

City of Vero Beach Firefighters Relief and Pension Fund

Actuarial Valuation Report as of October 1, 2018

Annual Employer Contribution for the Fiscal Year
Ending September 30, 2019



February 1, 2019

Board of Trustees
City of Vero Beach Firefighters
Relief and Pension Fund
Vero Beach, Florida

**Re: City of Vero Beach Firefighters Relief and Pension Fund
Actuarial Valuation as of October 1, 2018**

Dear Board Members:

The results of the October 1, 2018 Annual Actuarial Valuation of the City of Vero Beach Firefighters Relief and Pension Fund are presented in this report.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the System's funding progress, to determine the employer contribution rate for the fiscal year ending September 30, 2019, and to determine the actuarial information for Governmental Accounting Standards Board (GASB) Statement No. 67. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section B of this report. This report includes risk metrics on page 3 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through September 30, 2018. The valuation was based upon information furnished by the City concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

This report was prepared using certain assumptions approved by the Board as authorized under Florida Statutes and prescribed by the Florida Statutes as described in the section of this report entitled Actuarial Assumptions and Cost Method. The assumed mortality rates detailed in the Actuarial Assumptions and Cost Method section were prescribed by Chapter 112.63, Florida Statutes. All actuarial assumptions used in this report are reasonable for purposes of this valuation.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of Vero Beach Firefighters Relief and Pension Fund as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

Jeffrey Amrose and Trisha Amrose are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

This actuarial valuation and/or cost determination was prepared and completed by us or under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate. In our opinion, the techniques and assumptions used are reasonable, meet the requirements and intent of Part VII, Chapter 112, Florida Statutes, and are based on generally accepted actuarial principles and practices. 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.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

By 

Jeffrey Amrose, MAAA
Enrolled Actuary No. 17-6599
Senior Consultant and Actuary



Trisha Amrose, MAAA
Enrolled Actuary No. 17-8010
Consultant and Actuary

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
A	Discussion of Valuation Results	
	1. Discussion of Valuation Results	1
	2. Chapter Revenue	6
B	Valuation Results	
	1. Participant Data	7
	2. Actuarially Determined Employer Contribution (ADEC)	8
	3. Actuarial Value of Benefits and Assets	9
	4. Calculation of Employer Normal Cost	10
	5. Liquidation of the Unfunded Actuarial Accrued Liability	11
	6. Actuarial Gains and Losses	12
	7. Recent History of Valuation Results	16
	8. Recent History of UAAL and Funded Ratio	17
	9. Recent History of Required and Actual Contributions	18
	10. Actuarial Assumptions and Cost Method	19
	11. Glossary of Terms	22
C	Pension Fund Information	
	1. Statement of Plan Assets at Market Value	25
	2. Reconciliation of Plan Assets	26
	3. Development of Actuarial Value of Assets	27
	4. History of Investment Return Rates	28
D	Financial Accounting Information	
	1. FASB No. 35	29
	2. GASB No. 67	30
E	Miscellaneous Information	
	1. Reconciliation of Membership Data	36
	2. Statistical Data	37
	3. Inactive Participant Distribution	38
	4. Projected Retirement Benefits	39
F	Summary of Plan Provisions	41

SECTION A

DISCUSSION OF VALUATION RESULTS

DISCUSSION OF VALUATION RESULTS

Comparison of Required Employer Contributions

The following is a comparison of required contributions developed in this year's and last year's actuarial valuations.

	For FYE 9/30/2019 Based on 10/1/2018 Valuation	For FYE 9/30/2018 Based on 10/1/2017 Valuation	Increase (Decrease)
Required Employer/State Contribution	\$ 260,462	\$ 285,361	\$ (24,899)
Estimated State Contribution	\$ 136,257 **	\$ 138,704 *	\$ (2,447)
Required Employer Contribution	\$ 124,205	\$ 146,657	\$ (22,452)

**We have updated the amount shown in our October 1, 2017 Report to reflect the actual State contribution received for the fiscal year ending September 30, 2018.*

*** Estimated based on the August 2018 regular payment and October 2018 supplemental payment from the State.*

The contribution has been adjusted for interest as though payment would be made in equal installments at the end of each quarter of the Employer's fiscal year.

The required Employer contribution has been computed under the assumption that the amount to be received from the State on behalf of firefighters this year will be the same as last year's amount including the supplemental distribution. If the actual payment from the State falls below this amount, then the City must increase its contribution by the difference, so that the sum of the contributions from the City and the State equals the total Required Contribution amount shown above.

The actual Employer and State contributions during the fiscal year ending September 30, 2018 were \$146,657 and \$138,704, respectively, for a total of \$285,361. This total is equal to the required contribution of \$285,361 for that year.

Revisions in Benefits

There have been no revisions in benefits since the last valuation.

Revisions in Actuarial Assumptions or Methods

There have been no revisions in actuarial assumptions or methods since the last valuation.

Actuarial Experience

During the past year, there was a net actuarial loss of \$26,005 which means that actual experience was slightly less favorable than expected. The loss is due to lower than expected retiree mortality. The recognized investment return was higher than the assumed rate of 6.00%, which partially offset the actuarial loss. While the investment return was 7.4% based on market value of assets, the investment return was 7.9% based on actuarial value of assets.

Funded Ratio

The funded ratio this year is 87.6% compared to 85.8% last year. The funded ratio is equal to the actuarial value of assets divided by the actuarial accrued (past service) liability.

13th Check

As indicated on page 12, there is an actuarial loss for the fiscal year, and there is a cumulative net actuarial loss of \$1,237,362. Therefore, a 13th Check is not payable this year to retirees and beneficiaries.

Variability of Future Contribution Rates

The Actuarial Cost Method used to determine the contribution is intended to produce contribution rates which are generally level. Even so, when experience differs from the assumptions, as it often does, the employer's contribution can vary significantly from year-to-year.

Over time, if the year-to-year gains and losses offset each other, the contribution rate would be expected to return to the current level, but this does not always happen.

The Market Value of Assets exceeds the Actuarial Value of Assets by \$525,942 as of the valuation date (see Section C). This difference will be gradually recognized over the next several years. If Market Value had been the basis for the valuation, the funded ratio would have been 93.8% and the total Employer/State required contribution would have been about \$191,000.

Under this funding method an amortization charge or credit base will be fully paid for each year. As this occurs the total amortization payments will increase or decrease absent any other gain or loss or assumption change. For example, next year the oldest amortization base of approximately \$900 will expire. This will cause the required employer contribution to decrease by approximately \$900 absent any other changes.

Conclusion

The remainder of this Report includes detailed actuarial valuation results, financial information, miscellaneous information and statistics, and a summary of plan provisions.

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Asset/Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution shown on page 1 may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	2018	2017
Ratio of the market value of assets to total payroll	N/A	N/A
Ratio of actuarial accrued liability to payroll	N/A	N/A
Ratio of actives to retirees and beneficiaries	0.0	0.0
Ratio of net cash flow to market value of assets	-6.01%	-6.25%

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

CHAPTER REVENUE

Increments in Chapter revenue over that received in 1998 must first be used to fund the cost of compliance with minimum benefits. As of the valuation date, all minimum benefit requirements have been met.

Actuarial Confirmation of the Use of State Chapter Money	
1. Base Amount Previous Plan Year	\$ 183,499
2. Amount Received for Previous Plan Year	138,704
3. Benefit Improvements Made in Previous Plan Year	0
4. Excess Funds for Previous Plan Year	0
5. Accumulated Excess at Beginning of Previous Year	0
6. Prior Excess Used in Previous Plan Year	0
7. Accumulated Excess as of Valuation Date (Available for Benefit Improvements): (4) + (5) - (6)	0
8. Base Amount This Plan Year	138,704

The Accumulated Excess shown in line 7 (if any) is being held in reserve to pay for additional benefits. The reserve is subtracted from Plan assets (see Section C of this Report). The Base Amount in line 8 is the maximum amount the employer may take as a credit against its required contribution; however, in no event may the employer take credit for more than the actual amount of Chapter revenue received.

The Base Amount will continue to be updated each year based on actual Chapter revenue up to a maximum of \$306,972. If the Chapter 175 distribution exceeds \$306,972, half of the amount above \$306,972 is paid into the Share Plan and the remaining half is included in the amount the employer may take as a credit against its required contribution.

SECTION B

VALUATION RESULTS

PARTICIPANT DATA		
	October 1, 2018	October 1, 2017
ACTIVE MEMBERS		
Number	0	0
Covered Annual Payroll	\$ 0	\$ 0
Average Annual Payroll	\$ 0	\$ 0
Average Age	0.0	0.0
Average Past Service	0.0	0.0
Average Age at Hire	0.0	0.0
RETIREES & BENEFICIARIES		
Number	10	10
Annual Benefits	\$ 667,878	\$ 654,782
Average Annual Benefit	\$ 66,788	\$ 65,478
Average Age	75.2	74.2
DISABILITY RETIREES		
Number	4	4
Annual Benefits	\$ 90,565	\$ 88,789
Average Annual Benefit	\$ 22,641	\$ 22,197
Average Age	83.8	82.8
TERMINATED VESTED MEMBERS		
Number	0	0
Annual Benefits	\$ 0	\$ 0
Average Annual Benefit	\$ 0	\$ 0
Average Age	0.0	0.0

ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION (ADEC)		
A. Valuation Date	October 1, 2018	October 1, 2017
B. ADEC to Be Paid During Fiscal Year Ending	9/30/2019	9/30/2018
C. Assumed Dates of Employer Contributions	Quarterly	Quarterly
D. Annual Payment to Amortize Unfunded Actuarial Liability	\$ 235,058	\$ 257,800
E. Employer Normal Cost	16,191	17,467
F. ADEC if Paid on the Valuation Date: D + E	251,249	275,267
G. ADEC Adjusted for Frequency of Payments	260,462	285,361
H. Estimate of State Revenue in Contribution Year	136,257 **	138,704 *
I. Required Employer Contribution (REC) in Contribution Year	124,205	146,657

