

CITY OF NAPLES  
FIREFIGHTERS' PENSION AND RETIREMENT SYSTEM  
ACTUARIAL VALUATION  
AS OF OCTOBER 1, 2018  
CONTRIBUTIONS APPLICABLE TO THE  
PLAN/FISCAL YEAR ENDING SEPTEMBER 30, 2020  
GASB 67/68 DISCLOSURE INFORMATION  
AS OF SEPTEMBER 30, 2018



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

December 20, 2018

Board of Trustees  
City of Naples Firefighters' Pension and Retirement System  
c/o City of Naples Finance Department  
735 8<sup>th</sup> Street South  
Naples, FL 34102

Re: City of Naples Firefighters' Pension and Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Naples Firefighters' Pension and Retirement System. 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 175, 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 City of Naples, 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, 2017. The total pension liability was rolled-forward from the valuation date to the plan's fiscal year ending September 30, 2018 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 is familiar with the immediate and long-term aspects of pension valuations, and meets 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 City of Naples, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Naples Firefighters' Pension and Retirement System. 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 me at 239-433-5500.

Respectfully submitted,

Foster & Foster, Inc.

By:



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

DHL/lke

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  | 19   |
|         | c. Actuarial Assumptions and Methods  | 20   |
|         | d. Glossary   | 23   |
|         | e. Partial History of Premium Tax Refunds   | 25   |
| III     | Trust Fund  | 26   |
| IV      | Member Statistics   |      |
|         | a. Statistical Data   | 33   |
|         | b. Age and Service Distribution   | 34   |
|         | c. Valuation Participant Reconciliation   | 35   |
| V       | Summary of Current Plan   | 36   |
| VI      | Governmental Accounting Standards Board Statements No. 67 and No. 68 Disclosure Information | 40   |

## SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Naples Firefighters' Pension and Retirement System, performed as of October 1, 2018, 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, 2020. Funding requirements are projected for a lump sum City deposit on October 1, 2019, based on the Board's adoption of a Beginning of Year Funding Method.

The contribution requirements, compared with those set forth in the October 1, 2017 actuarial valuation report, are as follows:

| Valuation Date<br>Applicable to Fiscal Year Ending                       | 10/1/2018<br><u>9/30/2020</u> | 10/1/2017<br><u>9/30/2019</u> |
|--|-------------------------------|-------------------------------|
| Minimum Required Contribution<br>% of Projected Annual Payroll           | 66.62%                        | 70.67%                        |
| Member Contributions (Est.)<br>% of Projected Annual Payroll             | 4.58%                         | 4.70%                         |
| City And State Required Contribution<br>% of Projected Annual Payroll    | 62.04%                        | 65.97%                        |
| State Contribution (Est.) <sup>1</sup><br>% of Projected Annual Payroll  | \$539,925<br>16.50%           | \$539,925<br>16.50%           |
| Less City Incentive Contribution<br>% of Projected Annual Payroll        | \$57,135<br>1.75%             | \$57,135<br>1.75%             |
| City Required Contribution <sup>2</sup><br>% of Projected Annual Payroll | 43.79%                        | 47.72%                        |

<sup>1</sup> Represents the amount received in calendar 2018. As per a Mutual Consent Agreement between the Membership and the City, all State Monies received each year will be available to offset the City's required contribution.

<sup>2</sup> The required contribution from the combination of City and State sources for the year ending September 30, 2020, is 62.04% of the actual payroll realized in that year. As a budgeting tool, the City may contribute 43.79% of each Member's Salary and then make a one-time adjustment to account for the actual State Monies received. Please note that a shortfall contribution of \$145,413.56 is due in addition to


the above stated requirements for the fiscal year ending September 30, 2019. Based on the prior 7.50% investment return assumption, the interest charge for this shortfall is \$909 for each full month after September 30, 2017 (based on the assumption that the City deposit is made at the beginning of each fiscal year) until this deposit is made.

Experience since the prior valuation has been more favorable than expected on the basis of the Plan's actuarial assumptions. The primary source of actuarial gain is attributable to an 8.80% investment return (Actuarial Asset Basis), exceeding the 7.50% assumption. This gain was partially offset by average increases in pensionable earnings that exceeded the assumption by almost 4%, unfavorable retirement experience, and a Disability retirement. Additionally, this valuation of the Plan incorporates method and assumption changes, resulting from a special actuarial experience study.

The balance of this Report presents additional details of the actuarial valuation and the general operation of the Fund. The undersigned would be pleased to meet with the Board of Trustees in order to discuss the Report and any pending questions concerning its contents.

Respectfully submitted,

FOSTER & FOSTER, INC.

By:   
Douglas H. Lozen, EA, MAAA

By:   
Sara E. Carlson, ASA, EA, MAAA

## CHANGES SINCE PRIOR VALUATION

### Plan Changes

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

### Actuarial Assumption/Method Changes

#### Assumptions

In conjunction with this valuation of the Plan, all recommended assumption changes from the August 4, 2017 Experience Study have been incorporated. Additionally, the investment return assumption will reduce from 7.5% to 7.0% according to the following schedule:

| <u>Valuation Date</u> | <u>Assumption</u> |
|-----------------------|-------------------|
| October 1, 2018       | 7.4%              |
| October 1, 2019       | 7.3%              |
| October 1, 2020       | 7.2%              |
| October 1, 2021       | 7.1%              |
| October 1, 2022       | 7.0%              |

#### Methods

As of the October 1, 2018 valuation, the remaining amortization period of any component of the Unfunded Actuarial Accrued Liability (UAAL) will not exceed 15 years. Additionally, future changes to the UAAL will be amortized as a level dollar according to the following:

- Experience Gains/Losses – 10 years
- Assumption/Method Changes – 20 years
- Benefit Changes – 30 years

All changes described above were approved by the Board at the April 26, 2018 Workshop, with the exception of the investment return assumption schedule. The proposed investment return reduction was approved by the Board at the December 12, 2018 meeting.

## CONTRIBUTION IMPACT OF ANNUAL CHANGES

|   |               |
|---|---------------|
| (1) Contribution Determined as of October 1, 2017 | 47.63%        |
| (2) Summary of Contribution Impact by component:  |               |
| Change in State Contribution Percentage           | -0.01%        |
| Change in Normal Cost Rate                        | -1.01%        |
| Change in Administrative Expense Percentage       | -0.19%        |
| Payroll Change Effect on UAAL Amortization        | -2.42%        |
| Investment Return (Actuarial Asset Basis)         | -1.65%        |
| Salary Increases                                  | 0.54%         |
| Active Decrements                                 | 0.53%         |
| Inactive Mortality                                | 0.16%         |
| Assumption/Method Change                          | 0.41%         |
| Greater than Expected UAAL Decrease               | -0.13%        |
| Other   | <u>-0.07%</u> |
| Total Change in Contribution                      | -3.84%        |
| (3) Contribution Determined as of October 1, 2018 | 43.79%        |



## COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

|                                    | New Assump<br>New Method<br><u>10/1/2018</u> | Old Assump<br>Old Method<br><u>10/1/2018</u> | <u>10/1/2017</u> |
|------------------------------------|--|--|------------------|
| A. Participant Data                |  |  |                  |
| Actives                            | 46   | 46   | 46               |
| Service Retirees                   | 39   | 39   | 38               |
| DROP Retirees                      | 10   | 10   | 10               |
| Beneficiaries                      | 1  | 1  | 0                |
| Disability Retirees                | 2  | 2  | 1                |
| Terminated Vested                  | <u>8</u>                                     | <u>8</u>                                     | <u>6</u>         |
| Total                              | 106  | 106  | 101              |
| Total Annual Payroll               | \$3,272,458                                  | \$3,272,458                                  | \$3,092,717      |
| Annual Rate of Payments to:        |  |  |                  |
| Service Retirees                   | 2,363,419                                    | 2,363,419                                    | 2,269,287        |
| DROP Retirees                      | 864,073                                      | 864,073                                      | 842,940          |
| Beneficiaries                      | 65,715                                       | 65,715                                       | 0                |
| Disability Retirees                | 73,064                                       | 73,064                                       | 45,229           |
| Terminated Vested                  | 112,566                                      | 112,566                                      | 101,838          |
| B. Assets                          |  |  |                  |
| Actuarial Value (AVA) <sup>1</sup> | 57,266,338                                   | 57,266,338                                   | 52,873,585       |
| Market Value (MVA) <sup>1</sup>    | 59,348,412                                   | 59,348,412                                   | 53,951,029       |
| C. Liabilities                     |  |  |                  |
| Present Value of Benefits          |  |  |                  |
| Actives                            |  |  |                  |
| Retirement Benefits                | 16,176,621                                   | 16,668,983                                   | 16,569,570       |
| Disability Benefits                | 907,397                                      | 962,028                                      | 969,326          |
| Death Benefits                     | 110,190                                      | 120,317                                      | 124,441          |
| Vested Benefits                    | 554,327                                      | 87,675                                       | 84,613           |
| Refund of Contributions            | 14,204                                       | 13,232                                       | 10,792           |
| Service Retirees                   | 36,977,341                                   | 36,553,765                                   | 35,509,154       |
| DROP Retirees <sup>1</sup>         | 16,907,057                                   | 16,734,267                                   | 15,687,463       |
| Beneficiaries                      | 1,029,634                                    | 1,018,268                                    | 0                |
| Disability Retirees                | 906,378                                      | 897,614                                      | 578,343          |
| Terminated Vested                  | 782,182                                      | 769,795                                      | 692,334          |
| Share Plan Balances <sup>1</sup>   | <u>927,073</u>                               | <u>927,073</u>                               | <u>887,267</u>   |
| Total                              | 75,292,404                                   | 74,753,017                                   | 71,113,303       |

| C. Liabilities - (Continued)                    | New Assump<br>New Method<br><u>10/1/2018</u> | Old Assump<br>Old Method<br><u>10/1/2018</u> | <u>10/1/2017</u> |
|---|--|--|------------------|
| Present Value of Future Salaries                | 28,585,406                                   | 29,079,101                                   | 27,380,952       |
| Present Value of Future<br>Member Contributions | 1,309,114                                    | 1,331,724                                    | 1,285,560        |
| Normal Cost (Retirement)                        | 628,305                                      | 634,512                                      | 623,883          |
| Normal Cost (Disability)                        | 71,161                                       | 72,017                                       | 71,004           |
| Normal Cost (Death)                             | 6,883  | 7,183  | 7,380            |
| Normal Cost (Vesting)                           | 35,265                                       | 9,259  | 11,093           |
| Normal Cost (Refunds)                           | <u>2,326</u>                                 | <u>2,284</u>                                 | <u>3,340</u>     |
| Total Normal Cost                               | 743,940                                      | 725,255                                      | 716,700          |
| Present Value of Future<br>Normal Costs         | 5,793,237                                    | 5,808,019                                    | 5,696,798        |
| Accrued Liability (Retirement)                  | 11,284,376                                   | 11,562,768                                   | 11,577,280       |
| Accrued Liability (Disability)                  | 359,101                                      | 390,317                                      | 392,624          |
| Accrued Liability (Death)                       | 58,147                                       | 65,085                                       | 68,870           |
| Accrued Liability (Vesting)                     | 266,013                                      | 24,666                                       | 22,272           |
| Accrued Liability (Refunds)                     | 1,865  | 1,380  | 898              |
| Accrued Liability (Inactives) <sup>1</sup>      | 56,602,592                                   | 55,973,709                                   | 52,467,294       |
| Share Plan Balances <sup>1</sup>                | <u>927,073</u>                               | <u>927,073</u>                               | <u>887,267</u>   |
| Total Actuarial Accrued Liability (EAN AL)      | 69,499,167                                   | 68,944,998                                   | 65,416,505       |
| Unfunded Actuarial Accrued<br>Liability (UAAL)  | 12,232,829                                   | 11,678,660                                   | 12,542,920       |
| Funded Ratio (AVA / EAN AL)                     | 82.4%  | 83.1%  | 80.8%            |

| D. Actuarial Present Value of  | New Assump<br>New Method | Old Assump<br>Old Method |                  |
|--|--------------------------|--------------------------|------------------|
| Accrued Benefits   | <u>10/1/2018</u>         | <u>10/1/2018</u>         | <u>10/1/2017</u> |
| Vested Accrued Benefits  |                          |                          |                  |
| Inactives + Share Plan Balances <sup>1</sup>                                 | 57,529,665               | 56,900,782               | 53,354,561       |
| Actives  | 5,501,262                | 5,370,902                | 4,788,622        |
| Member Contributions   | <u>1,355,490</u>         | <u>1,355,490</u>         | <u>1,765,750</u> |
| Total  | 64,386,417               | 63,627,174               | 59,908,933       |
| Non-vested Accrued Benefits  | <u>4,541,801</u>         | <u>4,627,777</u>         | <u>5,343,603</u> |
| Total Present Value  |                          |                          |                  |
| Accrued Benefits (PVAB)  | 68,928,218               | 68,254,951               | 65,252,536       |
| Funded Ratio (MVA / PVAB)  | 86.1%                    | 87.0%                    | 82.7%            |
| Increase (Decrease) in Present Value of<br>Accrued Benefits Attributable to: |                          |                          |                  |
| Plan Amendments  | 0                        | 0                        |                  |
| Assumption Changes   | 673,267                  | 0                        |                  |
| New Accrued Benefits   | 0                        | 636,018                  |                  |
| Benefits Paid  | 0                        | (2,436,186)              |                  |
| Interest   | 0                        | 4,802,583                |                  |
| Other  | <u>0</u>                 | <u>0</u>                 |                  |
| Total  | 673,267                  | 3,002,415                |                  |

|                                  | New Assump<br>New Method | Old Assump<br>Old Method |                  |
|----------------------------------|--------------------------|--------------------------|------------------|
| Valuation Date                   | 10/1/2018                | 10/1/2018                | 10/1/2017        |
| Applicable to Fiscal Year Ending | <u>9/30/2020</u>         | <u>9/30/2020</u>         | <u>9/30/2019</u> |

