

RETIREMENT PLAN FOR THE
MANAGEMENT EMPLOYEES
OF THE CITY OF COOPER CITY

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2018

DETERMINES THE CONTRIBUTION
FOR THE 2018/19 FISCAL YEAR



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March 3, 2019

Introduction

This report presents the results of the October 1, 2018 actuarial valuation of the Retirement Plan for the Management Employees of the City of Cooper City. 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 2018/19 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 normal cost rate.

Minimum Required Contribution

Table I-A shows the development of the minimum required contribution for the 2018/19 plan year. The minimum required contribution is \$158,132, which represents a decrease of \$16,845 from the prior valuation.

Table I-C provides a breakdown of the sources of change in the contribution rate. Significantly, the rate decreased by 3.64% of payroll due to investment gains, decreased by another 4.27% of payroll due to demographic experience, and increased by 3.35% of payroll due to the assumption change that is described below. The market value of assets earned 7.43% 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



minus the expected employee contributions plus an amortization payment towards the unfunded liability, where the amortization period is no longer than 30 years and where all amounts are adjusted as necessary for administrative expenses and to reflect interest on any delayed payment of the contribution beyond the valuation date. On this basis, the City's 2018/19 minimum required contribution will be equal to \$158,132.

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 \$5,141,482 excluding any adjustments for future administrative expenses. As illustrated in Table I-A, current assets are sufficient to cover \$4,126,863 of this amount, the employer's 2018/19 expected contribution will cover \$158,132 of this amount, and future employee contributions are expected to cover \$31,680 of this amount, leaving \$824,807 to be covered by future employer funding beyond the 2018/19 fiscal year. Again, demographic and investment experience that differs from that assumed will either increase or decrease the future employer funding requirement.

Amortization of the Unfunded Liability

This plan uses the entry age normal cost method to develop an unfunded liability each year. The unfunded liability is then amortized or "paid off" over a period of time. The period over which the unfunded liability is amortized is often referred to as the "funding period" of the plan. Although under Chapter 112 the maximum allowable funding period is 30 years, the unfunded liability should be paid off within a period that does not exceed the expected future working life of the active employees who are covered by the plan or, if there are no active employees covered by the plan, the expected future lifetime of the retired participants. Table I-I shows the various components of the unfunded liability and the respective funding period for each component. We have used a closed 15-year funding period beginning October 1, 2014 to amortize all components of the unfunded liability.

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 \$814,935, which reflects the advance employer contribution of \$611,267 as of October 1, 2017 plus \$203,668 of actual employer 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. In this case, the immediate application of the entire balance of the advance employer contribution as of October 1, 2018 would reduce the minimum required contribution rate for the 2018/19 plan year to 18.96% of payroll.



Assumption Change

Since the completion of the previous valuation, the administrative expense assumption has been changed from \$7,500 per year to \$17,500 per year.

Contents of the Report

Tables I-D through I-I 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. 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.

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.

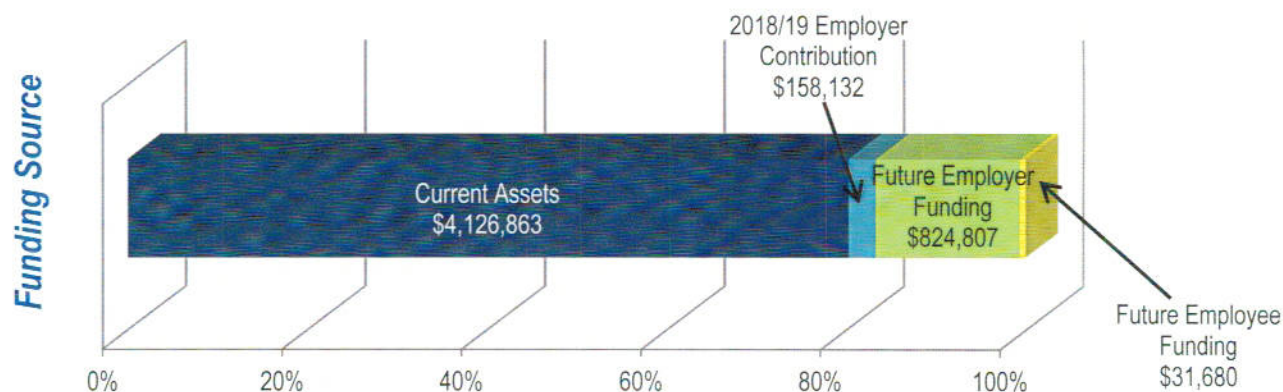
Enrolled Actuary No. 17-04927

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 2018/19 Plan Year

Entry Age Normal Cost	\$56,169
Unfunded Liability Amortization Payment	\$117,273
Expense Allowance	\$17,500
Expected Employee Contribution	(\$32,810)
Employer Contribution as of the Beginning of the Plan Year	\$158,132
Adjustment to Reflect Monthly Employer Contributions	\$0

