

TOWN OF MELBOURNE BEACH  
POLICE OFFICERS' RETIREMENT TRUST FUND

ACTUARIAL VALUATION  
AS OF OCTOBER 1, 2019

CONTRIBUTIONS APPLICABLE TO THE  
PLAN/FISCAL YEAR ENDING SEPTEMBER 30, 2021

GASB 67/68 DISCLOSURE INFORMATION  
AS OF SEPTEMBER 30, 2019



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

February 13, 2020

Board of Trustees  
Town of Melbourne Beach  
Police Officers' Pension Board

Re: Town of Melbourne Beach Police Officers' Retirement Trust Fund

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the Town of Melbourne Beach Police Officers' Retirement Trust Fund. Included are the related results for GASB Statements No. 67 and No. 68. The funding valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 68. Use of the results for other purposes may not be applicable and may produce significantly different results.

The valuations have been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflect laws and regulations issued to date pursuant to the provisions of Chapters 112 and 185, Florida Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in the valuations, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. 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.

In conducting the valuations, we have relied on personnel, plan design, and asset information supplied by the Town of Melbourne Beach, financial reports prepared by the custodian bank, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

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 30, 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.

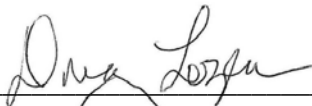
The undersigned are familiar with the immediate and long-term aspects of pension valuations, and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

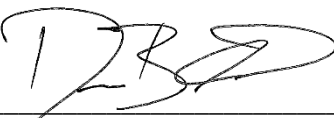
To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the Town of Melbourne Beach, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Police Officers' Retirement Trust Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

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

Respectfully submitted,

Foster & Foster, Inc.

By:   
\_\_\_\_\_  
Douglas H. Lozen, EA, MAAA  
Enrolled Actuary #17-7778

By:   
\_\_\_\_\_  
Drew D. Ballard, EA, MAAA  
Enrolled Actuary #17-8193

Enclosures

## TABLE OF CONTENTS

Section	Title	Page
I	Introduction	
	a. Summary of Report	5
	b. Changes Since Prior Valuation	7
	c. Contribution Impact of Annual Changes	8
	d. Comparative Summary of Principal Valuation Results	9
II	Valuation Information	
	a. Reconciliation of Unfunded Actuarial Accrued Liabilities	15
	b. Detailed Actuarial (Gain)/Loss Analysis	16
	c. Actuarial Assumptions and Methods	17
	d. Glossary	20
	e. Discussion of Risk	21
	f. Partial History of Premium Tax Refunds	24
III	Trust Fund	25
IV	Member Statistics	
	a. Statistical Data	30
	b. Age and Service Distribution	31
	c. Valuation Participant Reconciliation	32
V	Summary of Current Plan	33
VI	Governmental Accounting Standards Board Statements No. 67 and No. 68 Disclosure Information	36

SUMMARY OF REPORT

The regular annual actuarial valuation of the Town of Melbourne Beach Police Officers' Retirement Trust Fund, performed as of October 1, 2019, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year ending September 30, 2021.

The contribution requirements, compared with those set forth in the October 1, 2018 actuarial valuation report, are as follows:

Valuation Date Applicable to Fiscal Year Ending	10/1/2019 <u>9/30/2021</u>	10/1/2018 <u>9/30/2020</u>
Minimum Required Contribution % of Projected Annual Payroll	54.04%	62.44%
Member Contributions (Est.) % of Projected Annual Payroll	5.00%	5.00%
Town And State Required Contribution % of Projected Annual Payroll	49.04%	57.44%
State Contribution (Est.) <sup>1</sup> % of Projected Annual Payroll	\$40,536 6.84%	\$40,536 6.84%
Town Required Contribution <sup>2</sup> % of Projected Annual Payroll	42.20%	50.60%

<sup>1</sup> Represents the amount received in calendar 2019. Under the 'default' provisions of Chapter 2015-39, Laws of Florida, the Town has access to annual premium tax revenues up to \$54,044.91 (the amount received in calendar 2003). Annual state monies in excess of this amount will be allocated equally between the Town as a funding credit and the membership share plan.

<sup>2</sup> The required contribution from the combination of Town and State sources for the year ending September 30, 2021, is 49.04% of the actual payroll realized in that year. As a budgeting tool, the Town may contribute 42.20% of each Member's Salary and then make a one-time adjustment to account for the actual State Monies received. Please note that the Town has access to a prepaid contribution of \$8,161.72 that is available to offset a portion of the above stated requirements for the fiscal year ending September 30, 2020.

As you can see, the Minimum Required Contribution shows a decrease when compared to the results determined in the October 1, 2018 actuarial valuation report. The decrease is primarily attributable to an amortization charge that was established in 2009 being fully paid off.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of actuarial loss included inactive mortality experience and an average salary increase of 5.39% which exceeded the 4.93% assumption. These losses were offset in part by gains associated with more turnover than expected and an investment return of 7.89% (Actuarial Asset Basis) which exceeded the 7.50% assumption.

## CHANGES SINCE PRIOR VALUATION

### Plan Changes

There have been no changes in benefits since the prior valuation.

### Actuarial Assumption/Method Changes

There have been no changes of actuarial assumptions or methods since the prior valuation.

## CONTRIBUTION IMPACT OF ANNUAL CHANGES

(1) Contribution Determined as of October 1, 2018	49.75%
(2) Summary of Contribution Impact by component:	
Change in State Contribution Percentage	0.85%
Change in Normal Cost Rate	-0.78%
Change in Administrative Expense Percentage	-1.01%
Payroll Change Effect on UAAL Amortization	-1.87%
Investment Return (Actuarial Asset Basis)	-0.31%
Salary Increases	0.75%
Active Decrements	-1.05%
Inactive Mortality	0.93%
Assumption Change	0.00%
Amortization Charge Fully Paid	-6.14%
Other	<u>1.08%</u>
Total Change in Contribution	-7.55%
(3) Contribution Determined as of October 1, 2019	42.20%



COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	<u>10/1/2019</u>	<u>10/1/2018</u>
<b>A. Participant Data</b>		
Actives	10	10
Service Retirees	8	8
Beneficiaries	0	0
Disability Retirees	1	1
Terminated Vested	<u>1</u>	<u>0</u>
 Total	 20	 19
 Total Annual Payroll	 \$592,259	 \$549,549
Payroll Under Assumed Ret. Age	592,259	549,549
 Annual Rate of Payments to:		
Service Retirees	252,463	251,896
Beneficiaries	0	0
Disability Retirees	16,697	16,697
Terminated Vested	0	0
 <b>B. Assets</b>		
Actuarial Value (AVA) <sup>1</sup>	3,612,918	3,320,606
Market Value (MVA) <sup>1</sup>	3,451,721	3,336,285
 <b>C. Liabilities</b>		
Present Value of Benefits		
Actives		
Retirement Benefits	2,899,409	2,659,706
Disability Benefits	217,271	214,141
Death Benefits	34,044	33,489
Vested Benefits	0	0
Refund of Contributions	11,005	9,282
Service Retirees	2,345,542	2,385,742
Beneficiaries	0	0
Disability Retirees	180,420	182,411
Terminated Vested	489	0
Share Plan Balances <sup>1</sup>	<u>0</u>	<u>0</u>
 Total	 5,688,180	 5,484,771

C. Liabilities - (Continued)	<u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	4,850,573	4,858,239
Present Value of Future Member Contributions	242,529	242,912
Normal Cost (Retirement)	121,942	117,913
Normal Cost (Disability)	18,176	16,493
Normal Cost (Death)	1,678	1,735
Normal Cost (Vesting)	0	0
Normal Cost (Refunds)	<u>3,350</u>	<u>2,673</u>
Total Normal Cost	145,146	138,814
Present Value of Future Normal Costs	1,153,802	1,190,931
Accrued Liability (Retirement)	1,903,468	1,625,251
Accrued Liability (Disability)	83,617	80,530
Accrued Liability (Death)	19,489	17,807
Accrued Liability (Vesting)	0	0
Accrued Liability (Refunds)	1,353	2,099
Accrued Liability (Inactives)	2,526,451	2,568,153
Share Plan Balances <sup>1</sup>	<u>0</u>	<u>0</u>
Total Actuarial Accrued Liability (EAN AL)	4,534,378	4,293,840
Unfunded Actuarial Accrued Liability (UAAL)	921,460	973,234
Funded Ratio (AVA / EAN AL)	79.7%	77.3%

D. Actuarial Present Value of Accrued Benefits	<u>10/1/2019</u>	<u>10/1/2018</u>
Vested Accrued Benefits		
Inactives + Share Plan Balances <sup>1</sup>	2,526,451	2,568,153
Actives	931,218	758,552
Member Contributions	<u>197,532</u>	<u>179,777</u>
Total	3,655,201	3,506,482
Non-vested Accrued Benefits	<u>192,154</u>	<u>175,342</u>
Total Present Value		
Accrued Benefits (PVAB)	3,847,355	3,681,824
Funded Ratio (MVA / PVAB)	89.7%	90.6%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	178,371	
Benefits Paid	(278,532)	
Interest	265,692	
Other	<u>0</u>	
Total	165,531	

Valuation Date	10/1/2019	10/1/2018
Applicable to Fiscal Year Ending	<u>9/30/2021</u>	<u>9/30/2020</u>

E. Pension Cost

Normal Cost (with interest) % of Total Annual Payroll <sup>2</sup>	25.43	26.21
Administrative Expenses (with interest) % of Total Annual Payroll <sup>2</sup>	3.64	4.65
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 22 years (as of 10/1/2019, with interest) % of Total Annual Payroll <sup>2</sup>	24.97	31.58
Minimum Required Contribution % of Total Annual Payroll <sup>2</sup>	54.04	62.44
Expected Member Contributions % of Total Annual Payroll <sup>2</sup>	5.00	5.00
Expected Town and State Contribution % of Total Annual Payroll <sup>2</sup>	49.04	57.44

F. Past Contributions

Plan Years Ending:	<u>9/30/2019</u>
Total Required Contribution	324,567
Town and State Requirement	296,534
Actual Contributions Made:	
Members (excluding buyback)	28,033
Town	255,998
State	<u>40,536</u>
Total	324,567

G. Net Actuarial (Gain)/Loss 36,297

<sup>1</sup> The asset values and liabilities include accumulated Share Plan Balances as of 9/30/2019 and 9/30/2018.

<sup>2</sup> Contributions developed as of 10/1/2019 are expressed as a percentage of total annual payroll at 10/1/2019 of \$592,259.

H. Schedule Illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of:

<u>Year</u>	<u>Projected Unfunded Actuarial Accrued Liability</u>
2019	921,460
2020	837,312
2021	762,601
2026	484,993
2031	264,628
2036	41,282
2041	0

I. (i) 5 Year Comparison of Actual and Assumed Salary Increases

	<u>Actual</u>	<u>Assumed</u>
Year Ended 9/30/2019	5.39%	4.93%
Year Ended 9/30/2018	1.67%	5.59%
Year Ended 9/30/2017	16.99%	6.00%
Year Ended 9/30/2016	6.72%	6.00%
Year Ended 9/30/2015	2.79%	6.00%

(ii) 5 Year Comparison of Investment Return on Market Value and Actuarial Value

	<u>Market Value</u>	<u>Actuarial Value</u>	<u>Assumed</u>
Year Ended 9/30/2019	2.59%	7.89%	7.50%
Year Ended 9/30/2018	8.59%	6.97%	7.65%
Year Ended 9/30/2017	11.96%	7.56%	8.00%
Year Ended 9/30/2016	8.64%	7.40%	8.00%
Year Ended 9/30/2015	-0.87%	9.71%	8.00%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2019	\$592,259
	10/1/2009	329,086
(b) Total Increase		79.97%
(c) Number of Years		10.00
(d) Average Annual Rate		6.05%

STATEMENT BY ENROLLED ACTUARY

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



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

Please let us know when the report is approved by the Board and unless otherwise directed we will provide copies of the report to the following offices to comply with Chapter 112, Florida Statutes:

Mr. Keith Brinkman  
Bureau of Local  
Retirement Systems  
Post Office Box 9000  
Tallahassee, FL 32315-9000

Mr. Steve Bardin  
Municipal Police and Fire  
Pension Trust Funds  
Division of Retirement  
Post Office Box 3010  
Tallahassee, FL 32315-3010

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES

(1) Unfunded Actuarial Accrued Liability as of October 1, 2018	\$973,234
(2) Sponsor Normal Cost developed as of October 1, 2018	111,337
(3) Expected administrative expenses for the year ended September 30, 2019	24,645
(4) Expected interest on (1), (2) and (3)	82,267
(5) Sponsor contributions to the System during the year ended September 30, 2019	296,534
(6) Expected interest on (5)	9,786
(7) Expected Unfunded Actuarial Accrued Liability as of September 30, 2019 (1)+(2)+(3)+(4)-(5)-(6)	885,163
(8) Change to UAAL due to Assumption Change	0
(9) Change to UAAL due to Actuarial (Gain)/Loss	36,297
(10) Unfunded Actuarial Accrued Liability as of October 1, 2019	921,460

