

City of Miramar Management Retirement Plan

ACTUARIAL VALUATION REPORT
AS OF OCTOBER 1, 2018

ANNUAL EMPLOYER CONTRIBUTION FOR THE FISCAL YEAR
ENDING SEPTEMBER 30, 2020



April 10, 2019

Board of Trustees
City of Miramar Management Retirement Plan
Miramar, Florida

Dear Board Members:

The results of the October 1, 2018 Annual Actuarial Valuation of the City of Miramar Management Retirement Plan 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, 2020, and to determine the actuarial information for GASB Statement No. 67 for the fiscal year ending September 30, 2018. 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 in Section A 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 Plan Administrator concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked 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 Plan Administrator.

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 Methods. The assumed mortality rates detailed in the Actuarial Assumptions and Methods section were prescribed by the Florida Statutes in accordance with 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 Retirement System 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.

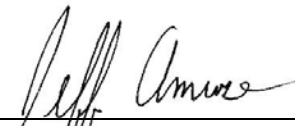
The signing actuaries are independent of the plan sponsor.

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 AND COMPANY

By: 
Jeffrey Amrose, MAAA
Enrolled Actuary No. 17-6599


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SECTION A

DISCUSSION OF VALUATION RESULTS

DISCUSSION OF VALUATION RESULTS

Comparison of Required Employer Contributions

The minimum required employer contribution developed in this year's valuation is compared below with that of the previous valuation:

	For FYE 9/30/2020 Based on 10/1/2018 Valuation	For FYE 9/30/2019 Based on 10/1/2017 Valuation	Increase (Decrease)
Required Employer Contribution*	\$ 3,285,410	\$ 3,096,794	\$ 188,616
As % of Covered Payroll	25.43 %	27.07 %	(1.64) %

** The contribution has been adjusted for interest on the basis that payment is made on the first day of the fiscal year.*

The required City contribution for the fiscal year ending September 30, 2018 was \$3,111,065. The actual City contribution made was \$3,111,065.

Revisions in Benefits

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

Revisions in Actuarial Assumptions or Methods

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

Actuarial Experience

During the past year, there was a net actuarial gain of \$1,227,621 which means that actual experience was more favorable than expected. The gain is primarily due to recognized investment earnings above the assumed rate. The actual investment return was 11.0%, and the expected return was 7.0%. The net actuarial gain has decreased the required employer contribution by 0.66% of covered payroll.

Funded Ratio

The funded ratio, one measure of the Plan's financial health, is equal to the actuarial value of assets divided by the actuarial accrued (past service) liability. The funded ratio is 70.4% this year compared to 65.0% last year.

Analysis of Change in Employer Contribution

The components of change in the required employer contribution are as follows:

Contribution Rate Last Year	27.07 %
Change in Actuarial Assumptions/Method	0.00
Change in Plan Provisions	0.00
Experience (Gains) or Losses	(0.66)
Payment on Unfunded Liability	(1.13)
Change in Normal Cost Rate	0.42
Change in Administrative Expense	<u>(0.27)</u>
Contribution Rate This Year	25.43

Other Cost Considerations

Due to the recent ordinances that allow members to purchase additional airtime service and Cost of Living Adjustments (“COLA”) the City’s exposure to risk has increased. If the experience of the Plan does not meet the assumptions used to determine the cost of the additional airtime service purchase and the COLA’s, there can be a significant increase in the Actuarially Determined Employer Contributions. In addition, there has been an influx of new members into this Plan in recent years (64 active employees in 2013 compared to 137 in 2018) which has increased the Actuarially Determined Employer Contributions as a dollar amount.

Conclusion

The remainder of this Report includes detailed actuarial valuation results, pension fund 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. 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;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. 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 rate shown on page 1 may be considered as a minimum contribution rate that complies with the Board's funding. 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:

	<u>2018</u>	<u>2017</u>
Ratio of the market value of assets to payroll	3.38	3.24
Ratio of actuarial accrued liability to payroll	4.80	4.98
Ratio of actives to retirees and beneficiaries	2.2	2.1
Ratio of net cash flow to market value of assets	5.60 %	6.55 %

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.

SECTION B

VALUATION RESULTS

PARTICIPANT DATA		
	October 1, 2018	October 1, 2017
ACTIVE MEMBERS		
Number	137	124
Covered Annual Payroll	\$ 12,482,538	\$ 11,053,089
Average Annual Payroll	\$ 91,113	\$ 89,138
Average Age	47.4	47.4
Average Past Service	4.6	4.5
Average Age at Hire	42.8	42.9
RETIREES, BENEFICIARIES & DROP		
Number	62	59
Annual Benefits	\$ 2,812,921	\$ 2,843,193
Average Annual Benefit	\$ 45,370	\$ 48,190
Average Age	64.3	63.3
DISABILITY RETIREES		
Number	0	0
Annual Benefits	\$ 0	\$ 0
Average Annual Benefit	\$ 0	\$ 0
Average Age	0.0	0.0
TERMINATED VESTED MEMBERS		
Number	11	7
Annual Benefits	\$ 406,121	\$ 231,756
Average Annual Benefit	\$ 36,920	\$ 33,108
Average Age	48.9	46.7

ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION (ADEC)		
	October 1, 2018	October 1, 2017
A. Valuation Date		
B. ADEC to Be Paid During Fiscal Year Ending	9/30/2020	9/30/2019
C. Assumed Date of Employer Contrib.	10/1/2019	10/1/2018
D. Annual Payment to Amortize Unfunded Actuarial Liability	\$ 1,313,736	\$ 1,360,710
E. Employer Normal Cost	1,860,466	1,631,147
F. ADEC if Paid on the Valuation Date: D+E	3,174,202	2,991,857
G. ADEC Adjusted for Frequency of Payments	3,174,202	2,991,857
H. ADEC as % of Covered Payroll	25.43%	27.07%
I. Assumed Rate of Increase in Covered Payroll to Contribution Year	3.50%	3.50%
J. Covered Payroll for Contribution Year	12,919,427	11,439,947
K. ADEC for Contribution Year: H x J	3,285,410	3,096,794
L. ADEC as % of Covered Payroll in Contribution Year: K ÷ J	25.43%	27.07%