#### E. Pension Cost

|   |       |       |       |
|---|-------|-------|-------|
| Normal Cost (with interest)<br>% of Total Annual Payroll <sup>2</sup>   | 22.73 | 22.16 | 23.17 |
| Administrative Expenses (with interest)<br>% of Total Annual Payroll <sup>2</sup>   | 2.42  | 2.42  | 2.61  |
| Payment Required to Amortize<br>Unfunded Actuarial Accrued<br>Liability over 20 years<br>(as of 10/1/2018, with interest)<br>% of Total Annual Payroll <sup>2</sup> | 41.47 | 41.63 | 44.89 |
| Minimum Required Contribution<br>% of Total Annual Payroll <sup>2</sup>   | 66.62 | 66.21 | 70.67 |
| Expected Member Contributions<br>% of Total Annual Payroll <sup>2</sup>   | 4.58  | 4.58  | 4.70  |
| Expected City and State Contribution<br>% of Total Annual Payroll <sup>2</sup>  | 62.04 | 61.63 | 65.97 |

#### F. Past Contributions

|                             |                  |
|-----------------------------|------------------|
| Plan Years Ending:          | <u>9/30/2018</u> |
| City and State Requirement  | 2,120,706        |
| Actual Contributions Made:  |                  |
| Members (excluding buyback) | 146,837          |
| City                        | 1,580,781        |
| State                       | <u>539,925</u>   |
| Total                       | 2,267,543        |

G. Net Actuarial (Gain)/Loss (274,527)

<sup>1</sup> The asset values and liabilities include accumulated DROP and Share Plan Balances as of 9/30/2018 and 9/30/2017.

<sup>2</sup> Contributions developed as of 10/1/2018 are expressed as a percentage of total annual payroll at 10/1/2018 of \$3,272,458.

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

| <u>Year</u> | <u>Projected Unfunded<br/>Actuarial Accrued Liability</u> |
|-------------|---|
| 2018        | 12,232,829  |
| 2019        | 11,680,472  |
| 2020        | 11,087,242  |
| 2025        | 7,393,912   |
| 2029        | 3,663,870   |
| 2034        | 181,086   |
| 2038        | 0   |

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

|                      | <u>Actual</u> | <u>Assumed</u> |
|----------------------|---------------|----------------|
| Year Ended 9/30/2018 | 9.03%         | 5.06%          |
| Year Ended 9/30/2017 | 3.33%         | 5.06%          |
| Year Ended 9/30/2016 | 3.76%         | 5.02%          |
| Year Ended 9/30/2015 | 3.68%         | 5.02%          |
| Year Ended 9/30/2014 | 2.26%         | 6.51%          |

(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 9/30/2018 | 10.43%              | 8.80%                  | 7.50%          |
| Year Ended 9/30/2017 | 12.02%              | 8.84%                  | 7.50%          |
| Year Ended 9/30/2016 | 8.01%               | 9.66%                  | 7.50%          |
| Year Ended 9/30/2015 | 0.77%               | 9.29%                  | 7.50%          |
| Year Ended 9/30/2014 | 12.67%              | 11.03%                 | 7.50%          |

(iii) Average Annual Payroll Growth

|                         |           |             |
|-------------------------|-----------|-------------|
| (a) Payroll as of:      | 10/1/2018 | \$3,272,458 |
|                         | 10/1/2008 | 3,682,251   |
| (b) Total Increase      |           | -11.13%     |
| (c) Number of Years     |           | 10.00       |
| (d) Average Annual Rate |           | -1.17%      |

## 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  
(PRIOR ASSUMPTIONS AND AMORTIZATION METHOD)

|     |   |              |
|-----|---|--------------|
| (1) | Unfunded Actuarial Accrued Liability as of October 1, 2017  | \$12,542,920 |
| (2) | Sponsor Normal Cost developed as of October 1, 2017   | 571,342      |
| (3) | Expected administrative expenses for the year ended September 30, 2018                            | 80,689       |
| (4) | Expected interest on (1), (2) and (3)   | 986,595      |
| (5) | Sponsor contributions to the System during the year ended September 30, 2018                      | 2,120,706    |
| (6) | Expected interest on (5)  | 107,653      |
| (7) | Expected Unfunded Actuarial Accrued Liability as of<br>September 30, 2018 (1)+(2)+(3)+(4)-(5)-(6) | 11,953,187   |
| (8) | Change to UAAL due to Actuarial (Gain)/Loss   | (274,527)    |
| (9) | Unfunded Actuarial Accrued Liability as of October 1, 2018  | 11,678,660   |

| Type of<br><u>Base</u> | Date<br><u>Established</u> | Years<br><u>Remaining</u> | 10/1/2018<br><u>Amount</u> | Amortization<br><u>Amount</u> |
|------------------------|----------------------------|---------------------------|----------------------------|-------------------------------|
|                        | 10/1/1997                  | 9                         | 1,161,552                  | 169,389                       |
|                        | 10/1/1999                  | 11                        | 1,888,860                  | 240,188                       |
|                        | 10/1/2000                  | 12                        | (886,424)                  | (106,600)                     |
|                        | 10/1/2002                  | 14                        | 3,777,734                  | 413,960                       |
|                        | 10/1/2003                  | 15                        | 2,115,842                  | 222,975                       |
| Actuarial Loss         | 10/1/2004                  | 16                        | 2,425,514                  | 246,818                       |
| Amendment              | 10/1/2004                  | 16                        | (8,469)                    | (862)                         |
| Actuarial Gain         | 10/1/2005                  | 17                        | (289,778)                  | (28,573)                      |
| Assum. Change          | 10/1/2005                  | 17                        | 1,143,624                  | 112,767                       |
| Actuarial Gain         | 10/1/2006                  | 18                        | (455,025)                  | (43,610)                      |
| Assum. Change          | 10/1/2006                  | 18                        | 1,214,820                  | 116,429                       |
| Actuarial Loss         | 10/1/2007                  | 19                        | 1,712,936                  | 159,998                       |
| Assum./Method Change   | 10/1/2007                  | 19                        | 124,554                    | 11,634                        |
| Amendment              | 10/1/2007                  | 19                        | 832,910                    | 77,798                        |
| Actuarial Loss         | 10/1/2008                  | 20                        | 3,662,734                  | 334,219                       |
| Actuarial Gain         | 10/1/2009                  | 21                        | (58,438)                   | (5,220)                       |
| Assumption Changes     | 10/1/2009                  | 21                        | (1,585,517)                | (141,634)                     |
| Actuarial Loss         | 10/1/2010                  | 22                        | 1,910,261                  | 167,369                       |
| Actuarial Loss         | 10/1/2011                  | 23                        | 1,580,368                  | 136,037                       |
| Actuarial Gain         | 10/1/2012                  | 24                        | (1,007,164)                | (85,305)                      |
| Amendment              | 10/1/2012                  | 24                        | (5,270,086)                | (446,364)                     |

| Type of<br><u>Base</u> | Date<br><u>Established</u> | Years<br><u>Remaining</u> | 10/1/2018<br><u>Amount</u> | Amortization<br><u>Amount</u> |
|------------------------|----------------------------|---------------------------|----------------------------|-------------------------------|
| Actuarial Gain         | 10/1/2013                  | 25                        | (194,252)                  | (16,211)                      |
| Actuarial Gain         | 10/1/2014                  | 26                        | (1,313,626)                | (108,145)                     |
| Assumption Change      | 10/1/2014                  | 26                        | (101,347)                  | (8,343)                       |
| Actuarial Gain         | 10/1/2015                  | 27                        | (635,754)                  | (51,689)                      |
| Assumption Change      | 10/1/2016                  | 28                        | 1,578,671                  | 126,889                       |
| Actuarial Gain         | 10/1/2016                  | 28                        | (1,155,928)                | (92,910)                      |
| Actuarial Gain         | 10/1/2017                  | 29                        | (215,385)                  | (17,130)                      |
| Actuarial Gain         | 10/1/2018                  | 30                        | <u>(274,527)</u>           | <u>(21,623)</u>               |
|                        |                            |                           | 11,678,660                 | 1,362,251                     |



RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES  
(NEW ASSUMPTIONS AND AMORTIZATION METHOD)

|      |   |              |
|------|---|--------------|
| (1)  | Unfunded Actuarial Accrued Liability as of October 1, 2017  | \$12,542,920 |
| (2)  | Sponsor Normal Cost developed as of October 1, 2017   | 571,342      |
| (3)  | Expected administrative expenses for the year ended September 30, 2018                            | 80,689       |
| (4)  | Expected interest on (1), (2) and (3)   | 986,595      |
| (5)  | Sponsor contributions to the System during the year ended September 30, 2018                      | 2,120,706    |
| (6)  | Expected interest on (5)  | 107,653      |
| (7)  | Expected Unfunded Actuarial Accrued Liability as of<br>September 30, 2018 (1)+(2)+(3)+(4)-(5)-(6) | 11,953,187   |
| (8)  | Change to UAAL due to Assumption Change   | 554,169      |
| (9)  | Change to UAAL due to Actuarial (Gain)/Loss   | (274,527)    |
| (10) | Unfunded Actuarial Accrued Liability as of October 1, 2018  | 12,232,829   |

| Type of<br>Base      | Date<br>Established | Years<br>Remaining | 10/1/2018<br>Amount | Amortization<br>Amount |
|----------------------|---------------------|--------------------|---------------------|------------------------|
|                      | 10/1/1997           | 9                  | 1,161,552           | 168,834                |
|                      | 10/1/1999           | 11                 | 1,888,860           | 239,231                |
|                      | 10/1/2000           | 12                 | (886,424)           | (106,139)              |
|                      | 10/1/2002           | 14                 | 3,777,734           | 411,903                |
|                      | 10/1/2003           | 15                 | 2,115,842           | 221,798                |
| Actuarial Loss       | 10/1/2004           | 15                 | 2,425,514           | 254,260                |
| Amendment            | 10/1/2004           | 15                 | (8,469)             | (888)                  |
| Actuarial Gain       | 10/1/2005           | 15                 | (289,778)           | (30,377)               |
| Assum. Change        | 10/1/2005           | 15                 | 1,143,624           | 119,883                |
| Actuarial Gain       | 10/1/2006           | 15                 | (455,025)           | (47,699)               |
| Assum. Change        | 10/1/2006           | 15                 | 1,214,820           | 127,347                |
| Actuarial Loss       | 10/1/2007           | 15                 | 1,712,936           | 179,563                |
| Assum./Method Change | 10/1/2007           | 15                 | 124,554             | 13,057                 |
| Amendment            | 10/1/2007           | 15                 | 832,910             | 87,312                 |
| Actuarial Loss       | 10/1/2008           | 15                 | 3,662,734           | 383,955                |
| Actuarial Gain       | 10/1/2009           | 15                 | (58,438)            | (6,126)                |
| Assumption Changes   | 10/1/2009           | 15                 | (1,585,517)         | (166,206)              |
| Actuarial Loss       | 10/1/2010           | 15                 | 1,910,261           | 200,248                |
| Actuarial Loss       | 10/1/2011           | 15                 | 1,580,368           | 165,666                |

| Type of<br><u>Base</u> | Date<br><u>Established</u> | Years<br><u>Remaining</u> | 10/1/2018<br><u>Amount</u> | Amortization<br><u>Amount</u> |
|------------------------|----------------------------|---------------------------|----------------------------|-------------------------------|
| Actuarial Gain         | 10/1/2012                  | 15                        | (1,007,164)                | (105,578)                     |
| Amendment              | 10/1/2012                  | 15                        | (5,270,086)                | (552,450)                     |
| Actuarial Gain         | 10/1/2013                  | 15                        | (194,252)                  | (20,363)                      |
| Actuarial Gain         | 10/1/2014                  | 15                        | (1,313,626)                | (137,704)                     |
| Assumption Change      | 10/1/2014                  | 15                        | (101,347)                  | (10,624)                      |
| Actuarial Gain         | 10/1/2015                  | 15                        | (635,754)                  | (66,644)                      |
| Assumption Change      | 10/1/2016                  | 15                        | 1,578,671                  | 165,488                       |
| Actuarial Gain         | 10/1/2016                  | 15                        | (1,155,928)                | (121,173)                     |
| Actuarial Gain         | 10/1/2017                  | 15                        | (215,385)                  | (22,578)                      |
| Actuarial Gain         | 10/1/2018                  | 10                        | (274,527)                  | (37,069)                      |
| Assump Change          | 10/1/2018                  | 20                        | <u>554,169</u>             | <u>50,230</u>                 |
|                        |                            |                           | 12,232,829                 | 1,357,157                     |

## DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

|   |                  |
|---|------------------|
| (1) Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2017 | \$12,542,920     |
| (2) Expected UAAL as of October 1, 2018                               | 11,953,187       |
| (3) Summary of Actuarial (Gain)/Loss, by component:                   |                  |
| Investment Return (Actuarial Asset Basis)                             | (684,225)        |
| Salary Increases  | 224,425          |
| Active Decrements   | 221,702          |
| Inactive Mortality  | 68,147           |
| Other   | <u>(104,576)</u> |
| Increase in UAAL due to (Gain)/Loss                                   | (274,527)        |
| Assumption Changes  | <u>554,169</u>   |
| (4) Actual UAAL as of October 1, 2018                                 | \$12,232,829     |

## 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, 2016 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

### Interest Rate

7.40% (prior year 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

See below table. These rates were incorporated with the October 1, 2014 valuation as the result of the October 31, 2014 Experience Study.

| <u>Credited Service</u> | <u>Increase</u> |
|-------------------------|-----------------|
| 1                       | 6.0%            |
| 2-9                     | 5.5%            |
| 10-14                   | 5.0%            |
| 15-19                   | 4.5%            |
| 20+                     | 4.0%            |

Payroll Growth

None for purposes of amortizing the Unfunded Actuarial Accrued Liability. This assumption cannot exceed the ten-year average payroll growth, in compliance with Part VII of Chapter 112, Florida Statutes.