Type of Base	Date Established	Years Remaining	10/1/2019 Amount	Amortization Amount
	10/1/1995	6	48,490	9,610
	10/1/1998	9	11,188	1,632
	10/1/2001	12	32,256	3,879
	10/1/2003	14	22,084	2,420
	10/1/2007	18	54,553	5,228
Method Change	10/1/2007	18	137,046	13,135
Actuarial Loss	10/1/2007	9	102,376	14,929
Method Change	10/1/2008	9	13,557	1,977
Actuarial Loss	10/1/2010	1	14,649	14,649
Benefit Change	10/1/2011	22	(15,428)	(1,352)
Actuarial Loss	10/1/2011	2	59,980	31,074
Actuarial Loss	10/1/2012	3	16,531	5,913
Actuarial Gain	10/1/2013	4	(16,065)	(4,462)
Actuarial Gain	10/1/2014	5	(29,142)	(6,700)
Actuarial Gain	10/1/2015	6	(63,190)	(12,523)
Assump Change	10/1/2016	17	132,933	13,108
Actuarial Loss	10/1/2016	7	60,302	10,591
Assump Change	10/1/2017	18	175,642	16,834
Actuarial Loss	10/1/2017	8	200,895	31,905
Actuarial Gain	10/1/2018	9	(139,934)	(20,407)
Assump Change	10/1/2018	19	66,440	6,206
Actuarial Loss	10/1/2019	10	<u>36,297</u>	<u>4,919</u>
			921,460	142,565

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2018	\$973,234
(2) Expected UAAL as of October 1, 2019	885,163
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	(13,009)
Salary Increases	31,684
Active Decrements	(44,130)
Inactive Mortality	39,285
Other	<u>22,467</u>
Increase in UAAL due to (Gain)/Loss	36,297
Assumption Changes	<u>0</u>
(4) Actual UAAL as of October 1, 2019	\$921,460



ACTUARIAL ASSUMPTIONS AND METHODS

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 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, 2018 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate

7.50% per year compounded annually, net of investment related expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Salary Increases

Rates shown below. In addition, the projected salary at retirement is increased 15% to account for lump-sum payments.

Salary Scale	
Service	Rate
<2	8.50%
2+	4.50%

The assumed rates were approved in conjunction with an actuarial experience study dated October 2017.

Payroll Growth

0.00% for purposes of amortizing the Unfunded Actuarial Accrued Liability, in compliance with Part VII of Chapter 112, Florida Statutes.

Administrative Expenses

\$20,780 annually, based on the average of actual expenses incurred in the prior two fiscal years. Previously, the actual expense in the prior fiscal year was used. Using a two-year average results in a less volatile estimate than the prior method.

Amortization Method

New UAAL amortization bases are established according to the following amortization periods:

Experience: 10 Years.  
Assumption/Method Changes: 20 Years.  
Benefit Changes: 30 Years.

Funding Method

Entry Age Normal Actuarial Cost Method.

Normal Retirement

100% assumed retirement at the earlier of: 1) age 55 and 10 years of credited service, or 2) age 52 and 20 years of credited service, regardless of age. This assumption was approved in conjunction with an actuarial experience study dated October 2017.

Early Retirement

Members are not assumed to take early retirement, as approved in conjunction with an actuarial experience study dated October 2017.

Disability Rate

Sample age-based rates below. It is assumed that 75% of disablements are service-related. The assumed rates were approved in conjunction with an actuarial experience study dated October 2017.

% Becoming Disabled During the Year	
Age	Rate
25	0.23%
30	0.27%
35	0.35%
40	0.45%
45	0.77%
50	1.50%
55	2.33%
60	3.14%

Termination Rate

<u>% Terminating During the Year</u>	
<u>Service</u>	<u>Rate</u>
0-3	18.0%
4-5	6.5%
6+	0.0%

The assumed rates were approved in conjunction with an actuarial experience study dated October 2017.

Actuarial Asset Method

Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric four-year average Market Value return (net of fees). It is possible that over time this technique will produce an insignificant bias above or below Market Value of Assets.

## GLOSSARY

Total Annual Payroll is the projected annual rate of pay for the fiscal year beginning on the valuation date for all covered Members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

- (a) The normal cost accrual rate equals
  - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
  - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age .
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

Unfunded Actuarial Accrued Liability (UAAL) is the difference between the actuarial accrued liability (described above) and the actuarial value of assets. Under the Entry Age Normal Actuarial Cost Method, an actuarial gain or loss, based on actual versus expected UAAL, is determined in conjunction with each valuation of the plan.

Total Required Contribution is equal to the Normal Cost plus administrative expenses plus an amount sufficient to amortize the Unfunded Accrued Liability over no more than 30 years. The required amount is adjusted for interest according to the timing of contributions during the year.

## DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined using various actuarial assumptions. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized. Currently, the valuation uses a 0.00% payroll growth assumption.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

## Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, closed plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature closed plans with a substantial inactive liability. Similarly, mature closed plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled “Plan Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has stayed about the same from October 1, 2016 to October 1, 2019, indicating that the plan's maturity level has not significantly changed during the period.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 55.7%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors may result in larger increases in contribution requirements than would be needed for a less mature plan. Please note Chapter 112, Florida Statutes, requires that the plan sponsor contributes the minimum required contribution; thus, there is minimal solvency risk to the plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has stayed approximately the same from October 1, 2016 to October 1, 2019.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (equal to contributions minus benefit payments and administrative expenses) to the Market Value of Assets, increased from -1.3% on October 1, 2016 to 0.8% on October 1, 2019. The current Net Cash Flow Ratio of 0.8% indicates that contributions are generally covering the plan's benefit payments and administrative expenses.

It is important to note that the actuary has identified the risks in this section as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Support Ratio</u>				
Total Actives	9	10	10	10
Total Inactives <sup>1</sup>	9	9	9	9
Actives / Inactives <sup>1</sup>	100.0%	111.1%	111.1%	111.1%
 <u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	2,756,818	3,089,984	3,336,285	3,451,721
Total Annual Payroll	471,258	592,210	549,549	592,259
MVA / Total Annual Payroll	585.0%	521.8%	607.1%	582.8%
 <u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	2,574,957	2,592,462	2,568,153	2,526,451
Total Accrued Liability (EAN)	3,739,814	4,243,774	4,293,840	4,534,378
Inactive AL / Total AL	68.9%	61.1%	59.8%	55.7%
 <u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	2,899,567	3,122,626	3,320,606	3,612,918
Total Accrued Liability (EAN)	3,739,814	4,243,774	4,293,840	4,534,378
AVA / Total Accrued Liability (EAN)	77.5%	73.6%	77.3%	79.7%
 <u>Net Cash Flow Ratio</u>				
Net Cash Flow <sup>2</sup>	(35,218)	3,818	(19,005)	29,121
Market Value of Assets (MVA)	2,756,818	3,089,984	3,336,285	3,451,721
Ratio	-1.3%	0.1%	-0.6%	0.8%

<sup>1</sup> Excludes terminated participants awaiting a refund of member contributions.