**We have updated the amount shown in our October 1, 2017 Report to reflect the actual State contribution received for the fiscal year ending September 30, 2018.*

*** Estimated based on the August 2018 regular payment and October 2018 supplemental payment from the State.*

ACTUARIAL VALUE OF BENEFITS AND ASSETS

A. Valuation Date	October 1, 2018	October 1, 2017
B. Actuarial Present Value of All Projected Benefits for		
1. Active Members		
a. Service Retirement Benefits	\$ -	\$ -
b. Vesting Benefits	-	-
c. Disability Benefits	-	-
d. Preretirement Death Benefits	-	-
e. Return of Member Contributions	-	-
f. Total	<u>-</u>	<u>-</u>
2. Inactive Members		
a. Service Retirees & Beneficiaries	7,977,301	8,050,738
b. Disability Retirees	478,872	491,784
c. Terminated Vested Members	-	-
d. Total	<u>8,456,173</u>	<u>8,542,522</u>
3. Total for All Members	8,456,173	8,542,522
C. Actuarial Accrued (Past Service) Liability (Entry Age Normal)	8,456,173	8,542,522
D. Actuarial Value of Accumulated Plan Benefits per FASB No. 35	8,456,173	8,542,522
E. Plan Assets		
1. Market Value	7,935,652	7,846,410
2. Actuarial Value	7,409,710	7,326,769
F. Unfunded Accrued Liability: C - E2	1,046,463	1,215,753
G. Actuarial Present Value of Projected Covered Payroll	-	-
H. Actuarial Present Value of Projected Member Contributions	-	-

CALCULATION OF EMPLOYER NORMAL COST

A. Valuation Date	October 1, 2018	October 1, 2017
B. Normal Cost for		
1. Service Retirement Benefits	\$ -	\$ -
2. Vesting Benefits	-	-
3. Disability Benefits	-	-
4. Preretirement Death Benefits	-	-
5. Return of Member Contributions	-	-
6. Total for Future Benefits	<u>-</u>	<u>-</u>
7. Assumed Amount for Administrative Expenses	16,191	17,467
8. Total Normal Cost	<u>16,191</u>	<u>17,467</u>
C. Expected Member Contribution	-	-
D. Employer Normal Cost: B8-C	16,191	17,467

LIQUIDATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

UAAAL Amortization Period and Payments					
Original UAAAL			Current UAAAL		
Date	Source	Amount	Years Remaining	Amount	Payment
10/1/2009	(Gain)/Loss	6,765	1	891	891
10/1/2010	(Gain)/Loss	202,098	2	51,538	26,520
10/1/2011	(Gain)/Loss	276,060	3	102,258	36,090
10/1/2012	(Gain)/Loss	184,159	4	88,059	23,975
10/1/2012	Assumption Change	173,555	4	82,987	22,594
10/1/2013	(Gain)/Loss	102,193	5	59,267	13,273
10/1/2013	Assumption Change	173,959	5	100,889	22,595
10/1/2014	(Gain)/Loss	65,701	6	44,372	8,513
10/1/2014	Assumption Change	173,819	6	117,392	22,522
10/1/2015	Assumption Change	(295,706)	7	(226,503)	(38,278)
10/1/2015	Assumption Change	169,584	7	129,895	21,952
10/1/2016	(Gain)/Loss	91,130	8	77,445	11,765
10/1/2016	Assumption Change	440,296	8	374,173	56,845
10/1/2017	(Gain)/Loss	19,161	9	17,795	2,468
10/1/2018	(Gain)/Loss	<u>26,005</u>	10	<u>26,005</u>	<u>3,333</u>
		\$ 1,808,779		\$ 1,046,463	\$ 235,058

Amortization Schedule

The UAAAL is being amortized as a level dollar amount over the number of years remaining in the amortization period. The expected amortization schedule is as follows:

Amortization Schedule	
Year	Expected UAAAL
2018	\$ 1,046,463
2019	860,090
2020	663,478
2021	483,181
2022	330,321
2023	217,653
2028	0

ACTUARIAL GAINS AND LOSSES

The assumptions used to anticipate mortality, investment income, expenses, and other factors have been based on long range trends and expectations. Actual experience can vary from these expectations. The variance is measured by the gain and loss for the period involved. If significant long term experience reveals consistent deviation from what has been expected and that deviation is expected to continue, the assumptions should be modified. The net actuarial gain (loss) for the past year has been computed as follows:

1. Last Year's UAAL	\$ 1,215,753
2. Last Year's Employer Normal Cost	17,467
3. Last Year's Contributions	
a. Employer	146,657
b. State	138,704
c. a + b	285,361
4. Interest at the Assumed Rate on:	
a. 1 and 2 for one year	73,993
b. 3 from dates paid	1,394
c. a - b	72,599
5. This Year's Expected UAAL: 1 + 2 - 3c + 4c	1,020,458
6. This Year's Actual UAAL Before Change in Assumption	1,046,463
7. Net Actuarial Gain (Loss): 5 - 6	(26,005)
8. Gain (Loss) Due to Investments	131,485
9. Gain (Loss) from Other Sources	(157,490)

HISTORY OF NET ACTUARIAL GAINS

Year Ended	Gain (Loss)
12/31/1981	\$ (146,958)
12/31/1982	16,353
12/31/1984	35,972
12/31/1987	(96,392)
12/31/1988	80,256
9/30/1989	54,491
9/30/1990	(97,170)
9/30/1991	235,788
9/30/1992	153,814
9/30/1993	92,046
9/30/1994	102,506
9/30/1995	362,094
9/30/1996	140,272
9/30/1997	243,370
9/30/1998	(60,770)
9/30/1999	470,731
9/30/2000	(29,397)
9/30/2001	(279,096)
9/30/2002	(419,477)
9/30/2003	(401,690)
9/30/2004	(388,244)
9/30/2005	106,565
9/30/2006	(49,142)
9/30/2007	173,004
9/30/2008	(98,237)
9/30/2009	(6,765)
9/30/2010	(202,098)
9/30/2011	(276,060)
9/30/2012	(184,159)
9/30/2013	(102,193)
9/30/2014	(65,701)
9/30/2015	295,706
9/30/2016	(91,130)
9/30/2017	(19,161)
9/30/2018	(26,005)

The fund earnings assumption has considerable impact on the cost of the Plan so it is important that they are in line with the actual experience. The following table shows the actual fund earnings compared to the assumed rates for the last few years.

Year Ending	Actuarial Investment Return	
	Actual	Assumed
12/31/1980	9.1 %	6.5 %
12/31/1981	13.1	6.5
12/31/1982	11.7	6.5
12/31/1983	11.5	6.5
12/31/1984	12.1	6.5
12/31/1985	16.4	6.5
12/31/1986	12.3	6.5
12/31/1987	7.0	6.5
12/31/1988	8.1	6.5
9/30/1989	8.7	4.9
9/30/1990	5.2	6.5
9/30/1991	15.0	6.5
9/30/1992	12.0	6.5
9/30/1993	9.5	7.0
9/30/1994	6.6	7.0
9/30/1995	10.1	7.0
9/30/1996	9.0	8.0
9/30/1997	11.2	8.0
9/30/1998	10.4	8.0
9/30/1999	13.3	8.0
9/30/2000	10.4	8.0
9/30/2001	5.0	8.0
9/30/2002	1.9	8.0
9/30/2003	3.1	8.0
9/30/2004	3.4	8.0
9/30/2005	5.0	8.0
9/30/2006	7.4	8.0
9/30/2007	11.8	7.0
9/30/2008	6.2	7.0
9/30/2009	5.2	7.0
9/30/2010	5.4	7.0
9/30/2011	4.3	7.0
9/30/2012	6.2	7.0
9/30/2013	7.3	6.75
9/30/2014	7.7	6.50
9/30/2015	6.2	6.25
9/30/2016	6.7	6.00
9/30/2017	7.9	6.00
9/30/2018	7.9	6.00
Averages	8.5 %	7.0 %

The actual investment return rates shown above are based on the actuarial value of assets. There is a limitation on 13th Check distributions tied to actuarial gains provided in Florida Statutes. The cumulative amount used to pay for 13th Checks may not exceed the cumulative amount of actuarial gains. Measurement begins in the year in which the 13th Check provision is adopted. The following table shows the limits:

Cumulative Actuarial Gains (Losses)					
Year Ending 9/30	Balance at Beginning of Year	Interest	Gain (Loss) for Year	13th Check	Balance at End of Year
2005	\$0	\$0	\$106,565	\$106,565	\$0
2006	0	0	(49,142)	0	(49,142)
2007	(49,142)	(3,440)	173,004	120,422	0
2008	0	0	(98,237)	0	(98,237)
2009	(98,237)	(6,877)	(6,765)	0	(111,879)
2010	(111,879)	(7,832)	(202,098)	0	(321,809)
2011	(321,809)	(22,527)	(276,060)	0	(620,396)
2012	(620,396)	(43,428)	(184,159)	0	(847,983)
2013	(847,983)	(57,239)	(102,193)	0	(1,007,415)
2014	(1,007,415)	(65,482)	(65,701)	0	(1,138,598)
2015	(1,138,598)	(71,162)	295,706	0	(914,054)
2016	(914,054)	(54,843)	(91,130)	0	(1,060,027)
2017	(1,060,027)	(63,602)	(19,161)	0	(1,142,790)
2018	(1,142,790)	(68,567)	(26,005)	0	(1,237,362)