Funding Method

Entry Age Normal Actuarial Cost Method.

Administrative Expenses

\$79,160 annually, based on actual expenses incurred in the prior fiscal year.

Normal Retirement Age

Hired prior to 6/1/13: Earlier of 1) age 55, 2) the completion of 25 years of credited service, or 3) age 50 with 20 years of credited service. See below table for Members age 50 with 20 years of service:

| Years after first<br>eligibility for<br><u>Normal Retirement</u> | Assumed<br>retirement<br><u>rate</u> |
|--|--------------------------------------|
| 0-1  | 50%                                  |
| 2 or more  | 100%                                 |

100% assumed retirement upon first eligibility for Members age 55 or older, or with at least 25 years of Credited Service.

Hired after 5/31/2013: 100% assumed retirement upon the earlier of 1) age 55 with completion of 8 years of credited service, or 2) the completion of 25 years of credited service.

The above rates were adopted as the result of the August 4, 2017 Experience Study.

Early Retirement Age

Hired prior to 6/1/13: Age 50, regardless of years of credited service. Members are assumed to retire with an immediate subsidized benefit at the rate of 10% per year.

Hired after 5/31/13: Attainment of age 50 and the completion of 8 years of credited service. Members are assumed to retire with an immediate subsidized benefit at the rate of 5% per year.

The above rates were adopted as the result of the August 4, 2017 Experience Study.

### Disability

See below table for sample rates. It is assumed that 75% of Disability Retirements are service-related. This assumption is in line with the national average for municipal defined benefit pension programs.

| <u>Age</u> | <u>% Becoming disabled<br/>during the year</u> |
|------------|--|
| 20         | 0.14%  |
| 25         | 0.15%  |
| 30         | 0.18%  |
| 35         | 0.23%  |
| 40         | 0.30%  |
| 45         | 0.51%  |
| 50         | 1.00%  |

### Termination

| <u>Credited<br/>Service</u> | <u>Hired prior<br/>to 6/1/13</u> | <u>Hired after<br/>5/31/13</u> |
|-----------------------------|----------------------------------|--------------------------------|
| 0                           | 20%                              | 20%                            |
| 1                           | 10%                              | 10%                            |
| 2                           | 4%                               | 4%                             |
| 3                           | 4%                               | 4%                             |
| 4                           | 2%                               | 4%                             |
| 5                           | 1%                               | 4%                             |
| 6                           | 1%                               | 4%                             |
| 7                           | 1%                               | 2%                             |
| 8 or more                   | 1%                               | 1%                             |

The above rates were adopted as the result of the August 4, 2017 Experience Study.

### Post-Retirement COLA

3% per year beginning at age 50 for Service Retirees, Disability Retirees, and surviving Beneficiaries. No COLA for Vested Terminated Members or benefits accrued after May 31, 2013

### Actuarial Asset Method

All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

## GLOSSARY

Total Annual Payroll is the projected annual rate of pay as of the valuation date of 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.

Normal (Current Year's) Cost is determined for each participant as the present value of future benefits, determined as of the Member's entry age, amortized as a level percentage of compensation over the anticipated number of years of participation, determined as of the entry age.

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.



# PARTIAL HISTORY OF PREMIUM TAX REFUNDS

| Received During<br><u>Fiscal Year</u> | <u>Amount</u> | Increase from<br><u>Previous Year</u> |
|---------------------------------------|---------------|---------------------------------------|
| 1996                                  | 257,693.96    | _____%                                |
| 1997                                  | 294,558.53    | 14.3%                                 |
| 1998                                  | 301,079.01    | 2.2%                                  |
| 1999                                  | 455,798.85    | 51.4%                                 |
| 2000                                  | 554,631.15    | 21.7%                                 |
| 2001                                  | 575,860.11    | 3.8%                                  |
| 2002                                  | 655,065.93    | 13.8%                                 |
| 2003                                  | 806,425.83    | 23.1%                                 |
| 2004                                  | 857,886.93    | 6.4%                                  |
| 2005                                  | 902,412.83    | 5.2%                                  |
| 2006                                  | 977,382.61    | 8.3%                                  |
| 2007                                  | 1,028,721.85  | 5.3%                                  |
| 2008                                  | 1,223,271.11  | 18.9%                                 |
| 2009                                  | 1,390,851.74  | 13.7%                                 |
| 2010                                  | 893,185.02    | -35.8%                                |
| 2011                                  | 765,598.10    | -14.3%                                |
| 2012                                  | 834,617.96    | 9.0%                                  |
| 2013                                  | 811,882.25    | -2.7%                                 |
| 2014                                  | 871,999.13    | 7.4%                                  |
| 2015                                  | 721,101.37    | -17.3%                                |
| 2016                                  | 581,196.08    | -19.4%                                |
| 2017                                  | 509,867.99    | -12.3%                                |
| 2018                                  | 539,925.23    | 5.9%                                  |

STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2018

| <u>ASSETS</u>                        | COST VALUE    | MARKET VALUE  |
|--------------------------------------|---------------|---------------|
| Cash and Cash Equivalents:           |               |               |
| Checking Account                     | 1,149.40      | 1,149.40      |
| Money Market                         | 998,485.00    | 998,485.00    |
| Cash                                 | 48,729.82     | 48,729.82     |
| Total Cash and Equivalents           | 1,048,364.22  | 1,048,364.22  |
| Receivables:                         |               |               |
| Member Contributions in Transit      | 5,480.34      | 5,480.34      |
| Member Contributions                 | 675.31        | 675.31        |
| Additional City Contributions        | 145,413.56    | 145,413.56    |
| State Contributions                  | 539,925.23    | 539,925.23    |
| Total Receivable                     | 691,494.44    | 691,494.44    |
| Investments:                         |               |               |
| Fixed Income                         | 9,076,036.37  | 8,927,514.14  |
| Equities                             | 32,262,272.69 | 41,656,676.18 |
| Mutual Funds:                        |               |               |
| Fixed Income                         | 1,087,934.97  | 1,098,885.27  |
| Pooled/Common/Commingled Funds:      |               |               |
| Hedge                                | 1,220,000.00  | 1,398,010.20  |
| Real Estate                          | 3,906,794.81  | 4,541,760.68  |
| Total Investments                    | 47,553,038.84 | 57,622,846.47 |
| Total Assets                         | 49,292,897.50 | 59,362,705.13 |
| <u>LIABILITIES</u>                   |               |               |
| Payables:                            |               |               |
| Administrative Expenses              | 14,010.59     | 14,010.59     |
| Prepaid Member Contribution          | 282.29        | 282.29        |
| Total Liabilities                    | 14,292.88     | 14,292.88     |
| NET POSITION RESTRICTED FOR PENSIONS | 49,278,604.62 | 59,348,412.25 |

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED SEPTEMBER 30, 2018  
Market Value Basis

ADDITIONS

Contributions:

|                |              |
|----------------|--------------|
| Member         | 146,836.54   |
| City           | 1,523,645.56 |
| City Incentive | 57,135.00    |
| State          | 539,925.23   |

|                     |              |
|---------------------|--------------|
| Total Contributions | 2,267,542.33 |
|---------------------|--------------|

Investment Income:

|   |              |  |
|---|--------------|--|
| Net Realized Gain (Loss)                  | 2,953,575.23 |  |
| Unrealized Gain (Loss)                    | 1,675,550.27 |  |
| Net Increase in Fair Value of Investments | 4,629,125.50 |  |
| Interest & Dividends                      | 1,291,548.77 |  |
| Less Investment Expense <sup>1</sup>      | (275,488.01) |  |

|                       |              |
|-----------------------|--------------|
| Net Investment Income | 5,645,186.26 |
|-----------------------|--------------|

|                 |              |
|-----------------|--------------|
| Total Additions | 7,912,728.59 |
|-----------------|--------------|

DEDUCTIONS

Distributions to Members:

|                                 |              |
|---------------------------------|--------------|
| Benefit Payments                | 2,387,382.84 |
| Lump Sum DROP Distributions     | 0.00         |
| Lump Sum Share Distributions    | 48,802.82    |
| Refunds of Member Contributions | 0.00         |

|                     |              |
|---------------------|--------------|
| Total Distributions | 2,436,185.66 |
|---------------------|--------------|

|                        |           |
|------------------------|-----------|
| Administrative Expense | 79,159.98 |
|------------------------|-----------|

|                  |              |
|------------------|--------------|
| Total Deductions | 2,515,345.64 |
|------------------|--------------|

|                              |              |
|------------------------------|--------------|
| Net Increase in Net Position | 5,397,382.95 |
|------------------------------|--------------|

NET POSITION RESTRICTED FOR PENSIONS

|                       |               |
|-----------------------|---------------|
| Beginning of the Year | 53,951,029.30 |
|-----------------------|---------------|

|                 |               |
|-----------------|---------------|
| End of the Year | 59,348,412.25 |
|-----------------|---------------|

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

ACTUARIAL ASSET VALUATION  
September 30, 2018

Actuarial Assets for funding purposes are developed by recognizing the total actuarial investment gain or loss for each Plan Year over a five year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

| Plan Year<br>Ending | Gain/Loss   | <u>Gains/(Losses) Not Yet Recognized</u>     |           |           |         |      |
|---------------------|-------------|--|-----------|-----------|---------|------|
|                     |             | Amounts Not Yet Recognized by Valuation Year |           |           |         |      |
|                     |             | 2018   | 2019      | 2020      | 2021    | 2022 |
| 09/30/2014          | 2,023,214   | 0  | 0         | 0         | 0       | 0    |
| 09/30/2015          | (3,022,305) | (604,461)                                    | 0         | 0         | 0       | 0    |
| 09/30/2016          | 223,916     | 89,567                                       | 44,784    | 0         | 0       | 0    |
| 09/30/2017          | 2,184,217   | 1,310,531                                    | 873,688   | 436,845   | 0       | 0    |
| 09/30/2018          | 1,608,046   | 1,286,437                                    | 964,828   | 643,219   | 321,610 | 0    |
| Total               |             | 2,082,074                                    | 1,883,300 | 1,080,064 | 321,610 | 0    |

| <u>Development of Investment Gain/(Loss)</u>                        |                  |
|---|------------------|
| Market Value of Assets, including Prepaid Contributions, 09/30/2017 | 53,953,553       |
| Contributions Less Benefit Payments & Admin Expenses                | (250,045)        |
| Expected Investment Earnings*                                       | 4,037,140        |
| Actual Net Investment Earnings                                      | 5,645,186        |
| 2018 Actuarial Investment Gain/(Loss)                               | <u>1,608,046</u> |

