

February 21, 2020

Board of Trustees
City of Tarpon Springs
Firefighters' Pension Trust Fund
444 Huey Ave. S.
Tarpon Springs, FL 34689

RE: GASB Statement No.67 and No.68 – City of Tarpon Springs Firefighters' Pension Trust Fund

Dear Board:

We are pleased to present to the Board GASB Statement No.67 and No.68 measured as of September 30, 2019 for the City of Tarpon Springs Firefighters' Pension Trust Fund.

The calculation of the liability associated with the benefits referenced in this report was performed for satisfying the requirements of GASB No.67 and No.68 and is not applicable for other purposes, such as determining the plan's funding requirements. A calculation of the plan's liability for other purposes may produce significantly different results.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of October 1, 2018. The total pension liability was rolled-forward from the valuation date to the plan's fiscal year ending September 30th, 2019 using generally accepted actuarial principles. It is our opinion that the assumptions used for this purpose are internally consistent, reasonable, and comply with the requirements under GASB No.67 and No.68.

Certain schedules should include a 10-year history of information. As provided for in GASB No.67 and No.68, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB No.67 and No.68.

To the best of our knowledge, these statements are complete and accurate and are in accordance with generally recognized actuarial practices and methods. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact me at 239-433-5500.

Respectfully submitted,

Foster & Foster, Inc.

By: 

Douglas H. Lozen, EA, MAAA
Enrolled Actuary #17-7778

Enclosures

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Prepaid Benefits	123,346
Money Market	557,000
Cash	125,366
Total Cash and Equivalents	805,712
Receivables:	
From Broker for Investments Sold	39,008
Tax Reclaims	6,236
Investment Income	41,694
Total Receivable	86,938
Investments:	
U. S. Bonds and Bills	80,503
Federal Agency Guaranteed Securities	2,179,864
Corporate Bonds	2,297,106
Municipal Obligations	10,611
Stocks	17,630,715
Pooled/Common/Commingled Funds:	
Real Estate	4,246,022
Total Investments	26,444,821
Total Assets	27,337,471
<u>LIABILITIES</u>	
Payables:	
To Broker for Investments Purchased	38,316
Total Liabilities	38,316
NET POSITION RESTRICTED FOR PENSIONS	27,299,155

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED SEPTEMBER 30, 2019
Market Value Basis

ADDITIONS

Contributions:

Member	255,510	
City	777,408	
State	217,232	
 Total Contributions		 1,250,150
 Investment Income:		
Net Increase in Fair Value of Investments	599,186	
Interest & Dividends	268,369	
Less Investment Expense ¹	(123,283)	
 Net Investment Income		 744,272
 Total Additions		 1,994,422

DEDUCTIONS

Distributions to Members:

Benefit Payments	1,457,817	
Lump Sum DROP Distributions	30,276	
Refunds of Member Contributions	0	
 Total Distributions		 1,488,093
 Administrative Expense		 60,473
 Total Deductions		 1,548,566
 Net Increase in Net Position		 445,856
 NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		26,853,299
 End of the Year		 27,299,155

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

NOTES TO THE FINANCIAL STATEMENTS
(For the Year Ended September 30, 2019)

Plan Administration

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of:

- a) Two City Commission appointees,
- b) Two Members of the System elected by a majority of the other covered Firefighters, and
- c) A fifth Member elected by the other four and appointed by the Commission.

Plan Membership as of October 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	33
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	7
Active Plan Members	38
	78

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the October 1, 2018 Actuarial Valuation Report for the City of Tarpon Springs Firefighters' Pension Trust Fund prepared by Foster & Foster Actuaries and Consultants.

Incorporated are the benefit changes for measurement date 09/30/2019 as noted under the Notes to Schedule of Changes in Net Pension Liability and Related Ratios.

Contributions

Employee: 9.45% of total pay.

Premium Tax: 1.85% tax on premiums for fire insurance policies.

City: Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability over 30 years, but not less than 7.00% of Members' salaries.

Investments

Investment Policy:

The following was the Board's adopted asset allocation policy as of September 30, 2019:

Asset Class	Target Allocation
Domestic Equity	53.0%
International Equity	12.0%
Domestic Fixed Income	20.0%
Real Estate	15.0%
Total	100.0%

Concentrations:

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan's Fiduciary Net Position.

