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City of Vero Beach

Police Officers' Retirement Fund

Actuarial Valuation as of October 1, 2017



January 25, 2018

REPORT TO DETERMINE MINIMUM FUNDING REQUIREMENTS
FOR THE PLAN AND FISCAL YEAR
ENDING SEPTEMBER 30, 2019



January 25, 2018

Board of Trustees
City of Vero Beach Police Officers' Retirement Fund
Vero Beach, Florida

RE: Actuarial Valuation as of October 1, 2017

Dear Board Members:

We are pleased to present the actuarial valuation as of October 1, 2017 for the City of Vero Beach Police Officers' Retirement Fund (the Plan). This report provides a review of the current funded status of the Plan, establishes the minimum funding requirements for the fiscal year ending September 30, 2019 and provides an analysis of experience since the last valuation. In addition to providing the summary and derivation of actuarial findings, this report describes the data, assumptions, and methods used to create these results.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

Statement by Enrolled Actuary:

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

We look forward to the presentation of these results to you in person and we are always available to answer any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chad M. Little'.

Chad M. Little, ASA, EA
Partner, Consulting Actuary
Enrollment Number 17-6619

A handwritten signature in black ink, appearing to read 'Paula C. Freiman'.

Paula C. Freiman, ASA, EA
Partner, Consulting Actuary
Enrollment Number 17-5796

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Section

1

Board Summary

This report presents the results of the October 1, 2017 actuarial valuation of the City of Vero Beach Police Officers' Retirement Fund (the Plan).

Summary of Principal Valuation Results

A summary of the key valuation findings as of October 1, 2017 are compared with the results of the last two valuations below.

Minimum Funding Requirements

Fiscal Year Ending September 30,	2017	2018	2019
Minimum Required City Contribution*	\$769,587	\$779,802	\$827,878
Expected State Contribution	<u>228,139</u>	<u>252,594</u>	<u>241,345</u>
Employer Minimum Funding Required (City plus State)	\$997,726	\$1,032,396	\$1,069,223
Minimum Required City Contribution*	29.17%	29.31%	27.62%
Expected State Contribution	<u>8.65%</u>	<u>9.49%</u>	<u>8.05%</u>
Employer Minimum Funding Required (City plus State)	37.82%	38.80%	35.67%

Funded Status

Valuation Date October 1,	2015	2016	2017
Accrued Liability (AL)	\$40,395,945	\$42,621,612	\$44,533,618
Actuarial Value of Assets	<u>35,432,388</u>	<u>37,831,183</u>	<u>40,081,886</u>
Unfunded Accrued Liability (UAL)	\$4,963,557	\$4,790,429	\$4,451,732
Funded Percentage	87.71%	88.76%	90.00%

Key Assumptions

Valuation Date October 1,	2015	2016	2017
Assumed Rate of Investment Return	7.75%	7.75%	7.75%
Salary Increase Assumption	6.25% - 4.28%	6.25% - 4.28%	6.25% - 4.28%
Funding Method	Entry Age	Entry Age	Entry Age

*The Minimum Required City Contribution is made at the beginning of the fiscal year.

Summary of Significant Events

Determination of the funded status of the Plan and minimum funding requirements are based on participant data, asset information, Plan provisions, actuarial methods and assumptions, as well as contributions made to the Plan by the State of Florida. Any significant events associated with these items are discussed in the following.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the City and the Plan Administrator. This information includes, but is not limited to, statutory provisions, employee census, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

Participant Data

The number of active members remained level at 48 where 1 member entered the DROP, 1 member terminated vested, 5 members terminated non-vested, and there were 7 new hires. Historical pay information follows.

Year Ended 9/30	Average Annual Salary Increase for Continuing Active Members		Payroll From Annual Report	Increase (Decrease) in Annual Report Payroll	Valuation Date 10/1	Payroll Projected for 12 Mo. Pd. Beginning on Val. Date	Increase (Decrease) in Valuation Payroll
	Actual	Expected					
2008		6.5%	3,659,849	7.1%	2008	3,858,411	5.0%
2009		6.5%	3,733,644	2.0%	2009	3,869,093	0.3%
2010	(1.2%)	6.5%	3,577,177	(4.2%)	2010	3,723,032	(3.8%)
2011	3.4%	6.5%	3,297,317	(7.8%)	2011	3,186,869	(14.4%)
2012	(1.2%)	6.5%	3,013,887	(8.6%)	2012	3,043,048	(4.5%)
2013	(2.3%)	4.8%	2,947,305	(2.2%)	2013	2,725,692	(10.4%)
2014	4.3%	4.8%	2,899,869	(1.6%)	2014	2,907,418	6.7%
2015	(0.2%)	4.8%	2,938,951	1.3%	2015	2,856,355	(1.8%)
2016	9.8%	4.9%	3,169,645	7.8%	2016	3,035,350	6.3%
2017	10.4%	4.8%	3,261,894	2.9%	2017	3,330,246	9.7%
Average:	2.8%	5.7%		(0.5%)			(1.0%)

Overall, there was a demographic loss. In general, should a pattern of consistent gains or losses develop, assumptions may require revision.

Assets

Whereas the assets were assumed to achieve a 7.75% investment return (net of expenses), the return on the market value of assets was 11.8%. Due to the smoothing method used to produce the actuarial value of assets which recognizes market value gains and losses over a five year period, an 8.6% return was achieved on the actuarial value of assets producing an investment related gain.

The following provides a summary of the actual return on investments for the 12 month periods ending on the date specified.

<u>Year Ending September 30,</u>	<u>Net Investment Return</u>	
	<u>Market Value</u>	<u>Actuarial Value</u>
2017	11.8%	8.6%
2016	8.4%	9.6%
2015	1.1%	8.9%
2014	9.4%	10.8%
2013	14.5%	7.9%
2012	19.3%	1.9%
2011	(0.5%)	0.4%
2010	9.4%	2.1%
2009	(1.7%)	1.5%
2008	(12.6%)	5.6%
10-Year Average:	5.5%	5.7%

Investment returns less than the assumed rate of return result in increased annual minimum required contributions in the future.

Plan Provisions

There were no changes in Plan provisions since the prior valuation of the Plan.

Methods

There were no changes in methods since the prior valuation of the Plan.

Assumptions

In the prior valuation, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality table has been revised to that used for special risk employees in the valuation of FRS as of July 1, 2016 and 2017, as required by state statute. While healthy post-retirement mortality and disabled mortality rates were unchanged, healthy pre-retirement was revised.

As directed by the Board, we have continued to use an assumed annual investment return of 7.75% net of investment expenses. We recommend additional discussions regarding lowering the net assumed return further.

State Contributions

Florida Statutes Section 185.35(1) states changes become effective upon entering into a Collective Bargaining Agreement (CBA) on or after July 1, 2015.

The current CBAs cover the period from October 1, 2015 through September 30, 2018. Section 25.06 of the International Union of Police Associations, Vero Beach Police Officers' Association, Local 6019 CBA and section 25.07 of the Coastal Florida Police Benevolent Association Lieutenant's CBA state "The City and the Union agree that all premium tax revenues received from the date of this Agreement into the future shall be used to fund current benefit levels and offset the City's contributions toward the retirement plan."

The "Minimum Required City Contribution" shown on page 1 assumes that the premium tax money received from the State will be in the same amount recognized in the prior year. Should the amount received be less than expected the City must contribute the difference.

Section 2 Results Derivation

In this section, the assets and liabilities of the Plan are shown in detail. Assets and liabilities are then compared to determine the funded status and minimum funding requirements. Finally, analysis is performed to explain movement in results from the prior valuation.

While asset information is based on the fair market value of assets, along with any techniques used to smooth out market fluctuations, liabilities are determined through a combination of the benefit provisions, participant census data which contains information for the members who will receive those benefits, and the methods and assumptions used with regard to how benefits will be paid to members. A summary of participant data, an outline of the benefit provisions, and a description of the methods and assumptions used in this valuation are described in Section 4.

Financial Information

Over the life of the Plan, the majority of assets are typically generated from investment return. In this section, we describe how the assets of the Plan are invested, show how the actuarial value of assets is derived, and review the investment results since the prior valuation.