\*Expected Investment Earnings =  $0.075 * [53,953,553 + 0.5 * (250,045)]$

| <u>Development of Actuarial Value of Assets</u>                        |                  |
|--|------------------|
| (1) Market Value of Assets, 09/30/2018                                 | 59,348,412       |
| (2) Gains/(Losses) Not Yet Recognized                                  | <u>2,082,074</u> |
| (3) Actuarial Value of Assets, 09/30/2018, (1) - (2)                   | 57,266,338       |
| (A) 09/30/2017 Actuarial Assets, including Prepaid Contributions:      | 52,876,109       |
| (I) Net Investment Income:   |                  |
| 1. Interest and Dividends  | 1,291,549        |
| 2. Realized Gains (Losses)   | 2,953,575        |
| 3. Change in Actuarial Value   | 670,920          |
| 4. Investment Expenses   | <u>(275,488)</u> |
| Total  | 4,640,556        |
| (B) 09/30/2018 Actuarial Assets, including Prepaid Contributions:      | 57,266,621       |
| Actuarial Asset Rate of Return = $2I/(A+B-I)$ :                        | 8.80%            |
| Market Value of Assets Rate of Return:                                 | 10.43%           |
| Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis) | 684,225          |
| 10/01/2018 Limited Actuarial Assets (not including Prepaid):           | 57,266,338       |

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
SEPTEMBER 30, 2018  
Actuarial Asset Basis

REVENUES

|                                     |              |              |
|-------------------------------------|--------------|--------------|
| Contributions:                      |              |              |
| Member                              | 146,836.54   |              |
| City                                | 1,523,645.56 |              |
| City Incentive                      | 57,135.00    |              |
| State                               | 539,925.23   |              |
| Total Contributions                 |              | 2,267,542.33 |
| Earnings from Investments:          |              |              |
| Interest & Dividends                | 1,291,548.77 |              |
| Net Realized Gain (Loss)            | 2,953,575.23 |              |
| Change in Actuarial Value           | 670,920.27   |              |
| Total Earnings and Investment Gains |              | 4,916,044.27 |

EXPENDITURES

|   |              |               |
|---|--------------|---------------|
| Distributions to Members:               |              |               |
| Benefit Payments                        | 2,387,382.84 |               |
| Lump Sum DROP Distributions             | 0.00         |               |
| Lump Sum Share Distributions            | 48,802.82    |               |
| Refunds of Member Contributions         | 0.00         |               |
| Total Distributions                     |              | 2,436,185.66  |
| Expenses:                               |              |               |
| Investment related <sup>1</sup>         | 275,488.01   |               |
| Administrative                          | 79,159.98    |               |
| Total Expenses                          |              | 354,647.99    |
| Change in Net Assets for the Year       |              | 4,392,752.95  |
| Net Assets Beginning of the Year        |              | 52,873,585.30 |
| Net Assets End of the Year <sup>2</sup> |              | 57,266,338.25 |

<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.

DEFERRED RETIREMENT OPTION PLAN ACTIVITY  
October 1, 2017 to September 30, 2018

|                               |              |
|-------------------------------|--------------|
| Beginning of the Year Balance | 1,824,695.62 |
| Plus Additions                | 845,236.97   |
| Investment Return Earned      | 30,292.14    |
| Less Distributions            | 0.00         |
| End of the Year Balance       | 2,700,224.73 |

SUPPLEMENTAL CHAPTER 175 SHARE PLAN ACTIVITY  
October 1, 2017 through September 30, 2018

|                                 |          |
|---------------------------------|----------|
| 9/30/2017 Balance               | 887,267  |
| Prior Year Adjustment           | (1,257)  |
| Plus Additions                  | 0        |
| Investment Return Earned (est.) | 89,866   |
| Administrative Fees             | 0        |
| Less Distributions              | (48,803) |
| 9/30/2018 Balance (est.)        | 927,073  |

RECONCILIATION OF CITY'S SHORTFALL/(PREPAID) CONTRIBUTION  
FOR THE FISCAL YEAR ENDED (FYE) SEPTEMBER 30, 2018

|  |                       |
|--|-----------------------|
| (1) City and State Required Contribution Rate                                  | 66.66%                |
| (2) Pensionable Payroll Derived from Member Contributions                      | \$3,181,376.82        |
| (3) Required City and State Contribution (1) x (2)                             | 2,120,705.79          |
| (4) Less Allowable State Contribution  | <u>(539,925.23)</u>   |
| (5) Equals Required City Contribution for Fiscal 2018                          | 1,580,780.56          |
| (6) Less City Incentive Contribution   | (57,135.00)           |
| (7) Less Actual City Contributions   | <u>(1,378,232.00)</u> |
| (8) Equals City's Shortfall/(Prepaid) Contribution as of<br>September 30, 2018 | \$145,413.56          |



## STATISTICAL DATA

10/1/2015                      10/1/2016                      10/1/2017                      10/1/2018

### Actives - Hired on or before May 31, 2013

|                           |          |          |          |          |
|---------------------------|----------|----------|----------|----------|
| Number                    | 45       | 41       | 38       | 34       |
| Average Current Age       | 38.9     | 39.1     | 39.7     | 40.3     |
| Average Age at Employment | 26.8     | 27.1     | 27.0     | 26.9     |
| Average Past Service      | 12.1     | 12.0     | 12.7     | 13.5     |
| Average Annual Salary     | \$68,759 | \$67,466 | \$68,872 | \$75,892 |

### Actives - Hired after May 31, 2013

|                           |          |          |          |          |
|---------------------------|----------|----------|----------|----------|
| Number                    | 3        | 6        | 8        | 12       |
| Average Current Age       | 23.2     | 28.6     | 28.9     | 28.7     |
| Average Age at Employment | 22.3     | 27.8     | 27.4     | 26.9     |
| Average Past Service      | 0.9      | 0.8      | 1.5      | 1.8      |
| Average Annual Salary     | \$46,601 | \$59,761 | \$59,446 | \$57,678 |

### Service Retirees

|                        |          |          |          |          |
|------------------------|----------|----------|----------|----------|
| Number                 | 36       | 37       | 38       | 39       |
| Average Current Age    | 60.8     | 61.5     | 62.4     | 62.8     |
| Average Annual Benefit | \$56,760 | \$57,322 | \$59,718 | \$60,600 |

### DROP Retirees

|                        |          |          |          |          |
|------------------------|----------|----------|----------|----------|
| Number                 | 6        | 9        | 10       | 10       |
| Average Current Age    | 53.5     | 52.7     | 52.6     | 53.6     |
| Average Annual Benefit | \$83,232 | \$86,517 | \$84,294 | \$86,407 |

### Beneficiaries

|                        |          |          |     |          |
|------------------------|----------|----------|-----|----------|
| Number                 | 1        | 1        | 0   | 1        |
| Average Current Age    | 72.9     | 73.9     | N/A | 59.8     |
| Average Annual Benefit | \$10,162 | \$10,162 | N/A | \$65,715 |

### Disability Retirees

|                        |          |          |          |          |
|------------------------|----------|----------|----------|----------|
| Number                 | 1        | 1        | 1        | 2        |
| Average Current Age    | 55.7     | 56.7     | 57.7     | 48.0     |
| Average Annual Benefit | \$42,840 | \$44,018 | \$45,229 | \$36,532 |

### Terminated Vested

|                                     |          |          |          |          |
|-------------------------------------|----------|----------|----------|----------|
| Number                              | 6        | 5        | 6        | 8        |
| Average Current Age <sup>1</sup>    | 44.5     | 48.2     | 53.7     | 46.2     |
| Average Annual Benefit <sup>2</sup> | \$15,426 | \$22,720 | \$20,368 | \$18,761 |

<sup>1</sup> The Average Current Age excludes participants awaiting a refund of contributions.

<sup>2</sup> The Average Annual Benefit 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 | 0 | 0 | 0 | 0 | 0   | 0     | 0     | 0     | 0     | 0   | 0     |
| 20 - 24 | 0 | 0 | 0 | 1 | 0 | 0   | 0     | 0     | 0     | 0     | 0   | 1     |
| 25 - 29 | 4 | 1 | 2 | 1 | 0 | 2   | 0     | 0     | 0     | 0     | 0   | 10    |
| 30 - 34 | 1 | 0 | 1 | 0 | 0 | 2   | 3     | 0     | 0     | 0     | 0   | 7     |
| 35 - 39 | 0 | 0 | 0 | 0 | 0 | 4   | 3     | 2     | 0     | 0     | 0   | 9     |
| 40 - 44 | 0 | 0 | 0 | 0 | 0 | 1   | 2     | 4     | 0     | 0     | 0   | 7     |
| 45 - 49 | 0 | 0 | 0 | 0 | 0 | 1   | 1     | 3     | 3     | 0     | 0   | 8     |
| 50 - 54 | 0 | 0 | 0 | 1 | 0 | 0   | 0     | 3     | 0     | 0     | 0   | 4     |
| 55 - 59 | 0 | 0 | 0 | 0 | 0 | 0   | 0     | 0     | 0     | 0     | 0   | 0     |
| 60 - 64 | 0 | 0 | 0 | 0 | 0 | 0   | 0     | 0     | 0     | 0     | 0   | 0     |
| 65+     | 0 | 0 | 0 | 0 | 0 | 0   | 0     | 0     | 0     | 0     | 0   | 0     |
| Total   | 5 | 1 | 3 | 3 | 0 | 10  | 9     | 12    | 3     | 0     | 0   | 46    |

## VALUATION PARTICIPANT RECONCILIATION

### 1. Active lives

|   |          |
|---|----------|
| a. Number in prior valuation 10/1/2017                | 46       |
| b. Terminations                                       |          |
| i. Vested (partial or full) with deferred benefits    | (2)      |
| ii. Non-vested or full lump sum distribution received | 0        |
| c. Deaths   |          |
| i. Beneficiary receiving benefits                     | 0        |
| ii. No future benefits payable                        | 0        |
| d. Disabled   | (1)      |
| e. Retired  | (2)      |
| f. DROP   | <u>0</u> |
| g. Continuing participants                            | 41       |
| h. New entrants                                       | <u>5</u> |
| i. Total active life participants in valuation        | 46       |

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

|                             | Service<br>Retirees,<br>Vested<br>Receiving<br><u>Benefits</u> | DROP<br><u>Benefits</u> | Receiving<br>Death<br><u>Benefits</u> | Receiving<br>Disability<br><u>Benefits</u> | Vested<br>Deferred | <u>Total</u> |
|-----------------------------|--|-------------------------|---------------------------------------|--|--------------------|--------------|
| a. Number prior valuation   | 38   | 10                      | 0                                     | 1  | 6                  | 55           |
| Retired                     | 2  | 0                       | 0                                     | 0  | 0                  | 2            |
| DROP                        | 0  | 0                       | 0                                     | 0  | 0                  | 0            |
| Vested Deferred             | 0  | 0                       | 0                                     | 0  | 2                  | 2            |
| Death, With Survivor        | (1)  | 0                       | 1                                     | 0  | 0                  | 0            |
| Death, No Survivor          | 0  | 0                       | 0                                     | 0  | 0                  | 0            |
| Disabled                    | 0  | 0                       | 0                                     | 1  | 0                  | 1            |
| 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 | 39   | 10                      | 1                                     | 2  | 8                  | 60           |

FIREFIGHTERS' PENSION AND RETIREMENT SYSTEM  
SUMMARY OF PLAN PROVISIONS  
(Through Ordinance No. 14-13466)

|                                   |  |
|-----------------------------------|--|
| <u>Eligibility</u>                | Full-time employees who are classified as certified Firefighters participate in the Plan as a condition of employment.   |
| <u>Credited Service</u>           | Total years and completed days of uninterrupted service with the City as a Firefighter.  |
| <u>Salary</u>                     | Base compensation, excluding overtime pay, holiday pay, and fringe benefits.   |
| <u>Final Average Compensation</u> | Average of compensation paid during the five (5) highest years of the last ten years of service. The average cannot be less than the three-year average (consecutive years) determined as of May 31, 2013.   |
| <u>Normal Retirement</u>          |  |
| Date                              | Earlier of 1) age 55, 2) age 50 and the completion of 20 years of Credited Service, or 3) the completion of 25 years of credited service, regardless of age.<br><br>For Members hired after May 31, 2013, the Normal Retirement Date is the earlier of 1) Age 55 with 8 years of Credited Service, or 2) the completion of 25 years of Credited Service, regardless of Age.  |
| Benefit                           | The sum of the following:<br><br>a.) 4% of Final Average Compensation (using a three-year average, determined as of May 31, 2013) for each year of Credited Service through May 31, 2013, plus<br><br>b.) 3% of Final Average Compensation (using a five-year average) for Credited Service after May 31, 2013.<br><br>Members who had attained Normal Retirement eligibility as of May 31, 2013 continue to accrued benefits under Plan provisions in effect prior to Ordinance 13-13283. |
| Form of Benefit                   | Ten Year Certain and Life Annuity (options available).   |

## Early Retirement

|         |  |
|---------|--|
| Date    | Age 50, regardless of years of Credited Service. Members hired after May 31, 2013 attain Early Retirement eligibility at age 50 with 8 years of Credited Service.  |
| Benefit | Accrued benefit, reduced 3% for each year Early Retirement precedes the earlier of age 55, or the completion of 20 years of Credited Service, regardless of age.<br><br>For Members hired after May 31, 2013, the reduction is 3% for each year Early Retirement precedes the earlier of age 55 and 8 years of Credited Service, or the completion of 25 years of Credited Service, regardless of age. |

## Vesting

|                |   |
|----------------|---|
| Schedule       | 100% after 5 years of Credited Service. Members hired after May 31, 2013 are fully vested upon the completion of 8 years of Credited Service.   |
| Benefit Amount | Member will receive the vested portion of his (her) accrued benefit payable at age 55 (unreduced), or age 50, reduced as for Early Retirement.<br><br>Non-vested Members receive a refund of Member contributions accumulated with 5.5% interest. |

## Disability

|             |  |
|-------------|--|
| Eligibility | Total and permanent as determined by the Board of Trustees. Members are covered from Date of Employment.   |
| Benefit     | Accrued Benefit to date of disability but not less than 42% of Final Average Compensation (Service Incurred), or 25% of Final Average Compensation (Non-Service Incurred). |
| Duration    | Payable for life with 10 years certain or until recovery (as determined by the Board).   |

## Death Benefits

### Pre-Retirement

#### Vested

Accrued benefit, actuarially reduced for commencement prior to age 55. The benefit is determined as if the participant had retired immediately prior to death and had chosen the 100% joint survivor option.