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	\$45,336,771	\$39,529,368
b. Vesting Benefits	2,016,382	1,912,020
c. Disability Benefits	-	-
d. Preretirement Death Benefits	1,073,250	973,092
e. Return of Member Contributions	243,521	235,442
f. Total	48,669,924	42,649,922
2. Inactive Members		
a. Service Retirees & Beneficiaries	33,725,052	34,162,966
b. Disability Retirees	-	-
c. Terminated Vested Members	3,924,799	1,929,775
d. Total	37,649,851	36,092,741
3. Total for All Members	86,319,775	78,742,663
C. Actuarial Accrued (Past Service) Liability under Entry Age Normal (AAL)	59,978,402	55,064,832
D. Actuarial Value of Accumulated Plan Benefits per FASB No. 35	61,251,563	54,622,073
E. Plan Assets		
1. Market Value	42,209,208	35,798,291
2. Actuarial Value	42,209,208	35,798,291
F. Unfunded Actuarial Accrued Liability: C - E2	17,769,194	19,266,541
G. Actuarial Present Value of Projected Covered Payroll	95,632,056	87,234,248
H. Actuarial Present Value of Projected Member Contributions	12,924,672	11,789,709

CALCULATION OF EMPLOYER NORMAL COST		
A. Valuation Date	October 1, 2018	October 1, 2017
B. Normal Cost for		
1. Service Retirement Benefits	\$3,108,860	\$2,700,143
2. Vesting Benefits	190,725	172,904
3. Disability Benefits	-	-
4. Preretirement Death Benefits	72,457	65,421
5. Return of Member Contributions	<u>58,455</u>	<u>53,031</u>
6. Total for Future Benefits	3,430,497	2,991,499
7. Assumed Amount for Administrative Expenses	<u>116,984</u>	<u>133,473</u>
8. Total Normal Cost	3,547,481	3,124,972
C. Expected Member Contribution	1,687,015	1,493,825
D. Employer Normal Cost: B8-C	1,860,466	1,631,147
E. Employer Normal Cost as a % of Covered Payroll	14.90%	14.76%

LIQUIDATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

Original UAAL				Current UAAL		
Date Established	Description	Amort'n Years	Amount	Years Left	Amount	Payment
10/1/03	Initial UAAL	30	\$ 576,847	15	\$ 619,022	\$ 51,552
10/1/04	Actuarial (Gain) Loss	30	659,458	16	738,213	58,519
10/1/05	Actuarial (Gain) Loss	30	85,592	17	101,056	7,654
10/1/05	Assumption Change	30	101,895	17	120,300	9,112
10/1/06	Actuarial (Gain) Loss	30	1,736,056	18	2,077,525	150,868
10/1/07	Actuarial (Gain) Loss	30	1,900,257	18	2,187,378	158,846
10/1/07	Assumption Change	30	1,561,412	18	1,797,335	130,521
10/1/08	Actuarial (Gain) Loss	30	3,992,703	18	4,619,434	335,459
10/1/09	Actuarial (Gain) Loss	30	(439,958)	18	(495,802)	(36,005)
10/1/09	Amendment	30	61,594	18	69,413	5,041
10/1/10	Actuarial (Gain) Loss	30	(135,034)	18	(147,301)	(10,697)
10/1/11	Actuarial (Gain) Loss	30	745,122	18	804,050	58,389
10/1/11	Amendment	30	(74,330)	18	(80,209)	(5,825)
10/1/12	Actuarial (Gain) Loss	30	(472,148)	18	(501,732)	(36,435)
10/1/12	Assumption Change	30	639,099	18	679,147	49,319
10/1/13	Actuarial (Gain) Loss	30	1,351,080	18	1,418,535	103,013
10/1/13	Assumption Change	30	1,023,515	18	1,074,616	78,038
10/1/14	Actuarial (Gain) Loss	30	(142,331)	18	(146,741)	(10,656)
10/1/14	Amendment	30	564,098	18	581,580	42,234
10/1/15	Actuarial (Gain) Loss	30	2,504,655	18	2,547,660	185,009
10/1/16	Actuarial (Gain) Loss	30	1,481,807	18	1,477,622	107,304
10/1/16	Assumption Change	30	1,050,286	18	1,047,320	76,055
10/1/16	Amendment	30	81,455	18	81,225	5,898
10/1/17	Actuarial (Gain) Loss	20	(1,690,593)	19	(1,672,831)	(116,818)
10/1/18	Actuarial (Gain) Loss	20	(1,227,621)	20	(1,227,621)	(82,659)
			15,934,917		17,769,194	1,313,736

The UAAL is being amortized as a level percent of payroll over the number of years remaining in the amortization period. The following schedule illustrates the expected amortization of the UAAL:

Amortization Schedule	
Year	Expected UAAL
2018	\$ 17,769,194
2019	17,607,326
2020	17,384,942
2021	17,096,069
2022	16,734,272
2023	16,292,601
2028	12,601,965
2033	5,502,013
2038	-

ACTUARIAL GAINS AND LOSSES

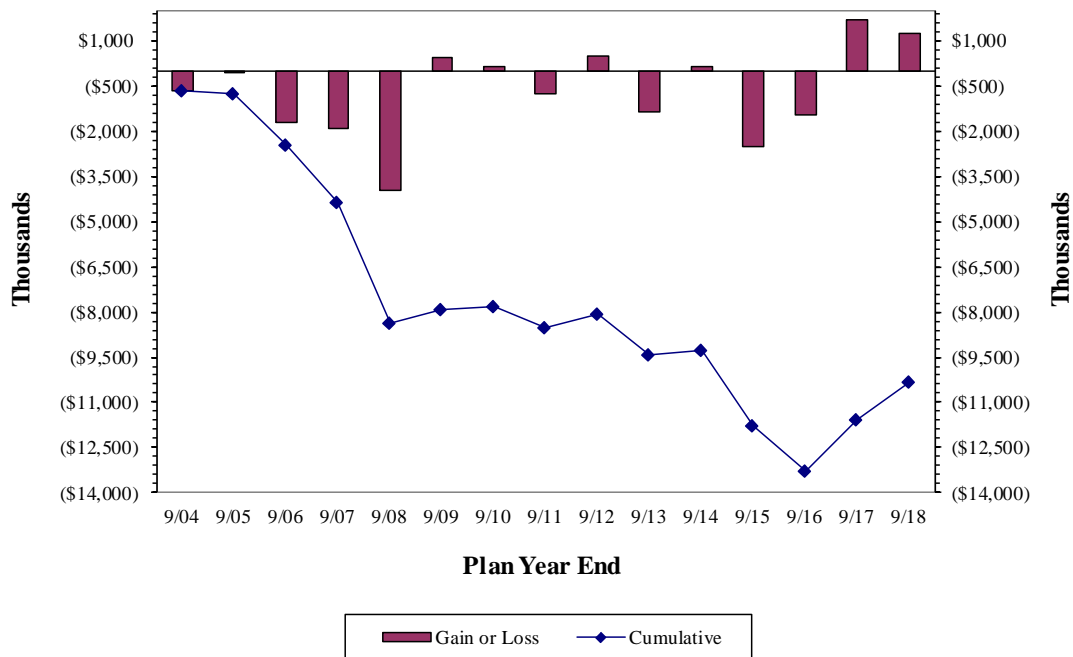
The assumptions used to anticipate mortality, employment turnover, investment income, expenses, salary increases, and other factors have been based on long range trends and expectations. Actual experience can vary from these expectations. The variance is measured by the gain and loss for the period involved. 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.