Investment Allocation

Valuation Date	October 1, 2016		October 1, 2017	
Short term investments	\$1,057,821	3%	\$764,294	2%
Equity	23,115,393	62%	26,925,049	67%
Fixed income	8,856,594	24%	8,635,133	21%
Real estate	4,119,390	11%	4,169,433	10%
Net receivables/payables	<u>27,439</u>	<u>0%</u>	<u>45,749</u>	<u>0%</u>
Net market value of assets	\$37,176,637	100%	\$40,539,658	100%

Reconciliation of Market Value of Assets

Year Ending September 30,	2016	2017
1. Market Value of Assets Beginning of Year	\$35,211,438	\$37,176,637
2. Contributions		
a. City	\$853,491	\$756,381
b. State	252,594	241,345
c. Plan Members	<u>191,664</u>	<u>208,521</u>
d. Total Contributions	\$1,297,749	\$1,206,247
3. Investment earnings		
a. Realized gains and (losses)	\$(38,099)	\$(52,339)
b. Unrealized gains and (losses)	2,352,549	3,846,849
c. Interest and dividends	842,106	821,960
d. Investment expense	<u>(240,910)</u>	<u>(279,562)</u>
e. Net investment income	\$2,915,646	\$4,336,908
4. Deductions		
a. Regular pension benefits	\$(1,916,151)	\$(2,007,242)
b. Contribution refunds	(19,926)	(55,911)
c. DROP distributions	(205,048)	0
d. Administrative expenses	<u>(107,071)</u>	<u>(116,981)</u>
e. Total Deductions	\$(2,248,196)	\$(2,180,134)
5. Market Value of Assets End of Year	\$37,176,637	\$40,539,658

Development of Historical Gain or Loss on Market Value of Assets

Year Ending September 30,	2017	2016
1. Market Value of Assets - Beginning of Year	\$37,176,637	\$35,211,438
2. Contributions	1,206,247	1,297,749
3. Benefit Payments + Administrative Expenses	(2,180,134)	(2,248,196)
4. Expected Return on Assets	<u>2,863,409</u>	<u>2,715,341</u>
5. Expected Value of Assets at End of Year	\$39,066,159	\$36,976,332
6. Market Value of Assets - End of Year	\$40,539,658	\$37,176,637
7. Gain (Loss) for Plan Year	\$1,473,499	\$200,305
	2015	2014
1. Market Value of Assets - Beginning of Year	\$35,432,960	\$33,407,578
2. Contributions	1,272,642	1,271,263
3. Benefit Payments + Administrative Expenses	(1,879,762)	(2,334,638)
4. Expected Return on Assets	<u>2,746,731</u>	<u>2,572,541</u>
5. Expected Value of Assets at End of Year	\$37,572,571	\$34,916,744
6. Market Value of Assets - End of Year	\$35,211,438	\$35,432,960
7. Gain (Loss) for Plan Year	\$(2,361,133)	\$516,216

Development of Actuarial Value of Assets

The market value of assets is adjusted to recognize gains and losses over a five-year period. However, the Actuarial Value of Assets is limited to no more than 120% or less than 80% of the market value of assets.

1.	Market Value of Assets as of October 1, 2017			\$40,539,658
2.	Phase-In Gains (Losses) Over Five Year Period			
		Original Gain (Loss)	Percent Unrecognized	Unrecognized Gain (Loss)
a.	Year Ending 9/30/2017	\$1,473,499	80%	\$1,178,799
b.	Year Ending 9/30/2016	200,305	60%	120,183
c.	Year Ending 9/30/2015	(2,361,133)	40%	(944,453)
d.	Year Ending 9/30/2014	516,216	20%	103,243
e.	Year Ending 9/30/2013	1,977,019	0%	<u>0</u>
f.	Total			\$457,772
3.	Preliminary Actuarial Value of Assets as of October 1, 2017			\$40,081,886
4.	Corridor Around Market Value			
a.	Minimum = 80% of Market Value of Assets			\$32,431,726
b.	Maximum = 120% of Market Value of Assets			\$48,647,589
c.	Corridor Adjustment to Preliminary Actuarial Value			\$0
5.	Actuarial Value of Assets as of September 30, 2017			\$40,081,886

Present Value of Benefits

Valuation as of October 1,	2016	2017
1. Active Members		
a. Retirement Benefits	\$17,085,509	\$18,317,011
b. Deferred Benefits	627,965	640,306
c. Survivor Benefits	512,688	211,141
d. Disability Retirement	<u>754,349</u>	<u>861,601</u>
e. Total for Active Members	\$18,980,511	\$20,030,059
2. Members in Payment Status		
a. Retirement Benefits	\$26,085,374	\$26,923,834
b. Terminated Vested	293,483	396,454
c. Beneficiaries	995,994	1,145,058
d. Disability Retirement	<u>211,704</u>	<u>208,472</u>
e. Total for Members in Payment Status	\$27,586,555	\$28,673,818
3. Present Value of Benefits	\$46,567,066	\$48,703,877

Accrued Liability

Valuation as of October 1,	2016	2017
1. Active Members		
a. Retirement Benefits	\$14,177,953	\$15,129,043
b. Deferred Benefits	187,355	158,828
c. Survivor Benefits	269,921	114,272
d. Disability Retirement	<u>399,828</u>	<u>457,657</u>
e. Total for Active Members	\$15,035,057	\$15,859,800
2. Members in Payment Status		
a. Retirement Benefits	\$26,085,374	\$26,923,834
b. Terminated Vested	293,483	396,454
c. Beneficiaries	995,994	1,145,058
d. Disability Retirement	<u>211,704</u>	<u>208,472</u>
e. Total for Members in Payment Status	\$27,586,555	\$28,673,818
3. Accrued Liability	\$42,621,612	\$44,533,618

Normal Cost – Entry Age Normal

Valuation as of October 1,	2016	2017
1. Preliminary Normal Cost		
a. Retirement Benefits	\$425,007	\$486,207
b. Deferred Benefits	62,848	73,155
c. Survivor Benefits	36,289	15,436
d. Disability Retirement	<u>51,752</u>	<u>62,490</u>
e. Total	\$575,896	\$637,288
2. Total Normal Cost		
a. Preliminary Normal Cost	\$575,896	\$637,288
b. Estimated Administrative Expense	<u>96,708</u>	<u>112,026</u>
c. Total Normal Cost	\$672,604	\$749,314
d. Total Normal Cost (% of Pay)	22.2%	22.5%
3. Actual Employer Normal Cost		
a. Total Normal Cost	\$575,896	
b. Actual Administrative Expense	116,981	
c. Actual Employee Contributions	<u>(208,521)</u>	
d. Actual Employer Normal Cost	\$484,356	
4. Valuation Payroll		
a. Hires After 10/1/2012	\$663,625	\$781,354
b. Hires Prior to 10/1/2012	<u>2,371,725</u>	<u>2,548,892</u>
c. Total	\$3,035,350	\$3,330,246

Unfunded Accrued Liability

Valuation as of October 1,	2017
Unfunded Actuarial Liability	
1. Accrued Liability	\$44,533,618
2. Actuarial Value of Assets	<u>40,081,886</u>
3. Unfunded Accrued Liability	\$4,451,732
Determination of Expected Unfunded Accrued Liability	
1. Unfunded Accrued Liability as of Prior Year	\$4,790,429
2. Normal Cost (Net of Employee Contributions)	484,356
3. Interest on UAL and NC	408,796
4. Contributions	
a. City	\$756,381
b. State of Florida	<u>241,345</u>
c. Total	\$997,726
5. Interest on Contribution for Time on Deposit	58,620
6. Change in Plan, Methods or Assumptions	<u>1,274</u>
7. Expected UAL as of Current Year	\$4,628,509
Calculation of (Gain) or Loss	
1. Actual Unfunded Accrued Liability	\$4,451,732
2. Expected UAL	<u>4,628,509</u>
3. Total (Gain) or Loss	\$(176,777)
4. Breakdown of (Gain) or Loss	
a. Investment Experience	\$(310,453)
b. Demographic Experience	<u>133,676</u>
c. Total (Gain) or Loss	\$(176,777)
Calculation of Actuarial Asset Gain or (Loss)	
1. Actuarial Value of Assets - Beginning of Year	\$37,831,183
2. Expected Interest on Assets	2,931,917
3. Contributions	1,206,247
4. Benefit Payments + Administrative Expenses	(2,180,134)
5. Interest on items (3) and (4)	<u>(17,780)</u>
6. Expected Value of Assets at End of Year	\$39,771,433
7. Actuarial Value of Assets - End of Year	<u>40,081,886</u>
8. Gain (Loss) for Plan Year = (7) - (6)	\$310,453
9. Actual Investment Income	\$3,224,590
10. Actual % Return	8.63%

Amortization of Unfunded Liability

The Unfunded Accrued Liability is being amortized as a level dollar amount based on the assumed net investment return assumption. A fresh start was implemented on the amortization of the Unfunded Accrued Liability over 25 years effective October 1, 2015. Future Unfunded Accrued Liability which arises from changes in Plan provisions, actuarial assumptions, changes in methods and actuarial gains or losses are to be amortized over 25 years.