Minimum Required Contribution **\$158,132**

Expected Payroll	÷ \$298,277
Minimum Required Contribution Rate	53.02%

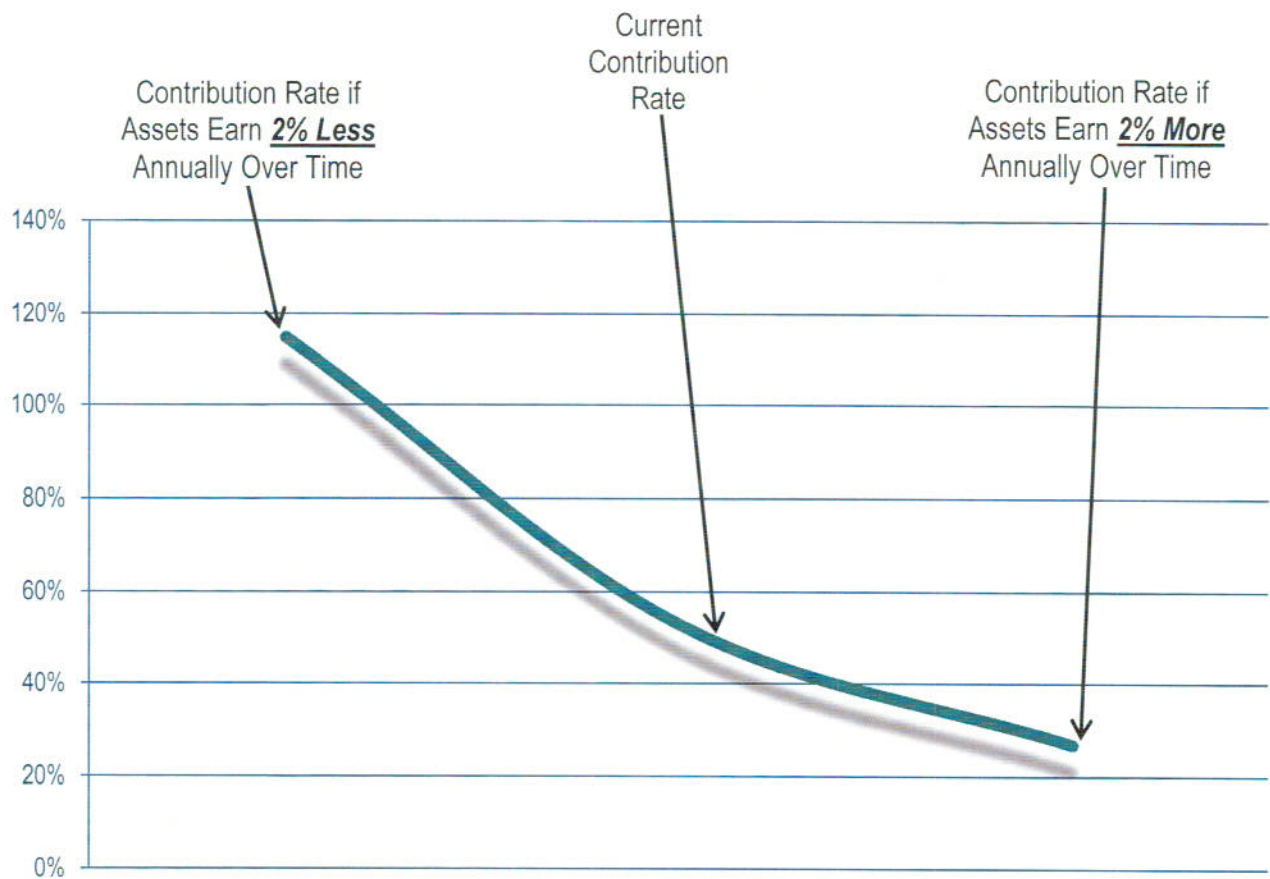
Additional Disclosures

Present Value of Future Compensation	\$288,004
Present Value of Future Employer Contributions	\$982,939
Present Value of Future Employee Contributions	\$31,680



Sensitivity Analysis

Table I-B



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



Gain and Loss Analysis

Table I-C

Source of Change in the Contribution Rate

Previous minimum required contribution rate	57.58%
Increase (decrease) due to investment gains and losses	-3.64%
Increase (decrease) due to demographic experience	-4.27%
Increase (decrease) due to assumption changes	3.35%
Increase (decrease) due to plan amendments	0.00%
Increase (decrease) due to actuarial method changes	0.00%
Current minimum required contribution rate	<u>53.02%</u>

Source of Change in the Unfunded Liability

Previous unfunded liability	\$1,141,481
Increase due to employer normal cost for the prior year	\$34,399
Increase due to interest on normal cost and unfunded liability	\$82,312
Decrease due to employer contributions	(\$174,977)
Decrease due to interest on employer contributions	(\$5,545)
Expected unfunded liability	<u>\$1,077,670</u>
Increase (decrease) due to plan experience	(\$136,720)
Increase (decrease) due to plan amendments	\$0
Increase (decrease) due to actuarial assumption changes	\$0
Increase (decrease) due to actuarial method changes	\$0
Current unfunded liability	<u>\$940,950</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>
<u>Actively Employed Participants</u>			
Retirement benefits	\$1,338,817	\$1,338,817	\$1,338,817
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$1,338,817	\$1,338,817	\$1,338,817
<u>Deferred Vested Participants</u>			
Retirement benefits	\$0	\$0	\$0
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$0	\$0	\$0
<u>Due a Refund of Contributions</u>	\$0	\$0	\$0
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$3,785,165	\$3,785,165	\$3,785,165
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$3,785,165	\$3,785,165	\$3,785,165
<u>Grand Total</u>	<u>\$5,123,982</u>	<u>\$5,123,982</u>	<u>\$5,123,982</u>
Present Value of Future Payroll	\$288,004	\$288,004	\$288,004
Present Value of Future Employee Contribs.	\$31,680	\$31,680	\$31,680
Present Value of Future Employer Contribs.	\$982,939	\$982,939	\$982,939



Present Value of Accrued Benefits

Table I-E

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
<u>Actively Employed Participants</u>			
Retirement benefits	\$1,230,771	\$1,230,771	\$1,230,771
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$1,230,771	\$1,230,771	\$1,230,771
<u>Deferred Vested Participants</u>			
Retirement benefits	\$0	\$0	\$0
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$0	\$0	\$0
<u>Due a Refund of Contributions</u>	\$0	\$0	\$0
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$3,785,165	\$3,785,165	\$3,785,165
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$3,785,165	\$3,785,165	\$3,785,165
<u>Grand Total</u>	<u>\$5,015,936</u>	<u>\$5,015,936</u>	<u>\$5,015,936</u>
<u>Funded Percentage</u>	98.52%	98.52%	98.52%

(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	\$1,230,771	\$1,230,771	\$1,230,771
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$1,230,771	\$1,230,771	\$1,230,771
<u>Deferred Vested Participants</u>			
Retirement benefits	\$0	\$0	\$0
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$0	\$0	\$0
<u>Due a Refund of Contributions</u>	\$0	\$0	\$0
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$3,785,165	\$3,785,165	\$3,785,165
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$3,785,165	\$3,785,165	\$3,785,165
<u>Grand Total</u>	<u>\$5,015,936</u>	<u>\$5,015,936</u>	<u>\$5,015,936</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	\$1,282,648	\$1,282,648	\$1,282,648
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$1,282,648	\$1,282,648	\$1,282,648
<u>Deferred Vested Participants</u>			
Retirement benefits	\$0	\$0	\$0
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$0	\$0	\$0
<u>Due a Refund of Contributions</u>	\$0	\$0	\$0
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$3,785,165	\$3,785,165	\$3,785,165
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$3,785,165	\$3,785,165	\$3,785,165
<u>Grand Total</u>	<u>\$5,067,813</u>	<u>\$5,067,813</u>	<u>\$5,067,813</u>
less Actuarial Value of Assets	(\$4,126,863)	(\$4,126,863)	(\$4,126,863)
<u>Unfunded Accrued Liability</u>	<u>\$940,950</u>	<u>\$940,950</u>	<u>\$940,950</u>