1.	Last Year's UAAL	19,266,541
2.	Last Year's Employer Normal Cost	1,598,555
3.	Last Year's Contributions	3,111,065
4.	Interest at the Assumed Rate on:	
	a. 1 and 2 for one year	1,460,558
	b. 3 from dates paid	217,775
	c. a - b	1,242,783
5.	This Year's UAAL Prior to Revision:	
	1 + 2 - 3 + 4c	18,996,815
6.	Change in UAAL Due to Plan Amendments and/or Changes in Actuarial Assumptions	0
7.	This Year's Expected UAAL: 5 + 6	18,996,815
8.	This Year's Actual UAAL	17,769,194
9.	This Year's Gain (Loss): 7 - 8	1,227,621
10.	Gain (Loss) Due to Investments	1,436,298
11.	Gain (Loss) Due to Other Causes	(208,677)

Net actuarial gains/(losses) in previous years have been as follows:

Year Ended 9/30	Gain (Loss)
9/30/04	\$ (659,458)
9/30/05	(85,592)
9/30/06	(1,736,056)
9/30/07	(1,900,257)
9/30/08	(3,992,703)
9/30/09	439,958
9/30/10	135,034
9/30/11	(745,122)
9/30/12	472,148
9/30/13	(1,351,080)
9/30/14	142,331
9/30/15	(2,504,655)
9/30/16	(1,481,807)
9/30/17	1,690,593
9/30/18	1,227,621

Actuarial Gain (+) or Loss (-)



The fund earnings and salary increase assumptions have 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 and salary increase rates compared to the assumed rates for the last few years:

Year Ending	Investment Return		Salary Increases	
	Actual	Assumed	Actual	Assumed
9/30/2003	(0.4) %	8.5 %	N/A %	4.5 %
9/30/2004	8.6	8.5	14.2	4.5
9/30/2005	6.5	8.5	1.9	4.5
9/30/2006	9.0	8.5	7.9	4.5
9/30/2007	10.4	8.5	6.5	4.5
9/30/2008	(10.9)	7.5	14.0	4.5
9/30/2009	10.9	7.5	2.1	4.5
9/30/2010	8.3	7.5	0.7	4.5
9/30/2011	4.3	7.5	2.7	4.5
9/30/2012	11.5	7.5	1.1	4.5
9/30/2013	8.9	7.25	5.7	4.0
9/30/2014	11.1	7.00	4.3	4.0
9/30/2015	1.7	7.00	1.5	4.0
9/30/2016	9.8	7.00	8.2	4.0
9/30/2017	11.6	7.00	1.5	4.0
9/30/2018	11.0	7.00	5.9	4.0
Averages	6.9 %	---	5.1 %	---

The actual investment return rates shown above are based on the actuarial value of assets. The actual salary increase rates shown above are the increases received by those active members who were included in the actuarial valuation both at the beginning and the end of each year.

**Actual (A) Compared to Expected (E) Decrements
Among Active Employees**

Year Ended	Number Added During Year		Service Retirement		Disability Retirement		Death		Terminations				Active Members End of Year
	A	E	A	E	A	E	A	E	Vested	Other	Totals		
									A	A	A	E	
9/30/2003	12	1	0	0	0	0	0	0	1	0	1	0	11
9/30/2004	6	1	0	0	0	0	0	0	1	0	1	0	16
9/30/2005	1	0	0	1	0	0	0	0	0	0	0	0	17
9/30/2006	17	1	1	2	0	0	0	0	0	0	0	0	33
9/30/2007	20	6	5	3	0	0	0	0	1	0	1	1	47
9/30/2008	9	5	5	3	0	0	0	0	0	0	0	1	51
9/30/2009	6	2	1	2	0	0	0	0	0	1	1	2	55
9/30/2010	2	8	4	4	0	0	0	0	2	2	4	2	49
9/30/2011	17	9	8	4	0	0	0	0	0	1	1	2	57
9/30/2012	11	5	5	2	0	0	0	0	0	0	0	2	63
9/30/2013	9	8	4	1	0	0	0	0	1	3	4	3	64
9/30/2014	34	8	3	2	0	0	0	0	2	3	5	3	90
9/30/2015	31	15	5	1	0	0	1	0	3	6	9	3	106
9/30/2016	32	20	6	1	0	0	0	0	2	12	14	4	118
9/30/2017	18	12	5	2	0	0	0	0	2	5	7	6	124
9/30/2018	29	16	1	2	0	0	0	0	4	11	15	6	137
9/30/2019				6		0		0				6	
16 Yr Totals*	254	117	53	30	0	0	1	0	19	44	63	35	

* Totals are through current Plan Year only

RECENT HISTORY OF VALUATION RESULTS							
Valuation Date	Number of Members		Covered Annual Payroll	Actuarial Value of Assets	UFAAL	Employer Normal Cost	
	Active	Inactive				Amount	% of Payroll
10/1/03	11	1	\$1,101,522	\$1,378,709	\$ 576,847	\$ 95,239	8.65 %
10/1/04	16	2	1,887,116	2,026,874	1,228,674	181,392	9.61
10/1/05	17	2	1,998,100	2,608,948	1,382,058	218,430	10.93
10/1/06	33	3	3,493,380	4,521,623	3,128,178	336,632	9.64
10/1/07	47	11	4,659,002	6,988,362	6,756,167	671,995	14.42
10/1/08	51	16	5,566,583	7,553,209	10,787,186	775,138	13.92
10/1/09	55	17	5,913,306	9,749,066	10,790,161	650,327	11.00
10/1/10	49	23	5,004,568	11,694,354	11,071,572	533,184	10.65
10/1/11	57	30	5,446,548	14,612,639	11,888,796	577,202	10.60
10/1/12	63	35	5,674,807	17,761,047	12,235,384	637,460	11.23
10/1/13	64	40	5,976,124	20,623,426	14,720,041	724,286	12.12
10/1/14	90	44	8,344,193	23,621,426	15,340,971	1,110,558	13.31
10/1/15	106	51	9,585,631	25,199,798	17,939,319	1,331,778	13.89
10/1/16	118	59	10,962,290	30,594,737	20,750,484	1,598,555	14.58
10/1/17	124	66	11,053,089	35,798,291	19,266,541	1,631,147	14.76
10/1/18	137	73	12,482,538	42,209,208	17,769,194	1,860,466	14.90