#### Non-Vested

Refund of Member contributions, with 5.5% interest.

### Post-Retirement

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

## Cost of Living Adjustment

### Eligibility

Normal and Early service Retirees and Beneficiaries, including Disability Retirees. Vested, terminated Members are not eligible for the COLA.

### Amount

3.0% increase per year following one year of payments and the retiree's 50<sup>th</sup> birthday.

COLAs are not applicable to benefits accrued after May 31, 2013.

## Member Contributions

5.0% of Compensation. The contribution rate is 3% for Members hired after May 31, 2013.

## City and State Contributions

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

## Deferred Retirement Option Plan

### Eligibility

Normal Retirement eligibility.

### Participation

Not to exceed 60 months.

### Rate of Return

1.3% annual effective rate, compounded monthly.

### Form of Distribution

Cash lump sum at termination of employment.

## Board of Trustees

Two Council appointees, two Members of the Plan elected by the Membership, and a fifth Member elected by other 4 and appointed by Council as a ministerial duty.

### Chapter 175 Share Accounts

Effective October 1, 2009, an initial amount of \$663,717.06 was allocated to all members who were employed as of that date. Based on the current Collective Bargaining Agreement, no future State Monies are scheduled for allocation to the Share Plan.

STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2018

| <u>ASSETS</u>                        | MARKET VALUE |
|--------------------------------------|--------------|
| Cash and Cash Equivalents:           |              |
| Checking Account                     | 1,149        |
| Money Market                         | 998,485      |
| Cash                                 | 48,730       |
| Total Cash and Equivalents           | 1,048,364    |
| Receivables:                         |              |
| Member Contributions in Transit      | 5,480        |
| Member Contributions                 | 675          |
| Additional City Contributions        | 145,414      |
| State Contributions                  | 539,925      |
| Total Receivable                     | 691,494      |
| Investments:                         |              |
| Fixed Income                         | 8,927,514    |
| Equities                             | 41,656,676   |
| Mutual Funds:                        |              |
| Fixed Income                         | 1,098,886    |
| Pooled/Common/Commingled Funds:      |              |
| Fixed Income                         | 0            |
| Hedge                                | 1,398,010    |
| Real Estate                          | 4,541,761    |
| Total Investments                    | 57,622,847   |
| Total Assets                         | 59,362,705   |
| <u>LIABILITIES</u>                   |              |
| Payables:                            |              |
| Administrative Expenses              | 14,010       |
| Total Liabilities                    | 14,010       |
| NET POSITION RESTRICTED FOR PENSIONS | 59,348,695   |



STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED SEPTEMBER 30, 2018  
Market Value Basis

ADDITIONS

## Contributions:

|   |           |           |
|---|-----------|-----------|
| Member                                    | 144,595   |           |
| City                                      | 1,523,646 |           |
| City Incentive                            | 57,135    |           |
| State                                     | 539,925   |           |
| Total Contributions                       |           | 2,265,301 |
| Investment Income:                        |           |           |
| Net Increase in Fair Value of Investments | 4,629,126 |           |
| Interest & Dividends                      | 1,291,549 |           |
| Less Investment Expense <sup>1</sup>      | (275,488) |           |
| Net Investment Income                     |           | 5,645,187 |
| Total Additions                           |           | 7,910,488 |

DEDUCTIONS

## Distributions to Members:

|                                      |           |            |
|--------------------------------------|-----------|------------|
| Benefit Payments                     | 2,387,383 |            |
| Lump Sum DROP Distributions          | 0         |            |
| Lump Sum Share Distributions         | 48,803    |            |
| Refunds of Member Contributions      | 0         |            |
| Total Distributions                  |           | 2,436,186  |
| Administrative Expense               |           | 79,160     |
| Total Deductions                     |           | 2,515,346  |
| Net Increase in Net Position         |           | 5,395,142  |
| NET POSITION RESTRICTED FOR PENSIONS |           |            |
| Beginning of the Year                |           | 53,953,553 |
| End of the Year                      |           | 59,348,695 |

<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, 2018)

### 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 Council appointees;
- b. Two Members of the Plan elected by the Membership, and a
- c. Fifth Member elected by other four and appointed by Council as a ministerial duty.

#### *Plan Membership as of October 1, 2017:*

|   |     |
|---|-----|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 49  |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits    | 6   |
| Active Plan Members   | 46  |
|   | 101 |

#### *Benefits Provided*

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

##### Normal Retirement:

Date: Earlier of 1) age 55, 2) age 50 and the completion of 20 years of Credited Service, or 3) the completion of 25 years of credited service, regardless of age.

For Members hired after May 31, 2013, the Normal Retirement Date is the earlier of 1) Age 55 with 8 years of Credited Service, or 2) the completion of 25 years of Credited Service, regardless of Age.

Benefit: The sum of the following:

- a) 4% of Final Average Compensation (using a three-year average, determined as of May 31, 2013) for each year of Credited Service through May 31, 2013, plus
- b) 3% of Final Average Compensation (using a five-year average) for Credited Service after May 31, 2013.

Members who had attained Normal Retirement eligibility as of May 31, 2013 continue to accrued benefits under Plan provisions in effect prior to Ordinance 13-13283.

##### Early Retirement:

Date: Age 50, regardless of years of Credited Service. Members hired after May 31, 2013 attain Early Retirement eligibility at age 50 with 8 years of Credited Service.

Benefit: Accrued benefit, reduced 3% for each year Early Retirement precedes the earlier of age 55, or the completion of 20 years of Credited Service, regardless of age.

For Members hired after May 31, 2013, the reduction is 3% for each year Early Retirement precedes the earlier of age 55 and 8 years of Credited Service, or the completion of 25 years of Credited Service, regardless of age.

##### Vesting:

Schedule: 100% after 5 years of Credited Service. Members hired after May 31, 2013 are fully vested upon the completion of 8 years of Credited Service.

Benefit Amount: Member will receive the vested portion of his (her) accrued benefit payable at age 55 (unreduced), or age 50, reduced as for Early Retirement.

Non-vested Members receive a refund of Member contributions accumulated with 5.5% interest.

##### Disability:

Eligibility: Total and permanent as determined by the Board of Trustees. Members are covered from Date of Employment.

Benefit: Accrued Benefit to date of disability but not less than 42% of Final Average Compensation (Service Incurred), or 25% of Final Average Compensation (Non-Service Incurred).

##### Pre-Retirement Death Benefits:

Vested: Accrued benefit, actuarially reduced for commencement prior to age 55. The benefit is determined as if the participant had retired immediately prior to death and had chosen the 100% joint survivor option.

Non-Vested: Refund of Member contributions, with 5.5% interest.

Cost of Living Adjustment:

Eligibility: Normal and Early service Retirees and Beneficiaries, including Disability Retirees. Vested, terminated Members are not eligible for the COLA.

Amount: 3.0% increase per year following one year of payments and the retiree's 50th birthday.

COLAs are not applicable to benefits accrued after May 31, 2013.

Chapter 175 Share Accounts:

Effective October 1, 2009, an initial amount of \$663,717.06 shall be allocated to all members who were employed on October 1, 2009. The Plan provides that Plan participants will share in the excess State Monies that are received over and above \$1,668,662. The portion of allocations is based on the total number of months of Credited Service as of the valuation date.

Contributions

Member Contributions: 5.0% of Compensation. The contribution rate is 3% for Members hired after May 31, 2013.

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

InvestmentsInvestment Policy:

The following was the Board's adopted asset allocation policy as of September 30, 2018:

| <u>Asset Class</u>   | <u>Target Allocation</u> |
|----------------------|--------------------------|
| Domestic Equity      | 52.50%                   |
| International Equity | 10.00%                   |
| Fixed Income         | 17.50%                   |
| Real Estate          | 10.00%                   |
| Hedge Funds          | 5.00%                    |
| MLPs                 | 5.00%                    |
| Total                | 100.00%                  |

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, 2018, the annual money-weighted rate of return on Pension Plan investments, net of Pension Plan investment expense, was 10.43 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: Normal Retirement eligibility.

Participation: Not to exceed 60 months.

Rate of Return: 1.3% annual effective rate, compounded monthly.

The DROP balance as September 30, 2018 is \$2,700,225.

## NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the Sponsor on September 30, 2018 were as follows:

|  |                        |
|--|------------------------|
| Total Pension Liability  | \$ 68,037,467          |
| Plan Fiduciary Net Position  | <u>\$ (59,348,695)</u> |
| Sponsor's Net Pension Liability  | <u>\$ 8,688,772</u>    |
| Plan Fiduciary Net Position as a percentage of Total Pension Liability | 87.23%                 |

*Actuarial Assumptions:*

The Total Pension Liability was determined by an actuarial valuation as of October 1, 2017 updated to September 30, 2018 using the following actuarial assumptions:

|                           |               |
|---------------------------|---------------|
| Inflation                 | 2.30%         |
| Salary Increases          | Service based |
| Discount Rate             | 7.40%         |
| Investment Rate of Return | 7.40%         |

*Mortality Rate 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 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 most recent actuarial experience study used to review the other significant assumptions was dated August 4, 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 2018 the inflation rate assumption of the investment advisor was 2.10%.

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, 2018 are summarized in the following table:

| Asset Class          | Long Term<br>Expected Real<br>Rate of Return |
|----------------------|--|
| Domestic Equity      | 6.66%  |
| International Equity | 6.10%  |
| Fixed Income         | 2.42%  |
| Real Estate          | 3.36%  |
| Hedge Funds          | 3.03%  |
| MLPs                 | 5.25%  |

Discount Rate:  
The Discount Rate used to measure the Total Pension Liability was 7.40 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   | Current<br>Discount Rate | 1% Increase  |
|---------------------------------|---------------|--------------------------|--------------|
|                                 | 6.40%         | 7.40%                    | 8.40%        |
| Sponsor's Net Pension Liability | \$ 17,613,942 | \$ 8,688,772             | \$ 1,413,327 |

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

|  | 09/30/2018           | 09/30/2017           | 09/30/2016           |
|--|----------------------|----------------------|----------------------|
| Total Pension Liability  |                      |                      |                      |
| Service Cost   | 724,263              | 708,978              | 874,002              |
| Interest   | 4,830,246            | 4,603,003            | 4,299,570            |
| Changes of benefit terms   | -                    | -                    | -                    |
| Differences between Expected and Actual Experience                         | (549,657)            | 182,694              | 116,520              |
| Changes of assumptions   | 571,688              | -                    | 1,240,006            |
| Contributions - Buy Back   | -                    | -                    | 15,021               |
| Benefit Payments, including Refunds of Employee Contributions              | (2,436,186)          | (2,523,905)          | (2,144,740)          |
| Net Change in Total Pension Liability                                      | 3,140,354            | 2,970,770            | 4,400,379            |
| Total Pension Liability - Beginning  | 64,897,113           | 61,926,343           | 57,525,964           |
| Total Pension Liability - Ending (a)                                       | <u>\$ 68,037,467</u> | <u>\$ 64,897,113</u> | <u>\$ 61,926,343</u> |
| Plan Fiduciary Net Position  |                      |                      |                      |
| Contributions - Employer   | 1,580,781            | 1,399,309            | 1,567,675            |
| Contributions - State  | 539,925              | 509,868              | 581,196              |
| Contributions - Employee   | 144,595              | 129,737              | 170,589              |
| Contributions - Buy Back   | -                    | -                    | 15,021               |
| Net Investment Income  | 5,645,187            | 5,815,765            | 3,606,806            |
| Benefit Payments, including Refunds of Employee Contributions              | (2,436,186)          | (2,523,905)          | (2,144,740)          |
| Administrative Expense   | (79,160)             | (80,689)             | (66,876)             |
| Net Change in Plan Fiduciary Net Position                                  | 5,395,142            | 5,250,085            | 3,729,671            |
| Plan Fiduciary Net Position - Beginning                                    | 53,953,553           | 48,703,468           | 44,973,797           |
| Plan Fiduciary Net Position - Ending (b)                                   | <u>\$ 59,348,695</u> | <u>\$ 53,953,553</u> | <u>\$ 48,703,468</u> |
| Net Pension Liability - Ending (a) - (b)                                   | <u>\$ 8,688,772</u>  | <u>\$ 10,943,560</u> | <u>\$ 13,222,875</u> |
| Plan Fiduciary Net Position as a percentage of the Total Pension Liability | 87.23%               | 83.14%               | 78.65%               |
| Covered Employee Payroll <sup>1</sup>                                      | \$ 3,181,377         | \$ 2,997,608         | \$ 3,237,715         |
| Net Pension Liability as a percentage of Covered Employee Payroll          | 273.11%              | 365.08%              | 408.40%              |

**Notes to Schedule:**

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

*Changes of assumptions:*

For measurement date 09/30/2018, all recommended assumption changes from the August 4, 2017 Experience Study have been incorporated. Additionally, the investment return assumption will reduce from 7.5% to 7.0% according to the following schedule:

| <u>Valuation Date</u> | <u>Assumption</u> |
|-----------------------|-------------------|
| October 1, 2018       | 7.4%              |
| October 1, 2019       | 7.3%              |
| October 1, 2020       | 7.2%              |
| October 1, 2021       | 7.1%              |
| October 1, 2022       | 7.0%              |

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 2.30%, matching the long-term inflation assumption utilized by the Plan's investment consultant.