Entry Age Normal Cost

Table I-H

	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	\$56,169	\$56,169	\$56,169
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$56,169	\$56,169	\$56,169
<u>Deferred Vested Participants</u>			
Retirement benefits	\$0	\$0	\$0
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	\$0	\$0	\$0
<u>Due a Refund of Contributions</u>	\$0	\$0	\$0
<u>Deferred Beneficiaries</u>	\$0	\$0	\$0
<u>Retired Participants</u>			
Service retirements	\$0	\$0	\$0
Disability retirements	\$0	\$0	\$0
Beneficiaries receiving	\$0	\$0	\$0
DROP participants	\$0	\$0	\$0
Sub-total	\$0	\$0	\$0
<u>Grand Total</u>	<u>\$56,169</u>	<u>\$56,169</u>	<u>\$56,169</u>



Unfunded Liability Bases

Table I-1

<u>Description</u>	<u>Original Amount</u>	<u>Outstanding Balance</u>	<u>Amortization Payment</u>	<u>Years Rem.</u>
	Total	\$940,950	\$117,273	
		↓	↓	
10/1/2018 Fresh Start	\$940,950	\$940,950	\$117,273	11



Actuarial Value of Assets

Table II-A

Market Value of Assets as of October 1, 2018	\$4,941,798
Minus DROP account credits	\$0
Plus/minus advance employer contribution	(\$814,935)
Actuarial Value of Assets as of October 1, 2018	<u>\$4,126,863</u>

Historical Actuarial Value of Assets

October 1, 2009	\$1,514,782
October 1, 2010	\$1,751,612
October 1, 2011	\$1,901,446
October 1, 2012	\$2,125,637
October 1, 2013	\$2,327,326
October 1, 2014	\$3,363,042
October 1, 2015	\$3,264,002
October 1, 2016	\$3,456,895
October 1, 2017	\$3,905,947
October 1, 2018	\$4,126,863

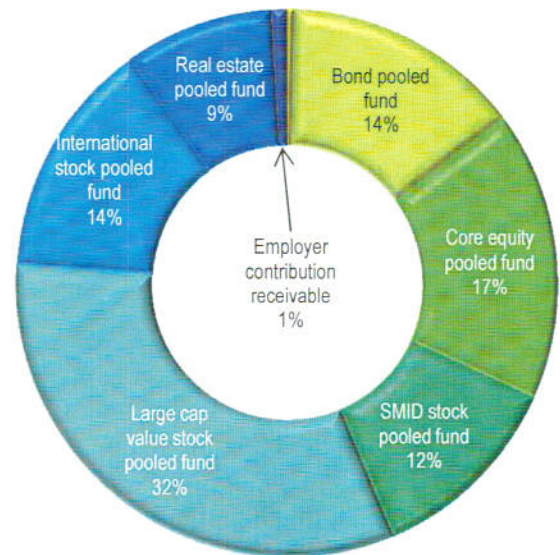


Market Value of Assets

Table II-B

As of October 1, 2018

Market Value of Assets	<u>\$4,941,798</u>
Cash	\$19,583
Bond pooled fund	\$709,906
Core equity pooled fund	\$842,095
SMID stock pooled fund	\$587,508
Large cap value stock pooled fund	\$1,600,960
International stock pooled fund	\$695,218
Real estate pooled fund	\$440,631
Employer contribution receivable	\$45,897