RECENT HISTORY OF REQUIRED AND ACTUAL CONTRIBUTIONS				
Valuation	End of Year To Which Valuation Applies	Required Contributions		Actual Contributions
		Amount	% of Payroll	
10/1/02	9/30/04	\$ 154,083	- %	\$ 154,083
10/1/03	9/30/05	156,190	13.70	232,933
10/1/04	9/30/06	270,709	13.86	292,975
10/1/05	9/30/07	310,205	15.00	310,205
10/1/06	9/30/08	538,370	14.89	772,350
10/1/07	9/30/09	1,069,856	18.00	1,069,856
10/1/08	9/30/10	1,067,649	21.36	1,140,550
10/1/09	9/30/11	1,286,546	20.92	1,286,546
10/1/10	9/30/12	1,195,531	22.97	1,195,531
10/1/11	9/30/13	1,301,681	22.98	1,301,681
10/1/12	9/30/14	1,414,321	24.08	1,414,321
10/1/13	9/30/15	1,640,338	26.52	1,640,338
10/1/14	9/30/16	2,099,470	24.31	2,099,470
10/1/15	9/30/17	2,496,156	25.16	2,496,156
10/1/16	9/30/18	3,111,065	27.42	3,111,065
10/1/17	9/30/19	3,096,794	27.07	---
10/1/18	9/30/20	3,285,410	25.43	---

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) percent-of-payroll contributions over a reasonable period of future years.

Actuarial Value of Assets - The Actuarial Value of Assets is set equal to the Market Value of Assets.

Valuation Assumptions

The actuarial assumptions used in the valuation are shown in this Section. The covered group is too small to provide statistically significant experience on which to base certain demographic assumptions. Mortality is based on a commonly used fully generational mortality table and projection scale that is mandated by the Florida Statutes. The retirement age assumption tracks the eligibility requirements for normal retirement. The investment return assumption was updated in the years 2013 and 2014.

Economic Assumptions

The investment return rate assumed in the valuation is 7.0% per year, compounded annually (net of investment expenses).

The **wage inflation rate** assumed in this valuation was 2.5% per year. The Wage Inflation Rate is defined to be the portion of total pay increases for an individual that are due to macro-economic forces including productivity, price inflation, and labor market conditions. The wage inflation rate does not include pay changes related to individual merit and seniority effects.

The assumed **real rate of return** over wage inflation is defined to be the portion of total investment return that is more than the assumed wage inflation rate. Considering other economic assumptions, the 7.0% investment return rate translates to an assumed real rate of return over wage inflation of 4.5%.

The active member population is assumed to remain constant. For purposes of financing the unfunded liabilities, total payroll is assumed to grow at 3.5% per year. The most recent ten year average is 8.66%.

Pay increase assumptions for individual active members are shown below. Part of the assumption for each age is for merit and/or seniority increase, and the other 2.5% recognizes wage inflation, including price inflation, productivity increases, and other macro-economic forces.

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member’s current salary to the salaries upon which benefits will be based.

Years of Service	% Increase in Salary		
	Merit and Seniority	Base (Economic)	Total Increase
1	1.5%	2.5%	4.0%
5	1.5%	2.5%	4.0%
10	1.5%	2.5%	4.0%
15	1.5%	2.5%	4.0%
20 +	1.5%	2.5%	4.0%

Demographic Assumptions

The mortality table is RP-2000 Combined Healthy Participant Mortality Table (for pre-retirement mortality) and the RP-2000 Mortality Table for Annuitants (for post-retirement mortality), with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 50% blue collar adjustment and a 50% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates used for Regular Class members of the Florida Retirement System (FRS) in the July 1, 2016 Actuarial Valuation Report, as mandated by Florida House Bill 1309.

FRS Healthy Post-Retirement Mortality for Regular Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	0.55 %	0.23 %	34.77	38.40
55	0.60	0.32	30.14	33.39
60	0.76	0.47	25.48	28.48
65	1.13	0.73	20.95	23.74
70	1.75	1.22	16.69	19.27
75	2.92	2.07	12.82	15.19
80	4.95	3.47	9.47	11.56

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

FRS Pre-Retirement Mortality for Regular Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	0.21 %	0.15 %	35.69	38.75
55	0.36	0.24	30.57	33.61
60	0.61	0.39	25.64	28.59
65	1.07	0.70	20.99	23.76
70	1.75	1.22	16.69	19.27
75	2.92	2.07	12.82	15.19
80	4.95	3.47	9.47	11.56

This assumption is used to measure the probabilities of active members dying prior to 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 Regular Class members of the Florida Retirement System (FRS) in the July 1, 2016 Actuarial Valuation Report, as mandated by Florida House Bill 1309.

FRS Disabled Mortality for Regular Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	2.38 %	1.35 %	20.25	23.74
55	3.03	1.87	17.78	20.46
60	3.67	2.41	15.55	17.43
65	4.35	3.13	13.44	14.58
70	5.22	4.29	11.39	11.96
75	6.58	5.95	9.43	9.65
80	8.70	8.23	7.65	7.66

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Retirement Ages	Years of Service		
	10 - 19.99	20 - 24.99	25+
45 - 54	0 %	15 %	100 %
55 - 61	5	25	100
62 - 64	5	50	100
65+	100	100	100

10% is added to assumed rate upon first eligibility

Rates of separation from active membership were as shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

Age	Turnover
25	16.6%
30	15.0%
35	11.8%
40	8.2%
45	4.8%
50	1.7%
55	0.6%
60	0.5%

Rates of disability are not applicable.

Changes since prior Valuation None.