<sup>2</sup> Determined as total contributions minus benefit payments and administrative expenses.

PARTIAL HISTORY OF PREMIUM TAX REFUNDS

<u>Received During Fiscal Year</u>	<u>Amount</u>	<u>Increase from Previous Year</u>
1998	35,351.93	_____%
1999	39,576.78	12.0%
2000	37,232.70	-5.9%
2001	40,146.67	7.8%
2002	47,539.23	18.4%
2003	54,044.91	13.7%
2004	48,344.89	-10.5%
2005	42,790.49	-11.5%
2006	42,790.49	0.0%
2007	42,790.49	0.0%
2008	42,790.49	0.0%
2009	36,379.23	-15.0%
2010	39,265.10	7.9%
2011	33,669.10	-14.3%
2012	32,943.06	-2.2%
2013	31,709.36	-3.7%
2014	32,043.51	1.1%
2015	-	-100.0%
2016	32,270.58	N/A
2017	36,786.85	14.0%
2018	78,809.00	114.2%
2019	40,536.00	-48.6%



STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2019

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Short Term Investments	120,912.43	120,912.43
Total Cash and Equivalents	120,912.43	120,912.43
Receivables:		
Member Contributions	134.62	134.62
Investment Income	846.80	846.80
Total Receivable	981.42	981.42
Investments:		
Mutual Funds:		
Fixed Income	1,042,833.39	1,060,148.00
Equity	1,752,997.61	2,281,976.33
Total Investments	2,795,831.00	3,342,124.33
Total Assets	2,917,724.85	3,464,018.18
 <u>LIABILITIES</u>		
Payables:		
Administrative Expenses	4,135.50	4,135.50
Prepaid Town Contribution	8,161.72	8,161.72
Total Liabilities	12,297.22	12,297.22
NET POSITION RESTRICTED FOR PENSIONS	2,905,427.63	3,451,720.96

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

ADDITIONS

Contributions:		
Member		28,033.10
Town		255,998.13
State		40,536.00
Total Contributions		324,567.23
Investment Income:		
Net Realized Gain (Loss)	23,861.29	
Unrealized Gain (Loss)	(3,403.63)	
Net Increase in Fair Value of Investments		20,457.66
Interest & Dividends		86,357.17
Less Investment Expense <sup>1</sup>		(20,500.00)
Net Investment Income		86,314.83
Total Additions		410,882.06
<u>DEDUCTIONS</u>		
Distributions to Members:		
Benefit Payments		268,593.00
Refunds of Member Contributions		9,939.45
Total Distributions		278,532.45
Administrative Expense		16,914.00
Total Deductions		295,446.45
Net Increase in Net Position		115,435.61
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		3,336,285.35
End of the Year		3,451,720.96

<sup>1</sup>Investment related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION  
SEPTEMBER 30, 2019

Actuarial Assets for funding purposes are developed by increasing the Actuarial Assets used in the most recent actuarial valuation of the Fund by the average annual market value rate of return (net of investment related expenses) for the past four years. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Details of the derivation are set forth as follows:

Plan Year End	Rate of Return <sup>1</sup>	
09/30/2016	8.64%	
09/30/2017	11.96%	
09/30/2018	8.59%	
09/30/2019	2.59%	
Annualized Rate of Return for prior four (4) years:		7.89%
(A) 10/01/2018 Actuarial Assets:		\$3,320,605.74
(I) Net Investment Income:		
1. Interest and Dividends	86,357.17	
2. Realized Gains (Losses)	23,861.29	
3. Unrealized Gains (Losses)	(3,403.63)	
4. Change in Actuarial Value	176,876.87	
5. Investment Related Expenses	(20,500.00)	
Total		263,191.70
(B) 10/01/2019 Actuarial Assets:		\$3,612,918.22
Actuarial Asset Rate of Return = 2I/(A+B-I):		7.89%
10/01/2019 Limited Actuarial Assets:		\$3,612,918.22
10/01/2019 Market Value of Assets:		\$3,451,720.96
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)		\$13,009.48

<sup>1</sup>Market Value Basis, net of investment related expenses.

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
 SEPTEMBER 30, 2019  
 Actuarial Asset Basis

REVENUES

Contributions:		
Member	28,033.10	
Town	255,998.13	
State	40,536.00	
 Total Contributions		 324,567.23
Earnings from Investments:		
Interest & Dividends	86,357.17	
Net Realized Gain (Loss)	23,861.29	
Unrealized Gain (Loss)	(3,403.63)	
Change in Actuarial Value	176,876.87	
 Total Earnings and Investment Gains		 283,691.70

EXPENDITURES

Distributions to Members:		
Benefit Payments	268,593.00	
Refunds of Member Contributions	9,939.45	
 Total Distributions		 278,532.45
Expenses:		
Investment related <sup>1</sup>	20,500.00	
Administrative	16,914.00	
 Total Expenses		 37,414.00
 Change in Net Assets for the Year		 292,312.48
 Net Assets Beginning of the Year		 3,320,605.74
 Net Assets End of the Year <sup>2</sup>		 3,612,918.22

<sup>1</sup>Investment related expenses include investment advisory, custodial and performance monitoring fees.

<sup>2</sup>Net Assets may be limited for actuarial consideration.

RECONCILIATION OF TOWN'S SHORTFALL/(PREPAID) CONTRIBUTION  
FOR THE FISCAL YEAR ENDED (FYE) SEPTEMBER 30, 2019

(1)	Total Required Contribution Rate	57.89%
(2)	Pensionable Payroll Derived from Member Contributions	\$560,662.00
(3)	Total Required Contribution (1) x (2)	324,567.23
(4)	Less Actual Member Contributions	(28,033.10)
(5)	Less Allowable State Contribution	<u>(40,536.00)</u>
(6)	Equals Required Town Contribution for Fiscal 2019	255,998.13
(7)	Less 2018 Prepaid Contribution	(1,851.85)
(8)	Less Actual Town Contributions	<u>(262,308.00)</u>
(9)	Equals Town's Shortfall/(Prepaid) Contribution as of September 30, 2019	(\$8,161.72)

STATISTICAL DATA

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives</u>				
Number	9	10	10	10
Average Current Age	41.0	40.7	37.4	38.8
Average Age at Employment	33.5	33.0	29.5	30.3
Average Past Service	7.5	7.7	7.9	8.5
Average Annual Salary	\$52,362	\$59,221	\$54,955	\$59,226
<u>Service Retirees</u>				
Number	8	8	8	8
Average Current Age	65.6	66.6	67.6	68.6
Average Annual Benefit	\$31,487	\$31,487	\$31,487	\$31,558
<u>Beneficiaries</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Disability Retirees</u>				
Number	1	1	1	1
Average Current Age	48.0	49.0	50.0	51.0
Average Annual Benefit	\$16,697	\$16,697	\$16,697	\$16,697
<u>Terminated Vested</u>				
Number	0	0	0	1
Average Current Age <sup>1</sup>	N/A	N/A	N/A	N/A
Average Annual Benefit <sup>1</sup>	N/A	N/A	N/A	N/A

<sup>1</sup> Excludes participants awaiting a refund of contributions.