RECENT HISTORY OF VALUATION RESULTS							
Valuation Date	Number of		Covered Annual Payroll	Actuarial Value of Assets	UAAL	Employer Normal Cost	
	Active Members	Inactive Member				Amount	% of Payroll
1/1/1987	17	13	\$ 355,227	\$ 2,327,657	\$ N/A	\$ 67,430	18.98 %
1/1/1988	17	13	375,564	2,482,851	N/A	82,655	22.01
1/1/1989	15	12	363,988	2,667,617	N/A	60,452	16.61
10/1/1989	15	12	394,597	2,900,295	N/A	51,117	12.95
10/1/1990	14	13	367,752	3,012,598	N/A	70,734	19.23
10/1/1991	13	12	390,785	3,413,469	N/A	54,675	13.99
10/1/1992	10	11	380,268	3,545,654	N/A	48,154	12.66
10/1/1993	10	10	410,075	3,822,663	N/A	24,434	5.96
10/1/1994	9	11	373,789	4,050,993	N/A	(6,320)	(1.69)
10/1/1995	9	9	381,329	4,395,327	N/A	16,657	4.37
10/1/1996	9	9	412,732	4,769,515	321,893	68,929	16.70
10/1/1997	8	10	375,870	5,265,683	285,112	(49,819)	(13.25)
10/1/1998	5	13	223,029	5,815,886	(25,007)	1,182	0.53
10/1/1999	5	13	264,329	6,393,676	797,230	(247,721)	(93.72)
10/1/2000	3	15	164,201	7,202,770	0	224,039	136.44
10/1/2001	2	16	86,791	7,312,430	0	230,937	266.08
10/1/2002	1	17	63,483	6,993,181	989,605	20,751	32.69
10/1/2003	1	17	62,357	6,823,162	119,086	23,237	37.26
10/1/2004	1	17	62,749	6,699,142	1,358,468	23,647	37.69
10/1/2005	1	16	63,769	6,690,094	1,009,144	23,899	37.48
10/1/2006	0	17	0	6,786,784	2,042,451	17,749	N/A
10/1/2007	0	17	0	7,196,956	1,640,628	18,012	N/A
10/1/2008	0	16	0	7,237,912	1,480,809	19,829	N/A
10/1/2009	0	15	0	7,216,297	1,197,170	30,829	N/A
10/1/2010	0	15	0	7,150,942	1,221,419	26,127	N/A
10/1/2011	0	15	0	7,018,988	1,292,513	12,300	N/A
10/1/2012	0	15	0	7,015,782	1,411,657	11,636	N/A
10/1/2013	0	15	0	7,071,430	1,458,163	12,725	N/A
10/1/2014	0	15	0	7,157,179	1,459,881	10,662	N/A
10/1/2015	0	14	0	7,188,678	1,091,383	12,759	N/A
10/1/2016	0	14	0	7,253,998	1,366,640	17,811	N/A
10/1/2017	0	14	0	7,326,769	1,215,753	17,467	N/A
10/1/2018	0	14	0	7,409,710	1,046,463	16,191	N/A

RECENT HISTORY OF UAAL AND FUNDED RATIO						
Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL As % of Covered Payroll (b - a) / c
10/1/1991	\$ 3,413,469	\$ 3,333,211	\$ (80,258)	102.4 %	\$ 390,785	(20.5) %
10/1/1992	3,545,654	3,515,782	(29,872)	100.8	380,268	(7.9)
10/1/1993	3,822,663	3,701,074	(121,589)	103.3	410,075	(29.7)
10/1/1994	4,050,993	3,852,818	(198,175)	105.1	373,789	(53.0)
10/1/1995	4,395,327	4,329,597	(65,730)	101.5	381,329	(17.2)
10/1/1996	4,769,515	5,091,408	321,893	93.7	412,732	78.0
10/1/1997	5,265,683	5,304,025	38,342	99.3	375,870	10.2
10/1/1998	5,815,886	5,693,700	(122,186)	102.1	223,029	(54.8)
10/1/1999	6,393,676	6,641,906	248,230	96.3	264,329	93.9
10/1/2000	7,202,770	7,593,964	391,194	94.8	164,201	238.2
10/1/2001	7,312,430	7,876,933	564,503	92.8	86,791	650.4
10/1/2002	6,993,181	7,982,786	989,605	87.6	63,483	1,558.9
10/1/2003	6,823,162	8,014,048	1,190,886	85.1	62,357	1,909.8
10/1/2004	6,699,142	8,057,610	1,358,468	83.1	62,749	2,164.9
10/1/2005	6,690,094	7,699,238	1,009,144	86.9	63,769	1,582.5
10/1/2006	6,786,784	8,829,235	2,042,451	76.9	0	N/A
10/1/2007	7,196,956	8,837,584	1,640,628	81.4	0	N/A
10/1/2008	7,237,912	8,718,721	1,480,809	83.0	0	N/A
10/1/2009	7,216,297	8,413,467	1,197,170	85.8	0	N/A
10/1/2010	7,150,942	8,372,361	1,221,419	85.4	0	N/A
10/1/2011	7,018,988	8,311,501	1,292,513	84.4	0	N/A
10/1/2012	7,015,782	8,427,439	1,411,657	83.2	0	N/A
10/1/2013	7,071,430	8,529,593	1,458,163	82.9	0	N/A
10/1/2014	7,157,179	8,617,060	1,459,881	83.1	0	N/A
10/1/2015	7,188,678	8,280,061	1,091,383	86.8	0	N/A
10/1/2016	7,253,998	8,620,638	1,366,640	84.1	0	N/A
10/1/2017	7,326,769	8,542,522	1,215,753	85.8	0	N/A
10/1/2018	7,409,710	8,456,173	1,046,463	87.6	0	N/A

RECENT HISTORY OF REQUIRED AND ACTUAL CONTRIBUTIONS										
Valuation	End of Year To Which Valuation Applies	Required Contributions						Actual Contributions		
		Employer & State		Estimated State		Net Employer		Employer	State	Total
		Amount	% of Payroll	Amount	% of Payroll	Amount	% of Payroll			
1/1/1987	9/30/1988	\$ 71,813	20.22 %	\$ 53,590	15.09 %	\$ 18,223	5.13 %	\$ 21,157	\$ 65,187	\$ 86,344
1/1/1988	9/30/1989	88,028	23.44	65,187	17.36	22,841	6.08	22,841	78,527	101,368
1/1/1989	9/30/1990	64,381	17.69	78,527	21.57	-	0.00	N/A	75,061	75,061
10/1/1989	9/30/1990	53,144	13.47	75,061	19.02	-	0.00	N/A	83,384	83,384
10/1/1990	9/30/1991	73,539	20.00	83,384	22.67	-	0.00	N/A	78,565	78,565
10/1/1991	9/30/1992	56,843	14.55	78,565	20.10	-	0.00	N/A	75,638	75,638
10/1/1992	9/30/1993	50,207	13.20	75,638	19.89	-	0.00	N/A	75,412	75,412
10/1/1993	9/30/1994	25,476	6.21	75,412	18.39	-	0.00	N/A	116,543	116,543
10/1/1994	9/30/1995	0	0.00	81,542	21.81	-	0.00	3,080	97,687	100,767
10/1/1995	9/30/1996	17,466	4.58	97,687	25.62	-	0.00	0	116,171	116,171
10/1/1996	9/30/1997	100,035	24.24	108,883	26.38	-	0.00	0	134,202	134,202
10/1/1997	9/30/1998	0	0.00	125,260	33.33	-	0.00	0	267,188	267,188
10/1/1998	9/30/1999	0	0.00	143,607	64.39	-	0.00	0	201,569	201,569
10/1/1999	9/30/2000	0	0.00	137,198	51.90	-	0.00	0	243,951	243,951
10/1/2000	9/30/2001	234,915	143.07	265,494	161.69	-	0.00	0	236,893	236,893
10/1/2001	9/30/2002	242,148	279.00	236,893	272.95	5,255	6.05	0	246,373	246,373
10/1/2002	9/30/2003	164,943	259.82	246,373	388.09	-	0.00	0	292,799	292,799
10/1/2003	9/30/2004	205,138	328.97	292,799	469.55	-	0.00	0	331,000	331,000
10/1/2004	9/30/2005	240,389	383.10	331,000	527.50	-	0.00	0	365,290	365,290
10/1/2005	9/30/2006	202,701	317.87	365,290	572.83	-	0.00	0	393,361	393,361
10/1/2006	9/30/2007	338,212	N/A	393,361	N/A	-	N/A	0	414,930	414,930
10/1/2007	9/30/2008	305,778	N/A	414,930	N/A	-	N/A	0	496,899	496,899
10/1/2008	9/30/2009	298,956	N/A	496,899	N/A	-	N/A	0	400,420	400,420
10/1/2009	9/30/2010	286,894	N/A	282,340	N/A	4,554	N/A	4,554	282,340	286,894
10/1/2010	9/30/2011	309,976	N/A	266,572	N/A	43,404	N/A	43,404	266,572	309,976
10/1/2011	9/30/2012	333,776	N/A	266,572	N/A	67,204	N/A	58,439	275,337	333,776
10/1/2012	9/30/2013	328,294	N/A	275,337	N/A	52,957	N/A	45,076	283,218	328,294
10/1/2013	9/30/2014	338,509	N/A	283,218	N/A	55,291	N/A	42,311	296,198	338,509
10/1/2014	9/30/2015	337,054	N/A	309,307	N/A	27,747	N/A	65,751	271,303	337,054
10/1/2015	9/30/2016	329,946	N/A	231,380	N/A	98,566	N/A	104,007	225,939	329,946
10/1/2016	9/30/2017	267,618	N/A	194,943	N/A	72,675	N/A	84,119	183,499	267,618
10/1/2017	9/30/2018	285,361	N/A	152,123	N/A	133,238	N/A	146,657	138,704	285,361
10/1/2018	9/30/2019	260,462	N/A	136,257	N/A	124,205	N/A	---	---	---

ACTUARIAL ASSUMPTIONS AND COST METHOD

Valuation Methods

Actuarial Cost Method - Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;
- (ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities - Unfunded Actuarial Accrued Liabilities (full funding credit if assets exceed liabilities) were amortized by level (principal & interest combined) dollar contributions over a reasonable period of future years.