Amortization Bases

Date 10/1	Source	Original Balance	Remaining Balance Before Adjustment	Remaining Balance	Years Remain	Amortization Payment
2015	Fresh Start	\$4,963,557	\$4,597,723	\$4,510,889	23	\$395,496
2016	(Gain)/Loss	(590,556)	(582,178)	(571,183)	24	(49,302)
2016	Assumption Change	710,848	700,764	687,529	24	59,345
2017	(Gain)/Loss	(176,777)	(176,777)	(176,777)	25	(15,042)
2017	Assumption Change	1,274	<u>1,274</u>	<u>1,274</u>	25	<u>108</u>
Total			\$4,540,806	\$4,451,732		\$390,605

Projected Unfunded Accrued Liability and Amortization Payments

Valuation as of October 1,	Unfunded Accrued Liability	Amortization Payment
2017	\$4,451,732	\$390,605
2018	4,375,864	390,605
2019	4,294,117	390,604
2020	4,206,035	390,605
2021	4,111,126	390,604
2022	4,008,862	390,605
2023	3,898,672	390,604
2024	3,779,944	390,605
2025	3,652,013	390,604
2026	3,514,168	390,605
2027	3,365,639	390,604
2028	3,205,600	390,605
2029	3,033,157	390,604
2030	2,847,351	390,605
2031	2,647,144	390,605
2032	2,431,421	390,605
2033	2,198,979	390,604
2034	1,948,524	390,604
2035	1,678,659	390,605
2036	1,387,878	390,604
2037	1,074,562	390,605
2038	736,964	390,605
2039	373,202	390,604
2040	(18,751)	(4,891)
2041	(14,934)	(14,934)

Actions Taken to Reduce Unfunded Actuarial Accrued Liability

The Unfunded Accrued Liability is being amortized as a level dollar amount based on the assumed net investment return assumption. A fresh start was implemented on the amortization of the Unfunded Accrued Liability over 25 years effective October 1, 2015. Future Unfunded Accrued Liability which arises from changes in Plan provisions, actuarial assumptions, changes in methods and actuarial gains or losses are to be amortized over 25 years.

Minimum Funding Requirements

Actuarial Valuation as of October 1, Required Funding for Year Ending September 30,	2016 2018	2017 2019
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As a Dollar Amount

1. Total Normal Cost	\$672,604	\$749,314
2. Amortization of Unfunded Accrued Liability	<u>413,345</u>	<u>390,605</u>
3. Minimum Required Contribution at Valuation Date	\$1,085,949	\$1,139,919
4. Interest Adjustment	\$108,144	\$112,283
5. Expected Employee Contributions	\$161,697	\$182,979
6. Expected State Contribution	252,594	241,345
7. Remaining City Minimum Required Contribution	<u>779,802</u>	<u>827,878</u>
8. Total Minimum Required Contribution for Funding Year	\$1,194,093	\$1,252,202
9. City Plus State Minimum Required Contribution Projected to Beginning of Funding Year	\$1,032,396	\$1,069,223

As a Percent of Payroll

10. Expected Employee Contributions	6.08%	6.10%
11. Expected State Contribution	9.49%	8.05%
12. Remaining City Minimum Required Contribution	<u>29.31%</u>	<u>27.62%</u>
13. Total Minimum Required Contribution for Funding Year	44.88%	41.78%
14. City Plus State Minimum Required Contribution Projected to Beginning of Funding Year	38.80%	35.67%
15. Valuation Payroll		
a. Hires After 10/1/2012	\$663,625	\$781,354
b. Hires Prior to 10/1/2012	<u>2,371,725</u>	<u>2,548,892</u>
c. Total	\$3,035,350	\$3,330,246
16. Projected Valuation Payroll		
a. Hires After 10/1/2012	\$614,868	\$724,772
b. Hires Prior to 10/1/2012	<u>2,045,592</u>	<u>2,272,675</u>
c. Total	\$2,660,460	\$2,997,447

Reconciliation of Unfunded Accrued Liability

	Unfunded Accrued <u>Liability</u>	Funded <u>Percent</u>	Change in Unfunded Accrued <u>Liability</u>	Change in Funded <u>Percent</u>
As of Prior Valuation	\$4,790,429	88.76%		
Changes in Contribution Rate due to:				
Normal Operation of Plan	4,627,235	89.58%	\$(163,194)	0.82%
Investment Experience	4,316,782	90.28%	(310,453)	0.70%
Demographic Experience	4,450,458	90.01%	133,676	(0.27%)
Required Mortality Change	4,451,732	90.00%	<u>1,274</u>	<u>(0.01%)</u>
Total Changes			\$(338,697)	1.24%
As of Current Valuation	\$4,451,732	90.00%		

Reconciliation of City Minimum Required Contribution

	<u>Dollar Amount</u>	<u>Percent of Pay</u>
As of Prior Valuation	\$779,802	29.31 %
Changes in Contribution due to:		
Normal Operation of Plan	\$(74,629)	0.06 %
Change in Expected State Contribution	10,440	0.43 %
Investment Experience	(28,465)	(1.19)%
Demographic Experience	146,134	(0.80)%
Required Mortality Change	<u>(5,404)</u>	<u>(0.19)%</u>
Total Changes	\$48,076	(1.69)%
As of Current Valuation	\$827,878	27.62 %

Section 3 Accounting Information

Information Required by GASB 67/68

A supplemental report provides information under the Governmental Accounting Standards Board No. 67/68.

Statement of Accumulated Plan Benefits (FASB 35)

The following table is based on prior accounting standards and is required by the State. The actuarial present value of accumulated plan benefits is an estimate of the liability for all benefits accrued to date.

Valuation as of October 1,	2016	2017
1. Actuarial present value of accumulated plan benefits		
a. Participants currently receiving benefits	\$27,293,072	\$28,277,364
b. Terminated members due deferred benefit	293,483	396,454
c. Other participants	<u>11,858,983</u>	<u>12,577,871</u>
d. Total vested plan benefits	\$39,445,538	\$41,251,689
e. Total non-vested plan benefits	<u>479,178</u>	<u>230,149</u>
f. Total accumulated plan benefits	\$39,924,716	\$41,481,838
2. Change in present value of accumulated plan benefits		
a. Accumulated plan benefits beginning of year		\$39,924,716
b. Increase (decrease) during year due to:		
i. Plan change		\$0
ii. Change in assumptions or methods		(60,056)
iii. Increase for interest and probability of payment due to decrease in discount period and benefits accrued		3,680,331
iv. Benefits paid		(2,063,153)
v. Other changes		<u>0</u>
vi. Net increase (decrease)		\$1,557,122
c. Accumulated plan benefits end of year		\$41,481,838

Other Disclosures Required by the State of Florida

Valuation as of October 1,	2016	2017
Present value of active member:		
Future salaries:	\$20,968,576	\$22,286,455
Future contributions:	1,307,663	1,406,088
Active member accumulated contributions:	1,342,506	1,405,123

Required Disclosure Under F.S. 112.664(1)

As required under F.S. Section 112.664(1) we have produced the following information:

- (a) Total pension liability calculated based on mortality used in one of the last two Florida Retirement System (FRS) valuations. This actuarial valuation assumes mortality as used in the July 1, 2016 and 2017 actuarial valuation for special risk members of FRS.
- (b) Total pension liability calculated using an assumed interest rate that is 200 basis points lower than that assumed in the valuation of the Plan.
- (c) Determination of the number of months or years for which the current market value of assets is adequate to sustain the payment of expected retirement benefits.
- (d) Recommended contribution to the Plan using the most recent valuation and the contributions necessary prepared pursuant to (a) and (b) stated as a dollar amount and % of payroll.