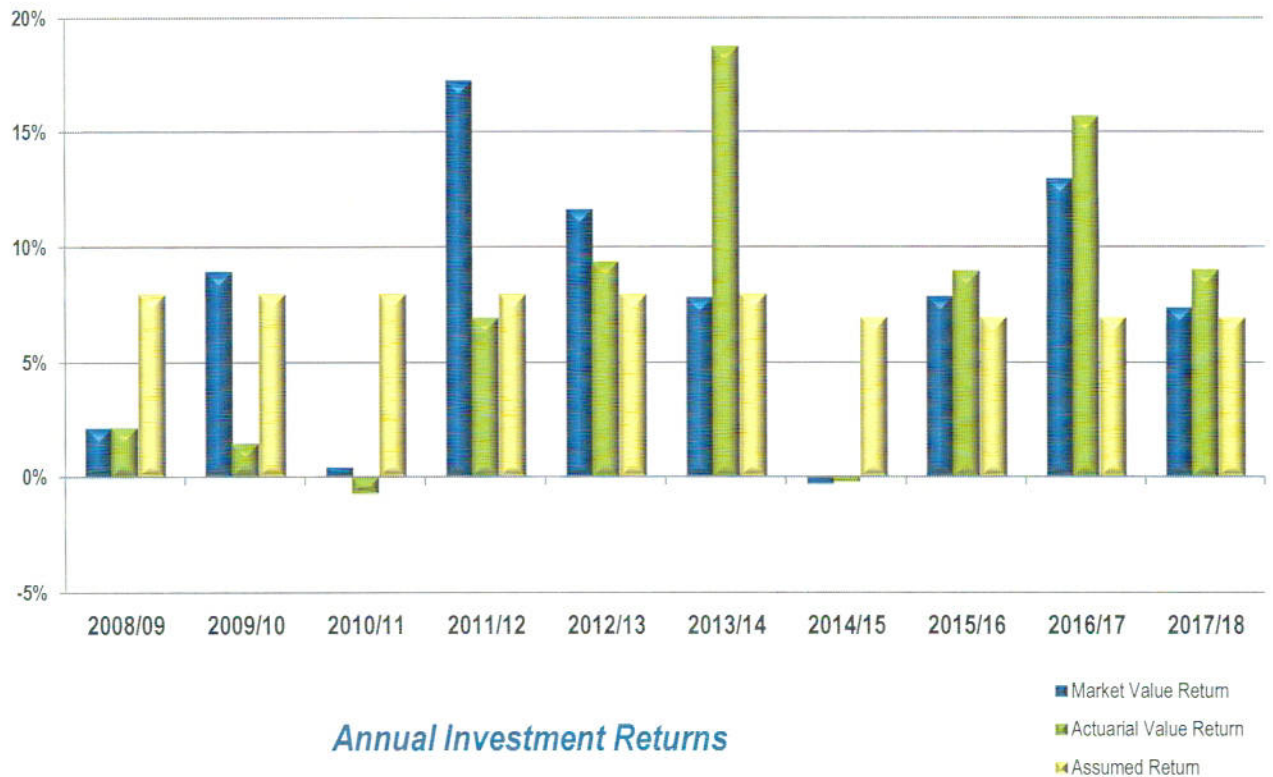
**Historical Market Value of Assets**

October 1, 2009	\$1,544,277
October 1, 2010	\$1,892,938
October 1, 2011	\$2,093,553
October 1, 2012	\$2,529,990
October 1, 2013	\$2,926,262
October 1, 2014	\$3,432,921
October 1, 2015	\$3,561,022
October 1, 2016	\$4,034,868
October 1, 2017	\$4,761,276
October 1, 2018	\$4,941,798



Investment Return

Table II-C

*Annual Investment Returns*

Plan	Market Value	Actuarial Value	Assumed
Year	Return	Return	Return
2008/09	2.15%	2.16%	8.00%
2009/10	8.96%	1.45%	8.00%
2010/11	0.44%	-0.69%	8.00%
2011/12	17.26%	7.00%	8.00%
2012/13	11.66%	9.41%	8.00%
2013/14	7.86%	18.77%	8.00%
2014/15	-0.28%	-0.21%	7.00%
2015/16	7.92%	9.00%	7.00%
2016/17	12.99%	15.71%	7.00%
2017/18	7.43%	9.04%	7.00%
10yr. Avg.	7.51%	6.98%	7.60%



Asset Reconciliation

Table II-D

	<u>Market Value</u>	<u>Actuarial Value</u>
As of October 1, 2017	\$4,761,276	\$3,905,947
<i>Increases Due To:</i>		
Employer Contributions	\$378,645	\$378,645
Employee Contributions	\$31,616	\$31,616
Service Purchase Contributions	\$0	\$0
Total Contributions	<u>\$410,261</u>	<u>\$410,261</u>
Interest and Dividends	\$0	
Realized Gains (Losses)	\$0	
Unrealized Gains (Losses)	<u>\$347,409</u>	
Total Investment Income	\$347,409	\$347,409
Other Income	\$0	
Total Income	<u>\$757,670</u>	<u>\$757,670</u>
<i>Decreases Due To:</i>		
Monthly Benefit Payments	(\$559,765)	(\$559,765)
Refund of Employee Contributions	\$0	\$0
DROP Credits		\$244,062
Total Benefit Payments	<u>(\$559,765)</u>	<u>(\$315,703)</u>
Investment Expenses	\$0	
Administrative Expenses	(\$17,383)	(\$17,383)
Advance Employer Contribution		(\$203,668)
Total Expenses	<u>(\$577,148)</u>	<u>(\$536,754)</u>
As of October 1, 2018	<u>\$4,941,798</u>	<u>\$4,126,863</u>



Historical Trust Fund Detail

Table II-E

Income

Plan	Employer	Employee	Service	Interest /	Realized	Unrealized	Other
Year	Contribs.	Contribs.	Purchase	Dividends	Gains /	Gains /	Income
			Contribs.		Losses	Losses	
2008/09	\$277,319	\$55,316	\$0	\$0	\$0	\$31,810	\$0
2009/10	\$333,836	\$56,451	\$0	\$0	\$0	\$147,429	\$0
2010/11	\$343,155	\$52,073	\$0	\$0	\$0	\$8,789	\$0
2011/12	\$301,131	\$43,797	\$0	\$0	\$0	\$367,360	\$0
2012/13	\$336,520	\$35,959	\$0	\$0	\$0	\$300,561	\$0
2013/14	\$506,288	\$28,150	\$0	\$0	\$0	\$240,525	\$0
2014/15	\$366,299	\$29,366	\$0	\$0	\$0	-\$9,895	\$0
2015/16	\$407,167	\$30,554	\$0	\$0	\$0	\$289,334	\$0
2016/17	\$415,079	\$31,636	\$0	\$0	\$0	\$536,281	\$0
2017/18	\$378,645	\$31,616	\$0	\$0	\$0	\$347,409	\$0

Expenses

Plan	Monthly	Contrib.	Admin.	Invest.	<u>Other Actuarial Adjustments</u>	
Year	Benefit	Refunds	Expenses	Expenses	DROP	Advance
	Payments				Credits	Employer
						Contribs.
2008/09	\$265,180	\$0	\$3,692	\$0	\$0	\$212,737
2009/10	\$184,732	\$0	\$4,323	\$0	\$0	-\$12,044
2010/11	\$198,170	\$0	\$5,232	\$0	\$0	\$29,271
2011/12	\$266,483	\$0	\$9,368	\$0	\$0	-\$18,983
2012/13	\$267,979	\$0	\$8,789	\$0	\$20,427	\$73,691
2013/14	\$261,166	\$0	\$7,138	\$0	\$49,452	-\$330,854
2014/15	\$244,921	\$0	\$12,748	\$0	\$44,429	\$185,581
2015/16	\$244,921	\$0	\$8,288	\$0	\$57,373	\$223,580
2016/17	\$246,044	\$0	\$10,544	\$0	\$72,381	\$204,975
2017/18	\$559,765	\$0	\$17,383	\$0	-\$244,062	\$203,668

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	\$244,062
DROP Benefit Credits	\$23,212
DROP Investment Credits	\$21,738
DROP Benefits Paid Out	(\$289,012)
Net DROP Credit	(\$244,062)
DROP Balance as of October 1, 2018	<u>\$0</u>