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

|  | 09/30/2015           | 09/30/2014           |
|--|----------------------|----------------------|
| Total Pension Liability  |                      |                      |
| Service Cost   | 842,047              | 981,492              |
| Interest   | 4,102,672            | 3,896,369            |
| Changes of benefit terms   | -                    | -                    |
| Differences between Expected and Actual Experience                         | (247,033)            | -                    |
| Changes of assumptions   | -                    | -                    |
| Contributions - Buy Back   | -                    | -                    |
| Benefit Payments, including Refunds of Employee Contributions              | (2,063,933)          | (1,911,491)          |
| Net Change in Total Pension Liability                                      | 2,633,753            | 2,966,370            |
| Total Pension Liability - Beginning  | 54,892,211           | 51,925,841           |
| Total Pension Liability - Ending (a)                                       | <u>\$ 57,525,964</u> | <u>\$ 54,892,211</u> |
| Plan Fiduciary Net Position  |                      |                      |
| Contributions - Employer   | 1,180,670            | 1,342,378            |
| Contributions - State  | 721,101              | 871,999              |
| Contributions - Employee   | 153,807              | 177,737              |
| Contributions - Buy Back   | -                    | -                    |
| Net Investment Income  | 341,202              | 4,986,191            |
| Benefit Payments, including Refunds of Employee Contributions              | (2,063,933)          | (1,911,491)          |
| Administrative Expense   | (63,952)             | (55,927)             |
| Net Change in Plan Fiduciary Net Position                                  | 268,895              | 5,410,887            |
| Plan Fiduciary Net Position - Beginning                                    | 44,704,902           | 39,294,015           |
| Plan Fiduciary Net Position - Ending (b)                                   | <u>\$ 44,973,797</u> | <u>\$ 44,704,902</u> |
| Net Pension Liability - Ending (a) - (b)                                   | <u>\$ 12,552,167</u> | <u>\$ 10,187,309</u> |
| Plan Fiduciary Net Position as a percentage of the Total Pension Liability | 78.18%               | 81.44%               |
| Covered Employee Payroll <sup>1</sup>                                      | \$ 4,341,784         | \$ 3,573,306         |
| Net Pension Liability as a percentage of Covered Employee Payroll          | 289.10%              | 285.09%              |

**Notes to Schedule:**

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

## SCHEDULE OF CONTRIBUTIONS

### Last 10 Fiscal Years

| Fiscal Year Ended | Actuarially<br>Determined<br>Contribution | Contributions<br>in relation to<br>the Actuarially<br>Determined<br>Contributions | Contribution<br>Deficiency<br>(Excess) | Covered<br>Employee<br>Payroll <sup>1</sup> | Contributions<br>as a percentage<br>of Covered<br>Employee<br>Payroll |
|-------------------|---|---|--|---|---|
| 09/30/2018        | \$ 2,120,706                              | \$ 2,120,706  | \$ -                                   | \$ 3,181,377                                | 66.66%  |
| 09/30/2017        | \$ 1,909,177                              | \$ 1,909,177  | \$ -                                   | \$ 2,997,608                                | 63.69%  |
| 09/30/2016        | \$ 2,148,871                              | \$ 2,148,871  | \$ -                                   | \$ 3,237,715                                | 66.37%  |
| 09/30/2015        | \$ 1,901,771                              | \$ 1,901,771  | \$ -                                   | \$ 4,341,784                                | 43.80%  |
| 09/30/2014        | \$ 2,214,378                              | \$ 2,214,378  | \$ -                                   | \$ 3,573,306                                | 61.97%  |

<sup>1</sup> The Covered Employee 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: 10/01/2016

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 Rates:

#### *Healthy 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, 2015 FRS actuarial valuation report. We feel this assumption sufficiently accommodates future mortality improvements.

Normal Retirement Age Eligibility:

#### Hired prior to 6/1/2013:

Earlier of 1) Age 55, 2) the completion of 25 years of Credited Service, regardless of age, or 3) the attainment of Age 50 with 20 years of Credited Service.

#### Hired after May 31, 2013:

Earlier of 1) Age 55 with 8 years of Credited Service, or 2) the completion of 25 years of Credited Service, regardless of age.



## Retirement Rates:

Assumed Normal Retirement rates shown below were incorporated with the October 1, 2007 valuation as the result of a prior Experience Study. These rates are also applicable for Members hired after May 31, 2013, as adopted with the October 1, 2013 valuation

| Number of Year After First<br>Eligibility For Normal<br>Retirement | Probability of Normal<br>Retirement |
|--|-------------------------------------|
| 0  | 25%                                 |
| 1  | 50%                                 |
| 2  | 50%                                 |
| 3  | 50%                                 |
| 4  | 100%                                |

The retirement rate for Normal Retirement is 100% for participants who have attained age 55 or 25 years of service, regardless of age.

## Early Retirement Age:

Attainment of age 50, regardless of years of Credited Service. Members are assumed to retire with an immediate subsidized benefit at the rate of 5% per year. These rates were incorporated with the October 1, 2007 valuation as the result of a prior Experience Study.

## Termination Rates:

| Sample Ages | Years of<br>Service | % of Active Members<br>Separating Within Next Year |
|-------------|---------------------|--|
| ALL         | 0                   | 20.0%  |
|             | 1                   | 12.0%  |
|             | 2                   | 8.0%   |
|             | 3                   | 4.0%   |
|             | 4                   | 2.0%   |
| 20          | 5+                  | 9.6%   |
| 25          |                     | 5.6%   |
| 30          |                     | 2.8%   |
| 35          |                     | 1.4%   |
| 40          |                     | 0.4%   |
| 45+         |                     | 0.0%   |

The above rates were incorporated with the October 1, 2007 valuation as the result of a prior Experience Study.

## Disability Rates:

See table below. It is assumed that 75% of disablements and active Member deaths are service-related. These rates are in line with the national average for municipal defined benefit pension programs.

| Age | % Becoming Disabled During<br>the Year |
|-----|--|
| 20  | 0.14%                                  |
| 25  | 0.15%                                  |
| 30  | 0.18%                                  |
| 35  | 0.23%                                  |
| 40  | 0.30%                                  |
| 45  | 0.51%                                  |
| 50  | 1.00%                                  |

## Salary Increases:

See table below. These rates were incorporated with the October 1, 2014 valuation as the result of an Experience Study.

| Years of Service | Salary Increase |
|------------------|-----------------|
| 1                | 6.0%            |
| 2 - 9            | 5.5%            |
| 10-14            | 5.0%            |
| 15-19            | 4.5%            |
| 20+              | 4.0%            |

## GASB 67

|                            |   |
|----------------------------|---|
| Payroll Growth:            | 0.0% per year for amortization of the Unfunded Actuarial Accrued Liability, based on the ten-year average (statutory limit). The assumption was 0.8% for the October 1, 2015 valuation.   |
| Interest Rate:             | 7.50% per year, compounded annually, net of investment related expenses. This assumption was adopted by the Board in conjunction with a revision to the October 1, 2006 valuation and is supported by the Plan's investment policy and long-term expected returns |
| Post Retirement COLA:      | 3% per year at beginning at age 50 for Service Retirees, Disability Retirees, and surviving Beneficiaries. The COLA is not applicable for Vested Terminated Members, or for benefits accrued after May 31, 2013.  |
| Actuarial Value of Assets: | The Actuarial Value of Assets utilizes a five-year smoothing methodology. The annual difference between expected and actual investment earnings (Market Value, net of investment-related expenses), is phased-in over a five-year period.                         |
| Funding Method:            | Entry Age Normal Actuarial Cost Method.   |

**SCHEDULE OF INVESTMENT RETURNS**  
Last 10 Fiscal Years

| Fiscal Year Ended | Annual Money-Weighted Rate of Return<br>Net of Investment Expense |
|-------------------|---|
| 09/30/2018        | 10.43%  |
| 09/30/2017        | 12.02%  |
| 09/30/2016        | 8.01%   |
| 09/30/2015        | 0.77%   |
| 09/30/2014        | 12.67%  |

## 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 Council appointees;
- b. Two Members of the Plan elected by the Membership, and a
- c. Fifth Member elected by other four and appointed by Council as a ministerial duty.

Full-time employees who are classified as certified Firefighters participate in the Plan as a condition of employment.

#### *Plan Membership as of October 1, 2017:*

|   |     |
|---|-----|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 49  |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits    | 6   |
| Active Plan Members   | 46  |
|   | 101 |

#### *Benefits Provided*

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

##### Normal Retirement:

Date: Earlier of 1) age 55, 2) age 50 and the completion of 20 years of Credited Service, or 3) the completion of 25 years of credited service, regardless of age.

For Members hired after May 31, 2013, the Normal Retirement Date is the earlier of 1) Age 55 with 8 years of Credited Service, or 2) the completion of 25 years of Credited Service, regardless of Age.

Benefit: The sum of the following:

a) 4% of Final Average Compensation (using a three-year average, determined as of May 31, 2013) for each year of Credited Service through May 31, 2013, plus

b) 3% of Final Average Compensation (using a five-year average) for Credited Service after May 31, 2013.

Members who had attained Normal Retirement eligibility as of May 31, 2013 continue to accrued benefits under Plan provisions in effect prior to Ordinance 13-13283.

##### Early Retirement:

Date: Age 50, regardless of years of Credited Service. Members hired after May 31, 2013 attain Early Retirement eligibility at age 50 with 8 years of Credited Service.

Benefit: Accrued benefit, reduced 3% for each year Early Retirement precedes the earlier of age 55, or the completion of 20 years of Credited Service, regardless of age.

For Members hired after May 31, 2013, the reduction is 3% for each year Early Retirement precedes the earlier of age 55 and 8 years of Credited Service, or the completion of 25 years of Credited Service, regardless of age.

##### Vesting:

Schedule: 100% after 5 years of Credited Service. Members hired after May 31, 2013 are fully vested upon the completion of 8 years of Credited Service.

Benefit Amount: Member will receive the vested portion of his (her) accrued benefit payable at age 55 (unreduced), or age 50, reduced as for Early Retirement.

Non-vested Members receive a refund of Member contributions accumulated with 5.5% interest.

##### Disability:

Eligibility: Total and permanent as determined by the Board of Trustees. Members are covered from Date of Employment.

Benefit: Accrued Benefit to date of disability but not less than 42% of Final Average Compensation (Service Incurred), or 25% of Final Average Compensation (Non-Service Incurred).

##### Pre-Retirement Death Benefits:

Vested: Accrued benefit, actuarially reduced for commencement prior to age 55. The benefit is determined as if the participant had retired immediately prior to death and had chosen the 100% joint survivor option.

Non-Vested: Refund of Member contributions, with 5.5% interest.

Cost of Living Adjustment:

Eligibility: Normal and Early service Retirees and Beneficiaries, including Disability Retirees. Vested, terminated Members are not eligible for the COLA.

Amount: 3.0% increase per year following one year of payments and the retiree's 50th birthday.

COLAs are not applicable to benefits accrued after May 31, 2013.

Chapter 175 Share Accounts:

Effective October 1, 2009, an initial amount of \$663,717.06 shall be allocated to all members who were employed on October 1, 2009. The Plan provides that Plan participants will share in the excess State Monies that are received over and above \$1,668,662. The portion of allocations is based on the total number of months of Credited Service as of the valuation date.

*Contributions*

Member Contributions: 5.0% of Compensation. The contribution rate is 3% for Members hired after May 31, 2013.

City 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, 2018.

The measurement period for the pension expense was October 1, 2017 to September 30, 2018.

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

The Sponsor's Net Pension Liability was measured as of September 30, 2018.

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, 2017 updated to September 30, 2018 using the following actuarial assumptions:

|                           |               |
|---------------------------|---------------|
| Inflation                 | 2.30%         |
| Salary Increases          | Service based |
| Discount Rate             | 7.40%         |
| Investment Rate of Return | 7.40%         |

*Mortality Rate 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 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 most recent actuarial experience study used to review the other significant assumptions was dated August 4, 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 2018 the inflation rate assumption of the investment advisor was 2.10%.