	2% Decrease (5.75%)	Current Discount Rate (7.75%)	2% Increase (9.75%)
Total pension liability	\$56,236,664	\$44,533,618	\$36,454,820
Plan fiduciary net position	<u>(40,539,658)</u>	<u>(40,539,658)</u>	<u>(40,539,658)</u>
Net pension liability	<u>\$15,697,006</u>	<u>\$3,993,960</u>	<u>\$(4,084,838)</u>
 Plan fiduciary net position as a percentage of the total pension liability	 72.09%	 91.03%	 111.21%
 Years of benefit payments:			
Expected for current members:	100	100	100
Paid for with current assets:	17.07	22.95	100.00
 City Plus State Contribution Requirement, Plus Expected Employee Contributions			
Dollar Amount	\$2,476,377	\$1,252,202	\$603,062
Percent of Payroll	82.62%	41.78%	20.12%

Required Disclosure Under F.S. 112.664(2)(b)2.

F.S. Section 112.664(2)(b)2. - For the previous five years, beginning with 2013, a side-by-side comparison of the plan's assumed rate of return compared to the actual rate of return, as well as the percentages of cash, equity, bond and alternative investments in the plan portfolio. The actual rate of return is as provided by the investment monitor.

Year Ending September 30,	2017	2016	2015	2014	2013
Assumed rate of return	7.75%	7.75%	7.75%	7.75%	7.75%
Actual rate of return	11.45%	7.99%	0.87%	9.08%	14.17%
Percentages of assets in:					
Cash	2%	3%	4%	2%	4%
Equity	67%	62%	54%	64%	65%
Bond	21%	24%	31%	25%	24%
Alternative	10%	11%	11%	9%	7%
Total	100%	100%	100%	100%	100%

Section
4Supplementary
Information

Summary of Participant Data

Member Statistics

Year Beginning October 1,	2016	2017
<u>Active Participants</u>		
Number	48	48
Average Age	38.6	38.7
Average Credited Service	12.1	11.8
Percent Male	91.7	91.7
Average Valuation Salary	\$ 65,407	\$ 69,380
Total Valuation Salary	\$ 3,139,528	\$ 3,330,246
Payroll Covered in Valuation	\$ 3,035,350	\$ 3,330,246
Annual Report	\$ 3,169,645	\$ 3,261,894
<u>Terminated With Rights to Deferred Benefits</u>		
Number	2	3
Average Age	46.0	44.6
Percent Male	100.0	100.0
Average Annual Benefit	\$ 22,981	\$ 22,066
<u>Retired and DROP Participants</u>		
Number	42	42
Average Age	63.3	63.9
Percent Male	95.2	95.2
Average Annual Benefit	\$ 48,817	\$ 50,431
DROP Balance	\$ 254,140	\$ 516,671
<u>Beneficiaries</u>		
Number	4	5
Average Age	65.9	66.9
Percent Male	0.0	0.0
Average Annual Benefit	\$ 27,226	\$ 25,033
<u>Disability Retirements</u>		
Number	2	2
Average Age	70.5	71.5
Percent Male	100.0	100.0
Average Annual Benefit	\$ 13,459	\$ 13,593

Number of Active Members by Age and Service as of October 1, 2017

Age	Service							Total
	< 1	< 5	< 10	< 15	< 20	< 25	25+	
< 21	1							1
< 25	3	2						5
< 30		3	1					4
< 35	2	2	2	2				8
< 40	1	1	1	1	2			6
< 45				4	3	1		8
< 50		1		2	4		2	9
< 55					1		6	7
55+								
Total	7	9	4	9	10	1	8	48

Active Valuation Pay by Age and Service as of October 1, 2017

Age	Service							Total
	< 1	< 5	< 10	< 15	< 20	< 25	25+	
< 21	38,935							38,935
< 25	40,198	53,444						45,497
< 30		52,762	50,270					52,139
< 35	44,769	53,800	58,756	61,557				54,721
< 40	45,166	56,289	58,120	67,946	66,391			60,050
< 45				76,932	79,463	103,747		81,233
< 50		58,057		67,174	76,599		99,018	77,426
< 55					92,168		103,056	101,501
55+								
Total	42,033	54,125	56,476	70,348	76,973	103,747	102,047	69,380

Reconciliation of Plan Participants

	Active	Term. Vested	DROP	Retired	Disabled	Survivor	Total
October 1, 2011	48	2	4	33	3	3	93
Retirement	(1)	(1)	(1)	3			0
Nonvested Termination	(3)						(3)
Death						(1)	(1)
New Hires	4						4
October 1, 2012	48	1	3	36	3	2	93
Retirement	(1)		(1)	2			0
Nonvested Termination	(7)						(7)
Death				(1)			(1)
New Hires	6						6
October 1, 2013	46	1	2	37	3	2	91
Retirement	(1)		(2)	3			0
DROP	(2)		2				0
Nonvested Termination	(2)						(2)
Death				(1)	(1)	1	(1)
Rehire	1						1
New Hires	6						6
October 1, 2014	48	1	2	39	2	3	95
Retirement	(1)			1			0
Nonvested Termination	(1)						(1)
Death				(1)			(1)
Rehire	1						1
New Hires	3						3
October 1, 2015	50	1	2	39	2	3	97
Active							0
Retirement	(1)		(1)	2			0
DROP	(1)		1				0
Vested Termination	(1)	1					0
Nonvested Termination	(3)						(3)
Death				(1)		1	0
New Hires	4						4
October 1, 2016	48	2	2	40	2	4	98
DROP	(1)		1				0
Vested Termination	(1)	1					0
Nonvested Termination	(5)						(5)
Death				(1)		1	0
New Hires	7						7
October 1, 2017	48	3	3	39	2	5	100

Reconciliation of DROP Account Balances

Fiscal Year Ending September 30,	2016	2017
Beginning Balance	\$271,845	\$254,140
Additions	165,375	216,733
Investment Income	21,968	45,798
Disbursements	<u>(205,048)</u>	<u>0</u>
Ending Balance	\$254,140	\$516,671

Outline of Plan Provisions

Plan Type: Single-employer Defined Benefit Pension Plan

Legal Authority: The Plan was established and is amended by local ordinance.

Effective Date: October 19, 1954. Most recently Plan provisions have been amended with the following ordinances.

<u>Ord. No.</u>	<u>Adopted</u>	<u>Ord. No.</u>	<u>Adopted</u>
2010-11	02/02/2010	2013-02	01/08/2013
2010-21	08/17/2010	2014-06	03/04/2014
2011-07	07/19/2011	2014-09	04/15/2014
2011-08	07/19/2011		

Plan Administrator: The Board of Trustees

Board Composition: The trustees consist of five members which may include participants of any DROP who have at least 18 months remaining in the DROP at the time they take office, none who are elected city officials, and who are selected as follows:

- (a) Two members who are legal residents of the city appointed by city council,
- (b) Two are police officer participants elected by a majority of the active police officer members of this fund, and
- (c) The fifth member is chosen by a majority of the previous four members and will be appointed to the board of trustees by city council, as a ministerial duty.

Funding Requirements: Employer contributions are actuarially determined and subject to State statute. Employee contributions are as described below and may be amended by ordinance.

Plan Year: The 12-month period from October 1st to the following September 30th.

Member: Full-time sworn police officers are eligible immediately upon hire.

Credited Service: Aggregate years and fractional part of years as a contributing Member, including unused medical leave days in excess of 120 days. Effective with Ordinance 2013-21, accrued sick leave under 120 days and accrued vacation under 60 days may be applied to service for Normal Retirement eligibility and benefits only. Credited Service also includes certain military service. Additional Credited Service may be purchased. Unused annual and medical leave will be used in the calculation of benefits as reported to the Board by the City per City policy

Vesting: 100% upon earning ten years of Credited Service.

Compensation: Total cash remuneration including shift differential, state and local incentives, "actual overtime" (but excluding "court overtime") paid by the city to a police officer for services rendered. Payments for accrued unused sick or annual leave are not included. Effective with Ordinance 2013-02, overtime is limited to 300 hours per calendar year. Compensation or salary contributed as employee-elective salary reductions or deferrals to any salary reduction, deferred compensation, or tax-sheltered annuity program authorized under IRC is included. For the purpose of benefit calculation the Board of

Trustees shall use the employee's compensation as reported by the City in accordance with the City's policies.

Employee Contributions: Prior to Ordinance 2013-02, 3.0% of Compensation. Effective with Ordinance 2013-02, Employee Contributions are increased to 5.5% of Compensation for Members hired prior to October 1, 2012 and to 8.0% of Compensation for Members hired after October 1, 2012. A Member who terminates non-vested is entitled to refund of accumulated Employee Contributions without interest.

