

CITY OF SATELLITE BEACH  
GENERAL EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION  
AS OF OCTOBER 1, 2017

DETERMINES THE CONTRIBUTION  
FOR THE 2018/19 FISCAL YEAR



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April 8, 2018

## Introduction

This report presents the results of the October 1, 2017 actuarial valuation of the City of Satellite Beach General Employees' Retirement System. 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, 2017 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 minimum required contribution 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 \$306,047, which represents a decrease of \$48,175 from the prior valuation.

The normal cost developed in this valuation is \$295,925, which is \$42,387 less than the normal cost from the prior valuation. Table I-C provides a breakdown of the sources of change in the normal cost. Significantly, the normal cost decreased by \$2,141 due to investment gains, decreased by another \$57,804 due to demographic experience, and increased by \$17,558 due to the assumption change that is described below. The market value of assets earned 13.60% during the 2016/17 plan year. However, the actuarial value is based on a four-year average of the market





value returns. On this basis, the actuarial value of assets only earned 7.64% during the 2016/17 plan year, whereas a 7.50% 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, adjusted 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 is \$306,047.

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 \$8,662,475. As illustrated in Table I-A, current assets are sufficient to cover \$7,236,805 of this amount, the employer's 2017/18 contribution will cover \$354,222 of this amount, the employer's 2018/19 contribution will cover \$306,047 of this amount, and future employee contributions are expected to cover \$100,781 of this amount, leaving \$664,620 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.

### 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 four-year average return on the market value of assets in order to provide a more stable and predictable contribution rate for the employer. 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, 2017, as well as a summary of the changes that have occurred since the previous valuation report was prepared.

### Assumption Change

The assumed interest (or discount) rate has been decreased from 7.50% per annum to 7.40% per annum to reflect lower future expected investment earnings. This change increased the normal cost by \$17,558.

### 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.

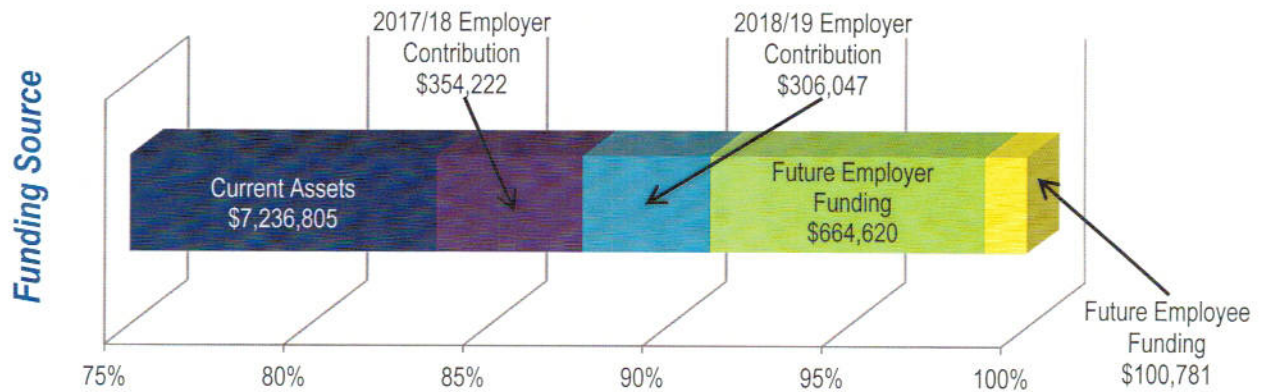
Enrolled Actuary No. 17-04927

*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

Present Value of Future Benefits	\$8,640,429
Present Value of Future Administrative Expenses	\$22,046
Actuarial Value of Assets	(\$7,236,805)
Present Value of Future Employee Contributions	(\$100,781)
Present Value of Future Normal Costs	\$1,324,889
Present Value of Future Payroll	÷ \$1,259,773
Normal Cost Rate	= 105.1689%
Expected Payroll	x \$281,381
Normal Cost	\$295,925
Adjustment to Reflect End-of-Quarter Employer Contributions	\$13,441
Expected Employer Contribution for the 2017/18 Plan Year	(\$354,222)
Remaining Contribution Due/(Credit) for the 2017/18 Plan Year	(\$44,856)
	x 0.074
One Year's Interest Charge/(Credit) on the Remaining Contribution	(\$3,319)

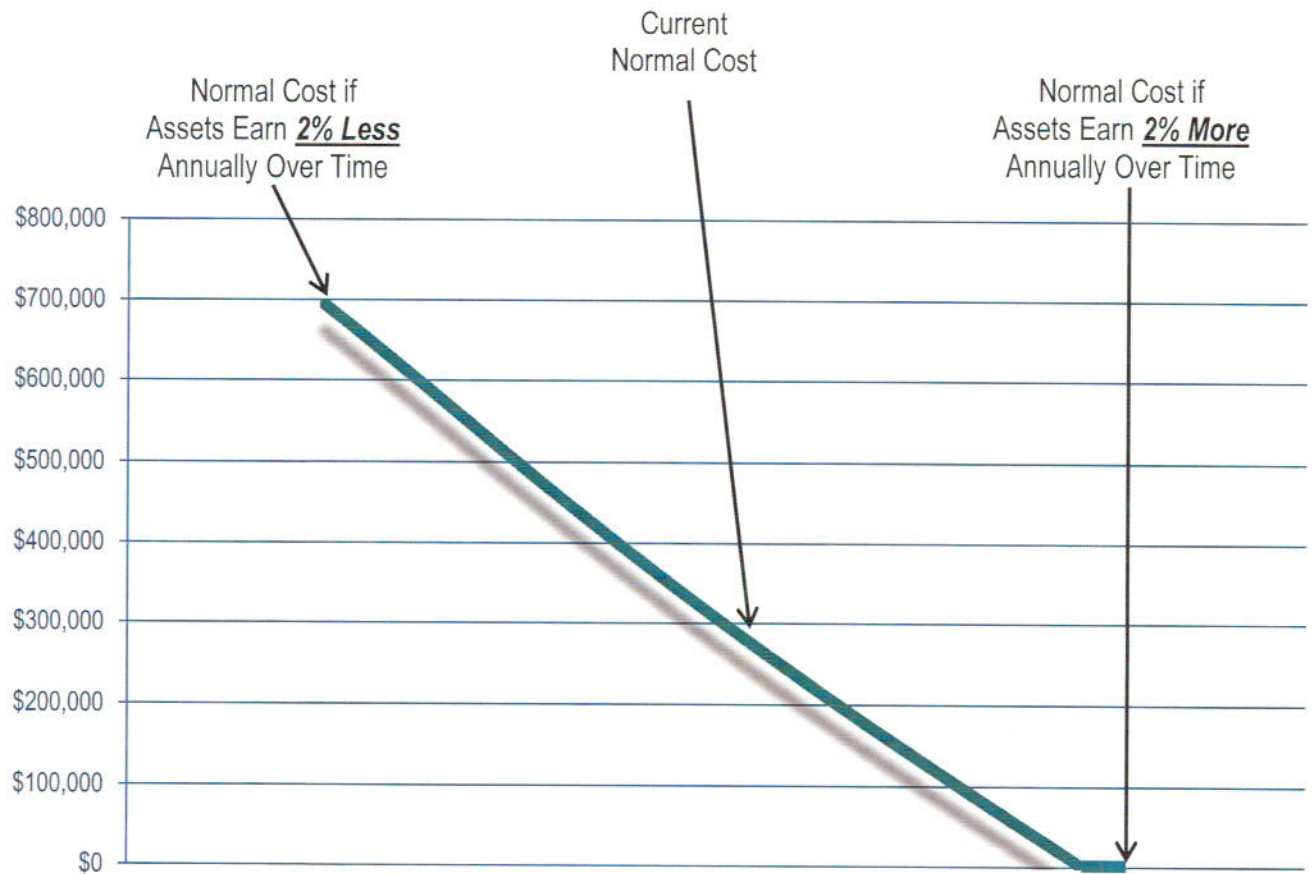
**Minimum Required Contribution for the 2018/19 Plan Year** **\$306,047**





Sensitivity Analysis

Table I-B



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

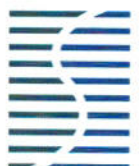


Gain and Loss Analysis

Table I-C

Source of Change in the Normal Cost

Previous normal cost	\$338,312
Increase (decrease) due to investment gains and losses	(\$2,141)
Increase (decrease) due to demographic experience	(\$57,804)
Increase (decrease) due to plan amendments	\$0
Increase (decrease) due to actuarial assumption changes	\$17,558
Increase (decrease) due to actuarial method changes	\$0
Current normal cost	<u>\$295,925</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	\$2,157,071	\$2,157,071	\$2,185,664
Termination benefits	\$538	\$538	\$547
Disability benefits	\$124,506	\$124,506	\$125,989
Death benefits	\$24,699	\$24,699	\$24,942
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$2,306,814</b>	<b>\$2,306,814</b>	<b>\$2,337,142</b>
<u>Deferred Vested Participants</u>			
Retirement benefits	\$439,001	\$439,001	\$444,592
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$439,001</b>	<b>\$439,001</b>	<b>\$444,592</b>
<u>Due a Refund of Contributions</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Deferred Beneficiaries</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Retired Participants</u>			
Service retirements	\$4,652,433	\$4,652,433	\$4,690,278
Disability retirements	\$88,233	\$88,233	\$88,721
Beneficiaries receiving	\$377,858	\$377,858	\$380,089
DROP participants	\$693,664	\$693,664	\$699,607
Sub-total	<b>\$5,812,188</b>	<b>\$5,812,188</b>	<b>\$5,858,695</b>
<u>Grand Total</u>	<b><u>\$8,558,003</u></b>	<b><u>\$8,558,003</u></b>	<b><u>\$8,640,429</u></b>
Present Value of Future Payroll	\$1,256,144	\$1,256,144	\$1,259,773
Present Value of Future Employee Contribs.	\$100,491	\$100,491	\$100,781
Present Value of Future Employer Contribs.	\$1,242,690	\$1,242,690	\$1,324,889



## 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	\$1,460,011	\$1,460,011	\$1,478,505
Termination benefits	\$538	\$538	\$547
Disability benefits	\$97,770	\$97,770	\$98,901
Death benefits	\$19,092	\$19,092	\$19,274
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$1,577,411</b>	<b>\$1,577,411</b>	<b>\$1,597,227</b>
<u>Deferred Vested Participants</u>			
Retirement benefits	\$439,001	\$439,001	\$444,592
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$439,001</b>	<b>\$439,001</b>	<b>\$444,592</b>
<u>Due a Refund of Contributions</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Deferred Beneficiaries</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Retired Participants</u>			
Service retirements	\$4,652,433	\$4,652,433	\$4,690,278
Disability retirements	\$88,233	\$88,233	\$88,721
Beneficiaries receiving	\$377,858	\$377,858	\$380,089
DROP participants	\$693,664	\$693,664	\$699,607
Sub-total	<b>\$5,812,188</b>	<b>\$5,812,188</b>	<b>\$5,858,695</b>
<u>Grand Total</u>	<b><u>\$7,828,600</u></b>	<b><u>\$7,828,600</u></b>	<b><u>\$7,900,514</u></b>
<u>Funded Percentage</u>	91.78%	91.78%	90.95%

(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	\$1,460,011	\$1,460,011	\$1,478,505
Termination benefits	\$538	\$538	\$547
Disability benefits	\$97,770	\$97,770	\$98,901
Death benefits	\$19,092	\$19,092	\$19,274
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$1,577,411</b>	<b>\$1,577,411</b>	<b>\$1,597,227</b>
<u>Deferred Vested Participants</u>			
Retirement benefits	\$439,001	\$439,001	\$444,592
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$439,001</b>	<b>\$439,001</b>	<b>\$444,592</b>
<u>Due a Refund of Contributions</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Deferred Beneficiaries</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Retired Participants</u>			
Service retirements	\$4,652,433	\$4,652,433	\$4,690,278
Disability retirements	\$88,233	\$88,233	\$88,721
Beneficiaries receiving	\$377,858	\$377,858	\$380,089
DROP participants	\$693,664	\$693,664	\$699,607
Sub-total	<b>\$5,812,188</b>	<b>\$5,812,188</b>	<b>\$5,858,695</b>
<u>Grand Total</u>	<b><u>\$7,828,600</u></b>	<b><u>\$7,828,600</u></b>	<b><u>\$7,900,514</u></b>





## Entry Age Normal Accrued Liability

Table I-G

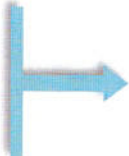
	Old Assumptions <u>w/o Amendment</u>	Old Assumptions <u>w/ Amendment</u>	New Assumptions <u>w/ Amendment</u>
<u>Actively Employed Participants</u>			
Retirement benefits	\$1,918,827	\$1,918,827	\$1,940,895
Termination benefits	\$538	\$538	\$547
Disability benefits	\$115,149	\$115,149	\$116,393
Death benefits	\$22,735	\$22,735	\$22,932
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$2,057,249</b>	<b>\$2,057,249</b>	<b>\$2,080,767</b>
<u>Deferred Vested Participants</u>			
Retirement benefits	\$439,001	\$439,001	\$444,592
Termination benefits	\$0	\$0	\$0
Disability benefits	\$0	\$0	\$0
Death benefits	\$0	\$0	\$0
Refund of employee contributions	\$0	\$0	\$0
Sub-total	<b>\$439,001</b>	<b>\$439,001</b>	<b>\$444,592</b>
<u>Due a Refund of Contributions</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Deferred Beneficiaries</u>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<u>Retired Participants</u>			
Service retirements	\$4,652,433	\$4,652,433	\$4,690,278
Disability retirements	\$88,233	\$88,233	\$88,721
Beneficiaries receiving	\$377,858	\$377,858	\$380,089
DROP participants	\$693,664	\$693,664	\$699,607
Sub-total	<b>\$5,812,188</b>	<b>\$5,812,188</b>	<b>\$5,858,695</b>
<u>Grand Total</u>	<b><u>\$8,308,438</u></b>	<b><u>\$8,308,438</u></b>	<b><u>\$8,384,054</u></b>



## Actuarial Value of Assets

Table II-A

Market Value Rate of Return

For the 2013/14 plan year	8.62%		Average return for the preceding four years 7.64%
For the 2014/15 plan year	0.25%		
For the 2015/16 plan year	8.52%		
For the 2016/17 plan year	13.60%		

Actuarial Value of Assets as of October 1, 2016	\$6,971,325
Plus contributions for the 2016/17 plan year	\$371,585
Minus benefit payments and administrative expenses for the 2016/17 plan year	(\$561,150)
Minus DROP account credits	(\$67,910)
Minus advance employer contribution	\$0

Adjustment for interest at the average rate shown above,  
but restricted to an amount that keeps the actuarial value  
of assets within an 80%-120% corridor of the market value

Actuarial Value of Assets as of October 1, 2017 **\$7,236,805**

Historical Actuarial Value of Assets

October 1, 2008	\$4,487,893
October 1, 2009	\$4,701,112
October 1, 2010	\$4,793,677
October 1, 2011	\$4,827,250
October 1, 2012	\$5,384,278
October 1, 2013	\$5,714,233
October 1, 2014	\$6,200,875
October 1, 2015	\$6,660,031
October 1, 2016	\$6,971,325
October 1, 2017	\$7,236,805

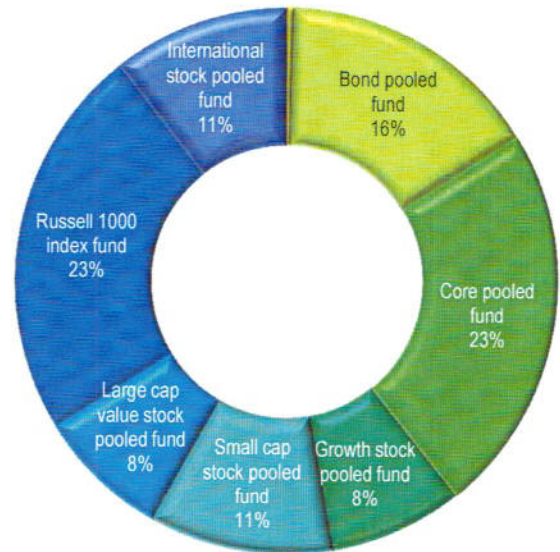


## Market Value of Assets

Table II-B

As of October 1, 2017

<b>Market Value of Assets</b>	<b><u>\$7,253,135</u></b>
Cash	\$29,009
Bond pooled fund	\$1,138,617
Core pooled fund	\$1,675,290
Growth stock pooled fund	\$580,187
Small cap stock pooled fund	\$797,757
Large cap value stock pooled fund	\$572,935
Russell 1000 index fund	\$1,689,794
International stock pooled fund	\$768,748
Due from public safety fund	\$798

**Historical Market Value of Assets**

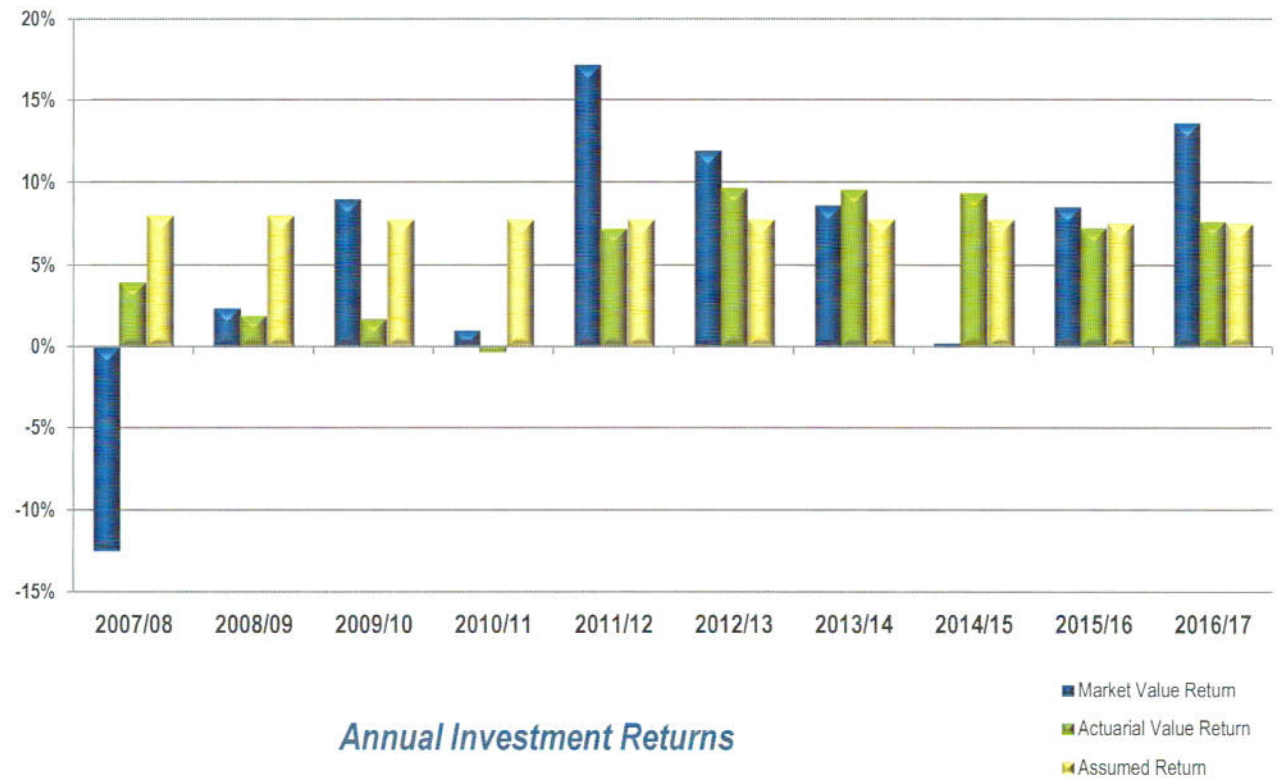
October 1, 2008	\$3,718,867
October 1, 2009	\$3,935,038
October 1, 2010	\$4,400,072
October 1, 2011	\$4,549,931
October 1, 2012	\$5,433,079
October 1, 2013	\$5,913,266
October 1, 2014	\$6,388,350
October 1, 2015	\$6,206,493
October 1, 2016	\$6,563,141
October 1, 2017	\$7,253,135





## Investment Return

Table II-C

*Annual Investment Returns*

Plan Year	Market Value Return	Actuarial Value Return	Assumed Return
2007/08	-12.46%	3.97%	8.00%
2008/09	2.39%	1.92%	8.00%
2009/10	8.99%	1.71%	7.75%
2010/11	1.05%	-0.32%	7.75%
2011/12	17.17%	7.21%	7.75%
2012/13	11.93%	9.63%	7.75%
2013/14	8.62%	9.53%	7.75%
2014/15	0.25%	9.32%	7.75%
2015/16	8.52%	7.24%	7.50%
2016/17	13.60%	7.64%	7.50%
10yr. Avg.	5.68%	5.73%	7.75%



## Asset Reconciliation

Table II-D

	<u>Market Value</u>	<u>Actuarial Value</u>
As of October 1, 2016	\$6,563,141	\$6,971,325
<i>Increases Due To:</i>		
Employer Contributions	\$349,352	\$349,352
Employee Contributions	\$22,233	\$22,233
Service Purchase Contributions	\$0	\$0
Total Contributions	<u>\$371,585</u>	<u>\$371,585</u>
Interest and Dividends	\$0	
Realized Gains (Losses)	\$0	
Unrealized Gains (Losses)	<u>\$879,559</u>	
Total Investment Income	\$879,559	\$522,955
Other Income	\$0	
Total Income	<u>\$1,251,144</u>	<u>\$894,540</u>
<i>Decreases Due To:</i>		
Monthly Benefit Payments	(\$528,339)	(\$528,339)
Refund of Employee Contributions	(\$8,806)	(\$8,806)
DROP Credits		(\$67,910)
Total Benefit Payments	<u>(\$537,145)</u>	<u>(\$605,055)</u>
Investment Expenses	\$0	
Administrative Expenses	(\$24,005)	(\$24,005)
Advance Employer Contribution		\$0
Total Expenses	<u>(\$561,150)</u>	<u>(\$629,060)</u>
As of October 1, 2017	<u><u>\$7,253,135</u></u>	<u><u>\$7,236,805</u></u>



## Historical Trust Fund Detail

Table II-E

Income

Plan	Employer	Employee	Service	Interest /	Realized	Unrealized	Other
<u>Year</u>	<u>Contribs.</u>	<u>Contribs.</u>	<u>Purchase</u>	<u>Dividends</u>	<u>Gains /</u>	<u>Gains /</u>	<u>Income</u>
			<u>Contribs.</u>		<u>Losses</u>	<u>Losses</u>	
2007/08	\$324,935	\$67,310	\$0	\$0	\$0	-\$518,820	\$0
2008/09	\$289,431	\$67,953	\$0	\$0	\$0	\$90,144	\$254
2009/10	\$285,286	\$62,726	\$0	\$0	\$0	\$358,675	\$0
2010/11	\$294,485	\$57,237	\$0	\$0	\$0	\$47,001	-\$353
2011/12	\$438,757	\$49,153	\$75,587	\$0	\$0	\$789,085	\$0
2012/13	\$274,264	\$35,318	\$0	\$0	\$0	\$638,768	\$0
2013/14	\$428,556	\$30,262	\$0	\$0	\$0	\$508,195	\$0
2014/15	\$370,855	\$31,458	\$0	\$0	\$0	\$15,912	\$0
2015/16	\$341,136	\$33,168	\$0	\$0	\$0	\$521,671	\$0
2016/17	\$349,352	\$22,233	\$0	\$0	\$0	\$879,559	\$0

Expenses

Plan	Monthly	Contrib.	Admin.	Invest.	<u>Other Actuarial Adjustments</u>	
<u>Year</u>	<u>Benefit</u>	<u>Refunds</u>	<u>Expenses</u>	<u>Expenses</u>	<u>DROP</u>	<u>Advance</u>
	<u>Payments</u>				<u>Credits</u>	<u>Employer</u>
						<u>Contribs.</u>
2007/08	\$226,724	\$0	\$18,302	\$0	\$0	\$0
2008/09	\$218,387	-\$49	\$13,273	\$0	\$0	\$0
2009/10	\$224,869	\$0	\$16,784	\$0	\$55,836	\$38,222
2010/11	\$231,350	\$0	\$17,161	\$0	\$75,880	-\$21,785
2011/12	\$450,909	\$0	\$18,525	\$0	-\$91,170	-\$16,437
2012/13	\$445,948	\$0	\$22,215	\$0	\$21,397	\$0
2013/14	\$469,265	\$0	\$22,674	\$0	\$22,236	\$0
2014/15	\$577,609	\$0	\$22,473	\$0	-\$84,179	\$0
2015/16	\$515,793	\$0	\$23,534	\$0	\$0	\$0
2016/17	\$528,339	\$8,806	\$24,005	\$0	\$67,910	\$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, 2016	\$0
DROP Benefit Credits	\$63,154
DROP Investment Credits	\$4,756
DROP Benefits Paid Out	\$0
Net DROP Credit	\$67,910
DROP Balance as of October 1, 2017	<u>\$67,910</u>

**Advance Employer Contribution**

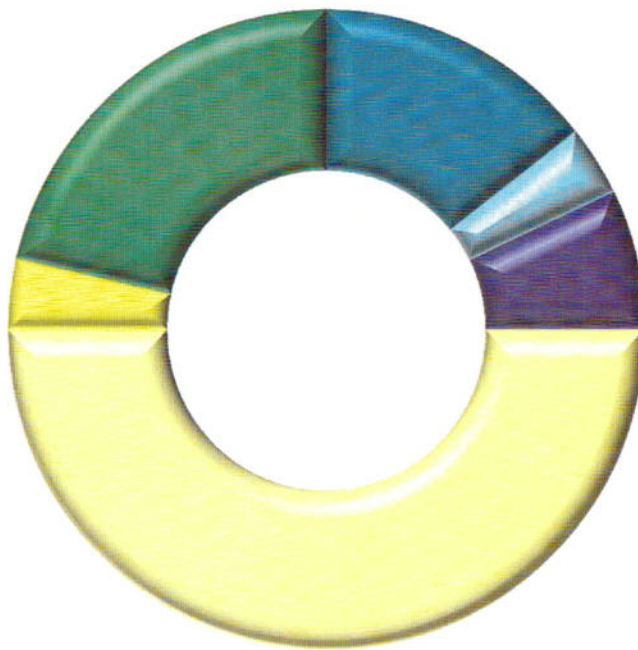
Advance Employer Contribution as of October 1, 2016	\$0
Additional Employer Contribution	\$349,352
Minimum Required Contribution	(\$349,352)
Net Increase in Advance Employer Contribution	\$0
Advance Employer Contribution as of October 1, 2017	<u>\$0</u>



## Summary of Participant Data

Table III-A

As of October 1, 2017

*Participant Distribution by Status*Actively Employed Participants

Active Participants	4
DROP Participants	1

Inactive Participants

Deferred Vested Participants	2
Due a Refund of Contributions	0
Deferred Beneficiaries	0

Participants Receiving a Benefit

Service Retirements	14
Disability Retirements	1
Beneficiaries Receiving	6

**Total Participants 28**Number of Participants Included in Prior Valuations

	Active	DROP	Inactive	Retired	Total
October 1, 2008	13	0	3	16	32
October 1, 2009	13	0	3	16	32
October 1, 2010	10	2	3	17	32
October 1, 2011	10	2	3	17	32
October 1, 2012	8	1	4	19	32
October 1, 2013	6	1	4	21	32
October 1, 2014	6	1	4	21	32
October 1, 2015	6	0	3	23	32
October 1, 2016	4	0	3	25	32
October 1, 2017	4	1	2	21	28



## 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, 2016</u>	4	0	3	0	0	17	1	7	32
<u>Change in Status</u>									
Re-employed									
Terminated									
Retired									
<u>Participation Ended</u>									
Transferred Out									
Cashed Out			(1)						(1)
Died						(2)		(1)	(3)
<u>Participation Began</u>									
Newly Hired									
Transferred In									
New Beneficiary									
Other Adjustment		1				(1)			
<u>October 1, 2017</u>	4	1	2	0	0	14	1	6	28



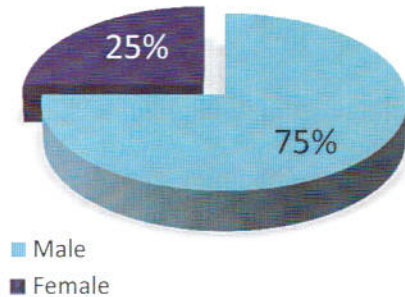


## Active Participant Data

## Table III-C

As of October 1, 2017

## Gender Mix



Average Age	56.8 years
Average Service	26.8 years
Total Annualized Compensation for the Prior Year	\$274,518
Total Expected Compensation for the Current Year	\$281,381
Average Increase in Compensation for the Prior Year	3.06%
Expected Increase in Compensation for the Current Year	4.75%
Accumulated Contributions for Active Employees	\$604,869

## Actual vs. Expected Salary Increases



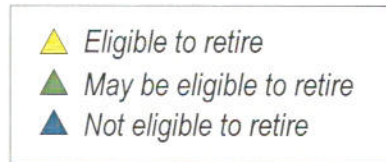
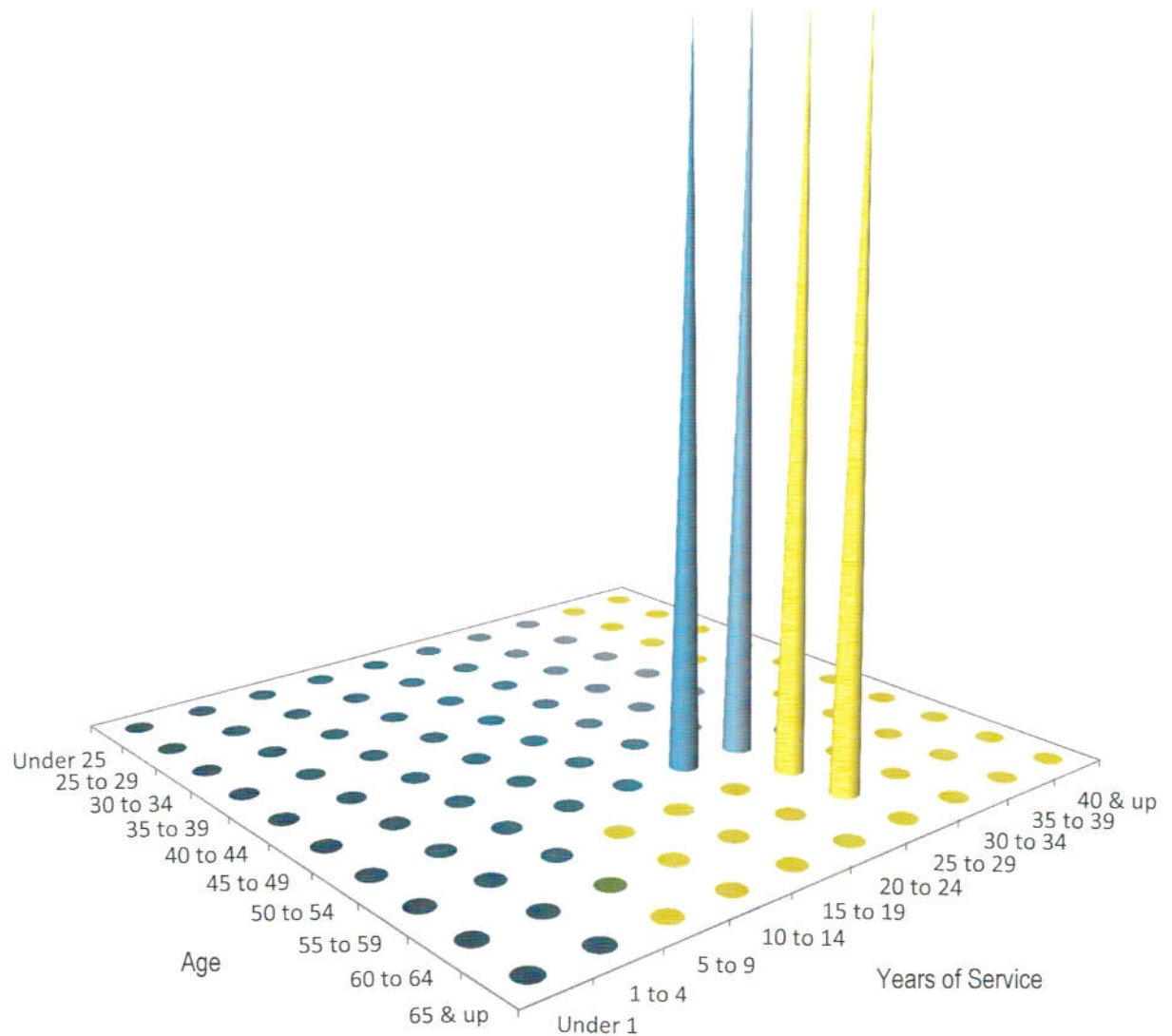
## Active Participant Statistics From Prior Valuations

	Average Age	Average Service	Average Salary	Average Expected Salary Increase	Average Actual Salary Increase
October 1, 2008	54.0	18.6	\$64,722	5.00%	4.38%
October 1, 2009	54.8	19.5	\$65,340	5.00%	1.24%
October 1, 2010	53.6	20.9	\$69,719	4.75%	3.15%
October 1, 2011	54.6	21.9	\$71,104	4.75%	2.43%
October 1, 2012	54.9	22.4	\$61,826	4.75%	-1.76%
October 1, 2013	55.2	24.8	\$60,127	4.75%	-0.03%
October 1, 2014	56.2	25.8	\$63,046	4.75%	5.53%
October 1, 2015	57.2	26.8	\$65,558	4.75%	4.12%
October 1, 2016	55.8	25.8	\$66,759	4.75%	11.12%
October 1, 2017	56.8	26.8	\$68,630	4.75%	3.06%



Active Age-Service Distribution

Table III-D



Active Age-Service-Salary Table

Table III-E

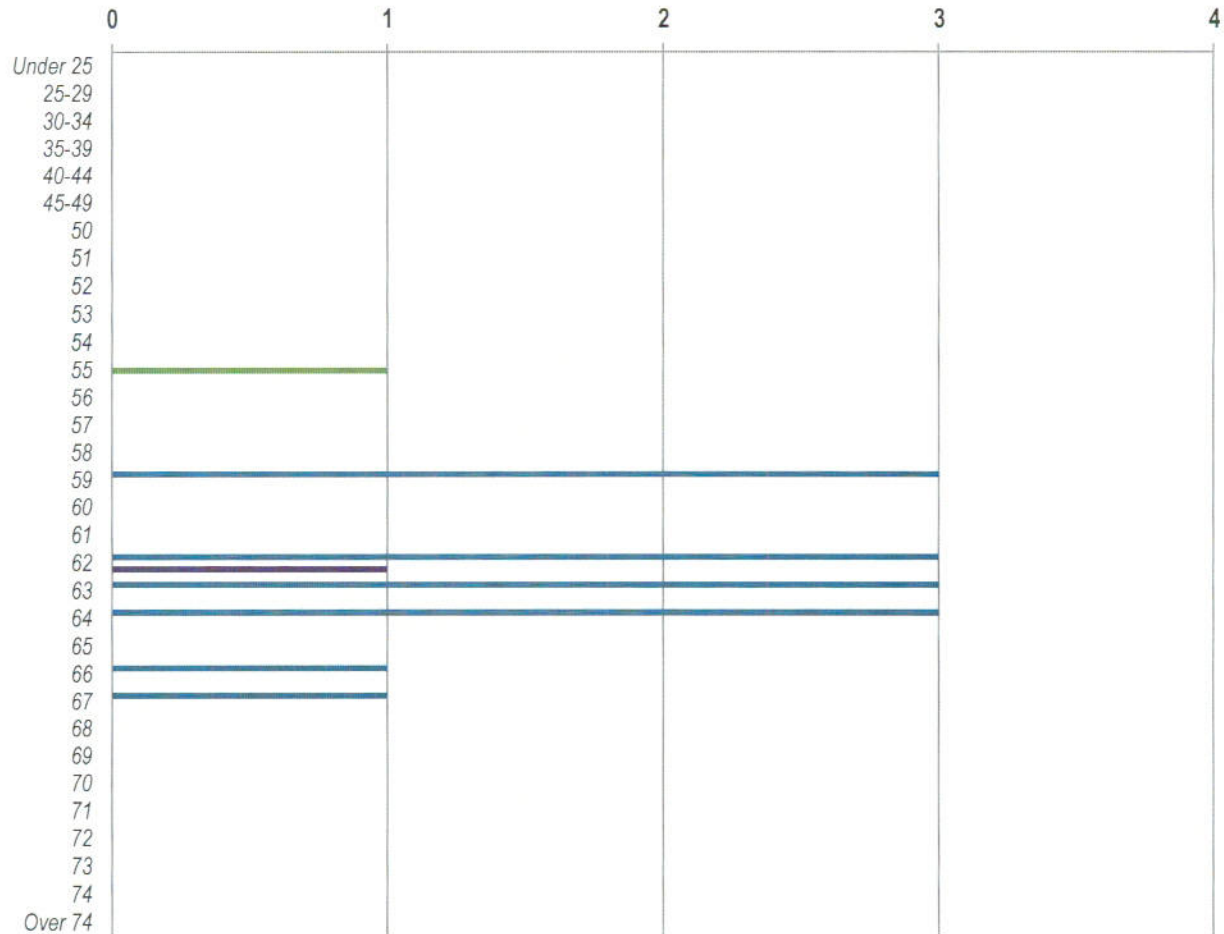
Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	0	0	0	0	0	0	0	0	0	0	0
Avg.Pay	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0
Avg.Pay	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0	0
Avg.Pay	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	1	1	0	0	0	2
Avg.Pay	0	0	0	0	0	60,899	61,261	0	0	0	61,080
55 to 59	0	0	0	0	0	0	1	0	0	0	1
Avg.Pay	0	0	0	0	0	0	97,881	0	0	0	97,881
60 to 64	0	0	0	0	0	0	1	0	0	0	1
Avg.Pay	0	0	0	0	0	0	54,477	0	0	0	54,477
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	0	0	1	3	0	0	0	4
Avg.Pay	0	0	0	0	0	60,899	71,206	0	0	0	68,630





## Inactive Participant Data

Table III-F

*Age at Retirement*

- Service Retirements
- Disability Retirements
- DROP Participants

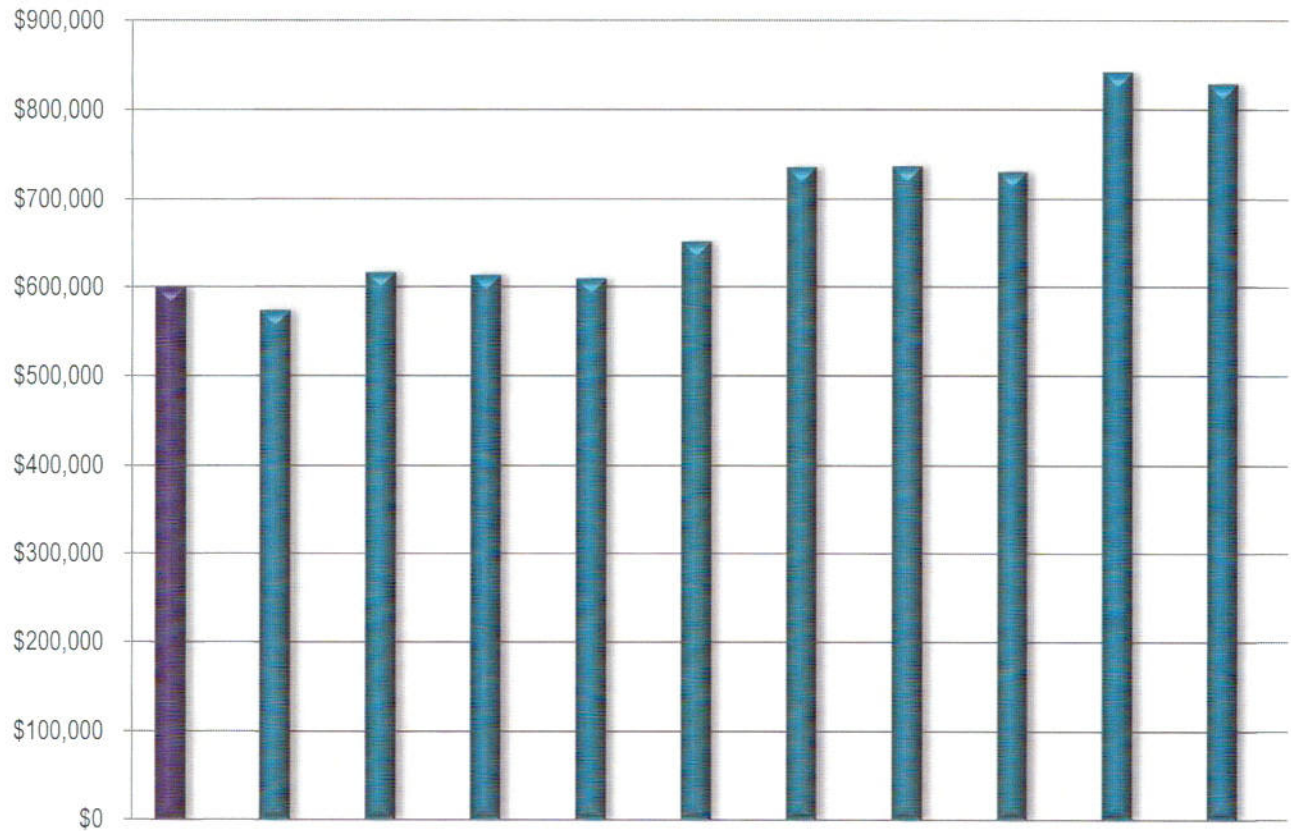
*Average Monthly Benefit*

Service Retirements	\$2,676.07
Disability Retirements	\$979.64
Beneficiaries Receiving	\$743.08
DROP Participants	\$5,262.83
Deferred Vested Participants	\$2,210.39
Deferred Beneficiaries	Not applicable



## Projected Benefit Payments

Table III-G

Actual

For the period October 1, 2016 through September 30, 2017

\$600,299

Projected

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

\$574,301

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

\$617,921

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

\$614,588

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

\$610,231

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

\$652,968

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

\$736,751

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

\$737,613

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

\$731,633

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

\$842,304

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

\$829,282



## 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 prior year's actuarial value of assets adjusted for contributions, benefit payments, and expenses and further adjusted by the average return on the market value of assets for the preceding four years; the actuarial value of assets is restricted to 80% to 120% of the market value.

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

7.40% per annum

(EXCEPTION: The actuary has recommended an assumed interest rate of 7.00% per annum based on the investment consultant's best estimate of the long-term expected rate of return for the plan's 60%/40% mix of stocks and fixed income investments. The Board of Trustees has elected to use a 7.40% interest rate assumption for this valuation, but has established a target rate of 7.00% to be realized by reducing the assumed interest rate by 0.10% per year for each of the next four years. It is anticipated that the 7.00% interest rate assumption will first be utilized for the October 1, 2021 actuarial valuation of the plan.)

4. **Salary Increases**

Plan compensation is assumed to increase at the rate of 4.75% 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 Combined Mortality Table, with full generational improvements in mortality using Scale BB





## Summary of Actuarial Methods and Assumptions

## Table IV-A

(continued)

- 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: Sex-distinct rates set forth in the Wyatt 1985 Disability Study (Class 1); No disabilities are assumed to be service-related.
- Termination: Sex-distinct rates set forth in the Scale 155 Table
- Retirement: Retirement is assumed to occur upon the attainment of age 62 with at least five years of service, except that those participants who have attained their normal retirement age as of the valuation date are assumed to retire one year after the valuation date. Alternatively, participants who have earned at least 35 years of service are assumed to retire at the rate of 5.00% per annum and participants who have attained age 55 with between 10 years of service and 35 years of service are assumed to retire at the rate of 2.50% per annum.

6. Form of Payment

Future retirees have been assumed to select the 10-year certain and life annuity.

7. Beneficiary Age and Gender

Where beneficiary information is unavailable, beneficiaries have been assumed to be of the opposite gender of the participant, with males assumed to be three years older than females.

8. Expenses

Administrative expenses are assumed to be 1.75% of future payroll. 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 interest (or discount) rate has been decreased from 7.50% per annum to 7.40% per annum.

*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 2007 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, 2015, the interest (or discount) rate was decreased from 7.75% per annum to 7.50% per annum.*
- (3) Effective October 1, 2012, the actuarial cost method was changed from the individual entry age normal cost method to the aggregate cost method.*
- (4) Effective October 1, 2011, the amortization period that is applied the unfunded liability was changed to a closed 15-year period.*
- (5) Effective October 1, 2010, the amortization payment towards the unfunded liability was changed from a level percentage of payroll to a level dollar amount.*
- (6) Effective October 1, 2009, the expected increase in total payroll was decreased from 4.00% per annum to 3.00% per annum.*
- (7) Effective October 1, 2009, the valuation interest rate was decreased from 8.00% per annum to 7.75% per annum.*
- (8) Effective October 1, 2009, the assumed increase in future plan compensation was decreased from 5.00% per annum to 4.75% per annum.*
- (9) Effective October 1, 2009, the pre-retirement mortality basis was changed from the 1983 Group Annuity Mortality Table to the RP-2000 Mortality Table for non-annuitants.*
- (10) Effective October 1, 2009, the post-retirement mortality basis was changed from the 1983 Group Annuity Mortality Table to the RP-2000 Mortality Table for annuitants.*
- (11) Effective October 1, 2009, the assumed incidence of disability was changed from a range of rates (0.05% at age 20 graded up to 0.43% at age 54) to the sex-distinct rates set forth in the Wyatt 1985 Disability Study (Class 1).*



## Changes in Actuarial Methods and Assumptions

## Table IV-B

(continued)

- (12) *Effective October 1, 2009, the assumed incidence of termination was changed from a range of rates (12.40% at age 20 graded down to 1.50% at age 54) to the sex-distinct rates set forth in the Scale 155 Table.*
- (13) *Effective October 1, 2009, the assumed incidence of retirement prior to normal retirement age was changed from 2.00% per annum to either 5.00% per annum (for those participants who have earned at least 35 years of service) or 2.50% per annum (for those participants who have attained age 55 with between 10 years of service and 35 years of service).*
- (14) *Effective October 1, 2009, the assumed administrative expenses were changed from \$17,500 per annum to 1.75% of future payroll.*





# Summary of Plan Provisions

## Table V-A

### 1. Benefit Formula

3% of Average Monthly Earnings multiplied by Credited Service earned prior to October 1, 2010 or after September 30, 2013 plus 2% of Average Monthly Earnings multiplied by Credited Service earned during the period October 1, 2010 through September 30, 2013 (§46-33(b)(1))

### 2. Service Retirement

Normal retirement: Age 62 with at least five years of participation (§46-33(a)(1))

Early retirement: Any age with at least 35 years of credited service; or  
Age 55 with at least 10 years of credited service  
(§46-33(a)(2))

*(Note: In the case of early retirement, the participant's benefit is reduced by  $\frac{1}{15}$  for each of the first five years plus  $\frac{1}{30}$  for each of the next five years by which the participant's early retirement age precedes his normal retirement age.) (§46-33(b)(2))*

### 3. Disability Retirement

Service-based disability: Participant must be disabled during the course of his employment with the City.  
(§46-33(c)(1))

Non-service disability: Participant must have earned at least 10 years of credited service. (§46-33(c)(1))

The disability benefit is a monthly life annuity equal to the larger of the monthly accrued benefit or either 42% of average monthly earnings (for service-based disability) or 25% of average monthly earnings (for non-service disability), but offset as necessary to preclude the total of the participant's worker's compensation, disability benefit, and other City-financed disability or salary continuation benefit (excluding social security benefits) from exceeding his average monthly earnings. A partial month's payment is made to cover the period between the date of the Board's approval and the end of the month.  
(§46-33(c)(4),(5),&(6))

*(A participant is disabled if he is found to be mentally or physically incapacitated so as to be wholly unable to properly perform his duties as an employee of the City and is likely to remain so disabled continuously and permanently. However, a participant will not be eligible for a disability benefit if his disability is caused by excessive and habitual use of drugs, intoxicants, or narcotics; by injury or disease sustained while serving in the armed forces; by injury or disease sustained while willfully and illegally participating in fights, riots, or civil insurrections, or while committing a crime; by injury or disease sustained after termination of employment; or by a self-inflicted injury.) (§§46-33(c)(1)&(2))*



# Summary of Plan Provisions

## Table V-A

(continued)

### 4. Deferred Vested Retirement

A vested participant who terminates employment before becoming eligible for retirement receives a deferred vested retirement benefit payable at the participant's early or normal retirement age. If the benefit is payable prior to normal retirement age, then the benefit is actuarially reduced to account for the earlier commencement of the benefit. (§46-33(e)(1))

A non-vested participant who terminates employment receives his accumulated contributions. (§46-33(e)(2))

### 5. Vesting

A participant becomes 100% vested upon the attainment of five years of credited service. For this purpose, service includes service earned under the City of Satellite Beach Police Officers' and Firefighters' Retirement System. (§46-33(e)(1))

### 6. Pre-Retirement Death Benefit

If a vested participant dies prior to retirement, the participant's beneficiary receives a 10-year certain annuity equal to the participant's monthly accrued benefit payable beginning at the participant's early or normal retirement age. At the beneficiary's election and upon approval by the Board of Trustees, an actuarially equivalent benefit is payable at any time following the participant's death. In any event, the pre-retirement death benefit guarantees at least the return of the participant's accumulated contributions. (§46-33(d))

If a non-vested participant dies prior to retirement, the participant's beneficiary receives the participant's accumulated contributions. (§46-33(d)(1))

### 7. 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 with a relative as the joint annuitant (*optional*);

Actuarially reduced 66⅔% joint and contingent annuity with a relative as the joint annuitant (*optional*);

Actuarially reduced 75% joint and contingent annuity with a relative as the joint annuitant (*optional*);





## Summary of Plan Provisions

## Table V-A

(continued)

Actuarially reduced 100% joint and contingent annuity with a relative as the joint annuitant (*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 participant's accumulated contributions.*)

(§46-33(b)(1), §46-34, & §46-35(a)(2))

### 8. Average Monthly Earnings

Average monthly earnings during the highest consecutive three years out of the 10 years immediately preceding the determination. Earnings include base pay, commissions, bonuses, maintenance pay, and overtime pay, but exclude accrued sick leave and vacation pay. Earnings cannot exceed the maximum amount allowed under IRC section 401(a)(17). (§46-31)

### 9. Credited Service

The service, expressed in years and completed months, from the participant's date of hire until his date of termination, retirement, or death, excluding periods during which the participant does not make the required employee contribution. Participants may also purchase up to five years of credited service for previous employment with any federal, state, county, or city government, including military service, by paying into the plan the full actuarial cost thereof, provided that no other retirement benefit is paid for such service. Payment for purchased service must be made within a period of time equal to the length of service being purchased. Where part-time service is purchased, the additional credited service granted is pro-rated accordingly. (§46-31 & §46-42(b))

### 10. Employee Contribution

Employees must contribute 8.00% of earnings and such contributions are accumulated with interest at the rate of 5.50% per annum. (§46-31)

### 11. City Contribution

The City is required to make quarterly contributions as determined in the most recent actuarial valuation of the retirement system. (§46-35(b))





# Summary of Plan Provisions

## Table V-A

(continued)

### 12. Deferred Retirement Option Plan (DROP)

A DROP is available to those participants who are at least age 57 and who have attained their early or normal retirement age, whereby the participant's monthly retirement benefit is accumulated on his behalf in a DROP account while he continues in active employment with the City. Individuals may participate in the DROP for a period of 12 to 60 months and neither earn additional benefits nor make the required employee contribution during the period of their DROP participation. DROP participants are considered to be retired for all other purposes under the plan and are not eligible for disability or pre-retirement death benefits. DROP accounts earn interest equal to the investment return realized by the market value of assets. (§46-41)

### 13. Participant Requirement

Only those individuals who were participants in the plan as of September 30, 1996 are eligible to continue their participation after that date. However, the City Manager was allowed to enter the plan on July 31, 2005 by contributing 50.1% of the cost of his past service credit. (§46-32(a) & §46-42(a))

### 14. Actuarial Equivalence

Based on 8.00% interest per annum and the 1984 Uninsured Pensioner Mortality Table (§46-31)

### 15. Retiree Increases

Retirement benefits in payment status on October 1, 1997 were increased by 1.00%. (§46-33(b)(3))

### 16. Plan Effective Date

The plan was originally effective on May 22, 1973.

### 17. Special Retirement Window

A special retirement window was available to participants who had attained age 59 with at least 25 years of service as of June 1, 2012 whereby the participant was eligible to receive a normal retirement benefit effective July 1, 2012 provided that the participant applied for retirement within 10 days following the passage of the ordinance.



## 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 January 15, 2014, the 0.1875% daily administrative charge on the DROP accounts was eliminated retroactively for the period December 6, 2004 through July 3, 2013. (Ordinance No. 1083)*
- (2) *Effective July 3, 2013, the 0.1875% daily administrative charge on the DROP accounts was eliminated. (Ordinance No. 1071)*
- (3) *Effective June 20, 2012, any participant who had attained the age of 59 with at least 25 years of service as of June 1, 2012 was allowed to retire with a normal retirement benefit provided that the participant applied for retirement to be effective July 1, 2012 within 10 days following the passage of the ordinance. (Ordinance No. 1056)*
- (4) *The benefit formula multiplier was decreased from 3% to 2% for service earned during the period October 1, 2010 through September 30, 2013. (Ordinance No. 1034)*
- (5) *Individuals who are not eligible for normal retirement, but who have attained age 57 and are eligible for early retirement, may elect to participate in the DROP. (Ordinance No. 1007)*