Miscellaneous and Technical Assumptions

<i>Administrative & Investment Expenses</i>	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 prior two years' expenses. Assumed administrative expenses are added to the Normal Cost.
<i>Benefit Service</i>	Exact fractional service is used to determine the amount of benefit payable.
<i>Decrement Operation</i>	Disability and mortality decrements operate during retirement eligibility.
<i>Decrement Timing</i>	Decrements of all types are assumed to occur at the beginning of the year.
<i>Eligibility Testing</i>	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
<i>Forfeitures</i>	For vested separations from service, it is assumed that 0% of members separating will withdraw their contributions and forfeit an employer financed benefit. It was further assumed that the liability at termination is the greater of the vested deferred benefit (if any) or the member's accumulated contributions.
<i>Incidence of Contributions</i>	Employer contributions are assumed to be made on the first day of the fiscal year.
<i>Marriage Assumption</i>	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
<i>Normal Form of Benefit</i>	A 100% Joint and Survivor annuity is the normal form of benefit.
<i>Pay Increase Timing</i>	Middle of fiscal year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
<i>Service Credit Accruals</i>	It is assumed that members accrue one year of service credit per year.
<i>Structure for Current Dual Service Members</i>	The five active dual service members as of October 1, 2015 are assumed to elect the benefit structure with the greatest present value.

GLOSSARY

<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 contributions (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 Contributions (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>	The initial amortization period for new bases is 20 years. All bases with more than 20 years remaining as of October 1, 2016 were shortened to 20 years.
<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 the normal cost rate from last year and the normal cost rate from this year.
<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. 67 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 68 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>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)	\$ -	\$ -
B. Receivables		
1. Member Contributions	\$ -	\$ -
2. Employer Contributions	-	-
3. Investment Income and Other Receivables	39,229	43,895
4. Prepaid Benefit Payment	201,296	191,307
5. Total Receivables	\$ 240,525	\$ 235,202
C. Investments		
1. Short Term Investments	\$ 465,872	\$ 283,331
2. Domestic Equities	28,529,969	22,920,504
3. International Equities	-	-
4. Domestic Fixed Income	8,055,947	7,998,278
5. International Fixed Income	-	-
6. Real Estate	4,721,300	4,343,453
7. Alternative Investments	-	-
8. DROP Investments (held outside the Plan)	1,804,841	1,516,231
9. Total Investments	\$ 43,577,929	\$ 37,061,797
D. Liabilities		
1. Benefits Payable	\$ -	\$ -
2. Accrued Expenses and Other Payables	14,709	-
3. Total Liabilities	\$ 14,709	\$ -
E. Total Market Value of Assets Available for Benefits	\$ 43,803,745	\$ 37,296,999
F. DROP Accounts	\$ 1,804,841	\$ 1,516,231
G. Member Contributions Payable*	\$ 42,477	\$ 42,477
H. Employee Contributions Receivable (Buyback Receivable)	\$ 252,781	60,000
I. Market Value Net of Reserves	\$ 42,209,208	\$ 35,798,291
J. Allocation of Investments		
1. Short Term Investments	1.1%	0.8%
2. Domestic Equities	65.5%	61.8%
3. International Equities	0.0%	0.0%
4. Domestic Fixed Income	18.5%	21.6%
5. International Fixed Income	0.0%	0.0%
6. Real Estate	10.8%	11.7%
7. Alternative Investments	0.0%	0.0%
8. DROP Investments	4.1%	4.1%
9. Total Investments	100.0%	100.0%

* Member contributions owed to certain dual service members based on assumed elected new benefit structure.

Reconciliation of Plan Assets

Item	September 30	
	2018	2017
A. Market Value of Assets at Beginning of Year	\$ 37,296,999	\$ 31,283,086
B. Revenues and Expenditures		
1. Contributions		
a. Member Contributions (Including Service Purchases)	\$ 1,762,120	\$ 2,498,920
b. Employer Contributions	3,111,065	2,496,156
c. Other Income	-	-
d. Total	<u>\$ 4,873,185</u>	<u>\$ 4,995,076</u>
2. Investment Income		
a. Interest, Dividends, and Other Income	\$ 852,023	\$ 779,847
b. Investment Gains/(Losses)*	3,513,144	3,142,906
c. Investment Expenses	<u>(129,697)</u>	<u>(154,992)</u>
d. Net Investment Income	<u>\$ 4,235,470</u>	<u>\$ 3,767,761</u>
3. Benefits and Refunds		
a. Regular Monthly Benefits	\$ (2,208,493)	\$ (2,346,411)
b. Refunds	(58,236)	(217,512)
c. Lump Sum Benefits Paid	-	-
d. DROP Distributions	<u>(215,500)</u>	<u>(70,714)</u>
e. Total	<u>\$ (2,482,229)</u>	<u>\$ (2,634,637)</u>
4. Administrative and Miscellaneous Expenses	\$ (119,680)	\$ (114,287)
5. Transfers	\$ -	\$ -
C. Market Value of Assets at End of Year	\$ 43,803,745	\$ 37,296,999
D. DROP Accounts	\$ 1,804,841	\$ 1,516,231
E. Member Contributions Payable**	\$ 42,477	\$ 42,477
F. Employee Contributions Receivable (Buyback Receivable)	\$ 252,781	\$ 60,000
G. Net Market Value of Assets at End of Year: C-D-E	\$ 42,209,208	\$ 35,798,291

* Split between realized and unrealized gains/losses was not available.

** Member contributions owed to certain dual service members based on assumed elected new benefit structure.

Year Ending	Investment Rate of Return	
	Market Value	Actuarial Value
2003	(0.4) %	(0.4) %
2004	8.6	8.6
2005	6.5	6.5
2006	9.0	9.0
2007	10.4	10.4
2008	(10.9)	(10.9)
2009	10.9	10.9
2010	8.3	8.3
2011	4.3	4.3
2012	11.5	11.5
2013	8.9	8.9
2014	11.1	11.1
2015	1.7	1.7
2016	9.8	9.8
2017	11.6	11.6
2018	11.0	11.0
Average Returns:		
Last 5 Years	9.0 %	9.0 %
Last 10 Years	8.9 %	8.9 %
All Years	6.9 %	6.9 %

