summary of Actuarial Methods and Assumptions

Table IV-A

(continued)

- 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.
- 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: For those participants whose normal retirement age is age 53 or earlier, retirement is assumed to occur at the rate of 15% at age 50, 10% at each of ages 51 and 52, and 100% at the earlier of age 53 or normal retirement age. For those participants whose normal retirement age is age 54 or later, retirement is assumed to occur at the rate of 15% at each of ages 50 through 54 and 100% at age 55, except that 40% retirement is assumed to occur at a normal retirement age of 54.

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 10 years of service are assumed to receive a refund of their accumulated employee contributions.

7. Expenses

The total projected benefit liability has been loaded by 1.75% 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

Since the completion of the previous valuation, the mortality basis was changed from the RP-2000 Combined Mortality Table to the RP-2000 Blue Collar Mortality Table, both with full generational improvements in mortality using Scale BB.

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

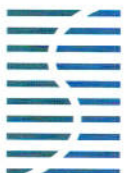
- (1) *Effective October 1, 2016, the mortality basis was changed from a 2015 projection of the RP-2000 Mortality Table for annuitants to a full generational projection using Scale BB of the RP-2000 Combined Mortality Table as required by State law.*
- (2) *Effective October 1, 2013, the method used to determine the actuarial value of assets was changed from the market value, adjusted to reflect a five-year phase-in of the net investment gains or losses, to the market value, adjusted to reflect a five-year phase-in of the net investment gains and losses that occur after September 30, 2013.*
- (3) *Effective October 1, 2013, the assumed interest rate was decreased from 7.50% per annum to 7.00% per annum.*
- (4) *Effective October 1, 2013, the assumed increase in future salaries was decreased from a range of rates (8.00% per year graded down to 5.00% per year, depending on service) to a flat 4.50% per year.*
- (5) *Effective October 1, 2013, the mortality basis was changed from the RP-2000 Mortality Table for annuitants, projected to 2007 by Scale AA, to the RP-2000 Mortality Table for annuitants, 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 \$22,000 per year to a 1.75% loading of the total projected benefit liability.*
- (7) *Effective October 1, 2008, the pre-retirement mortality assumption was changed from the 1983 Group Annuity Mortality Table, set back five years for females, to the RP-2000 Mortality Table for non-annuitants.*
- (8) *Effective October 1, 2008, the post-retirement healthy mortality assumption was changed from the 1983 Group Annuity Mortality Table, set back five years for females, to the RP-2000 Mortality Table for annuitants.*
- (9) *Effective October 1, 2008, the post-retirement disabled mortality assumption was changed from the 1983 Group Annuity Mortality Table, set forward five years for males, to the RP-2000 Mortality Table for annuitants.*



Changes in Actuarial Methods and Assumptions

Table IV-B

- (10) *Effective October 1, 2008, the actuarial value of assets was changed from the market value to the market value adjusted to reflect a five-year phase-in of the net investment gains and losses that occur after September 30, 2007.*



Summary of Plan Provisions

Table V-A

1. Monthly Accrued Benefit

2.00% of Average Final Compensation multiplied by Credited Service earned prior to December 1, 2000 plus 3.70% of Average Final Compensation multiplied by Credited Service earned during the period December 1, 2000 through September 30, 2010 plus 3.00% of Average Final Compensation multiplied by Credited Service earned after September 30, 2010

2. Normal Retirement Age and Benefit

- **Age**
Age 55 with at least 10 years of Credited Service; or
Age 52 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 66²/₃% joint and contingent annuity (optional);
Actuarially reduced 75% joint and contingent annuity (optional);
Actuarially reduced 100% joint and contingent annuity (optional);
Social security level income 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 \$1,000)

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

3. Early Retirement Age and Benefit

- **Age**
Any age with at least 10 years of Credited Service
- **Amount**
Monthly Accrued Benefit (payable at Normal Retirement Age); or
Monthly Accrued Benefit reduced by 3% for each year by which the participant's Early Retirement Date precedes his Normal Retirement Date (payable at Early Retirement Age)
- **Form of Payment**
Same as for Normal Retirement



Summary of Plan Provisions

Table V-A

(continued)

4. Service Incurred Disability Eligibility and Benefit

- **Eligibility**

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

- **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.

- **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 District-provided disability compensation from exceeding his Average Final Compensation:

- (a) Monthly Accrued Benefit; or
- (b) 42% of Average Final Compensation

5. 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 District.