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.

## GASB 68

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, 2018 are summarized in the following table:

| Asset Class          | Target Allocation | Long Term Expected<br>Real Rate of Return |
|----------------------|-------------------|---|
| Domestic Equity      | 52.50%            | 6.66%                                     |
| International Equity | 10.00%            | 6.10%                                     |
| Fixed Income         | 17.50%            | 2.42%                                     |
| Real Estate          | 10.00%            | 3.36%                                     |
| Hedge Funds          | 5.00%             | 3.03%                                     |
| MLPs                 | 5.00%             | 5.25%                                     |
| Total                | 100.00%           |   |

### Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.40 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)               |
| Reporting Period Ending September 30, 2018                    | \$ 64,897,113           | \$ 53,953,553               | \$ 10,943,560         |
| Changes for a Year:   |                         |                             |                       |
| Service Cost  | 724,263                 | -                           | 724,263               |
| Interest  | 4,830,246               | -                           | 4,830,246             |
| Differences between Expected and Actual Experience            | (549,657)               | -                           | (549,657)             |
| Changes of assumptions  | 571,688                 | -                           | 571,688               |
| Changes of benefit terms                                      | -                       | -                           | -                     |
| Contributions - Employer                                      | -                       | 1,580,781                   | (1,580,781)           |
| Contributions - State   | -                       | 539,925                     | (539,925)             |
| Contributions - Employee                                      | -                       | 144,595                     | (144,595)             |
| Net Investment Income   | -                       | 5,645,187                   | (5,645,187)           |
| Benefit Payments, including Refunds of Employee Contributions | (2,436,186)             | (2,436,186)                 | -                     |
| Administrative Expense  | -                       | (79,160)                    | 79,160                |
| Net Changes   | 3,140,354               | 5,395,142                   | (2,254,788)           |
| Reporting Period Ending September 30, 2019                    | \$ 68,037,467           | \$ 59,348,695               | \$ 8,688,772          |

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

|                                 | Current Discount |              |              |
|---------------------------------|------------------|--------------|--------------|
|                                 | 1% Decrease      | Rate         | 1% Increase  |
|                                 | 6.40%            | 7.40%        | 8.40%        |
| Sponsor's Net Pension Liability | \$ 17,613,942    | \$ 8,688,772 | \$ 1,413,327 |

*Pension Plan Fiduciary Net Position.*

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

**FINAL PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED  
INFLOWS OF RESOURCES RELATED TO PENSIONS**  
FISCAL YEAR SEPTEMBER 30, 2018

For the year ended September 30, 2018, the Sponsor has recognized a Pension Expense of \$1,567,312.

On September 30, 2018, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

|  | Deferred<br>Outflows of<br>Resources | Deferred<br>Inflows of<br>Resources |
|--|--------------------------------------|-------------------------------------|
| Differences between Expected and Actual Experience                               | 223,836                              | 123,516                             |
| Changes of assumptions   | 826,672                              | -                                   |
| Net difference between Projected and Actual Earnings on Pension Plan investments | -                                    | 1,085,936                           |
| Employer and State contributions subsequent to the measurement date              | 2,120,706                            | -                                   |
| Total  | <u>\$ 3,171,214</u>                  | <u>\$ 1,209,452</u>                 |

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer and State contributions subsequent to the measurement date has been recognized as a reduction of the net Pension Liability in the year ended September 30, 2018.

Other 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: |              |
| 2019                     | \$ (64,074)  |
| 2020                     | \$ 340,569   |
| 2021                     | \$ (261,222) |
| 2022                     | \$ (174,217) |
| 2023                     | \$ -         |
| Thereafter               | \$ -         |



**PRELIMINARY PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND  
DEFERRED INFLOWS OF RESOURCES RELATED TO PENSIONS  
FISCAL YEAR SEPTEMBER 30, 2019**

For the year ended September 30, 2019, the Sponsor will recognize a Pension Expense of \$1,070,652.

On September 30, 2019, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

|  | Deferred<br>Outflows of<br>Resources | Deferred<br>Inflows of<br>Resources |
|--|--------------------------------------|-------------------------------------|
| Differences between Expected and Actual Experience                               | 167,877                              | 522,068                             |
| Changes of assumptions   | 1,077,356                            | -                                   |
| Net difference between Projected and Actual Earnings on Pension Plan investments | -                                    | 2,086,843                           |
| Employer and State contributions subsequent to the measurement date              | TBD                                  | -                                   |
| Total  | <u>TBD</u>                           | <u>\$ 2,608,911</u>                 |

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer and State contributions subsequent to the measurement date will be recognized as a reduction of the net Pension Liability in the year ended September 30, 2019.

Other 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                     | \$ 23,367    |
| 2021                     | \$ (578,424) |
| 2022                     | \$ (491,419) |
| 2023                     | \$ (317,202) |
| 2024                     | \$ -         |
| Thereafter               | \$ -         |

**Payable to the Pension Plan**

On September 30, 2018, the Sponsor reported a payable of \$145,413 for the outstanding amount of contributions of the Pension Plan required for the year ended September 30, 2018.

## SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Fiscal Years

| Reporting Period Ending<br>Measurement Date                                | 09/30/2019<br>09/30/2018 | 09/30/2018<br>09/30/2017 | 09/30/2017<br>09/30/2016 |
|--|--------------------------|--------------------------|--------------------------|
| Total Pension Liability  |                          |                          |                          |
| Service Cost   | 724,263                  | 708,978                  | 874,002                  |
| Interest   | 4,830,246                | 4,603,003                | 4,299,570                |
| Changes of benefit terms   | -                        | -                        | -                        |
| Differences between Expected and Actual Experience                         | (549,657)                | 182,694                  | 116,520                  |
| Changes of assumptions   | 571,688                  | -                        | 1,240,006                |
| Contributions - Buy Back   | -                        | -                        | 15,021                   |
| Benefit Payments, including Refunds of Employee Contributions              | (2,436,186)              | (2,523,905)              | (2,144,740)              |
| Net Change in Total Pension Liability                                      | 3,140,354                | 2,970,770                | 4,400,379                |
| Total Pension Liability - Beginning  | 64,897,113               | 61,926,343               | 57,525,964               |
| Total Pension Liability - Ending (a)                                       | <u>\$ 68,037,467</u>     | <u>\$ 64,897,113</u>     | <u>\$ 61,926,343</u>     |
| Plan Fiduciary Net Position  |                          |                          |                          |
| Contributions - Employer   | 1,580,781                | 1,399,309                | 1,567,675                |
| Contributions - State  | 539,925                  | 509,868                  | 581,196                  |
| Contributions - Employee   | 144,595                  | 129,737                  | 170,589                  |
| Contributions - Buy Back   | -                        | -                        | 15,021                   |
| Net Investment Income  | 5,645,187                | 5,815,765                | 3,606,806                |
| Benefit Payments, including Refunds of Employee Contributions              | (2,436,186)              | (2,523,905)              | (2,144,740)              |
| Administrative Expense   | (79,160)                 | (80,689)                 | (66,876)                 |
| Net Change in Plan Fiduciary Net Position                                  | 5,395,142                | 5,250,085                | 3,729,671                |
| Plan Fiduciary Net Position - Beginning                                    | 53,953,553               | 48,703,468               | 44,973,797               |
| Plan Fiduciary Net Position - Ending (b)                                   | <u>\$ 59,348,695</u>     | <u>\$ 53,953,553</u>     | <u>\$ 48,703,468</u>     |
| Net Pension Liability - Ending (a) - (b)                                   | <u>\$ 8,688,772</u>      | <u>\$ 10,943,560</u>     | <u>\$ 13,222,875</u>     |
| Plan Fiduciary Net Position as a percentage of the Total Pension Liability | 87.23%                   | 83.14%                   | 78.65%                   |
| Covered Employee Payroll <sup>1</sup>                                      | \$ 3,181,377             | \$ 2,997,608             | \$ 3,237,715             |
| Net Pension Liability as a percentage of Covered Employee Payroll          | 273.11%                  | 365.08%                  | 408.40%                  |

**Notes to Schedule:**

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

***Changes of assumptions:***

For measurement date 09/30/2018, all recommended assumption changes from the August 4, 2017 Experience Study have been incorporated. Additionally, the investment return assumption will reduce from 7.5% to 7.0% according to the following schedule:

| <u>Valuation Date</u> | <u>Assumption</u> |
|-----------------------|-------------------|
| October 1, 2018       | 7.4%              |
| October 1, 2019       | 7.3%              |
| October 1, 2020       | 7.2%              |
| October 1, 2021       | 7.1%              |
| October 1, 2022       | 7.0%              |

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 2.30%, matching the long-term inflation assumption utilized by the Plan's investment consultant.

## SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Fiscal Years

| Reporting Period Ending<br>Measurement Date                                | 09/30/2016<br>09/30/2015 | 09/30/2015<br>09/30/2014 |
|--|--------------------------|--------------------------|
| Total Pension Liability  |                          |                          |
| Service Cost   | 842,047                  | 981,492                  |
| Interest   | 4,102,672                | 3,896,369                |
| Changes of benefit terms   | -                        | -                        |
| Differences between Expected and Actual Experience                         | (247,033)                | -                        |
| Changes of assumptions   | -                        | -                        |
| Contributions - Buy Back   | -                        | -                        |
| Benefit Payments, including Refunds of Employee Contributions              | (2,063,933)              | (1,911,491)              |
| Net Change in Total Pension Liability                                      | 2,633,753                | 2,966,370                |
| Total Pension Liability - Beginning  | 54,892,211               | 51,925,841               |
| Total Pension Liability - Ending (a)                                       | <u>\$ 57,525,964</u>     | <u>\$ 54,892,211</u>     |
| Plan Fiduciary Net Position  |                          |                          |
| Contributions - Employer   | 1,180,670                | 1,342,378                |
| Contributions - State  | 721,101                  | 871,999                  |
| Contributions - Employee   | 153,807                  | 177,737                  |
| Contributions - Buy Back   | -                        | -                        |
| Net Investment Income  | 341,202                  | 4,986,191                |
| Benefit Payments, including Refunds of Employee Contributions              | (2,063,933)              | (1,911,491)              |
| Administrative Expense   | (63,952)                 | (55,927)                 |
| Net Change in Plan Fiduciary Net Position                                  | 268,895                  | 5,410,887                |
| Plan Fiduciary Net Position - Beginning                                    | 44,704,902               | 39,294,015               |
| Plan Fiduciary Net Position - Ending (b)                                   | <u>\$ 44,973,797</u>     | <u>\$ 44,704,902</u>     |
| Net Pension Liability - Ending (a) - (b)                                   | <u>\$ 12,552,167</u>     | <u>\$ 10,187,309</u>     |
| Plan Fiduciary Net Position as a percentage of the Total Pension Liability | 78.18%                   | 81.44%                   |
| Covered Employee Payroll <sup>1</sup>                                      | \$ 4,341,784             | \$ 3,573,306             |
| Net Pension Liability as a percentage of Covered Employee Payroll          | 289.10%                  | 285.09%                  |

**Notes to Schedule:**

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

## SCHEDULE OF CONTRIBUTIONS

### Last 10 Fiscal Years

| Fiscal Year Ended | Actuarially<br>Determined<br>Contribution | Contributions<br>in relation to<br>the Actuarially<br>Determined<br>Contributions | Contribution<br>Deficiency<br>(Excess) | Covered<br>Employee<br>Payroll <sup>1</sup> | Contributions<br>as a percentage<br>of Covered<br>Employee<br>Payroll |
|-------------------|---|---|--|---|---|
| 09/30/2018        | \$ 2,120,706                              | \$ 2,120,706  | \$ -                                   | \$ 3,181,377                                | 66.66%  |
| 09/30/2017        | \$ 1,909,177                              | \$ 1,909,177  | \$ -                                   | \$ 2,997,608                                | 63.69%  |
| 09/30/2016        | \$ 2,148,871                              | \$ 2,148,871  | \$ -                                   | \$ 3,237,715                                | 66.37%  |
| 09/30/2015        | \$ 1,901,771                              | \$ 1,901,771  | \$ -                                   | \$ 4,341,784                                | 43.80%  |
| 09/30/2014        | \$ 2,214,378                              | \$ 2,214,378  | \$ -                                   | \$ 3,573,306                                | 61.97%  |

<sup>1</sup> The Covered Employee 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: 10/01/2016

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 Rates:

#### *Healthy 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, 2015 FRS actuarial valuation report. We feel this assumption sufficiently accommodates future mortality improvements.

Normal Retirement Age Eligibility:

#### Hired prior to 6/1/2013:

Earlier of 1) Age 55, 2) the completion of 25 years of Credited Service, regardless of age, or 3) the attainment of Age 50 with 20 years of Credited Service.

#### Hired after May 31, 2013:

Earlier of 1) Age 55 with 8 years of Credited Service, or 2) the completion of 25 years of Credited Service, regardless of age.