DROP Account Reconciliation

<u>Year Ended 9/30</u>	<u>Balance at Beginning of Year</u>	<u>Credits</u>	<u>Investment Earnings</u>	<u>Distributions</u>	<u>Balance at End of Year</u>
2014	\$ 893,349	\$ 521,656	\$ 68,654	\$ (44,511)	\$ 1,439,148
2015	\$ 1,439,148	\$ 309,414	\$ 37,464	\$ (746,646)	\$ 1,039,380
2016	\$ 1,039,380	\$ 312,308	\$ 44,845	\$ (237,399)	\$ 1,159,134
2017	\$ 1,159,134	\$ 341,653	\$ 86,158	\$ (70,714)	\$ 1,516,231
2018	\$ 1,516,231	\$ 358,061	\$ 146,049	\$ (215,500)	\$ 1,804,841

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	\$ 33,725,052	\$ 34,162,966
b. Terminated Vested Members	3,924,799	1,929,775
c. Other Members	<u>17,370,973</u>	<u>13,907,289</u>
d. Total	55,020,824	50,000,030
2. Non-Vested Benefits	6,230,739	4,622,043
3. Total Actuarial Present Value of Accumulated Plan Benefits: 1d + 2	61,251,563	54,622,073
4. Accumulated Contributions of Active Members	9,483,932	8,020,458
C. Changes in the Actuarial Present Value of Accumulated Plan Benefits		
1. Total Value at Beginning of Year	54,622,073	51,228,855
2. Increase (Decrease) During the Period Attributable to:		
a. Plan Amendment	0	0
b. Change in Actuarial Assumptions	0	0
c. Latest Member Data, Benefits Accumulated and Decrease in the Discount Period	9,254,280	6,298,794
d. Benefits Paid	<u>(2,624,790)</u>	<u>(2,905,576)</u>
e. Net Increase	6,629,490	3,393,218
3. Total Value at End of Period	61,251,563	54,622,073
E. Market Value of Assets	42,209,208	35,798,291

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

Fiscal year ending September 30,	2018	2017	2016	2015	2014
Total Pension Liability					
Service Cost	\$ 2,991,499	\$ 2,861,698	\$ 2,518,825	\$ 1,872,399	\$ 1,413,607
Interest	4,048,676	3,463,509	3,047,764	2,764,576	2,590,498
Benefit Changes	-	85,811	972,222	-	-
Difference between actual & expected experience	508,992	3,175,232	1,431,262	1,111,274	(10,581)
Assumption Changes	-	1,201,912	-	-	-
Benefit Payments	(2,423,993)	(2,417,125)	(2,034,435)	(2,585,438)	(1,286,644)
Refunds	(58,236)	(217,512)	(78,389)	-	-
Other (Change in Buyback Payables)	-	-	-	-	68,898
Net Change in Total Pension Liability	5,066,938	8,153,525	5,857,249	3,162,811	2,775,778
Total Pension Liability - Beginning	56,087,847	47,934,322	42,077,073	38,914,262	36,138,484
Total Pension Liability - Ending (a)	\$ 61,154,785	\$ 56,087,847	\$ 47,934,322	\$ 42,077,073	\$ 38,914,262
Plan Fiduciary Net Position					
Contributions - Employer	\$ 3,111,065	\$ 2,496,156	\$ 2,099,470	\$ 1,640,338	\$ 1,414,321
Contributions - Non-Employer Contributing Entity	-	-	-	-	-
Contributions - Member	1,762,120	2,498,920	2,376,288	1,851,604	1,255,885
Net Investment Income	4,214,420	3,767,761	2,706,817	424,212	2,451,132
Benefit Payments	(2,423,993)	(2,417,125)	(2,034,435)	(2,585,438)	(1,286,644)
Refunds	(58,236)	(217,512)	(78,389)	-	-
Administrative Expense	(98,630)	(114,287)	(152,658)	(140,686)	(77,174)
Other	-	-	-	-	-
Net Change in Plan Fiduciary Net Position	6,506,746	6,013,913	4,917,093	1,190,030	3,757,520
Plan Fiduciary Net Position - Beginning	37,296,999	31,283,086	26,365,993	25,175,963	21,418,443
Plan Fiduciary Net Position - Ending (b)	\$ 43,803,745	\$ 37,296,999	\$ 31,283,086	\$ 26,365,993	\$ 25,175,963
Net Pension Liability - Ending (a) - (b)	17,351,040	18,790,848	16,651,236	15,711,080	13,738,299
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	71.63 %	66.50 %	65.26 %	62.66 %	64.70 %
Covered Payroll*	\$ 11,053,089	\$ 10,962,290	\$ 9,585,631	\$ 8,344,193	\$ 5,976,124
Net Pension Liability as a Percentage of Covered Payroll	156.98 %	171.41 %	173.71 %	188.29 %	229.89 %

* Based on valuation payroll.

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	\$ 38,914,262	\$ 25,175,963	\$ 13,738,299	64.70%	\$ 5,976,124	229.89%
2015	\$ 42,077,073	\$ 26,365,993	\$ 15,711,080	62.66%	\$ 8,344,193	188.29%
2016	\$ 47,934,322	\$ 31,283,086	\$ 16,651,236	65.26%	\$ 9,585,631	173.71%
2017	\$ 56,087,847	\$ 37,296,999	\$ 18,790,848	66.50%	\$ 10,962,290	171.41%
2018	\$ 61,154,785	\$ 43,803,745	\$ 17,351,040	71.63%	\$ 11,053,089	156.98%

** Based on valuation payroll.*

NOTES TO EMPLOYER'S 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	2.50%
Salary Increases	4.0%, including inflation
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates
Mortality	The healthy post-retirement mortality table is the RP-2000 Mortality Table for annuitants with future improvements in mortality projected to all future years using Scale BB. For females, the base mortality rates include a 100% white collar adjustment. For males, the base mortality rates include a 50% blue collar adjustment and a 50% white collar adjustment. These are the same rates used for Regular Class members of the Florida Retirement System (FRS) in the July 1, 2016 FRS actuarial valuation.

Other Information:

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

SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

<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>
2009	\$ 1,069,856	\$ 1,069,856	\$ -	\$ 5,566,583	19.22%
2010	\$ 1,067,649	\$ 1,140,550	\$ (72,901)	\$ 5,913,306	19.29%
2011	\$ 1,286,546	\$ 1,286,546	\$ -	\$ 5,004,568	25.71%
2012	\$ 1,195,531	\$ 1,195,531	\$ -	\$ 5,446,548	21.95%
2013	\$ 1,301,681	\$ 1,301,681	\$ -	\$ 5,674,807	22.94%
2014	\$ 1,414,321	\$ 1,414,321	\$ -	\$ 5,976,124	23.67%
2015	\$ 1,640,338	\$ 1,640,338	\$ -	\$ 8,344,193	19.66%
2016	\$ 2,099,470	\$ 2,099,470	\$ -	\$ 9,585,631	21.90%
2017	\$ 2,496,156	\$ 2,496,156	\$ -	\$ 10,962,290	22.77%
2018	\$ 3,111,065	\$ 3,111,065	\$ -	\$ 11,053,089	28.15%

* Based on valuation payroll.

NOTES TO SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

Valuation Date: October 1, 2016
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 Percent, Closed
Remaining Amortization Period	20 years
Asset Valuation Method	Market Value
Inflation	2.5%
Salary Increases	4.0%, including inflation
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates
Mortality	The healthy post-retirement mortality table is the RP-2000 Mortality Table for annuitants with future improvements in mortality projected to all future years using Scale BB. For females, the base mortality rates include a 100% white collar adjustment. For males, the base mortality rates include a 50% blue collar adjustment and a 50% white collar adjustment. These are the same rates used for Regular Class members of the Florida Retirement System (FRS) in the July 1, 2016 FRS actuarial valuation.

Other Information:
Notes See Discussion of Valuation Results from October 1, 2016 Actuarial Valuation Report.

SINGLE DISCOUNT RATE
GASB Statement No. 67

A single discount rate of 7.00% 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 7.00%. 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 (7.00%) 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 7.00%, 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 6.00%	Current Single Discount Rate Assumption 7.00%	1% Increase 8.00%
\$25,444,204	\$17,351,040	\$11,038,675

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	124	118
2. New Members Included in Current Valuation	29	18
3. Non-Vested Employment Terminations	(9)	(5)
4. Vested Employment Terminations	(4)	(2)
5. Service Retirements	0	(1)
6. DROP Retirements	(1)	(4)
7. Disability Retirements	0	0
8. Deaths	0	0
9. Other--Data Correction	<u>(2)</u>	<u>0</u>
10. Number Included in This Valuation	137	124
B. Terminated Vested Members		
1. Number Included in Last Valuation	7	5
2. Additions from Active Members	4	2
3. Lump Sum Payments/Refund of Contributions	0	0
4. Payments Commenced	0	0
5. Deaths	0	0
6. Other--Data Correction	<u>0</u>	<u>0</u>
7. Number Included in This Valuation	11	7
C. DROP Plan Members		
1. Number Included in Last Valuation	8	7
2. Additions from Active Members	1	4
3. Retirements	(3)	(3)
4. Dual Members with no benefit payable from this Plan	<u>0</u>	<u>0</u>
5. Number Included in This Valuation	6	8
D. Service Retirees, Disability Retirees and Beneficiaries		
1. Number Included in Last Valuation	51	47
2. Additions from Active Members	0	1
3. Additions from Terminated Vested Members	0	0
4. Additions from DROP Plan	3	3
5. Deaths Resulting in No Further Payments	0	0
6. Other--Data Correction	2	0
7. End of Certain Period - No Further Payments	<u>0</u>	<u>0</u>
8. Number Included in This Valuation	56	51

**ACTIVE PARTICIPANT SCATTER
AS OF OCTOBER 1, 2018**

Age Group	Years of Service to Valuation Date											Totals
	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25-29	30+	
25-29 No.	3	2	0	0	0	0	0	0	0	0	0	5
Tot Pay	189,602	120,692	0	0	0	0	0	0	0	0	0	310,294
Avg Pay	63,201	60,346	0	0	0	0	0	0	0	0	0	62,059
30-34 No.	0	2	2	2	2	1	1	0	0	0	0	10
Tot Pay	0	114,825	133,637	138,519	125,100	73,928	66,937	0	0	0	0	652,946
Avg Pay	0	57,412	66,818	69,260	62,550	73,928	66,937	0	0	0	0	65,295
35-39 No.	3	1	2	3	1	2	2	1	0	0	0	15
Tot Pay	260,000	64,575	127,350	194,369	87,353	151,770	124,564	65,418	0	0	0	1,075,399
Avg Pay	86,667	64,575	63,675	64,790	87,353	75,885	62,282	65,418	0	0	0	71,693
40-44 No.	0	2	4	3	0	1	6	4	0	0	0	20
Tot Pay	0	183,791	255,676	229,723	0	58,227	668,651	321,267	0	0	0	1,717,335
Avg Pay	0	91,896	63,919	76,574	0	58,227	111,442	80,317	0	0	0	85,867
45-49 No.	3	2	1	5	3	3	10	3	0	0	0	30
Tot Pay	224,966	124,766	168,001	533,064	342,766	186,451	875,843	284,784	0	0	0	2,740,641
Avg Pay	74,989	62,383	168,001	106,613	114,255	62,150	87,584	94,928	0	0	0	91,355
50-54 No.	2	0	2	3	3	7	1	5	1	0	0	24
Tot Pay	235,000	0	205,584	251,300	330,185	694,248	77,017	482,659	88,925	0	0	2,364,918
Avg Pay	117,500	0	102,792	83,767	110,062	99,178	77,017	96,532	88,925	0	0	98,538
55-59 No.	1	1	1	2	1	2	5	4	1	0	0	18
Tot Pay	170,000	143,416	88,912	342,850	50,166	175,986	463,016	380,352	72,244	0	0	1,886,942
Avg Pay	170,000	143,416	88,912	171,425	50,166	87,993	92,603	95,088	72,244	0	0	104,830
60-64 No.	0	1	1	3	1	4	1	0	0	0	0	11
Tot Pay	0	114,733	155,917	273,988	143,411	336,132	100,330	0	0	0	0	1,124,511
Avg Pay	0	114,733	155,917	91,329	143,411	84,033	100,330	0	0	0	0	102,228
65-69 No.	0	0	0	1	2	0	1	0	0	0	0	4
Tot Pay	0	0	0	95,608	188,192	0	80,996	0	0	0	0	364,796
Avg Pay	0	0	0	95,608	94,096	0	80,996	0	0	0	0	91,199
Total No.	12	11	13	22	13	20	27	17	2	0	0	137
Tot Pay	1,079,568	866,798	1,135,077	2,059,421	1,267,173	1,676,742	2,457,354	1,534,480	161,169	0	0	12,237,782
Avg Pay	89,964	78,800	87,314	93,610	97,475	83,837	91,013	90,264	80,585	0	0	89,327