## AGE AND SERVICE DISTRIBUTION

### PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19												0
20 - 24												0
25 - 29	1											1
30 - 34				2	1							3
35 - 39						1	1					2
40 - 44								1				1
45 - 49	1											1
50 - 54								2				2
55 - 59												0
60 - 64												0
65+												0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>

## VALUATION PARTICIPANT RECONCILIATION

### 1. Active lives

a. Number in prior valuation 10/1/2018	10
b. Terminations	
i. Vested (partial or full) with deferred annuity	0
ii. Vested in refund of member contributions only	(1)
iii. Refund of member contributions or full lump sum distributio	(1)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	0
f. Continuing participants	8
g. New entrants	<u>2</u>
h. Total active life participants in valuation	10

### 2. Non-Active lives (including beneficiaries receiving benefits)

	Service Retirees, Vested Receiving <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested (Deferred Annuity)	Vested (Due Refund)	<u>Total</u>
a. Number prior valuation	8	0	1	0	0	9
Retired	0	0	0	0	0	0
Vested (Deferred Annuity)	0	0	0	0	0	0
Vested (Due Refund)	0	0	0	0	1	1
Hired/Terminated in Same Year	0	0	0	0	0	0
Death, With Survivor	0	0	0	0	0	0
Death, No Survivor	0	0	0	0	0	0
Disabled	0	0	0	0	0	0
Refund of Contributions	0	0	0	0	0	0
Rehires	0	0	0	0	0	0
Expired Annuities	0	0	0	0	0	0
Data Corrections	0	0	0	0	0	0
b. Number current valuation	8	0	1	0	1	10



## SUMMARY OF CURRENT PLAN

<u>Eligibility</u>	Full-time employees who are classified as full-time sworn Police Officers participate in the System as a condition of employment.
<u>Credited Service</u>	Total years and fractional parts of years of employment with the Town as a Police Officer.
<u>Salary</u>	Total cash compensation for services rendered. Effective July 1, 2011, Salary shall not include more than three hundred (300) hours of overtime per calendar year. Additionally, Salary will include the lesser of the amount of sick or annual leave time accrued as of July 1, 2011, or the actual amount of sick or annual leave time for which the retiree receives payment at the time of retirement.
<u>Average Final Compensation</u>	Average Earnings for the highest 5 years during the 10 years immediately preceding retirement or termination.
<u>Member Contributions</u>	5% of Salary.
<u>Town and State Contributions</u>	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, over 30 years.
<u>Normal Retirement</u>	
Date	Earlier of: 1) age 55 and 10 years of Credited Service, or 2) age 52 and 20 years of Credited Service.
Benefit	3.0% of Average Final Compensation for each year of Credited Service
Benefit Supplement	In addition, members retiring after 10/1/98 with 20 or more years of service, or on or after 10/1/02 at Normal Retirement, receive a monthly benefit supplement equal to \$10 for each full year of Credited Service.
Form of Benefit	Ten Year Certain and Life Annuity (options available).
<u>Early Retirement</u>	
Eligibility	Age 50 and 10 Years of Credited Service.
Benefit	Accrued benefit, reduced 3% per year prior to Normal Retirement.

Vesting

Schedule 100% after 10 years of Credited Service.

Benefit Amount Member will receive the vested portion of his (her) accrued benefit payable at the otherwise Normal Retirement Date.

Cost-of-Living Adjustments

Members (including terminated vested members, but excluding disability retirees) who begin receiving payments after 10/1/2001 receive a 3% per year increase beginning on the 10/1 following the otherwise normal retirement date (or the date of termination, if later) and ending on the 10/1 preceding age 62.

Disability

Eligibility

Service Incurred Covered from Date of Employment.

Non-Service Incurred 10 years of Credited Service.

Benefit

Service Incurred 50% of rate of regular base pay.

Non-Service Incurred Benefit accrued to date of disability but not less than 25% of Average Monthly Earnings.

Duration Payable for life with ten years certain or until recovery (as determined by the Board).

Death Benefits

Pre-Retirement

Not vested Refund of accumulated contributions.

Vested Accrued benefit payable to beneficiary for 10 years at otherwise Normal Retirement Date.

Post-Retirement

Benefits payable to beneficiary in accordance with option selected at retirement.

Board of Trustees

- a. Two Commission appointees,
- b. Two Members of the Department elected by the membership, and
- c. Fifth Member elected by other 4 and appointed by the Commission.

Chapter 185 Share Plan

Established with Ordinance 2017-04. When the Chapter 185 Premium Tax Monies exceeds \$54,044.91, 50% of the excess will fund this Share Plan. Details will be established by the Board of Trustees once the Share Plan is funded.

STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	120,912
Total Cash and Equivalents	120,912
Receivables:	
Member Contributions	135
Investment Income	847
Total Receivable	982
Investments:	
Mutual Funds:	
Fixed Income	1,060,148
Equity	2,281,976
Total Investments	3,342,124
Total Assets	3,464,018
<u>LIABILITIES</u>	
Payables:	
Administrative Expenses	4,135
Total Liabilities	4,135
NET POSITION RESTRICTED FOR PENSIONS	3,459,883

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

ADDITIONS

## Contributions:

Member	28,033	
Town	262,309	
State	40,536	
Total Contributions		330,878
Investment Income:		
Net Increase in Fair Value of Investments	20,457	
Interest & Dividends	86,357	
Less Investment Expense <sup>1</sup>	(20,500)	
Net Investment Income		86,314
Total Additions		417,192

DEDUCTIONS

## Distributions to Members:

Benefit Payments	268,593	
Refunds of Member Contributions	9,939	
Total Distributions		278,532
Administrative Expense		16,914
Total Deductions		295,446
Net Increase in Net Position		121,746
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		3,338,137
End of the Year		3,459,883

<sup>1</sup>Investment related expenses include investment advisory, custodial and performance monitoring fees.