Advance Employer Contribution

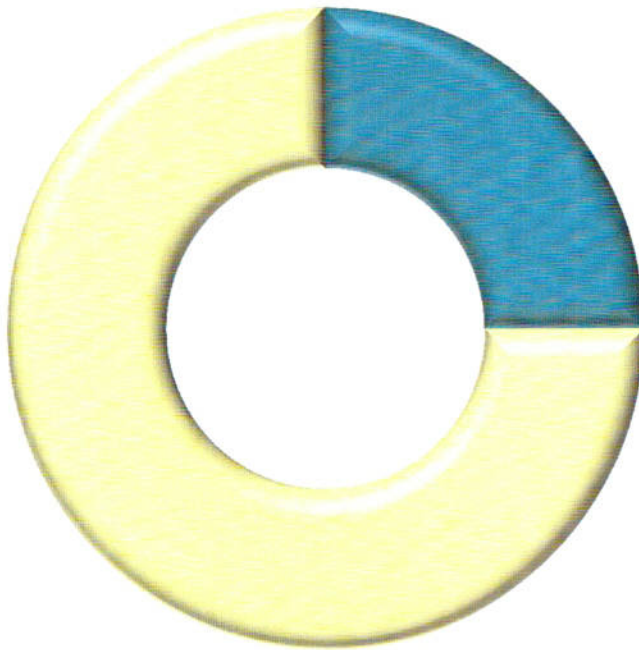
Advance Employer Contribution as of October 1, 2017	\$611,267
Additional Employer Contribution	\$378,645
Minimum Required Contribution	(\$174,977)
Net Increase in Advance Employer Contribution	\$203,668
Advance Employer Contribution as of October 1, 2018	<u>\$814,935</u>



Summary of Participant Data

Table III-A

As of October 1, 2018

*Participant Distribution by Status*Actively Employed Participants

◆ Active Participants	2
◆ DROP Participants	0

Inactive Participants

◆ Deferred Vested Participants	0
◆ Due a Refund of Contributions	0
◆ Deferred Beneficiaries	0

Participants Receiving a Benefit

◆ Service Retirements	6
◆ Disability Retirements	0
◆ Beneficiaries Receiving	0

Total Participants 8

Number of Participants Included in Prior Valuations

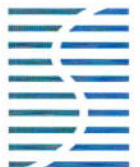
	<i>Active</i>	<i>DROP</i>	<i>Inactive</i>	<i>Retired</i>	<i>Total</i>
October 1, 2009	N/A	N/A	N/A	N/A	N/A
October 1, 2010	N/A	N/A	N/A	N/A	N/A
October 1, 2011	3	0	0	6	9
October 1, 2012	N/A	N/A	N/A	N/A	N/A
October 1, 2013	N/A	N/A	N/A	N/A	N/A
October 1, 2014	2	1	0	5	8
October 1, 2015	2	1	0	5	8
October 1, 2016	2	1	0	5	8
October 1, 2017	2	1	0	5	8
October 1, 2018	2	0	0	6	8



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>	2	1	0	0	0	5	0	0	8
<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									
Transferred In									
New Beneficiary									
<u>Other Adjustment</u>									
<u>October 1, 2018</u>	2	0	0	0	0	6	0	0	8

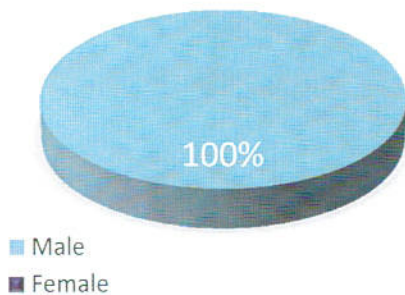


Active Participant Data

Table III-C

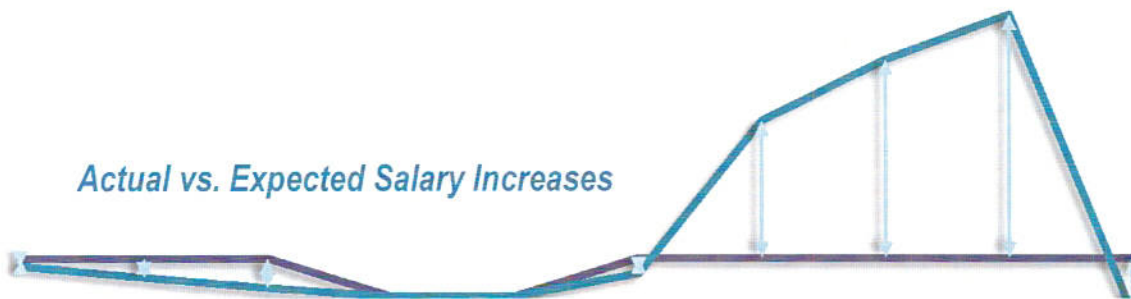
As of October 1, 2018

Gender Mix



Average Age	57.5 years
Average Service	15.5 years
Total Annualized Compensation for the Prior Year	\$286,805
Total Expected Compensation for the Current Year	\$298,277
Average Increase in Compensation for the Prior Year	-1.84%
Expected Increase in Compensation for the Current Year	4.00%
Accumulated Contributions for Active Employees	\$406,487