## Retirement Rates:

Assumed Normal Retirement rates shown below were incorporated with the October 1, 2007 valuation as the result of a prior Experience Study. These rates are also applicable for Members hired after May 31, 2013, as adopted with the October 1, 2013 valuation

| Number of Year After First<br>Eligibility For Normal<br>Retirement | Probability of Normal<br>Retirement |
|--|-------------------------------------|
| 0  | 25.00%                              |
| 1  | 50.00%                              |
| 2  | 50.00%                              |
| 3  | 50.00%                              |
| 4  | 100.00%                             |

The retirement rate for Normal Retirement is 100% for participants who have attained age 55 or 25 years of service, regardless of age.

## Early Retirement Age:

Attainment of age 50, regardless of years of Credited Service. Members are assumed to retire with an immediate subsidized benefit at the rate of 5% per year. These rates were incorporated with the October 1, 2007 valuation as the result of a prior Experience Study.

## Termination Rates:

| Sample Ages | Years of<br>Service | % of Active Members<br>Separating Within Next Year |
|-------------|---------------------|--|
| ALL         | 0                   | 20.0%  |
| 0           | 1                   | 12.0%  |
| 0           | 2                   | 8.0%   |
| 0           | 3                   | 4.0%   |
| 0           | 4                   | 2.0%   |
| 20          | 5+                  | 9.6%   |
| 25          |                     | 5.6%   |
| 30          |                     | 2.8%   |
| 35          |                     | 1.4%   |
| 40          |                     | 0.4%   |
| 45+         |                     | 0.0%   |

The above rates were incorporated with the October 1, 2007 valuation as the result of a prior Experience Study.

## Disability Rates:

See table below. It is assumed that 75% of disablements and active Member deaths are service-related. These rates are in line with the national average for municipal defined benefit pension programs.

| Age | % Becoming Disabled During |
|-----|----------------------------|
| 20  | 0.14%                      |
| 25  | 0.15%                      |
| 30  | 0.18%                      |
| 35  | 0.23%                      |
| 40  | 0.30%                      |
| 45  | 0.51%                      |
| 50  | 1.00%                      |

## Salary Increases:

See table below. These rates were incorporated with the October 1, 2014 valuation as the result of an Experience Study.

| Years of Service | Salary Increase |
|------------------|-----------------|
| 1                | 6.0%            |
| 2 - 9            | 5.5%            |
| 10-14            | 5.0%            |
| 15-19            | 4.5%            |
| 20+              | 4.0%            |

## GASB 68

|                            |  |
|----------------------------|--|
| Payroll Growth:            | 0.0% per year for amortization of the Unfunded Actuarial Accrued Liability, based on the ten-year average (statutory limit). The assumption was 0.8% for the October 1, 2015 valuation.  |
| Interest Rate:             | 7.50% per year, compounded annually, net of investment related expenses. This assumption was adopted by the Board in conjunction with a revision to the October 1, 2006 valuation and is supported by the Plan's investment policy and long-term |
| Post Retirement COLA:      | 3% per year at beginning at age 50 for Service Retirees, Disability Retirees, and surviving Beneficiaries. The COLA is not applicable for Vested Terminated Members, or for benefits accrued after May 31, 2013.                                 |
| Actuarial Value of Assets: | The Actuarial Value of Assets utilizes a five-year smoothing methodology. The annual difference between expected and actual investment earnings (Market Value, net of investment-related expenses), is phased-in over a five-year period.        |
| Funding Method:            | Entry Age Normal Actuarial Cost Method.  |

## EXPENSE DEVELOPMENT AND AMORTIZATION SCHEDULES

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

**FINAL COMPONENTS OF PENSION EXPENSE**  
**FISCAL YEAR SEPTEMBER 30, 2018**

|  | Net Pension<br>Liability | Deferred<br>Inflows | Deferred<br>Outflows | Pension<br>Expense  |
|--|--------------------------|---------------------|----------------------|---------------------|
| Beginning balance  | \$ 13,222,875            | \$ 1,157,306        | \$ 4,844,989         | \$ -                |
| Employer and State contributions made after 09/30/2017   | -                        | -                   | 2,120,706            | -                   |
| Total Pension Liability Factors:   |                          |                     |                      |                     |
| Service Cost   | 708,978                  | -                   | -                    | 708,978             |
| Interest   | 4,603,003                | -                   | -                    | 4,603,003           |
| Changes in benefit terms   | -                        | -                   | -                    | -                   |
| Differences between Expected and Actual Experience<br>with regard to economic or demographic assumptions | 182,694                  | -                   | 182,694              | -                   |
| Current year amortization of experience difference   | -                        | (41,172)            | (55,958)             | 14,786              |
| Change in assumptions about future economic or<br>demographic factors or other inputs                    | -                        | -                   | -                    | -                   |
| Current year amortization of change in assumptions   | -                        | -                   | (206,667)            | 206,667             |
| Benefit Payments, including Refunds of Employee<br>Contributions   | (2,523,905)              | -                   | -                    | -                   |
| Net change   | <u>2,970,770</u>         | <u>(41,172)</u>     | <u>2,040,775</u>     | <u>5,533,434</u>    |
| Plan Fiduciary Net Position:   |                          |                     |                      |                     |
| Contributions - Employer   | 1,399,309                | -                   | (1,399,309)          | -                   |
| Contributions - State  | 509,868                  | -                   | (509,868)            | -                   |
| Contributions - Employee   | 129,737                  | -                   | -                    | (129,737)           |
| Projected Net Investment Income  | 3,631,547                | -                   | -                    | (3,631,547)         |
| Difference between projected and actual earnings on<br>Pension Plan investments                          | 2,184,218                | 2,184,218           | -                    | -                   |
| Current year amortization  | -                        | (887,318)           | (601,791)            | (285,527)           |
| Benefit Payments, including Refunds of Employee<br>Contributions   | (2,523,905)              | -                   | -                    | -                   |
| Administrative Expenses  | (80,689)                 | -                   | -                    | 80,689              |
| Net change   | <u>5,250,085</u>         | <u>1,296,900</u>    | <u>(2,510,968)</u>   | <u>(3,966,122)</u>  |
| Ending Balance   | <u>\$ 10,943,560</u>     | <u>\$ 2,413,034</u> | <u>\$ 4,374,796</u>  | <u>\$ 1,567,312</u> |



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

|  | Net Pension<br>Liability   | Deferred<br>Inflows        | Deferred<br>Outflows | Pension<br>Expense         |
|--|----------------------------|----------------------------|----------------------|----------------------------|
| Beginning balance  | \$ 10,943,560              | \$ 2,413,034               | \$ 4,374,796         | \$ -                       |
| Employer and State contributions made after 09/30/2018   | -                          | -                          | TBD*                 | -                          |
| Total Pension Liability Factors:   |                            |                            |                      |                            |
| Service Cost   | 724,263                    | -                          | -                    | 724,263                    |
| Interest   | 4,830,246                  | -                          | -                    | 4,830,246                  |
| Changes in benefit terms   | -                          | -                          | -                    | -                          |
| Differences between Expected and Actual Experience<br>with regard to economic or demographic assumptions | (549,657)                  | 549,657                    | -                    | -                          |
| Current year amortization of experience difference   | -                          | (151,105)                  | (55,959)             | (95,146)                   |
| Change in assumptions about future economic or<br>demographic factors or other inputs                    | 571,688                    | -                          | 571,688              | -                          |
| Current year amortization of change in assumptions   | -                          | -                          | (321,004)            | 321,004                    |
| Benefit Payments, including Refunds of Employee<br>Contributions   | (2,436,186)                | -                          | -                    | -                          |
| Net change   | <u>3,140,354</u>           | <u>398,552</u>             | <u>194,725</u>       | <u>5,780,367</u>           |
| Plan Fiduciary Net Position:   |                            |                            |                      |                            |
| Contributions - Employer   | 1,580,781                  | -                          | (1,580,781)          | -                          |
| Contributions - State  | 539,925                    | -                          | (539,925)            | -                          |
| Contributions - Employee   | 144,595                    | -                          | -                    | (144,595)                  |
| Projected Net Investment Income  | 4,037,140                  | -                          | -                    | (4,037,140)                |
| Difference between projected and actual earnings on<br>Pension Plan investments                          | 1,608,047                  | 1,608,047                  | -                    | -                          |
| Current year amortization  | -                          | (1,208,931)                | (601,791)            | (607,140)                  |
| Benefit Payments, including Refunds of Employee<br>Contributions   | (2,436,186)                | -                          | -                    | -                          |
| Administrative Expenses  | (79,160)                   | -                          | -                    | 79,160                     |
| Net change   | <u>5,395,142</u>           | <u>399,116</u>             | <u>(2,722,497)</u>   | <u>(4,709,715)</u>         |
| Ending Balance   | <u><u>\$ 8,688,772</u></u> | <u><u>\$ 3,210,702</u></u> | <u><u>TBD</u></u>    | <u><u>\$ 1,070,652</u></u> |

\* Employer Contributions subsequent to the measurement date made after September 30, 2018 but made on or before September 30, 2019 need to be added.

## 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<br>Ending                        | Differences Between<br>Expected and Actual<br>Experience | Recognition<br>Period (Years) | 2018         | 2019         | 2020         | 2021         | 2022         | 2023         | 2024 | 2025 | 2026 | 2027 | 2028 |
|--|--|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|------|------|------|------|------|
| 2014                                       | \$ (2,023,214)   | 5                             | \$ (404,643) | \$ (404,643) | \$ -         | \$ -         | \$ -         | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2015                                       | \$ 3,008,954   | 5                             | \$ 601,791   | \$ 601,791   | \$ 601,791   | \$ -         | \$ -         | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2016                                       | \$ (229,164)   | 5                             | \$ (45,833)  | \$ (45,833)  | \$ (45,833)  | \$ (45,833)  | \$ -         | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2017                                       | \$ (2,184,218)   | 5                             | \$ (436,842) | \$ (436,844) | \$ (436,844) | \$ (436,844) | \$ (436,844) | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2018                                       | \$ (1,608,047)   | 5                             | \$ -         | \$ (321,611) | \$ (321,609) | \$ (321,609) | \$ (321,609) | \$ (321,609) | \$ - | \$ - | \$ - | \$ - | \$ - |
| Net Increase (Decrease) in Pension Expense |  |                               | \$ (285,527) | \$ (607,140) | \$ (202,495) | \$ (804,286) | \$ (758,453) | \$ (321,609) | \$ - | \$ - | \$ - | \$ - | \$ - |

AMORTIZATION SCHEDULE - CHANGES OF ASSUMPTIONS

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

| Plan Year<br>Ending                        | Changes of<br>Assumptions | Recognition<br>Period (Years) | 2018       | 2019       | 2020       | 2021       | 2022       | 2023       | 2024 | 2025 | 2026 | 2027 | 2028 |
|--|---------------------------|-------------------------------|------------|------------|------------|------------|------------|------------|------|------|------|------|------|
| 2016                                       | \$ 1,240,006              | 6                             | \$ 206,667 | \$ 206,668 | \$ 206,668 | \$ 206,668 | \$ 206,668 | \$ -       | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2018                                       | \$ 571,688                | 5                             | \$ -       | \$ 114,336 | \$ 114,338 | \$ 114,338 | \$ 114,338 | \$ 114,338 | \$ - | \$ - | \$ - | \$ - | \$ - |
| Net Increase (Decrease) in Pension Expense |                           |                               | \$ 206,667 | \$ 321,004 | \$ 321,006 | \$ 321,006 | \$ 321,006 | \$ 114,338 | \$ - | \$ - | \$ - | \$ - | \$ - |

## AMORTIZATION SCHEDULE - EXPERIENCE

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

| Plan Year<br>Ending                        | Differences Between<br>Expected and Actual<br>Experience | Recognition<br>Period (Years) | 2018        | 2019         | 2020         | 2021         | 2022         | 2023         | 2024 | 2025 | 2026 | 2027 | 2028 |
|--|--|-------------------------------|-------------|--------------|--------------|--------------|--------------|--------------|------|------|------|------|------|
| 2015                                       | \$ (247,033)   | 6.00                          | \$ (41,172) | \$ (41,172)  | \$ (41,172)  | \$ (41,172)  | \$ -         | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2016                                       | \$ 116,520   | 6.00                          | \$ 19,420   | \$ 19,420    | \$ 19,420    | \$ 19,420    | \$ 19,420    | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2017                                       | \$ 182,694   | 5.00                          | \$ 36,538   | \$ 36,539    | \$ 36,539    | \$ 36,539    | \$ 36,539    | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ - |
| 2018                                       | \$ (549,657)   | 5.00                          | \$ -        | \$ (109,933) | \$ (109,931) | \$ (109,931) | \$ (109,931) | \$ (109,931) | \$ - | \$ - | \$ - | \$ - | \$ - |
| Net Increase (Decrease) in Pension Expense |  |                               | \$ 14,786   | \$ (95,146)  | \$ (95,144)  | \$ (95,144)  | \$ (53,972)  | \$ (109,931) | \$ - | \$ - | \$ - | \$ - | \$ - |