Actuarial Value of Assets - The Actuarial Value of Assets phase in the difference between the expected actuarial value and actual market value of assets at the rate of 20% per year. The Actuarial Value of Assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the Market Value of plan assets and whose upper limit is 120% of the Market Value of plan assets. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than Market Value. During periods when investment performance is less than assumed rate, Actuarial Value of Assets will tend to be greater than Market Value.

Valuation Assumptions

The actuarial assumptions used in the valuation are shown in this Section.

Economic Assumptions

The investment return rate assumed in the valuation is 6.00% per year, compounded annually (net after investment expenses).

The **inflation rate** assumed in this valuation is 2.5% per year. The Inflation Rate is defined to be the expected long-term rate of increases in the prices of goods and services.

Pay increase assumptions are not applicable.

Demographic Assumptions

The mortality table was the RP-2000 Mortality Tables for Annuitants with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates included a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the actuarial valuation as of July 1, 2016, as mandated by Chapter 112.63, Florida Statutes.

FRS Healthy Mortality for Special Risk Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
	50	0.53 %	0.23 %	34.01
55	0.67	0.32	29.37	33.39
60	0.90	0.47	24.80	28.48
65	1.29	0.73	20.40	23.74
70	1.98	1.22	16.26	19.27
75	3.21	2.07	12.52	15.19
80	5.29	3.47	9.30	11.56

This assumption is used to measure the probabilities of each benefit payment being made after retirement.

For disabled retirees, the mortality table used was 60% of the RP-2000 for Disabled Annuitants and 40% of the RP-2000 Annuitant Mortality Table with a White Collar adjustment, set back 4 years for males and set forward 2 years for females, with no provision being made for future mortality improvements. These are the same rates used for the Special Risk Class members of the Florida Retirement System (FRS) in the actuarial valuation as of July 1, 2016, as mandated by Chapter 112.63, Florida Statutes.

FRS Disabled Mortality for Special Risk Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
	50	1.58 %	0.86 %	28.66
55	1.93	1.15	25.36	27.68
60	2.18	1.39	22.13	23.69
65	2.47	1.81	18.85	19.80
70	2.97	2.56	15.53	16.18
75	4.03	3.70	12.38	12.92
80	5.78	5.36	9.55	10.06

Rates of death among active members are not applicable.

Rates of retirement are not applicable.

Rates of separation from active membership are not applicable.

Rates of disability among active members are not applicable.

Miscellaneous and Technical Assumptions

Administrative & Investment Expenses

The investment return assumption is intended to be the return net of investment expenses. Annual administrative expenses are assumed to be equal to the average of the two prior year's expenses. Assumed administrative expenses are added to the Normal Cost.

GLOSSARY OF TERMS

<i>Actuarial Accrued Liability (AAL)</i>	The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.
<i>Actuarial Assumptions</i>	Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items.
<i>Actuarial Cost Method</i>	A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of Future Normal Costs and the Actuarial Accrued Liability.
<i>Actuarial Equivalent</i>	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
<i>Actuarial Present Value (APV)</i>	The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made.
<i>Actuarial Present Value of Future Benefits (APVFB)</i>	The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
<i>Actuarial Valuation</i>	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB No. 67.
<i>Actuarial Value of Assets</i>	The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially determined employer contribution (ADEC).

<i>Amortization Method</i>	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.
<i>Amortization Payment</i>	That portion of the plan contribution or ADEC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
<i>Amortization Period</i>	The period used in calculating the Amortization Payment.
<i>Actuarially Determined Employer Contribution (ADEC)</i>	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADEC consists of the Employer Normal Cost and Amortization Payment.
<i>Closed Amortization Period</i>	A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.
<i>Employer Normal Cost</i>	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
<i>Equivalent Single Amortization Period</i>	For plans that do not establish separate amortization bases (separate components of the UAAL), this is the same as the Amortization Period. For plans that do establish separate amortization bases, this is the period over which the UAAL would be amortized if all amortization bases were combined upon the current UAAL payment.
<i>Experience Gain/Loss</i>	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.

<i>Funded Ratio</i>	The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability.
<i>GASB</i>	Governmental Accounting Standards Board.
<i>GASB No. 67 and GASB No. 68</i>	These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
<i>Normal Cost</i>	The annual cost assigned, under the Actuarial Cost Method, to the current plan year.
<i>Open Amortization Period</i>	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.
<i>Unfunded Actuarial Accrued Liability</i>	The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.
<i>Valuation Date</i>	The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.

SECTION C

PENSION FUND INFORMATION

Statement of Plan Assets at Market Value

Item	September 30	
	2018	2017
A. Cash and Cash Equivalents (Operating Cash)	\$ 26	\$ 1
B. Receivables		
1. Member Contributions	\$ -	\$ -
2. Employer Contributions	-	-
3. State Contributions	-	-
4. Investment Income and Other Receivables	14,117	11,918
5. Prepaid Expenses	-	-
6. Total Receivables	<u>\$ 14,117</u>	<u>\$ 11,918</u>
C. Investments		
1. Short Term Investments	\$ 486,294	\$ 834,907
2. Domestic Equities	3,605,370	3,636,039
3. International Equities	1,209,475	986,704
4. Domestic Fixed Income	1,140,353	833,579
5. International Fixed Income	361,822	362,608
6. Real Estate	1,125,902	1,188,651
7. Private Equity	-	-
8. Total Investments	<u>\$ 7,929,216</u>	<u>\$ 7,842,488</u>
D. Liabilities		
1. Benefits Payable	\$ -	\$ -
2. Accrued Expenses and Other Payables	<u>(7,707)</u>	<u>(7,997)</u>
3. Total Liabilities	<u>\$ (7,707)</u>	<u>\$ (7,997)</u>
E. Total Market Value of Assets Available for Benefits	\$ 7,935,652	\$ 7,846,410
F. State Contribution Reserve	\$ -	\$ -
G. Market Value Net of Reserves	\$ 7,935,652	\$ 7,846,410
H. Allocation of Investments		
1. Short Term Investments	6.1%	10.6%
2. Domestic Equities	45.4%	46.4%
3. International Equities	15.3%	12.6%
4. Domestic Fixed Income	14.4%	10.6%
5. International Fixed Income	4.6%	4.6%
6. Real Estate	14.2%	15.2%
7. Private Equity	<u>0.0%</u>	<u>0.0%</u>
8. Total Investments	100.0%	100.0%

Reconciliation of Plan Assets

Item	September 30	
	2018	2017
A. Market Value of Assets at Beginning of Year	\$ 7,846,410	\$ 7,450,456
B. Revenues and Expenditures		
1. Contributions		
a. Employee Contributions	\$ -	\$ -
b. Employer Contributions	146,657	84,119
c. State Contributions	138,704	183,499
d. Purchased Service Credit	-	-
e. Total	\$ 285,361	\$ 267,618
2. Investment Income		
a. Interest, Dividends, and Other Income	\$ 217,206	\$ 223,868
b. Net Realized Gains/(Losses)	4,477	15,659
c. Net Unrealized Gains/(Losses)	408,715	711,517
d. Investment Expenses	(67,224)	(77,052)
e. Net Investment Income	\$ 563,174	\$ 873,992
3. Benefits and Refunds		
a. Regular Monthly Benefits	\$ (743,573)	\$ (728,993)
b. Refunds	-	-
c. Lump Sum Benefits	-	-
d. Thirteenth Check Distribution	-	-
e. Total	\$ (743,573)	\$ (728,993)
4. Administrative Expenses and Miscellaneous Items		
a. Administrative Expenses	\$ (15,720)	\$ (16,663)
b. Miscellaneous	-	-
c. Total	\$ (15,720)	\$ (16,663)
5. Transfers	\$ -	\$ -
C. Market Value of Assets at End of Year	\$ 7,935,652	\$ 7,846,410
D. State Contribution Reserve	\$ -	\$ -
E. Market Value Net of Reserves	\$ 7,935,652	\$ 7,846,410

Development of Actuarial Value of Assets

Item	September 30	
	2018	2017
A. Beginning of Year Assets*		
1. Market Value	\$ 7,846,410	\$ 7,450,456
2. Actuarial Value	7,326,769	7,253,998
B. End of Year Market Value of Assets*	7,935,652	7,846,410
C. Net of Contributions Less Disbursements	(473,932)	(478,038)
D. Actual Net Investment Earnings	563,174	873,992
E. Expected Investment Earnings	425,388	420,899
F. Expected Actuarial Value End of Year	7,278,225	7,196,859
G. End of Year Market Value Less Expected Actuarial Value: B - F	657,427	649,551
H. 20% of Difference	131,485	129,910
I. End of Year Assets		
1. Actuarial Value: F + H	7,409,710	7,326,769
2. Final Actuarial Value Within 80% to 120% of Market Value	7,409,710	7,326,769
J. State Contribution Reserve	0	0
K. Final Actuarial Value of Assets: I2 - J	7,409,710	7,326,769
L. Recognized Investment Earnings	556,873	550,809
M. Recognized Rate of Return	7.9%	7.9%

* Before offset of State Contribution Reserve.