Actual vs. Expected Salary Increases



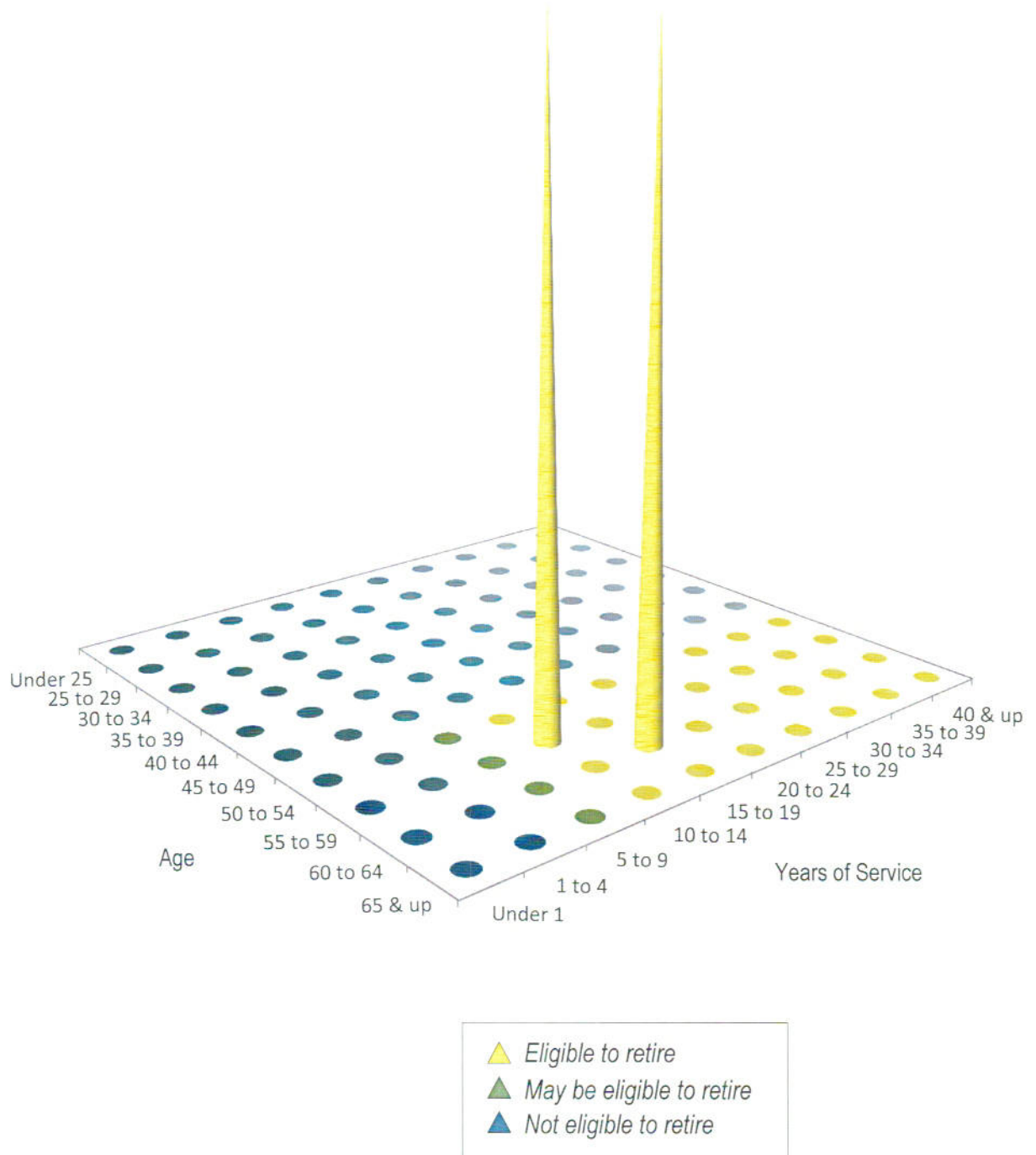
Active Participant Statistics From Prior Valuations

	Average Age	Average Service	Average Salary	Average Expected Salary Increase	Average Actual Salary Increase
October 1, 2009	54.3	13.5	\$121,251	4.00%	3.20%
October 1, 2010	55.3	14.5	\$123,688	4.00%	2.00%
October 1, 2011	54.7	10.4	\$127,802	4.00%	0.90%
October 1, 2012	N/A	N/A	N/A	N/A	N/A
October 1, 2013	N/A	N/A	N/A	N/A	N/A
October 1, 2014	53.5	11.5	\$127,955	4.00%	2.40%
October 1, 2015	54.5	12.5	\$156,341	4.00%	18.21%
October 1, 2016	55.5	13.5	\$138,882	4.00%	24.61%
October 1, 2017	56.5	14.5	\$146,089	4.00%	29.28%
October 1, 2018	57.5	15.5	\$143,403	4.00%	-1.84%