Rate of Return:

For the year ended September 30, 2019, the annual money-weighted rate of return on Pension Plan investments, net of Pension Plan investment expense, was 2.80 percent.

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Deferred Retirement Option Program

Eligibility: Satisfaction of Normal Retirement requirements.

Participation: Not more than 60 months (future retirees cannot extend beyond 30 years of combined service).

Rate of Return: Net rate of return on the actuarial value of assets credited annually.

The DROP balance as September 30, 2019 is \$107,219¹.

¹ Investment returns for June 2018 and September 2018 are included.

NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the Sponsor on September 30, 2019 were as follows:

Total Pension Liability	\$ 30,948,998
Plan Fiduciary Net Position	\$ (27,299,155)
Sponsor's Net Pension Liability	<u>\$ 3,649,843</u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	88.21%

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of October 1, 2018 updated to September 30, 2019 using the following actuarial assumptions:

Inflation	2.50%
Salary Increases	Service based
Discount Rate	7.75%
Investment Rate of Return	7.75%

Mortality Rate Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Mortality Rate Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Mortality Rate Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The above assumption rates were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in Milliman’s July 1, 2016 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated November 15, 2019.

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

For 2019 the inflation rate assumption of the investment advisor was 2.50%.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of September 30, 2019 are summarized in the following table:

<u>Asset Class</u>	<u>Long Term Expected Real Rate of Return</u>
Domestic Equity	7.50%
International Equity	8.50%
Domestic Fixed Income	2.50%
Real Estate	4.50%

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Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.75 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those 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 was applied to all periods of projected benefit payments to determine the Total Pension Liability.

	1% Decrease 6.75%	Current Discount Rate 7.75%	1% Increase 8.75%
Sponsor's Net Pension Liability	\$ 7,498,689	\$ 3,649,843	\$ 470,531

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Fiscal Years

	09/30/2019	09/30/2018	09/30/2017
Total Pension Liability			
Service Cost	624,885	502,577	451,742
Interest	2,260,369	2,145,398	2,080,242
Change in Excess State Money	(68,720)	-	-
Share Plan Allocation	34,360	-	-
Changes of benefit terms	(5,673)	-	-
Differences between Expected and Actual Experience	134,039	387,233	(4,067)
Changes of assumptions	652,014	-	-
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	(1,904,939)	(1,603,051)
Net Change in Total Pension Liability	2,143,181	1,130,269	924,866
Total Pension Liability - Beginning	28,805,817	27,675,548	26,750,682
Total Pension Liability - Ending (a)	<u>\$ 30,948,998</u>	<u>\$ 28,805,817</u>	<u>\$ 27,675,548</u>
Plan Fiduciary Net Position			
Contributions - Employer	777,408	776,966	560,252
Contributions - State	217,232	213,788	205,597
Contributions - Employee	255,510	247,177	201,094
Net Investment Income	744,272	2,735,006	3,023,816
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	(1,904,939)	(1,603,051)
Administrative Expense	(60,473)	(55,735)	(56,818)
Net Change in Plan Fiduciary Net Position	445,856	2,012,263	2,330,890
Plan Fiduciary Net Position - Beginning	26,853,299	24,841,036	22,510,146
Plan Fiduciary Net Position - Ending (b)	<u>\$ 27,299,155</u>	<u>\$ 26,853,299</u>	<u>\$ 24,841,036</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 3,649,843</u>	<u>\$ 1,952,518</u>	<u>\$ 2,834,512</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	88.21%	93.22%	89.76%
Covered Payroll ¹	\$ 2,703,808	\$ 2,616,053	\$ 2,127,978
Net Pension Liability as a percentage of Covered Payroll	134.99%	74.64%	133.20%