- **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 District-provided disability compensation from exceeding his Average Final Compensation:

- (a) Monthly Accrued Benefit; or
- (b) 25% of Average Final Compensation

6. Delayed Retirement Age and Benefit

- **Age**

After Normal Retirement Age

- **Amount**

Monthly Accrued Benefit

- **Form of Payment**

Same as for Normal Retirement



Summary of Plan Provisions

Table V-A

(continued)

7. Deferred Vested Benefit

- **Age**
Any age with at least 10 years of Credited Service
- **Amount**
Monthly Accrued Benefit (payable at Normal Retirement Age); or
Monthly Accrued Benefit reduced by 3% for each year by which the participant's Early Retirement Date precedes his Normal Retirement Date (payable at Early Retirement Age)
- **Form of Payment**
Same as for Normal Retirement

8. 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 for 10 years beginning on the participant's early or normal retirement date. In the case of the death of a non-vested participant prior to retirement, his beneficiary will receive the participant's Accumulated Contributions in lieu of any other benefits payable from the plan.

9. Average Final Compensation

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

10. Compensation

Fixed monthly compensation; annual compensation in excess of \$200,000 (as indexed) is excluded in accordance with Internal Revenue Code (IRC) §401(a)(17).

11. 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, excluding leave conversions of unused accrued paid time off. Firefighters hired on or before December 1, 2000 who did not opt to participate in the plan until January 1, 2007 do not receive credit for service prior to 2007 unless they make a contribution equal to the full actuarial cost of their prior service. In addition, the participant may purchase up to five additional years of Credited Service for certain military service or other firefighter service by paying into the plan the full actuarial cost thereof, subject to the restrictions on such service purchases as set forth in the legal plan document.



Summary of Plan Provisions

Table V-A

(continued)

12. Participation Requirement

All full-time firefighters of the Estero Fire District who are hired after December 1, 2000 automatically become a participant in the plan on their date of hire. Firefighters hired on or before December 1, 2000 could elect to participate as of that date or were given an additional opportunity to participate effective January 1, 2007. The Fire Chief may irrevocably opt not to participate in the plan.

13. Accumulated Contributions

The Employee Contributions accumulated with no interest; if the participant terminates his employment with less than 10 years of Credited Service, he receives his Accumulated Contributions in lieu of any other benefits payable from the plan.

14. Participant Contribution

3.00% of earnings

15. Definition of Actuarially Equivalent

- **Interest Rate**

7.00% per annum

- **Mortality Table**

RP-2000 Mortality Table for annuitants, projected to 2015 by Scale AA, as published by the Internal Revenue Service (IRS) for purposes of Internal Revenue Code (IRC) section 430; male rates are used for the primary annuitant and female rates are used for the joint annuitant.

16. Plan Effective Date

December 1, 2000

17. Deferred Retirement Option Plan (DROP)

A participant who reaches his Normal Retirement Age is eligible to participate in the DROP for a period of up to 60 months. The DROP accounts are credited with interest at the rate of 6.50% per annum or based on the actual investment return on plan assets as elected by the participant.



Summary of Plan Amendments

Table V-B

No significant plan changes were adopted since the completion of the previous valuation.

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

- (1) *Effective during the 2015/16 plan year, the interest rate and mortality table used for actuarial equivalence was changed to the interest rate used to complete the most recently approved actuarial valuation of the plan and the RP-2000 Mortality Table for annuitants, projected to 2015 by Scale AA. (Resolution 2016-02)*
- (2) *Effective during the 2015/16 plan year, credited service excludes leave conversions of unused accrued paid time off. (Resolution 2016-02)*
- (3) *Effective during the 2015/16 plan year, a DROP participant may choose between receiving interest at a flat rate of 6.50% per annum or based on the actual investment return on plan assets and may change his election one time. (Resolution 2016-02)*
- (4) *Effective during the 2010/11 plan year, the plan was amended by a "stop/start" combination of resolutions. First, Resolution 2011-02 decreased benefits prospectively to the minimum benefits set forth in Chapter 175. Second, Resolution 2011-03 immediately increased benefits back to the previous level.*
- (5) *The benefit formula multiplier for service earned during the period December 1, 2000 through September 30, 2010 was increased to 3.70%. (Resolution 2011-03)*
- (6) *During the 2010/11 plan year, a share plan was added to receive excess Chapter 175 contributions. (Resolution 2011-03)*