Active Age-Service Distribution

Table III-D



Active Age-Service-Salary Table

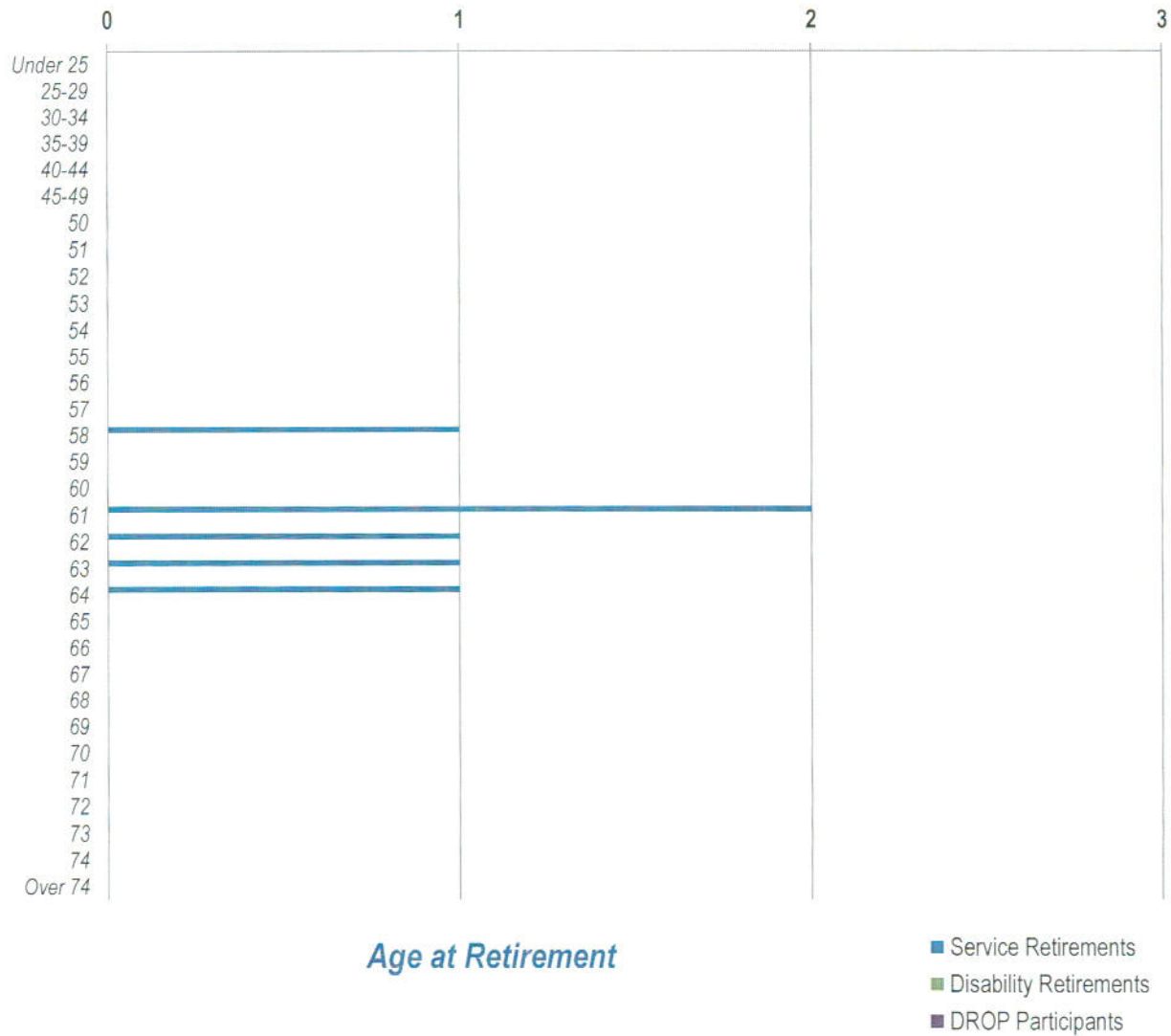
Table III-E

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	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0	0	0	0	0
Avg. Pay	0	0	0	0	0	0	0	0	0	0	0
55 to 59	0	0	0	1	0	0	0	0	0	0	1
Avg. Pay	0	0	0	156,763	0	0	0	0	0	0	156,763
60 to 64	0	0	0	0	1	0	0	0	0	0	1
Avg. Pay	0	0	0	0	130,042	0	0	0	0	0	130,042
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	0	0	0	1	1	0	0	0	0	0	2
Avg. Pay	0	0	0	156,763	130,042	0	0	0	0	0	143,403



Inactive Participant Data

Table III-F

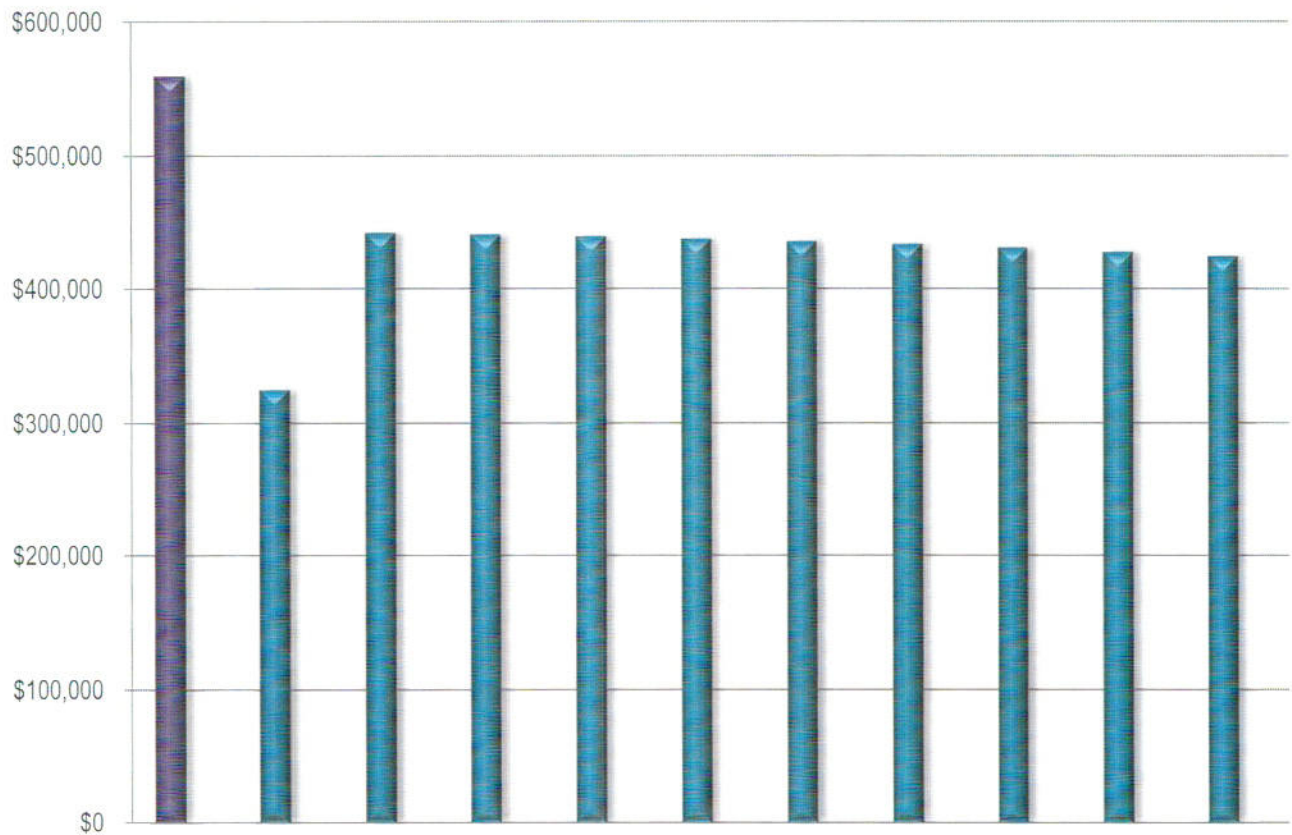
Average Monthly Benefit

Service Retirements	\$4,524.70
Disability Retirements	Not applicable
Beneficiaries Receiving	Not applicable
DROP Participants	Not applicable
Deferred Vested Participants	Not applicable
Deferred Beneficiaries	Not applicable



Projected Benefit Payments

Table III-G

Actual

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

\$559,765

Projected

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

\$325,155

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

\$441,809

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

\$440,589

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

\$439,158

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

\$437,503

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

\$435,562

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

\$433,333

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

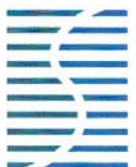
\$430,761

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

\$427,753

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

\$424,309



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**

Individual entry age normal cost method. Under this actuarial cost method, a level funding cost is developed with respect to each benefit for each participant. The level funding cost for each benefit applies to the period beginning when the participant's service commences and ending when the participant is assumed to cease active participation due to each respective decrement. The actuarial accrued liability is equal to the accumulated level funding cost to the valuation date for all participants. The normal cost is equal to the level funding cost for the year immediately following the valuation date for all active participants.