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	<u>09/30/2016</u>	<u>09/30/2015</u>
Total Pension Liability		
Service Cost	470,186	433,596
Interest	1,949,568	1,901,472
Change in Excess State Money	-	4,353
Share Plan Allocation	-	-
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	226,161	(141,504)
Changes of assumptions	954,519	-
Benefit Payments, including Refunds of Employee Contributions	<u>(2,252,731)</u>	<u>(989,960)</u>
Net Change in Total Pension Liability	1,347,703	1,207,957
Total Pension Liability - Beginning	<u>25,402,979</u>	<u>24,195,022</u>
Total Pension Liability - Ending (a)	<u>\$ 26,750,682</u>	<u>\$ 25,402,979</u>
Plan Fiduciary Net Position		
Contributions - Employer	758,808	974,041
Contributions - State	223,925	242,782
Contributions - Employee	197,641	183,224
Net Investment Income	1,821,061	316,096
Benefit Payments, including Refunds of Employee Contributions	(2,252,731)	(989,960)
Administrative Expense	<u>(39,185)</u>	<u>(66,388)</u>
Net Change in Plan Fiduciary Net Position	709,519	659,795
Plan Fiduciary Net Position - Beginning	<u>21,800,627</u>	<u>21,140,832</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 22,510,146</u>	<u>\$ 21,800,627</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 4,240,536</u>	<u>\$ 3,602,352</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	84.15%	85.82%
Covered Payroll ¹	\$ 2,090,999	\$ 2,535,620
Net Pension Liability as a percentage of Covered Payroll	202.80%	142.07%

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	09/30/2014	09/30/2013
Total Pension Liability		
Service Cost	415,729	385,291
Interest	1,806,846	1,729,806
Change in Excess State Money	-	-
Share Plan Allocation	-	-
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	-	-
Changes of assumptions	(41,516)	-
Benefit Payments, including Refunds of Employee Contributions	(1,012,279)	(1,328,432)
Net Change in Total Pension Liability	1,168,780	786,665
Total Pension Liability - Beginning	23,026,242	22,239,577
Total Pension Liability - Ending (a)	<u>\$ 24,195,022</u>	<u>\$ 23,026,242</u>
Plan Fiduciary Net Position		
Contributions - Employer	782,526	710,690
Contributions - State	237,443	235,043
Contributions - Employee	162,859	164,853
Net Investment Income	1,993,557	2,221,341
Benefit Payments, including Refunds of Employee Contributions	(1,012,279)	(1,328,432)
Administrative Expense	(46,371)	(42,561)
Net Change in Plan Fiduciary Net Position	2,117,735	1,960,934
Plan Fiduciary Net Position - Beginning	19,023,097	17,062,163
Plan Fiduciary Net Position - Ending (b)	<u>\$ 21,140,832</u>	<u>\$ 19,023,097</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 3,054,190</u>	<u>\$ 4,003,145</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	87.38%	82.61%
Covered Payroll ¹	\$ 2,063,310	\$ 2,088,575
Net Pension Liability as a percentage of Covered Payroll	148.02%	191.67%

Notes to Schedule of Changes in Net Pension Liability and Related Ratios

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Changes in benefit terms:

For measurement date 09/30/2019, amounts reported as changes of benefit terms resulted from the provisions of Chapter 112.1816, Florida Statutes. The Statutes state that, effective July 1, 2019, a death or disability (under the Plan's definition of total and permanent disability) for a Firefighter due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer will be treated as duty-related.

Changes of assumptions:

For measurement date 09/30/2019, as a result of the Experience Study dated November 15, 2019, the Board approved the following changes to the assumptions:

- 1.) Reduced the Investment Return assumption from 7.90% to 7.75%.
- 2.) Amended the assumed individual salary increases from 7.00% for those with less than 10 years of service and 5.50% with those with 10 or more years of service, to 7.25% for those with less than 10 years of service, 6.00% for those with 10 or more years of service and less than 15 years of service, and 5.50% for those with 15 or more years of service.
- 3.) Amended the assumed retirement rates to include 100% probability upon completion of 25 years of service.
- 4.) Amended the assumed withdrawal rates from an age-based table to 10% per year for the first 5 years of service, and age-based rates after the completion of 5 years of service.
- 5.) Amended the assumed disability rates to remain constant after age 59.

For measurement date 09/30/2016, as a result of Chapter 2015-157, Laws of Florida, the assumed rates of mortality were changed to the assumptions used by the Florida Retirement System for special risk employees. Also the inflation assumption rate was lowered from 3.00% to 2.50%, matching the long-term inflation assumption utilized by the Plan's investment

For measurement date 09/30/2014, amounts reported as changes of assumptions were resulted from Ordinance 2015-04, adopted and effective January 27, 2015, provided for limitations on pensionable items of pay related to overtime and cash in of unused sick and annual leave time.