**INACTIVE PARTICIPANT SCATTER
AS OF OCTOBER 1, 2018**

Age	Terminated Vested		Disabled		Retirees & Beneficiaries	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 40	1	32,470	-	-	2	22,175
40-44	2	39,768	-	-	2	108,180
45-49	4	208,344	-	-	3	95,487
50-54	3	87,401	-	-	4	194,382
55-59	-	-	-	-	10	527,038
60-64	-	-	-	-	14	642,946
65-69	1	38,138	-	-	10	512,330
70-74	-	-	-	-	9	374,579
75-79	-	-	-	-	6	264,185
80-84	-	-	-	-	1	24,558
85-89	-	-	-	-	1	47,061
90 & Up	-	-	-	-	-	-
Total	11	406,121	-	-	62	2,812,921

SECTION F

SUMMARY OF PLAN PROVISIONS

CITY OF MIRAMAR MANAGEMENT RETIREMENT PLAN
SUMMARY OF PLAN PROVISIONS AS OF OCTOBER 1, 2018

A. Ordinances

Plan established under the Code of Ordinances for the City of Miramar, Florida, Chapter 15, Article VI, and was most recently amended under Ordinance No. 16-01 passed and adopted on November 24, 2015. The Plan is also governed by certain provisions Part VII, Chapter 112, Florida Statutes and the Internal Revenue Code.

B. Effective Date

October 1, 2002

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

All full-time management employees are eligible for membership.

F. Credited Service

Service is measured as the total number years and completed months from the date of employment to the date of termination, retirement, disability or death. Vacations and other paid leaves of absence are included. Unpaid leaves of absence are not included. No service is credited for any periods of employment for which the member received a refund of their contributions.

G. Compensation

Fixed monthly compensation. Payments for unused leave are not included.

H. Final Monthly Compensation (FMC)

The average of Compensation over the 3 consecutive years of Credited Service which produce the highest average.

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 62 and 5 years of Credited Service,
- (2) 20 years of Credited Service regardless of age, or
- (3) age 55 and 10 years of Credited Service.

Benefit: Credited Service multiplied by the percentage of FMC as provided in the following table. Maximum benefit equal to 80% of FMC.

YEARS OF CREDITED SERVICE*	MULTIPLIER APPLIED TO SERVICE*
5 or less	3.0%
6	3.2
7	3.4
8	3.6
9	3.8
10	4.0

*Additional Credited Service beyond 10 years is multiplied by 2.75% of FMC.

Benefit Offset: Pension is reduced by the amount received from any of the other three City-sponsored Retirement Plans.

Normal Form of Benefit: 100 % Joint & Survivor Annuity; other options also available.

COLA: None

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 5.0% for each year by which the Early Retirement date precedes age 55.

Normal Form of Benefit: 100 % Joint & Survivor Annuity; other options also available.

COLA: None

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

Not Applicable

M. Non-Service Connected Disability

Not Applicable

N. Death in the Line of Duty

Eligibility: Any vested member who dies prior to commencement of benefits is eligible for survivor benefits.

Benefit: A monthly benefit is computed as though the member retired on their date of death and chose the 100% Joint & Survivor option.

Normal Form of Benefit: Payable for the life of the beneficiary.

COLA: None

In the event that a non-vested member dies with sufficient accumulated sick, comp or vacation time to reach 5 years of Credited Service, it will be presumed that the member completed 5 years of Credited Service and the unused leave accounts will be reduced accordingly. The member's beneficiary will then be eligible for the survivor benefits described above. The beneficiary of a member who dies with less than 5 years of Credited Service will receive a refund of the member's accumulated contributions with interest.

O. Other Pre-Retirement Death

Eligibility: Any vested member who dies prior to commencement of benefits is eligible for survivor benefits.

Benefit: A monthly benefit is computed as though the member retired on their date of death and chose the 100% Joint & Survivor option.

Normal Form of Benefit: Payable for the life of the beneficiary.

COLA: None

In the event that a non-vested member dies with sufficient accumulated sick, comp or vacation time to reach 5 years of Credited Service, it will be presumed that the member completed 5 years of Credited Service and the unused leave accounts will be reduced accordingly. The member's beneficiary will then be eligible for the survivor benefits described above. The beneficiary of a member who dies with less than 5 years of Credited Service will receive a refund of the member's accumulated contributions with interest.

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 Life Annuity, a 10 Year Certain and Life Annuity and the 50% and 75% Joint and Survivor options.

R. Vested Termination

Eligibility: A member has earned a non-forfeitable right to Plan benefits after the completion of 5 years of Credited Service (see vesting table below).

YEARS OF CREDITED SERVICE	VESTED PERCENTAGE
Less Than 5	0%
5 or more	100

Benefit: The member’s accrued Normal Retirement Benefit taking into account compensation earned and service credited as of the date of termination. Benefit is payable at the date the member would have reached their Normal Retirement date.

Normal Form of Benefit: 100 % Joint & Survivor Annuity; other options also available.

COLA: None

Members terminating employment with less than 5 years of Credited Service will receive a refund of the member’s accumulated contributions with interest.

S. Refunds

Eligibility: All members terminating employment with less than 5 years of Credited Service are eligible. Optionally, vested members (those with 5 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 with interest. Interest is currently credited at a rate of 6.0%.

T. Member Contributions

13.515% of Compensation.

U. Employer Contributions

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

V. Cost of Living Increases

Not Applicable

W. 13th Check

Not Applicable

X. Deferred Retirement Option Plan (DROP)

Eligibility: Plan members who have met one of the following criteria are eligible for the DROP:

- (1) age 62 with 5 years of Credited Service, or
- (2) age 55 with 10 years of Credited Service, or
- (3) 20 years of Credited Service regardless of age

Benefit: The member's Credited Service and FAC are frozen upon entry into the DROP. The monthly retirement benefit as described under Normal Retirement is calculated based upon the frozen Credited Service and FAC.

Maximum
DROP Period: 60 months

Interest
Credited: The member's DROP account shall be self-directed, using self-directed mutual fund options available under the DROP program.

Normal Form
of Benefit: Lump Sum, Direct Rollover, or Partial Lump Sum with a Direct Rollover of remaining balance.

Y. Other Ancillary Benefits

There are no ancillary retirement type benefits not required by statutes but which might be deemed a City of Miramar Management Retirement Plan liability if continued beyond the availability of funding by the current funding source.

Z. Changes from Previous Valuation

None.