History of Investment Return Rates

Year Ending	Market	Actuarial
12/31/1980	N/A	9.1 %
12/31/1981	6.6 %	13.1
12/31/1982	26.8	11.7
12/31/1983	8.3	11.5
12/31/1984	13.0	12.1
12/31/1985	20.5	16.4
12/31/1986	13.2	12.3
12/31/1987	3.6	7.0
12/31/1988	6.9	8.1
9/30/1989 (9 mos.)	10.7	8.7
9/30/1990	1.8	5.2
9/30/1991	20.1	15.0
9/30/1992	13.6	12.0
9/30/1993	10.5	9.5
9/30/1994	(0.7)	6.6
9/30/1995	17.2	10.1
9/30/1996	9.5	9.0
9/30/1997	23.5	11.2
9/30/1998	7.2	10.4
9/30/1999	10.8	13.3
9/30/2000	9.3	10.4
9/30/2001	(0.8)	5.0
9/30/2002	(4.0)	1.9
9/30/2003	14.9	3.1
9/30/2004	10.0	3.4
9/30/2005	10.0	5.0
9/30/2006	6.4	7.4
9/30/2007	13.7	11.8
9/30/2008	(11.2)	6.2
9/30/2009	1.0	5.2
9/30/2010	6.7	5.4
9/30/2011	0.0	4.3
9/30/2012	15.5	6.2
9/30/2013	13.6	7.3
9/30/2014	10.0	7.7
9/30/2015	1.2	6.2
9/30/2016	9.7	6.7
9/30/2017	12.1	7.9
9/30/2018	7.4	7.9
Average Returns:		
Last 5 years	8.0 %	7.3 %
Last 10 years	7.6 %	6.5 %
All years	9.0 %	8.5 %

Note: Market value returns are net of investment expenses starting in 2005.

The above rates are based on the retirement systems financial information reported to the actuary. They may differ from figures that the investment consultant reports, in part because of differences in the handling of administrative and investment expenses, and in part because of differences in the handling of cash flows.

SECTION D

FINANCIAL ACCOUNTING INFORMATION

FASB NO. 35 INFORMATION

A. Valuation Date	October 1, 2018	October 1, 2017
B. Actuarial Present Value of Accumulated Plan Benefits		
1. Vested Benefits		
a. Members Currently Receiving Payments	\$ 8,456,173	\$ 8,542,522
b. Terminated Vested Members	0	0
c. Other Members	0	0
d. Total	<u>8,456,173</u>	<u>8,542,522</u>
2. Non-Vested Benefits	0	0
3. Total Actuarial Present Value of Accumulated Plan Benefits: 1d + 2	8,456,173	8,542,522
4. Accumulated Contributions of Active Members	0	0
C. Changes in the Actuarial Present Value of Accumulated Plan Benefits		
1. Total Value at Beginning of Year	8,542,522	8,620,638
2. Increase (Decrease) During the Period Attributable to:		
a. Plan Amendment and Change in Actuarial Assumptions	0	0
c. Latest Member Data, Benefits Accumulated and Decrease in the Discount Period	657,224	650,877
d. Benefits Paid	<u>(743,573)</u>	<u>(728,993)</u>
e. Net Increase	(86,349)	(78,116)
3. Total Value at End of Period	8,456,173	8,542,522
D. Market Value of Assets	7,935,652	7,846,410
E. Actuarial Assumptions - See page entitled Actuarial Assumptions and Methods		

SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS
GASB Statement No. 67

Fiscal year ending September 30,	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total Pension Liability					
Service Cost	\$ -	\$ -	\$ -	\$ -	\$ -
Interest	480,914	460,574	503,480	515,130	529,277
Benefit Changes	-	-	-	-	-
Difference between actual & expected experience	164,840	147,994	(321,469)	168,392	-
Assumption Changes	-	466,714	160,377	164,475	-
Benefit Payments	(743,573)	(728,993)	(714,699)	(720,087)	(773,744)
Refunds	-	-	-	-	-
Net Change in Total Pension Liability	<u>(97,819)</u>	<u>346,289</u>	<u>(372,311)</u>	<u>127,910</u>	<u>(244,467)</u>
Total Pension Liability - Beginning	<u>8,387,014</u>	<u>8,040,725</u>	<u>8,413,036</u>	<u>8,285,126</u>	<u>8,529,593</u>
Total Pension Liability - Ending (a)	<u>\$ 8,289,195</u>	<u>\$ 8,387,014</u>	<u>\$ 8,040,725</u>	<u>\$ 8,413,036</u>	<u>\$ 8,285,126</u>
Plan Fiduciary Net Position					
Contributions - Employer	\$ 146,657	\$ 84,119	\$ 104,007	\$ 65,751	\$ 42,311
Contributions - Employer (from State)	138,704	183,499	225,939	271,303	296,198
Contributions - Non-Employer Contributing Entity	-	-	-	-	-
Contributions - Member	-	-	-	-	-
Net Investment Income	563,174	873,992	676,519	84,490	702,893
Benefit Payments	(743,573)	(728,993)	(714,699)	(720,087)	(773,744)
Refunds	-	-	-	-	-
Administrative Expense	(15,720)	(16,663)	(18,271)	(17,351)	(8,167)
Other	-	-	-	-	-
Net Change in Plan Fiduciary Net Position	<u>89,242</u>	<u>395,954</u>	<u>273,495</u>	<u>(315,894)</u>	<u>259,491</u>
Plan Fiduciary Net Position - Beginning	<u>7,846,410</u>	<u>7,450,456</u>	<u>7,176,961</u>	<u>7,492,855</u>	<u>7,233,364</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 7,935,652</u>	<u>\$ 7,846,410</u>	<u>\$ 7,450,456</u>	<u>\$ 7,176,961</u>	<u>\$ 7,492,855</u>
Net Pension Liability - Ending (a) - (b)	<u>353,543</u>	<u>540,604</u>	<u>590,269</u>	<u>1,236,075</u>	<u>792,271</u>
Plan Fiduciary Net Position as a Percentage					
of Total Pension Liability	95.73 %	93.55 %	92.66 %	85.31 %	90.44 %
Covered Payroll	\$ -	\$ -	\$ -	\$ -	\$ -
Net Pension Liability as a Percentage					
of Covered Payroll	N/A	N/A	N/A	N/A	N/A

SCHEDULE OF THE EMPLOYER'S NET PENSION LIABILITY
GASB Statement No. 67

FY Ending September 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	\$ 8,285,126	\$ 7,492,855	\$ 792,271	90.44%	\$ -	N/A
2015	\$ 8,413,036	\$ 7,176,961	\$ 1,236,075	85.31%	\$ -	N/A
2016	\$ 8,040,725	\$ 7,450,456	\$ 590,269	92.66%	\$ -	N/A
2017	\$ 8,387,014	\$ 7,846,410	\$ 540,604	93.55%	\$ -	N/A
2018	\$ 8,289,195	\$ 7,935,652	\$ 353,543	95.73%	\$ -	N/A

NOTES TO NET PENSION LIABILITY
GASB Statement No. 67

Valuation Date: October 1, 2017
Measurement Date: September 30, 2018

Methods and Assumptions Used to Determine Net Pension Liability:

Actuarial Cost Method	Entry Age Normal
Inflation	2.5%
Salary Increases	N/A
Investment Rate of Return	6.00%
Retirement Age	N/A
Mortality	RP-2000 Mortality Tables for Annuitants with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates included a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the actuarial valuation as of July 1, 2017, as mandated by Chapter 112.63, Florida Statutes.

Other Information:

Notes See Discussion of Valuation Results in the October 1, 2017 Actuarial Valuation Report.

SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

FY Ending September 30,	Actuarially Determined Employer Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	\$ 338,509	\$ 338,509	\$ -	\$ -	N/A
2015	\$ 337,054	\$ 337,054	\$ -	\$ -	N/A
2016	\$ 329,946	\$ 329,946	\$ -	\$ -	N/A
2017	\$ 267,618	\$ 267,618	\$ -	\$ -	N/A
2018	\$ 285,361	\$ 285,361	\$ -	\$ -	N/A

NOTES TO SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

Valuation Date: October 1, 2017
Notes Actuarially determined contributions are calculated as of October 1, which is one year prior to the end of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Dollar, Closed
Remaining Amortization Period	10 years
Asset Valuation Method	5-year smoothed market
Inflation	2.5%
Salary Increases	N/A
Investment Rate of Return	6.00%
Retirement Age	N/A
Mortality	RP-2000 Mortality Tables for Annuitants with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates included a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the actuarial valuation as of July 1, 2017, as mandated by Chapter 112.63, Florida Statutes.

Other Information:
Notes See Discussion of Valuation Results in the October 1, 2017 Actuarial Valuation Report

SINGLE DISCOUNT RATE
GASB Statement No. 67

A single discount rate of 6.00% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 6.00%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between the total actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan’s fiduciary net position was 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 (6.00%) was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan’s net pension liability, calculated using a single discount rate of 6.00%, as well as what the plan’s net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

1% Decrease 5.00%	Current Single Discount Rate Assumption 6.00%	1% Increase 7.00%
\$1,079,434	\$353,543	(\$275,585)

SECTION E

MISCELLANEOUS INFORMATION

RECONCILIATION OF MEMBERSHIP DATA		
	From 10/1/17 To 10/1/18	From 10/1/16 To 10/1/17
A. Active Members		
1. Number Included in Last Valuation	0	0
2. New Members Included in Current Valuation	0	0
3. Non-Vested Employment Terminations	0	0
4. Vested Employment Terminations	0	0
5. Service Retirements	0	0
6. Disability Retirements	0	0
7. Deaths	0	0
8. Other	0	0
9. Number Included in This Valuation	0	0
B. Terminated Vested Members		
1. Number Included in Last Valuation	0	0
2. Additions from Active Members	0	0
3. Lump Sum Payments/Refund of Contributions	0	0
4. Payments Commenced	0	0
5. Deaths	0	0
6. Other	0	0
7. Number Included in This Valuation	0	0
C. Service Retirees, Disability Retirees and Beneficiaries		
1. Number Included in Last Valuation	14	14
2. Additions from Active Members	0	0
3. Additions from Terminated Vested Members	0	0
4. Deaths Resulting in No Further Payments	0	0
5. Deaths Resulting in New Survivor Benefits	0	0
6. End of Certain Period - No Further Payments	0	0
7. Other - New Survivor	0	0
8. Number Included in This Valuation	14	14