SCHEDULE OF CONTRIBUTIONS
Last 10 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll ¹	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 1,039,195	\$ 994,640	\$ 44,555	\$ 2,703,808	36.79%
09/30/2018	\$ 951,675	\$ 990,754	\$ (39,079)	\$ 2,616,053	37.87%
09/30/2017	\$ 932,405	\$ 765,849	\$ 166,556	\$ 2,127,978	35.99%
09/30/2016	\$ 945,300	\$ 982,733	\$ (37,433)	\$ 2,090,999	47.00%
09/30/2015	\$ 992,531	\$ 1,212,470	\$ (219,939)	\$ 2,535,620	47.82%
09/30/2014	\$ 1,019,969	\$ 1,019,969	\$ -	\$ 2,063,310	49.43%
09/30/2013	\$ 945,733	\$ 945,733	\$ -	\$ 2,088,575	45.28%

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Notes to Schedule

Valuation Date: 10/01/2017

Actuarially determined contribution rates are calculated as of October 1, two years prior to the end of the fiscal year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Mortality Rate:

Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.
Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.
Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.
Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The assumed rates of mortality were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumption used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in the July 1, 2016 FRS actuarial valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate:

7.90% per year, compounded annually, net of investment related expenses. This is supported by the target asset class allocation of the trust and the expected long-term return by asset class.

Normal Retirement Rates:

Number of Years after First Eligibility for Normal Retirement	Probability of Retirement
0	50%
1 or more	100%

This assumption is supported by an experience study issued on June 28, 2012.

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Termination Rates: See table below. This assumption is supported by an experience study issued on June 28, 2012.

Disability Rates: See table below. 75% of Disability and Pre-Retirement Death Retirements are assumed to be service-incurred. This assumption is supported by an experience study issued on June 28, 2012.

Salary Increases: 7.00% per year for Members with less than 10 years of Service, 5.50% for those with 10 or more years of service. This assumption is supported by an experience study issued on June 28, 2012.

Projected Salary at retirement is increased according to the following table:

Date of Plan Entry	Final Salary Load
Before 10/01/2000	20.0%
10/01/2000 - 09/30/2011	10.0%
On and after 10/01/2011	0.0%

This is based on the expected amount of sick or annual leave time accrued at retirement.

Payroll Increase: 0.20% per year for amortization of the Unfunded Actuarial Accrued Liability. This assumption is consistent with the state-mandated limitation.

Cost-of-Living Increase: 2.00% per year beginning on the October 1 following five years of payments, as defined by the plan provisions.

Asset Smoothing Methodology: The Actuarial Value of Assets is brought forward using the historical four-year geometric average of Market Value Returns (net-of-fees). Over time, this may result in a deminis bias that is above or below the Market Value of Assets.

Cost Method: Entry Age Normal Actuarial Cost Method.

Loads: Half of year of interest at 7.90% and a full year of salary at the current 6.33% assumption.

Amortization Method: Level Percentage of Pay, Closed.

Remaining Amortization Period: 26 Years (as of 10/01/2017 valuation).

Termination and Disability Rate Table:

Age	% Becoming	
	Disabled During the Year	% Terminating During the Year
20	0.14%	8.00%
30	0.18%	6.00%
40	0.30%	4.00%
50	1.00%	0.00%

SCHEDULE OF INVESTMENT RETURNS
Last 10 Fiscal Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
09/30/2019	2.80%
09/30/2018	11.29%
09/30/2017	13.66%
09/30/2016	8.52%
09/30/2015	1.49%
09/30/2014	10.43%
09/30/2013	13.04%

NOTES TO THE FINANCIAL STATEMENTS
(For the Year Ended September 30, 2019)

General Information about the Pension Plan

Plan Description

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of:

- a) Two City Commission appointees,
- b) Two Members of the System elected by a majority of the other covered Firefighters, and
- c) A fifth Member elected by the other four and appointed by the Commission.

Each person employed by the City Fire Department as a full-time Firefighter becomes a member of the Plan as a condition of his employment. All Firefighters are therefore eligible for plan benefits as provided for in the plan document and by applicable law.