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

Plan Description

*Plan Administration*

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

- a. Two Commission appointees,
- b. Two Members of the Department elected by the membership, and
- c. A fifth Member elected by other 4 and appointed by the Commission.

*Plan Membership as of October 1, 2018:*

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	9
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	-
Active Plan Members	10
	19
	19

*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 Town of Melbourne Beach Police Officers' Retirement Trust Fund prepared by Foster & Foster Actuaries and Consultants.

*Contributions*

Member Contributions: 5% of Salary.

Town and State Contributions: Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, over 30 years.

Investments

*Investment Policy:*

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

Asset Class	Target Allocation
Domestic Equity	55%
International Equity	10%
Broad Market Fixed Income	30%
GTAA	5%
Total	100%

*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 2.59 percent.

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

## 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	\$ 4,456,483
Plan Fiduciary Net Position	\$ (3,459,883)
Sponsor's Net Pension Liability	\$ 996,600
Plan Fiduciary Net Position as a percentage of Total Pension Liability	77.64%

*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	7.50%
Investment Rate of Return	7.50%

*Mortality Rate Active Healthy 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 assumption 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 October 9, 2017.

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	Long Term Expected Real Rate of Return
Domestic Equity	7.50%
International Equity	8.50%
Broad Market Fixed Income	2.50%
GTAA	3.50%

## GASB 67

### Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.50 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 6.50%	Current Discount Rate 7.50%	1% Increase 8.50%
Sponsor's Net Pension Liability	\$ 1,514,639	\$ 996,600	\$ 561,941



**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	139,118	142,520	92,471
Interest	333,851	305,755	287,077
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	(189,455)	228,539	73,071
Changes of assumptions	-	69,128	188,677
Benefit Payments, including Refunds of Employee Contributions	(278,532)	(297,428)	(268,593)
Net Change in Total Pension Liability	4,982	448,514	372,703
Total Pension Liability - Beginning	4,451,501	4,002,987	3,630,284
Total Pension Liability - Ending (a)	<u>\$ 4,456,483</u>	<u>\$ 4,451,501</u>	<u>\$ 4,002,987</u>
Plan Fiduciary Net Position			
Contributions - Employer	262,309	196,123	223,500
Contributions - State	40,536	78,809	36,787
Contributions - Employee	28,033	28,500	28,084
Net Investment Income	86,314	265,306	329,348
Benefit Payments, including Refunds of Employee Contributions	(278,532)	(297,428)	(268,593)
Administrative Expense	(16,914)	(24,645)	(14,945)
Net Change in Plan Fiduciary Net Position	121,746	246,665	334,181
Plan Fiduciary Net Position - Beginning	3,338,137	3,091,472	2,757,291
Plan Fiduciary Net Position - Ending (b)	<u>\$ 3,459,883</u>	<u>\$ 3,338,137</u>	<u>\$ 3,091,472</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 996,600</u>	<u>\$ 1,113,364</u>	<u>\$ 911,515</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	77.64%	74.99%	77.23%
Covered Payroll <sup>1</sup>	\$ 560,662	\$ 569,999	\$ 561,681
Net Pension Liability as a percentage of Covered Payroll	177.75%	195.33%	162.28%

**Notes to Schedule:**

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

*Changes of assumptions:*

For measurement date 09/30/2018, amounts reported as changes of assumptions resulted from lowering the investment return assumption from 7.65% to 7.50%.

For measurement date 09/30/2017, the assumptions for investment return, salary increase, mortality, termination, retirement, and disability were updated in accordance with the experience study dated October 9, 2017.

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

	09/30/2016	09/30/2015	09/30/2014
Total Pension Liability			
Service Cost	90,773	95,129	92,542
Interest	274,273	266,454	257,604
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	(80,473)	(3,954)	-
Changes of assumptions	138,126	-	-
Benefit Payments, including Refunds of Employee Contributions	(260,105)	(250,963)	(233,262)
Net Change in Total Pension Liability	162,594	106,666	116,884
Total Pension Liability - Beginning	3,467,690	3,361,024	3,244,140
Total Pension Liability - Ending (a)	<u>\$ 3,630,284</u>	<u>\$ 3,467,690</u>	<u>\$ 3,361,024</u>
Plan Fiduciary Net Position			
Contributions - Employer	186,596	222,353	200,907
Contributions - State	32,271	-	32,044
Contributions - Employee	23,298	22,464	21,403
Net Investment Income	221,491	(22,583)	255,971
Benefit Payments, including Refunds of Employee Contributions	(260,105)	(250,963)	(233,262)
Administrative Expense	(16,803)	(23,280)	(8,111)
Net Change in Plan Fiduciary Net Position	186,748	(52,009)	268,952
Plan Fiduciary Net Position - Beginning	2,570,543	2,622,552	2,353,600
Plan Fiduciary Net Position - Ending (b)	<u>\$ 2,757,291</u>	<u>\$ 2,570,543</u>	<u>\$ 2,622,552</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 872,993</u>	<u>\$ 897,147</u>	<u>\$ 738,472</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	75.95%	74.13%	78.03%
Covered Payroll <sup>1</sup>	\$ 465,956	\$ 467,561	\$ 428,060
Net Pension Liability as a percentage of Covered Payroll	187.36%	191.88%	172.52%

**Notes to Schedule:**

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

*Changes of assumptions:*

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.

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.

**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 <sup>1</sup>	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 296,534	\$ 302,845	\$ (6,311)	\$ 560,662	54.02%
09/30/2018	\$ 274,568	\$ 274,932	\$ (364)	\$ 569,999	48.23%
09/30/2017	\$ 259,272	\$ 260,287	\$ (1,015)	\$ 561,681	46.34%
09/30/2016	\$ 218,394	\$ 218,867	\$ (473)	\$ 465,956	46.97%
09/30/2015	\$ 222,353	\$ 222,353	\$ -	\$ 467,561	47.56%
09/30/2014	\$ 232,950	\$ 232,950	\$ -	\$ 428,060	54.42%

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

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:

*Healthy Active Lives:*

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

Male: RP2000 Generational, 10% Combined 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 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 the July 1, 2016 FRS actuarial valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate:

7.65% per year compounded annually, net of investment related expenses. This assumption was adopted by the Board as a result of the October 9, 2017 experience study. Additionally, this assumption is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Retirement Age:

100% assumed retirement at the earlier of: 1) age 55 and 10 years of credited service, or 2) age 52 and 20 years of credited service, regardless of age. This assumption is supported by the October 9, 2017 experience study.

Early Retirement:

Members are not assumed to take early retirement, based on results of the experience study dated October 9, 2017.