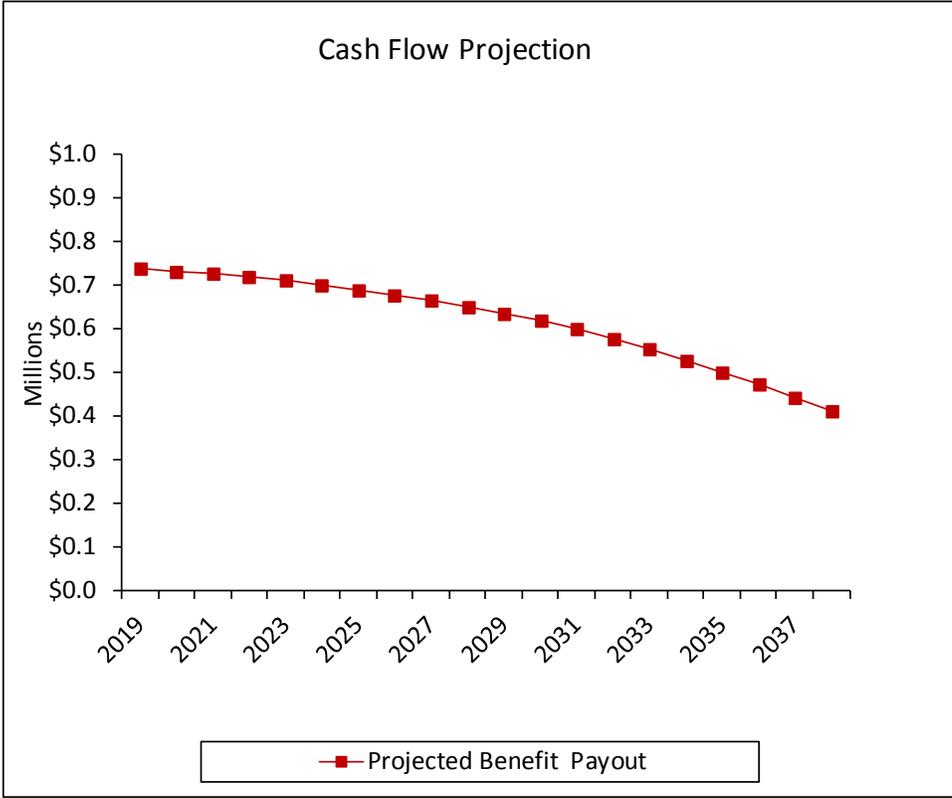
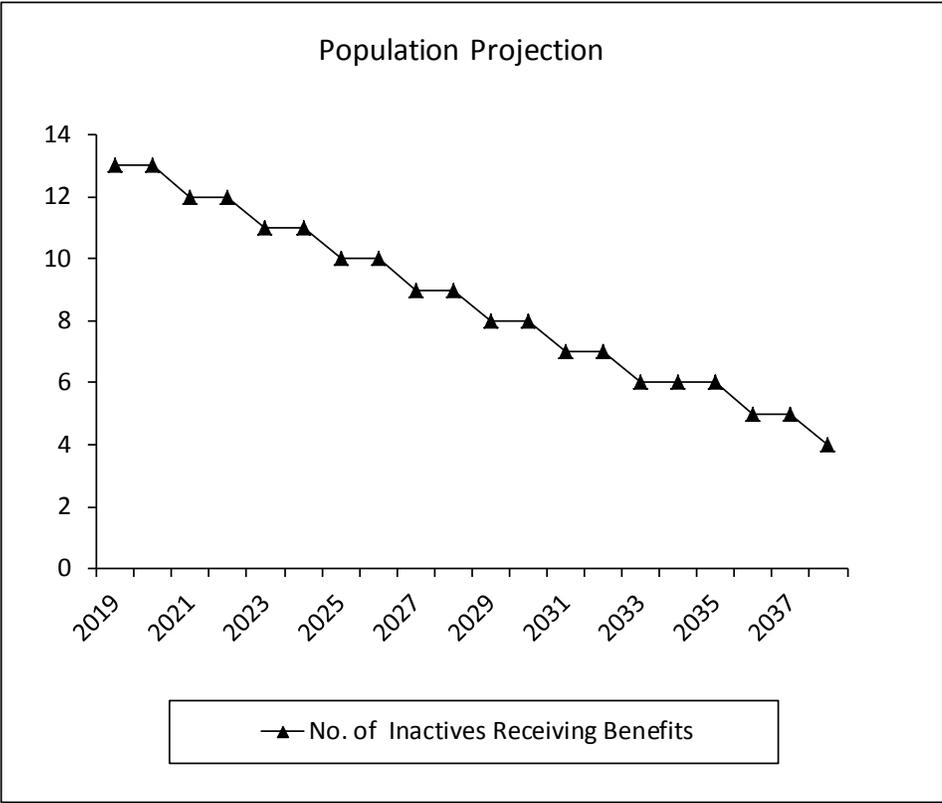
STATISTICAL DATA									
	10/1/2010	10/1/2011	10/1/2012	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018
Active Participants									
Number	0	0	0	0	0	0	0	0	0
Total Annual Payroll	---	---	---	---	---	---	---	---	---
Average Annual Salary	---	---	---	---	---	---	---	---	---
Other Averages									
Current Age	---	---	---	---	---	---	---	---	---
Age at Employment	---	---	---	---	---	---	---	---	---
Past Service	---	---	---	---	---	---	---	---	---
Service Retirees and Beneficiaries									
Number	11	11	11	11	11	10	10	10	10
Total Annual Benefit	\$ 651,819	\$ 664,859	\$ 678,153	\$ 691,715	\$ 705,551	\$ 629,358	\$ 641,945	\$ 654,782	\$ 667,878
Average Monthly Benefit	4,938	5,037	5,138	5,240	5,345	5,245	5,350	5,457	5,566
Disability Retirees									
Number	4	4	4	4	4	4	4	4	4
Total Annual Benefit	\$ 77,297	\$ 78,842	\$ 80,419	\$ 82,028	\$ 83,668	\$ 85,343	\$ 87,049	\$ 88,789	\$ 90,565
Average Monthly Benefit	1,610	1,643	1,675	1,709	1,743	1,778	1,814	1,850	1,887
Terminated Members with Vested Benefits									
Number	0	0	0	0	0	0	0	0	0
Total Annual Benefit	---	---	---	---	---	---	---	---	---
Average Monthly Benefit	---	---	---	---	---	---	---	---	---

INACTIVE PARTICIPANT DISTRIBUTION

Age Group	Terminated Vested		Disabled		Retired		Deceased with Beneficiary	
	Number	Total Benefits	Number	Total Benefits	Number	Total Benefits	Number	Total Benefits
Under 20	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-
40-44	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	-	-
50-54	-	-	-	-	-	-	-	-
55-59	-	-	-	-	-	-	-	-
60-64	-	-	-	-	-	-	-	-
65-69	-	-	-	-	1	84,114	-	-
70-74	-	-	-	-	4	279,589	-	-
75-79	-	-	-	-	3	226,053	1	18,867
80-84	-	-	3	61,743	-	-	1	46,635
85-89	-	-	1	28,822	-	-	-	-
90-94	-	-	-	-	-	-	-	-
95-99	-	-	-	-	-	-	-	-
100 & Over	-	-	-	-	-	-	-	-
Total	-	-	4	90,565	8	589,756	2	65,502
Average Age	N/A		84		74		81	

PROJECTED RETIREMENT BENEFITS		
<u>Fiscal Year End</u>	<u>No. of Inactives Receiving Benefits</u>	<u>Projected Benefit Payout</u>
2019	13	\$737,143
2020	13	731,752
2021	12	725,429
2022	12	718,137
2023	11	709,836
2024	11	700,476
2025	10	689,982
2026	10	678,289
2027	9	665,322
2028	9	650,941
2029	8	635,018
2030	8	617,433
2031	7	598,049
2032	7	576,823
2033	6	553,701
2034	6	528,723
2035	6	502,029
2036	5	473,606
2037	5	443,610
2038	4	412,326

These projections are based on the assumptions outlined in the Actuarial Assumptions and Cost Method section. Benefit payouts may differ from the above estimates depending upon actual experience of the plan. However, since the projections are recomputed each valuation date, there is an automatic correction to the extent actual experience varies from expected experience.



SECTION F

SUMMARY OF PLAN PROVISIONS

SUMMARY OF PLAN PROVISIONS

A. Ordinances

The Plan was established under the Code of Ordinances for the City of Vero Beach, Florida, Chapter 58, Article II, and Division 3 and was most recently amended under Ordinance No. 2016-05, passed and adopted on its second reading on March 15, 2016. The Plan is also governed by certain provisions of Chapter 175, Florida Statutes, Part VII, Chapter 112, Florida Statutes and the Internal Revenue Code.

B. Effective Date

June 1, 1976

C. Plan Year

October 1 through September 30

D. Type of Plan

Qualified, governmental defined benefit retirement plan; for GASB purposes it is a single employer plan.

E. Eligibility Requirements

The Plan is closed to new members.

F. Credited Service

Service is measured as the total length of employment for which the firefighter received Compensation from the City and made Member Contributions to the plan. No service is credited for any periods of employment for which the member received a refund of their contributions.

G. Compensation

Total cash compensation including wages, salary, bonuses and overtime, but excluding lump sum payment of unused leave.

H. Final Average Compensation (FAC)

The average of Compensation over the highest 3 years of employment.

I. Normal Retirement

Eligibility: A member may retire on the first day of the month coincident with or next following the earlier of:

- (1) age 55 and 10 years of Credited Service, or
- (2) age 52 and 25 years of Credited Service.