Plan Membership as of October 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	33
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	7
Active Plan Members	38
	78
	78

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the October 1, 2018 Actuarial Valuation Report for the City of Tarpon Springs Firefighters' Pension Trust Fund prepared by Foster & Foster Actuaries and Consultants.

Incorporated are the benefit changes for measurement date 09/30/2019 as noted under the Notes to Schedule of Changes in Net Pension Liability and Related Ratios.

Contributions

Employee: 9.45% of total pay.

Premium Tax: 1.85% tax on premiums for fire insurance policies.

City: Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability over 30 years, but not less than 7.00% of Members' salaries.

Net Pension Liability

The measurement date is September 30, 2019.

The measurement period for the pension expense was October 1, 2018 to September 30, 2019.

The reporting period is October 1, 2018 through September 30, 2019.

The Sponsor's Net Pension Liability was measured as of September 30, 2019.

The Total Pension Liability used to calculate the Net Pension Liability was determined as of that date.

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of October 1, 2018 updated to September 30, 2019 using the following actuarial assumptions:

Inflation	2.50%
Salary Increases	Service based
Discount Rate	7.75%
Investment Rate of Return	7.75%

Mortality Rate Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Mortality Rate Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Mortality Rate Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

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The above assumption rates were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in Milliman’s July 1, 2016 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated November 15, 2019.

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

For 2019 the inflation rate assumption of the investment advisor was 2.50%.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of September 30, 2019 are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
Domestic Equity	53.0%	7.50%
International Equity	12.0%	8.50%
Domestic Fixed Income	20.0%	2.50%
Real Estate	15.0%	4.50%
Total	100.0%	

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.75 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those 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 was applied to all periods of projected benefit payments to determine the Total Pension Liability.

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Balances at September 30, 2018	\$ 28,805,817	\$ 26,853,299	\$ 1,952,518
Changes for a Year:			
Service Cost	624,885	-	624,885
Interest	2,260,369	-	2,260,369
Change in Excess State Money	(68,720)	-	(68,720)
Share Plan Allocation	34,360	-	34,360
Differences between Expected and Actual Experience	134,039	-	134,039
Changes of assumptions	652,014	-	652,014
Changes of benefit terms	(5,673)	-	(5,673)
Contributions - Employer	-	777,408	(777,408)
Contributions - State	-	217,232	(217,232)
Contributions - Employee	-	255,510	(255,510)
Net Investment Income	-	744,272	(744,272)
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	(1,488,093)	-
Administrative Expense	-	(60,473)	60,473
Net Changes	2,143,181	445,856	1,697,325
Balances at September 30, 2019	\$ 30,948,998	\$ 27,299,155	\$ 3,649,843

Sensitivity of the Net Pension Liability to changes in the Discount Rate.

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.75%	7.75%	8.75%
Sponsor's Net Pension Liability	\$ 7,498,689	\$ 3,649,843	\$ 470,531

Pension Plan Fiduciary Net Position.

Detailed information about the pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

**PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED
INFLOWS OF RESOURCES RELATED TO PENSIONS**

For the year ended September 30, 2019, the Sponsor will recognize a Pension Expense of \$1,191,980.
On September 30, 2019, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between Expected and Actual Experience	300,848	1,017
Changes of assumptions	521,612	-
Net difference between Projected and Actual Earnings on Pension Plan investments	73,914	-
Total	\$ 896,374	\$ 1,017

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in Pension Expense as follows:

Year ended September 30:		
2020	\$	82,729
2021	\$	112,289
2022	\$	270,058
2023	\$	430,281
2024	\$	-
Thereafter	\$	-