2. **Amortization Method**

The unfunded actuarial accrued liability is amortized as a level dollar amount over a closed period of 15 years from October 1, 2014.

3. **Asset Method**

The actuarial value of assets is equal to the market value of assets.

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

7.00% per annum

5. **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.

6. **Decrements**

- Pre-retirement mortality: None is assumed.
- Post-retirement mortality: Sex-distinct rates set forth in the RP-2000 Combined Mortality Table, with full generational improvements in mortality using Scale BB
- Disability: None is assumed.



Summary of Actuarial Methods and Assumptions

Table IV-A

(continued)

- Termination: None is assumed.
- Retirement: Retirement is assumed to occur at the later of normal retirement age or one year after the valuation date.

7. Form of Payment

Future retirees have been assumed to select the single life annuity.

8. Expenses

Administrative expenses are assumed to be \$17,500 per year. In addition, the interest rate set forth in item 4. 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 assumed administrative expenses were increased from \$7,500 per year to \$17,500 per year.

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, 2014, the amortization period for all bases was shortened from 22 years as of October 1, 2014 to 15 years.*
- (3) Effective October 1, 2014, the assumed interest rate was decreased from 8.00% per annum to 7.00% per annum.*
- (4) Effective October 1, 2014, the mortality basis was updated from the unprojected RP-2000 Mortality Table to the RP-2000 Mortality Table, projected to 2015 by Scale AA.*
- (5) Effective October 1, 2014, the decrements for termination of employment and disability were eliminated.*
- (6) Effective October 1, 2014, the assumed retirement age was changed to normal retirement age, but no earlier than one year after the valuation date.*
- (7) Effective October 1, 2014, the assumed administrative expenses were increased from \$5,000 per year to \$7,500 per year.*
- (8) Effective October 1, 2014, the four-year phase-in of investment gains and losses was eliminated for purposes of determining the actuarial value of assets.*



Summary of Plan Provisions

Table V-A

1. Monthly Accrued Benefit

2.25% of Average Monthly Earnings multiplied by Credited Service, plus
\$20.00 multiplied by years of Credited Service

(Note: The police and fire chiefs receive a 2.00% benefit formula multiplied unless they purchase a higher benefit accrual rate by paying the full actuarial cost thereof within three months of the determination.)

2. Normal Retirement Age and Benefit

- **Age**
Age 55 with at least six years of Credited Service
- **Amount**
Monthly Accrued Benefit
- **Form of Payment**
Single life annuity (optional);
Actuarially reduced 10-year certain and life annuity (normal form of payment);
Actuarially reduced 50% joint and contingent annuity (optional);
Actuarially reduced 66⅔% joint and contingent annuity (optional);
Actuarially reduced 75% joint and contingent annuity (optional);
Actuarially reduced 100% joint and contingent annuity (optional); or
Any other actuarially equivalent form of payment approved by the Board of Trustees (optional)

(Note: All forms of payment guarantee at least the return of the member's Accumulated Contributions.)

3. Early Retirement Age and Benefit

- **Age**
Age 50 with at least six years of Credited Service
- **Amount**
Monthly Accrued Benefit (payable at Normal Retirement Age); or
Monthly Accrued Benefit reduced 0.50% for each month by which the member'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. Delayed Retirement Age and Benefit

- **Age**
After Normal Retirement Age
- **Amount**
Monthly Accrued Benefit
- **Form of Payment**
Same as for Normal Retirement

5. Disability Eligibility and Benefit

- **Eligibility**
The member is eligible if he becomes totally and permanently disabled from bodily injury, disease, or a mental disorder such that he is incapable of employment and remains so disabled for a period of at least six months.
- **Amount Payable**
Monthly Accrued Benefit
- **Form of Payment**
Same as for Normal Retirement

6. Deferred Vested Benefit

- **Age**
Any age with at least six years of Credited Service
- **Amount**
Monthly Accrued Benefit (payable at Normal Retirement Age); or
Monthly Accrued Benefit reduced 0.50% for each month by which the member'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)

7. Pre-Retirement Death Benefits

- **Vested Member**

Upon the death prior to retirement of a vested member, the member's beneficiary receives the member's Monthly Accrued Benefit reduced to reflect an immediate 100% joint and contingent form of payment. In any event, the pre-retirement death benefit guarantees at least the return of the member's Accumulated Contributions.

- **Non-Vested Member**

In the case of the death of a non-vested member prior to retirement, his beneficiary will receive the member's Accumulated Contributions.

8. Average Monthly Earnings

Average monthly earnings during the highest three years preceding the determination (or career average, if higher); for this purpose, earnings include total compensation other than overtime, sick pay, lump sum payments, and vacation pay.

9. Credited Service

The elapsed time from the member's date of hire until his date of termination, retirement, or death, excluding periods during which the member does not make the required contribution

10. Membership Requirement

All management employees of the City of Cooper City, Florida automatically become a member of the plan on the later of their date of hire or their promotion to a management position.

11. Accumulated Contributions

Member Contributions accumulated without interest; if the member terminates his employment with less than six years of Credited Service, then he receives a refund of his Accumulated Contributions.

12. Member Contributions

11.00% of earnings on a pre-tax basis for all members other than the police and fire chiefs



Summary of Plan Provisions

Table V-A

(continued)

13. Definition of Actuarially Equivalent

- **Interest Rate**
8.00% per annum
- **Mortality Table**
1994 Group Annuity Reserving Table, projected to 2002 by Scale AA

14. Plan Effective Date

The plan was originally effective on November 1, 2002.

15. Deferred Retirement Option Program (DROP)

A participant who has earned at least 15 years of Credited Service who is otherwise eligible for Early or Normal Retirement may elect to enter the DROP for a period of up to 60 months. DROP accounts may be self-directed and are credited with interest at the actual rate of return earned by the pension fund less a 0.50% administrative charge.



Summary of Plan Amendments

Table V-B

Since the completion of the previous valuation, Resolution No. 17-11-1 was adopted on November 14, 2017 to be effective December 1, 2017. This amendment changed the maximum Deferred Retirement Option Plan (DROP) participation period from a five years beginning the date the participant becomes eligible to first enter the DROP to five years from the participant's actual DROP entry date. This amendment had no actuarial impact on the plan.