Benefit: 3.0% of FAC multiplied by years of Credited Service plus \$25.00 multiplied by years of Credited Service.

Normal Form of Benefit: 10 Years Certain and Life thereafter; other options are also available.

COLA: Each retiree and surviving beneficiary will receive a 2.0% increase in benefits On October 1st of each year.

J. Early Retirement

Eligibility: A member may elect to retire earlier than the Normal Retirement Eligibility upon attainment of age 50 and 10 years of Credited Service.

Benefit: The Normal Retirement Benefit is reduced by 0.25% for each month (3.0% annually) by which the Early Retirement date precedes the Normal Retirement date.

Normal Form of Benefit: 10 Years Certain and Life thereafter; other options are also available.

COLA: Each retiree and surviving beneficiary will receive a 2.0% increase in benefits on October 1st of each year.

K. Delayed Retirement

Same as Normal Retirement taking into account compensation earned and service credited until the date of actual retirement.

L. Service Connected Disability

Eligibility: Any member who becomes totally and permanently disabled as a result from an act occurring in the performance of service for the City is immediately eligible for a disability benefit.

Benefit: Accrued Normal Retirement Benefit taking into account compensation earned and service credited until the date of disability with a minimum equal to 50% of FAC. There will be no actuarial reduction for the period of time that the date of disability precedes the Normal Retirement date.

Normal Form
of Benefit: 10 Years Certain and Life thereafter.

COLA: Each retiree and surviving beneficiary will receive a 2.0% increase in benefits
on
October 1st of each year.

M. Non-Service Connected Disability

Eligibility: Any member with 10 years of Credited Service who becomes totally and permanently disabled is immediately eligible for a disability benefit.

Benefit: Accrued Normal Retirement Benefit taking into account compensation earned and service credited until the date of disability with a minimum equal to 50% of FAC. There will be no actuarial reduction for the period of time that the date of disability precedes the Normal Retirement date.

Normal Form
of Benefit: 10 Years Certain and Life thereafter.

COLA: Each retiree and surviving beneficiary will receive a 2.0% increase in benefits
on
October 1st of each year.

N. Death in the Line of Duty

Eligibility: All members are eligible for survivor benefits regardless of Credited Service.

Benefit: Dependent spouse receives 50% of the deceased member's accrued Normal Retirement Benefit with a minimum equal to 25% of FAC. If there is no spouse, the member's own contributions are paid to the estate.

Normal Form
of Benefit: Paid until death or remarriage of spouse.

COLA: Each surviving beneficiary will receive a 2.0% increase in benefits on October 1st of each year.

O. Other Pre-Retirement Death

Eligibility: Members are eligible for survivor benefits after the completion of 1 or more years of Credited Service.

Benefit: Dependent spouse receives 50% of the deceased member's accrued Normal Retirement Benefit with a minimum equal to 25% of FAC. If there is no spouse, the member's own contributions are paid to the estate.

Normal Form
of Benefit: Paid until death or remarriage of spouse.

COLA: Each surviving beneficiary will receive a 2.0% increase in benefits on October 1st of each year.

The beneficiary of a plan member with less than 1 year of Credited Service at the time of death will receive a refund of the member's accumulated contributions.

P. Post Retirement Death

Benefit determined by the form of benefit elected upon retirement.

Q. Optional Forms

In lieu of electing the Normal Form of benefit, the optional forms of benefits available to all retirees are a Single Life Annuity or the 50%, 66 2/3%, 75% and 100% Joint and Survivor options.

R. Vested Termination

Eligibility: A member has earned a non-forfeitable right to Plan benefits after the completion of 10 years of Credited Service.

Benefit: The benefit is the member's accrued Normal Retirement Benefit as of the date of termination. Benefit begins on the date that would have been the member's Normal Retirement date had the member continued employment. Alternatively, members can elect a reduced Early Retirement benefit any time after age 50.

Normal Form of Benefit: 10 Years Certain and Life thereafter; other options are also available.

COLA: Each retiree and surviving beneficiary will receive a 2.0% increase in benefits on October 1st of each year.

Members terminating employment with less than 10 years of Credited Service will receive a refund of their own accumulated contributions.

S. Refunds

Eligibility: All members terminating employment with less than 10 years of Credited Service are eligible. Optionally, vested members (those with 10 or more years of Credited Service) may elect a refund in lieu of the vested benefits otherwise due.

Benefit: Refund of the member's contributions.

T. Member Contributions

7% of Compensation.

U. State Contributions

Chapter 175 Premium Tax Refunds.

V. Employer Contributions

Any additional amount determined by the actuary needed to fund the plan properly according to State laws.

W. Cost of Living Increases

Each retiree and surviving beneficiary will receive a 2.0% increase in benefits on October 1st of each year.

X. 13th Check

In years in which a cumulative net actuarial gain has been determined, there shall be payable an ad-hoc thirteenth check paid on June 1 to each retiree and beneficiary in payment status as of September 30th of the prior year. The amount is determined based on the amount of the cumulative net actuarial gain and is limited to \$25,000 in any year for each retiree and beneficiary.

Y. Share Plan

The Share Plan is funded exclusively with available Chapter 175 premium tax revenue. Premium tax revenue is available for payment into the Share Plan if the distribution exceeds \$306,972. Half of the amount above \$306,972 is paid into the Share Plan and distributed on a pro-rata basis to all retirees or beneficiaries who are receiving a monthly benefit from the Plan.

Z. Other Ancillary Benefits

There are no ancillary retirement type benefits not required by statutes but which might be deemed a City of Vero Beach Firefighters Relief and Pension Fund liability if continued beyond the availability of funding by the current funding source.

February 1, 2019

Ms. Cynthia D. Lawson
Finance Director
City of Vero Beach
P.O. Box 1389
Vero Beach, FL 32961-1389

**Re: City of Vero Beach Firefighters' Relief and Pension Fund
GASB No. 68 Disclosure Information for Reporting Year Ending September 30, 2018**

Dear Cynthia:

As requested, we have prepared the actuarial disclosure information required under Governmental Accounting Standards Board (GASB) Statement Number 68 for the City of Vero Beach Firefighters Relief and Pension Fund for use in the preparation of the City's GAAP-basis employer financial statement for the reporting year ending September 30, 2018.

GASB Statement No. 68 establishes the accounting and financial reporting standards for state and local government employers who provide their employees (including former employees) pension benefits through a trust. These calculations have been made on a basis that is consistent with our understanding of this accounting standard. Enclosed are the following exhibits:

- Executive Summary
- Schedule of Changes in Net Pension Liability and Related Ratios for Measurement Year
- Notes to Net Pension Liability
- Pension Expense Under GASB No. 68
- Statement of Outflows and Inflows Arising from Current Reporting Period
- Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods
- Summary of Remaining Deferred Outflows and Inflows of Resources
- Schedule of Contributions
- Notes to Schedule of Contributions
- Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

The actuarial valuation of the liabilities was determined as of the beginning of the year, October 1, 2017 (based on the actuarial valuation results as reported in the October 1, 2017 actuarial valuation report dated January 15, 2018) and rolled forward to the September 30, 2018 measurement date. These liabilities are used for GASB Statement No. 68 reporting for the reporting period ending September 30, 2018. If significant changes occur during the year, such as benefit changes or changes in assumptions or methods, these should be noted in the footnotes.

Required Disclosures

This information is intended to assist in preparation of the financial statements of the Plan. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends y changes.

Our actuarial calculations for this report were prepared for the purpose of complying with the requirements of GASB Statement No. 68. These calculations have been made on a basis that is consistent with our understanding of this Statement.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement No. 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 68 may produce significantly different results.

This report was prepared at the request of the Board and is intended for use by the Plan and those designated or approved by them. This report may be provided to parties other than the Board only in its entirety and only with their permission. This report should not be relied on for any purpose other than the purpose described above. GRS is not responsible for unauthorized use of this report.

The calculations in this report are based on financial information furnished by the City as of September 30, 2018, as well as information furnished for the October 1, 2017 Actuarial Valuation concerning plan provisions, active members, terminated members, retirees and beneficiaries. We reviewed this information for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

This report complements the actuarial valuation report that was provided to the Board and should be considered in conjunction with that report. Please see the actuarial valuation report as of October 1, 2017 dated January 15, 2018 and the actuarial valuation report as of October 1, 2018 dated February 1, 2019 for additional discussion of the nature of actuarial calculations and information related to participant data, economic and demographic assumptions, and benefit provisions.

The findings in this report are based on census data through September 30, 2017 and financial information through September 30, 2018. 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.



To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the Plan. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

Jeffrey Amrose and Trisha Amrose are members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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. In my opinion, the techniques and assumptions used are reasonable and are based on generally accepted actuarial principles and practices. 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 welcome your questions and comments.

Sincerely yours,


Jeffrey Amrose, EA, MAAA
Senior Consultant & Actuary


Trisha Amrose, EA, MAAA
Consultant & Actuary

Enclosures



EXECUTIVE SUMMARY
GASB Statement No. 68

Actuarial Valuation Date	October 1, 2017
Measurement Date of the Net Pension Liability	September 30, 2018
Employer's Fiscal Year Ending Date (Reporting Date)	September 30, 2018

Membership as of Actuarial Valuation Date

Number of	
- Retirees and Beneficiaries	14
- Inactive, Nonretired Members	-
- Active Members	-
- Total	14
Covered Payroll	N/A

Net Pension Liability

Total Pension Liability	\$ 8,289,195
Plan Fiduciary Net Position	7,935,652
Net Pension Liability	\$ 353,543
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	95.73 %
Net Pension Liability as a Percentage of Covered Payroll	N/A

Development of the Single Discount Rate

Single Discount Rate	6.00 %
Long-Term Expected Rate of Investment Return	6.00 %
Long-Term Municipal Bond Rate*	3.83 %
Last year ending September 30 in the 2018 to 2117 projection period for which projected benefit payments are fully funded	2117

Total Pension Expense	\$ 125,121
------------------------------	-------------------

Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ -	\$ -
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	77,905	446,290
Total	\$ 77,905	\$ 446,290

*Source: Fidelity General Obligation AA rate as of September 28, 2018. This is the rate for Fixed Income Market Data/Yield Curve/Data Municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index." In describing this index, Fidelity notes that municipal curves are constructed using option adjusted analytics of a diverse population of over 10,000 tax exempt securities.

**SCHEDULE OF CHANGES IN THE EMPLOYER'S
NET PENSION LIABILITY AND RELATED RATIOS
FOR REPORTING YEAR ENDED SEPTEMBER 30, 2018
GASB Statement No. 68**

Measurement Year Ended September 30,	2018	2017	2016	2015
A. Total Pension Liability				
1. Service Cost	\$ -	\$ -	\$ -	\$ -
2. Interest on the Total Pension Liability	480,914	460,574	503,480	515,130
3. Changes of Benefit Terms	-	-	-	-
4. Difference Between Expected and Actual Experience of the Total Pension Liability	164,840	147,994	(321,469)	168,392
5. Changes of Assumptions	-	466,714	160,377	164,475
6. Benefit Payments	(743,573)	(728,993)	(714,699)	(720,087)
7. Refunds	-	-	-	-
8. Other	-	-	-	-
9. Net Change in Total Pension Liability	\$ (97,819)	\$ 346,289	\$ (372,311)	\$ 127,910
10. Total Pension Liability – Beginning	8,387,014	8,040,725	8,413,036	8,285,126
11. Total Pension Liability – Ending	<u>\$ 8,289,195</u>	<u>\$ 8,387,014</u>	<u>\$ 8,040,725</u>	<u>\$ 8,413,036</u>
B. Plan Fiduciary Net Position				
1. Contributions – Employer (from City)	\$ 146,657	\$ 84,119	\$ 104,007	\$ 65,751
2. Contributions – Employer (from State)	138,704	183,499	225,939	271,303
3. Contributions – Non-Employer Contributing Entity	-	-	-	-
4. Contributions – Employee (Including Buyback Contributions)	-	-	-	-
5. Net Investment Income	563,174	873,992	676,519	84,490
6. Benefit Payments	(743,573)	(728,993)	(714,699)	(720,087)
7. Refunds	-	-	-	-
8. Pension Plan Administrative Expense	(15,720)	(16,663)	(18,271)	(17,351)
9. Other	-	-	-	-
10. Net Change in Plan Fiduciary Net Position	\$ 89,242	\$ 395,954	\$ 273,495	\$ (315,894)
11. Plan Fiduciary Net Position – Beginning	7,846,410	7,450,456	7,176,961	7,492,855
12. Plan Fiduciary Net Position – Ending	<u>\$ 7,935,652</u>	<u>\$ 7,846,410</u>	<u>\$ 7,450,456</u>	<u>\$ 7,176,961</u>
C. Net Pension Liability				
	<u>\$ 353,543</u>	<u>\$ 540,604</u>	<u>\$ 590,269</u>	<u>\$ 1,236,075</u>
D. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability				
	95.73%	93.55%	92.66%	85.31%
E. Covered Payroll				
	N/A	N/A	N/A	N/A
F. Net Pension Liability as a Percentage of Covered Payroll				
	N/A	N/A	N/A	N/A

NOTES TO NET PENSION LIABILITY
GASB Statement No. 68

Valuation Date: October 1, 2017
Measurement Date: September 30, 2018

Methods and Assumptions Used to Determine Net Pension Liability:

Actuarial Cost Method	Entry Age Normal
Inflation	2.5%
Salary Increases	N/A
Investment Rate of Return	6.00%
Retirement Age	N/A
Mortality	RP-2000 Mortality Tables for Annuitants with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates included a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the actuarial valuation as of July 1, 2017, as mandated by Chapter 112.63, Florida Statutes.

Other Information:

Notes See Discussion of Valuation Results in the October 1, 2017 Actuarial Valuation Report

PENSION EXPENSE
FISCAL YEAR ENDED SEPTEMBER 30, 2018
(BASED ON MEASUREMENT PERIOD ENDING SEPTEMBER 30, 2018)
GASB Statement No. 68

Pension Expense

1. Service Cost	\$	-
2. Interest on the Total Pension Liability		480,914
3. Current-Period Benefit Changes		-
4. Employee Contributions (made negative for addition here)		-
5. Projected Earnings on Plan Investments (made negative for addition here)		(456,567)
6. Pension Plan Administrative Expense		15,720
7. Other Changes in Plan Fiduciary Net Position		-
8. Other Changes in Total Pension Liability		-
9. Recognition of Outflow (Inflow) of Resources due to Liabilities		164,840
10. Recognition of Outflow (Inflow) of Resources due to Assets		<u>(79,786)</u>
11. Total Pension Expense	\$	125,121

**STATEMENT OF OUTFLOWS AND INFLOWS
ARISING FROM CURRENT REPORTING PERIOD
EMPLOYER FISCAL YEAR ENDED SEPTEMBER 30, 2018
(BASED ON MEASUREMENT PERIOD ENDING SEPTEMBER 30, 2018)
GASB Statement No. 68**

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability due to (gains) or losses	\$	164,840
2. Assumption Changes (gains) or losses	\$	-
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		1.0
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$	164,840
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for assumption changes	\$	-
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$	164,840
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$	-
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for assumption changes	\$	-
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$	-

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments due to (gains) or losses	\$	(106,607)
2. Recognition period for Assets {in years}		5.0
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$	(21,321)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	(85,286)

**STATEMENT OF OUTFLOWS AND INFLOWS
ARISING FROM CURRENT AND PRIOR REPORTING PERIODS
EMPLOYER FISCAL YEAR ENDED SEPTEMBER 30, 2018
(BASED ON MEASUREMENT PERIOD ENDING SEPTEMBER 30, 2018)
GASB Statement No. 68**

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to Liabilities	\$ 164,840	\$ -	\$ 164,840
2. Due to Assets	77,907	157,693	(79,786)
3. Total	\$ 242,747	\$ 157,693	\$ 85,054

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 164,840	\$ -	\$ 164,840
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	77,907	157,693	(79,786)
4. Total	\$ 242,747	\$ 157,693	\$ 85,054

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ -	\$ -	\$ -
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments	77,905	446,290	(368,385)
4. Total	\$ 77,905	\$ 446,290	\$ (368,385)

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending September 30	Net Deferred Outflows of Resources
2019	\$ (79,788)
2020	(157,691)
2021	(109,583)
2022	(21,323)
2023	-
Thereafter	-
Total	\$ (368,385)

**SUMMARY OF REMAINING DEFERRED
OUTFLOWS AND INFLOWS OF RESOURCES
GASB Statement No. 68**

<u>Date Established</u>	<u>Source</u>	<u>Recognition Period (years)</u>	<u>Original Amount</u>	<u>Years Remaining</u>	<u>Remaining Amount</u>	<u>Amount Recognized in Current Expense</u>
<u>Deferred Outflows of Resources</u>						
9/30/2015	Investment Exp. Loss	5.0	\$ 389,533	2.0	\$ 155,812	\$ 77,907
9/30/2018	Liability Exp. Loss	1.0	<u>164,840</u>	1.0	<u>164,840</u>	<u>164,840</u>
		SUBTOTAL:	554,373		320,652	242,747
<u>Deferred Inflows of Resources</u>						
9/30/2016	Investment Exp. Gain	5.0	(240,553)	3.0	(144,331)	(48,111)
9/30/2017	Investment Exp. Gain	5.0	(441,306)	4.0	(353,045)	(88,261)
9/30/2018	Investment Exp. Gain	5.0	<u>(106,607)</u>	5.0	<u>(106,607)</u>	<u>(21,321)</u>
		SUBTOTAL:	(788,466)		(603,983)	(157,693)
		GRAND TOTAL:	(234,093)		(283,331)	\$ 85,054

SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 68

<u>FY Ending September 30,</u>	<u>Actuarially Determined Contribution</u>	<u>Actual Contribution</u>	<u>Contribution Deficiency (Excess)</u>	<u>Covered Payroll</u>	<u>Actual Contribution as a % of Covered Payroll</u>
2014	\$ 338,509	\$ 338,509	\$ -	\$ -	N/A
2015	337,054	337,054	-	-	N/A
2016	329,946	329,946	-	-	N/A
2017	267,618	267,618	-	-	N/A
2018	285,361	285,361	-	-	N/A

NOTES TO SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 68

Valuation Date: October 1, 2017
Notes Actuarially determined contributions are calculated as of October 1, which is two years prior to the end of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Dollar, Closed
Remaining Amortization Period	10 years
Asset Valuation Method	5-year smoothed market
Inflation	2.5%
Salary Increases	N/A
Investment Rate of Return	6.0%
Retirement Age	N/A
Mortality	RP-2000 Mortality Tables for Annuitants with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates included a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the actuarial valuation as of July 1, 2017, as mandated by Chapter 112.63, Florida Statutes.

Other Information:

Notes See Discussion of Valuation Results in the October 1, 2017 Actuarial Valuation Report

**SENSITIVITY OF NET PENSION LIABILITY
TO THE SINGLE DISCOUNT RATE ASSUMPTION
GASB Statement No. 68**

A single discount rate of 6.00% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 6.00%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between the total actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan’s fiduciary net position was 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 (6.00%) was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan’s net pension liability, calculated using a single discount rate of 6.00%, as well as what the plan’s net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

1% Decrease	Current Single Discount	1% Increase
5.00%	Rate Assumption	7.00%
6.00%	6.00%	7.00%
\$1,079,434	\$353,543	(\$275,585)