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	09/30/2019	09/30/2018	09/30/2017
Total Pension Liability			
Service Cost	624,885	502,577	451,742
Interest	2,260,369	2,145,398	2,080,242
Change in Excess State Money	(68,720)	-	-
Share Plan Allocation	34,360	-	-
Changes of benefit terms	(5,673)	-	-
Differences between Expected and Actual Experience	134,039	387,233	(4,067)
Changes of assumptions	652,014	-	-
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	(1,904,939)	(1,603,051)
Net Change in Total Pension Liability	2,143,181	1,130,269	924,866
Total Pension Liability - Beginning	28,805,817	27,675,548	26,750,682
Total Pension Liability - Ending (a)	<u>\$ 30,948,998</u>	<u>\$ 28,805,817</u>	<u>\$ 27,675,548</u>
Plan Fiduciary Net Position			
Contributions - Employer	777,408	776,966	560,252
Contributions - State	217,232	213,788	205,597
Contributions - Employee	255,510	247,177	201,094
Net Investment Income	744,272	2,735,006	3,023,816
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	(1,904,939)	(1,603,051)
Administrative Expense	(60,473)	(55,735)	(56,818)
Net Change in Plan Fiduciary Net Position	445,856	2,012,263	2,330,890
Plan Fiduciary Net Position - Beginning	26,853,299	24,841,036	22,510,146
Plan Fiduciary Net Position - Ending (b)	<u>\$ 27,299,155</u>	<u>\$ 26,853,299</u>	<u>\$ 24,841,036</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 3,649,843</u>	<u>\$ 1,952,518</u>	<u>\$ 2,834,512</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	88.21%	93.22%	89.76%
Covered Payroll ¹	\$ 2,703,808	\$ 2,616,053	\$ 2,127,978
Net Pension Liability as a percentage of Covered Payroll	134.99%	74.64%	133.20%

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	09/30/2016	09/30/2015
Total Pension Liability		
Service Cost	470,186	433,596
Interest	1,949,568	1,901,472
Change in Excess State Money	-	4,353
Share Plan Allocation	-	-
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	226,161	(141,504)
Changes of assumptions	954,519	-
Benefit Payments, including Refunds of Employee Contributions	(2,252,731)	(989,960)
Net Change in Total Pension Liability	1,347,703	1,207,957
Total Pension Liability - Beginning	25,402,979	24,195,022
Total Pension Liability - Ending (a)	<u>\$ 26,750,682</u>	<u>\$ 25,402,979</u>
Plan Fiduciary Net Position		
Contributions - Employer	758,808	974,041
Contributions - State	223,925	242,782
Contributions - Employee	197,641	183,224
Net Investment Income	1,821,061	316,096
Benefit Payments, including Refunds of Employee Contributions	(2,252,731)	(989,960)
Administrative Expense	(39,185)	(66,388)
Net Change in Plan Fiduciary Net Position	709,519	659,795
Plan Fiduciary Net Position - Beginning	21,800,627	21,140,832
Plan Fiduciary Net Position - Ending (b)	<u>\$ 22,510,146</u>	<u>\$ 21,800,627</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 4,240,536</u>	<u>\$ 3,602,352</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	84.15%	85.82%
Covered Payroll ¹	\$ 2,090,999	\$ 2,535,620
Net Pension Liability as a percentage of Covered Payroll	202.80%	142.07%

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	<u>09/30/2014</u>	<u>09/30/2013</u>
Total Pension Liability		
Service Cost	415,729	385,291
Interest	1,806,846	1,729,806
Change in Excess State Money	-	-
Share Plan Allocation	-	-
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	-	-
Changes of assumptions	(41,516)	-
Benefit Payments, including Refunds of Employee Contributions	<u>(1,012,279)</u>	<u>(1,328,432)</u>
Net Change in Total Pension Liability	1,168,780	786,665
Total Pension Liability - Beginning	23,026,242	22,239,577
Total Pension Liability - Ending (a)	<u>\$ 24,195,022</u>	<u>\$ 23,026,242</u>
Plan Fiduciary Net Position		
Contributions - Employer	782,526	710,690
Contributions - State	237,443	235,043
Contributions - Employee	162,859	164,853
Net Investment Income	1,993,557	2,221,341
Benefit Payments, including Refunds of Employee Contributions	(1,012,279)	(1,328,432)
Administrative Expense	<u>(46,371)</u>	<u>(42,561)</u>
Net Change in Plan Fiduciary Net Position	2,117,735	1,960,934
Plan Fiduciary Net Position - Beginning	19,023,097	17,062,163
Plan Fiduciary Net Position - Ending (b)	<u>\$ 21,140,832</u>	<u>\$ 19,023,097</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 3,054,190</u>	<u>\$ 4,003,145</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	87.38%	82.61%
Covered Payroll ¹	\$ 2,063,310	\$ 2,088,575
Net Pension Liability as a percentage of Covered Payroll	148.02%	191.67%

Notes to Schedule of Changes in Net Pension Liability and Related Ratios

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Changes in benefit terms:

For measurement date 09/30/2019, amounts reported as changes of benefit terms resulted from the provisions of Chapter 112.1816, Florida Statutes. The Statutes state that, effective July 1, 2019, a death or disability (under the Plan's definition of total and permanent disability) for a Firefighter due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer will be treated as duty-related.