## GASB 67

Disability Rates:	Table 1205, increased by 50% at all ages. It is assumed that 75% of disablements are service-related. This assumption is based on results of the experience study dated October 9, 2017.
Termination Rates:	18.0% per year for the first three years of Credited Service, and 6.5% per year for the fourth and fifth years of Credited Service; no turnover is expected after the fifth year. This assumption is based on results of the October 9, 2017 experience study.
Salary Increases:	8.5% per year for less than two years of Credited Service, followed by 4.5% per year for two or more years of Credited Service. In addition, the projected salary at retirement is increased 15% to account for lump sum payments. This assumption is based on results of the October 9, 2017 experience study.
Payroll Growth:	None for amortization of the Unfunded Actuarial Accrued Liability. This assumption was adopted as the result of the October 9, 2017 experience study.
Funding Method:	Entry Age Normal Actuarial Cost Method.
Asset Valuation Method:	Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric four-year average Market Value return (net of fees). It is possible that over time this technique will produce an insignificant bias above or below Market Value of Assets.

SCHEDULE OF INVESTMENT RETURNS  
Last 10 Fiscal Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
09/30/2019	2.59%
09/30/2018	8.59%
09/30/2017	11.96%
09/30/2016	8.64%
09/30/2015	-0.87%
09/30/2014	10.99%

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 Commission appointees,
- b. Two Members of the Department elected by the membership, and
- c. A fifth Member elected by other 4 and appointed by the Commission.

Full-time employees who are classified as full-time sworn Police Officers participate in the System as a condition of employment.

*Plan Membership as of October 1, 2018:*

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	9
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	-
Active Plan Members	10
	19
	19

*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 Town of Melbourne Beach Police Officers' Retirement 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*

Member Contributions: 5% of Salary.

Town and State Contributions: Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, over 30 years.

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	7.50%
Investment Rate of Return	7.50%

## GASB 68

### *Mortality Rate Active Healthy 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 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 assumption 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 October 9, 2017.

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>Target Allocation</u>	<u>Long Term Expected Real Rate of Return</u>
Domestic Equity	55.00%	7.50%
International Equity	10.00%	8.50%
Broad Market Fixed Income	30.00%	2.50%
GTAA	5.00%	3.50%
<u>Total</u>	<u>100.00%</u>	

### Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.50 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)
Balance at September 30, 2018	\$ 4,451,501	\$ 3,338,137	\$ 1,113,364
Changes for a Year:			
Service Cost	139,118	-	139,118
Interest	333,851	-	333,851
Differences between Expected and Actual Experience	(189,455)	-	(189,455)
Changes of assumptions	-	-	-
Changes of benefit terms	-	-	-
Contributions - Employer	-	262,309	(262,309)
Contributions - State	-	40,536	(40,536)
Contributions - Employee	-	28,033	(28,033)
Net Investment Income	-	86,314	(86,314)
Benefit Payments, including Refunds of Employee Contributions	(278,532)	(278,532)	-
Administrative Expense	-	(16,914)	16,914
Net Changes	4,982	121,746	(116,764)
Balance at September 30, 2019	\$ 4,456,483	\$ 3,459,883	\$ 996,600

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

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.50%	7.50%	8.50%
Sponsor's Net Pension Liability	\$ 1,514,639	\$ 996,600	\$ 561,941

*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 \$334,488.

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	188,897	157,880
Changes of assumptions	140,423	-
Net difference between Projected and Actual Earnings on Pension Plan investments	67,713	-
<b>Total</b>	<b>\$ 397,033</b>	<b>\$ 157,880</b>

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	\$	63,670	
2021	\$	67,117	
2022	\$	88,832	
2023	\$	51,110	
2024	\$	(31,576)	
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	139,118	142,520	92,471
Interest	333,851	305,755	287,077
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	(189,455)	228,539	73,071
Changes of assumptions	-	69,128	188,677
Benefit Payments, including Refunds of Employee Contributions	(278,532)	(297,428)	(268,593)
Net Change in Total Pension Liability	4,982	448,514	372,703
Total Pension Liability - Beginning	4,451,501	4,002,987	3,630,284
Total Pension Liability - Ending (a)	<u>\$ 4,456,483</u>	<u>\$ 4,451,501</u>	<u>\$ 4,002,987</u>
Plan Fiduciary Net Position			
Contributions - Employer	262,309	196,123	223,500
Contributions - State	40,536	78,809	36,787
Contributions - Employee	28,033	28,500	28,084
Net Investment Income	86,314	265,306	329,348
Benefit Payments, including Refunds of Employee Contributions	(278,532)	(297,428)	(268,593)
Administrative Expense	(16,914)	(24,645)	(14,945)
Net Change in Plan Fiduciary Net Position	121,746	246,665	334,181
Plan Fiduciary Net Position - Beginning	3,338,137	3,091,472	2,757,291
Plan Fiduciary Net Position - Ending (b)	<u>\$ 3,459,883</u>	<u>\$ 3,338,137</u>	<u>\$ 3,091,472</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 996,600</u>	<u>\$ 1,113,364</u>	<u>\$ 911,515</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	77.64%	74.99%	77.23%
Covered Payroll <sup>1</sup>	\$ 560,662	\$ 569,999	\$ 561,681
Net Pension Liability as a percentage of Covered Payroll	177.75%	195.33%	162.28%

**Notes to Schedule:**

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

*Changes of assumptions:*

For measurement date 09/30/2018, amounts reported as changes of assumptions resulted from lowering the investment return assumption from 7.65% to 7.50%.

For measurement date 09/30/2017, the assumptions for investment return, salary increase, mortality, termination, retirement, and disability were updated in accordance with the experience study dated October 9, 2017.

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

	09/30/2016	09/30/2015	09/30/2014
Total Pension Liability			
Service Cost	90,773	95,129	92,542
Interest	274,273	266,454	257,604
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	(80,473)	(3,954)	-
Changes of assumptions	138,126	-	-
Benefit Payments, including Refunds of Employee Contributions	(260,105)	(250,963)	(233,262)
Net Change in Total Pension Liability	162,594	106,666	116,884
Total Pension Liability - Beginning	3,467,690	3,361,024	3,244,140
Total Pension Liability - Ending (a)	<u>\$ 3,630,284</u>	<u>\$ 3,467,690</u>	<u>\$ 3,361,024</u>
Plan Fiduciary Net Position			
Contributions - Employer	186,596	222,353	200,907
Contributions - State	32,271	-	32,044
Contributions - Employee	23,298	22,464	21,403
Net Investment Income	221,491	(22,583)	255,971
Benefit Payments, including Refunds of Employee Contributions	(260,105)	(250,963)	(233,262)
Administrative Expense	(16,803)	(23,280)	(8,111)
Net Change in Plan Fiduciary Net Position	186,748	(52,009)	268,952
Plan Fiduciary Net Position - Beginning	2,570,543	2,622,552	2,353,600
Plan Fiduciary Net Position - Ending (b)	<u>\$ 2,757,291</u>	<u>\$ 2,570,543</u>	<u>\$ 2,622,552</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 872,993</u>	<u>\$ 897,147</u>	<u>\$ 738,472</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	75.95%	74.13%	78.03%
Covered Payroll <sup>1</sup>	\$ 465,956	\$ 467,561	\$ 428,060
Net Pension Liability as a percentage of Covered Payroll	187.36%	191.88%	172.52%

**Notes to Schedule:**

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

Effective for the City's fiscal year ending 09/30/2016, the GASB 68 measurement date of the Pension Expense has been approved and changed from 09/30/2015 to 09/30/2016.

*Changes of assumptions:*

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.

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.

**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 <sup>1</sup>	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 296,534	\$ 302,845	\$ (6,311)	\$ 560,662	54.02%
09/30/2018	\$ 274,568	\$ 274,932	\$ (364)	\$ 569,999	48.23%
09/30/2017	\$ 259,272	\$ 260,287	\$ (1,015)	\$ 561,681	46.34%
09/30/2016	\$ 218,394	\$ 218,867	\$ (473)	\$ 465,956	46.97%
09/30/2015	\$ 222,353	\$ 222,353	\$ -	\$ 467,561	47.56%
09/30/2014	\$ 232,950	\$ 232,950	\$ -	\$ 428,060	54.42%

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

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:

*Healthy Active Lives:*

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

Male: RP2000 Generational, 10% Combined 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

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 the July 1, 2016 FRS actuarial valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate:

7.65% per year compounded annually, net of investment related expenses. This assumption was adopted by the Board as a result of the October 9, 2017 experience study. Additionally, this assumption is supported by the target asset allocation of the 100% assumed retirement at the earlier of: 1) age 55 and 10 years of credited service, or 2) age 52 and 20 years of credited service, regardless of age. This assumption is supported by the October 9, 2017 experience study.

Retirement Age:

Early Retirement:

Members are not assumed to take early retirement, based on results of the experience study dated October 9, 2017.

Disability Rates:

Table 1205, increased by 50% at all ages. It is assumed that 75% of disablements are service-related. This assumption is based on results of the experience study dated October 9, 2017.

## GASB 68

Termination Rates:	18.0% per year for the first three years of Credited Service, and 6.5% per year for the fourth and fifth years of Credited Service; no turnover is expected after the fifth year. This assumption is based on results of the October 9, 2017 experience study.
Salary Increases:	8.5% per year for less than two years of Credited Service, followed by 4.5% per year for two or more years of Credited Service. In addition, the projected salary at retirement is increased 15% to account for lump sum payments. This assumption is based on results of the October 9, 2017 experience study.
Payroll Growth:	None for amortization of the Unfunded Actuarial Accrued Liability. This assumption was adopted as the result of the October 9, 2017 experience study.
Funding Method:	Entry Age Normal Actuarial Cost Method.
Asset Valuation Method:	Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric four-year average Market Value return (net of fees). It is possible that over time this technique will produce an insignificant bias above or below Market Value of Assets.

EXPENSE DEVELOPMENT AND AMORTIZATION SCHEDULES

**The following information is not required to be disclosed but is provided for informational purposes.**

**COMPONENTS OF PENSION EXPENSE**  
**FISCAL YEAR SEPTEMBER 30, 2019**

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 1,113,364	\$ 115,770	\$ 503,330	\$ -
Total Pension Liability Factors:				
Service Cost	139,118	-	-	139,118
Interest	333,851	-	-	333,851
Changes in benefit terms	-	-	-	-
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	(189,455)	189,455	-	-
Current year amortization of experience difference	-	(51,693)	(50,269)	(1,424)
Change in assumptions about future economic or demographic factors or other inputs	-	-	-	-
Current year amortization of change in assumptions	-	-	(77,499)	77,499
Benefit Payments, including Refunds of Employee Contributions	(278,532)	-	-	-
Net change	<u>4,982</u>	<u>137,762</u>	<u>(127,768)</u>	<u>549,044</u>
Plan Fiduciary Net Position:				
Contributions - Employer	262,309	-	-	-
Contributions - State	40,536	-	-	-
Contributions - Employee	28,033	-	-	(28,033)
Projected Net Investment Income	251,689	-	-	(251,689)
Difference between projected and actual earnings on Pension Plan investments	(165,375)	-	165,375	-
Current year amortization	-	(31,065)	(79,317)	48,252
Benefit Payments, including Refunds of Employee Contributions	(278,532)	-	-	-
Administrative Expenses	(16,914)	-	-	16,914
Net change	<u>121,746</u>	<u>(31,065)</u>	<u>86,058</u>	<u>(214,556)</u>
Ending Balance	<u>\$ 996,600</u>	<u>\$ 222,467</u>	<u>\$ 461,620</u>	<u>\$ 334,488</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	\$ 165,375	5	\$ 33,075	\$ 33,075	\$ 33,075	\$ 33,075	\$ 33,075	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ (29,521)	5	\$ (5,904)	\$ (5,904)	\$ (5,904)	\$ (5,904)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (108,571)	5	\$ (21,714)	\$ (21,714)	\$ (21,714)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (17,237)	5	\$ (3,447)	\$ (3,447)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 231,210	5	\$ 46,242	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 48,252	\$ 2,010	\$ 5,457	\$ 27,171	\$ 33,075	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -



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
2018	\$ 69,128	6	\$ 11,521	\$ 11,521	\$ 11,521	\$ 11,521	\$ 11,521	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 188,677	6	\$ 31,446	\$ 31,446	\$ 31,446	\$ 31,447	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 138,126	4	\$ 34,532	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 77,499	\$ 42,967	\$ 42,967	\$ 42,968	\$ 11,521	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

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	\$ (189,455)	6	\$ (31,575)	\$ (31,576)	\$ (31,576)	\$ (31,576)	\$ (31,576)	\$ (31,576)	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ 228,539	6	\$ 38,090	\$ 38,090	\$ 38,090	\$ 38,090	\$ 38,090	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 73,071	6	\$ 12,179	\$ 12,179	\$ 12,179	\$ 12,179	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (80,473)	4	\$ (20,118)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (1,424)	\$ 18,693	\$ 18,693	\$ 18,693	\$ 6,514	\$ (31,576)	\$ -	\$ -	\$ -	\$ -	\$ -