Average Monthly Salary: One-twelfth the average of Compensation for the five highest years of Credited Service.

Normal Retirement Date: The first day of the month coincident with or next following the earlier of (i) age 55 and ten years of Credited Service, or (ii) 25 years of Credited Service with no age requirement.

Accrued Benefit: $3\% \times \text{Average Monthly Salary} \times \text{Credited Service}$, plus $\$5 \times \text{Credited Service}$.

Cost-of-Living-Adjustment: 1% annually on October 1st.

Late Retirement Benefit: Benefit as determined for Normal Retirement taking into account Compensation and Credited Service through the actual date of retirement.

Early Retirement Date: The first day of the month coincident with or next following the date the Member earns ten years of Credited Service and attains age 50.

Early Retirement Benefit: The Accrued Benefit reduced by 2.5% for each year the Member is younger than the Normal Retirement Date. (Note: the early retirement reduction is only taken on the 3% multiplier benefit and is not taken on the flat $\$5 \times \text{Credited Service}$ benefit.)

Disability Benefits: Members are eligible for service-connected Disability Benefits immediately upon hire. Members are eligible for a non-service-connected Disability Benefit after earnings at least ten years of Credited Service. The monthly Disability Benefit is the greater of (i) the Accrued Benefit and (ii) 50% of Average Monthly Salary.

Pre-Retirement Survivor Benefits: Members are eligible for service-connected Pre-Retirement Survivor Benefits immediately upon hire. Members are eligible for non-service-connected Pre-Retirement Survivor Benefits after one year of service. The monthly survivor benefit is the greater of (i) the Accrued Benefit and (ii) 25% of Average Monthly Salary.

Optional Forms of Benefit: Pension benefits described above are payable in the form of a 10 year certain and continuous annuity. Members may optionally choose an actuarially equivalent single life annuity, or joint and last survivor annuity (with 50%, 66 2/3, 75%, or 100% continuance), or a joint and survivor annuity (with 50%, 66 2/3, 75%, or 100% continuance).

Actuarial Equivalence: The 1983 Group Annuity Mortality Table (100% male) and an interest rate of 7.0% (with no COLA assumed payable) is defined for use in the determination of Optional Forms of Benefit.

Deferred Retirement Option Plan (DROP): Members are eligible to enter the DROP at the Normal Retirement Date. The Accrued Benefit is frozen and no further Employee Contributions are payable at DROP entry. The Accrued Benefit accumulates at the net investment return earned on Fund assets less an administrative fee. The maximum DROP participation duration is 5 years. DROP participants are not eligible for pre-retirement death or disability benefits.

Description of Assumptions and Methods

Assumed Rate of Investment Return: 7.75% per year net of investment expenses.

Salary Increase – Total Payroll: Based on individual salary increase assumptions and other decrements assumed in the valuation of Plan liabilities.

Salary Increase – Individual: The following table of annual increases based on service:

<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
0	6.250%				
1	5.850%	11	4.850%	21	4.500%
2	5.600%	12	4.800%	22	4.475%
3	5.500%	13	4.750%	23	4.450%
4	5.350%	14	4.700%	24	4.425%
5	5.250%	15	4.650%	25	4.400%
6	5.150%	16	4.625%	26	4.375%
7	5.100%	17	4.600%	27	4.350%
8	5.000%	18	4.575%	28	4.325%
9	4.950%	19	4.550%	29	4.300%
10	4.900%	20	4.525%	30	4.275%

Mortality: In the prior valuation, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality table has been revised to that used for special risk employees in the valuation of FRS as of July 1, 2016 and 2017, as required by state statute. While healthy post-retirement mortality and disabled mortality rates were unchanged, healthy pre-retirement was revised. The mortality rates are as follows:

Healthy mortality (Pre-retirement):

Males: 10% RP-00 Combined Healthy White Collar +
90% RP-00 Combined Healthy Blue Collar
Females: 100% RP-00 Combined Healthy White Collar
Both male and female rates fully generational using Scale BB

Healthy mortality (Post-retirement):

Males: 10% RP-00 Annuitant White Collar +
90% RP-00 Annuitant Blue Collar
Females: 100% RP-00 Annuitant White Collar
Both male and female rates fully generational using Scale BB

Disabled mortality:

Males: 60% RP-00 Disabled Retiree Set Back 4 Years +
40% RP-00 Annuitant White Collar
Females: 60% RP-00 Disabled Retiree Set Forward 2 Yrs +
40% RP-00 Annuitant White Collar
No mortality improvement is assumed for disabled lives.

75% of active deaths are assumed to be service connected.

Retirement: Members are assumed to retire at a rate of 5% per year eligible for early retirement. In the year of the Normal Retirement Date, Members are assumed to retire at a rate of 80%. For each of the four years subsequent to the Normal Retirement Date, Members are assumed to retire at 40%. 100% of Members are assumed to retire in the fifth year subsequent to the Normal Retirement Date.

Termination: Unisex rates, as follows:

<u>Service</u>	<u>Rate</u>
<6	12.00%
6-10	4.00%
11-15	3.00%
16-19	2.00%
20-24	1.00%

Termination rates are not applied when an active member reaches the age and service combinations where non-zero retirement decrements are in force.

Disability: Unisex rates, as follows:

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
<=15	0.00%	34	0.22%	43	0.39%	52	1.20%
16-21	0.14%	35	0.23%	44	0.44%	53	1.31%
22-25	0.15%	36	0.24%	45	0.51%	54	1.43%
26-27	0.16%	37	0.25%	46	0.59%	55	1.55%
28-29	0.17%	38	0.26%	47	0.70%	56	1.68%
30	0.18%	39	0.28%	48	0.79%	57	1.81%
31	0.19%	40	0.30%	49	0.90%	58	1.95%
32	0.20%	41	0.32%	50	1.00%	59	2.09%
33	0.21%	42	0.35%	51	1.10%	>=60	0.00%

75% of disabilities are assumed to be service connected.

Accrued Leave: Retirement benefits are increased 1% to account for sick leave over 120 days. In addition, Members are assumed to include accrued sick leave under 120 days and accrued vacation under 60 days as 0.6923 in Credited Service for Normal Retirement eligibility and benefits. Normal Retirement benefits are increased by the following table of factors based on Credited Service earned:

<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>
10	1.0692	15	1.0462	20	1.0346	25	1.0277
11	1.0629	16	1.0433	21	1.0330	26	1.0266
12	1.0577	17	1.0407	22	1.0315	27	1.0256
13	1.0533	18	1.0385	23	1.0301	28	1.0247
14	1.0495	19	1.0364	24	1.0288	29	1.0239
						30	1.0231

Plan Expenses: An average of the prior two years of administrative expense is added to the normal cost.

Marital Assumption: 100% are assumed married with husbands assumed to be three years older than wives.

Liability Load: Liabilities are loaded by 0.9% to reflect the exclusion of the COLA in the determination of optional forms of benefit.

Funding Method: Entry Age (level percent of salary)

Glossary of Actuarial Terms

Present Value of Benefits (PVB): The present value, as of the valuation date, of all benefits that will become payable by the Plan for the current group of members in the census.

Normal Cost (NC): The value of the portion of the total benefit for active members which accrues in the year following the valuation date. Under the Entry Age Normal (Level Percent of Salary) funding method, the NC is a constant fraction of salary from the member's date of entry into the Plan to the member's assumed date of termination, retirement, disability or death.

Accrued Liability (AL): This is the portion of the PVB attributable to the past at the valuation date. For active members, AL is the annual NC accumulated from date of entry to the valuation date for each member. For retired and terminated members, the PVB and the AL are equal. The AL is the estimated liability owed by the pension fund at the valuation date.

Unfunded Accrued Liability (UAL): Any excess of the Accrued Liability over the fund assets. A negative UAL indicates fund assets are greater than the Accrued Liability, otherwise known as a surplus.

Actuarial Value of Assets: The market value of assets is adjusted to recognize gains and losses over a five-year period. The Actuarial Value of Assets shall not be more than 120% or less than 80% of the market value of assets.



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City of Vero Beach

Police Officers' Retirement Fund

GASB 67/68 Supplement
As of September 30, 2017





January 25, 2018

Board of Trustees
City of Vero Beach Police Officers' Retirement Fund
Vero Beach, Florida

RE: GASB 67/68 Supplement as of September 30, 2017

Dear Board Members:

We are pleased to present the Governmental Accounting Standards Board Statement No. 67 (GASB 67) and No. 68 (GASB 68) Supplement as of September 30, 2017 for the City of Vero Beach Police Officers' Retirement Fund (the Plan).

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report provides information required to be disclosed under GASB 67 and GASB 68 as described in the statement and the implementation guide. The relevant dates are as follows:

GASB 67		GASB 68	
Valuation Date	10/01/2017	Valuation Date	10/01/2017
Measurement Date	09/30/2017	Measurement Date	09/30/2017
Reporting Date	09/30/2017	Reporting Date	09/30/2017

Please let us know if you have any questions or need additional information.

Sincerely,

Chad M. Little, ASA, EA
Partner, Consulting Actuary
Enrollment Number 17-6619

Paula C. Freiman, ASA, EA
Partner, Consulting Actuary
Enrollment Number 17-5796

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Statement of Fiduciary Net Position

As of September 30,	2017	2016
Assets		
Cash and cash equivalents	\$0	\$0
Receivables:		
Accrued interest and dividends	44,373	41,681
Distributions receivable	<u>25,143</u>	<u>24,827</u>
Total receivables	<u>69,516</u>	<u>66,508</u>
Investments, at fair value:		
Short Term Investments	764,294	1,057,821
US Bonds and Bills	4,295,804	4,695,915
Federal Agency Guaranteed Securities	1,501,315	2,213,851
Corporate Bonds	2,838,014	1,946,828
Stocks	26,925,049	23,115,393
Real Estate	<u>4,169,433</u>	<u>4,119,390</u>
Total investments	<u>40,493,909</u>	<u>37,149,198</u>
Total assets	<u>40,563,425</u>	<u>37,215,706</u>
Liabilities		
Accounts payable and accrued expenses	10,561	19,926
Prepaid contribution	<u>13,206</u>	<u>19,143</u>
Total liabilities	<u>23,767</u>	<u>39,069</u>
Net position restricted for pensions	<u>\$40,539,658</u>	<u>\$37,176,637</u>

Statement of Changes in Fiduciary Net Position

As of September 30,	2017	2016
Additions		
Contributions:		
Employer	\$756,381	\$853,491
State of Florida	241,345	252,594
Employees	<u>208,521</u>	<u>191,664</u>
Total contributions	<u>1,206,247</u>	<u>1,297,749</u>
Investment income (loss):		
Net appreciation in fair value of investments	3,794,510	2,314,450
Interest and dividends	<u>821,960</u>	<u>842,106</u>
Total investment income	<u>4,616,470</u>	<u>3,156,556</u>
Less investment expenses:		
Investment expense	<u>279,562</u>	<u>240,910</u>
Net investment income	<u>4,336,908</u>	<u>2,915,646</u>
Total additions	<u>5,543,155</u>	<u>4,213,395</u>
Deductions		
Benefit payments	2,007,242	2,121,199
Refunds of contributions	55,911	19,926
Administrative expenses	<u>116,981</u>	<u>107,071</u>
Total deductions	<u>2,180,134</u>	<u>2,248,196</u>
Net increase in net position	3,363,021	1,965,199
Net position restricted for pensions		
Beginning of year	<u>37,176,637</u>	<u>35,211,438</u>
End of year	<u>\$40,539,658</u>	<u>\$37,176,637</u>

fNet Pension Liability

The total pension liability under GASB 67 and 68 is based on the October 1, 2017 actuarial valuation which used the following actuarial assumptions applied to all periods included in the measurement.

Inflation	2.5%
Salary increases	6.25% to 4.28% based on service, including inflation
Investment rate of return	7.75% net of investment expense, including inflation
Mortality:	From the July 1, 2016 and 2017 FRS special risk valuation.
Healthy Pre-Retirement:	Males: 10% RP-00 Combined Healthy White Collar + 90% RP-00 Combined Healthy Blue Collar Females: 100% RP-00 Combined Healthy White Collar Both male and female rates fully generational using Scale BB
Healthy Post-Retirement:	Males: 10% RP-00 Annuitant White Collar + 90% RP-00 Annuitant Blue Collar Females: 100% RP-00 Annuitant White Collar Both male and female rates fully generational using Scale BB
Disabled mortality:	Males: 60% RP-00 Disabled Retiree Set Back 4 Years + 40% RP-00 Annuitant White Collar Females: 60% RP-00 Disabled Retiree Set Forward 2 Yrs + 40% RP-00 Annuitant White Collar No mortality improvement is assumed for disabled lives.

Assumptions are based on the results of an actuarial experience study for the period October 1, 2006 to September 30, 2011. In the prior valuation, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality table has been revised to that used for special risk employees in the valuation of FRS as of July 1, 2016 and 2017, as required by state statute.

The long-term expected net rate of return on investments was determined using a building-block method. Best-estimate ranges of expected future real rates of return (expected returns net of investment expense and inflation) are developed for each major asset class. The long-term expected net rate of return on investments is the best-estimate ranges weighted by the asset allocation plus expected inflation. Best estimates of arithmetic real rates of return for each major asset class as provided by the investment monitor are shown in the following table:

Asset Class	Target Allocation %	Expected Long-Term Real Return	Weighted Average Expected Long-Term Real Return
Domestic Equity	45.0%	7.5%	3.4%
International Equity	15.0%	8.5%	1.3%
Domestic Bonds	30.0%	2.5%	0.8%
International Bonds	0.0%	3.5%	0.0%
Real Estate	10.0%	4.5%	0.5%
	100.0%		6.0%

Based on the above target allocation and expected long-term real returns for each asset class, the weighted average expected long-term real return net of inflation is 6.0%. The investment monitor also indicated that the inflation estimate was 2.5% producing an expected long-term rate of return net of expenses, including inflation of 8.5%.

The discount rate used to measure the total pension liability was 7.75%. This is the single rate that reflects the long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits. A projection of cash flows used to determine the discount rate assumed that plan member contributions are made at the current contribution rate and that City contributions will be made equal to the difference between the actuarially determined contribution and the member contributions. Based on those assumptions, the pension plan's fiduciary net position is projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments is applied to all periods of projected benefit payments to determine the total pension liability. For purposes of this determination we understand the board of trustees finds the 7.75% assumption to be reasonable and that they expect pension plan assets to be invested using a strategy to achieve the 7.75% net discount rate.

Note: See "Actuarial Assumptions and Methods" for a full description of the assumptions used in the determination of the total pension liability.

The components of the net pension liability at September 30, 2017 were as follows:

Total pension liability	\$44,533,618
Plan fiduciary net position	<u>(40,539,658)</u>
Net pension liability	<u>\$3,993,960</u>

Plan fiduciary net position as a percentage of the total pension liability	91.03%
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Sensitivity of the net pension liability to changes in the discount rate follows.

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Net pension liability	\$9,275,207	\$3,993,960	\$(396,976)

Schedule of Changes in Net Pension Liability and Related Ratios

This schedule will be updated each year until a 10-year history is accumulated.

Year Ending September 30,	2017	2016	2015	2014
Total pension liability				
Service cost	\$575,896	\$543,187	\$550,357	\$478,211
Interest	3,264,313	3,086,536	3,009,258	2,881,001
Changes of benefit terms	0	0	0	118,425
Differences between expected and actual experience	133,676	26,221	(642,610)	96,146
Changes of assumptions	1,274	710,848	44,151	41,761
Benefit payments	(2,007,242)	(2,121,199)	(1,792,149)	(2,240,182)
Refunds of member contributions	(55,911)	(19,926)	(1,269)	(8,102)
Net change in total pension liability	1,912,006	2,225,667	1,167,738	1,367,260
Total pension liability - beginning	<u>42,621,612</u>	<u>40,395,945</u>	<u>39,228,207</u>	<u>37,860,947</u>
Total pension liability - ending (a)	\$44,533,618	\$42,621,612	\$40,395,945	\$39,228,207
Plan fiduciary net position				
Contributions - employer	\$756,381	\$853,491	\$852,721	\$869,837
Contributions - State of Florida	241,345	252,594	228,139	233,451
Contributions - employee	208,521	191,664	191,782	167,975
Net investment income	4,336,908	2,915,646	385,598	3,088,757
Benefit payments	(2,007,242)	(2,121,199)	(1,792,149)	(2,240,182)
Refunds of member contributions	(55,911)	(19,926)	(1,269)	(8,102)
Administrative expense	(116,981)	(107,071)	(86,344)	(86,354)
Other	-	0	0	0
Net change in plan fiduciary net position	3,363,021	1,965,199	(221,522)	2,025,382
Plan fiduciary net position - beginning	<u>37,176,637</u>	<u>35,211,438</u>	<u>35,432,960</u>	<u>33,407,578</u>
Plan fiduciary net position - ending (b)	\$40,539,658	\$37,176,637	\$35,211,438	\$35,432,960
Net pension liability - ending (a) - (b)	\$3,993,960	\$5,444,975	\$5,184,507	\$3,795,247
Plan fiduciary net position as a percentage of the total pension liability	91.03 %	87.22 %	87.17 %	90.33 %
Covered employee payroll	\$3,261,894	\$3,169,645	\$2,938,951	\$2,899,869
Net pension liability as a percentage of covered employee payroll	122.44 %	171.78 %	176.41 %	130.88 %

Notes to Schedule:

At October 1, 2017 and October 1, 2016, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2016 and July 1, 2015, respectively, as required by state statute. Prior to this change the RP-2000 Combined Mortality Table using Scale AA projected to the valuation year was used.

Statement of Changes in Net Pension Liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 9/30/2016	\$42,621,612	\$37,176,637	\$5,444,975
Changes for the year:			
Service cost	575,896		575,896
Interest	3,264,313		3,264,313
Changes of benefit terms	0		0
Differences between expected and actual experience	133,676		133,676
Changes of assumptions	1,274		1,274
Contributions—employer		756,381	(756,381)
Contributions—State of Florida		241,345	(241,345)
Contributions—employee		208,521	(208,521)
Net investment income		4,336,908	(4,336,908)
Benefit payments, including refunds of employee contributions	(2,063,153)	(2,063,153)	0
Administrative expense		(116,981)	116,981
Other changes		0	0
Net changes	<u>1,912,006</u>	<u>3,363,021</u>	<u>(1,451,015)</u>
Balances at 9/30/2017	<u>\$44,533,618</u>	<u>\$40,539,658</u>	<u>\$3,993,960</u>

Pension Expense and Deferred Outflows and Inflows of Resources

Pension expense for the year ended September 30, 2017 is as shown below.

Description	Amount
Service cost	\$575,896
Interest on the total pension liability	3,264,313
Changes of benefit terms	0
Differences between expected and actual experience	(119,822)
Changes of assumptions	189,077
Employee contributions	(208,521)
Projected earnings on pension plan investments	(2,863,409)
Differences between projected and actual earnings on plan investments	137,466
Pension plan administrative expense	116,981
Other changes in fiduciary net position	0
Total pension expense	<u><u>\$1,091,981</u></u>

There are deferred outflows and inflows of resources from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$112,511	\$160,651
Changes of assumptions	367,408	0
Net difference between projected and actual earnings	<u>944,452</u>	<u>1,298,982</u>
Total	<u><u>\$1,424,371</u></u>	<u><u>\$1,459,633</u></u>

Amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended September 30:	
2018	\$206,722
2019	356,335
2020	(303,620)
2021	(294,699)
2022	0

Recognition of Deferred Outflows and Inflows of Resources

<u>Year</u>	<u>Original Amount</u>	<u>Recognition Period</u>	<u>Measurement Year Recognition</u>				
			<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Differences between Expected and Actual Experience							
2015	(642,610)	4.0	(160,653)	(160,651)	0	0	0
2016	26,221	4.0	6,555	6,555	6,556	0	0
2017	133,676	3.9	34,276	34,276	34,276	30,848	0
Changes in Assumptions							
2015	44,151	4.0	11,038	11,037	0	0	0
2016	710,848	4.0	177,712	177,712	177,712	0	0
2017	1,274	3.9	327	327	327	293	0
Differences between Projected and Actual Earnings on Pension Plan Investments							
2015	2,361,133	5.0	472,227	472,227	472,225	0	0
2016	(200,305)	5.0	(40,061)	(40,061)	(40,061)	(40,061)	
2017	(1,473,499)	5.0	(294,700)	(294,700)	(294,700)	(294,700)	(294,699)

0

Schedule of Contributions

Year Ending September 30,	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Actuarially determined contribution	\$997,726	\$1,106,085	\$1,080,860	\$1,103,288	\$1,124,361	\$1,069,836	\$1,003,043	\$808,241	\$614,497	\$607,358
Contributions in relation to the actuarially determined contribution	<u>997,726</u>	<u>1,106,085</u>	<u>1,080,860</u>	<u>1,103,288</u>	<u>1,124,361</u>	<u>1,069,836</u>	<u>1,003,043</u>	<u>808,241</u>	<u>614,497</u>	<u>607,358</u>
Contribution deficiency (excess)	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
Covered employee payroll	\$3,261,894	\$3,169,645	\$2,938,951	\$2,899,869	\$2,947,305	\$3,013,887	\$3,297,317	\$3,577,177	\$3,733,644	\$3,659,849
Contributions as a percentage of covered-employee payroll	30.59 %	34.90 %	36.78 %	38.05 %	38.15 %	35.50 %	30.42 %	22.59 %	16.46 %	16.60 %

Notes to Schedule

Actuarially determined contributions are calculated based on the valuation as of the beginning of the year prior to the fiscal year in which contributions are due.

Methods and assumptions used to determine contributions for the year ending September 30, 2017:

Actuarial cost method	Entry age
Amortization method	Level dollar, closed
Remaining amortization period	25 years
Asset valuation method	5-year smoothed market
Inflation	2.5%
Salary increases	Scale of increase rates from 6.25% to 4.28% depending on years of service, including inflation
Investment rate of return	7.75% net of investment expenses, including inflation
Retirement age	See "Description of Assumptions and Methods" for the assumed retirement age assumption
Mortality	At October 1, 2016, the mortality table was revised to the mortality assumption used for special risk employees in the valuation of the Florida Retirement System (FRS), as required by state statute. Healthy (Male:10% RP-2000 Annuitant White Collar+90% Annuitant Blue Collar/Female:100% Annuitant White Collar) - Generational from 2000 Scale BB Disabled (Male: 60% RP-2000 Disabled Retiree SB4 + 40% Annuitant White Collar/Female: 60% Disabled Retiree SF2 + 40% Annuitant White Collar) - No Projection Prior to this change the RP-2000 Combined Mortality Table using Scale AA projected to valuation year was used.

Schedule of Investment Returns

This schedule will be updated each year until a 10-year history is accumulated.

Year Ending September 30,	Annual money-weighted rate of return net of investment expense
2017	11.45%
2016	7.99%
2015	0.87%
2014	9.08%
2013	14.17%
2012	19.27%
2011	(1.69%)
2010	9.89%
2009	(1.41%)
2008	(12.28%)

Plan Membership Statistics

Valuation for Year Beginning October 1,	2017	2016
Inactive members or beneficiaries currently receiving benefits	49	48
Inactive members entitled to but not yet receiving benefits	3	2
Active members	<u>48</u>	<u>48</u>
Total	<u>100</u>	<u>98</u>

Plan Description

Plan Type: Single-employer Defined Benefit Pension Plan

Legal Authority: The Plan was established and is amended by local ordinance.

Effective Date: October 19, 1954. Most recently Plan provisions have been amended with the following ordinances.

<u>Ord. No.</u>	<u>Adopted</u>	<u>Ord. No.</u>	<u>Adopted</u>
2010-11	02/02/2010	2013-02	01/08/2013
2010-21	08/17/2010	2014-06	03/04/2014
2011-07	07/19/2011	2014-09	04/15/2014
2011-08	07/19/2011		

Plan Administrator: The Board of Trustees

Board Composition: The trustees consist of five members which may include participants of any DROP who have at least 18 months remaining in the DROP at the time they take office, none who are elected city officials, and who are selected as follows:

- (a) Two members who are legal residents of the city appointed by city council,
- (b) Two are police officer participants elected by a majority of the active police officer members of this fund, and
- (c) The fifth member is chosen by a majority of the previous four members and will be appointed to the board of trustees by city council, as a ministerial duty.

Funding Requirements: Employer contributions are actuarially determined and subject to State statute. Employee contributions are as described below and may be amended by ordinance.

Plan Year: The 12-month period from October 1st to the following September 30th.

Member: Full-time sworn police officers are eligible immediately upon hire.

Credited Service: Aggregate years and fractional part of years as a contributing Member, including unused medical leave days in excess of 120 days. Effective with Ordinance 2013-21, accrued sick leave under 120 days and accrued vacation under 60 days may be applied to service for Normal Retirement eligibility and benefits only. Credited Service also includes certain military service. Additional Credited Service may be purchased. Unused annual and medical leave will be used in the calculation of benefits as reported to the Board by the City per City policy

Vesting: 100% upon earning ten years of Credited Service.

Compensation: Total cash remuneration including shift differential, state and local incentives, "actual overtime" (but excluding "court overtime") paid by the city to a police officer for services rendered. Payments for accrued unused sick or annual leave are not included. Effective with Ordinance 2013-02, overtime is limited to 300 hours per calendar year. Compensation or salary contributed as employee-elective salary reductions or deferrals to any salary reduction, deferred compensation, or tax-sheltered annuity program authorized under IRC is included. For the purpose of benefit calculation the Board of

Trustees shall use the employee's compensation as reported by the City in accordance with the City's policies.

Employee Contributions: Prior to Ordinance 2013-02, 3.0% of Compensation. Effective with Ordinance 2013-02, Employee Contributions are increased to 5.5% of Compensation for Members hired prior to October 1, 2012 and to 8.0% of Compensation for Members hired after October 1, 2012. A Member who terminates non-vested is entitled to refund of accumulated Employee Contributions without interest.

Average Monthly Salary: One-twelfth the average of Compensation for the five highest years of Credited Service.

Normal Retirement Date: The first day of the month coincident with or next following the earlier of (i) age 55 and ten years of Credited Service, or (ii) 25 years of Credited Service with no age requirement.

Accrued Benefit: $3\% \times \text{Average Monthly Salary} \times \text{Credited Service}$, plus $\$5 \times \text{Credited Service}$.

Cost-of-Living-Adjustment: 1% annually on October 1st.

Late Retirement Benefit: Benefit as determined for Normal Retirement taking into account Compensation and Credited Service through the actual date of retirement.

Early Retirement Date: The first day of the month coincident with or next following the date the Member earns ten years of Credited Service and attains age 50.

Early Retirement Benefit: The Accrued Benefit reduced by 2.5% for each year the Member is younger than the Normal Retirement Date. (Note: the early retirement reduction is only taken on the 3% multiplier benefit and is not taken on the flat $\$5 \times \text{Credited Service}$ benefit.)

Disability Benefits: Members are eligible for service-connected Disability Benefits immediately upon hire. Members are eligible for a non-service-connected Disability Benefit after earnings at least ten years of Credited Service. The monthly Disability Benefit is the greater of (i) the Accrued Benefit and (ii) 50% of Average Monthly Salary.

Pre-Retirement Survivor Benefits: Members are eligible for service-connected Pre-Retirement Survivor Benefits immediately upon hire. Members are eligible for non-service-connected Pre-Retirement Survivor Benefits after one year of service. The monthly survivor benefit is the greater of (i) the Accrued Benefit and (ii) 25% of Average Monthly Salary.

Optional Forms of Benefit: Pension benefits described above are payable in the form of a 10 year certain and continuous annuity. Members may optionally choose an actuarially equivalent single life annuity, or joint and last survivor annuity (with 50%, 66 2/3, 75%, or 100% continuance), or a joint and survivor annuity (with 50%, 66 2/3, 75%, or 100% continuance).

Actuarial Equivalence: The 1983 Group Annuity Mortality Table (100% male) and an interest rate of 7.0% (with no COLA assumed payable) is defined for use in the determination of Optional Forms of Benefit.

Deferred Retirement Option Plan (DROP): Members are eligible to enter the DROP at the Normal Retirement Date. The Accrued Benefit is frozen and no further Employee Contributions are payable at DROP entry. The Accrued Benefit accumulates at the net investment return earned on Fund assets less an administrative fee. The maximum DROP participation duration is 5 years. DROP participants are not eligible for pre-retirement death or disability benefits.

Actuarial Assumptions and Methods

Assumed Rate of Investment Return: 7.75% per year net of investment expenses.

Salary Increase – Total Payroll: Based on individual salary increase assumptions and other decrements assumed in the valuation of Plan liabilities.

Salary Increase – Individual: The following table of annual increases based on service:

<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
0	6.250%				
1	5.850%	11	4.850%	21	4.500%
2	5.600%	12	4.800%	22	4.475%
3	5.500%	13	4.750%	23	4.450%
4	5.350%	14	4.700%	24	4.425%
5	5.250%	15	4.650%	25	4.400%
6	5.150%	16	4.625%	26	4.375%
7	5.100%	17	4.600%	27	4.350%
8	5.000%	18	4.575%	28	4.325%
9	4.950%	19	4.550%	29	4.300%
10	4.900%	20	4.525%	30	4.275%

Mortality: In the prior valuation, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality table has been revised to that used for special risk employees in the valuation of FRS as of July 1, 2016 and 2017, as required by state statute. While healthy post-retirement mortality and disabled mortality rates were unchanged, healthy pre-retirement was revised. The mortality rates are as follows:

Healthy mortality (Pre-retirement):

Males: 10% RP-00 Combined Healthy White Collar +
90% RP-00 Combined Healthy Blue Collar
Females: 100% RP-00 Combined Healthy White Collar
Both male and female rates fully generational using Scale BB

Healthy mortality (Post-retirement):

Males: 10% RP-00 Annuitant White Collar +
90% RP-00 Annuitant Blue Collar
Females: 100% RP-00 Annuitant White Collar
Both male and female rates fully generational using Scale BB

Disabled mortality:

Males: 60% RP-00 Disabled Retiree Set Back 4 Years +
40% RP-00 Annuitant White Collar
Females: 60% RP-00 Disabled Retiree Set Forward 2 Yrs +
40% RP-00 Annuitant White Collar

No mortality improvement is assumed for disabled lives.

75% of active deaths are assumed to be service connected.

Retirement: Members are assumed to retire at a rate of 5% per year eligible for early retirement. In the year of the Normal Retirement Date, Members are assumed to retire at a rate of 80%. For each of the four years subsequent to the Normal Retirement Date, Members are assumed to retire at 40%. 100% of Members are assumed to retire in the fifth year subsequent to the Normal Retirement Date.

Termination: Unisex rates, as follows:

<u>Service</u>	<u>Rate</u>
<6	12.00%
6-10	4.00%
11-15	3.00%
16-19	2.00%
20-24	1.00%

Termination rates are not applied when an active member reaches the age and service combinations where non-zero retirement decrements are in force.

Disability: Unisex rates, as follows:

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
<=15	0.00%	34	0.22%	43	0.39%	52	1.20%
16-21	0.14%	35	0.23%	44	0.44%	53	1.31%
22-25	0.15%	36	0.24%	45	0.51%	54	1.43%
26-27	0.16%	37	0.25%	46	0.59%	55	1.55%
28-29	0.17%	38	0.26%	47	0.70%	56	1.68%
30	0.18%	39	0.28%	48	0.79%	57	1.81%
31	0.19%	40	0.30%	49	0.90%	58	1.95%
32	0.20%	41	0.32%	50	1.00%	59	2.09%
33	0.21%	42	0.35%	51	1.10%	>=60	0.00%

75% of disabilities are assumed to be service connected.

Accrued Leave: Retirement benefits are increased 1% to account for sick leave over 120 days. In addition, Members are assumed to include accrued sick leave under 120 days and accrued vacation under 60 days as 0.6923 in Credited Service for Normal Retirement eligibility and benefits. Normal Retirement benefits are increased by the following table of factors based on Credited Service earned:

<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>
10	1.0692	15	1.0462	20	1.0346	25	1.0277
11	1.0629	16	1.0433	21	1.0330	26	1.0266
12	1.0577	17	1.0407	22	1.0315	27	1.0256
13	1.0533	18	1.0385	23	1.0301	28	1.0247
14	1.0495	19	1.0364	24	1.0288	29	1.0239
						30	1.0231

Plan Expenses: An average of the prior two years of administrative expense is added to the normal cost.

Marital Assumption: 100% are assumed married with husbands assumed to be three years older than wives.

Liability Load: Liabilities are loaded by 0.9% to reflect the exclusion of the COLA in the determination of optional forms of benefit.

Funding Method: Entry Age (level percent of salary)