Changes of assumptions:

For measurement date 09/30/2019, as a result of the Experience Study dated November 15, 2019, the Board approved the following changes to the assumptions:

- 1.) Reduced the Investment Return assumption from 7.90% to 7.75%.
- 2.) Amended the assumed individual salary increases from 7.00% for those with less than 10 years of service and 5.50% with those with 10 or more years of service, to 7.25% for those with less than 10 years of service, 6.00% for those with 10 or more years of service and less than 15 years of service, and 5.50% for those with 15 or more years of service.
- 3.) Amended the assumed retirement rates to include 100% probability upon completion of 25 years of service.
- 4.) Amended the assumed withdrawal rates from an age-based table to 10% per year for the first 5 years of service, and age-based rates after the completion of 5 years of service.
- 5.) Amended the assumed disability rates to remain constant after age 59.

For measurement date 09/30/2016, as a result of Chapter 2015-157, Laws of Florida, the assumed rates of mortality were changed to the assumptions used by the Florida Retirement System for special risk employees. Also the inflation assumption rate was lowered from 3.00% to 2.50%, matching the long-term inflation assumption utilized by the Plan's investment consultant.

For measurement date 09/30/2014, amounts reported as changes of assumptions were resulted from Ordinance 2015-04, adopted and effective January 27, 2015, provided for limitations on pensionable items of pay related to overtime and cash in of unused sick and annual leave time.

SCHEDULE OF CONTRIBUTIONS
Last 10 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll ¹	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 1,039,195	\$ 994,640	\$ 44,555	\$ 2,703,808	36.79%
09/30/2018	\$ 951,675	\$ 990,754	\$ (39,079)	\$ 2,616,053	37.87%
09/30/2017	\$ 932,405	\$ 765,849	\$ 166,556	\$ 2,127,978	35.99%
09/30/2016	\$ 945,300	\$ 982,733	\$ (37,433)	\$ 2,090,999	47.00%
09/30/2015	\$ 992,531	\$ 1,212,470	\$ (219,939)	\$ 2,535,620	47.82%
09/30/2014	\$ 1,019,969	\$ 1,019,969	\$ -	\$ 2,063,310	49.43%
09/30/2013	\$ 945,733	\$ 945,733	\$ -	\$ 2,088,575	45.28%

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Notes to Schedule

Valuation Date: 10/01/2017

Actuarially determined contribution rates are calculated as of October 1, two years prior to the end of the fiscal year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Mortality Rate:

Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The assumed rates of mortality were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumption used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in the July 1, 2016 FRS actuarial valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate:

7.90% per year, compounded annually, net of investment related expenses. This is supported by the target asset class allocation of the trust and the expected long-term return by asset class.

Normal Retirement Rates:

Number of Years after First Eligibility for Normal Retirement	Probability of Retirement
0	50%
1 or more	100%

This assumption is supported by an experience study issued on June 28, 2012.

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Termination Rates: See table below. This assumption is supported by an experience study issued on June 28, 2012.

Disability Rates: See table below. 75% of Disability and Pre-Retirement Death Retirements are assumed to be service-incurred. This assumption is supported by an experience study issued on June 28, 2012.

Salary Increases: 7.00% per year for Members with less than 10 years of Service, 5.50% for those with 10 or more years of service. This assumption is supported by an experience study issued on June 28, 2012.

Projected Salary at retirement is increased according to the following table:

Date of Plan Entry	Final Salary Load
Before 10/01/2000	20.0%
10/01/2000 - 09/30/2011	10.0%
On and after 10/01/2011	0.0%

This is based on the expected amount of sick or annual leave time accrued at retirement.

Payroll Increase: 0.20% per year for amortization of the Unfunded Actuarial Accrued Liability. This assumption is consistent with the state-mandated limitation.

Cost-of-Living Increase: 2.00% per year beginning on the October 1 following five years of payments, as defined by the plan provisions.

Asset Smoothing Methodology: The Actuarial Value of Assets is brought forward using the historical four-year geometric average of Market Value Returns (net-of-fees). Over time, this may result in a deminis bias that is above or below the Market Value of Assets.

Cost Method: Entry Age Normal Actuarial Cost Method.
 Loads: Half of year of interest at 7.90% and a full year of salary at the current 6.33% assumption.

Amortization Method: Level Percentage of Pay, Closed.

Remaining Amortization Period: 26 Years (as of 10/01/2017 valuation).

Termination and Disability Rate Table:

Age	% Becoming Disabled During the Year	% Terminating During the Year
20	0.14%	8.00%
30	0.18%	6.00%
40	0.30%	4.00%
50	1.00%	0.00%

COMPONENTS OF PENSION EXPENSE
FISCAL YEAR SEPTEMBER 30, 2019

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 1,952,518	\$ 1,463,743	\$ 859,115	\$ -
Total Pension Liability Factors:				
Service Cost	624,885	-	-	624,885
Interest	2,260,369	-	-	2,260,369
Change in Excess State Money	(68,720)	-	-	(68,720)
Share Plan Allocation	34,360	-	-	34,360
Changes in benefit terms	(5,673)	-	-	(5,673)
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	134,039	-	134,039	-
Current year amortization of experience difference	-	(1,017)	(180,155)	179,138
Change in assumptions about future economic or demographic factors or other inputs	652,014	-	652,014	-
Current year amortization of change in assumptions	-	-	(369,032)	369,032
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	-	-	-
Net change	<u>2,143,181</u>	<u>(1,017)</u>	<u>236,866</u>	<u>3,393,391</u>
Plan Fiduciary Net Position:				
Contributions - Employer	777,408	-	-	-
Contributions - State	217,232	-	-	-
Contributions - Employee	255,510	-	-	(255,510)
Projected Net Investment Income	2,109,623	-	-	(2,109,623)
Difference between projected and actual earnings on Pension Plan investments	(1,365,351)	-	1,365,351	-
Current year amortization	-	(443,343)	(546,592)	103,249
Benefit Payments, including Refunds of Employee Contributions	(1,488,093)	-	-	-
Administrative Expenses	(60,473)	-	-	60,473
Net change	<u>445,856</u>	<u>(443,343)</u>	<u>818,759</u>	<u>(2,201,411)</u>
Ending Balance	<u>\$ 3,649,843</u>	<u>\$ 1,019,383</u>	<u>\$ 1,914,740</u>	<u>\$ 1,191,980</u>

AMORTIZATION SCHEDULE - INVESTMENTS

Increase (Decrease) in Pension Expense Arising from the Recognition of the of Differences Between Projected and Actual Earnings on Pension Plan Investments

Plan Year Ending	Differences Between Projected and Actual Earnings	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2019	\$ 1,365,351	5	\$ 273,071	\$ 273,070	\$ 273,070	\$ 273,070	\$ 273,070	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ (801,113)	5	\$ (160,223)	\$ (160,223)	\$ (160,223)	\$ (160,223)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (1,272,885)	5	\$ (254,577)	\$ (254,577)	\$ (254,577)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (142,717)	5	\$ (28,543)	\$ (28,543)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 1,367,606	5	\$ 273,521	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 103,249	\$ (170,273)	\$ (141,730)	\$ 112,847	\$ 273,070	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Plan Year Ending	Changes of Assumptions	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2019	\$ 652,014	5.0	\$ 130,402	\$ 130,403	\$ 130,403	\$ 130,403	\$ 130,403	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 954,519	4.0	\$ 238,630	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 369,032	\$ 130,403	\$ 130,403	\$ 130,403	\$ 130,403	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Plan Year Ending	Differences Between Expected and Actual Experience	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2019	\$ 134,039	5.0	\$ 26,807	\$ 26,808	\$ 26,808	\$ 26,808	\$ 26,808	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ 387,233	4.0	\$ 96,808	\$ 96,808	\$ 96,808	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (4,067)	4.0	\$ (1,017)	\$ (1,017)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 226,161	4.0	\$ 56,540	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 179,138	\$ 122,599	\$ 123,616	\$ 26,808	\$ 26,808	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -